Professional Accomplishments and University Service of
Susan Horwitz
Professor of Computer Sciences

Professor Susan Horwitz has been a member of the faculty of the Computer Sciences Department of the University of Wisconsin–Madison since 1985. She was promoted to Associate Professor in 1991 and Professor in 1996. She served as Associate Chair of the Department from 2004 to 2007. She has held visiting appointments at INRIA (1982–83), the University of Copenhagen (1993–94), Consiglio Nazionale delle Ricerche (CNR) in Pisa, Italy (2000–01), and Université Paris Diderot – Paris 7 (2007–08).

Research Highlights: During her nearly three decades on the faculty, Professor Horwitz conducted research in the fields of programming languages and software engineering, with particular emphasis on the topics of software-development environments, program slicing, dataflow analysis, and pointer analysis. You may have noticed that the Windows operating system became much more stable starting around 2004 (fewer "blue screens of death"). In part, that happened because Microsoft developed the SLAM tool, a static analyzer that checks for bugs in Windows device drivers (which cause 85% of the system crashes in Windows). One of the algorithms that makes SLAM successful is the interprocedural dataflow-analysis algorithm that Horwitz and her collaborators developed in 1995.

Professor Horwitz published 35 papers in refereed conferences and workshops, as well as 15 journal papers. Over a quarter of her conference papers received special recognition:

- Seven of her conference papers were invited for special submission to journals.
- Her 1988 paper "Interprocedural slicing using dependence graphs" (with T. Reps and D. Binkley) was selected as one of the 50 best papers to appear at the ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI) during the period 1979–99.
- In 2011, she received an ACM SIGSOFT Retrospective Impact Paper Award (with T. Reps, M. Sagiv, and G. Rosay) for their paper "Speeding up slicing," which appeared at the SIGSOFT Symposium on Foundations of Software Engineering (FSE) in 1994.

The PLDI 1988 paper and the subsequent ACM TOPLAS journal paper have together been cited over 1,780 times according to Google Scholar. Professor Horwitz is also highly ranked in two of the twenty-four area citation rankings for Computer Science compiled by Microsoft Academic Search: in Programming Languages, she is #43; in Software Engineering, she is #83.

Professor Horwitz supervised the Ph.D. dissertations of Wuu Yang (National Chiao-Tung University, Taiwan) [jointly with T. Reps], Tom Ball (Microsoft Research), Raghavan Komondoor (I.I.Sc., India), and Suan Yong (GrammaTech, Inc.).

Professor Horwitz received an NSF Presidential Young Investigator Award in 1989.

Service: Professor Horwitz was very visible for her service at the national level. She served on the Educational Testing Services's Computer Science AP Exam Committee for

ten years, including five years as its chair. She served on twenty-seven NSF panels, chairing three of them. She was a Founding Member of the Academic Alliance of the National Center for Women and IT (NCWIT). She was a lecturer in the IEEE Distinguished Visitors program and the ACM Lecturer program. She also served a three-year term as Secretary of the SIGPLAN Executive Committee.

Professor Horwitz also represented the Computer Sciences Department in the Faculty Senate for a number of years.

Professor Horwitz served on numerous conference program committees, including four times for POPL and PLDI, the flagship conferences of the ACM Special Interest Group on Programming Languages (SIGPLAN). She was also an editor of *ACM Letters on Programming Languages and Systems* (LOPLAS) for four years.

Teaching: Professor Horwitz is a devoted and gifted teacher, and over the years she received numerous awards for her teaching, including ones from the Computer Sciences Department (1987 and 1997), the Student Chapter of the ACM at Wisconsin (1989 and 1993), the College of Letters and Sciences (1992), and the University of Wisconsin (1993).

In 2004, she launched Wisconsin Emerging Scholars–Computer Science (WES-CS), which was designed to help attract students to Computer Science who might otherwise overlook the opportunities in our field. The program is organized around student-led group meetings in which students work together on interesting problems designed to help them understand and enjoy the topics taught in CS 302.

Since 2012, Professor Horwitz has been the faculty director of Women in Science and Engineering (WISE), a residential learning community of about sixty female freshmen. As part of that activity, she organizes a weekly seminar for the participants to learn about interesting topics in science and engineering.

Conclusion: Professor Susan Horwitz has enjoyed a long and productive career in the Computer Sciences Department at the University of Wisconsin–Madison. We wish to acknowledge her notable contributions in research, service, and teaching by conferring Emerita status upon her at her retirement.