

## DAN ODELL, Ph.D., CPE

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### SUMMARY

- Customer focused engineer with 14 years' experience using research, ergonomics, and design knowledge to deliver meaningful products that are useful, usable, desirable, and well engineered.

### RELEVANT SKILLS

- Designer of human-machine interfaces with a focus on physical human factors (hardware) in addition to cognitive, emotional, cultural, and social factors (integrating software and hardware)
- Expert in ergonomic factors that drive physical and mental comfort, fatigue, and injury
- Creative thinker with multiple awarded patents and more than 20 patent disclosures
- Proven ability to lead and facilitate teams, reframe problems, and generate successful solutions
- Expert at designing experiments, applying qualitative and quantitative research tools, and analyzing data to answer relevant research questions. Led well over 100 studies
- Able to design functional prototypes to demonstrate concepts and answer research questions
- Engineer of parts in CAD for production via injection molding, vacuum forming, extrusion, metal stamping and forming, machining, welding, and numerous Rapid Prototyping processes

### PROFESSIONAL EXPERIENCE

**Microsoft Corp.** *Design Ergonomist/User Experience Researcher* 2004 – present

- Manage projects while collaborating with and coordinating designers, marketing, engineering, and development teams to deliver successful products on time and in budget.
- Create product requirements documents and specs to inform design and evaluate products.
- Drive product research to inspire innovation, evaluate opportunity, inform design, and assess product performance using a variety of User Research techniques. Ensure that products deliver lasting user value in addition to shelf appeal.
- Instrument devices for data collection, analyze data, and report to establish reliability requirements.
- Generate and facilitate new product concept creation. Prototype concepts for evaluation.
- Move the ergonomics state-of-the-art forward and incorporate these advances into Microsoft's award winning Natural keyboards and mice. Leverage the knowledge from Natural products to advance the comfort baseline across all products. This work yielded the worldwide best selling wired keyboard, the Natural Ergonomic Keyboard 4000, winner of the HFES User Centered Design Award.
- Lead User Experience development through entire lifecycle from insights-driven concept incubation through to refined manufacturing. Shipped 20 products plus over 30 focused investigations.
- Inform and evaluate gestural multi-touch devices and interfaces
- Deliver 3-year product strategy plans, "good, better, best" differentiation across the product lines, platform strategy, and user trends information. This work established product roadmaps.
- Establish, standardize, and improve processes to improve project cost, time, and output.
- Manage a team of 1 to 4 contract researchers to meet business objectives as above.
- Interface with MS China offices and suppliers to deliver high quality products that meet user needs.

UC-Berkeley Graduate Student Researcher 1999 – 2004

- Designed and built a new bimanual computer workstation with novel interaction techniques based on key tenets of ergonomics, HCI, and mechanical design. Iterated design through 3 revisions.
- Evaluated bimanual system performance through a series of human-based experiments.
- Graduate Student Instructor of 'High-Tech Product Design and Rapid Manufacture' course.

Icon Health and Fitness Mechanical Design Engineer 1996 – 1999

- Designed exercise equipment from prototypes through to production, taking concepts from solid models to released prints and production units. Utilized skills in DFM / DFA to reduce costs.
- Created Bills of Material (BOMs) and projected product costs.

Team DBM Combat Robot Designer, Builder, and Driver 2007 – present

- Designed, built and drove the US #1 rated 3 pound combat robot, "Gutter Monkey."

## EDUCATION

- Ph.D., MS, Mechanical Engineering, UC Berkeley: GPA: 3.9 12/2004
  - Major: Design, Minors: Manufacturing and Business - Management of Technology cert.
- BS, Mechanical Engineering, University of Utah: GPA: 3.6 6/1995
- Board Certified Professional Ergonomist (CPE) - #1511

## PROFESSIONAL POSITIONS AND AFFILIATIONS

- **President** – Puget Sound Human Factors and Ergonomics Society 2008 – 2010
- **Director** – Office Ergonomics Research Committee 2004 – present
- **Member** – Human Factors and Ergonomics Society, Association for Computing Machinery, American Society of Mechanical Engineers, Tau Beta Pi, Phi Eta Sigma

## PUBLICATIONS:

Houwink A, Oude Hengel K, Odell D, Dennerlein J, (2009) Providing ergonomic instructions enhances the biomechanical improvements of an alternative computer mouse design. Human Factors, 51(1): 46 -55.

Rempel D, Nathan-Roberts D, Chen BY, Odell D, (2009) The effects of split keyboard geometry on upper body postures., Ergonomics, Volume 52, Issue 1 January 2009 , pages 104 - 111

Kimmerly, L, Odell, D (2009) Children and computer use in the home: Workstations, behaviors, and parental attitudes. Work: A Journal of Prevention, Assessment and Rehabilitation, Vol 32, Number 3, pages 299-310

Oude Hengel, K, Houwink, A, Odell, D, Dieen, J, Dennerlein, J, (2008), Smaller external notebook mice have different effects on posture and muscle activity., Clinical Biomechanics 23 (2008) 727-734

Odell, D, Johnson, P, (2007), Evaluation of a Mouse Designed to Improve Posture and Comfort. WWCS 2007, #115

Odell, D, Barr, A, Goldberg, R, Chung, J, Rempel, D, 2007 Evaluation of a dynamic arm support for seated and standing tasks: a laboratory study of electromyography and subjective feedback. Ergonomics, V. 50, #4, pp. 520-535

The Importance of Ergonomic Input Devices in the Workplace (The Scope of Computer-Related Repetitive Strain Injuries and Methods for Their Prevention). Microsoft white paper, 2005

Odell, D, Davis, R, Smith, A, Wright, P, Toolglasses, Marking Menus, and Hotkeys: A Comparison of One and Two-Handed Command Selection Techniques. Graphics Interface, 2004, May 17-29, pp. 17-24

Odell, D, Wright, P, An Integrated Bimanual Computer Input Station: the Command Chair BMI white paper, 2003

Odell, D, Wright, P, Concurrent Product Design: A Case Study on the Pico Radio Test Bed. ASME's 2002 Design and Engineering Technical Conference (DETC), DFM #34154

*Winner of the 2003 Literati Club Highly Commended Paper Award*

Ahn, S, Montero, M, Odell, D, Roundy, S, and Wright, P, 2002, Anisotropic Material Properties of Fused Deposition Modeling (FDM) ABS. Rapid Prototyping Journal, Vol. 8, Number 4, pp. 248-257