

Edward D. Lazowska
January 2020

Personal

Born in Washington, D.C., August 3, 1950. Married to Lyndsay Downs; 2 children

Education

Ph.D. in Computer Science, Univ. of Toronto, 1977 (mentor: Kenneth C. Sevcik)

M.Sc. in Computer Science, Univ. of Toronto, 1974 (mentor: Kenneth C. Sevcik)

A.B. in Computer Science (independent concentration), Brown Univ., 1972 (mentors: David J. Lewis and Andries van Dam)

Employment

University of Washington Paul G. Allen School of Computer Science & Engineering: Bill & Melinda Gates Chair, 2000-20;

Department Chair, 1993-2001; Professor, 1986-; Associate Professor, 1982-86; Assistant Professor, 1977-82

University of Washington eScience Institute: Founding Director, 2008-17; Senior Data Science Fellow, 2014-

University of Washington School of Oceanography: Adjunct Professor, 2012-20

University of California, San Diego, Department of Computer Science and Engineering: Visiting Scholar, 2001-02

Digital Equipment Corporation Systems Research Center: Visiting Scientist, 1984-85

Stanford University Department of Computer Science: Visiting Scholar, 1984-85

Research Interests

Computer systems: modeling and analysis, design and implementation, distributed and parallel systems. Data-intensive discovery. Information technology and public policy.

Representative Recognition

Geek of the Year, *GeekWire*, 2017

50th Anniversary Seattle Hall of Fame, *Seattle* magazine, 2016

Tech Impact Champion, *Seattle Business* magazine, 2016

Microsoft Research Outstanding Collaborator Award, 2016

University of Washington David B. Thorud Leadership Award, 2015

Vollum Award for Distinguished Accomplishment in Science and Technology, Reed College, 2012

Inaugural ACM SIGMETRICS Test-of-Time Award, 2010

ACM Distinguished Service Award, 2009

University of Washington Computer Science & Engineering Undergraduate Teaching Award, 2007

Elected to Washington State Academy of Sciences, 2007 (founding class)

Association for Computing Machinery Presidential Award, 2005

Computing Research Association Distinguished Service Award for outstanding service to the computing research community, 2005

Named one of "Seattle's 25 most influential people," *Seattle* magazine, 2004

Fellow of the American Academy of Arts & Sciences, 2004

Named to "GT 25" (national leaders of information technology in state government) by *Government Technology* magazine, 2002

Elected to the National Academy of Engineering, 2001

Fellow of the American Association for the Advancement of Science, 2001

Bill & Melinda Gates Chair in Computer Science & Engineering, University of Washington, 2000

Named to "BAM 100" (one hundred Brown University alumni who had the greatest impact on the twentieth century), 2000

R1.edu Educational Technology Award, 2000

University of Washington Brotman Award for Instructional Excellence (departmental, as Chair), 1999

University of Washington Outstanding Public Service Award, 1998

Alliance for Education "A+ Partnership Award" for Outstanding Contributions to the Seattle Public Schools, 1997

University of Washington Annual Faculty Lecturer, 1996

Fellow of the Institute of Electrical and Electronics Engineers, 1996

Fellow of the Association for Computing Machinery, 1995

Award papers: ACM SIGMOD/PODS 2017 (Most Reproducible Paper Award), ACM SIGCOMM '93 Symposium, 1993

Machnix Workshop, 13th ACM Symposium on Operating Systems Principles (1991), 12th ACM Symposium on

Operating Systems Principles (1989), 1989 ACM SIGMETRICS Conference on Measurement and Modeling of Computer

Systems, 1985 ACM SIGMETRICS Conference on Measurement and Modeling of Computer Systems, 7th ACM

Symposium on Operating Systems Principles (1979)

Representative Recent Grants

National Science Foundation, 2019-23. PI (with D. Culler, V. Kellen, M. Norman, S. Smallen), Grant No. CNS-1925001, *Enabling Access to Cloud Computing Resources for CISE Research and Education*, \$1,100,000 (collaborative project with UC Berkeley and UC San Diego; total budget \$5,000,000).

National Science Foundation, 2019-23. PI (with D. Culler, B. Howe, C. Kirkpatrick, M. Lee, M. Norman, S. Stone), Grant No. IIS-1550224, *BD Hubs: Collaborative Proposal: WEST: Accelerating the Big Data Innovation Ecosystem*, \$461,346 (collaborative project with UC Berkeley and UC San Diego; total budget \$1,992,366).

National Science Foundation, 2015-19. PI (with D. Culler, M. Franklin, B. Howe, C. Kirkpatrick, M. Norman, E. Robinson, A. Rokem), Grant No. IIS-1550224, *BD Hubs: Collaborative Proposal: WEST: A Big Data Innovation Hub for the Western United States*, \$307,756 (collaborative project with UC Berkeley and UC San Diego; total budget \$1,464,050).

Washington Research Foundation, 2014-20. PI and Project Director (with many Co-PIs), *Global Leadership in Data-Intensive Discovery*, \$9,270,000

Gordon and Betty Moore Foundation and Alfred P. Sloan Foundation, 2013-20. PI and Project Director (with many Co-PIs), *Data Science Environment*, \$12,600,000 (collaborative with UC Berkeley and NYU; total budget \$37,800,000)

National Science Foundation, 2013-18. Faculty Participant (Carlos Guestrin, PI), Grant No. DGE-1258485, *IGERT-CIF21: Big Data U: A Program for Integrated Multidisciplinary Education & Research for Big Data Science*, \$2,800,000

Gordon and Betty Moore Foundation, 2013. PI and Project Director (with many Co-PIs), *Data Science Environment* (planning grant), \$120,000

National Science Foundation, 2012-19 (awarded to Computing Research Association). PI (with A. Bernat, A. Jones, S. Graham, F. Schneider), Grant No. CCF-1136993, *The Computing Community Consortium II*, \$8,274,864 (transitioned to co-PI in August 2013 when transitioned from Chair of CCC; resigned as co-PI in August 2014 when rotated off CCC Council)

National Science Foundation, 2012-14. PI (with A. Connolly, E.V. Armbrust, T. Ackerman), Grant No. CCF-1256144, *CC-NIE Network Infrastructure: Enhancements to Support Data-Driven Discovery at the University of Washington*, \$497,461

National Science Foundation, 2011-13 (awarded to Computing Research Association). Co-PI (with M.F. Kaashoek, E. Gianchandani, G. Hager, L. Fortnow), Grant No. CNS-1136996, *The Third Computing Innovation Fellows Project*, \$7,397,537

National Science Foundation, 2010-14. Co-PI (with E. Riskin, J. Turns, S. Winter), Grant No. DUE-0965816, *Engineering the Husky Promise*, \$600,000

National Science Foundation, 2010-15. Co-PI (with D. Lassner, R. Johnson, J. Dolgonas), Grant No. OCI-0962931, *IRNC: ProNet - TransLight / Pacific Wave*, \$3,999,771

National Science Foundation, 2010-14 (awarded to Computing Research Association). Co-PI (with G. Andrews, S. Graham, A. Bernat), Grant No. CNS-1019343, *The Second Computing Innovation Fellows Project*, \$14,995,174

Google Inc., 2007, 08, 09, 10, 11, 12, 13. PI, *CS4HS* (Computer Science for High School Teachers), \$177,000 total

Gordon and Betty Moore Foundation, 2009-13. PI (with W. Howe), *eScience: Computational Science for the 21st Century*, \$741,358 + \$73,612

National Science Foundation, 2008-09. PI (with J. Dougherty), Grant No. IIS-0836525, *Preparing Students and Teachers for Large-Scale Cluster Computing*, \$49,778

Microsoft Corporation, 2007-08. PI, *Oceanography Workbench* (award amount confidential)

National Science Foundation, 2006-12 (awarded to Computing Research Association). PI (with A. Bernat, S. Graham, A. Jones, D. Reed), Grant No. CNS-0637190: *The Computing Community Consortium*, \$6,092,111 + \$9,505 + \$101,762 + \$37,673

National Science Foundation, 2006-10. Co-PI (with T. Anderson, A. Krishnamurthy), Grant No. MRI-0619836: *Enabling Lightweight Planetary Scale Services*, \$987,933

Microsoft Corporation, 2006. Co-PI (with T. Anderson, N. Garg, T. Parikh), *DSH and CAM: Leveraging Low Cost Technology for Rural India*, \$100,000

Ricoh Co., Ltd., 2006. Co-PI (with T. Parikh), *ORIGINS Pilot Project*, \$25,000

National Science Foundation, 2005-06. Co-PI (with G. Borriello, C. Diorio), Grant No. CNS-0454394: *RFID Ecosystem*, \$200,401

National Science Foundation, 2005-06, 2006-07, 2007-08. Co-PI (with R. Nolan, M. Eisenberg, M. Cotteleer, D. Croson, R. Mason, W. Harman, G. Westerman), Grants No. IIS-0534789, IIS-0627990, IIS-0723914: *Seattle Innovation Symposium*, \$90,000 total

National Science Foundation, 2004-08. Co-PI (with M. Abbott, J. Delaney, R. Johnson, J. Orcutt, L. Smarr), Grant No. ITR-0428483: *Next-Generation Cyber-Infrastructure for Interactive Ocean Observatories*, \$3,972,826

National Science Foundation, 2000-08. PI (with T. Duchamp), Grants No. DUE-0323900, DUE-9987159: *Advancing Student Success in Computer Science, Engineering and the Mathematical Sciences*, \$995,000 total

Intel Corporation, 2002-03. PI, *Laboratory Upgrade for UW CSE*, \$250,000

Microsoft Corporation and High Speed Connectivity Consortium, 2001-05. Co-PI (with R. Anderson, F. Videon), *Distributed Education*, \$480,000

Intel Corporation, 2000. PI, *Gigabit-to-the-Desktop Initiative*, \$155,000 (100% allowance on equipment)

National Science Foundation, 1999-2001. Co-PI (with J. Hook, C. Pu, C. Brown, W. Hersh, D. Steere), Grant No. ANI-9975992: *High Performance Metropolitan and Internet2 Connectivity for Portland Oregon Research Institutions*, \$1,228,000 (including 55% institutional contribution)

Intel Corporation, 1997. Co-PI (with G. Lake, G. Zick), *Technology for Higher Education 2000* (campus-wide project), \$5,900,000 (100% allowance on equipment)

National Science Foundation, 1996-98. Co-PI (with S. Corbato, T. Gray, C. Stubbs), Grant No. NCR-9617039: *vBNS Connectivity for the University of Washington*, \$904,000 (including 60% UW contribution)

Intel Corporation, 1996, 1997. Co-PI (with B. Bershad, M. Soma, G. Zick), *Enhancing the Engineering Curriculum on the PC Platform*, \$925,000 for 1996, \$1,500,000 for 1997 (100% allowance on equipment)

IBM Corporation, 1994-95. Co-PI (with B. Bershad), *System Structure for Advanced Processors*, \$750,000 (100% allowance on equipment)

Intel Corporation, 1993-94. Co-PI (with G. Zick), *Collaborative Research in High Performance Computing*, \$761,000 (100% allowance on equipment)

National Science Foundation, 1992-97. Co-PI (with H. Levy, J. Zahorjan), Grant No. CCR-9200832: *System Support for High Performance Computing*, \$1,984,000 (including 20% UW contribution)

National Science Foundation, 1992-96. Co-PI (with R. Anderson, A. Borning, T. DeRose, H. Levy, D. Notkin, L. Snyder, S. Tanimoto, J. Zahorjan), Grant No. CDA-9123308: *High Performance Parallel/Distributed Computing (II Program)*, \$1,765,000 (including 25% UW contribution)

National Aeronautics and Space Administration, 1992-95. Co-PI (with L. Adams, R. Anderson, J. Bardeen, R. Carlberg, C. Hogan, G. Lake (PI), W. Petersen, L. Snyder), *Large Scale Structure and Galaxy Formation*, \$1,549,000

Digital Equipment Corporation, 1990-93. Co-PI (with H. Levy), Research Agreement #1076: *Operating System Support for Contemporary Multi-Computers*, \$960,000 (80% allowance on \$1,200,000 in equipment)

National Science Foundation, 1989-92. Co-PI (with H. Levy), Grant No. CCR-8907666: *Amber: Programming Support for Networks of Multiprocessors*, \$343,000

National Science Foundation, 1987-92. Project Director and Co-PI (with J.-L. Baer, H. Levy, L. Snyder, W. Ruzzo, S. Tanimoto, J. Zahorjan), Grant No. CCR-8619663: *Effective Use of Parallel Computing (CER Program)*, \$4,808,000 (including 25% UW contribution)

National Science Foundation, 1987-91. Co-PI (with J. Zahorjan), Grant No. CCR-8703049: *Performance of Parallel Systems*, \$320,000

Representative Recent Professional Activities

American Association for the Advancement of Science Section T (Information, Computing, and Communication) Council Delegate, 2020-23; Section Chair, 2009-10; Steering Group, 2003-11; ACM liaison to AAAS, 2002-08

National Science Foundation Search Advisory Committee for the Assistant Director for Computer and Information Science and Engineering, 2019

National Academy of Engineering, Councilor, 2018-21

National Science Foundation Advisory Committee for Cyberinfrastructure, 2018-21

Living Computers Museum + Lab, Board of Directors, 2018-19

National Academies Committee on Impacts of Sexual Harassment in Academia, 2016-18

ACM Prize in Computing, Award Committee, 2016-21 (Chair, 2020)

Brown University Department of Computer Science Alumni Advisory Board, 2016-

U.S. Department of Energy Pacific Northwest National Laboratory Physical & Computational Sciences Directorate Advisory Committee, 2016-

Arivale, Scientific Advisory Board, 2015-19

Information Science and Technology (ISAT) Study Group of the Defense Advanced Research Projects Agency, Steering Committee, 2014-17

National Academies Committee on Women in Science, Engineering, and Medicine, 2014-

Allen Institute for Artificial Intelligence, Board of Directors, 2013-

National Academy of Engineering, Membership Policy Committee, 2013-16

T4A.org Convening Board, 2013-17

Institute for Systems Biology, President's Council and Scientific Advisory Board, 2012-

U.S. Department of Energy Lawrence Berkeley National Laboratory Computational Research Division Review Committee, 2012

NASA Advisory Council, Information Technology Infrastructure Committee, 2012-13

NSF Computer and Information Science and Engineering Directorate Advisory Subcommittee on Education and Workforce, 2012-14

NSF Computer and Information Science and Engineering Directorate Advisory Subcommittee on Mid-Scale Infrastructure, 2012-13

Co-chair (with D.E. Shaw), Working Group of the President's Council of Advisors on Science and Technology (PCAST) to review the Networking and Information Technology Research and Development (NITRD) Program, 2010

Founding Chair, Computing Community Consortium, 2007-13

U.S. Department of Energy, Energy Efficiency and Renewable Energy Advisory Committee (ERAC), 2010-12

U.S. Department of Energy Pacific Northwest National Laboratory Future Power Grid Initiative Advisory Committee, 2011-15

U.S. Department of Energy Pacific Northwest National Laboratory Fundamental & Computational Sciences Directorate Advisory Committee, 2009-16

National Academies Committee on Management of University Intellectual Property, 2008-10

National Academies Committee on Assessing the Impacts of Changes in the Information Technology Research and Development Infrastructure, 2006-08
 Chair, Computing Research Association GENI Community Advisory Board, 2006-07
 Co-chair (with M. Benioff), President's Information Technology Advisory Committee, 2003-05
 Chair, Information Science and Technology (ISAT) Study Group of the Defense Advanced Research Projects Agency, 2005-06; Vice Chair (Chair-designate), 2003-04; Member, 1998-2001
 Corporate Technical Advisory Boards: Microsoft Research, 1991-2016; Voyager Capital, 1996-; E-Quill, 2000-02; Ignition Partners, 2000-10; Frazier Technology Ventures, 2000-06; Madrona Venture Group, 2000-; Impinj, 2001-10; Conenza, 2007-09; Microsoft Research India, 2014-; Arivale 2015-19
 Corporate Boards of Directors: Data I/O Corp., 1996-2009; Intrepid Learning Solutions, 1999-2006; Pacific Northwest GigaPoP, 1999-2011; Allen Institute for Artificial Intelligence, 2013-; Living Computers Museum + Lab, 2018-19
 Organizational Boards of Directors: Washington State Academy of Sciences, 2007-13 (Secretary, 2009-12); Washington Technology Industry Association (formerly Washington Software Alliance), 1996- (Executive Committee, 2008-); Computing Research Association, 1992-2004 (Chair, 1997-2001; Chair, Government Affairs Committee, 1992-97 and 2001-03); Technology Alliance of Washington, 2000-17 (Executive Committee, 2001-17; Vice President, 2001-03; Council member, 1995-2000); ACM Council, 2000-03; Lakeside School, 2001-04; Washington Digital Learning Commons, 2003-11; Pacific Wave, 2001-11
 State of Washington Information Services Board, 1995-2011
 National Academy of Engineering Section 5 (Computer Science & Engineering) Chair, 2006-08; Vice Chair (Chair-designate), 2006; Peer Committee Chair (and member of the NAE Committee on Membership), 2004, Vice Chair (Chair-designate), 2003, Member, 2002-06
 American Academy of Arts & Sciences, Membership Panel, Class I Section 6 (Computer Sciences), 2006-18
 Chair, ACM Distinguished Dissertation Award Committee, 2005; Member, 2002-06
 Executive Advisory Council, National Center for Women and Information Technology, 2004-
 Prosperity Partnership Higher Education Working Group, 2005-07
 Computer Science and Telecommunications Board of the National Research Council, 1996-2002
 Chair, NSF Advisory Committee for Computer and Information Science and Engineering, 1998-99; Member, 1995-2000
 National Academies Committee on Science and Technology for Countering Terrorism: Panel on Information Technology, 2001-02
 National Academies Committee on Improving Learning with Information Technology, 2001-02
 National Academies Committee on Research Horizons in Networking, 2000-01
 Chair, ACM A.M. Turing Award Committee, 1999; Member, 1996-2001
 National Science Foundation 50th Anniversary Public Advisory Committee, 1998-99
 National Academies Committee to Review the Multi-Agency HPCC Program ("Brooks/Sutherland Committee"), 1994-95
 Chair, university-level review committees for UC Berkeley Dept. of EECS (2009), UC San Diego Dept. of CSE (2008), Georgia Institute of Technology College of Computing (2002), Princeton Univ. Dept. of CS (1999), Univ. of Virginia Dept. of CS (1999), Rice Univ. Dept. of CS (1998), Brown University Dept. of CS (2018), University of Hawaii Dept. of ICS (2019)
 Standing advisory committees in past years for Univ. of Virginia Dept. of CS, Georgia Institute of Technology College of Computing, Hong Kong Univ. of Science & Technology Dept. of CS, National College of Ireland Program in Informatics, Princeton University Dept. of CS
 Editor, *IEEE Transactions on Computers*, 1988-94
 Chair, Committee of Examiners, GRE Computer Science Test, 1986-90; Member, 1982-90
 Chair, ACM Special Interest Group on Measurement and Evaluation (SIGMETRICS), 1985-89
 IFIP Working Group 7.3 on Computer System Modeling, 1986-

Student Supervision

23 Ph.D. completed, 23 M.S. completed. Ph.D. students:
 Richard L. Garner, 1982 (Cedar River Software)
 Patricia A. Jacobson, 1984
 Stephen C. Vestal, 1987 (Honeywell Research)
 John K. Bennett, 1988 (Rice University -> University of Colorado)
 Haim E. Mizrahi, 1988 (co-supervised with J.-L. Baer) (Raphael (Israel))
 David B. Wagner, 1989 (University of Colorado -> Principia Consulting)
 Brian N. Bershad, 1990 (co-supervised with H. Levy) (Carnegie Mellon University -> University of Washington -> Google -> retired) (NSF PYI Award, NSF PFF Award, and ONR YI Award recipient)
 Yi-Bing Lin, 1990 (Bell Communications Research -> National Chiao-Tung University (Taiwan))
 Mark S. Squillante, 1990 (IBM T.J. Watson Research Center)
 Sung K. Chung, 1990 (co-supervised with D. Notkin) (IBM T.J. Watson Research Center (postdoc) -> Microsoft)
 Thomas E. Anderson, 1991 (co-supervised with H. Levy) (University of California, Berkeley -> University of Washington) (NSF PYI Award, NSF PFF Award, and Sloan Research Fellowship recipient; Member, National Academy of Engineering)
 B. Clifford Neuman, 1992 (USC Information Sciences Institute)

Edward W. Felten, 1993 (co-supervised with J. Zahorjan) (Princeton University) (NSF YI Award and Sloan Research Fellowship recipient; Member, National Academy of Engineering; Fellow, American Academy of Arts & Sciences)

Chandramohan A. Thekkath, 1994 (co-supervised with H. Levy) (DEC Systems Research Center -> Microsoft Research)

Robert Bedichek, 1994 (co-supervised with H. Levy) (MIT (postdoc) -> Transmeta Corp. -> AMD Corp. -> Apple -> Intel)

Michael Rabinovich, 1994 (AT&T Bell Laboratories -> Case Western Reserve University)

Jeffrey S. Chase, 1995 (co-supervised with H. Levy) (Duke University)

Dylan J. McNamee, 1996 (co-supervised with H. Levy) (Oregon Graduate Institute -> Galois -> Reed College)

Brian Pinkerton, 2000 (co-supervised with J. Zahorjan) (Consultant -> Amazon A9 -> Chan Zuckerberg Initiative -> Apple)

Tapan Parikh, 2007 (co-supervised with D. Notkin) (University of California, Berkeley -> Cornell Tech NYC)

Sujay Parekh, 2010 (IBM Research -> Bloomberg LP)

Keith Grochow, 2011 (National ICT Australia Ltd. -> consultant)

Shrainik Jain, 2019 (co-supervised with Bill Howe) (Snowflake)

Representative Publications

- E. Lazowska, J. Zahorjan, G. Graham, and K. Sevcik. *Quantitative System Performance: Computer System Analysis Using Queueing Network Models*. Prentice-Hall, 1984.
- D. Eager, E. Lazowska, and J. Zahorjan. Adaptive Load Sharing in Homogeneous Distributed Systems. *IEEE Trans. on Software Engr. SE-12,4* (May 1986).
- D. Eager, E. Lazowska, and J. Zahorjan. A Comparison of Receiver-Initiated and Sender-Initiated Adaptive Load Sharing. *Performance Evaluation 6* (1986). (Award Paper, 1985 ACM SIGMETRICS Conf., and inaugural ACM SIGMETRICS Test-of-Time Award, 2010.)
- D. Eager, J. Zahorjan, and E. Lazowska. Speedup vs. Efficiency in Parallel Systems. *IEEE Trans. on Computers 38,3* (March 1989).
- T. Anderson, E. Lazowska, and H. Levy. The Performance Implications of Thread Management Alternatives for Shared-Memory Multiprocessors. *IEEE Trans. on Computers 38,12* (Dec. 1989). (Award paper, 1989 ACM SIGMETRICS Conf.)
- J. Chase, F. Amador, E. Lazowska, H. Levy, and R. Littlefield. The Amber System: Parallel Programming on a Network of Multiprocessors. *Proc. 12th ACM Symp. on Operating Systems Principles* (Dec. 1989).
- B. Bershad, T. Anderson, E. Lazowska, and H. Levy. Lightweight Remote Procedure Call. *ACM Trans. on Computer Systems 8,1* (Feb. 1990). (Award paper, 12th ACM Symp. on Operating Systems Principles.)
- T. Anderson and E. Lazowska. Quartz: A Tool for Tuning Parallel Program Performance. *Proc. ACM SIGMETRICS Conf. on Measurement and Modeling of Computer Systems* (May 1990).
- T. Anderson, H. Levy, B. Bershad, and E. Lazowska. The Interaction of Architecture and Operating System Design. *Proc. 4th International Conf. On Architectural Support for Programming Languages and Operating Systems* (April 1991).
- B. Bershad, T. Anderson, E. Lazowska, and H. Levy. User-Level Interprocess Communication for Shared Memory Multiprocessors. *ACM Trans. on Computer Systems 9,2* (May 1991).
- T. Anderson, B. Bershad, E. Lazowska, and H. Levy. Scheduler Activations: Effective Kernel Support for the User-Level Management of Parallelism. *ACM Trans. on Computer Systems 10,1* (Feb. 1992). (Award paper, 13th ACM Symp. on Operating Systems Principles.)
- C. Thekkath, T. Nguyen, E. Moy, and E. Lazowska. Implementing Network Protocols at User Level. *IEEE/ACM Trans. on Networking 1,5* (Oct. 1993). (Award paper, ACM SIGCOMM '93 Symp.)
- M. Vernon, E. Lazowska, and S. Personick, eds. *R&D for the NII: Technical Challenges*. EDUCOM, May 1994.
- C. Thekkath, H. Levy, and E. Lazowska. Separating Data and Control Transfer in Distributed Operating Systems. *Proc. 6th International Conf. On Architectural Support for Programming Languages and Operating Systems* (Oct. 1994).
- J. Chase, H. Levy, M. Feeley, and E. Lazowska. Sharing and Protection in a Single Address Space Operating System. *ACM Trans. on Computer Systems 12,4* (Nov. 1994).
- T. Anderson, B. Bershad, E. Lazowska, and H. Levy. Thread Management for Shared-Memory Multiprocessors. *The Computer Science and Engineering Handbook 1997*.
- G. Voelker, H. Jamrozik, M. Vernon, H. Levy, and E. Lazowska. Managing Server Load in Global Memory Systems. *Proc. ACM SIGMETRICS Conf. on Measurement and Modeling of Computer Systems* (June 1997).
- T. Alberg, W. Finkbeiner, E. Lazowska, and D. Rosen. *Policy Initiatives to Increase the Availability of Advanced Telecommunications Services Throughout Washington State*. Technology Alliance of Washington, 1998.
- E. Lazowska. Pale and Male: 19th Century Design in a 21st Century World. *SIGCSE Bulletin 34(2)* (March 2002).
- B. Schilit, A. LaMarca, G. Borriello, W. Griswold, D. McDonald, E. Lazowska, A. Balachandran, J. Hong, and V. Iverson. Challenge: Ubiquitous Location-Aware Computing and the "Place Lab" Initiative. *Proc. 1st ACM Intl. Wkshp. on Wireless Mobile Applications and Services on WLAN Hotspots (WMASH 2003)* (Sept. 2003).
- B. St. Arnaud, A. Chave, A. Maffei, E. Lazowska, L. Smarr, and G. Gopalan. An Integrated Approach to Ocean Observatory Data Acquisition/Management and Infrastructure Control Using Web Services. *Marine Technology Society Journal* (2004).
- E. Lazowska and D. Patterson. An Endless Frontier Postponed. *Science 308*, 6 (May 2005).

- E. Lazowska and D. Patterson. Computing Research: A Looming Crisis. *ACM SIGCOMM Computer Communication Review* 35,3 (July 2005).
- D. Richardson, S. Gribble, and E. Lazowska. The Limits of Global Scanning Worm Detectors in the Presence of Background Noise. *Proc. 3rd Workshop on Rapid Malcode* (Nov. 2005).
- T. Parikh and E. Lazowska. Designing an Architecture for Delivering Mobile Information Services to the Rural Developing World. *Proc. World Wide Web Conf. 2006* (May 2006).
- E. Lazowska and J. Zahorjan. In Memoriam: Kenneth C. Sevcik. *Proc. ACM SIGMETRICS / Performance '06* (June 2006).
- L. Blum, T. Cortina, E. Lazowska, and J. Wise. The Expansion of CS4HS, an Outreach Program for High School Teachers. *Proc. SIGCSE 2008* (March 2008).
- E. Lazowska. 500 Special Relationships: Jim Gray as a Mentor to Faculty and Students. *SIGMOD Record* 37(2) (June 2008).
- K. Grochow, M. Stoermer, D. Kelley, J. Delaney, and E. Lazowska. COVE: A Visual Environment for Ocean Observatory Design. *J. Physics: Conference Series* 125 (2008) 012092.
- R. Barga, J. Jackson, N. Araujo, D. Guo, N. Gautam, K. Grochow, and E. Lazowska. Trident: Scientific Workflow Workbench for Oceanography. *Proc. SERVICES I 2008* (July 2008).
- K. Grochow, B. Howe, M. Stoermer, R. Barga, and E. Lazowska. Client + Cloud: Evaluating Seamless Architectures for Visual Data Analytics in the Ocean Sciences. *Proc. 22nd Intl. Conf. on Scientific and Statistical Database Management* (June 2010).
- K. Grochow, M. Stoermer, J. Fogarty, C. Lee, B. Howe, and E. Lazowska. COVE: A Visual Environment for Multidisciplinary Ocean Science Collaboration. *Proc. IEEE e-Science 2010 Conf.* (Dec. 2010).
- E. Lazowska, D. Shaw, et al. *Designing a Digital Future: Federally Funded Research and Development in Networking and Information Technology*. President's Council of Advisors on Science and Technology (Dec. 2010).
- C. Eney, E. Lazowska, H. Martin, and S. Reges. Broadening Participation: The Why and the How. *Computer* 46,3 (March 2013).
- A. Rokem, C. Aragon, A. Arendt, B. Fiore-Gartland, B. Hazelton, J. Hellerstein, B. Herman, B. Howe, E. Lazowska, M. Parker, V. Staneva, S. Stone, A. Tanweer, and J. Vanderplas. Building an Urban Data Science Summer Program at the University of Washington eScience Institute. *Proc. Bloomberg Data for Good Exchange* (Sept. 2015).
- S. Jain, D. Moritz, D. Halperin, B. Howe, and E. Lazowska. SQLShare: Results from a Multi-Year SQL-as-a-Service Experiment. *Proc. 2016 ACM International Conf. on Management of Data (SIGMOD/PODS)* (June 2016). (Most Reproducible Paper Award, 2017.)
- E. Lazowska. How to Encourage Data-Driven Discovery. *Chronicle of Higher Education* 2018 Trends Report (March 2018). (Written to draw attention to the white paper Creating Institutional Change in Data Science, available at http://msdse.org/creating_institutional_change.html.)
- C.D. Mote Jr., S. Widnall, and E. Lazowska. Sexual Harassment is a Threat to Engineering. *Spectrum* (Nov. 2018). (Written to draw attention to the National Academies report *Sexual Harassment of Women: Climate, Culture, and Consequences in Academic Sciences, Engineering, and Medicine*, available at <http://www.nationalacademies.org/sexualharassment>.)

Representative Recent Invited Talks

- Northwestern University McCormick School of Engineering Dean's Lecture, "Computer Science: The Ever-Expanding Sphere," April 2016
- Chesapeake Large-Scale Analytics Conference Keynote Address, "The Moore/Sloan Data Science Environments: Advancing Data-Intensive Discovery," October 2015
- University of Colorado at Denver Chancellor's Distinguished Lecture, "Big Data, Enormous Opportunity," September 2015
- University of Toronto Department of Computer Science 50th Anniversary Keynote Address, "Computer Science: The Ever-Expanding Sphere," June 2015
- Computing Research Association Leadership in Science Policy Institute, "Advisory Committees 101," April 2015
- Rutgers University Department of Computer Science Distinguished Lecture, "Big Data, Enormous Opportunity," February 2015
- Microsoft Research India TechVista 10, "Tsunami or Sea Change? Responding to the Explosion of Student Interest in Computer Science," January 2015
- NRC Computer Science and Telecommunications Board Committee on Future Directions for NSF Advanced Computing Infrastructure to Support US Science in 2017-2020, "A Plea for Greater Attention to Data-Intensive Discovery, Greater Investment in Intellectual and Software Infrastructure, and Greater Use of the Commercial Cloud," December 2014
- UC San Diego Department of Computer Science and Engineering Distinguished Lecture, "Computer Science: The Ever-Expanding Sphere," December 2014
- Harvey Mudd College Department of Computer Science Distinguished Lecture, "Big Data, Enormous Opportunity," October 2014
- UC Irvine Department of Computer Science Distinguished Lecture, "Big Data, Enormous Opportunity," May 2014
- 2014 Computing Research Association Conference at Snowbird, "Tsunami or Sea Change? Responding to the Explosion of Student Interest in Computer Science," July 2014
- Amazon International Ambassador Delegation invited talk, "Data Science @ UW," June 2014
- 2014 NCWIT Summit on Women and IT, "Tsunami or Sea Change? Responding to the Explosion of Student Interest in Computer Science," May 2014

Johns Hopkins University 2014 Edward and Carolyn Wenk Lecture in Technology and Public Policy, “Computer Science, Global Challenges, and National Policy,” April 2014
 University of Utah 2014 Organick Lectures, “Computer Science, Global Challenges, and National Policy” and “Big Data, Enormous Opportunity,” April 2014
 White House Office of Science and Technology Policy, “Harnessing the Potential of Data Scientists and Big Data for Scientific Discovery,” November 2013
 Brookings Institution Board of Directors, “A Tale of Two Washingtons,” November 2013
 University at Buffalo Presidential Lecture, “Big Data, Enormous Opportunity,” September 2013
 National Science Board, “Thoughts on ‘The Future of Advanced Cyberinfrastructure for Science and Engineering Research and Education,’” September 2013
 ACM SIGCSE Conference Keynote Address, “Why Broadening Participation Matters,” March 2013
 United States House of Representatives Science, Space, and Technology Committee, February 2013
 University of Michigan EECS Distinguished Lecture, “Computer Science: Past, Present, and Future,” October 2012
 Reed College Freshman Convocation, August 2012
 Computing Research Association Conference at Snowbird, “On the Edge: The Future of Computing Research, July 2012
 Boston University Hariri Institute Inaugural, “eScience: Computational Science for the 21st Century,” April 2012
 NRC Computer Science & Telecommunications Board, “The Computing Community Consortium,” March 2012
 Modern Language Association 127th Annual Convention, “It’s the Data, Stupid!,” January 2012
 University of Waterloo Computer Science Distinguished Lecture, “Computer Science: Past, Present, and Future,” October 2011
 Washington State Academy of Sciences, “STEM Education in Washington: The Facts of the Matter,” September 2011
 United States House of Representatives Science, Space, and Technology Committee, September 2011
 MIT 150th Anniversary Symposium, “Computer Systems Research and the Transformation of Practically Everything,” April 2011
 NRC Computer Science and Telecommunications Board, “Designing a Digital Future,” March 2011
 White House Office of Science and Technology Policy, “Designing a Digital Future,” December 2010
 President’s Council of Advisors on Science and Technology, “Designing a Digital Future,” November 2010
 Harvard University Computer Science Distinguished Lecture, “Computer Science: Past, Present, and Future,” April 2010
 University of Pennsylvania Computer & Information Science Distinguished Lecture, “Computer Science: Past, Present, and Future,” April 2010

Synergistic Activities

K-12: Lazowska has received the Seattle Alliance for Education A+ *Partnership Award* and the University of Washington *Outstanding Public Service Award* for high-impact contributions to K-12 outreach and educational technology in the Seattle area and throughout the State of Washington. For more than a decade he has directed CS4HS-UW, an annual summer workshop on computer science and computational thinking for high school STEM teachers.

Higher education: Lazowska was a PI on the University of Washington’s three NSF CSEMS projects, and received the 2007 *Computer Science & Engineering Undergraduate Teaching Award*. Under his leadership as chair, UW Computer Science & Engineering received the inaugural *UW Brotman Award for Instructional Excellence* and CSE faculty received 4 *UW Distinguished Teaching Awards* and the *UW Outstanding Graduate Mentor Award*.

Regional leadership: Lazowska serves on Board and Executive Committee of the Washington Technology Industry Association, and until recently the Washington Technology Alliance and the Washington State Academy of Sciences.

National leadership: Lazowska received the 2005 *Computing Research Association Distinguished Service Award* for outstanding service to the computing research community, the 2005 *ACM Presidential Award* from the Association for Computing Machinery “for showing us how to advocate effectively for IT research and advanced education,” and the 2009 *ACM Distinguished Service Award* “for more than two decades of wide-ranging and tireless service to the computing community, especially in advocacy at a national level.” He serves on the Executive Advisory Council of the National Center for Women and Information Technology, and on the National Academies Committee on Women in Science, Engineering, and Medicine. He served as the Founding Chair of the Computing Community Consortium (an NSF-funded effort to engage the computing research community in envisioning and pursuing more audacious research challenges) from 2007-13, as Co-Chair of the President’s Information Technology Advisory Committee from 2003-05, and as Co-Chair of the PCAST Working Group for the 2010 assessment of \$4.3B Federal NIT R&D program.

World Wide Web and Email

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