GRANT CORSO

Embedded Systems | Microfluidics | Controls | Mechatronics

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Experience

IMI Norgren — Global motion and fluid technology leader

Engineering Intern *Palmer, MA | Summer 2025*

- Developed closed-loop multi-PID pressure and flow control for a dual-channel pneumatic dispense pump.
- Designed a custom current-drive PCB for proportional valves, improving stability and precision.
- Applied in mass spectrometry workflows, enabling accurate, repeatable microfluidic sample delivery.
- Verified performance across 30–5000 µL/min with accuracy of ±0.5 µL.
- Now entering manufacturing.

CyteQuest Inc. — Biotech startup for non-viral cell engineering

Engineering Intern *Ithaca, NY | 2021 — 2025*

- Built an integrated flow-electroporation system with GMP automation, microfluidic bubble mitigation, Faradaic efficiency tracking, and channel multiplexing.
- Designed the machine and custom control software; system remains in active use for cell-therapy experiments.

Donzi Boat Restoration — Full systems rebuild and modernization

Student Engineer *Ithaca, NY | 2023 — 2024*

- Planned and executed the full restoration of a Donzi boat: built Chevy 350 to 420+ hp, restored Bravo outdrive, installed fuel system, wiring, hydraulic steering, and trim tabs.
- Designed and implemented a custom ECU PCB with protections, CAN-FD networking, and LoRa communications.
- Integrated mechanical, electrical, and control systems through a custom GUI dashboard for seamless operation.

Autonomous Navigation Robot — Applied robotics project

Lead Developer *Ithaca, NY | 2022 — 2024*

- Developed a yardwork/delivery robot using GPS + digital compass achieving 1 ft accuracy.
- Implemented multi-sensor fusion with outlier rejection to improve robustness against faulty readings.
- Project reviewed by a committee of aerospace navigation engineers for error handling and reliability best practices.

Education

B.S. Mechanical Engineering (in progress) — Cornell University
Ithaca, NY 2024 — 2028

- President, Holland International Living Center Program House
  - Managed event programming for 300+ residents

High School Diploma — Lansing High School
Lansing, NY 2020 — 2024

- Graduated at top of class (98.94 GPA).
- Class President; National Honor Society President.

Skills

Tools

SolidWorks · Autodesk Inventor · Blender · KiCad · VS Code · Video editing

Programming

Python · C/C++ · MATLAB · HTML · LaTeX · PID loops · GUI development

Embedded/EE

Custom PCB design · CAN-FD · ESP32 · STM32 · Raspberry Pi · Analog circuits

Fabrication

Electronics assembly · Soldering · 3D Printing · General shop competency

Courses

- Controls & Mechatronics — PID, state-space, embedded implementation.
- Electromagnetics — fields, capacitance, AC circuits.
- Microfluidics — electrode design, bubble dynamics, Faradaic efficiency.

Project Outcomes

- **Peer Reviewed Publication**: Vander-Burgh, J.A., Corso, G.T., Levy, S.L. & H.G Craighead. A multiplexed microfluidic continuous-flow electroporation system for efficient cell transfection. Biomed Microdevices 26, 10 (2024).
- **Patent application**: Multiplexed microfluidic continuous-flow electroporation system for efficient cell transfection.
- **NIH Phase II SBIR**: “Adaptable and scalable electroporation for cellular therapy.”
- **Conference visibility**: CyteQuest projects featured on numerous conference posters.

Recognitions

- American Chemical Society Undergraduate Scholarship
- French Seal of Biliteracy
- John Philip Sousa Music Award