Queen's School of Computing

Queen's University

School of Computing Seminar

CREATE ULSS Distinguished Seminar

Dr. Linda Northrop
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Software Solutions Division
Carnegie Mellon Software Engineering Institute (SEI)

Thursday, January 16th, 2014
2:30-3:30 pm
Dupuis Hall 215

Light Refreshments

The Impact of Scale on Software Engineering

In 2006, *Ultra-Large-Scale Systems: The Software Challenge of the Future* (ISBN 0-9786956-0-7) documented the results of a year-long study on ultra-large, complex, distributed systems. Ultra-large-scale (ULS) systems are socio-technical, cyber-physical ecosystems of ultra-large size on one or many dimensions – number of lines of code; number of people employing the system for different purposes; amount of data stored, accessed, manipulated, and refined; number of connections and interdependencies among software components; number of hardware elements to which they interface. The characteristics of such systems require changes in traditional software development and management practices, which in turn require multi-disciplinary perspective and research. This talk shares a perspective on the post study reality – a perspective based on research motivated by the study and direct experiences with ULS systems.

Linda Northrop is Chief Scientist of the Software Solutions Division of Carnegie Mellon Software Engineering Institute (SEI) where she leads the technical agenda in architecture-centric engineering, software development and acquisition practices, measurement, software product lines, cyber-physical systems, advanced mobile systems, and ultra-large-scale systems. Linda is coauthor of the book Software Product Lines: Practices and Patterns and led the research group on ultra-large-scale systems that resulted in the book, Ultra-Large-Scale Systems: The Software Challenge of the Future.

Before joining the SEI, she was associated with both the United States Air Force Academy and the State University of New York College at Brockport as professor of computer science, and with both Eastman Kodak and IBM as a software engineer.

She is an SEI Fellow (one of six in the 29 year history of the SEI) and an ACM Distinguished Member.