C. James Nesbit IV (CJ)

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ABOUT

Chemical Engineering student at the University of Dayton with a passion for advancing energy systems and solutions. Skilled in data analysis, computer programming, and software literacy. Proven ability to deliver accurate, high-quality results through effective team collaboration. Actively seeking opportunities to apply technical skills to solve real-world energy and engineering problems.

EDUCATION

University of Dayton, Dayton OH — May 2027
Bachelor of Engineering, Chemical Engineering
GPA: 4.0/4.0

Sinclair Community College, Dayton OH — December 2024
Associate of Science, Computer Science
GPA: 3.76/4.0

RELEVANT COURSEWORK

Excel Engineering Computations	Material & Energy Balances	Chemical Engineering Thermodynamics
General & Organic Chemistry	C++/Java Software Coding	Separation Process Engineering

WORK EXPERIENCE

University of Dayton Research Institute, Dayton OH — August 2025 – present
Fuel Science Intern

- Researched the combined effects of fuel additives and water solubility on dielectric constant measurements used for fuel gauging. Led experiments testing blends of controlled concentrations of additives and water content.
- Performed 50+ surface tension experiments with pure components of standard jet fuels to commission a novel new instrument. Researched effects of 5 various needle diameters, temperature and air flow variables.

University of Dayton Research Institute, Dayton OH — January 2025 – August 2025
Chemical Process Co-op

- Assisted with the development of a mobile petroleum desulfurization unit for the US Air Force.
- Gained hands-on experience with the design and construction of various refining process units relating to the desulfurization and recycle processes. Gained experience reading and developing Process Flow Diagrams, Piping & Instrumentation Diagrams, and Controls drawings.
- Optimized mechanical bill of materials and organized suppliers to save $11,000.
- Developed the technical data package draft for the unit's design. The technical data package contains information about manufacturing processes, chemical processes, and safety requirements.
- Gained simulation & design experience with process control, ASPEN HYSYS, and Aspen Plus.

University of Dayton Research Institute, Dayton OH — October 2024 – May 2025
Fuel Science Intern

- Analyzed gas chromatography (GC-FID, GCxGC) samples for 80+ international jet fuels. Used simulated distillation software to generate over 100 distillation points for each jet fuel. Increased quality and reproducibility of distillation data by up to 30% for new fuels.
- Researched the effects of modern fuel additives on dielectric constant measurements used for fuel gauging. Led 20+ individual experiments with unique fuel & additive combinations to develop models to accurately predict the magnitude of additive effects.
- Collaborated with multiple research professionals to deliver accurate results efficiently.

TECHNICAL PROJECTS

Personal Website, Dayton OH — January 2025
Front-end Website Developer

- Designed and created a personal website to act as an expanded online resume and total catalog of my academic progress and achievements. Hosted at cjnesbit.com.

ADDITIONAL EDUCATION

Sinclair Community College, Dayton OH — December 2024
Associate of Science, Mathematics
GPA: 3.76/4.0

Sinclair Community College, Dayton OH — July 2024
Associate of Science, Chemistry
GPA: 3.76/4.0

HONORS AND AWARDS

OSGC/NASA 2025 Scholar — April 2025
Ohio Space Grant Consortium 2025 STEM Scholarship

- Recipient of the NASA & Ohio Space Grant Consortium STEM Scholarship 2025 for my research in the jet fuel industry.

Dean's List, University of Dayton — 2024 – 2025
Dean's List, Various Semesters

- Made the Dean's List at University of Dayton for all semesters studied: Fall 2024, Spring 2025, Fall 2025.
- Recognized for having a perfect 4.0/4.0 GPA.

Dean's List, Sinclair Community College — 2022 – 2024
Dean's List, Various Semesters

- Made the Dean's List at Sinclair Community College for: Spring 2022, Fall 2022, Spring 2023, Spring 2024, Summer 2024.

PRESENTATIONS AND PUBLICATIONS

World Jet Fuel Survey Part 1: 2023 – 2024 — December 2025
University of Dayton Research Institute, Fuels & Energetic Materials

- Contributed to the design of simulated distillation and dielectric constant experiments for the World Jet Fuel Survey.
- Analyzed key literature to validate key empirical correlations to predict model results.
- University of Dayton Research Institute. (2025). *World Jet Fuel Survey Part 1: 2023-2024* (CRC Report No. AV-33-22). Coordinating Research Council, Inc. https://crcao.org/wp-content/uploads/2025/12/CRC-AV-33-22_Final-Report.pdf

PROFESSIONAL INVOLVEMENT

Omega Chi Epsilon, Chemical Engineering Honor Society — February 2025 – present
Community Outreach Officer

- Community Outreach Officer of Omega Chi Epsilon Chemical Engineering Honor Society (OXE). Admittance requires around top ~20% of Chemical Engineering class.

KEY SKILLS

- Aspen Plus, Aspen HYSYS, Process Modeling, Process Control, Process Engineering
- Software Literacy, C++, Java, HTML, CSS, VBA, Microsoft Office, Adobe Creative Suite
- Communication, Team Collaboration, Project Management, Public Speaking, Problem Solving