

James R. Gentry, Jr., PE (Jim)

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QUALIFICATION HIGHLIGHTS

- **Engineering Manager** experienced in building teams with the appropriate skills and manpower to meet company operational needs and achieve strategic objectives, while maintaining the insight to define the detailed tasks required to accomplish loosely defined project goals.
- **Project Manager** skilled in developing and implementing complex project plans with schedules and budgets that meet customer needs and requirements, and that reflect the ability to evaluate ideas, analysis, and data to identify the optimal operational path to a solution
- **Mechanical Engineer** driven by a high level of curiosity and investigative ability, as well as a tenacious problem solver with the determination to identify the root causes of the most difficult technical problems, and develop and implement solutions

SKILLS SUMMARY

- Component/Product Design & System Integration
- Heat Transfer/Air Flow Analysis & Testing
- Heat Exchanger/Cooling System Design
- 3-D CAD Design with SolidWorks & ProE
- Prototype Fabrication and Manufacturing Interface
- Specification Review & Requirements Definition
- Project Coordination with Multi-Functional Groups
- Customer Support & Business Development
- Personnel Recruiting, Hiring, & Performance Reviews
- Castings, Sheet Metal, Machined Parts, & Weldments
- Robotics, Grippers, Mechanisms & Machine Design
- Motion System Design & Integration
- Proposals & Concept Development
- Stress/Fatigue Analysis & Testing
- Vibration/Shock Analysis & Testing
- Structural Component Design
- Manufacturing & Assembly Tooling
- Vendor/Subcontractor Management
- Schedule Tracking & Status Reporting
- Manpower Planning & Cost Estimating
- Production Support
- Injection Molded & Vacuum Formed Plastics
- Electronics Packaging
- Gear Train Design

PROFESSIONAL ACHIEVEMENTS

FOCUS ENGINEERING, INC., Wake Forest, NC

2002-Present

President-Engineering Consulting Business specializing in Engineering Design, Analysis, Investigations, Prototyping, Project Management, and SolidWorks CAD Design:

- Concentrating on:
Product Design, Machine Design & Automation, Process Equipment, Electronics Packaging, Defense/Aerospace/Space Product Development
- Recent Projects include:
 - DC Motor/Actuator design, prototyping & environmental qualification analysis for space satellite, and military aircraft applications
 - Design & prototyping of a R&D machine for focused energy materials processing research, incorporating a four axis robotic motion system
 - R&D equipment for plasma physics research
 - High density computer memory module physical product design, assembly tooling design, and prototyping support
 - Injection Molded plastic part and assembly design

CARL ZEISS OPTRONICS USA, INC., Wake Forest, NC

2010-2011

Senior Project Manager/ Senior Mechanical Engineer reporting to the CEO and supporting the startup of a new USA facility of a German headquartered company focused on the design, prototyping, testing, and production of electro-optical products for defense and security applications.

- Product Concept Design using ProE 3-CAD software
- Proposal Development & Business Case Planning
- Business Development and Sales & Marketing
- Product Market Analysis and Requirements Definition
- Facility, Staff, Infrastructure, & QMS AS-9100C planning for startup operation
- Trade Show and Customer visits and presentations
- FedBizOps & SBIR/STTR Solicitation review & Bid/No Bid recommendations

PARATA SYSTEMS, LLC, Durham, NC

2004-2009

Chief Engineer- Division Wide Engineering Consultant/Director Mechanical Design- Responsible for managing a Mechanical Engineering and CAD Design team of 40+ people that focused on R&D, design, prototyping, testing, & production of robotic automation equipment for dispensing prescription drugs:

- Development of overall Engineering Division Processes, Plans, and Budgets
- Directed Engineering Division support for proposals and new product concept development
- Directed cross-functional task force teams to solve critical technical issues
- Managed 500% growth in the mechanical team and took over responsibility for the Counting Technology Team that provides fundamental core technology our products are based on.
- Organized functional groups focused on design specialties in key product areas, while also developing core competencies in specific engineering disciplines to support across all the team
- Directed the development of department standards and processes from a start-up environment
- Provided Technical Due Diligence support for mergers and acquisitions activities

JOEL WITTKAMP DESIGN, INC., Morrisville, NC

2002-2004

Engineering & Operations Manager- Responsible for engineering, analysis, 3-D CAD design, prototype fabrication, and project management for clients' product development and R & D activities involving:

- Medical devices, industrial equipment, electronic and consumer products
- Field Failure Analysis investigations and corrective action recommendations
- Managed business operations in owners absence

LAMBDA TECHNOLOGIES, Morrisville, NC

2001-2002

Engineering Project Manager-Responsible for project planning, product definition, equipment R & D, and process development of advanced variable frequency microwave technology for polymer materials processing in a startup company:

- Business development support with project plans, cost estimates, and concept designs
- Process & equipment R & D for microwave decontamination of biohazards (i.e. Anthrax)
- Microwave decontamination system design concepts and technology white papers for government agencies and thermal analysis of the microwave energy conversion process

CONVEYOR TECHNOLOGIES, Sanford, NC

2000-2001

Design Engineering Manager-Responsible for the mechanical design of conveyors and automated material handling machinery for the assembly of printed circuit boards & electronic subassemblies:

- Directed daily task assignments & prioritized design efforts to meet production schedules
- Interfaced with customers on design concepts and product definitions resulting in new business for custom applications of standard product components
- Directed conversion of the design team from 2-D AutoCAD to 3-D CAD solid modeling
- Directed redesign of standard products to reduce costs

INVENSYS POWERWARE (Now Eaton Power Quality), Raleigh, NC 1998-2000
Product Design & Documentation Manager/Staff Engineer Responsible for Mechanical R & D Engineering, Design, and Component Engineering, for 40KVA to 750KVA, three phase uninterruptible power systems:

- Directed new product introduction mechanical design efforts using PRO/Engineer 3-D CAD solid modeling tools
- Airflow pressure drop and thermal analysis and testing
- Heat sink & cooling system design & optimization
- Sheet metal and structural shape design and stress analysis
- Power connection and buss bar design
- Injection molded plastic part design
- Design for manufacture & assembly (DFMA) and LEAN design reviews

ELECTROMAGNETIC SCIENCES INCORPORATED, Norcross, GA 1995-1998
Mechanical Group Leader/Staff Engineer – Responsible for mechanical design, development, analysis, testing, and production of microwave and millimeter wave components, antennas, and systems for military & commercial ground, aerospace, and space applications:

- Directed mechanical engineering and design group using Intergraph's EMS 3-D CAD tools
- Precision mechanical component and mechanical system design
- Process engineering and development and tooling/fixtures design
- Thermal, structural, and vibration analysis and testing
- Project management, schedule and cost account budget management
- Manufacturing interface and transition from development to production
- Customer interface and requirements definition
- Directed transition of CAD design group to Intergraph's SOLID EDGE 3-D software

LORAL Information Display Systems, Atlanta, GA 1988-1995
Mechanical Engineering Manager/Principal Mechanical Engineer-
Responsible for directing the mechanical engineering, design and development, testing and production of military aerospace electronic display equipment:

- Heat transfer, fluid flow, structural, vibration, weight, and tolerance analysis
- Chassis, welded structures, and rack & panel design
- Investment castings, precision sheet metal, machined parts, and welded assembly design
- Plate-fin heat exchanger and heat sink design
- Environmental qualification procedures, testing, instrumentation, final reports, and corrective action redesign
- Proposals, cost estimating, scheduling, department cost account budget reporting
- Printed wiring assemblies and wire harness design
- Design for manufacture and assembly as well as production support to manufacturing
- Selected & procured IDEAS Master Series 3-D CAD solid modeling and FEA system

GRUMMAN Aerospace Corp., Melbourne Systems Division, Melbourne, FL 1987-1988
Senior Avionics Mechanical Engineer - Responsible for technical evaluation and direction of subcontractors' mechanical design and development of military electronic equipment

GTE Government Systems, Research Triangle Park, NC 1984-1987
Supervisor Of Mechanical Engineering - Responsible for establishing and managing a Mechanical Engineering and Drafting group for mechanical design and development of military and commercial electronic equipment for military environments:

ITT Telecom, Network Systems Division, Raleigh, NC 1983-1984
Senior Mechanical Engineer, Researched SMT component packaging, PCB design,

TEXAS INSTRUMENTS INC., Advanced Technology Division, Dallas, TX 1980- 1983
Engineering Supervisor/Mechanical Design Engineer - Responsible for R&D of high density sequential interconnect, printed circuit boards & SMT components for military electronic equipment:

PROFESSIONAL ASSOCIATIONS: - American Society Of Mechanical Engineers (ASME)
- Research Triangle Park SolidWorks Users Group
- Professional Engineers of North Carolina (PENC)

PROFESSIONAL ENGINEERS LICENSE: North Carolina License No: 025986

PATENTS

- Granted - Mixing Head Device Utility Patent
- Application - Memory Module with internal cooling heat exchanger Utility Patent
 - Robotic “Automated Pharmacy Machine” Design Patent: 9335-63DS
 - Semi- “Automated Pharmacy Machine” Design Patent: 9335-64DS
 - “Automated Pharmacy Machine” Design Patent: 9335-83DS

EDUCATION, SEMINARS & COURSES:

- **BSME - NORTH CAROLINA STATE UNIVERSITY - GPA: 3.73/4.0** 1980
- Three graduate level courses at Southern Methodist University (GPA: 4.0/4.0) 1981-1982
- Communication, Influencing, and Negotiation in Project Management at NCSU 2008
- Extreme Project Management at NCSU 2006
- NextLevel Business Planning Workshop for Small Businesses 2004
- Introduction to PRO-E Wildfire 2003
- 3-D Solid Modeling with SolidWorks CAD Software 2001
- Introduction to Flowtherm CFD Thermal Analysis 2000
- ANSYS Finite Element Analysis 1989