DANIEL REED BAKER, Ph.D.

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SKILL SUMMARY

Skills include broad-based experience in conceptualization, research, development, testing, and manufacturing, with an emphasis on the design and development of medical/surgical implants and instrumentation and diagnostic and therapeutic instruments and products. Able to coordinate efforts of people for problem solving and enjoys the challenge of an early-phase start-up company, yet understands and appreciates appropriate design controls and regulations. Specializes in proof-of-concept development. A strong safety and health background, along with expertise and experience in IP, product liability and forensics, are additional skills. Has successfully run a small company with several employees (WA state).

PROFESSIONAL EXPERIENCE AND SELECTED ACCOMPLISHMENTS

KINETIC RESEARCH & DESIGN, INC. (KRDi), Seattle, WA
President/Owner/Founder 1985–Present
KRDi is a research, design, development, and testing consultancy specializing in medical implants, surgical instruments, and therapeutic and diagnostic devices primarily for human and veterinary orthopaedic and neurosurgical applications. Clients range from early-phase startups to large established corporations. Most work is done with the goal being an IDE, 510K, or PMA.

- MEDICAL PRODUCTS – Replacement spinal implants, various surgical instrumentation (including spine, hip, and vascular), design/redesign for patient and surgeon usability and variability, testing and test development, transplant materials, and biomaterials.
- INTELLECTUAL PROPERTY – Patent reviews, technical summaries of the field, technical patent preparation, competitive analysis.
- MANUFACTURING – Automation, instrumentation, injection molding, testing machines, statistics, robotics, teleoperations/remote manipulation.
- PRODUCT AND PRODUCT LIABILITY – Human factors engineering, anthropometry, risk analysis, and forensics.
- SAFETY AND HEALTH – Ergonomic and safety background and expertise.

DEPARTMENT OF BIOENGINEERING, University of Washington (UW), Seattle, WA
Affiliate Assistant Professor 1997–Present
Faculty member involved in education, research, and service to further improve the quality of the Department.

- Designed and regularly teach a graduate course covering medical product design (latest W'05).

SPINAL DYNAMICS CORPORATION, Mercer Island, WA
Senior Engineer 1997–2000
Established protocols, performed basic research, designed and built instrumentation, and performed tests on prostheses and instruments for an early-phase, spine implant company (through FDA IDE submission). Assisted in surgeries to support animal, clinical, research, and design efforts. Designed and managed company IT system.

- Developed program that resulted in successful tests of polymeric parts of the prosthesis.
- Developed the automatic control system for a set of mechanical test machines.
- Wrote major portions of the Design & Functional Requirements Agreements for the prostheses and instrumentation.

FIELD RESEARCH & CONSULTATION GROUP, Dept. of Environmental Health, UW, Seattle, WA
Research Scientist 1996 – 1997

ARTHUR, D. LITTLE, INC., Seattle, WA
Senior Engineer 1996

ERGONOMICS LABORATORY, Dept. of Environmental Health, UW, Seattle, WA
Research Scientist 1994 – 1996

MUSCULOSKELETAL RESEARCH CENTER, Departments of Orthopaedic Surgery & Mechanical Engineering, University of Pittsburgh, Pittsburgh, PA
Research Associate, Co-Founder and Co-Head of the Spine Mechanics Laboratory 1993 – 1994

DEPARTMENT OF MECHANICAL ENGINEERING AND DEPARTMENT OF FAMILY AND PREVENTIVE MEDICINE, University of Utah, Salt Lake City, UT
Teaching, Research, and Clinical Assistant 1987 – 1993

HONEYWELL, INC., Golden Valley, MN
Research Intern, Corporate Systems Development Division 1986 – 1987

MERCURY WORKER'S HEALTH PROJECT, University of Michigan, Ann Arbor, MI
Research Assistant 1985 – 1986

J. M. MILLER ENGINEERING, Ann Arbor, MI
Engineer 1984 – 1986

UM HUMAN FACTORS SHORT COURSE, Chrysler Center for Continuing Education, Ann Arbor, MI
Member of Instructional Staff 1985 & 1986

FORD NUCLEAR REACTOR, University of Michigan, Ann Arbor, MI
Instrument Maker's Assistant 1983 – 1984

EDUCATION

Ph.D., Mechanical Engineering, University of Utah, Salt Lake City, UT, 1993.
Dissertation title: Sagittal Plane Dynamics of the Human Spine *In Vivo*.
Dissertation chair: Donald S. Bloswick, PE, Ph.D.
Committee: E. Paul France, Ph.D., Richard E. Johns, M.D., Sanford G. Meek, Ph.D., John E. Wood, Ph.D.

M.S.E., Industrial & Operations Engineering, Center for Ergonomics, University of Michigan, Ann Arbor, MI, 1986.

B.S.E., Industrial & Operations Engineering, University of Michigan, Ann Arbor, MI, 1985.

PROFESSIONAL LICENSING

- Certificant, Board of Certification in Professional Ergonomics (CPE), conferred: 23 May 1996, #791.
- Engineer-in-Training (State of Washington), conferred: 28 June 1996, #20852.

ADDITIONAL RELEVANT EXPERIENCE

- Reviewed for many scientific organizations and publications, including the NIH SBIR program (Chaired the Dec. 2004 meeting).
- Taught graduate and undergraduate courses in basic engineering, anatomy, design, safety, and health.
- Several patents in the medical device field pending.
- Authored numerous papers, posters, and reports.
- Presented numerous technical talks.