Kate E. Malmsbury

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Education:

University of Detroit Mercy — **Graduated:** *December 2024*
Master of Science in Product Development — **Cumulative GPA:** 4.00/4.00
Graduate Certificate in Systems Engineering

University of Illinois at Urbana - Champaign — **Graduated:** *May 2019*
Bachelor of Science in Mechanical Engineering with Honors — **Cumulative GPA:** 3.52/4.00

Work and Research Experience:

Ford Motor Company — September *2019 – Present*
Propulsion Systems Attribute Engineer, Electric Vehicle Energy Management Systems

- Selected for the Ford University Partnership program and led team of Ford engineers through Masters thesis
- Formulated customer value-business cost analysis for key attribute to incite informed decisions with leadership
- Developed charging program summary report and charging progress chart that was presented to Doug Field (CTO) and made into a template for future charging discussions on Field's request
- Established and presented an introductory EV-101 course attended by over 500 engineers at Ford
- Developed and published article sent to all Mach-E customers regarding battery health info via Ford Pass
- Led supplier bidding, negotiated lower price than target, and developed design for ISC component
- Dissected battery module issue and delivered data that helped Ford win warranty negotiations with supplier

Ford Motor Company — *May 2018 – August 2018*
Student Intern, Electrified Powertrain Engineering

- Created a complete design verification method for studying high voltage battery cells
- Analyzed capacity, internal resistance, strain, and force trends for battery cell/pack usage and aging
- Validated current battery design robustness and battery degradation trends for future design

Honda Research and Development — *June 2017 – Dec. 2017*
Student Intern, Transmission Design Department

- Designed components around dynamic environments, aiding safety and function of future vehicles
- Analyzed part durability by calculating von Mises stress and deflection using FEA
- Disassembled and reassembled entire 10 speed automatic planetary gear-set transmission

Undergraduate Research — *Jan. 2017 – May 2018*
Undergraduate Researcher, Department of Mechanical Science and Engineering

- Modified CFD simulations using Ansys for flow analysis
- Assisted with laboratory experiments, data collection, and analysis
- Presented experiments, data, and progress at the Undergraduate Research Symposium

Skills and Interests:

Computer: Matlab, Python, Java, Creo, Catia, Ansys (Proficient)
Language: English (Primary), French (Proficient)

Honors and Awards:

Ford Recognition Award *2024/2023/2023/2022/2020*
Exemplifying the Ford Truths

Senior Design Award *May 2019*
Outstanding Achievement for Exc. in Eng.

James W. Bayne Award *May 2019*
Graduating Class Outstanding Sr. Design Project

Undergraduate Research *May 2017*
TechnipFMC Outstanding Poster in Eng.

Leadership and Philanthropy:

Pi Tau Sigma – Mechanical Engineering Honor Society — *Jan. 2019 – May 2019*
Member of Illinois Alpha Chapter

- Volunteered at the local elementary school to introduce STEM concepts at Engineering Club

Illini Motorsports — *Aug. 2015 – May 2019*
Member of Engine Sub-team, Project Lead in Drivetrain Sub-team (Aug. 2018 – Dec. 2018)

- Designed pedal box to minimize weight and improve strength and ergonomics
- Designed and tested 7 tube silencer used on current formula car

American Society of Mechanical Engineers — *Aug. 2015 – May 2019*
Treasurer (Aug. 2016 - May 2017), Freshman Representative (Aug. 2015 - May 2016)