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## **RALPH E. BURNS, P.E.**

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**Objective:** Consulting Project or Lead Mechanical Engineer

**Experience:** **Ascent Design, Inc. CONSULTING MECHANICAL ENGINEER** (January 2002 – Present)

- Developed surgical instrumentation for knee joint implant
- Developed uniquely valved disposable drug syringe.
- Developed ergonomic, miniature medical fluid connector system
- Created mechanical hardware for healthcare wireless router device.
- Led mechanical design of high-load patient lift, and developed a portable patient lift hoist.
- Designed mil-tight PCB positioning system for in-process quality assurance.
- Redesigned flow meter product resolving sensitivity, gas-tight seals and manufacturability.
- Designed effective circuit board automated press fit alignment and assembly system.

**RELA, Inc. (Colorado Medtech affiliate)**

**PRINCIPAL MECHANICAL ENGINEER** (November 1996 – December 2001)

- Lead mechanical engineer; successfully coordinated a mechanical engineering team and cross-function disciplines to rapidly produce a functional commercial therapy device prototype. Designed injection and blow molded plastic parts and a roll-bond heat exchanger cooling system. Delivered prototype on schedule to client, enabling client to secure venture capital funding.
- Designed electrical enclosures, fluidics systems, and contributed to the development of a cryotherapy device.
- Developed large-scale revolutionary *in vitro* diagnostic instrument from concept to production. Conceived and designed process hardware for precise electro-mechanical function, sample handling, fluid delivery, and chemical luminescent measurement. Supported control integration, manufacturing, led UL/CE compliance process.

**Sweetwater, Inc.**

**PROJECT ENGINEER** (August 1993 – October 1996)

- Developed new consumer products, managed sustaining product improvements, reducing part count and volume. Used Pro/Engineer in design of new product line.
- Conceived and implemented factory automation for primary product line, reduced assembly time up to 80% for difficult operations. Reduced part cost up to 32%, brought plastic injection molds on-line.

**Valleylab, Inc.**

**ENGINEERING T. III** (August 1991 – August 1993)

- Designed and developed new product line of electro-surgical scalpels and minimally invasive surgical tools through production release. Researched plasma flow stability and designed injection molded plastic, ceramic and metal parts.

**A.G. Wassenaar, Inc.**

**MATERIALS ANALYST** (April 1991 – August 1991)

- Precision materials testing in accordance with ASTM.

**University of Colorado, Boulder**

**RESEARCH ASSISTANT** (February 1987 – October 1990)

- Researched unsteady empirical airflow dynamics; Instructor - Freshman Aerospace Laboratory; Bioengineering – experimental osteoporosis treatment (BioServe Space Technologies); Ramjet research.

**Education:** **University of Colorado, Boulder**

- Bachelor of Science Degree, Aerospace Engineering Sciences, December 1988; with additional graduate coursework (1989-1990) and studying Finite Element Methods (2007, 2008).

**Publications:** Hawk Moth Flight: Possible Exploitation of the Weis-Fogh Mechanism. Burns, R. E.. AIAA Regional Student Conference, Minneapolis, MN, April 1989.

Reversal of Disuse Osteoporosis by Magnetic Field Immersion of Mature Tail-Suspended Mice. Burns, R. E., Adler J., Stodeick, L., Luttges, M. W.. In: Programs and Abstracts, Fourth Annual Meeting, ASGSB, p. 65 (1988).