



I am the Deputy Director (Senior Research Scientist) at the University of Washington's new Institute for Nano-engineered Systems (NanoES). The institute is part of the NSF's NNCI (National Nanotechnology Coordinated Institute). My areas of expertise stem from almost two decades as an industrial scientist, engineer and manager in design, design assurance, reliability and test engineering. I have worked in fields from automotive, nanofabricated thin-film sensors, materials inspection and implantable medical devices. My career has insured the functionality, quality, reliability and safety of life-impacting and life-saving systems. This was accomplished by helping others focus on the correct understanding of the fundamental physics during design and how these factors will influence product performance against requirements thus insuring a successfully fielded product. I have a proven history of leading advanced technical and business teams to successfully yield results.

Specialties: medical device, composite materials and testing, product development process, nanofabrication, sensors, electricity and magnetism (EM), EM FEM, materials studies for improved FEA, mechanics and applied physics.

Occupational History



**Deputy Director (Research Engineer)-Institute for Nano-engineered Systems (NanoES)
The University of Washington**

Seattle, Washington

Helping to lead the Institute's research program, managing of external partnerships, funding strategies, and new opportunities. Responsible for the NanoES research portfolio, facilitating new collaborations, leading projects, and contributing to research proposals in the Institute's focus areas.



CEO/Owner FLEXFORGE, LLC

Seattle, Washington

Nanofabricated thin-film magnetic sensors



Research and Development Lead Engineer/Business Development

Zetec, Inc.

Seattle, Washington Area

Design of eddy current based Non-destructive materials evaluation systems. Executed EM FEM studies for product redesign and integration of custom AMR sensors to replace inductive coil based sensors for material defect detection requiring micro and pico tesla resolution. These sensors were custom outsourced and manufactured at the wafer-level. Re-designed mechanics of probe heads to minimize vibration and increase stability for better data integrity. Lead off-site research with groups across the United States.



Manager Corporate Reliability Lab (Leads)/Senior Principal Design Assurance Engineer

Guidant/Boston Scientific

Minneapolis/St. Paul, Minnesota Area

Corporate leads Design Assurance engineer and Corporate Reliability Lab manager (supervised team of 5) representing quality and reliability on product development teams. Corporate SME for fatigue, medical device design, testing, FEA, materials, metallurgy, failure analysis, mechanics of materials, lead field failures product recall teams, CORE team member, wrote and lead design reviews.



Test Engineer/Business Planning

Ford Headquarters

Dearborn, Michigan

Experimental Stress Analysis for Ford's Global Testing Organization (thermo-optics, 3D printing for rapid prototyping, strain gage based data acquisition and analysis), business planning (Crown Victoria platform) and research and development at the Ford Physics Laboratory.



Assistant Program Manager

Ingersoll Rand – Robotics/Automated Production Systems

Detroit, Michigan Area

Education



Ph.D. Applied Physics

The University of Michigan-Ann Arbor

Ann Arbor, Michigan



M.Eng. Engineering Mechanics and Graduate Dean's Certification in Engineering Management

Cornell University

Ithaca, New York



B.S. Physics

The University of Michigan-Ann Arbor

Ann Arbor, Michigan