

Publication List

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9/1/18

Publications

Books

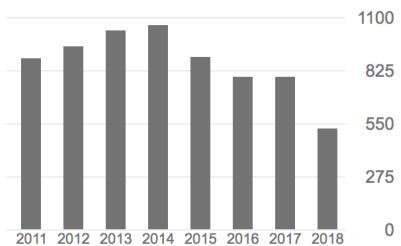
1. *Operating Systems Theory* (with E. G. Coffman, Jr.), Prentice-Hall (1973).
2. *Machines, Languages, and Computation* (with J. Dennis and J. Qualitz), Prentice-Hall (1978).
3. *Computers Under Attack: Intruders, Worms, and Viruses*. ACM Press and Addison-Wesley (1990).
4. *Beyond Calculation: The Next 50 Years of Computing* (Peter J. Denning and Robert M. Metcalfe, eds.). Copernicus Books (1997). (A collection of essays by the leaders of computing.)
5. *Internet Besieged* (Dorothy E. Denning and Peter J. Denning, eds.) Addison-Wesley and ACM Press Books (1997). (A new collection of essays about vulnerabilities of computers and telecommunications.)
6. *Talking Back to the Machine* (Peter J. Denning, ed.). Copernicus Books (1999). An edited collection of essays from speakers at ACM97 conference.
7. *The Invisible Future: The Seamless Integration of Technology in Everyday Life*. (Peter J. Denning, editor). McGraw-Hill (2001).
8. *The Art of Operating Systems*. Simple, elegant models of operating system components tame the complexities of operating systems. Slide version online at <cs.gmu.edu/cne/pjd/ArtOS>. 2002.
9. *The Innovator's Way: Essential Practices for Successful Innovation* (With Robert Dunham) MIT Press, 2010. (Eight personal practices for achieving success at innovation.)
10. *Great Principles of Computing*. (With Craig Martell) A guide on the fundamental science and engineering principles of the computing field. MIT Press, 2015.

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Cited by

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	All	Since 2013
Citations	22538	5107
h-index	60	35
i10-index	177	82



11. *Computational Thinking*. (With Matti Tedre). MIT Press, 2019, to appear.

Journals and Major Conferences (refereed)

11. "Effects of scheduling on file memory operations," *Proc. AFIPS Conf. 30* (1967 SJCC), 9-22.
12. "The working set model for program behavior," *Comm. ACM 11*, 5 (May 1968), 323-333. **(ACM Best System Paper award.)**
13. "A statistical model for console behavior in multiuser computers," *Comm. ACM 11*, 9 (September 1968), 605-612.
14. "Thrashing: Its causes and prevention," *Proc. AFIPS Conf. 32* (1968 FJCC), 915-922.
15. "Equipment configuration in balanced computer systems," *IEEE Transactions Computers C-18*, 11 (November 1969), 1008-1012.
16. "Operating systems: present and future," *Digest IEEE Int'l Convention* (1970), 116-117.
17. "On the determinacy of schemata," *Record Project MAC Conference on Concurrent Systems and Parallel Computation* (June 1970), 143-148. Published by ACM.
18. "Virtual memory," *Computing Surveys 2*, 3 (September 1970), 153-189.
19. "Principles of computer system organization," *Proc. ACM SIGCSE Symposium* (November 1970), 45-55.
20. "Principles of optimal page replacement" (A. Aho, P. Denning, and J. Ullman), *J. ACM 18*, 1 (January 1971), 80-93.
21. "Statistical methods in performance evaluation" (P. Denning and B. Eisenstein), *Proc. ACM Symposium on System Performance Evaluation* (April 1971).
22. "Third generation computer systems," *Computing Surveys 3*, 4 (December 1971), 175-216.
23. "Protection: principles and practice" (P. Denning and G. S. Graham), *Proc. AFIPS Conf. 40* (1972 SJCC), 417-429.
24. "Operating systems principles and undergraduate computer science curricula," *Proc. AFIPS Conf. 40* (1972 SJCC), 849-855. **(AFIPS Best Paper Award.)**
25. "On modelling the behavior of programs," *Proc. AFIPS Conf. 40* (1972 SJCC), 937-944.
26. "Applications of program modelling to hierarchies," *Digest IEEE Int'l Convention* (March 1972), 22-23.

27. "Properties of the working set model" (P. Denning and S. C. Schwartz), *Comm. ACM* 15, 3 (March 1972), 191-198. Corrigendum: *Comm. ACM* 16, 2 (February 1973), 122.
28. "A note on paging drum efficiency," *Computing Surveys* 4, 1 (March 1972), 1-3.
29. "Weak and mixed strategy precedence parsing" (A. Aho, P. Denning, and J. Ullman), *J. ACM* 19, 2 (April 1972), 225-243.
30. "Some thoughts on locality in program behavior" (P. Denning, J. Spirn, and J. Savage), *Proc. Symposium on Computer Communications Networks and Teletraffic*, Polytechnic Institute of Brooklyn (1972), 101-112.
31. "The impact of theory on systems design," *Proc. 10th Allerton Conference*, University of Illinois (October 1972).
32. "Experiments with program locality" (P. Denning and J. Spirn), *Proc. AFIPS Conf. 41* (1972 FJCC), 611-621.
33. "The use of models in systems evaluation" (P. Denning and R. Muntz), in *Record of ACM/NBS Workshop on Performance Evaluation*, National Bureau of Standards (1972).
34. "Dynamic storage partitioning" (P. Denning and J. Spirn), *Proc. 4th ACM Symposium on Operating Systems Principles*, (October 1973), 73-79.
35. "A note on subexpression ordering in the evaluation of arithmetic expressions" (with G. S. Graham), *Comm. ACM* 16, 11 (November 1973), 700-702. Erratum: *Comm. ACM* 17, 8 (August 1974), 455.
36. "Selectively confined subsystems" (P. Denning, D. Denning, and G. S. Graham), *Proc. IRIA Workshop on Protection in Operating Systems* (August 1974), 55-61.
37. "Multiprogramming and program behavior" (P. Denning and G. S. Graham), *Proc. ACM SIGMETRICS Symposium* (October 1974), 1-8.
38. "Comments on a linear paging model," *Proc. ACM SIGMETRICS Symposium* (October 1974), 34-38.
39. "Multiprogrammed memory management" (P. Denning and G. S. Graham), *Proc. IEEE* 63, 6 (June 1975), 924-937. Reprinted in *Infotech State of the Art Report: Virtual Storage* (1976).
40. "On being one's own programming self," *Proc. AFIPS NCC Conf.* (1975), 283.
41. "Two misconceptions about structured programming," *Proc. ACM Annual Conf.* (1975).
42. "A study of program locality and lifetime functions" (P. Denning and K. Kahn), *Proc. 5th ACM Symposium on Operating Systems Principles* (November 1975), 207-216.
43. "An L=S criterion for optimal multiprogramming" (P. Denning and K. Kahn), *Proc. ACM/IFIP Int'l Symposium on Computer Performance Modelling, Measurement, and Evaluation* (March 1976), 219-229.

44. "Sacrificing the calf of flexibility on the altar of reliability," *Proc. 2nd ACM/IEEE Int'l Conf. on Software Engineering* (October 1976).
45. "Optimal multiprogramming" (P. Denning, K. Kahn, J. Leroudier, D. Potier, and R. Suri), *Acta Informatica* 7, 2 (1976), 197-216.
46. "Fault tolerant operating systems," *Computing Surveys* 8, 4 (December 1976), 359-390.
47. "Program certification for secure information flow" (D. Denning and P. Denning), *Comm. ACM* 20, 7 (July 1977), 504-513.
48. "On the relative controllability of memory policies" (P. Denning and G. S. Graham), *Computer Performance* (M. Chandy and M. Reiser, Eds.), North-Holland Publishing Co. (1977), 411-428.
49. "Operational analysis of queueing networks" (J. Buzen and P. Denning), *Proc. 3rd Int'l Symposium on Modelling and Performance Evaluation of Computer Systems*, North-Holland Publishing Co. (1977), 151-172.
50. "The limits of data security" (P. Denning and D. Denning), *AFIPS Abacus* 0, 0 (June 1977).
51. "Operating systems principles for data flow networks," *IEEE Computer* 11, 7 (July 1978), 86-96.
52. "The operational analysis of queueing network models" (P. Denning and J. Buzen), *Computing Surveys* 10, 3 (September 1978), 225-261. Reprinted in *CMG Transactions*, Summer 1994, 29-60.
53. "Generalized working sets for segment reference strings" (P. Denning and D. Slutz), *Comm. ACM* 21, 9 (September 1978), 705-759.
54. "Working sets then and now," *Proc. 2nd Int'l Conf. on Operating Systems*, North-Holland Publishing Co. (1978), at IRIA Laboria, Rocquencourt, France.
55. "Approximations for load distributions in time sharing systems" (P. Denning and G. Balbo), *Ibid.*
56. "Working sets today," *Proc. IEEE COMPSAC* (November 1978).
57. "The tracker: A threat to statistical data base security" (D. Denning, P. Denning, and M. Schwartz), *ACM Transactions on Database Systems* 4, 1 (March 1979), 76-96.
58. "Homogeneous approximations of general queueing networks" (G. Balbo and P. Denning), *Proc. Int'l Symposium on Computer Performance Measurement, Modelling, and Evaluation*, North-Holland Publishing Co. (1979), in Vienna, Austria.
59. "Linear queries in statistical data bases" (D. Denning, P. Denning, and M. Schwartz), *ACM Transactions on Database Systems* 4, 2 (June 1979), 476-482.
60. "Data security" (D. Denning and P. Denning), *Computing Surveys* 11, 3 (September 1979), 227-249. [Executive summary published in *Data Processing Management*, Note 1-03-09 (1980), by Auerbach Publishers, Inc.]

61. "Working sets past and present," *IEEE Transactions on Software Engineering SE-6*, 1 (January 1980), 64-84.
62. "Measuring and calculating queue length distributions" (J. Buzen and P. Denning), *IEEE Computer* 13, 4 (April 1980), 33-44.
63. "Operational treatment of queue distributions and mean value analysis" (J. Buzen and P. Denning), *Computer Performance* 1, 1 (June 1980), 6-15.
64. "On learning how to predict," *IEEE Proc.* 68, (September 1980).
65. "A discipline in crisis: The Snowbird Report," (Peter Denning, Edward Feigenbaum, Paul Gilmore, Anthony Hearn, Robert Ritchie, Joseph Traub). *Comm. ACM* 24, 6 (June 1981), 370-374.
66. "Performance Evaluation: Experimental Computer Science at its Best," *Proc. ACM/SIGMETRICS Conference on Measurement and Modeling of Computer Systems* (September 1981), 106-109.
67. "Low contention semaphores and ready lists" (P. Denning, T. D. Dennis and J. Brumfield), *Comm. ACM* 24, 10 (October 1981), 687-699.
68. "Error Analysis of the Mean Busy Period of a Queue," (P. Denning and W. Kowalk), in *Proc. 10th IMACS*, Vol. 5, North-Holland (1982).
69. "Error Analysis of Homogeneous Mean Response Time and Queue Length Estimators," (Jeff Brumfield and P. Denning), in *Proc. ACM SIGMETRICS Symposium* (August 1982), 215-221.
70. "History and overview of CSNET" (P. Denning, A. Hearn, and C. W. Kern), *Proc. ACM SIGCOMM Symposium* (March 1983), 138-145.
71. "Should distributed systems be hidden?" (P. Denning and R. L. Brown), *Proc. IEEE Int'l Wkshp on Computer Systems Organization* (March 1983), 49-61.
72. "Operational state sequence analysis" (P. Denning and J. Brumfield), *Proc. 9th Int'l Symposium on Computer Performance Modeling, Measurement, and Evaluation*, IFIP Working Group 7.3 (May 1983).
73. "Advanced Operating Systems," (R. Brown, P. Denning, W. Tichy), *IEEE Computer* 17, 10, special issue for 100th Anniversary IEEE (October 1984), 173-190.
74. "Operating Systems," *Scientific American* special issue on computer software (1984), 94-106.
75. "Supercomputers for engineering design," (G. Adams and P. Denning), *Aerospace America* (January 1985), 122-124.
76. "Software for parallel architectures," *Proc. AIAA Conference: Computers in Aerospace* (October 1987).
77. "Computing as a discipline" (P. Denning, D. Comer, D. Gries, M. Mulder, A. Tucker, J. Turner, P. Young), *Communications of ACM* 32, 1 (January 1989), 9-23. A condensed version was published in *IEEE Computer*, February 1989.
78. "Highly Parallel Computation" (P. Denning and W. Tichy), *Science* 250, 1217-1222 (30 November 1990).

79. "Information technology in earth and space sciences," *AIP Conf. Proc. Earth and Space Science Information Systems*. AIP New York (1993), xxvii-xliii. Presented at JPL Symposium for International Space Year (February 1992).
80. "Educating a new engineer", *Communications of ACM* 35, 12 (December 1992), 83-97.
81. "Designing new principles for sustaining research in our universities," *Communications of ACM* 36, 7 (July 1993), 99-104.
82. "A Discipline of Software Architecture" (P. Denning and P. A. Dargan), *ACM Interactions* 1, 1 (January 1994), 55-65. Republished in *Transactions of the South African Institute of Electrical Engineers* 87, 3 (Sept 1996), special issue on software engineering.
83. "Completing the Loops," (P. Denning and R. Medina-Mora), *ORSA/TIMS Interfaces* 25, 3 (May-June 1995), 42-57.
84. "A short theory of multiprogramming," in *Proc. MASCOTS '95*, IEEE Press (January 1995), 2-7.
85. "Re-engineering the engineering school" (P. Denning, D. Menascé, and J. Gerstner). In *Proc. ASEE Conf.* (June 1995), 1037-1042.
86. "Can there be a science of information?" *ACM Computing Surveys* 27 (June 1995), 23-25.
87. "Virtual memory." *ACM Computing Surveys* 28, 1 (1996), 213-216.
88. "Professional software engineering education," *Annals of Software Engineering Education* 6, 1998, 145-166.
89. "Origin of virtual machines and other virtualities." *Annals of the History of Computing* 23 (July-Sept 2001), 73.
90. "Designing an IT College." (with R. Athale, N. Dabbagh, D. Menascé, J. Offutt, M. Pullen, S. Ruth, R. Sandhu). 2001. *Networking the Learner* (Proceedings of the IFIP World Congress on Computers in Education). Kluwer Academic Publishers. 541-550.
91. "Innovation as Language Action." (with Robert Dunham) *ACM Communications* 49 (May 2006), 47-52. (Special section on language-action)
92. "Transformational Events." (with John Hiles). *Computer Science Education* 16, 2 (June 2006), 77-85.
93. "The Great Principles of Computing." *American Scientist* 98 (Sep-Oct 2010), 369-372. **(Selected for Best Writings on Mathematics 2010 (Mircea Pitici, Ed.), Princeton University Press (2011).)**
94. "The Information Paradox." (with Tim Bell). *American Scientist* 100, 6 (November-December 2012), 470-477.
95. "Cybersecurity is harder than building bridges." (with Dorothy Denning). *American Scientist* 104 (May-June 2016), 154-157.
96. "The Long Quest for Computational Thinking." (with Matti Tedre) *Proc. 16th Koli Calling Conference on Computing Education Research*, November 24-27,

2016, Koli, Finland, 120-129. [Received conference Best Paper and Best Presentation Awards]

97. "Computational thinking in Science". *American Scientist* 105 (January-February 2017), 13-17.
98. "Exponential laws of computing." (with Ted Lewis). *Communications of ACM* 60, 1 (January 2017), 54-65.
99. "Remaining trouble spots with computational thinking." *Communications of ACM* 60, (June 2017), 33-39.
100. Computers that can run backwards. (with Ted Lewis), *American Scientist* 105 (Sept-Oct 2017), 270-273.
101. Bitcoins maybe; blockchains likely (with Ted Lewis), *American Scientist* 105 (Nov-Dec 2017), 335-339.
102. Computational Design. *ACM Ubiquity*, August, to appear.

Invited Papers (reviewed)

103. "A Scientist's View of Government Control over Scientific Publication," *Comm. ACM* 25, 2 (February 1982), 95-93. Reprinted in *IEEE Trans. on Computers and Society*, (September 1982), together with an article by Admiral B. R. Inman and additional comments by both authors.
104. "The ACM Electronic Publishing Plan," (P. Denning and B. Rous), *Communications of ACM* 38, 4 (April 1995), 97-103. Condensed version in *The Serials Librarian* (NASIG Conf. Proc.), ISSN 0361-526X, Haworth Press, Inc., New York (June 1995), 57-62. Republished in *Astrophysics and Space Science* 247 (1997), 69-82.
105. "The ACM Interim Copyright Policies for Cyberspace," *Communications of ACM* 38, 4 (April 1995), 104-107.
106. "Author's Guide to the ACM Copyright Policies," *Communications of ACM* 38, 4 (April 1995), 107-109.
107. "Business designs for the new university." *Educom Review* (Nov-Dec 1996), 20-33.
108. "A new social contract for research." *Communications ACM* 40(Feb 1997).
109. "The new university." *The Leading Edge*, published by the Society of Exploration of Geophysics (July 1997), 1013-1016.
110. "Skewer the Stereotype." *Educom Review* 33, 3 (May-June 1998), 30-34.
111. "Computing the profession." *Educom Review* 33 (Nov-Dec 1998), 26-30, 46-59.
112. "Teaching as a social process." *Educom Review* 34 (May-June 1999), 18-22.
113. "The professional teacher." *GMU Inventio* (Spring 1999), on the web <http://www.doiit.gmu.edu/inventio>.

114. "Our seed corn is growing in the commons." In *Information Impacts* (iMP), an electronic magazine of opinion, <<http://www.cisp.org/imp/>>, (March 1999).
115. "A model curriculum for an IT College at University of United Arab Emirates." (with R. Athale, N. Dabbagh, D. Menascé, J. Offutt, M. Pullen, S. Ruth, R. Sandhu). Published as web report <cne.gmu.edu/pjd/UAE>. 2001
116. "Getting Your Ideas Adopted." *Tau Beta Pi Bent* (Spring 2011), 21-24.
117. "Computer Science: An Interview" (with Neville Holmes). *IEEE Computer* (March 2011), 94-96.
118. "Innovating the Future: From Ideas to Adoption." World Future Society, *The Futurist* (Jan-Feb 2012), 40-45.
119. Interview (with Dave Walden). *IEEE Annals of the History of Computing* 34, 4 (Oct-Dec 2012), 72-77.
120. Anecdotal story (with Jack Dennis). "Machines, Languages, and Computation at MIT". *IEEE Annals of the History of Computing* (July-September 2015), 2-3.

Invited Book Chapters (reviewed)

121. "The developing theory of operating systems," in *Infotech State of the Art Report: Operating Systems* (1972), 375-394.
122. "Annotated bibliography on operating systems," *Ibid.*, 503-533.
123. "Structuring operating systems for reliability," in *Infotech State of the Art Report: Computer System Reliability* (1974), 481-504.
124. "An operational overview of queueing network models" (J. Buzen and P. Denning), in *Infotech State of the Art Report: Performance Modelling and Prediction* (1977), 75-108.
125. "A hard look at structured programming," in *Infotech State of the Art Report: Structured Programming* (1976), 183-202.
126. "Program behavior, working sets, and multiprogramming," in *Current Trends in Programming Methodology III* (M. Chandy and R. Yeh, Eds.), Prentice-Hall (1978), 298-323.
127. "The impact of operating systems research on software technology," (J. C. Browne, P. Denning, and J. Peterson), in *Research Directions in Software Technology* (P. Wegner, Ed.), MIT Press (1979), 490-513.
128. "Operating Systems," Section 9 of *What Can be Automated?* (B. Arden, Ed.), MIT Press (1980), 665-729. [I was editor of this section; J. Buzen, J. Dennis, R. S. Gaines, P. Brinch Hansen, W. C. Lynch, and E. I. Organick were contributors.]

129. "Research Questions for Performance Analysis of Supercomputers," (with G. B. Adams III), in *SUPERCOMPUTING: State of the Art* (A. Lichniewsky & C. Saguez, eds.), North-Holland (1987), 171-184.
130. "Case Study of Course Scheduling in a University" (P. Denning and Raul Medina-Mora), in *New Tools for New Times: The Workflow Paradigm*, published by Future Strategies, Inc. (1994). Second edition (1995).
131. "Worldnet". In *Studies in Computer Science* (J. Rice and R. DeMillo, Eds.), Plenum Press (1994), 15-27.
132. "Action-Centered Design," (P. Denning and P. A. Dargan). In *Bringing Design to Software* (T. Winograd, Ed.), Addison-Wesley (1996).
133. "Workflow in the web," In *New Tools for New Times: Electronic Commerce* (L. Fischer, ed.), Future Strategies (1996). 45-58.
134. "The new engineer revisited," (interview format with Charlotte Thomas, ed.) *Graduating Engineer*, Spring 1997. Full text of interview at <http://cne.gmu.edu/pjd/perspectives/thomas.html>.
135. "How we will learn." In *Beyond Calculation: The Next 50 Years of Computing* (P. Denning and B. Metcalfe, eds.), Copernicus Books (1997), 267-286.
136. "Quantitative practices." In *Why Numbers Count* (Lynn Arthur Steen, ed.) College Board Press (1997), 106-117.
137. "A glimpse into the future," (interview format with John Gehl, ed.), *Educom Review* (July-August 1997), 14-27.
138. "Getting hyper over learning," (interview with Deborah Coppola, ed.) *ASEE Prism* (May 1997), 12-17.
139. "Before memory was virtual." In *In The Beginning: Personal Recollections of Software Pioneers*. Robert Glass, Ed. (1997), IEEE Press.
140. "The Internet after thirty years." In *Internet Besieged: Countering Cyberspace Scofflaws* (D. Denning and P. Denning, eds.), Addison-Wesley and ACM Press (1997).
141. "Passwords." In *Internet Besieged: Countering Cyberspace Scofflaws* (D. Denning and P. Denning, eds.), Addison-Wesley and ACM Press (1997).
142. "Secure electronic commerce." In *Internet Besieged: Countering Cyberspace Scofflaws* (D. Denning and P. Denning, eds.), Addison-Wesley and ACM Press (1997).
143. "The new engineer newly revised," (interview format with Charlotte Thomas), *Career Track* (Spring 1999).
144. "The end of computer science." In *Future of Computer Science Education* (T. Greening, ed.), Springer-Verlag (2000).
145. "Many zeroes ahead." *ACM Communications* 44, 3 (March 2001), 112-113.
146. "When IT becomes a profession." In *The Invisible Future* (P. J. Denning, ed.) McGraw-Hill (2001), Chapter 18.

147. "Is Security a great principle of computing?" *Proc. World Info Security Education (WISE) Conf: Security Education And Critical Infrastructure* (June 2003).
148. "The Somatic Engineer." *Being Human at Work*. (Richard Strozzi Heckler PhD, ed.), North Atlantic Books (2004).
149. "The Design of reliable operating systems." In *Computer Systems: Theory, Technology, and Applications*. In memory of Roger Needham. (A. Herbert and K. Spärck-Jones, eds.). Springer-Verlag (2004), 79-84.
150. "Coordination." (with Tom Malone) In *Interactive Computation*. (D. Goldin, S. Smolka, P. Wegner, Eds.). Springer (2006), 415-439.
151. "Operational Analysis." In *Computer System Performance Modeling in Perspective* (E. Gelenbe, Ed.). Imperial College Press (2006), 21-33.
152. "The Locality Principle." In *Communication Networks and Computer Systems* (J. Barria, Ed.). Imperial College Press (2006), 43-67.
153. "Deja Vu All Over Again." *ACM Communications* 51, 1 (January 2008), 35-39.
154. "Resolving Wicked Problems Through Collaboration." In *Handbook of Research on Socio-Technical Design and Social Networking Systems* (Brian Whitworth, Ed.). IGI Global (2009).
155. "Pluralistic Coordination" (with Fernando Flores and Gloria Flores). In *Business, Technological, and Social Dimensions of Computer Games* (Maria Manuela Cruz-Cunha, Vitor Hugo Carvalho, Paula Tavares, eds.). IGI Global (2011), 416-431.
156. "Structure and Organization of Computing." In *CRC Handbook of Computer Science and Engineering* (T. Gonzalez, J. Diaz-Herrera, and A. Tucker, Ed.), 3rd Ed. Chapman-Hall, 2014.
157. "Virtual Memory." In *CRC Handbook of Computer Science and Engineering* (T. Gonzalez, J. Diaz-Herrera, and A. Tucker, Ed.), 3rd Ed. Chapman-Hall, 2014.
158. "Being in Uncertainty: Cultivating Leadership Sensibilities in Military Education." (with Susan L. Higgins). In *Innovative Learning: A Key to National Security* (Ralph Doughty and Lin Wells III, eds.), Ch 8. US Army Press, 2015.
159. "Shifting Identities in Computing: From a Useful Tool to a New Method and Theory of Science". (With Matti Tedre as primary author). In *Informatics in the Future* (H. Werthner and F. van Harmelen (eds.), Springer Open, 1-16.

Invited Encyclopedia Articles (reviewed)

160. "The computer: An overview of hardware and software architecture," *Encyclopedia of the Twentieth Century*, Istituto della Enciclopedia Italiana (Rome) (1977).
161. "Operating systems" in *Encyclopedia of Computer Science* (A. Ralston and C. Meek, Eds.), Petrocelli/Charter (1976), 989-1003. Revision in 2nd Edition, Van Nostrand (1983), 1060-74. Revision in 3rd edition, Van Nostrand (1991), 966-980.
162. "Virtual memory," *Ibid.*, 1448-1451. Revision in 2nd Edition, Van Nostrand (1983), 1560-63. Revision in 3rd Edition, Van Nostrand (1991), 1420-1424.
163. Short articles (P. Denning and D. Denning) in *Ibid.*: "Nucleus," 968 [Revision 2nd Ed., *Ibid.*], "Kernel," 817; "Overhead," 1026-27 [Revision 2nd Ed., *Ibid.*, 1091] [Revision 3rd Ed., *Ibid.*, 1005-1006]; "Program status words and state vectors," 1166-67 [Revision 2nd Ed., *Ibid.*, 1246]; "System generation," 1390-91 [Revision 2nd Ed., *Ibid.*, 1474-75]; "Thrashing," 1420-21 [Revision 2nd Ed., *Ibid.*, 1518-19] [Revision in 3rd Ed., *Ibid.*, 1374]; "Throughput," 1421-23 [Revision 2nd Ed., *Ibid.*, 1519-20] [Revision in 3rd Ed., *Ibid.*, 1374-1376]; and "Working set," 1461-1462 [Revision 2nd Ed., *Ibid.*, 1575] [Revision in 3rd Ed., *Ibid.*, 1441-1442].
164. "Queueing network models," in *Encyclopedia of Computer Science* (A. Ralston and E. Reilly, eds.) 2nd edition, Van Nostrand (1983), 1253-55.
165. "Monitors," (P. Denning and W. Tichy) in 3rd Edition *Ibid.*, 996-997.
166. "Swapping," in 3rd Edition *Ibid.*, 1466.
167. "Computer Science Disciplinary Structure," in *Encyclopedia of Computer Science* (A. Ralston and E. Reilly, eds.) 3rd Edition, Van Nostrand (1991), 319-322.
168. "Monitors," (P. Denning and W. Tichy), in 3rd Edition *Ibid.*, 898-899.
169. "Swapping," short article in 3rd Ed. *Ibid.*, 1332.
170. "Computer science", *Grolier Encyclopedia* (1993).
171. "Computer Science," in *Encyclopedia of Computer Science* (A. Ralston, E. O'Reilly, D Hemmendinger, Eds.) New article in 4th Edition, Nature Publishing Group, Grove's Dictionaries (2000), 405-419.
172. "Kernel," in *Encyclopedia of Computer Science* (A. Ralston, E. O'Reilly, D Hemmendinger, Eds.) New article in 4th Edition, Nature Publishing Group, Grove's Dictionaries (2000), 945-946.
173. "Monitor, Synchronization," in *Encyclopedia of Computer Science* (A. Ralston, E. O'Reilly, D Hemmendinger, Eds.) (with W. Tichy) New article in 4th Edition, Nature Publishing Group, Grove's Dictionaries (2000), 1191-1192.
174. "Operating Systems," in *Encyclopedia of Computer Science* (A. Ralston, E. O'Reilly, D Hemmendinger, Eds.) (with W. Tichy and J. Hunt) New article in 4th Edition, Nature Publishing Group, Grove's Dictionaries (2000), 1290-1311.

175. "Overhead," in *Encyclopedia of Computer Science* (A. Ralston, E. O'Reilly, D Hemmendinger, Eds.) New article in 4th Edition, Nature Publishing Group, Grove's Dictionaries (2000), 1341-1343.
176. "Swapping," in *Encyclopedia of Computer Science* (A. Ralston, E. O'Reilly, D Hemmendinger, Eds.) New article in 4th Edition, Nature Publishing Group, Grove's Dictionaries (2000), 1726-1727.
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