Hal Abelson

Education:

Princeton	A.B. (*summa cum laude*)	1969
MIT	Ph.D. (Mathematics)	1973

Professional Appointments:

1994–present	MIT Class of 1922 Professor	MIT
1991–present	Full Professor of Computer Sci. and Eng.	MIT
1982–1991	Associate Professor of Electrical Eng. and Computer Sci.	MIT
1979–1982	Associate Professor, Dept. of EECS and Division for Study and Res. in Education	MIT
1977–1979	Assistant Professor, Dept. of EECS and DSRE	MIT
1974–1979	Lecturer, Dept. of Mathematics and DSRE	MIT
1974–1979	Instructor, Dept. of Mathematics and DSRE	MIT

Selected publications relevant to this proposal:

1. "Transparent Accountable Data Mining: New Strategies for Privacy Protection," with T. Berners-Lee, C. Hanson, J, Hendler, L. Kagal, D. McGuinness, G.J. Sussman, K. Waterman, and D. Weitzner. MIT CSAIL Technical Report, 2006-007, January 2006.

2. "Information Accountability," with Daniel J. Weitzner, Tim Berners-Lee, Joan Feigenbaum, James Hendler, and Gerald Jay Sussman, MIT CSAIL Technical Report, 2007-034, June 2007. Available at http://hdl.handle.net/1721.1/37600.

3. "The Creation of OpenCourseWare at MIT," *J. Science Education and Technology*, May, 2007.

4. *Structure and Interpretation of Computer Programs*, Hal Abelson, Gerald Jay Sussman and Julie Sussman, MIT Press and McGraw-Hill, 1985, (published translations in French, Polish, Chinese, Japanese, Spanish, and German). Second Edition, 1996.

5. "The Risks of Key Recovery, Key Escrow, and Trusted Third-Party Encryption," with Ross Anderson, Steven Bellovin, Josh Benaloh, Matt Blaze, Whitfield Diffie, John Gilmore, Peter Neumann, Ronald Rivest, Jeffrey Schiller, and Bruce Schneier, in *World Wide Web Journal*, vol. 2, no. 3, Summer 1997, O'Reilly & Associates, pp. 241–257.

Selected other publications:

1. "The Supercomputer Toolkit: A general framework for special-purpose computing," with A. Berlin, J. Katzenelson, W. McAllister, G. Rozas, G. J. Sussman, and Jack Wisdom, *International Journal of High-Speed Electronics*, vol. 3, no. 3, 1992, pp. 337–361.

2. "Amorphous Computing," Harold Abelson, Don Allen, Daniel Coore, Chris Hanson, George Homsy, Thomas F. Knight Jr., Radhika Nagpal, Erik Rauch, Gerald Jay Sussman, and Ron Weiss, in *Communications of the ACM*, **43**, 5, May 2000.

3. "Amorphous Computing" with Jacob Beal and Gerald Jay Sussman. *Encyclopdeia of Complexity & System Science*, Springer, 2007 (to appear). Also available at: http://hdl.handle.net/1721.1/37591, CSAIL Tech Memo Reference 2007-030.

4. "Intelligence in Scientific Computing," with M. Eisenberg, M. Halfant, J. Katzenelson, E. Sacks, G.J. Sussman, J. Wisdom, K. Yip, *CACM*, vol. 32, no. 5, May, 1989, pp. 546–562. Reprinted in *Readings in Qualitative Reasoning about Physical Systems*, D.S. Weld and J. deKleer (ed.), Morgan Kaufmann, 1990; also in *Artificial Intelligence at MIT*, P. Winston and S. Shellard (ed.), MIT Press, 1990.

Synergistic Activities:

Abelson's professional career centers around the use of computation as a framework for formulating knowledge in science and engineering, both to create better tools for science and engineering and to better teach these subjects to people. He is a founding director of Creative Commons and of its Science Commons subsidiary, which promotes interoperability and data sharing in scientific research, and he is a member of the National Academies Commitee on Data for Sci. and Tech. (CODATA).

Abelson is a Fellow of the IEEE and winner of the 1995 Taylor L. Booth Education Award given by IEEE Computer Society, cited for his continued contributions to the pedagogy and teaching of introductory computer science. He plays a leading role in educational technology at MIT as co-director of the MIT-Microsoft iCampus Research Alliance in Educational Technology and as co-chair of the MIT Council on Educational Technology. He is also one of the prime initiators of the MIT OpenCourseWare project.

Abelson's research at the MIT Artificial Intelligence Laboratory focuses on "amorphous computing," an effort to create programming technologies that can harnes the power of the new computing substrates emerging from advances in microfabrication and molecular biology. He is also engaged in the interaction of law, policy, and technology as they relate to societal tensions sparked by the growth of the Internet. He initiated the MIT Computer Science Department's course on these topics, Ethics and Law on the Electronic Frontier, in 1994, and teaches it together with Daniel Weitzner.

Awards and Honors:

Phi Beta Kappa Visiting Scholar	2003–2004
IEEE Taylor Booth Award	1995
Elected Fellow of the IEEE	1994
MIT Class of 1922 Professorship	1994–
MIT Bose Award	1992
MIT MacVicar Faculty Fellow	1992–2002

Recent collaborators:

Gerald Sussman	MIT
Tom Knight	MIT
Peter Robinson	Cambridge University, UK
Lawrence Lessig	Stanford Law School
Tim Berners-Lee	World Wide Web Consortium
Daniel Weitzner	World Wide Web Consortium

Graduate Advisor of Hal Abelson:

Dennis Sullivan	MIT

Recent PhD students supervised by Hal Abelson

Radhika Nagpal	Harvard University
Ron Weiss	Princeton University
Latanya Sweeney	CMU
Daniel Coore	University of the West Indies

Abelson has supervised the PhD theses of 13 students.