

Zach D. Ruble

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EDUCATION

UNIVERSITY OF UTAH

Salt Lake City, Utah

Master of Science in Mechanical Engineering

May 2024

Focus: Environmental Fluid Dynamics

Thesis title: *An investigation of the interactions between turbulence and wave phenomena in a stably stratified nocturnal boundary layer flow during the CFACT field campaign.*

UNIVERSITY OF UTAH

Salt Lake City, Utah

Bachelor of Science in Mechanical Engineering (GPA: 3.727)

May 2023

PROFESSIONAL RESEARCH EXPERIENCE

GRADUATE RESEARCH ASSISTANT, ENVIRONMENTAL FLUID DYNAMICS LABORATORY

University of Utah

November 2021 – present

- Design and development of a low-cost atmospheric sensor array Salt Lake City, Utah
- Assisted with the deployment and maintenance of the CFACT field campaign
- Assisted in the setup of a plume transport and dispersion field campaign

R&D CO-OP, PRODUCT DEVELOPMENT

January 2023 – August 2023

BioFire Diagnostics

Salt Lake City, Utah

- Assembly, testing, and optimization of a rapid micro-scale fluid dispenser. Intended on being installed in all of BioFire's array automation lines
- Work on visual quality assurance systems (CogNex) to ensure manufacturing processes are being performed accurately and effectively
- Ground up design of a dynamic laser cutting housing for CO2 laser
- Design and development of testing fixtures and jigs for engineering process validation

ANSYS SIMULATION CONSULTANT, PARTICLE FLUX ANALYTICS

University of Utah

October 2022 – present

- Development of a microscale, transient heat simulation using ANSYS Salt Lake City, Utah
- Prototype design for dynamic wind tunnel fixture

TEACHING EXPERIENCE

University of Utah (Teaching assistantships)

- *Heat Transfer* • Upper-level Undergraduate TFES course (ME EN 3560)
- *Thermal, Fluids, and Energy Systems Lab* • Senior level TFES laboratory

University of Utah (Tutoring)

- *Tutor certified to assist in students understanding across all subjects within the Undergraduate Mechanical Engineering Program.*

AWARDS & FUNDING

- Student Researcher of the Year Award (2022-2023)
- De Maio Merit Scholarship (\$5000, 2022-2023)

May, 2023
August 2022

PROFESSIONAL MEMBERSHIPS

- American Geophysical Union
- American Society of Mechanical Engineers