

Eric Dodgen

Senior Mechanical Engineer | Technical Program Leadership | Product Development

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Mechanical engineer with 17 years of experience leading complex product development across medical devices, consumer electronics, aerospace, and defense. Known for identifying organizational capability gaps and developing practical solutions that improve engineering effectiveness, collaboration, and execution. Recognized for building engineering capability through process improvement, technical mentorship, organizational training, and implementation of scalable engineering tools and workflows. Combines deep technical expertise with a proven ability to align multidisciplinary teams, improve execution, and deliver innovative products from concept through production.

Leadership Highlights

- Led multidisciplinary engineering efforts spanning medical devices, consumer electronics, aerospace and defense,
- Implemented Jira-based engineering workflow and project management systems across multiple organizations.
- Developed engineering processes improving execution, documentation, and task visibility.
- Managed external design firms, manufacturing partners, and supplier technical activities.
- Trained engineers in advanced simulation methods, engineering documentation, and development processes.
- Led research teams developing advanced modeling technologies published in peer-reviewed journals.
- Guided product development from concept through verification, validation, and manufacturing.

Professional Experience

Landing Gear Structural Analyst

ES3 - Layton, UT

Military Aircraft Modernization

2022 – Present

Technical lead supporting modernization of military aircraft landing gear systems through advanced structural analysis and engineering mentorship.

Organizational Contributions

- Recognized as a technical mentor and organizational resource, developing engineering training, mentoring analysts, and improving collaboration practices while supporting modernization of military aircraft landing gear systems.
- Developed and delivered a multi-day finite element analysis training program for engineers, strengthening organizational capability in structural simulation and analysis.
- Mentored junior engineers in structural analysis techniques, engineering judgment, and best practices for finite element modeling.
- Partnered with engineering leadership to improve collaboration and project tracking workflows by introducing modern digital collaboration practices and advising on team execution strategies.
- Collaborated in developing structural analysis strategies supporting modernization of legacy military aircraft landing gear systems.

Technical Contributions

- Developed high-fidelity finite element models supporting structural integrity, and fatigue assessment of military landing gear systems.
- Updated historical design specifications and loading environments for legacy aircraft modernization programs.
- Designed landing gear components that improved fatigue performance while reducing manufacturing cost.
- Performed structural investigations supporting continued airworthiness of legacy aircraft platforms.

Development Scientist/Engineer

Nu Skin Enterprises, Inc | Provo, UT

Medical Devices | Consumer Electronics

2021 – 2022

Product development engineer leading cross-functional medical device and consumer electronics programs while strengthening engineering processes and organizational capability.

- Led mechanical development activities for consumer electronics and FDA Class II medical device programs from concept through manufacturing readiness.
- Managed technical relationships with external design firms, manufacturing partners, and contract engineering organizations.
- Implemented Jira and Adobe Workfront project management systems, establishing standardized engineering workflows and training development teams.
- Initiated a collaborative partnership with Brigham Young University to establish an in-house product drop-test capability, strengthening internal verification resources.
- Developed verification and validation methodologies supporting product qualification and regulatory compliance.
- Provided technical leadership in resolving complex mechanical design challenges using simulation, testing, and analytical methods.

- Trained engineering and manufacturing partners on Device Master Record documentation, engineering procedures, testing protocols, and reporting requirements.

Senior Mechanical Engineer

Honeywell FM&T - Kansas City, MO

Advanced Simulation | R&D | Manufacturing Technologies

2016 to 2021

Technical leader driving cross-functional R&D initiatives that expanded simulation capabilities and engineering effectiveness across multiple DOE organizations.

- Provided technical leadership for multidisciplinary research initiatives involving engineering, quality, manufacturing, environmental testing, and university research partners to advance simulation technologies supporting national security programs.
- Led cross-functional development of engineering software that expanded organizational capabilities in automated inspection, structural simulation, and environmental testing.
- Developed model-based inspection technologies enabling automated comparison of manufactured hardware against nominal CAD geometry while incorporating statistical tolerance methodologies.
- Directed development of software tools that improved environmental test setup accuracy, standardized operator workflows, and increased compliance with complex test specifications.
- Developed next-generation modeling and simulation methodologies for structural dynamics, material modeling, and verification, resulting in peer-reviewed publications and deployment across DOE engineering organizations.
- Mentored engineers and delivered advanced simulation training, strengthening organizational capability and establishing best practices in computational engineering.
- Developed engineering automation tools that reduced analysis effort, standardized workflows, and accelerated technical decision-making across multiple engineering programs.

Product Development Engineer

Nexus Orthopedics - Salt Lake City, UT

Medical Device Development | Surgical Tools | Novel Procedures

2015 to 2016

Primary mechanical engineer responsible for development of the company's next-generation orthopedic implant platform from concept through manufacturing readiness and product verification.

- Partnered with suppliers and manufacturing teams to optimize product and tooling designs for manufacturability, performance, regulatory compliance, and production scalability.

- Designed the complete surgical instrument system supporting implantation of the next-generation orthopedic device, balancing clinical usability, manufacturability, and performance.
- Designed manufacturing fixtures and assembly equipment that improved production efficiency and supported successful product launch.
- Developed and executed design verification and validation strategies to demonstrate compliance with applicable medical device standards and design requirements.

Engineering Analyst

W.L. Gore & Associates – Phoenix Az

Internal FEA consultant | Product Development

2011 to 2015

Internal structural analysis consultant supporting multiple concurrent new product development programs through simulation, verification, and engineering guidance.

- Served as the business unit's primary structural analysis consultant, providing simulation expertise and engineering guidance across nine concurrent new product development programs and three commercial products.
- Influenced critical product development decisions by reducing design uncertainty through advanced finite element analysis, engineering simulation, and technical consultation.
- Developed automated design, meshing, simulation, and post-processing workflows that evaluated more than 2,000 design concepts, reduced engineering effort by over 8,000 hours, and accelerated product optimization.
- Partnered with product development teams to establish verification strategies, identify representative test articles, and validate analytical predictions through fatigue testing.
- Developed engineering documentation and analytical knowledge supporting FDA-controlled product development while preserving technical expertise for future design programs.

Education

Masters of Science in Mechanical Engineering	Bachelors of Science in Mechanical Engineering
Brigham Young University	Brigham Young University Idaho
August 2011	July 2009

- Biomechanics: Graduate-level study and research involving the biomechanics of the knee and spine, with application of engineering principles to human musculoskeletal systems.

Patents

- *Serpentine Spinal Stability Device* — U.S. Patent Publication No. **20130150891** (Inventor)