STRENGTHS

Systems integration
Connected mechanical, electrical, pneumatic, software, and sensor subsystems during portable equipment development, keeping interfaces clear for verification.

Root cause analysis
When production and field failures surfaced, reproduced conditions in controlled tests and converted findings into corrective design actions.

Laboratory development
Built repeatable LabView setups and equipment records, giving engineering teams dependable evidence for concept and feasibility decisions.

Cross functional delivery
Coordinated hardware, software, quality, manufacturing, suppliers, and partners when design changes needed shared decisions.

Technical communication
Presented demonstrations, reports, and recommendations in clear language, helping reviewers act on risks and next experiments.

SKILLS

Systems engineering

Medical device manufacturing

R&D laboratories

Analytical simulation | Matlab

LabView | 3D modeling

Cole Gibbs

Systems Engineer IV

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SUMMARY

Systems Engineer IV with 10 years of progressive **research laboratory** and **product development** experience, including more than 6 years supporting **medical device manufacturing**. Combines mechanical, electrical, pneumatic, chemical, embedded software, and analytical modeling expertise across feasibility, prototyping, integration, verification, and production support. Leads **system level design changes**, laboratory capability development, supplier coordination, technology integration, and investigations involving production and field issues. Applies National Instruments LabView, Matlab, 3D modeling, fabrication equipment, statistical techniques, and structured root cause analysis to guide sound engineering decisions. Produces design history file documentation, test records, simulations, technical reports, demonstrations, and invention disclosures. Collaborative work with hardware, software, quality, manufacturing, suppliers, and development partners supports reliable, manufacturable, cost effective medical products.

EXPERIENCE

Principal Systems Engineer

Aster Biomedical Systems May 2022 - Present Austin, TX

Lead system level engineering for portable medical equipment, integrating mechanical, electrical, pneumatic, **embedded software**, and sensor subsystems through verification and manufacturing transfer. Own design changes, laboratory capability, technical investigations, documentation, supplier coordination, and invention disclosures.

- Led portable equipment integration across mechanical, electrical, pneumatic, software, and sensor subsystems through verification.
- Modeled flow, pressure, thermal behavior, and power demand in Matlab before committing **prototype** resources.
- Investigated production and field failures using controlled experiments, fault isolation, and **root cause analysis** tools.
- Expanded laboratory capability by specifying equipment, overseeing deployment, and establishing repeatable LabView test setups.
- Generated invention disclosures from **product development** work for technical and legal **intellectual property** review.
- Coordinated design changes across hardware, software, **quality**, manufacturing, suppliers, and development partners for implementation.

Senior Systems Engineer

Trinity Medical Devices January 2020 - April 2022 San Antonio, TX

Directed integrated medical device subsystem development from concept and 3D modeling through prototype fabrication, embedded controls, system testing, and production support. Coordinated suppliers and external development partners while maintaining traceable design history file evidence.

- Directed subsystem development from **3D modeling** and fabrication through embedded controls and **system testing**.
- Designed fixtures combining LabView data acquisition and **Matlab** analysis for reliability and performance studies.
- Evaluated suppliers against **reliability**, **manufacturability**, cost, and performance criteria for product design reviews.
- Reproduced manufacturing failures in laboratory settings and defined engineering changes that stabilized acceptance testing.
- Maintained protocols, setup records, results, analyses, and conclusions supporting design history file traceability.
- Coordinated external partners through interface definitions and acceptance criteria for sensing and control technologies.

Embedded software

Statistical analysis

Root cause analysis | Prototyping

System testing | Design history files

Supplier coordination

Technology integration

LANGUAGES

English — Native

Spanish — Intermediate

MY CAREER

- Principal Systems Engineer at Aster Biomedical Systems (4.3 Years)
- Senior Systems Engineer at Trinity Medical Devices (2.2 Years)
- Systems Engineer at Lone Star Respiratory Technologies (2.3 Years)
- Associate Systems Engineer at Cedar Ridge Engineering Labs (1.1 Years)

Systems Engineer

Lone Star Respiratory Technologies | August 2017 - December 2019 | Round Rock, TX

Developed components and fixtures for electromechanical and pneumatic medical products, combining CAD concepts, fabrication, embedded software, simulation, testing, supplier coordination, and technical communication. Supported feasibility decisions and practical manufacturing improvements.

- Developed electromechanical and pneumatic components from requirements and CAD concepts through fabrication and verification.
- Debugged **embedded software** with bench instrumentation to validate firmware, sensors, actuators, and assemblies.
- Created Matlab simulations and refined model assumptions using measured data before concept decisions.
- Planned system tests with documented procedures, equipment configurations, datasets, anomalies, and engineering conclusions.
- Resolved tolerance, assembly, and component issues with manufacturing engineers and suppliers during **product development**.
- Presented prototype demonstrations and **technical reports** covering feasibility findings, risks, and recommended experiments.

Associate Systems Engineer

Cedar Ridge Engineering Labs | June 2016 - July 2017 | Dallas, TX

Supported research **laboratory development** for complex electromechanical systems through supervised prototyping, fixture fabrication, LabView data collection, statistical analysis, equipment documentation, and component technology research.

- Built prototypes and test setups supporting controlled evaluation of early electromechanical product concepts.
- Operated **fabrication equipment** to create fixture and component iterations from 3D models under review.
- Configured LabView data collection for repeatable comparison of prototype behavior across operating conditions.
- Applied statistical analysis to laboratory datasets and investigated unexpected results through documented follow up tests.
- Maintained equipment instructions, setup diagrams, calibration references, and experiment records for shared resources.
- Researched component technologies and summarized technical tradeoffs for feasibility reviews and supplier discussions.

PROJECTS

Portable Medical Equipment Integration | 2024

Advanced integrated medical equipment architecture through subsystem modeling, laboratory testing, design changes, and verification evidence. Work connected mechanical, electrical, pneumatic, software, and sensor elements with production needs.

Research Laboratory Capability Expansion | 2022

Expanded laboratory capability through equipment evaluation, procurement support, LabView setup development, documented procedures, and repeatable test records for rapid concept evaluation and system testing.

LEADERSHIP & AWARDS

- Technical Session Contributor, Medical Device Systems Engineering Forum, 2023
- Engineering Representative, R&D Laboratory Safety and Capability Committee, 2022
- Invention disclosure contributor for novel medical device system concepts

EDUCATION

Bachelor's Degree in Mechanical Engineering

The University of Texas at Dallas | GPA: 0 | 2016 | Dallas, TX

Coursework: *Systems engineering, mechanical design, analytical modeling, controls, materials science*

CERTIFICATIONS

- LabVIEW Core 2 Training 2021
- MATLAB for Data Processing and Visualization 2020

TECHNICAL SKILLS

- **Systems Engineering:** System architecture, interface analysis, system integration
- **Medical Device Development:** Feasibility analysis, design verification, manufacturing transfer
- **Mechanical Engineering:** Component design, fixture design, tolerance analysis
- **Electrical Engineering:** Sensors, actuators, power demand analysis
- **Pneumatic Systems:** Flow analysis, pressure modeling, pneumatic controls
- **Chemical Systems:** Chemical process evaluation, material compatibility, laboratory handling
- **Modeling and Simulation:** Matlab, analytical models, statistical techniques
- **Test and Measurement:** LabView, data acquisition, bench instrumentation
- **Embedded Software:** Embedded controls, software debugging, firmware interfaces
- **Manufacturing Engineering:** Design for manufacturability, production troubleshooting, supplier evaluation
- **Quality Documentation:** Design history files, test protocols, traceable conclusions
- **Prototyping and Fabrication:** 3D modeling, fixture fabrication, fabrication equipment
- **Root Cause Methods:** Fault isolation, controlled experiments, corrective actions
- **Laboratory Operations:** Equipment procurement, setup records, calibration references
- **Intellectual Property:** Invention disclosures, patentable concepts, technical review

PROFESSIONAL AFFILIATIONS

- Medical Device Systems Engineering Forum, technical contributor
- R&D Laboratory Safety and Capability Committee, engineering representative

ADDITIONAL INFORMATION

Work Status : Authorized to work in United States. No sponsorship required.

REFERENCES

AVAILABLE ON REQUEST