

CARSON SHELLENBERGER

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SUMMARY

Hands-on mechanical engineer with 20+ years in medical devices & robotics, driving innovative designs from concept to production. Adept at building and leading small, nimble teams that deliver.

CORE SKILLS

- Product Development: User needs, Product Requirements, DFX, FMEA, Risk Analysis
- Prototyping & Manufacturing: Machining, Molding, Sheet Metal, MIM, Additive, Laser Cutting, Extrusion
- Test & Automation: Custom test rigs, Allen Bradley/Koyo PLCs, sensors, vision systems
- Tools: SolidWorks, Minitab, Microsoft, Python, Ladder Logic, Six Sigma Green Belt (NC State)
- Leadership: Cross-functional team building, mentoring, strategic planning
- Compliance: Regulatory requirements, IEC standards, design control

EXPERIENCE

Noah Medical – San Carlos, CA / Cary, NC

Principal Robotic Instruments Engineer | Jan 2023 – Present

- Led cost-reduction initiatives for a robotic bronchoscope system across design, packaging, and supply chain
- Developed performance and reliability improvements for cable/coil-pipe mechanisms
- Built automated test and manufacturing systems (Allen Bradley PLCs, HMIs)
- Mentored engineers and guided compliance with IEC standards for electrosurgical tools

Titan Medical – Chapel Hill, NC

Principal Engineer, Instrumentation | Aug 2020 – Jan 2024

- Managed 6-person team to develop robotic surgical instruments from concept to production
- Collaborated with surgeons and marketing to define product & engineering requirements
- Established & managed internal pilot manufacturing line and machine shop
- Led transition to scalable, cost-efficient production

Teleflex Inc. – Morrisville, NC

Principal Engineer, Surgical R&D | Oct 2015 – Aug 2020

- Designed next-gen Hem-o-Lok clip and applier
- Created test methods and fixtures for design verification and validation
- Developed high-volume automation systems and transferred products to OUS production

Solara Automation – Morrisville, NC

Principal Engineer | Jan 2015 – Oct 2015

- Designed custom automation systems across medical, industrial, and consumer markets
- Worked closely with clients to define and deliver tailored solutions

TransEnterix Inc. – Morrisville, NC

Director of Engineering | Mar 2008 – Nov 2014

- Early core team member for SPIDER and SurgiBot surgical platforms
- Led technical efforts from early concept to commercial launch

NeoGuide Systems – Santa Clara, CA

Senior Mechanical Engineer | Mar 2005 – Mar 2008

- Designed force transmission systems for robotic endoscopy

Stellartech Research – Santa Clara, CA

Mechanical R&D Engineer | May 2001 – Mar 2005

- Developed catheter-based RF systems and supported contract R&D

Palo Alto Medical Foundation – Palo Alto, CA

Mechanical Engineer | May 2000 – May 2001

- Supported spinal cord signal transmission research with Stanford physicians

EDUCATION

MS, Mechanical Engineering – Colorado State University

BS, Mathematics – Colorado State University

PATENTS

WO2013116869 A1 **Mechanized multi-instrument surgical system**
US20110251599 A1 **Deflectable Instrument Shafts**
WO2005067668 A3 **Devices and methods for treatment of luminal tissue**
US20120265214 A1 **Locking mechanism for deflectable instrument shafts**
US20110230723 A1 **Active Instrument Port System for Minimally-Invasive Surgery**
WO2009100368 A1 **A segmented instrument having braking capabilities**
US20130281924 A1 **Segmented instrument shaft with anti-rotation features**

PORTFOLIO

Available upon request