

MAXWELL HOLLAND

EDUCATION

Iowa State University
Bachelor of Science in Materials Engineering specializing in Metallurgy

WORK EXPERIENCE

Chemical Batch Processing Intern

W.E. Mowrey – Saint Paul, MN

May 2019 – August 2019, May 2020 – September 2020

Refined batches of precious metals consisting of Gold, Platinum, Palladium, and Silver using a wet chemical process.

Characterized materials using an X-Ray Fluorescence Spectrometer and determined their value based on the current market exchange rate and decided on a fair sale price.

Cast, rolled, drew, and heat-treated various precious metal alloys.

Assayed scrap samples to determine composition.

Joined metals using a spot-welder.

Brazed metals using silver solder to prevent oxidation.

Extracted precious metals from non-precious metals via electrochemical deposition.

Constructed forms that were used to cast a furnace using refractory.

Constructed a polyvinyl chloride ventilation system using commonly available parts.

Installed new electro-mechanical switches for an ultrasonic cleaner.

Accurately and precisely weighed and stamped metals for inventory management.

Assessed precious metal bullion, wire, coins, jewelry, and dental crowns for resale value.

Cleaned cast bars using a mechanical wire wheel.

Disposed of waste chemicals properly.

Service Engineer

Top Gun Technology – Prior Lake, MN

November 2022 – December 2023

Provided remote support to onsite engineers to maintain critical storage systems.

Installed and configured testing infrastructure capable of testing multiple brands of servers.

Tested batches of servers and internal components to verify functionality.

Developed multidimensional problem-solving skills.

Laboratory Technician

3M contracted through Russel Tobin and Associates

November 2024 – November 2025

Performed sample measurement and analysis.

Conducted laboratory scale experiments with a team.

Documented data using excel and document test methods and results in written format.

Conducted material testing and documentation.

Generated a standard operating procedure for equipment.

PROJECTS

Caterpillar Engineering Design Competition (Iowa State Club)

Analyzed existing Skid-Steer Entry design.

Proposed modern design for entry system with a focus on safety and ease of use.

Evaluated design for business viability.

Additive Manufacturing and Product Development (Personal)

Additively manufactured polymer-based cell phone cases.

Extruded multiple materials including Polylactic Acid, Polylactic Acid infused with wood fiber, Polylactic Acid infused with carbon fiber, and Acrylonitrile butadiene styrene.

Optimized process parameters to ensure proper flow rate, melting temperature, print bed temperature, retraction rate, and slice settings.

Orange Juice Plant (Iowa State Group project)

Roughly modeled a processing plant for orange juice production.

Analyzed cost of process from tree to package.

Calculated process parameters describing the plant including valves, piping, tanks, pumps, boilers, and supply chain management.