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Michael C. Dahl, PhD MBA

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Bioengineering Scientist and patented innovator with over nine years of medical device experience and biodesign, seeking to help launch new technological innovations in the medical devices industry.

- Dedicated to developing novel, innovative technology and bringing it through the gauntlet to market in order to truly improve patients' lives.

- Comfortable in the management and surmounting of the chaos present in the medical device startup, and willing to tackle anything from research to regulatory, clinical to marketing.

Education

MBA, (Executive Health Care Focus) | *University of St. Thomas, Minneapolis* |

Dissertation:
A Health IT Approach to the Prevention of Ulcers: A Business Case

PhD, Mechanical Engineering (Biomechanics Focus) | *University of Washington, Seattle* |

Dissertation:
The Efficacy of using Vibrometry to Detect Osteointegration of the Agility Total Ankle.
-U.S. Patient Application (No. 20090264754) entitled: Method and Apparatus for Evaluating Osteointegration of Medical Implants.

MS, Mechanical Engineering (Biomechanics Focus) | *University of Washington, Seattle* |

Dissertation:
An Alterative to Disc Fusion: The Dynamic Characteristics of the Bryan Cervical Disc System.

- University of Washington College of Engineering Graduate Fellowship

BS, Biomedical Engineering | *Washington University in St. Louis* |

- President of the Biomedical Engineering Society
- Founded Alpha Eta Mu Beta BioEngineering Honor Society
- Tau Beta Pi, Golden Key, and Alpha Eta Mu Beta Societies
- Graduated Magna Cum Laude, Dean's List all semesters

BA, Physics | *University of Puget Sound, Tacoma* | **(Dual Degree Program with Washington University)**

- Vice President of Sigma Pi Sigma
- Philanthropy and Social Chair of Sigma Nu

Technical Work Experience

Engineering Consultant | *Zyga Technology Inc* | **(2012 - Present)**

Managing the completion of device design optimization, instrument design optimization, and R&D testing requirements toward IDE submission for a novel spine technology. Assisting with a variety of engineering, research, regulatory, clinical and marketing projects.

Chief Technical Officer | *Decubitus* | **(2011 - Present)**

Responsible for strategy, marketing, research and development for a startup company aimed at the prevention and treatment of decubitus ulcers (bedsores) in home, assisted living, and hospital environments.

Project Advisory Board Member / Project Team Engineer | *DesignWise Medical Inc.* | **(2011 - 2012)**

Evaluated and prioritized the development of concepts for a nonprofit pediatric medical device company. Member of a volunteer project team that researched, developed, and marketed customer inspired products in order to fulfill crucial pediatric care needs in traditionally unfavorable markets.

Senior Innovation Fellow | *University of Minnesota Medical Devices Center* | **(2010 - 2011)**

A member of a professional, multi-disciplinary four person team whose mission was to identify needs, innovate solutions, prototype, and patent advanced, novel medical devices. This new intellectual property was then refined to facilitate its licensing and development in conjunction with university technology transfer.

- Fostered interdisciplinary networks of high-level health science professionals, including state senators and medical technology trade associations.
- Researched market attributes, science literature, patent landscapes, and the current technology solutions.
- Worked with practicing physicians and heath care providers in the field to gain insight into fields of interest.
- Developed innovative solutions to identified needs, constructed prototypes, and performed feasibility testing in both bench top and cadaveric models.
- Accumulated over 22 patent discloses and 6 provisional patents on novel medical device solutions.
- Traveled to Japan as an ambassador of the Institute of Engineering and Medicine and the BioBusiness Alliance to discuss regulatory issues and partnerships with top device companies as well as the director of the Pharmaceuticals and Medical Devices Agency.

Dawn Bardot, Michael Dahl, Fischer Gwen, Kiyo Miyasaka, Marie Johnson. *Learning the Art of Disciplined Innovation.* **J. Med. Devices**, Vol. 5, Issue 2, 027523

U.S. Patient Applications (No. 61/500,048, 61/481,627, 61/481,453, 61/510,703, 61/ 512,408, 61/51,1822)

Senior Biomechanical Scientist | *Disc Dynamics Inc.* | **(2008 - 2010)**

Developed, managed, and executed studies (internally and in collaboration) to biomechanically assess devices for a venture capital backed spine implant company.

- Analyzed data and wrote manuscripts for journal publications, textbook chapters, marketing distribution, and European market device indication expansions.
- Oversaw the submission and construction of abstracts for conferences, scientific/marketing literature, and represented industry for ASTM standards development in nucleus replacement testing.
- Preliminary work on device optimization, custom surgical equipment and six sigma DOE, including animal model and cadaveric biomechanics testing.
- Conducted technical device specification and clinical trial surgical training.
- Assisted executive management in constructing venture capital fundraising presentations and literature.
- Collaborated with director of regulatory in writing and submitting PMA expansions and annual reports to the FDA.
- Collaborated with director of clinical in planning and analyzing clinical study protocol, statistical analysis plans, and feasibility study data.

Dahl MC, Tsantrizos A, Lee M, Myint K, Herrington R, Cohen A, Ching RP. *Hybrid, Multilevel Lumbar Spine Arthroplasty Using an In Situ Cured, Polyurethane Nucleus Replacement Device in Conjunction with Total Disc Replacement.* **Submitted to The Spine Journal 2012**

Poster Presentations at:
24th Annual Meeting of the North America Spine Society, November 10th – 14th, 2009, in San Francisco, California.

Contributed to book chapter on *Lumbar Nucleus Replacement* in: **The Spine, 6th edition**. Edited by Drs. Herkowitz, Garfin, Eismont, Bell, and Balderston. Rothman-Simeone.

Clinical and In Vitro DASCOR Research Scientific Exhibit at:
Annual Meeting of the American Association of Orthopaedic Surgeons, February 25th-28th, 2009, in Las Vegas, Nevada.

Dahl MC, Ellingson, AM, Mehta, H, Huelman, JH, Nuckley DJ. *The Biomechanics of a Multilevel Lumbar Spine Hybrid Using Nucleus Replacement in Conjunction with Fusion.* **The Spine Journal. 2012** (in press: accepted 11-26-2012).

Poster Presentations at:
24th Annual Meeting of the North America Spine Society, November 10th – 14th, 2009, in San Francisco, California.

Clinical and In Vitro DASCOR Research Scientific Exhibit at:
Annual Meeting of the American Association of Orthopaedic Surgeons, February 25th-28th, 2009, in Las Vegas, Nevada.

Dahl MC, Ahrens M, Sherman J, Martz E. *The Restoration of Lumbar Intervertebral Disc Load Distribution: A Comparison of Three Nucleus Replacement Technologies.* **Spine 2010 Jul 1:35(15): 1445-53.**

Poster Presentations at:
9th Annual Meeting of the Spine Arthroplasty Society, April 28th - May 1st, 2009, in London, England.

Research Scientist and Course Instructor | *Applied Biomechanics Laboratory* | **(2002 - 2008)**

Prepared and executed contractual research on medical devices for private individuals as well as venture capital backed and publicly traded companies.

- Developed and performed a twenty patient clinical study to determine efficacy of experimental techniques.
- Prototyped novel surgical instruments and employed them intraoperatively.
- Constructed testing fixtures and conducted research for established and start-up medical device companies.
- Supervised and lectured for engineering dynamics, mechanics of materials, and orthopaedic biomechanics courses.
- Collaborated with physicians in the neurosurgery and orthopaedics department to investigate novel techniques and devices.

Dahl MC, Ananthakrishnan D, Nicandri G, Chapman JR, Ching RP. *Helmet and shoulder pad removal in football players with unstable cervical spine injuries.* **Journal Applied Biomechanics. 2009 May;25(2):119-32.**

Dahl MC, Kramer PA, Reinhall PG, Benirschke SK, Hansen ST jr., Ching RP. *The Efficacy of using Vibrometry to Detect Osteointegration of the Agility Total Ankle.* ***Accepted*****: Journal of Biomechanics, 2009 Feb 26 [Epub ahead of print].**

U.S. Patient Application (No. 20090264754) entitled: **Method and Apparatus for Evaluating Osteointegration of Medical Implants.**

Dahl MC, Rouleau JP, Papadopoulos S, Nuckley DJ, Ching RP. *Dynamic characteristics of the intact, fused, and prosthetic-replaced cervical disk.* **Journal of Biomechanical Engineering. 2006 Dec; 128(6):809-14.**

Presentations at:
23th Annual Meeting of the North America Spine Society, October 14th – 18th, 2008, in Toronto, Canada.

Poster Presentation at:
50th Annual Meeting of the Orthopaedic Research Society, March 7th-10th, 2004, in San Francisco, California.

Bio-Technician Intern | *Institute of Systems Biology* | **(2000)**

Engineered, constructed, and operated sections of an ink jet microarray synthesizer used to construct multi-oligonucleotide arrays onto slides and synthetic membranes. Created the drafting and technical aspects of the apparatus. Initiated preliminary testing of ink-jet protein fractionation for mass spectrometry.

Honors and Achievements

• University of Minnesota Senior Innovation Fellow
• Herbert B. Jones Northwest Entrepreneur Scholarship and Entrepreneur Boot Camp Certificate
• Collegiate All-American Scholar Award
• Washington University Biomedical Engineering Departmental Award for Senior Academic Excellence
• Eagle Scout
• Lean Six Sigma Black Belt
• University of Minnesota Advanced Cardiac Physiology and Anatomy Course Certificate