

# Christine F. Reilly

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## Education

- 2010 Ph.D. Computer Sciences, University of Wisconsin-Madison  
Minor: Science and Technology Studies
- 2005 M.S. Computer Sciences, University of Wisconsin-Madison
- 2002 M.S. Environmental and Resource Engineering, State University of New York College of Environmental Science and Forestry
- 1999 B.S. Environmental Engineering Science, Massachusetts Institute of Technology

## Professional Experience

### Assistant Professor

#### Charles Lubin Family Chair for Women in Science

August 2016 – present

*Skidmore College*

I teach undergraduate courses including Introduction to Computer Science, Introduction to Computer Organization, Operating Systems, and computer systems electives. My research areas include distributed data storage and computer science education.

### Assistant Professor

*University of Texas Rio Grande Valley\**

September 2015 – August 2016

*University of Texas – Pan American*

September 2010 – August 2015

I taught a wide range of undergraduate and graduate level courses, including Introduction to Computer Engineering, Engineering Computer Science I, Computer Organization and Architecture, and Database Systems. I advised both undergraduate and graduate student research projects. My service activities included department, college, and university committees. My research areas included data mining in social networks, database systems, data provenance, and computer science education. I was a recipient of the 2015 University of Texas System Regents' Outstanding Teaching Award.

\* *The University of Texas – Pan American was incorporated into the new University of Texas Rio Grande Valley in September 2015.*

### Research Assistant

June 2003 – June 2010

*University of Wisconsin-Madison*

I developed noninvasive methods for gathering provenance from programs that store data in files, including from programs run in the Condor distributed job execution system and also from programs written in a declarative programming language. I was also a member of the Quill team, who developed a tool that transparently gathers operational data from Condor.

### Lecturer, Introduction to Programming

Summer 2009

*University of Wisconsin-Madison*

My main goals for the semester were to teach the 35 students object-oriented programming in Java and to enhance their logical reasoning skills. I developed the course schedule, wrote assignments and exams, prepared and presented four 75 minute lectures per week, determined grades, and supervised a teaching assistant.

**Intern**

Summer 2006

*Google, Inc., Mountain View, California*

I developed tools to query and manage data from the software development bug tracking system. This project began by building queries on the existing transactional database. Upon finding that queries were difficult to write and slow to run, I designed a data warehouse that stores bug data in a format that is better suited for the types of queries desired by my group.

**Teaching Assistant, Introduction to Programming**

September 2002 – May 2003

*University of Wisconsin-Madison*

During discussion sections, I provided opportunities for students to practice the skills they learned in lecture. I interacted with individual students in the computer lab and during office hours. Additionally, I graded assignments and exams.

**Probabilistic Risk Assessment Center Intern**

Summer 2002

*SRC, North Syracuse, New York*

I was the lead programmer for a Windows interface to the US-EPA's Pesticide Root Zone Model. Also, I created Excel macros using Visual Basic.

**Research Assistant**

June 2000 – May 2002

*SUNY College of Environmental Science and Forestry*

For my thesis, I used a simulation to compare methods for estimating low streamflow statistics at measurement stations that have partial streamflow records. Another project compared the accuracy of different statistical techniques for estimating low streamflow quantiles in the presence of incomplete records.

**Environmental Specialist**

July 1999 – April 2000

*Beals and Thomas, Inc., Southborough, Massachusetts*

My main responsibility was analyzing local, state, and national environmental regulations in relation to proposed land developments and existing buildings. In addition to preparing various permit applications, I participated in groundwater monitoring well installation and water supply pump tests.

**Undergraduate Research Opportunities Program**

February 1998 – June 1999

*Massachusetts Institute of Technology*

I built a web site and wrote fact sheets about non-native marine species in order to educate the public regarding issues surrounding these species. My duties also included assisting with planning the First National Conference on Marine Bioinvasions. I was awarded two semesters of funding from MIT-UROP.

**Peer Reviewed Publications**<sup>U</sup> indicates undergraduate student co-author<sup>M</sup> indicates master's student co-author

Reilly, Christine F. Creation of a virtual machine for a database class. *The Journal of Computing Sciences in Colleges*, 35(8). 2020. *In press*.

Reilly, Christine F. and Joan Ann Swanson. A case study in constructivist pedagogy in a computer organization course. In the proceedings of the 2019 Frontiers in Education Conference. Cincinnati, Ohio, USA. October 2019.

Reilly, Christine F. Experience with active learning and formative feedback for a SQL unit. In the proceedings of the 2018 Frontiers in Education Conference. San Jose, California, USA. October 2018.

Reilly, Christine, Emmett Tomai, and Laura M. Grabowski. An evaluation of how changes to the introductory computer science course sequence impact student success. In the proceedings of the 2015 Frontiers in Education Conference. El Paso, Texas, USA. October 2015.

Lawrence-Fowler, Wendy A., Laura M. Grabowski, and Christine F. Reilly. Bridging the divide: Strategies for college to career readiness in computer science. In the proceedings of the 2015 Frontiers in Education Conference. El Paso, Texas, USA. October 2015.

Reilly, Christine F. and Emmett Tomai. An examination of mathematics preparation for and progress through three introductory computer science courses. In the proceedings of the 2014 Frontiers in Education Conference. Madrid, Spain. October 2014.

Grabowski, Laura M., Christine F. Reilly, and Wendy A. Lawrence-Fowler. Emulating a corporate software development environment through collaboration between student projects in six courses. In the proceedings of the 2014 Frontiers in Education Conference. Madrid, Spain. October 2014.

Reilly, Christine F., Dave Salinas<sup>M</sup>, and David De Leon<sup>U</sup>. Ranking users based on influence in a directional social network. In the proceedings of the 2014 International Conference on Computational Science and Computational Intelligence. Las Vegas, Nevada, USA. March 2014.

Grabowski, Laura and Christine F. Reilly. Promoting inclusion of underrepresented populations in computing. In the proceedings of the 2014 International Conference on Computational Science and Computational Intelligence. Las Vegas, Nevada, USA. March 2014.

Lian, Xiang, Eugenio De Hoyos<sup>M</sup>, Artem Chebotko, Bin Fu, and Christine Reilly. k-Nearest keyword search in RDF graphs. *Journal of Web Semantics*, 22, pages 40-56, 2013.

Reilly, Christine F. and Emmett Tomai. Should college algebra be a co-requisite for Computer Science 1? In the proceedings of the International Conference on Frontiers in Education: Computer Science and Computer Engineering. Las Vegas, Nevada, USA. July 2013.

Reilly, Christine F. and Noe De La Mora<sup>U</sup>. The impact of real-world topic labs on student performance in CS1. In the proceedings of the 2012 Frontiers in Education Conference. Seattle, Washington, USA. October 2012.

Rios, David<sup>M</sup>, Artem Chebotko, Christine Reilly, Ralph Carlson, Emmett Tomai, Amy A. Weimer, Nicholas Weimer, Thomas Pearson, Francis Andoh-Baidoo, Robert Winkle, David Ammons, Joanne Rampersad. Improving STEM education in research: Preliminary report on the development of a computer-assisted student-mentor research community. *Creative Education*, 3(5), September 2012.

Chebotko, Artem, Eugenio De Hoyos<sup>M</sup>, Carlos Gomez<sup>M</sup>, Andrey Kashlev<sup>M</sup>, Xiang Lian, and Christine Reilly. UTPB: A benchmark for scientific workflow provenance storage and querying systems. In proceedings of the 6<sup>th</sup> IEEE International Workshop on Scientific and Engineering Workflows: Advances in Data and Event-Driven Workflows, in conjunction with the 10<sup>th</sup> IEEE International Conference on Web Services. Honolulu, Hawaii, USA. June 2012.

Reilly, Christine F. and Jeffrey F. Naughton. Transparently gathering provenance with Provenance Aware Condor. In proceedings of the First Workshop on the Theory and Practice of Provenance. San Francisco, California, USA. 2009.

Reilly, Christine F. and Jeffrey F. Naughton. Exploring provenance in a distributed execution system. In proceedings of the International Provenance and Annotation Workshop. Chicago, Illinois, USA. May 2006.

Reilly, Christine F. and Charles N. Kroll. Estimation of low streamflow statistics using baseflow correlation. *Water Resources Research*, 39(9). 2003.

## Conference Presentations

A generic RDBMS schema for property graphs. Spotlight Talk and Poster Presentation. Northeast Database Day. Cambridge, Massachusetts, USA. January 2020.

Parallel traversal of graphs stored in RDBMSs. Gong Show Talk. 10th Annual Conference on Innovative Data Systems Research (CIDR '20). Amsterdam, Netherlands. January 2020.

A case study in constructivist pedagogy in a computer organization course. The 2019 Frontiers in Education Conference. Cincinnati, Ohio, USA. October 2019.

Storing and querying social graph data on a variety of distributed systems. Gong Show Talk. 9th Biennial Conference on Innovative Data Systems Research (CIDR '19). Asilomar, California, USA. January 2019.

Experience with active learning and formative feedback for a SQL unit. The 2018 Frontiers in Education Conference. San Jose, California, USA. October 2018.

Cultivating diversity in a small computer science department. ACM New York Celebration of Women in Computing. Henrietta, New York, USA. April 2017.

An evaluation of how changes to the introductory computer science course sequence impact student success. The 2015 Frontiers in Education Conference. El Paso, Texas, USA. October 2015.

Bridging the divide: Strategies for college to career readiness in computer science. The 2015 Frontiers in Education Conference. El Paso, Texas, USA. October 2015.

An examination of mathematics preparation for and progress through three introductory computer science courses. The 2014 Frontiers in Education Conference. Madrid, Spain. October 2014.

Emulating a corporate software development environment through collaboration between student projects in six courses. The 2014 Frontiers in Education Conference. Madrid, Spain. October 2014.

Ranking users based on influence in a directional social network. The 2014 International Conference on Computational Science and Computational Intelligence. Las Vegas, Nevada, USA. March 2014.

Promoting inclusion of underrepresented populations in computing. The 2014 International Conference on Computational Science and Computational Intelligence. Las Vegas, Nevada, USA. March 2014.

The impact of math preparedness on introductory programming (CS1) success. Poster presentation. SIGCSE Symposium. Atlanta, Georgia, USA. March 2014.

Should college algebra be a co-requisite for Computer Science 1? The International Conference on Frontiers in Education: Computer Science and Computer Engineering. Las Vegas, Nevada, USA. July 2013.

The impact of real-world topic labs on student performance in CS1. The 2012 Frontiers in Education Conference. Seattle, Washington, USA. October 2012.

Poster presentation highlighting research activities (for New Faculty Fellowship). The 2012 Frontiers in Education Conference. Seattle, Washington, USA. October 2012.

Instrumenting a logic programming language to gather provenance. Invited poster presentation. World Wide Web Conference. Lyon, France. April 2012.

Transparently gathering provenance with Provenance Aware Condor. The First Workshop on the Theory and Practice of Provenance. San Francisco, California, USA. 2009.

Exploring provenance in a distributed execution system. The International Provenance and Annotation Workshop. Chicago, Illinois, USA. May 2006.

Estimating low flow frequency using correlation of baseflow measurements. ASCE Environmental and Water Resources Institute Conference. Roanoke, Virginia, USA. May 2002.

## **Awards**

UTRGV Computer Engineering Outstanding Faculty Award, 2016.  
University of Texas System Regents' Outstanding Teaching Award, 2015.  
UTPA Junior Faculty Travel Support, October 2014.  
UTPA Junior Faculty Travel Support, March 2014.  
New Faculty Fellowship Grant, Frontiers in Education Conference, 2012.  
Google travel grant for WWW Conference, 2012.  
Travel scholarship for NCWIT Summit, 2011.  
CRA-W travel grant for SIGCSE conference, 2011.

## **Grants**

"Quantitative comparison of methods for ranking users in an online directional social network." UTPA STEM ADVANCE Graduate Assistant Support Program. \$8333. 2014 – 2015.

"Discovering influential users in a social network based on past influence and current activity." UTPA Faculty Research Council Grant \$5000. 2013.

"Exploring the benefits and limitations of Twitter's retweet functionality." UTPA Undergraduate Research Initiative Grant, \$2000. 2012.

## **Service**

### **Professional Service**

Active Member, National Committee on Women in Information Technology. 2011 – present.  
Technical Program Committee. Frontiers in Education Conference. 2019, 2018, 2014, 2012.  
Session Chair. Frontiers in Education Conference. 2019, 2014.  
Repeatability and Workability Committee. SIGMOD. 2011.

### **Skidmore College Service**

Engineering Advisory Committee. Spring 2018 to present.  
Computer Science Department Faculty Search Committee. 2020, 2018, 2016.

### **UTRGV/UTPA Departmental, College, and University Service**

University Academic Advisement Council. 2013 – 2016.  
Co-advisor, UTRGV/UTPA chapter of ACM-W. 2012 – 2016.  
Undergraduate Curriculum Committee, Computer Science Department. 2010 – 2016.  
Graduate Curriculum Committee, Computer Science Department. 2010 – 2016.  
Computer Engineering Program Committee. 2010 – 2016.  
Scholarship Committee, Computer Science Department. 2010 – 2016.  
Computer Science Department Policies Committee. 2015.  
Computer Science Department Administrative Assistant II search committee. 2015.  
Computer Engineering Program Administrative Assistant I search committee. 2015.

Computer Science Faculty Search Committee. 2014 – 2015.  
Affirmative Action Advocate, Mechanical Engineering Faculty Search Committee. 2014 – 2015.  
Computer Science Faculty Search Committee. 2013 – 2014.  
Computer Science Department Policies Committee. 2012 – 2013.  
Computer Engineering Faculty Search Committee. 2012 – 2013.  
College of Engineering and Computer Science Dean Search Committee. 2013.  
College of Engineering and Computer Science Annual Evaluations Committee. 2012 – 2013.  
Annual Evaluations Committee, Computer Science Department. 2011 and 2012 (chair in 2012).  
College Computer Committee, College of Engineering and Computer Science. 2011 – 2016.  
Affirmative Action Advocate, Mechanical Engineering Faculty Search Committee. 2012.  
Affirmative Action Advocate, Civil Engineering Faculty Search Committee. 2012.  
Lecturer Search Committee, Computer Science Department. 2012.

### **Other Departmental and University Service**

Active Member, UW-Madison Student ACM Chapter. 2002 – 2010.  
Active Member, UW-Madison Chapter of ACM-W. 2002 – 2010.  
Treasurer, UW-Madison Student ACM Chapter. 2007 – 2009.  
Secretary, SUNY-ESF Graduate Student Association. 2001 – 2002.  
Strategic Planning Council, SUNY-ESF. 2001.