

# Laura M. Pfeifer Vardoulakis

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Human-Computer Interaction researcher, creating and evaluating health technologies designed specifically for patients.

## Education

<b>Northeastern University</b> , Boston, MA Ph.D., Computer Science - Human-Computer Interaction Advisor: Dr. Timothy Bickmore	2013
<b>Northeastern University</b> , Boston, MA M.Sc., Computer Science	2008
<b>Augustana College</b> , Sioux Falls, SD B.A., cum laude, Computer Science, Spanish	2002

## Employment

<b>Microsoft Research</b> , Redmond, WA <i>Research Intern, Computational User Experiences (CUE) Group</i> Mentors: Amy Karlson, Dan Morris	May 2011 – July 2011
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*A Mobile Phone Experience for Emergency Department Patients, Providing Near Real-Time Access to their Medical Record*

Roles: software implementation, study design, recruitment, patient interviewer, data analysis, author

Study design: hospital field study, demonstration design, mixed-methods, 44 participants

<b>Northeastern University</b> , Boston, MA <i>Research Assistant, Relational Agents Group</i>	September 2006-present
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### Selected Projects

*Social Desirability Bias and Engagement in Systems Designed for Long-Term Health Tracking* (Ph.D. Thesis)

Roles: research study design, IRB application, software design and implementation, recruitment, data analysis, author

Study design: between-subjects experimental design, longitudinal, quantitative, web-based, 360 participants

*Virtual Nurse: An Embodied Conversational Agent for Hospital Discharge*

Roles: technical project lead, software implementation and integration, pilot study design, pilot study lead researcher, patient interviewer, data analysis, author

Study design: hospital field study, demonstration design, mixed-methods, 49 participants

*Tinker: A Virtual Agent Exhibit at the Boston Museum of Science*

Roles: technical project lead, software implementation, pilot study design, author

Study design: field study, between-subjects experimental design, quantitative, 1,607 participants

Users to-date: 180,000 museum guests

<b>ProVation Medical – Wolters Kluwer Health</b> , Minneapolis, MN <i>Senior Technical Support Analyst</i>	July 2003 – August 2006
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Began as an analyst providing on-call technical support to database administrators, software administrators and customers at 200 sites. Quickly became an agile, Jill-of-all-trades member of the start-up, expanding my role to work with software engineers to resolve bugs, teach day-long technical courses to new software administrators, and travel onsite to install software and diagnose issues at seven hospitals across the country.

# Publications

## Journals Articles

- [J.5] Response to a Relational Agent by Hospital Patients with Depressive Symptoms.  
Bickmore, T., Mitchell, S., Jack, B., Paasche-Orlow, M., **Pfeifer, L.**, O'Donnell, J.  
*Interacting with Computers, special issue on Mental Health*, 2010, 22(4), 289-298.
- [J.4] Maintaining Reality: Relational Agents for Antipsychotic Medication Adherence.  
Bickmore, T., Puskar., K, Schlenk, E., **Pfeifer, L.**, Sereika, S.  
*Interacting with Computers, special issue on Mental Health*, 2010, 22(4), 276-288.
- [J.3] Usability of Conversational Agents by Patients with Inadequate Health Literacy: Evidence from Two Clinical Trials.  
Bickmore, T., **Pfeifer, L.**, Byron, D., Forsythe, S., Henault, L., Jack, B., Silliman, R., Paasche-Orlow, M.  
*Journal of Health Communication*, 2010, 15, 197-210.
- [J.2] Using Computer Agents to Explain Medical Documents to Patients with Low Health Literacy.  
Bickmore, T., **Pfeifer, L.**, and Paasche-Orlow, M.  
*Patient Education and Counseling*, 2009, 75 (3), 315-320.
- [J.1] The Role of Gesture in Document Explanation by Embodied Conversational Agents.  
Bickmore, T., **Pfeifer, L.**, and Yin, L.  
*International Journal of Semantic Computing*. 2008, 2 (1), 47-70.

## Conference Papers

- [C.6] Using Mobile Phones to Present Medical Information to Hospital Patients.  
**Pfeifer Vardoulakis, L.**, Karlson, A., Morris, D., Smith, G., Gatewood, J. Tan, D.  
*Proceedings of the ACM SIGCHI Conference on Human Factors in Computing Systems (CHI)*, 2012.
- [C.5] Relational Agents Improve Engagement and Learning in Science Museum Visitors.  
Bickmore, T., **Pfeifer, L.**, Schulman, D.  
*Intelligent Virtual Agents*. Reykjavik, Iceland, September 2011. **Best Paper nomination.**
- [C.4] Is the Media Equation a Flash in the Pan? The Durability and Longevity of Social Responses to Computers.  
**Pfeifer, L.**, and Bickmore, T.  
*Proceedings of the ACM SIGCHI Conference on Human Factors in Computing Systems (CHI)*, Vancouver, BC, May 2011.
- [C.3] Should Agents Talk Like, um, Humans? The Use of Conversational Fillers by Virtual Agents.  
**Pfeifer, L.**, and Bickmore, T.  
*Intelligent Virtual Agents*. Amsterdam, The Netherlands, September 2009.
- [C.2] Taking the Time to Care: Empowering Low Health Literacy Hospital Patients with Virtual Nurse Agents.  
Bickmore, T., **Pfeifer, L.**, and Jack, B.  
*Proceedings of the ACM SIGCHI Conference on Human Factors in Computing Systems (CHI)*, Boston, MA, April 2009.
- [C.1] Health Document Explanation by Virtual Agents.  
Bickmore, T., **Pfeifer, L.**, and Paasche-Orlow, M.  
*Intelligent Virtual Agents*. Paris, France, September 2007.

## Conference Workshops and Posters (Peer Reviewed)

- [c.5] Longitudinal Remote Follow-Up by Intelligent Conversational Agents for Post-Hospitalization.  
**Pfeifer, L.**, Bickmore, T.  
AAAI 2011 *Spring Symposium on Artificial Intelligence and Health Communication*, Palo Alto, CA. March 2011.
- [c.4] Designing Embodied Conversational Agents to Conduct Longitudinal Health Interviews.  
**Pfeifer, L.**, and Bickmore, T.  
*Intelligent Virtual Agents*. Philadelphia, PA. September 2010.

- [c.3] Longitudinal Health Interviewing by Embodied Conversational Agents: Directions for Future Research.  
**Pfeifer, L.**, and Bickmore, T.  
*AAAI 2009 Fall Symposium on Virtual Healthcare Interaction*, Washington D.C. November 2009.
- [c.2] Public Displays of Affect: Deploying Relational Agents in Public Spaces.  
Bickmore, T. and **Pfeifer, L.**, Schulman, D., Perera, S., Senanayake, C. and Nazmi, I.  
*CHI'08 Extended Abstracts*. Florence, Italy, April 2008.
- [c.1] Relational Agents for Antipsychotic Medication Adherence.  
Bickmore, T. and **Pfeifer, L.**  
*CHI 2008 Workshop on Technology in Mental Health*. Florence, Italy, April 2008.

### Invited Talks

- [I.4] Embodied Conversational Agents for Long-Term Health Monitoring. Presented at Healthrageous!, Boston, MA, October 2011.
- [I.3] Patient-Computer Interaction. Presented at the Dot Diva Launch, Microsoft Research New England, Cambridge, MA, September 2010.
- [I.2] Virtual Nurse Agents for Hospital Discharge. Presented at the Northeastern University Board of Trustees annual meeting. Boston, MA, May 2009.
- [I.1] Health Document Explanation by Relational Agents. Presented at the New England Electronic-Media and Behavior Change Interest Group Quarterly Meeting. Newton, MA, October 2008.

## Teaching

**Human-Computer Interaction** (CS5340), Northeastern

Fall 2006, Fall 2008

*Teaching Assistant for Prof. Timothy Bickmore*

Graded and provided feedback on class assignments. Provided mentorship for project teams designing user interfaces for older adults. Coordinated user-testing of student projects by older adults at a local apartment complex.

**Department Tutor**, Augustana College

September 2000 – May 2002

Assisted students with program design and development. Tested, debugged and graded programming assignments.

## Awards

Best Paper nomination, Intelligent Virtual Agents Conference (2011)  
Northeastern University Outstanding Graduate Research Award (2009)

## Service

**Reviewer**

CHI 2010-2013

IVA 2011, 2012

Virtual Reality (Springer) 2009

**Women in Computing**

DigiGirlz, panelist, Microsoft New England, 2011

Dot Diva, speaker and panelist, Microsoft New England, 2012

Augustana College Women in Computer Science, 2000-2002