

SUMMARY

Mechanical design and development of medical devices, specification/concept through manufacturing. Extensive molding and machining experience. Mechanism design, low cost and/or precision. Boundary crossing. Application of physics perspective and first principles to problem analysis. SolidWorks 2012.

“The lowest cost product is that which starts down the right path. Technical feasibility is only part of choosing that path.”

“How do you know you have a problem?”

EXPERIENCE

2012-Present	Consulting Engineer Thermally Driven Inhaler	Boston Engineering Corp – Waltham, MA <ul style="list-style-type: none">○ Design/develop test system for components qualification.○ Exhaustive research on reservoir materials.○ Polyimide-based heater design.○ Product design for high volume manufacture.
2010-2011	Consulting Engineer Implantable/Extracorporeal Blood Pump	CIRTEC Medical Syst – East Longmeadow, MA <ul style="list-style-type: none">○ Participate in design of blood pump & motor.○ Engineered and constructed pump prototype.○ Wall shear stress, pressure losses analysis.○ Catheter connectors.
2009-2010	Consulting Engineer Dermal Injector System	Logic Product Development - Maynard, MA <ul style="list-style-type: none">○ Design and build fully functional prototype for an automated high frequency trans-dermal injection system.
2009	Consulting Engineer Extracorporeal Blood Handling	Bridgemedica - Walpole, MA <ul style="list-style-type: none">○ Product design and assembly concepts.○ Design/build test system for components in an extracorporeal blood handling device.○ Set up ultraclean assembly space.
2007-2009	Consulting Engineer Molecular Bio-Detection System	BioScale, Inc - Cambridge, MA <ul style="list-style-type: none">○ System layout concepts.○ Design and pilot production of fluidic interface mechanisms to a MEMS detection cartridge.

2001-2007	<p>Principal Engineer</p> <p>Colon Cancer Detection</p>	<p>EXACT Sciences Corp - Marlboro, MA</p> <ul style="list-style-type: none"> ○ Molded microplate disposables, including bonded filter plate. ○ Electrophoresis systems. ○ Molded bio sample collector/shipper. ○ Microfluidic sample divider with two axis robot.
1994-2001	<p>Consulting Engineer</p> <p>Biosample Collection and Processing</p>	<p>Exact Laboratories Inc. - Maynard, MA</p> <ul style="list-style-type: none"> ○ Microfluidic device and centrifuge. ○ Sample collector. Patented. ○ High amplitude shaker and cabinet for stool homogenization.
1994-1996	<p>Consulting Engineer</p> <p>Medical Device Development</p>	<p>P.D. Co-op, Inc. - Gorham, ME</p> <ul style="list-style-type: none"> ○ Drug infusion pump system design. ○ Coil winding tool for coil with concave surface.
1990-1994	<p>Principal Mechanical Engineer</p> <p>PAP Smear Preparation System GMP manufacturing</p>	<p>Cytoc Corporation - Marlboro, MA</p> <ul style="list-style-type: none"> ○ TransCyt® molded filter with bonded polycarbonate membrane. Patents. ○ Microscope slide handling system. ○ Specified interactive testing of cervical cell pools, filters, and ThinPrep® unit. ○ Robotic automation unit for cytological slides with unique safety features.
1990	<p>Consulting Engineer</p> <p>Laser drum plotters</p>	<p>Optronics Corporation - Chelmsford, MA</p> <ul style="list-style-type: none"> ○ Eliminated redundant positioning components ○ Solved recording drum mis-registration and drive train vibrations in four different laser drum plotter products.
1984-1989	<p>Part Time Consulting Engineer</p> <p>Blood Pressure Metrology Research</p>	<p>Seale Consulting Engineering - Gorham, ME</p> <ul style="list-style-type: none"> ○ Designed, built two-axes sweeping, servo-aimed ultrasonic transducer and arterial vibrator for non-invasive real time blood pressure metrology, for Critikon/J&J. ○ Radial artery external pulse-force transducer incorporating an EKG device to measure blood pressure pulse wave transit time from systole to arrival of the pulse wave at the radial artery. ○ Intraocular pressure transducer design.

1980-1989 Wang Laboratories Incorporated - Lowell, MA**Section Manager****1985-1989**

- Evaluated 20 OEM magnetic and optical mass storage devices for incorporation into Wang product lines

Principal Mechanical Engineer**1982-1984**

- Managed R&D program for dot matrix print heads.
- Wrote data capture software for programmable storage oscilloscope.

Senior Mechanical Engineer**1980-1981**

- Hired and managed mechanical design group for disk drives and components testing

1970-1980 Digital Equipment Corporation - Maynard, MA**Mechanical Design Engineer****1972-1980**

- Designed disk drive products and servo writers, incorporating microinch accuracy transducers and actuation.

1970-1971**Production Engineer**

- Transferred three disk drive products from design into manufacturing.

1969 RCA Information Systems - Marlboro, MA**Production Engineer**

- Manufacturing methods, flow, and layout for disk magnetic recording heads.

PERSONAL PROJECTS

- Wind energy systems - bearings, blade construction.
- Underwater habitats - film bonding, marine engineering.

EDUCATION**1968 MIT - Cambridge, MA**

- Bachelor of Science – Physics
- Thesis: Design of a gate-level computer for sports car rallying.