C. James Nesbit IV (CJ)

Dayton, OH | (937) 609 – 4885 | cjnesbit4@gmail.com | linkedin.com/in/cj-nesbit-iv | cjnesbit.com

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

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

WORK EXPERIENCE

Marathon Petroleum Corporation, Robinson IL — January 2026 – present
Refining Engineering Co-op

- Developed and led test runs to optimize hydrogen consumption in stripper units to support environmental goals for diesel hydrotreating units.
- Process engineered a workaround partial process bypass on an isomerization reactor formation to assist with startup and shutdown operations. Improved energy consumption by the unit during transient operation and improved process safety by minimizing risk of runaway reactions.
- Performed engineering calculations using Petro-SIM and other simulation packages to support operations with water wash processes.
- Developed inspection checklists for distillation tower internals during turnaround, maintenance, and installation activities.
- Collected lab samples of process unit corrosion to improve reliability and process safety.

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

- Calibrated and created a standard operating procedure for a new Surface Tension/Interfacial Tension instrument. Validated results against industry standards.
- 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.
- Researched the effects of fuel additives in pure components of standard jet fuels. Created predictive models for dielectric constant data of additives from calculations using these base components. Developed blending rules to automatically predict additive effects on dielectric constant based on mixing concentrations.

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. Gained experience reading and developing Process Flow Diagrams and Piping & Instrumentation 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 increase reproducibility of distillation data by up to 30% for new fuels.
- Researched the effects of fuel additives on dielectric constant data used for fuel gauging. Led 20+ individual experiments with unique fuel & additive combinations to develop predictive models.

CERTIFICATIONS

Runaway Reactions Certificate November 2025
Issued by American Institute of Chemical Engineers (AIChE)

- Learned about why runaway reactions occur and how to prevent them to improve process safety.

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.

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

Stander Symposium Poster Presentation, Dayton OH April 2025
Stander Symposium, College of Engineering, Independent Research

- Presented research regarding fuel gauging in response to dielectric properties of various additives and impurities in jet fuel.
- "Influence of Additives and Impurities on the Dielectric Properties of Jet Fuel" (2025). *Stander Symposium Projects*. 3799.

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.

RELEVANT TEST SCORES

American Chemical Society Organic Chemistry Final April 2024
Score: 61/70. Nationwide Percentile: 99th

ACT February 2024
Score: 34/36 Composite.

American Chemical Society General Chemistry Final April 2023
Score: 64/70. Nationwide Percentile: 99th

VOLUNTEERING EXPERIENCE

Audio-Visual Technician, FairHaven Church August 2021 – June 2023
Fall Visit Day Alumni Panel Volunteer, Sinclair Community College November 1, 2025
Volunteer Staff, Tau Beta Pi Association, University of Dayton December 5, 2025
TEAMS Competition Volunteer, Robinson High School February 2026

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.

Other Involvement: American Institute of Chemical Engineers (AIChE), Tau Beta Pi Engineering Honor Society, University Honors Program, Grand Challenges Scholars Program, Triathlon Club, Running Club.

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