

Phillip Buelow

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Education

Colorado School of Mines

M.S. Mechanical Engineering, Thermofluids

expected: Dec 2018

GPA 3.65

University of Wisconsin - Madison

B.S. Physics, Minor: Math

2012 - 2016

GPA 3.5

Skills

Programming:

- Advanced:

Matlab, Solidworks, MS Office

- Intermediate:

EnergyPlus, EES, AMPL

- Introductory:

Python

Machining:

- 300+ hours of milling, lathing, & assembly

Projects & Organizations

ASHRAE Rocky Mountain Chapter

Vice-President of Colorado School of Mines Student Chapter. Coordinate guest speakers and public events

DU Analytics Challenge

Develop a model in AMPL to optimize distribution of food for The Food Bank of the Rockies based on geospatial poverty data and agency locations. Awarded 2nd place.

Engineers Without Borders

Designed spring box, transportation, and storage for community in Tanzania. Negotiated with community to ensure their participation both in construction/maintenance and monetary contribution

Garage Physics

Constructed and designed a working anaerobic digester for electrical power generation

Experience

ColdQuanta

Mechanical Engineer

May 2018–September 2018

University of Wisconsin Madison

Thermohydraulics Lab Technician

October 2016–May 2017

- Assembled high voltage/current circuits to provide Inconel rod with a 1000 amps
- Installed thermal couples, and circuit connections to data loggers

- Programmed Phantom high speed cameras to optically trigger upon critical heat flux event
- Machined and assembled inconel rod contact points with circuits

- Coupled large data from thermocouple, pressure gauge, and flow recordings to model transient heat transfer of inconel rod to fluid.

Universität Koblenz · Landau(Germany)

Environmental Physics Researcher

May 2015–September 2015

- Investigated CO_2 and CH_4 out-gassing from fresh water bodies with isotope and trace gas analyzer.
- Measured topography of rivers utilizing 3D laser scanner

- Modeled river discharge with transient changes in electrical conductivity from large data sets

- Coupled data loggers with electromagnetic flow meter and conductivity meter to characterize rivers

University of Wisconsin Madison

Chemical Engineering Lab Assistant

May 2014–May 2016

- Developed procedures for planarizing and chemically etching metabolic buffer layers for regrowth.

- Designed cloud database for lab
- 40+ presentations to 5 professors and multiple PhD students.

- (*100+ clean room hours*) Dicing and spin-coating wafers for quantum cascade lasers

Publications

1. **Planarized Process for Resonant Leaky-Wave Coupled Phase-Locked Arrays of Mid-IR Quantum Cascade Lasers**
Co-author. *SPIE*. March 10, 2015.
2. **Quantum-Cascade-Laser Active Regions on Metamorphic Buffer Layers**
Co-author. *SPIE*. February 7, 2015.
3. **Buried-heterostructure Mid-Infrared Quantum Cascade Lasers Fabricated by Non-Selective Regrowth and C.P.**
Co-author. *Electronic Letters*. July 9, 2015.