

MEGAN JEFFORDS

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MJ Design Consulting, LLC

EXPERIENCE

MICROSOFT | SURFACE HARDWARE

Senior Mechanical Engineer | August 2022 - October 2023

- Mechanical Engineering lead for the Surface laptop; led cross-functional meetings and designed mechanical parts for high volume manufacturing using various manufacturing techniques (Machining, Injection Molding, Stamping).
- Managed complex models and assemblies in Creo Parametric and released on-time mechanical designs with international contract manufacturers.
- Worked across disciplines to design, test, and debug complex hardware technologies for product development, to meet aggressive cost and schedule goals.

NUVASIVE | POSTERIOR FIXATION

Project Engineer | August 2021 – July 2022

- Project leader for a new implant and instrument spinal fixation system; led a 20-person cross-functional team including Quality, Regulatory, Marketing and Supply Chain for an on-time Alpha launch amidst the COVID pandemic.
- Inventor and technical lead of a novel powered instrument consisting of 60+ unique components with the management of multiple vendors on an accelerated timeline.
- Authored 25 reports and project documentation per relevant domestic and international standards in the highly regulated medical devices environment (FDA 21 CFR Part 820.30, ISO 13485).

Senior Development Engineer | February 2020 – August 2021

- 2020 Extreme Lazar Award Winner – the highest mechanical design award at NuVasive out of 95 engineers.
- Filed 9 IP submissions leading to 3 provisional patent submissions.
- Managed in-house and external prototyping and commercial manufacturing while applying DFX principles and Agile Sprint methodology. Design experience includes bearings, planetary gearboxes, clutch designs, ratcheting devices, quick-connect mechanisms, springs, and complex mechanism design.

Development Engineer | March 2018 – February 2020

- Designed and released 50+ custom instruments with 3D CAD design (CREO), drawings (DFX, GD&T, Tolerance Analysis).
- Launched two standalone instruments as lead designer, supplier coordinator and facilitator of design controls.
- Developed a test protocol to verify 5 year lifespan for a reusable instrument in a high-torque, sterile environment.

RADY CHILDREN'S HOSPITAL | ORTHOPEDIC BIOMECHANICS RESEARCH CENTER

Biomechanical Engineer | May 2015 – March 2018

- Lead biomechanical engineer for orthopedic surgeons conducting research, resulting in 16 publications.
- Designed fixtures (SolidWorks), developed test protocols, and lead operator of a servo hydraulic Test System.
- Developed custom MATLAB software and pioneered 3D printing capabilities for pre-surgical planning.

PATENTS

- **Lead Inventor | NuVasive** – Jeffords, M. 2021 “Power Module for Bone Anchor and Stylet Insertion” Pub. No: US20220142681A1
- **Co-Inventor | NuVasive** – Jeffords, M. 2021 “Stylet Control Handles” Pub. No: US20220192718A1
- **Co-Inventor | NuVasive** – Jeffords, M. 2021 “Surgical Instrument Tracking Devices and Related Methods” Pub. No: US20210068903A1

TECHNICAL SKILLS

- **ENGINEERING:** CAD, Design for Manufacturing (Stamping, Molding, Milling), Design for Assembly, GD&T, Rapid Prototyping, Worst Case & Statistical Tolerance Analysis, Technical Presentation & Writing, Mechanical Testing
- **SOFTWARE:** Creo Parametric, PTC Windchill, CETOL 6 Sigma, SolidWorks, Visualize, Planview PPM Pro, MATLAB
- **MENTORSHIP:** Conduct weekly meetings, design & print reviews for Mechanical Engineers at NuVasive & Microsoft

EDUCATION

- **M.S. Biomedical Engineering**, *The University of Akron*, Akron, OH 2013-2015
- **B.S. Biomedical Engineering**, *The University of Akron*, Akron, OH 2008-2013

ORGANIZATIONS & HOBBIES

ORGANIZATIONS: Society of Women Engineers & Toastmasters

HOBBIES: Ultra Marathon Running, Backpacking, Sailing, Rock Climbing, & Skiing