

Sylvie Crowell

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(216)-551-7413

Education

-Case Western Reserve University, Cleveland, Ohio
-GPA: 3.945/4.0
-B.S. / M.S. Materials Engineering (Exp. Grad: May 2023 / December 2023)

Scholarships

-Parker Hannifin Corporation Scholarship
-G. Brooks Earnest Memorial Engineers Foundation of Ohio
-AIST Steel Intern Scholarship
-Van Horn Scholarship for Materials Science
-CWRU Alumni Scholarship

Employment

Lincoln Electric Consumables R&D Department Intern, Cleveland, Ohio (Summer 2022)

- Development of welding flux-cored electrodes for higher strength applications
- Characterization of slag using microscopy (SEM / EDS) to determine relationships between chemistry and microstructure

Parker Hannifin Engineered Materials Group Intern, Cleveland, Ohio (Summer 2021)

- Research and design of a biomedical water purification system
- Performing laboratory water quality testing
- Design, modeling, and professional rendering of an improved prototype

Think[box] Fabrication Technician: CWRU (Fall 2020-)

- Responsible for fabrication of prototypes, aiding and training users on wood and metal shop machinist equipment
- Undergraduate teacher's assistant for Mechanical Manufacturing laboratory course

Cotsworks LLC Engineering and Business Development Departments FORCE Intern, Cleveland, Ohio (June-December 2020)

- Researched product materials for optoelectronics and creating production facility scale model

Future Connections Internship: Cleveland Museum of Natural History Ornithology Department (Summer 2018)

- Dissected & analyzed bird specimens and prepared specimens for museum collections
- Analyzed statistical data comparing maturity of bird skull to death rate

Research

Undergraduate researcher with the Advanced Manufacturing and Mechanical Reliability Center (AMMRC) at Case Western Reserve University in the lab of Dr. Gbur and Dr. Lewandowski (2020-present)

- Developing operation protocol for aerosol metal ink 3D printing of circuits with the Cleveland VA and Dr. Doug Shire
- Design and modeling of implantable neurostimulation prosthesis components incorporating aerosol metal 3D printing
- Research on rotational bending fatigue testing, tension, and flex testing of biomedical implantable wires (Nitinol and 35N LT)
- Swagelok Student Fellowship Program SCSAM Awardee for Atomic Force Microscopy (Fall 2021 - Spring 2022)
- Presented poster at CWRU SOURCE Intersections on Characterization of Sintering and Aging Behavior of Silver Nanoparticle Ink for Aerosol Printing (December 2022)

Skills, Activities

- Proficient in 3D printing, laser cutting, mill, lathe, TIG / MIG / stick welding, drill press, waterjet cutting, CNC ShopBot, metal and wood shop power saws, sanding and grinding tools
- Proficient in Scanning Electron Microscopy, T/SEM, Digital Microscopy (Keyence), and Atomic Force Microscopy
- Proficient with CAD (Autodesk Inventor Professional, Solid Edge, and Solidworks), Mathematica, and Matlab
- Familiar with ASTM standards and compliance
- Proficient with Adobe Photoshop (digital painting), graphic design via Krita and Adobe Fresco, and studio art
- Proficient with MuseScore software for musical arrangements
- Member and secretary of the Case Western Reserve University Quidditch Team