JOHN MCLAUGHLIN

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EDUCATION

University of Illinois at Urbana-Champaign Expected Graduation May 2026
Bachelor of Science in Chemical and Biomolecular Engineering | GPA: 3.92 *Champaign, Illinois*
Ohio University August 2021 – May 2024
Coursework in Chemical and Biomolecular Engineering (Transfer) *Athens, Ohio*

EXPERIENCE

NSF iBioFoundry, Dr. Huimin Zhao Lab August 2025 – Present
Undergraduate Researcher, Lab Automation & Controls *Champaign, Illinois*

- Troubleshoot cross-layer equipment failures spanning electromechanical and software interfaces, including method logic, labware configuration, and scheduling dependencies, and document root cause and corrective actions to reduce repeat downtime across a 15+ instrument workcell.
- Develop Python orchestration and control logic to translate experimental intent into executable workflows, incorporating parameter validation, guardrails, and runtime error handling to improve equipment uptime and run consistency.
- Own end-to-end workcell development on the Tecan Fluent platform, integrating software control logic with physical deck layouts, liquid handling constraints, and multi-instrument coordination; validate performance after configuration changes using machine data.
- Design an agentic AI protocol compiler that converts plain-English experiment descriptions into multi-step, machine-readable workflows with supporting Python execution code for automated equipment coordination.

Revolution Medicines May 2025 – August 2025
Pharmaceutical Engineer, Drug Product *Redwood City, California*

- Built an Excel-based inventory forecasting and control dashboard supporting a $3.3M excipient procurement decision by visualizing on-hand inventory, campaign demand, and material order timing across programs.
- Developed control charts and detailed process performance summaries for 13+ tablet manufacturing campaigns across two strengths, improving manufacturing visibility and supporting tech transfer documentation.
- Standardized documentation templates and reporting across DOE, clinical, and PAR deliverables, streamlining review cycles and cross-functional communication between formulation, analytical, and manufacturing teams.

Kymanox May 2024 – August 2024
Validation Engineer *Raleigh-Durham, North Carolina*

- Co-developed qualification protocols for a novel cleaning validation robot, contributing to User Requirement Specifications, hands-on test execution, and GMP/FDA-aligned documentation, and translated equipment failure modes into actionable design improvements.
- Executed 20+ qualification protocols for automated and temperature-controlled systems; performed root cause analysis on failure modes identified during iterative usability testing of an automated swabbing device.

Kymanox May 2022 – August 2023
Operations Data Engineer *Raleigh-Durham, North Carolina*

- Led a CEO-sponsored initiative to categorize 2,000+ technical deliverables, enabling standardized pricing, scoping, and capability communication across the firm.
- Built Smartsheet and Excel tools to track workload and surface resource risks across 50+ active projects, improving execution visibility for technical leadership.

LEADERSHIP

Men's ACHA Division I Ice Hockey August 2021 – Present
Director of Operations, Forward *Champaign, Illinois & Athens, Ohio*

- Lead a 10-person team managing game day operations, fan engagement, alumni initiatives, digital campaigns, sponsorship decks, and booster club structure, fostering several external partnerships.
- Balance full-time academics (3.92 GPA), competitive Division I athletics, and team operations leadership.

TECHNICAL SKILLS

Automation & Controls: FluentControl, workcell integration, liquid handling, multi-instrument coordination, robotic validation, equipment qualification
Programming & Modeling: Python, MATLAB, Git, KNIME, CHEMCAD
AI & Agentic Systems: Agentic workflow design, LLM-driven protocol compilation, ML feedback loops, Claude Code, Cursor
Data & Documentation: Excel, Smartsheet, Microsoft Office, data dashboards, GMP documentation, control charts, pass-down communications