# Leif Berg

## Education

**Ph.D. Human-Computer Interaction**
Iowa State University. 2015.

**B.A. Computer Science**
St. Olaf College, 2009.

## Contact

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952.807.6602

## Experience

### HCI Researcher
R&D Computer Science
Sandia National Labs
Jul. 2015 - Present

Leading multiple corporate initiatives to increase the user experience/usability capability. from recruiting to resource and methodology development.

Providing guidance and leadership to the Sandia HCI community through the development and cordination of a user experience community of practice.

Transforming the user experience of numerous corporate applications and websites by applying of a variety of HCI research and design methods.

### Research Assistant
Virtual Reality Applications Center
Iowa State University
Jan. 2011 - May 2105

Explored human-computer interactions and user experience across a variety of immersive user interfaces.

Leveraged virtual reality technologies to discover new design processes. Investigated the synergy between normative and description design methodolgies.

### Microsoft Design Research Internship
Windows Research
Microsoft Corporation
May 2013 - Aug. 2013

Impacted design thinking of designers, researchers, and program managers surrounding core user experiences in Windows 8.1.

Investigated how Windows 8.1 updates would be received by varying groups of end-users through the design and execution of several studies.

Applied critical thinking and analytics to findings to support product development and future design directions.

### HCI Research Internship
Interactive Clinical Design Institute
Biomedical Informatic Research Center
Marshfield, WI
May 2012 - Aug. 2012

Strengthened designers and product managers understanding of how medical staff perceive and utilize electronic health record systems.

Conceptualized and implemented a user-centered design process integrating cognitive modeling into existing evaluation methods.

Executed in-depth usability studies with physicians to identify salient user experience issues in an electronic health record prototype.

## Skillset

**Methods**
A/B Testing, Affinity Diagramming, Card Sorting, Competitor Analysis, Contextual Inquiry, Eye-Tracking, Field Observation, Focus Groups, Heuristic Evaluation, Keystroke Level Modeling, Personas, Prototyping, Interviews, Storytelling, Surveys, Task Analysis, Usability Testing, Wireframing

**Software**
Axure
Balsamiq Mockups
Inkscape
JustInMind Prototyper
Morae Suite
Ovo Studios
UserZoom

**Technical**
Java
Python
Lua
HTML
JavaScript
PHP

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## Research

**Enhanced Immersive Technology to Improve Collaborative Decision Making**

Funded by the National Science Foundation, research explored new design methodologies combining analytical tools for design decision making and immersive sensory environments to support complex design.
Spring 2011 - Spring 2015.

**Capstone Research Project: Image Compression (Undergraduate)**

Directed a team of students in the design and implementation of an image compression algorithm in Python. Researched existing literature to establish goal benchmarks. Final design compressed image data by exploiting polygon mesh connectivity utilizing a special segmentation method. Fall 2009.

**Sociotechnical Analysis of Regents Hall, St. Olaf College (Undergraduate)**

Conceptualized prospective human-computer interactions within the Regents Hall of Natural Science at St. Olaf College. Surveyed collaborative spaces to identify potential interaction issues. Observed and interviewed potential users to influence future space alterations. Presented findings and recommendations to the building's design team. Spring 2008.

## Recent Publications

*Berg, L. P., & Vance, J. M. (2016).* ***Industry use of virtual reality in product design and manufacturing: a survey****. Virtual Reality, 1-17.*

*Berg, L. P., & Vance, J. M. (2016).* ***An Industry Case Study: Investigating Early Design Decision Making in Virtual Reality****. Journal of Computing and Information Science in Engineering. Accepted.*

*Berg, L., Behdad, S., Vance, J., and Thurston, D. (2015).* ***Disassembly Sequence Evaluation: A User Study Leveraging Immersive Computing Technologies****. Journal of Computing and Information Science in Engineering. 15(1)*

*Behdad, S., Berg, L., Vance, J., and Thurston, D. (2014).* ***Immersive Computing Technology to Investigate Trade-offs under Uncertainty in Disassembly Sequence Planning****. Journal of Mechanical Design. 136(7)*

*Berg, L., Mahnke, A., Moritz, R. (2013).* ***Integration of Cognitive Modeling in the Evaluation of an Electronic Health Record.*** *HFES 2013 Symposium on Human Factors and Ergonomics in Health Care. March 11-13, Baltimore, Maryland, USA.*

## Extracurricular & Service

**President**
HCI Student Group
Iowa State University
2011 - 2012

**Graduate Student Mentor**
HCI Graduate Program
Iowa State University
2011 - 2015

**Volunteer IT Consultant**
Peace Lutheran Church
Hutchinson, MN
2005 - Present