

# Mary Jones

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## UAV Engineer – R&D Technician

### SUMMARY

Highly skilled, analytical, hands-on associate engineer with extensive experience in electro-mechanical new product and process development, R&D transition to production, tooling/fixture design/fabrication, and materials testing/failure analysis within commercial, aerospace, and medical device manufacturing environments. Demonstrated ability to go from problem identification through conceptualizing, designing, testing, prototyping, and rolling out engineering solutions that drive substantial savings, market share advantages, and quality/efficiency enhancements.

### SKILLS

Data Reduction/Reporting/Excel

3D Cad Modeling/Solidworks

RC Piloting Skills

Mechanical Inspection, Electrical Testing, Failure & Root Cause Analysis

Soldering/IPC A-106/Hand Tools, Precision Assemblies, Fits/tolerances

Manual/CNC Machine Shop Practices

### WORK EXPERIENCE

#### FB Marine (Bowie, MD)

##### Consultant / Owner / Operator

*January 2010 – Current*

- Oversaw machine shop providing small- to medium-sized parts design, prototyping, and fabrication
- Consulted with clients to assess needs and turn ideas and designs into reality
- Performed custom rigging, parts/fabrication, installation according to client specifications and timelines

##### Sample Projects:

- *Scan Service Corporation*: Fabricated scanning electron microscope maintenance tools per customer design from 304 stainless steel and 6061-T6 aluminum
- *Giroux Engineering*: Fabricated short run of vacuum pick-up tools from A2 tool steel used in robotic assembly of small mechanical sub-assemblies, requiring close tolerance turning, drilling, and threading

#### Dermaport, Inc (Santa Clarita, CA)

##### Senior Manufacturing Specialist

*2008 – 2009*

- Developed and managed FDA-/ISO-compliant production/ tooling preventative maintenance program, and administered the calibration of company-wide production/research equipment and tooling
- Designed production tooling/fixturing using SolidWorks 3D CAD Modeling/ANSI 14.1,
- Conducted laboratory experiments following engineering protocols, installed new engineering/production equipment, and trained operators
- Oversaw calibration of production/research equipment and tooling companywide

#### Topanga Underground (Canoga Park, CA)

##### Construction Project Permit Coordinator

*2006 – 2007*

- Planned and designed private fire-line water systems, advanced on-site water treatment systems, and underground utility projects

- Interfaced with equipment/system vendors; local city/county inspectors; and structural, geological, architectural, and environmental engineering firms as well as company clients
- Wrote engineering change orders (ECOs) and created project bills of materials (BOMs)
- Presented winning project plans and documentation to local city and county government agencies, resulting in project approvals and the issuance of permits

### **Raytheon Company (Space and Airborne Systems Division (El Segundo, CA)**

#### **Prohibited Material Component Engineer**

2005

- Engineer at major Aerospace Company providing defense and military hardware to DoD
- Earned consistent commendations for completing detailed XRF spectral analysis of space-qualified integrated electronic components/assemblies and hardware
- Managed operations of Niton XLt 500 XRF Gun, Thermo Electron Corporation GXRF equipment, and NeXray Systems Micro XR XRF inspection scanning equipment
- Elevated team's skills in XRF inspection equipment and techniques through ongoing training/mentoring
- Developed and fabricated specialized tooling to remove leaded IC components

### **Optimal Energy Systems (Torrance, CA)**

#### **Associate Design Engineer**

2002 - 2003

- Developed assembly/fabrication tooling for electromechanical high-speed energy systems for manufacturer of flywheel energy systems for aerospace, defense, and other industries

#### **Sample Projects**

- Designed and fabricated a magnet alignment tool to aid in the alignment of high-strength neodymium rare earth magnets when inserted into titanium flywheels
- Engineered extremely thin magnet shims used to ensure proper bond line thickness when epoxy bonding high-strength neodymium rare earth magnets into flywheel magnet cavities
- Designed and arranged fabrication of a magnet transfer fixtures for flywheel magnet cavities

### **TRW Space & Defense (Redondo Beach, CA)**

#### **Senior Assoc. Materials & Processes Engineer**

1994 - 2002

- Transformed engineering concepts into working prototypes, served as team leader of scanning electron microscope laboratory, and assisted failure analysis engineers in evaluating material and process problems in spacecraft-related hardware and electronics
- Developed patent-pending Ball Grid Array (BGA) removal tool that streamlined manufacturing process and resulted in both time and cost savings
- Earned "Manager's Checkbook Award" for response to emergency situation requiring production shutdown of spacecraft electrical hardware
- Designed, procured, and fabricated all parts required for prototype hot gas fiber-optic soldering station and hot gas die attach system; wrote operating manuals for both systems

## **EDUCATION**

### **Los Angeles Pierce Jr. College (Woodland Hills, CA) (1978)**

AS in Quality Engineering

## **SPECIALIZED TRAINING COMPLETED**

SolidWorks 2010, Basic Metallurgy, Clear Report Writing, Surface Treatments of Metals, GMP Training, Quad Robotic Assembly, Tens-Lac Brittle Coating Principles, Quad Systems Pick & Place Operator Training, Strain Gage Instrumentation & Applications, Strengths of Materials, Instron 1120 Operations, Surface-Mount Technologies, HAZMAT Handling, Space Hardware Handling, Ionizing Radiation Training

## **AFFILIATIONS**

American Society of Metals and SMT Association, Quad Systems (Advisory Board Member)