

REESE HUFNAGEL

CHEMISTRY, PHYSICS & MATERIALS SCIENCE

Ramsey, MN

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SUMMARY

I am an undergraduate Chemistry student interested in securing an internship which requires and further develops knowledge and experience in chemistry and materials science. I am especially interested in Aerospace and related fields.

EDUCATION

University of Wisconsin-Stout

BS Chemistry / Minors in Materials Science and Physics

September 2024 - Present

Emphasis Area: Materials and Nanoscience

GPA: 4.0

Anoka-Ramsey Community College

Associate of Arts Degree

August 2022 - May 2024

Awarded AA degree in 2024

GPA: 4.0

EXPERIENCE

Chemistry Research Assistant -- September 2024 to Present

University of Wisconsin-Stout

- Conduct independent research on the chemical treatment and thermal analysis of carbon fiber composites under simulated thermal reentry conditions in a design for demise project.
- Additional lab research projects including:
 - Silver nanowire and copper nanoparticle synthesis
 - Porosity control and characterization of ceramics
 - Development of plasma and heat testing strategies
 - Material characterization utilizing scanning electron microscopy (SEM)
 - Portfolio: raysciences.com/hufnagel/

- Practice laboratory techniques such as:
 - Lab notebook documentation
 - Experiment preparations
 - Project setup
 - Procedure execution
 - Result analysis
 - Characterization

Lab Assistant -- June 2025 to Present

University of Wisconsin-Stout

- Organize and clean various lab spaces by washing glassware, hoods, and countertops.
- Sort and restock general lab equipment and return chemicals to their designated storage spaces.
- Organize storage and equipment to be more efficient and functional.

Desk Assistant -- September 2024 to May 2025

University of Wisconsin-Stout

- Provide residence hall customer service.
- Foster a welcoming atmosphere.
- Assist residents with problem solving.

Childcare Assistant -- August 2022 to August 2024

Anoka-Hennepin Schools

- Led program activities such as gym time, arts and crafts, and collaborative games for elementary-aged students.
- Managed projects and facilitated club meetings while building relationships and mentorship experience.
- Learned to speak in front of large groups of people for announcements every morning.

Martial Arts Instructor -- August 2019 to August 2024

Jitsu Do Club

- Led Martial Arts classes for a wide variety of students, adapting instruction to meet diverse needs from professional adults to special needs children.
- Demonstrated and taught a variety of martial arts skills and concepts.

SKILLS

- Scanning Electron Microscopy (SEM)
- Energy Dispersive X-ray (EDX)
- Optical Microscopy
- Thermogravimetric Analysis
- Thermal Decomposition Kinetics
- High Temperature Materials Testing
- Ceramic Processing
- Experimental Design
- Scientific Writing
- Academic Research
- Lab Cleaning / Organization
- Team Collaboration
- Time Management

COURSEWORK

Chemistry: Organic Chemistry I and II, Chemistry of Materials, Chemistry of Polymers

Physics: University Physics I and II

Math: Calculus I and II

Engineering: Metallurgy

Nanotechnology: Intro to Vacuum Technology

UW Madison: NSF I-Corps Program

ACHIEVEMENTS

- Two successfully funded research proposals
- Dean's List – UW-Stout
- Dean's List – ARCC
- Graduated with Highest Honors and Ranked 1/456 with a 4.25 GPA from Andover High School

PASSIONS



Aerospace

- I aspire to do materials science for aerospace applications. The extreme conditions and high-performance needs of materials during launch and reentry are exciting problems to solve. I hope to contribute my knowledge and be part of this exciting industry.



New Advancements in Materials Science

- I am passionate and curious about material science. This industry is always evolving, and the new discoveries are important to scientific endeavors. I enjoy how the core science works together to describe the physics we encounter daily.



Multi-faceted Teams

- I am motivated to be part of a diverse academic and professional team. It takes collaboration between material scientists, chemists, physicists, engineers, and others to creatively tackle complex problems and develop unique and innovative solutions.

ACCEPTED GRANT PROPOSALS

Title: Chemically Assisted Design for Demise of Carbon Fiber and Carbon Fiber Reinforced Polymers for Uncontrolled Reentry of Spacecraft

Funding Agency #1: Wisconsin Space Grant Consortium

Funding Agency #2: UW-Stout Office of Research & Sponsored Programs

Project Description: Design for demise of carbon fiber composites by chemical pretreatment and thermal analysis under simulated reentry conditions.

Status: Approved

PRESENTATIONS

- Hufnagel, R.; Ray, M.A. "The Sky is Falling: Accelerating Demise During Reentry." UW-Stout Research Day, 2025