

Hayden Nelson

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Work Experience

Manufacturing – Associate Production Supervisor

April 2022 – Present

Healgen Scientific

Houston, TX

- Oversaw planning and installation/ validation of lateral flow diagnostic test production facilities
- Wrote validation protocols and other SOPs for production and complex automated equipment
- Generated technical drawings to integrate products into customers' existing hardware
- Managed the disposal of over 5 million covid tests from characterization to final disposal
- Managed relationships with customers and oversaw contract manufacturing negotiations
- Coordinated international teams to assist in install and support of complex machinery
- Developed prototype covid test for blind/low vision users, received funding from NIH RADx program
- Wrote Instructions for Use for covid-19 and flu tests; used python to analyze readability

Production Associate

October 2020 – March 2022

Cue Health

San Diego, CA

- Operated, maintained and troubleshooted Oligo Pilot 100 for oligonucleotide synthesis
- Operated and troubleshooted Akta pilot and Avant chromatography systems for oligo purification
- Designed and built solvent/buffer delivery systems for oligonucleotide synthesis and purification
- Ensured that high pressure volatile chemical systems were maintained and operated in a safe manner
- Designed and built leak detection/ auto shut off device for TFF system
- Assisted in scaling up oligonucleotide (organic synthesis) production for rapid Covid-19 tests
- Worked quickly in a startup environment to deliver on government and private contracts
- Utilized HPLC, LC/MS, and UV-Vis to analyze and quantify oligonucleotides
- Wrote python scripts to automate tasks and collect data for machine learning

Research Associate

May 2020 – August 2020

Utah State University Biological Engineering Bionanophotonics lab (REU)

Logan, UT

- Followed and optimized standard operating procedures
- Worked within a group to process sewage and atmospheric samples for the detection of coronavirus
- Developed testing fixtures to test effectiveness of surgeries in cadaver arms

Undergraduate Research

Balloon fill lead/ Instrument owner

May 2018 – March 2020

High Altitude Research Team

Rexburg, ID

- Planned and executed balloon fill and launch, set a team record of 114k feet
- Designed, built, and maintained atmospheric measuring instruments (Ozone, CO₂ and Particle counter)
- Selected electrical components for spectroscopy-based ozone detector

Education

Bachelor of Science in Chemistry

September 2014 – April 2020

Brigham Young University-Idaho

Rexburg, ID

- Minor: Engineering GPA: 3.0
- Relevant coursework: Manufacturing Processes, Instrumental Analysis, Strength of Materials, Differential Equations, Linear Algebra, Mechanical Design, and Intro to Nanomaterials

Technical Skills

Software/Programing

- Python, Arduino, Psi4, Wolfram, MATLAB, RPA, VBA, MacOS, Windows and Linux
- SolidWorks (CSWA), Microsoft Office, Fusion 360, Photoshop, ImageJ, FEA

Other Skills

- Analytical chemistry, nanofabrication, PCB design, Spectroscopy, chromatography
- Welding (MIG and stick), soldering, 3D printing, manual mill and lathe, CNC laser, plasma, and mill
- Amateur radio technician KI5 APD