

# Iris K. Howley

Human-Computer Interaction Institute  
Carnegie Mellon University  
5000 Forbes Ave.  
Pittsburgh, PA  
iris AT cmu DOT edu  
xxx-xxx-xxxx

## EDUCATION

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<b>Carnegie Mellon University</b> Ph.D. in Human-Computer Interaction Primary Adviser: Carolyn Penstein Rosé	Anticipated Graduation: June 2014 Pittsburgh, PA Cumulative GPA: 3.87
<b>Drexel University</b> Bachelor of Science in Computer Science Concentrations in HCI & Artificial Intelligence	Graduated: June 2008 Philadelphia, PA Cumulative GPA: 3.90
<b>Middle East Technical University</b> Study Abroad	September 2005 - January 2006 Ankara, Turkey

## RESEARCH INTERESTS

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Computer-mediated communication, virtual agents, dialogue agents, intelligent tutoring systems, computer-supported collaborative learning, information literacy, discourse analysis, motivation and dispositions, educational technologies for underserved communities.

## SKILLS

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**Computer Skills:** Expert in Java, C++, XML, and OWL. Familiarity with Perl, JESS, and Weka. Expert in Eclipse, Netbeans, and Linux development environments. Expert in Microsoft Office.  
**Research Approaches:** Statistical analysis (JMP, SPSS), Discourse analysis, Coding manual development, Experimental design (both laboratory studies and field experiments in classrooms).

## REFEREED JOURNAL & FULL CONFERENCE PAPERS

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- Howley, I., Adamson, D., Dyke, G., Mayfield, E., Beuth, J. & Rosé, C. Group Composition and Intelligent Dialogue Tutors for Impacting Students' Academic Self-efficacy. *Full paper submitted to Intelligent Tutoring Systems (ITS)*, 2012.
- Howley, I., Mayfield, E. & Rosé, C. Missing Something? Authority in Collaborative Learning. *Full paper presented at Computer Supported Collaborative Learning (CSCL)*, 2011.
- Kuznetsov, S., Trutoiu, L., Kute, C., Howley, I., Siewiorek, D., & Paulos, E. Breaking Boundaries: Mentoring with Wearable Computing. *Full paper at ACM CHI Conference on Human Factors in Computing Systems (CHI)*, 2011.
- Kumar, R., Chaudhuri, S., Howley, I. & Rosé, C. VMT-Basilica: An Environment for Rapid Prototyping of Collaborative Learning Environments with Dynamic Support. *Full paper at Computer Supported Collaborative Learning (CSCL)*, 2009.
- Chaudhuri, S., Kumar, R., Howley, I. & Rosé, C. Engaging Collaborative Learners with Helping Agents. *Full paper presented at Artificial Intelligence in Education (AIED)*, 2009.
- Ritchie, J.M., R.C.W. Sung, H. Rea, T. Lim, J.R. Corney, & I. Howley. The Use of Non-intrusive User Logging to Capture Engineering Rationale, Knowledge and Intent During the Product Life Cycle. *Portland International Conference on Management of Engineering & Technology (PICMET)*. Cape Town, South Africa. July 27 - 31, 2008.
- Rea, H.J., Howley, I.K., Corney, J.R., Ritchie, J.M., Sung, R., & Salamon, C. (2007). CBBC

BAMZOOKi as a Tool for Engineering Design Research. *Learning with Games 2007 Conference*. Valbonne, France. September 24 - 25, 2007.

Grauer, M.J., Howley, I.K., Kopena, J.B., & Regli, W.C. (2007). Towards a Format Registry for Engineering Data. *ASME International Design Engineering Technical Conference 2007*. Las Vegas, NV USA. September 4 - 7, 2007.

Kopena, J.B., Sultanik, E., Naik, G., Howley, I.K., Peysakhov, M., Cicerello, V.A., Kam, M., & Regli, W.C. (2005). Service-Based Computing on Manets: Enabling Dynamic Interoperability of First Responders. In *IEEE Intelligent Systems*, 20(5),17-25.

## INVITED BOOK CHAPTERS & PAPERS

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Howley, I. & Rosé, C. Modeling the Rhetoric of Human Computer Interaction. *Full paper at HCI International*, 2011.

Howley, I., Mayfield, E., & Rosé, C. Linguistic Analysis Methods for Studying Small Groups. *Invited Book Chapter to Appear in International Handbook of Collaborative Learning*, 2010.

## REFEREED ABSTRACT & SHORT PAPERS

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Howley, I. & Rosé, C. Student Dispositions and Help-Seeking in collaborative Learning. *Young Researcher's Track paper presented at the Tenth International Conference on Intelligent Tutoring Systems (ITS)*, 2010.

Howley, I., Chaudhuri, S., Kumar, R., & Rosé, C. Motivation and Collaborative Behavior: An Exploratory Analysis. *Poster paper presented at Computer Supported Collaborative Learning (CSCL)*, 2009.

Howley, I., Chaudhuri, S., Kumar, R., & Rosé, C. Motivation and Collaboration On-Line. *Poster paper presented at Artificial Intelligence in Education (AIED)*, 2009.

Santos, G., Howley, I., Copenhaver, B., & Alevan, V. Integrating Conceptual and Procedural Knowledge for Middle-school Math – A Cognitive Tutoring Approach. *Young Researcher's Track paper at Artificial Intelligence in Education (AIED)*, 2009.

## RESEARCH EXPERIENCE

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| <b>Intelligent Dialogue Agents for Collaborative Learning</b><br><i>Carnegie Mellon University, HCII</i>   | 2008 - Present<br>Pittsburgh, PA |
| <ul style="list-style-type: none"><li>▪ Designed experiments to examine the effect of student dispositions in group learning exercises</li><li>▪ Modified existing computer supported collaborative learning software for experimental design</li><li>▪ Developed Java software for automatically pseudo-randomly assigning participants to experimental pairs based on day-of self-efficacy scale results</li><li>▪ Analyzed data with a variety of methods including: statistical analyses, discourse analysis, and qualitative storytelling</li><li>▪ Gained experience presenting results to audiences</li><li>▪ Examined learning domains of: fractions for sixth graders, semi-permeable membranes for ninth grade biology, power plant design for undergraduate mechanical engineering, and wrench design for middle school children.</li></ul> |                                  |
| <b>Academically Productive Talk in the Classroom</b><br><i>Pittsburgh Science of Learning Center</i>   | 2010 - Present<br>Pittsburgh, PA |
| <ul style="list-style-type: none"><li>▪ Collaborated and coordinated with a large multi-disciplinary research team</li><li>▪ Recorded high school classroom discourse over a multi-year period, with multiple teachers</li><li>▪ Developed rapport with teachers, creating foundation for research cooperation</li><li>▪ Ran experimental studies in school computer lab, utilizing classroom management skills</li></ul>  |                                  |

- Aided in performing interviews of students about class discussions

**Mentoring with the Lilypad Wearable Computer**

*Carnegie Mellon University, HCII*

Summer 2010

Pittsburgh, PA

- Mentored and lead sessions teaching at-risk girls aged 10-12 the basics of wearable computing
- Skills taught included circuit design, Lilypad programming, brainstorming, & implementation of designs

**Inferring Engineering Decisions from Children's Game Behavior**

*Heriot Watt University, Manufacturing Engineering Department*

Summer 2007

Edinburgh, UK

- Developed software to parse and organize large quantities of automatically generated log files
- Prototyped a data visualization program, displaying information as directed graphs
- Contributed current knowledge of computer tools to an interdisciplinary team

**Semantic Web for First-Responder Robot Classification**

*National Institute of Standards and Technology*

Summer 2006

Gaithersburg, MD

- Expanded upon a large OWL ontology classifying Urban Search and Rescue robots
- Created an engine using JESS to reason over parameters of an ontology
- Successfully implemented proof of concept system

**Secure Wireless Agent Testbed**

*Drexel University, SWAT Lab*

2004 - 2006

Camden, NJ

- Performed extensive work with Semantic Web services on a Manet
- Tested and developed various software components of a system
- Integrated existing software with a larger, external project
- Gained practical experience writing for a technical conference

TEACHING EXPERIENCE

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**Section Instructor**, User-Centered Research & Evaluation, Professor Matt Kam, 2011

**Mentor**, Pittsburgh Science of Learning Center Summer School, Professor Carolyn Rosé, 2010 & 2011

**Attendee**, Seminars on Teaching from Eberly Center for Teaching Excellence at CMU, 2011 & 2012

*Teaching references from the Eberly Center for Teaching Excellence available upon request.*

AWARDS

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- Program in Interdisciplinary Education Research Fellow, 2008-present
- National Science Foundation Graduate Research Fellowship Honorable Mention, 2008
- CRA Outstanding Undergraduate Finalist, 2008
- Drexel University College of Engineering Undergraduate Research Award, 2008
- Harry E. Muchnic Scholarship from Drexel College of Engineering, 2006
- Students Tackling Advanced Research Program (Drexel University), 2004
- Girl Scout Gold Award, 2002

SERVICE

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- CHI Works-in-Progress Reviewer, 2011
- Mentoring with the Lilypad Wearable Computer, 2010
- Creative Technology Nights Volunteer, 2008 - 2010
- Founding officer of Drexel's Women in Computing Society and Member, 2004 - 2008