

## **I. Personal Information (1/25/2020)**

### I.A. UID, Last Name, First Name, Middle Name, Contact Information

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Mailing Address: A.V. Williams Building, Dept. of Computer Science, University of Maryland, College Park, MD 20742  
  
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Wikipedia: [https://en.wikipedia.org/wiki/Ben\\_Shneiderman](https://en.wikipedia.org/wiki/Ben_Shneiderman)  
Google Scholar: <https://scholar.google.com/citations?user=h4i4fh8AAAAJ&hl=en>  
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### I.B. Academic Appointments at UMD

2017- Emeritus Distinguished University Professor  
2013- Distinguished University Professor  
2013- Affiliate Professor, Glenn L. Martin Professor of Engineering  
2005- Affiliate Professor, College of Information Studies  
2005- Affiliate Professor, College of Engineering  
1991- 2005 Member, Institute for Systems Research  
1989- Professor, Department of Computer Science  
1987- Member, Institute for Advanced Computer Studies  
1980- 1989 Associate Professor, Department of Computer Science  
1976- 1980 Assistant Professor, Department of Information Systems Management

### I.C. Administrative Appointments at UMD

1983- 2000 Founding Director, Human-Computer Interaction Lab,  
Institute for Advanced Computer Studies

### I.D. Other Employment

1973- 1976 Indiana University Assistant Professor, Department of Computer  
Science  
1972- 1973 State University of NY Instructor, Department of Computer Science at Stony  
Brook  
1968- 1972 State University of NY Instructor, Department of Data Processing at  
Farmingdale

## I.E. Educational Background

State University of New York at Stony Brook	Ph.D., Computer Science	1973
State University of New York at Stony Brook	M.S., Computer Science	1972
City College of New York	B.S., Mathematics/ Physics	1968

## Honorary Doctorates

University of Pretoria, South Africa	Honorary Doctorate of Science	2018
Swansea University, Wales, UK	Honorary Doctorate of Science	2018
University of Melbourne, Australia	Honorary Doctorate of Engineering	2017
State University of New York at Stony Brook	Honorary Doctorate	2015
University of Castilla-LaMancha, Spain	Honorary Doctorate	2010
University of Guelph, Canada	Honorary Doctorate of Science	1995

## **II. Research, Scholarly, and Creative Activities**

### II.A. Books (include full citation information and ISBN)

#### II.A.1. Books Authored (specify original or revised edition)

1. Kreitzberg, C. and Shneiderman, B., *Elements of FORTRAN Style: Techniques for Effective Programming*, Harcourt Brace Jovanovich, Inc., New York (1972), 121 pages.
2. Shneiderman, B., *A Self Study Guide to FORTRAN Programming*, State University of New York Independent Study Program, Empire State College, 86 pages, revised edition (1974).
3. Kreitzberg, C. and Shneiderman, B., *FORTRAN Programming: A Spiral Approach*, Harcourt Brace Jovanovich, New York (1975) 2nd Edition (1982), 437 pages plus Instructor's Guide. Bestselling book in this competitive market for several years.
4. Shneiderman, B., *Introduction to Computer Programming*, Indiana University Independent Study Division (1976), 56 pages.
5. Shneiderman, B., *Software Psychology: Human Factors in Computer and Information Systems*, Little, Brown and Co., (formerly Winthrop Publ.) Boston, MA (1980), 320 pages. Main selection - June 1980 Library of Computer and Information Sciences and August 1980 McGraw-Hill Computer Professionals Book Club. Russian translation, 1984.
6. Shneiderman, B., *Let's Learn BASIC: A Kids' Introduction to BASIC Programming*, Apple, Atari, Commodore 64, and IBM versions, Little, Brown and Co., Boston, MA, (1984).
7. Shneiderman, B., *Designing the User Interface: Strategies for Effective Human-Computer Interaction*, Addison-Wesley Publ. Co., Reading, MA (1987), 448 pages.

- Japanese version published by Nikkei-McGraw-Hill (1987), 385 pages. Excerpted in Forester, T. (editor), *Computers in the Human Context: Information Technology, Productivity, and People*, MIT Press, Cambridge, MA, (1989), 166-173. Excerpted in *Educational Media International* 26, 2, (June 1989), 101-106.
8. Shneiderman, B. and Kearsley, G., *Hypertext Hands-On! An Introduction to a New Way of Organizing and Accessing Information*, Addison-Wesley Publ. Co., Reading, MA , book and hypertext disk using Hyperties (May 1989), 192 pages and two disks.
  9. Shneiderman, B., *Designing the User Interface: Strategies for Effective Human-Computer Interaction: Second Edition*, Addison-Wesley Publ. Co., Reading, MA (1992), 573 pages. Japanese version appeared October 1993. Extracts printed in: *Computer Science Syllabus* 7, (Fall 1993), 6-9, and 8 (Winter, 1993), 2-5; *The Review: Association of Human Resources Professionals* 10, 2 (April/May 1994), 12-16.  
**Received Rigo Award from ACM SIG Documentation, 1996.**
  10. Shneiderman, B., *Designing the User Interface: Strategies for Effective Human-Computer Interaction: Third Edition*, Addison-Wesley Publ. Co., Reading, MA (1998), 639 pages. Related book site at <<http://www.awl.com/DTUI>>. German edition, translated by Jurgen Dubau and Arne Willner, MITP-Verlag, Bonn (2002), 701 pages.
  11. Card, S., Mackinlay, J., and Shneiderman, B., *Readings in Information Visualization: Using Vision to Think*, Morgan Kaufmann Publ., San Francisco, CA (1999), 686 pages.
  12. Shneiderman, B., *Leonardo's Laptop: Human Needs and the New Computing Technologies*, MIT Press, Cambridge, MA (October 2002), 256 pages.  
<http://mitpress.mit.edu/books/leonardos-laptop> Finalist in the Independent Book Publishers Awards for 2003, Internet/Computers category. **Winner of IEEE 2004 book award for "Distinguished Literary Contribution furthering Public Understanding of the Profession."** Korean edition (August 2005). Chinese edition (2006), Portuguese edition (2006). Revised extracts published in:
    - [1] *ACM Interactions* 9, 5 (Sept-Oct 2002), 40-53.
    - [2] Creativity support tools, *Communications of the ACM* 45, 10 (October 2002), 116-120.
    - [3] Meeting human needs with new digital imaging technologies, *IEEE Multimedia* 9, 4 (Oct-Dec 2002), 8-14.
    - [4] Imagining the New Computing, *User Experience* 1, 3 (Winter 2002), 20-24.
  13. Bederson, B. and Shneiderman, B., *The Craft of Information Visualization: Readings and Reflections*, Morgan Kaufmann Publ., San Francisco, CA (2003), 410 pages.
  14. Shneiderman, B. and Plaisant, C., *Designing the User Interface: Strategies for Effective Human-Computer Interaction: Fourth Edition*, Addison-Wesley Publ. Co., Reading, MA

- (2005), 684 pages. Related book site at <<http://www.awl.com/DTUI>>. Chinese and Spanish versions appeared in 2005. Revised extracts published in:
- [1] Shneiderman, B., User interface design with speech technologies: A cognitive limitations review, *Intl Journal for Language Data Processing* 28, 2 (2004), 101-109.
  - [2] Shneiderman, B. and Plaisant, C., Chapters 1, 2, 9, and Appendices 1 and 2, in Adams, R. (Compiler), *Natural Computing and Interactive System Design*, Pearson Education, Inc., London (2005), 209-383.
  - [3] Shneiderman, B., Section 3.1-3.3, Managing Design Processes for Successful User Interfaces, in Holziner, A. (Editor), *Proc. 1st Usability Symposium, Austrian Computer Society*, November 8, 2005, Vienna, Austria (2005), 15-27.
15. Shneiderman, B. and Plaisant, C., *Designing the User Interface: Strategies for Effective Human-Computer Interaction: Fifth Edition*, Addison-Wesley Publ. Co., Reading, MA (2010), 606 pages. <http://www.pearsonhighered.com/dtui5einfo/> Chinese and Greek editions (2010).
16. Wilson, M., Kules, W., Schraefel, M., and Shneiderman, B., *From Keyword Search to Exploration: Designing Visual Search Interfaces for the Web*, Monograph in Foundations and Trends in Web Science, <http://www.nowpublishers.com/web/> (2010) Vol. 2: No 1, pp 1-97.  
<http://dx.doi.org/10.1561/1800000003>
17. Hansen, D., Shneiderman, B. and Smith, M. A., *Analyzing Social Media Networks with NodeXL: Insights from a Connected World*, Morgan Kaufmann Publishers (2011). ISBN: 9780123822291  
<http://www.elsevierdirect.com/product.jsp?isbn=9780123822291>
18. Rind, A., Wang, T. D., Aigner, W., Miksch, S., Wongsuphasawat, K., Plaisant, C., and Shneiderman, B., *Interactive Information Visualization for Exploring and Querying Electronic Health Records: A Systematic Review*, Monograph in Foundations and Trends in Human-Computer Interaction 5, 3, <http://www.nowpublishers.com/hci> (2013), 207–298. <http://dx.doi.org/10.1561/1100000039>
19. Shneiderman, B., *The New ABCs of Research: Achieving Breakthrough Collaborations*, Oxford University Press (April 2016), 317 pages. <http://www.cs.umd.edu/hcil/newabcs>  
<https://global.oup.com/academic/product/the-new-abcs-of-research-9780198758839>  
<http://www.amazon.com/New-ABCs-Research-Breakthrough-Collaborations/dp/0198758839/>  
Related Blog posts:
- [1] IEEE Blog, February 4, 2016, [The Benefits of Combining Applied and Basic Research](#)
  - [2] *Times Higher Education Supplement*, February 11, 2016, [Better than blue skies: blending techniques leads to innovation](#)

- [3] Oxford University Press Blog, March 21, 2016, [Can design thinking challenge the scientific method?](#)
- [4] Inside Higher Ed Website, April 6, 2016, [How to Do Team Research](#)
- [5] Oxford University Press Blog, July 23, 2016, [Beyond Brexit panic: An American perspective](#)
- [6] *Communication of the ACM* 59, 8, Viewpoint: [Teamwork in computing research](#) (August 2016), 30-31.
- [7] Oxford University Press Blog, July 30, 2016, [Teaching teamwork.](#)
20. Shneiderman, B., Plaisant, C., Cohen, M., Jacobs, S., and Elmqvist, N., *Designing the User Interface: Strategies for Effective Human-Computer Interaction: Sixth Edition*, Pearson (May 2016). <http://www.cs.umd.edu/hcil/DTUI6>  
<https://www.pearsonhighered.com/program/Shneiderman-Designing-the-User-Interface-Strategies-for-Effective-Human-Computer-Interaction-6th-Edition/PGM327860.html>  
<http://www.amazon.com/Designing-User-Interface-Human-Computer-Interaction/dp/013438038X>  
 Revised extracts:  
 [1] Shneiderman, B., Plaisant, C., Cohen, M., Jacobs, S., Elmqvist, N., and Diakopoulos, N., Grand Challenges in HCI, *ACM Interactions* 23, 5 (Sept-Oct 2016), 24-25.
21. Shneiderman, B., *Rock the Research: Your Guidebook for Accelerating Campus Discovery and Innovation*, Amazon Kindle & Paperback (2018):  
<https://www.amazon.com/Rock-Research-Guidebook-Accelerating-Innovation/dp/1976899729/>
22. Shneiderman, B., *Twin-Win Research: Breakthrough Theories and Validated Solutions for Societal Benefit: Second Edition*, Morgan & Claypool Publishers (2019):  
[http://www.morganclaypoolpublishers.com/catalog\\_Orig/product\\_info.php?products\\_id=1308](http://www.morganclaypoolpublishers.com/catalog_Orig/product_info.php?products_id=1308)
23. Shneiderman, B., *Encounters with HCI Pioneers: A Personal History and Photo Journal*, Morgan & Claypool Publishers (2019):  
[www.morganclaypoolpublishers.com/catalog\\_Orig/product\\_info.php?products\\_id=1363](http://www.morganclaypoolpublishers.com/catalog_Orig/product_info.php?products_id=1363)
24. Hansen, D., Shneiderman, B, Smith, M. A., and Himelboim, I., *Analyzing Social Media Networks with NodeXL: Insights from a Connected World: Second Edition*, Elsevier Publishers (2019). <https://www.elsevier.com/books/analyzing-social-media-networks-with-nodexl/hansen/978-0-12-817756-3>

## II.A.2. Books Edited

1. Shneiderman, B. (Editor), *Database Management Systems* (editor), AFIPS Press, Montvale, NJ (1976), 131 pages.
2. Shneiderman, B. (Editor), *Databases: Improving Usability and Responsiveness*, Academic Press, New York (1978), 431 pages.

3. Badre, A. and Shneiderman, B. (Editor), *Directions in Human/Computer Interaction*, Ablex Publ., Norwood, NJ (1982), 225 pages.
4. Shneiderman, B. (Editor), *Hypertext on Hypertext*, Hyperties disk with 1Mbyte data and graphics incorporating July 1988 *CACM*, ACM Press, New York, NY (July 1988).
5. Shneiderman, B. (Editor), *Sparks of Innovation in Human-Computer Interaction*, Ablex Publishers, Norwood, NJ (1993), 387 pages.

II.A.3. Books Translated (as translator)

II.A.4. Textbooks

II.A.5. Major Reference Works

II.A.6. Exhibition Catalogs

II.A.7. Other

Book Forewords

1. Friedman, D. P., *The Little LISPer*, Science Research Associates, Inc., Chicago (1974).
2. Debski, R., Gassin, J., and Smith, M. (Editors), *Language Learning through Social Computing*, Applied Linguistics Association of Australia, Melbourne (1997), v-viii.
3. Hazemi, R., Hailes, S., and Wilbur, S. (Editors), *The Digital University: Reinventing the Academy*, Springer, London (1998), xxi-xxii.
4. Aggarwal, A., *Web-based Learning and Teaching Technologies: Opportunities and Challenges*, Idea Group Publishing, Hershey, PA (2000), v-vi.
5. \*\*\**NCI Research-based Web Design and Usability Guidelines*, Dept of Health & Human Services, National Institutes of Health, National Cancer Institute, (Sept 2003, revised edition 2006), iii-v. <http://www.usability.gov/pdfs/guidelines.html>
6. Chen, C., *Information Visualization: Beyond the Horizon, 2nd ed.*, Springer (2004), vii-ix.
7. Horton, S., *Access by Design: A Guide to Universal Usability for Web Designers*, New Riders Press, Indianapolis, IN (2005), vii-xi.
8. Hanegan, K., *Building Solutions with the DecisionSite Analytics Platform*, iUniverse, Lincoln, NE (2005), ix-xi.
9. Zhang, P. and Galletta, D. eds., *Human-Computer Interaction and Management Information Systems - Foundations*, M. E. Sharpe, Inc., Armonk, NY (2006).
10. Design for All Newsletter, Vol. 2, No. 1, Universal Usability: Shaping the world for ourselves and our children (January 2007), 6-13. [www.designforall.in](http://www.designforall.in)

11. Lazar, J. (Editor), *Universal Usability: Designing User Interfaces for Diverse Users*, John Wiley & Sons, New York (2007), vii-xiv.
12. Inselberg, A., *Parallel Coordinates: Visual Multidimensional Geometry and Its Applications*, Springer, New York (2009), v-vi.
13. Whitworth, Brian and De Moor, Aldo (Editors), *Handbook of Research on Socio-Technical Design and Social Networking Systems*, IGI Global, Hershey, PA (2009), xxvi-xxix.
14. Aigner, W., Miksch, S., Schumann, H., and Tominski, C., *Visualization of Time-Oriented Data*, Springer, Berlin (2011), vii-viii.
15. Jacko, J. (Editor), *Handbook of Human-Computer Interaction: 3<sup>rd</sup> Edition*, Foreword: The Expanding Impact of Human-Computer Interaction, Taylor & Francis, London (2012), xv-xvi.
16. Newell, Alan, *Design and the Digital Divide: Insights from 40 Years in Computer Support for Older and Disabled People*, Synthesis Lectures on Assistive, Rehabilitative, and Health-Preserving Technologies (Ron Baecker, Editor), Morgan & Claypool Publishers (2011), xvii-xviii.
17. Chen, Chaomei, *Turning Points: The Nature of Creativity*, Springer, New York (2012), v-vii.
18. Golbeck, Jennifer, *Analyzing the Social Web*, Morgan Kaufmann, Waltham, MA (2013), xxiii-xxiv.
19. Lima, Manuel, *The Book of Trees: Visualizing Branches of Knowledge*, Princeton Architectural Press, New York (2014), 7-8.
20. Marcus, Aaron, *Mobile Persuasion Design*, Springer (2015).
21. Parush, Avi, *Conceptual Design for Interactive Systems: Designing for Performance and User Experience*, Morgan Kaufmann Publishers (2015), ix-x.
22. Arias, Ernesto G., Eden, Hal, and Fischer, Gerhard, *The Envisionment and Discovery Collaboratory (EDC): Explorations in Human-Centered Informatics with Tabletop Computing Environments*, Synthesis Lectures on Human-Centered Informatics (Jack M. Carroll, Editor), Morgan & Claypool Publishers (2015), xvii-xix.
23. Lazar, Jonathan, Feng, Jinjuan Heidi, and Hochheiser, Harry, *Research Methods in Human-Computer Interaction: Second Edition*, Morgan Kaufmann Publishers (2017), xxi-xxii.

## II.B. Chapters

### II.B.1. Books

1. Shneiderman, Ben, "Errors", "Data Type", "Rings", "FIFO-LIFO", sections in *Encyclopedia of Computer Science*, Anthony Ralston, Editor, Petrocelli/Charter Publisher, (1976).
2. Shneiderman, Ben, Human Factors Experiments for Developing Quality Software, *INFOTECH State of the Art Report on Software Reliability*, 1977, 263-276.
3. Shneiderman, Ben, System message design: Guidelines and experimental results, In *Directions in Human-Computer Interaction*, Badre, A. and Shneiderman, B. (Editors), Ablex Publ. Co., Norwood, NJ, (1982), 55-78.
4. Shneiderman, Ben, "Human Factors in Computing", 688-690, and "Data Base On-Line", 447-448, Sections of the *Encyclopedia of Computer Science, 2nd Edition*, A. Ralston, Editor (1983).
5. Shneiderman, Ben, Human factors in interactive software, *End User Systems and their Human Factors*, A. Blaser and M. Zoeppritz, Editors, Springer-Verlag, Berlin, (1983), 9-29. Keynote address IBM Heidelberg Conference.
6. Shneiderman, Ben, Correct, complete operations and other principles of interaction, Invited paper for the First USA-Japan Conference on Human-Computer Interaction (August 1984), In *Human-Computer Interaction*, (G. Salvendy, Ed.), Elsevier Science Publishers B.V., (North-Holland), (1984), 135-147.
7. Shneiderman, Ben, A model programming environment, In *Advances in Human-Computer Interaction I*, (R. Hartson, Ed.), Ablex Publ., Norwood, NJ (1985), 105-131.
8. Weiser, M. and Shneiderman, Ben, Human factors of computer programming, In *Handbook of Human Factors* (G. Salvendy, Ed.), John Wiley & Sons, Inc., (1986), 1398-1415, Reprinted in *Tutorial on Software Restructuring*, (R. Arnold, Editor), IEEE EH0244-4 (1986), 67-81.
9. Shneiderman, Ben, Reflections on authoring, editing, and managing hypertext, In (Barrett, E., Editor), *The Society of Text*, MIT Press, Cambridge, MA (1989), 115-131.
10. Shneiderman, Ben, Design guidebook for interaction styles: A taxonomy, rule-base, and some opinions, In (B. Shackel, Ed.), *Human Factors for Informatics Usability*, Cambridge University Press (1990), 325-342. Reprinted in Baecker, R. M., Grudin, J., Buxton, W. A. S., and Greenberg, S. (Editors), *Readings in Human-Computer*



*Interaction: Toward the Year 2000, Second Edition*, Morgan Kaufmann Publishers, Inc., San Francisco, CA (1995), 401-410.

11. Shneiderman, Ben, User interface races, In (B. Laurel, Ed.), *The Art of Human-Computer Interface Design*, Addison-Wesley Publ., Reading, MA (1990), 221-224.
12. Shneiderman, B., Direct manipulation versus agents: Paths to predictable, controllable, and comprehensible interfaces, In Bradshaw, J. (Editor), *Software Agents*, AAAI Press, Menlo Park, CA (1997), 97-106.
13. Shneiderman, B., Universal Usability: A research agenda for human-computer interaction research to empower every citizen. In Earnshaw, R., Guedj, R., Van Dam, A., and Vince, J. (Editors), *Human-Centred Computing, Online Communities, and Virtual Environments*, Springer-Verlag London (2001), 179-189.
14. Shneiderman, B., Supporting creativity with advanced information-abundant user interfaces. In Earnshaw, R., Guedj, R., Van Dam, A., and Vince, J. (Editors), *Human-Centred Computing, Online Communities, and Virtual Environments*, Springer-Verlag London (2001), 469-480.
15. Ceaparu, I., Demner, D., Hung, E., Zhao, H. and Shneiderman, B., "In Web We Trust": Establishing strategic trust among online customers, In Rust, R. and Kannan, P. K. (Editors), *E-Service*, M. E. Sharpe Publishers, Armonk, NY (August 2002), 90-107.
16. Bessiere, K., Ceaparu, I., Lazar, J., Robinson, J., and Shneiderman, B., Social and psychological influences on computer user frustration, In Bucy, E. P. and Newhagen, J. E. (Editors), *Media Access: Social and Psychological Dimensions of New Technology User*, Lawrence Erlbaum Associates, Mahwah, NJ (2004), 91-103.
17. Seo, J. and Shneiderman, B., A knowledge integration framework for information visualization, In Hemmje, M, Niederee, C., and Risse, T. (Editors), *From Integrated Publication and Information Systems to Virtual Information and Knowledge Environments*, Springer Lecture Notes in Computer Science, Berlin (2005), 207-220.
18. Plaisant, C., and Shneiderman, B., Personal role management: Overview and a design study of email for university students, In Czerwinski, M. and Kaptelinin, V. (Editors), *Designing Integrated Digital Work Environments: Beyond the Desktop*, MIT Press, Cambridge, MA (2007), 143-170.
19. Zhao, H., Plaisant, C., and Shneiderman, B., Listening to choropleth maps: Interactive sonification of geo-referenced data for users with vision impairment, In Lazar, J. (Editor), *Universal Usability: Designing User Interfaces for Diverse Users*, John Wiley & Sons, New York (2007), 141-173.

20. Jank W., Shmueli G., Plaisant, C., and Shneiderman B., Visualizing Functional Data with an Application to eBay's Online Auctions, In *Handbook on Data Visualization*, Eds: Chen, Haerdle, and Unwin, Springer Verlag, Heidelberg, ISBN: 3-540-33036-4 (2008), 873-898.
21. Shneiderman, B., Creativity Support Tools: A Grand Challenge for HCI Researchers, In Redondo, Miguel; Bravo, Crescencio; Ortega, Manuel (Eds.), *Engineering the User Interface: From Research to Practice*, Springer, Berlin (2009), 1-9.
22. Gillam, M., Shneiderman, B., Feied, C., Handler, J., Plaisant, C., Dickason, J., Moody, E., and Smith, M., The healthcare singularity and the age of semantic medicine, In Hey, A., Tansley, S., and Tolle, K. (Editors), *The Fourth Paradigm: The Future of Information Science and Data Intensive Computing*, Microsoft Research, Redmond, WA (2009), 57-64.
23. Gregory, M. and Shneiderman, B., Shape identification in temporal data sets, In Dill, J., Earnshaw, R., Kasik, D., Vince, J., Wong, P.C. (Editors), *State-of-the-Art volume on Computer Graphics, Visualization, Visual Analytics, VR and HCI: Dedicated to the memory of Jim Thomas*, Springer, Berlin (2012), 305-321.
24. Zalinger, J., Freier, N., and Shneiderman, B., Reading Ben Shneiderman's Email: Identifying Narrative Elements in Email Archives, In Hawkins, D. (Editor), *Personal Archiving: Preserving Our Digital Heritage*, Information Today, Inc. (2013), 109-135.
25. Shneiderman, B., Building trusted social media communities: A research roadmap for promoting credible content, In Bertino, E. and Matei, S. A. (editors), *Roles, Trust, and Reputation in Social Media Knowledge Markets: Theory and Methods*. Series: Computational Social Science. New York: Springer Publishing (2014), 35-43. DOI 10.1007/978-3-319-05467-4\_2.
26. Smith, A., Malik, S., and Shneiderman, B., Visual analysis of topical evolution in unstructured text: Design and evaluation of TopicFlow, In Kazienko, P. and Chawla (Editors), N., *Applications of Social Media and Social Network Analysis, Lecture Notes on Social Network Analysis*, Springer (2015), 159-176.
27. Plaisant, C., Monroe, M., Meyer, T., and Shneiderman, B., Interactive Visualization, In Marconi, K. and Lehman, H. (Editors), *Big Data and Health Analytics*, CRC Press - Taylor and Francis (2014), 243-262.
28. Smith, M., Himelboim, I., Rainie, L., and Shneiderman, B., The Structures of Twitter Crowds and Conversations, In Matei, S. A. et al. (Editors), *Transparency in Social Media, Computational Social Science*, Springer (2015).

29. Onukwugha, E., Plaisant, C., and Shneiderman, B., Data visualization tools for investigating health services utilization among cancer patients, in Hesse, B., Ahern, D., and Beckjord, E. (Eds.), *Oncology Informatics: Using Health Information Technology to Improve Processes and Outcomes in Cancer*, Academic Press (2016), 207-229.
30. Klein, G., Shneiderman, B., Hoffman, R.R., & Wears, R.L., The war on expertise: Five communities that seek to discredit experts. In P. Ward, J.M. Schraagen, J. Gore & E. Roth (Eds.), *The Oxford Handbook of Expertise*, Oxford, UK: Oxford University Press (online October 2018, 42 pages). DOI: 10.1093/oxfordhb/9780198795872.013.50

II.B.2. Collections

II.B.3. Encyclopedia

II.B.4. Series

II.B.5. Research Paper

II.B.6. Other

### II.C. Articles in Refereed Journals

Full citation, inclusive of all authors in the order of publication and page numbers. Review articles and invited articles should be so identified. Optional: include DOI.

1. Shneiderman, B., Polynomial search, *Software: Practice and Experience* 3, 5 (January – March 1973), 5-8.
2. Shneiderman, B., Optimum data base reorganization points, *Communications of the ACM* 16, 6 (June 1973), 362-365.
3. Shneiderman, B., A computer graphics system for polynomials, *The Mathematics Teacher* 67,2 (February 1974), 111-113.
4. Shneiderman, B. and Scheuermann, P., Structured data structures, *Communications of the ACM* 17, 10 (October 1974), 566-574.
5. Shneiderman, B., A model for optimizing indexed file structures, *International Journal of Computer and Information Sciences* 3, 1 (March 1974), 93-103.
6. Shneiderman, B., Experimental testing in programming languages, Stylistic considerations and design techniques, *Proc. National Computer Conference*, AFIPS Press, Montvale, NJ (1975), 653-656.
7. Shneiderman, B. and Shapiro, S. C., Towards a theory of encoded data structures and data translation, *International Journal of Computer and Information Sciences* 5, 1 (1976), 33-43 (March 1976).

8. Shneiderman, B., Exploratory experiments in programmer behavior, *International Journal of Computer and Information Sciences* 5, 2 (June 1976), 123-143.
9. Shneiderman, B., A review of design techniques for programs and data, *Software: Practice and Experience* 5 (1976), 555-567.
10. Goodman, V., Shneiderman, B., Batched searching of sequential and tree structured files, *ACM Transactions on Database Systems* 1, 3 (September 1976), 268-275
11. Report of the Stored Data Definition and Translation Task Group, special issue of *Information Systems* 2, 3 (1977), 95-148 with 6 other authors.
12. Shneiderman, B., Reduced combined indexes for efficient multiple attribute retrieval, *Information Systems* 2, 4 (1977), 149-154.
13. Shneiderman, B., Design, development and utilization perspectives on database management systems, *Information Processing and Management* 13, 1 (1977), 23-33.
14. Mayer, R., McKay, D., Heller, P., Shneiderman, B., Experimental investigations of the utility of detailed flowcharts in programming, *Communications of the ACM* 20,6 (June 1977), 373-381, Reprinted in *Human Factors in Software Development*, Bill Curtis, Editor, IEEE EHO 185-9 (1981).
15. Shneiderman, B., Measuring computer program quality and comprehension, *International Journal of Man-Machine Studies* 9 (1977), 465-478.
16. Shneiderman, B., Jump searching: A fast sequential search technique, *Communications of the ACM* 21, 10 (October 1978), 831-834.
17. Shneiderman, B., Teaching programming: A spiral approach to syntax and semantics, *Computers and Education* 1, 3 (1978), 193-197.
18. Brosey, M. K. and Shneiderman, B., Two experimental comparisons of relational and hierarchical database models, *International Journal of Man-Machine Studies* 10 (1978), 625-637.
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- II.D.2. Non-Refereed Conference Proceedings
- II.D.3. Historical Conference Proceedings (10+ years ago)
- II.D.4. Other

## II.E. Conferences, Workshops, and Talks

- II.E.1. Keynotes
- II.E.2. Invited Talks  
(approximately 40 per year), see list at:  
<http://www.lib.umd.edu/archivesum/findingaids/shneiderman/biolectures.jsp>
- II.E.3. Refereed Presentations
- II.E.4. Refereed Abstracts
- II.E.5. Refereed Posters
- II.E.6. Refereed Panels
- II.E.7. Non-Refereed Presentations
- II.E.8. Non-Refereed Abstracts
- II.E.9. Non-Refereed Posters
- II.E.10. Non-Refereed Panels
- II.E.11. Symposia
- II.E.12. Workshops
- II.E.13. Colloquia
- II.E.14. Historical Conferences, Workshops, Talks (10+ years ago)
- II.E.15. Other

## II.F. Professional Publications

- II.F.1. Reports and Non-Refereed Monographs
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16. Ho, P., Wang, T. D., Wongsuphasawat, K., Plaisant, C., Shneiderman, B., Smith, M.S., and Roseman, D., Monitoring and improving quality of care with interactive exploration of temporal patterns in electronic health records, University of Maryland, HCIL Technical Report, (December 2010).
17. Tarkan, S., Plaisant, C., Shneiderman, B., and Hettinger, A. Z., Ensuring timely clinical lab test result management: A generative XML process model to support medical care, University of Maryland Technical Report (July 2011).

- II.F.3. Legal Briefs
- II.F.4. Policy Briefs
- II.F.5. Other

## II.G. Book Reviews, Notes, and Other Contributions

II.G. 1. Book Reviews

II.G. 2. Essays

II.G. 3. Notes

II.G. 4. Manuals

II.G. 5. Other

## II.H. Completed Creative Works

II.H.1. Digital Media (e.g., CDs, DVDs)

II.H.2. Datasets

II.H.3. Constructed Projects

II.H.4. Demonstrations

II.H.5. Inventions

II.H.6. Original Plans and Designs

II.H.7. Photography

II.H.8. Software and Applications

II.H.9. Websites

II.H.10. Exhibitions and Installations

II.H.11. Curatorial Practice

II.H.12. Performance or Interpretation— Performing Arts

II.H.13. Direction - Performing Arts

II.H.14. Production - Performing Arts

II.H.15. Costume, Stage, Multimedia, and Theatrical Design

II.H.16. Artistic and Graphic Design

II.H.17. Dramaturgy

II.H.18. Artwork

II.H.19. Choreography

II.H.20. Playwriting, Screenwriting, and Musical Composition

II.H.21. Works of Creative Writing

II.H.22. Performance or Interpretation - Film, Video, and Multimedia

II.H.23. Direction - Film, Video, and Multimedia

II.H.24. Production - Film, Video, and Multimedia

II.H.25. Citations and Reviews

II.H.26. Historical Completed Creative Works (10+ years ago)

II.H.27. Other

## II.I Significant Works in Public Media

II.I.1. Explanatory, Investigative, or Long-Form Journalism

II.I.2. Other Significant Journalism

II.I.3. Commentary/Analysis

II.I.4. Interactive Online Database

II.I.5. Other

## II.J. Sponsored Research

II.J.1. Grants

1. NSF Travel Grant to attend lectures of Edsger Dijkstra, 1974.



2. National Academy of Sciences Travel Grant: International Federation for Information Processing in Stockholm, Sweden, 1974.
3. Research Committee, Indiana University (\$2990) participation in Stored Data Definition and Translation Task Group, 3/74-7/75.
4. NSF MCS-77-18641 (\$20,300) Collaborative US/USSR Research in the use of a conceptual schema in agricultural systems and human factors issues in database facilities 7/77-6/78, with Sibley and Hardgrave.
5. NSF MCS-77-22244 (\$76,400) Towards the development of a methodology for application program conversion based on database semantics 8/77-1/80, Supplement for Teleconference (\$7,973).
6. NSF MCS-77-22509 (\$52,300) Structured Data Base Systems, 2/80-7/81.
7. Control Data Corp. 80M15 (\$49,580) Human Factors Research in Editor Interfaces, 1/81-12/83.
8. Control Data Corp. 83M102 (\$99,993), Human-Computer Interaction Research, 7/6/83-7/5/85.
9. IBM Corp. (\$235,000 for first 30 months) Multiple Coordinated Windows for Programmer Workstations, 7/1/83-12/31/85.
10. Dept. of Health and Human Services, (\$25,000) Impact of Personal Computers on Office Workers, 6/84-6/85.
11. IBM Corp. and University of Maryland FULCRUM Project, Expert Networks for Cooperative Problem-Solving.
12. IBM Corp. (\$33,000) Converting paper manuals to online access, 8/21/84-12/31/84.
13. Dept. of Interior and US Holocaust Memorial Museum, (\$49,999), Development and Testing of TIES (The Interactive Encyclopedia System), 12/7/84-4/15/85.
14. Inference Corp. (\$73,000) User interface for expert systems, 8/1/85-7/31/86.
15. National Science Foundation, (\$42,000) Developing an effective user evaluation questionnaire for interactive systems), 8/1/86-7/31/87.
16. A T & T Information Systems, (\$232,000), Human-Computer Interaction Research, 9/1/86-8/31/87.

17. National Aeronautics and Space Administration - Ames Laboratory (\$50,000), Structuring and searching online knowledge - TIES, 2/1/87-1/31/88.
18. Maryland Industrial Partnerships with American Voice & Robotics, (\$26,400), 1/1/88 - 6/30/88.
19. A T & T Information Systems, (\$289,000), Human-Computer Interaction Research, 11/1/87 - 12/31/88.
20. Apple Corporation, (\$34,086) - Graduate Research Assistants for the Human-Computer Interaction Laboratory, 1/1/88 - 12/31/88. Additional hardware contribution, approx. \$15,000, 4/88.
21. National Cash Register Corporation, (\$50,000), Extensions to Hyperties, 1/1/88 - 12/31/88.
22. Museum of Jewish Heritage, (\$41,000), Learning Center User Interfaces, 4/1/88 - 12/31/88.
23. Maryland Industrial Partnerships with American Voice and Robotics, (\$50,000), User interfaces for home applications, 7/1/88 - 12/31/88.
24. Museum of Jewish Heritage, (\$61,000), Learning Center User Interfaces, 6/1/89 - 5/30/90.
25. National Cash Register Corporation, (\$50,000), Extensions to Hyperties, (\$50,000) User interface for a portable touchscreen computer, 1/1/89 - 12/31/89.
26. SUN Microsystems (\$35,000 equipment), SUN4 workstation for NeWS implementation of Hyperties, 3/89.
27. Library of Congress, (\$24,999), Survey of LOCIS users, 1/1/89 - 6/30/89.
28. National Library of Medicine, (\$25,000), Usability evaluation of microanatomy videodisk database, 3/15/89 - 9/15/89.
29. Apple Corporation, (\$20,000), Do What I Did Interfaces, 6/89-5/90.
30. NEC Corporation, (\$90,000), Human-Computer Interaction Research, 8/89-8/90.
31. National Library of Medicine, (\$24,999), Usability evaluation of microanatomy videodisk database, 12/1/89 - 4/15/90.
32. Engineering Research Center, (\$12,700) Hypermedia Workstation, 12/89.
33. NCR Corporation, (\$75,000), Human-Computer Interaction Research, 1/1/90 - 12/31/90.

34. Maryland Industrial Partnerships with Custom Command Systems, (\$50,000), User interfaces for home applications, 2/1/90 - 1/31/91.
35. Maryland Industrial Partnerships with Corabi, Inc., (\$37,500), User interfaces for telemedicine, 2/1/90 - 1/31/91.
36. Sun Microsystems, (\$130,000), Orientation, traversal, and mental models for large documents, 6/1/90 - 5/31/91.
37. NEC Corporation, (\$10,000), 10/15/90 - 10/14/91.
38. NCR Corporation, (\$50,000), Human-Computer Interaction Research, 1/1/91 - 12/31/91.
39. General Electric Information Services, (\$50,000), Graphic Boolean Queries and User Interface Research, 12/1/90 - 11/30/91.
40. Maryland Industrial Partnerships with Corabi, Inc., (\$50,000), User interfaces for telemedicine, 2/1/91 - 1/31/92.
41. NASA Graduate Fellowship (for Andrew Sears) (\$18,000), 7/1/91 - 6/30/92.
42. Johnson Controls Graduate Fellowship (\$20,000), 6/5/91 - 6/4/92.
43. Toshiba Corporation (\$65,000), 9/1/91 - 2/28/93.
44. SONY Corporation (\$50,000), 9/1/91 - 8/31/92.
45. Apple Corporation, Graduate Fellowship, Programming in the User Interface (\$20,000 + \$12,000 equipment), 10/1/91 - 9/30/92.
46. NEC Corporation, (\$10,000), 10/1/91 - 9/30/92.
47. Maryland Industrial Partnerships with Corabi, Inc., (\$50,000), User interfaces for telemedicine, 2/1/92 - 1/31/93.
48. General Electric Information Services, (\$50,000), Research on Platform Independent User Interface Builders, 3/1/92 - 2/28/93.
49. Panasonic Corporation, (\$10,000), 3/1/91 - 2/28/92, Home Automation Consortium.
50. NEC Corporation, (\$50,000), 10/1/92 - 9/30/93, Human-Computer Interaction Research.
51. National Library of Medicine, (\$24,500), 7/6/92 - 11/30/92, Computer Interface Design for Intermediate Results (Grateful Med).

52. National Center for Health Statistics, (\$10,000), 6/5/92 - 9/5/92, Development of a prototype for dynamic queries on a health statistics atlas.
53. National Center for Health Statistics, (\$25,000), 10/1/92 - 5/15/93, Development of a prototype for dynamic queries on cause of death statistics.
54. Johnson Controls Graduate Fellowship (\$20,000), 6/5/92 - 6/4/93.
55. Apple Corporation, Graduate Fellowship, Programming in the User Interface (\$20,000), 11/1/92 - 10/31/93.
56. Maryland Industrial Partnerships with General Electric Information Services, (\$108,000), 3/1/93 - 2/28/94, Improving Usability in Information Services.
57. Maryland Industrial Partnerships with Hughes Network Systems, (\$160,000), 2/1/93 - 1/30/94, Next generation network management system, with J. Baras (ISR).
58. Johnson Controls Graduate Fellowship (\$20,000), 6/5/93 - 6/4/94.
59. Online Computer Library Center, Information Visualization Consortium (\$10,000), 7/93 - 7/94.
60. Visix Corporation, Donation of Galaxy Software (\$15,000), 9/93.
61. World Bank, Future User Interfaces (\$30,000), 10/93 - 1/94.
62. NEC Corporation, Human-Computer Interaction Research (\$10,000), 10/1/93 - 9/30/94.
63. IBM, Video-on-demand User Interfaces (\$29,000), 2/94 - 6/94.
64. Maryland Industrial Partnerships with General Electric Information Services, (\$108,000), 3/1/94 - 2/28/95, Improving Usability in Information Services.
65. Maryland Industrial Partnerships with Hughes Network Systems, (\$160,000), 2/1/94 - 1/30/95, Next generation network management system, with J. Baras (ISR).
66. State of Maryland, Department of Juvenile Services (\$272,000), Advanced User Interfaces for Case Workers, 7/1/94 - 6/30/95.
67. National Science Foundation, SGER (\$48,000), Multiple Window Coordination for Visual Information Access in High Performance User Interfaces, 8/15/94 - 8/14/95.
68. National Library of Medicine (approx \$40,000, 2 graduate fellowships), User Interfaces for the Visible Human Project, 8/94 - 8/95.
69. NEC Corporation, Human-Computer Interaction Research (\$10,000), 10/1/94 - 9/30/95.

70. National Library of Medicine (\$24,981), User Interfaces for the Visible Human Project, 11/15/94 - 9/15/95.
71. Maryland Industrial Partnerships with General Electric Information Services, (\$108,000), 3/1/95 - 2/28/96, Improving Usability in Information Services.
72. NASA - Goddard (\$103,145, NAG52895), 3/1/95 - 2/28/96, Dynamic Queries Interfaces for the EOSDIS Information System.
73. IBM, Boca Raton, FL (\$10,000 + \$30,000), 8/95 - 7/96, Next generation graphical user interfaces.
74. State of Maryland, Department of Juvenile Justice (\$650,000), Advanced User Interfaces for Case Workers, 9/1/95 - 8/31/96.
75. NEC Corporation, Human-Computer Interaction Research (\$10,000), 10/1/95 - 9/30/96.
76. NASA - Goddard (\$130,000, NAG52895), 3/1/96 - 2/28/97, Dynamic Queries Interfaces for the EOSDIS Information System. Plus supplement to support Richard Beigel sabbatical visit (\$34,876).
77. National Science Foundation, IRIS (\$72,648, IRI9615534), Information Abundant Interfaces: Advanced Organization and Coordination, 10/01/96 - 09/30/97.
78. NASA - Goddard (\$163,240, NAG52895), 3/1/97 - 2/28/98, Dynamic Queries Interfaces for the EOSDIS Information System.
78. NASA - Goddard (\$145,000, NAG57126), Dynamic Queries Interfaces for the EOSDIS Information System, 3/1/98 - 2/28/99. Expanded to \$281,299 and extended to 12/31/99.
79. IBM University Partner Program (\$40,000), Information Visualization for Electronic Commerce, 6/15/98 - 6/14/99.
81. West Publishing (\$149,875, 9712229014), User Interfaces for Visualizing Legal Information, 6/1/98 - 8/31/99.
82. U. S. Bureau of the Census, Human Computer Interface Design, 8/1/1998-9/30/1998 (\$30,000). Renewal 2/25/1999 - 09/15/1999 (\$100,000, 40YABC909111). Renewal 09/16/99 - 06/30/00 (\$100,000, 43YABC917123). Renewal 09/21/00 - 06/30/01 (\$100,000, 43YABC039062).  
Renewal 7/1/2001-6/30/2002 (\$100,000). Renewal 7/1/2002-6/30/2003 (\$100,000).
83. IBM University Partner Program, E-Commerce: Visualization for Customer Relationship Management (\$40,000), 7/1999-7/2000.

84. Microsoft (\$30,000), Information Visualization Graduate Fellowship, 9/1/1999-8/30/2000.
85. National Science Foundation Digital Government Program (\$80,000), Citizen Access to Government Statistical Data in Tables, 08/15/99 - 07/31/01.
86. Intel (\$100,000), User Interfaces for Photo Libraries, 9/3/1999-9/2/2000, plus equipment grants (approx \$20,000 additional).
87. Toyota Support for Industrial Visitor (\$50,000), 5,2000-5/2001.
88. IBM University Partner Program, Extending Search Interfaces to Support Creative Exploration (\$40,000), 7/2000-7/2001.
89. Agilent Bio-informatics visualization, (\$35,000 + \$35,000), 2000 + 2001.
90. America Online Fellowship in Human-Computer Interaction, (\$35,000/year), 7/2000-7/2001. Awarded to Harry Hochheiser. Renewed 7/2001-7/2002. Renewed 7/2002-7/2003.
91. Ricoh Innovations, Inc., User Interfaces for Digital Photos (\$35,000), 3/2001. Addition (\$15,000), 9/2001.
92. National Science Foundation Information Technology Research (PI-John Robinson, Sociology, \$2.7Million, IIS-0086143) Understanding the Social Impact of the Internet: A Multifaceted Multidisciplinary Approach (9/1/2000-9/1/2003).
93. National Science Foundation Digital Government Program (\$492,000, EIA 0129978) Integration of Data and Interfaces to Enhance Human Understanding of Government Statistics: Toward the National Statistical Knowledge Network, Supplement for AudioMap (\$50,000) (7/1/2002-6/30/2006).
94. Adobe, Inc. User Interfaces for Presenting Digital Photos (\$38,000), (1/2004).
95. America Online Fellowship in Human-Computer Interaction, (\$38,000/year), 7/2003-7/2004. Awarded to Bill Kules. Renewed 7/2004-7/2005. Renewed (8/2005-12/2005).
96. National Science Foundation (\$45,000, IIS-0527109) Workshop on Creativity Support Tools (5/1/2005-4/31/2006).
97. Microsoft Contribution to social computing research (\$15,000) 9/2005. Renewed (\$15,000) 9/2006. Renewed (\$47,000) 7/2008.
98. National Science Foundation (\$60,000, IIS-0633843) Developing Ethnographic Evaluations for Creativity Support Tools: A Case Study with Expert Users of a New Social

- Network Visualization (8/15/2006-8/14/2007).
99. Washington Hospital Center (\$100,000), Discovering Patterns of Events in Patient Histories (1/1/2007-12/31/2007).
  100. Office of the Vice President for Research, University of Maryland. Yan Qu, Paul T. Jaeger, Jenny Preece, Ben Shneiderman, Ken Fleischmann, & Philip Fei Wu. University of Maryland Community Response Grid: Building Emergency Response Infrastructure (\$40,421), (5/2007-5/2008).
  101. National Science Foundation (\$720,000, IIS-0705832) iOPENR--A Flexible Framework to Support Rapid Learning in Unfamiliar Research Domains (8/1/2007-7/31/2010). PI Bonnie Dorr, also includes J. Klavans, J. Lin, D. Radev. No cost extension to 7/31/2011.
  102. National Cancer Institute (subcontract from iDOXsolutions, inc.) (\$100,235) Evaluating Cooperation Among NCI Partners, (2/11/08 - 8/31/08).
  103. Washington Hospital Center (\$100,000) Discovering Patterns of Events in Medical Patient Records (1/1/2008-12/31/2008). Renewed (\$150,000) (1/1/2009-12/31/2009). Renewed (\$100,000) (06/01/2010 - 05/31/2011).
  104. Lockheed Martin Corporation (\$100,000), Human-Computer Interaction Research (12/01/2008 - 12/01/2009). Add-on for Social networking (\$50,000).
  105. TIBCO/Spotfire (\$40,000) Unrestricted Gift for Social Networking Visualization (8/28/2009-8/27/2010).
  106. National Science Foundation (\$718,644, SBE-0915645) TLS: Science & Technology Innovation Concept Knowledge-base (STICK): Monitoring, Understanding, and Advancing the (R)Evolution of Science & Technology Innovations, Ping Wang, Ben Shneiderman, Yan Qu (9/1/2009-8/31/2012).
  107. National Science Foundation (\$86,744, IIS-0956571) Proposal for Two NSF Workshops: Technology-Mediated Social Participation Jennifer Preece (PI), Peter Pirolli & Ben Shneiderman (co-PIs) (9/1/2009-8/31/2010).
  108. NIH-National Cancer Institute (\$337,134, RC1-CA147489), Interactive Exploration of Temporal Patterns in Electronic Health Records (9/30/2009 - 8/31/2010). Second Year (\$345,086), (9/30/2009 - 8/31/2011).
  109. National Science Foundation - Computing Research Association (\$140,000, CIFB90), Computing Innovations Fellow: Postdoctoral Research Grant for Jae-Wook Ahn, (9/01/2010 - 08/31/2011). Renewal (\$127,000, 09/21/2011 - 09/20/2012)

110. Office of the National Coordinator (ONC), Strategic Health IT Advanced Research Projects (SHARP). Patient-Centered Cognitive Support: (sub of The University of Texas Health Science Center at Houston). Approx \$960,000 over four years. Cognitive Information Design and Visualization for the National Center for Cognitive Informatics and Decision Making in Healthcare (\$228,232, UT-007593, UMCP-FRS-432658) (4/1/2010-3/31/2011). (\$188,194, 4/1/2011-3/31/2012), (\$188,194, 04/01/2010 - 03/31/2013) (\$187,820, 04/01/2010 - 03/31/2013)
111. National Science Foundation (\$249,926, IIS-0968521) Social Computational Systems (SoCS): Supporting a Nation of Neighbors with Community Analysis Visualization Environments, Ben Shneiderman, Alan Neustadt, Catherine Plaisant (8/1/2010-8/31/2012).
112. National Science Foundation (\$47,000, IIS-1135022) Webshop 3.0: Technology-Mediated Social Participation, Jennifer Preece, Ben Shneiderman, Alan Neustadt (5/1/2011-4/30/2012).  
Additional sponsorship obtained from Google (\$10,000) and Intel (\$5,000).
113. Oracle (\$100,000) Gift for research on Temporal Event Sequences (8/2011). Renewal (\$188,000, 10/2012) (\$147,601, 11/2013).
114. National Science Foundation (\$99,995, IIS- 1239863) Summer Social Webshop 3.0: Technology-Mediated Social Participation, J. Preece, B. Shneiderman, A. Neustadt (07/01/2012-06/30/2013).
115. YAHOO Research Award for HCIL projects (4/2013, \$19,000).
116. State of Maryland, Center for Health Informatics & BioImaging, Interactive Visualization of Temporal Patterns in Electronic Health Record Data, Ben Shneiderman, Catherine Plaisant, Lise Getoor (9/2013-8/2014, \$200,000).
117. YAHOO Grants for HCIL (1/2014, \$10,000). Renewal for HCIL (1/2015, \$5,000) and for Campus Visualization Partnership (1/2015, \$5,000).
118. University of Maryland Seed Grant (11/ 2014, \$50,000), Interactive Visual Analytics for Insider Threat Detection and Evaluation, collaborate with Leidos on use of EventFlow, Ben Shneiderman and Catherine Plaisant.
119. Adobe Research Award, EventFlow and Cohort Comparison (5/2015, \$50,000).
120. National Science Foundation (\$59,297, 1661041) Visualizing Science, Technology, and Innovation Activity Sequences with EventFlow, Scott Dempwolf and B. Shneiderman, (09/01/2015-08/31/2016).
121. Oracle, Gift for research on Cohort Comparison (10/2015-9/2016, \$95,000).



122. Adobe Research Award, Visual Analytics for Event Sequence Recommendation: Event Action (5/2016, \$50,000).
123. Adobe Research Award, Visual Analytics for Event Sequence Recommendation: Event Action (9/2017, \$50,000). Plus additional \$7,500 (10/17/2017).
124. National Academy of Science Sackler Colloquium, March 2018. Obtained sponsorship during Fall 2017 from Sackler Foundation (\$30,000), Google (\$50,000), and Simons Foundation (\$15,000).
125. Peter Wall Institute for Advanced Studies, University of British Columbia (CAN \$30,000), Visiting International Scholar (September 2018-August 2020).

II.J.2. Contracts

II.J.3. Other

II.K. Fellowships, Gifts and Other Funded Research

II.K.1. Fellowships

II.K.2. Gifts

II.K.3. Other

II.L. Submissions and Works in Progress

List press, journal, or granting agency.

II.L.1. Current Grant Applications

II.L.2. Manuscripts in Preparation

II.L.3. Manuscripts under Review (indicate status: submitted or revising to resubmit)

II.L.4. Working Papers in Preparation

II.L.5. Designs in Preparation

II.L.6. Other

II.M. Centers for Research, Scholarship, and Creative Activities

Specify Name of the Center, Description of Center, Collaborators, Start and End Dates.

II.M.1. Centers Established

II.M.2. Centers Directed

II.M.3. Symposia Organized (through center)

II.M.4. Other

II.N. Patents

II.N.1. Device

II.N.2. Other

II.O. Other Research/Scholarship/Creative Activities

**III. Teaching, Mentoring and Advising.**

III.A. Courses Taught

<b>Course No.</b>	<b>Description</b>	<b>Semester</b>	<b>Enrollment</b>
CMSC498F	Human factors in computer and information systems	Fall 83	44
CMSC424	Database design	Spring 84	40
CMSC434	Human factors in computer and information systems	Fall 84	34
CMSC434	Human factors in computer and system information	Spring 85	16
CMSC424	Database design	Fall 85	36
CMSC434	Human factors in computer and information systems	Spring 86	26
CMSC434	Human factors in computer and information systems	Fall 87	9
CMSC434	Human factors in computer and information systems	Spring 88	21
CMSC828S	User interface design	Fall 88	12
CMSC434/828	Human factors in computer and information systems	Spring 89	12
CMSC112	Introduction to Computer Science	Spring 90	100
CMSC434/828	Human factors in computer and information systems	Fall 90	20
CMSC498A	Computers and Society	Spring 91	30
CMSC828S	User interface design seminar	Spring 91	3
CMSC434/828	Human factors in computer and information systems	Fall 91	17
CMSC112	Introduction to Computer Science	Spring 92	40
CMSC424	Database Systems	Fall 92	40
CMSC434/828	Human factors in computer and information systems	Spring 93	25
CMSC828S	Virtual Reality, Telepresence & Beyond	Fall 93	30
CMSC112	Introduction to Computer Science	Spring 94	12
CMSC434	Human factors in computer and information systems	Fall 94	38
CMSC434	Human factors in computer and information systems	Fall 95	40
CMSC434	Human factors in computer and information systems	Spring 97	37
CMSC 828/838	Information Visualization	Fall 97	10
CMSC434	Human factors in computer and information systems	Spring 98	38
MSWE 613	Usability Engineering	Fall 98	40
CMSC434	Human factors in computer and information systems	Spring 99	42
CMSC 828/838	Information Visualization	Fall 99	12
CMSC434/838	Human factors in computer	Spring 2000	40

	and information systems		
CMSC434/838	Human factors in computer and information systems	Spring 2001	44
CMSC838S	Advanced Usability-Mobile devices	Fall 2001	9
CMSC434/838	Human factors in computer and information systems	Spring 2002	34
CMSC838S	Advanced Usability-Creativity Support Tools	Fall 2002	7
CMSC434	Human factors in computer and information systems	Spring 2004	41
CMSC434	Human factors in computer and information systems	Fall 2004	50
CMSC 838S	Information Visualization	Spring 2005	16
CMSC434	Human factors in computer and information systems	Fall 2005	44
CMSC 838S	Information Visualization	Spring 2006	19
CMSC434	Human factors in computer and information systems	Fall 2006	31
CMSC 734	Information Visualization	Spring 2007	24
CMSC 734	Information Visualization	Spring 2008	23
CMSC 434	Introduction to HCI	Fall 2008	36
CMSC 734	Information Visualization	Fall 2009	29
CMSC 734	Information Visualization	Spring 2011	30
CMSC 434	Introduction to HCI	Fall 2011	39
CMSC 734	Information Visualization	Fall 2012	29
CMSC 734	Information Visualization	Fall 2013	30
CMSC 734	Information Visualization	Spring 2015	26
CMSC 798F	How to Conduct Great Research	Spring 2015	50
CMSC 798F	How to Conduct Great Research	Spring 2016	46

### III.B. Teaching Innovations

III.B.1. Major Programs Established

III.B.2. Education Abroad Established

III.B.3. Software, Applications, Online Education, etc.

III.B.4. Instructional Workshops and Seminars Established

III.B.5. Course or Curriculum Development

III.B.6. Historical Innovations (10+ years ago)

III.B.7. Other

University of Maryland University College, Center for Professional Development:

June 5-6, 1980, June 15-17, 1981, December 14-15, 1981, January 9-11, 1984, May 30-June 1, 1984 (UCLA), January 8-10, 1985, May 29-31, 1985 (UCLA), January 13-17, 1986, January 12-16, 1987, May 27-29, 1987 (UCLA), January 11-15, 1988, July 11-15, 1988 (UCLA), January 9-13, 1989, August 23-25, 1989 (UC Santa Cruz, CA), June 27-29, 1990, July 9-11, 1990 (UC Santa Cruz, CA), January 14-15, 1991 (Univ. of Calgary).

### III.C. Advising: Research or Clinical

#### III.C.1. Undergraduate

Don Hopkins, developer of pie menus and much more, super hacker  
Christopher Williamson, dynamic queries, games

#### III.C.2. Master's

<b>Master's Student</b>	<b>Thesis Title</b>	<b>Date</b>
Alan Laverson	Menu selection systems jump-ahead techniques: Evaluation of type-ahead vs. direct access methodologies	5/1985
Lawrence Koved	Restructuring textual information for online retrieval	8/1985
Gupta Pradeep	Evaluation of user interface for computer based communication	12/1985
Joe Reisel	The effects of display size on program comprehension	5/1986
Dan Ostroff	Selection systems: Interactive devices and strategies	5/1986
Richard Seabrook	User interface for a hypertext program browsing system	12/1988
Jacob Lifshitz	Multiwindow display systems for a hypertext system	12/1989
Patricia Jones	Hypertext for educational applications	8/1990
Rodrigo Botafogo	Structural analysis of hypertexts	5/1991
William Weiland	A graphical query interface based on aggregation/generalization hierarchies	5/1991
Degi Young	A graphical filter/flow model for boolean queries: An implementation and experiment	5/1992
Boon-Teck Kuah	Providing advisory notices for UNIX command users: Design, implementation, and empirical evaluations	12/1992
Vinit Jain	Data structures for dynamic queries	8/1993
David Turo	Enhancing treemap displays via distortion and animation: Algorithms and experimental evaluation	12/1993
Harsha Kumar	Browsing hierarchical data with multi-level dynamic queries and pruning	12/1994
Rohit Mahajan	Layout and textual consistency in user interfaces	5/1996
Irina Ceparu	(No thesis)	5/2003
Gouthami Chintalapani	Temporal treemaps for visualizing time series data	5/2004
Jack Kustanowitz	(No Thesis – worked on BRQ)	5/2005
Joonghoon Lee	(No Thesis)	5/2008
Machon Gregory	Shape identification and ranking in temporal data sets	5/2009
Robert Gove	Understanding scientific literature networks: Case study evaluations of integrating visualizations and statistics	5/2011
Ran Liu	(No Thesis – worked on ManyLists)	5/2012
Lyndsey Franklin	Designing interactive decision aids for medical communication and exploration of treatment options	12/2013
Awalin Sopan	(No thesis, worked on social media)	6/2015

#### III.C.3. Doctoral

Andrew Sears, Layout Appropriateness: Guiding user interface design with simple task descriptions (5/1993) (Prof & Dean, College of Computing & Info Sciences, RIT).

Brian Johnson, Treemaps: Visualizing hierarchical and categorical data (12/1993) (eBay).

David Carr, Specification methods for user interface objects (5/1995) (Prof. Lulea Univ., died 2005).

Eser Kandogan, Hierarchical multi-window management with elastic layout dynamics (8/1998) (IBM Research, Almaden, CA).

Richard Potter, Pixel data access: Interprocess communication in the user interface for end-user programming and graphical macros (5/1999) (Researcher, Univ of Tokyo).

Zhijun Zhang, (jointly with Victor Basili), Perspective-based usability inspection: empirical studies of efficacy (5/1999).

Chris North, A user interface for coordinating visualizations based on relational schemata: Snap Together Visualization (5/2000) (Prof, Virginia Tech).

Egemen Tanin, Exploration of large online data tables using generalized query previews (5/2001) (Assoc Prof, Univ of Melbourne).

Harry Hochheiser, Interactive graphical querying of time series and linear sequence data sets (5/2003) (Asst Prof. Univ. of Pittsburgh).

Hyunmo Kang, Dynamic personal management and exploration of media using semantic regions: A spatial interface supporting user-defined mental models (12/2003) (MicroStrategy).

Jinwook Seo, Information visualization design for multidimensional data: Integrating the rank-by-feature framework with hierarchical clustering, (5/2005) (Assoc Prof. Seoul National Univ).

William Kules, Supporting exploratory web search with meaningful and stable categorized overviews (5/2006) (Assoc. Prof. & Chair, Catholic Univ. of America, → Univ of Maryland iSchool Associate Professor).

Haixia Zhao, Interactive sonification of abstract data - Framework, design space, evaluation, and user tool (5/2006) (Google).

Aleks Aris, Visualizing & exploring networks with semantic substrates (8/2008) (Google).

Adam Perer, Integrating statistics and visualization to improve exploratory social network analysis (5/2008). (IBM Research → CMU).

David Wang, Interactive visualization techniques for searching temporal categorical data (5/2010). (PartnersHealthCare & Harvard Medical School).

Krist Wongsuphasawat, Interactive exploration of temporal event sequences (5/2012) (Twitter → Airbnb).

Cody Dunne, Measuring and improving the readability of network visualizations (5/2013) (IBM Research → Northeastern University).

Sureyya Tarkan, Interactive visual displays for results management in complex medical workflows (5/2013) (PARC → Oracle).

John Alexis Guerra-Gómez, Exploring differences in multivariate datasets using hierarchies: An interactive information visualization approach (5/2013) (PARC, YAHOO, Universita Los Andes).

Megan Monroe, Interactive event sequence query and transformation (5/2014) (IBM Research → Tufts University).

Sana Malik, A visual analytics approach to comparing cohorts of event sequences (5/2016)  
(Adobe Research).

Fan Du, Explainable Recommendation for Event Sequences: A Visual Analytics Approach,  
(5/2018) (Adobe Research)

III.C.4. Post-doctoral

III.C.5. Other Research Directions (K-12 Interactions)

### III.D. Mentorship

III.D.1. Junior Faculty

III.D.2. Other

### III.E. Advising: Other than Research Direction

III.E.1. Undergraduate

III.E.2. Master's

III.E.3. Doctoral

III.E.4. Post-doctoral

III.E.5. Other Advising Activities

(Include advising student groups, special assignments, recruiting, etc.)

### III.F. Professional and Extension Education

III.F.1. Professional Programs Established

III.F.2. Major Extension Programs

III.F.3. Workshops

III.F.4. Other

### III.G. Other Teaching Activities

## **IV. Service and Outreach**

### IV.A. Editorships, Editorial Boards, and Reviewing Activities

IV.A.1. Editorships

1. Book series, Human/Computer Interaction, Ablex Publishers,  
(21 books published, list available on request)

IV.A.2. Editorial Boards

Previous *ACM Transactions on Database Systems* (1974-80).  
*Hypermedia* (1989-92)  
*HCI Abstracts* (1990-91)  
*International Journal of Man-Machine Studies* (1985-95)  
*ACM Transactions on Computer-Human Interaction* (1992-95)  
*Empirical Software Engineering* (1999-2002)  
*Journal of Digital Information* (1997-2004)  
*ACM Interactions* (1994-2007)  
*Journal of Information Technologies and International  
Development* (2003-2010)

*Information Visualization* (2002- 2018) Advisory Editor

Current *International Journal of Human-Computer Interaction* (1988- ).  
*Interacting with Computers* (1989- )  
*Behaviour and Information Technology* (1989- )  
*Journal of Biomedical Discovery and Collaboration (BioMed Central)* (2005- )  
*Foundations and Trends in Web Science* (2005- )  
Association for Information Systems (AIS) Advisory Board for  
*Transactions on Human-Computer Interaction (THCI)* (2008- )

#### IV.A.3. Reviewing Activities for Journals and Presses

List available on request

#### IV.A.4. Reviewing Activities for Agencies and Foundations

List available on request

#### IV.A.5. Reviewing Activities for Conferences

#### IV.A.6. Historical Editorships, etc. (10+ years ago)

#### IV.A.7. Other

1. Assistant Editor - *Information Processing and Management*, (1974-78).
2. Guest Editor - *Communications of the ACM*, Special Section on Ecological Studies of Professional Programmers, (November 1988).
3. Special Issue Editor, Usability Engineering, *Empirical Software Engineering*, (March 1999), with J. Scholtz.
4. Special Issue Editor, Web Navigation, *IT and Society* 1, 3 (March 2003), with Melody Ivory and Jonathan Lazar, <http://www.stanford.edu/group/siqss/itandsociety/v01i03/>

#### IV.B. Committees, Professional & Campus Service

##### IV.B.1. Campus Service - Department

##### IV.B.2. Campus Service - College

##### IV.B.3. Campus Service – University

Director of Departmental Colloquium (1982-1987) - Obtained corporate contributions, arranged for speakers, prepared brochures, developed publicity, and arranged visits.

Chairman Appeals Committee, August 1984 Comprehensive Exam.

Member, Search Committee for MPSE Division Assistant Provost (1988).

Member Department Advisory Board (1984).

Annual Report Editor (1985).

Chairman, January 1985 Comprehensive Exam.

Member of Promotion Committee for Nicholas Roussopoulos (1989).

Member, Hiring and Tenure Committee for Gary Knott (1989).

Organizer for High School Day (April 1989).

Member, Campus Review Committee for the Center for Automation Research (1990).

Member, Undergraduate Studies Committee (1990-91).  
 Member Tenure committee for David Stotts (1990).  
 Member Systems Engineering Advisory Board (1990- ).  
 Member, Faculty Senate (1990-93?)  
 Member Tenure committee for Richard Furuta (1991).  
 Chairman Tenure committee for Leo Mark (1991).  
 Chairman, January 1992 IP Comprehensive Exam.  
 Member Information Processing Field Committee, Dept. of Computer Science.  
 Member of Appointments, Promotions and Tenure Committe, Dept. of Computer Science.  
 Liaison with College of Business (1982- ).  
 Liaison with College of Library and Information Services (1982- ).  
 Liaison with Department of Psychology (1982- ).  
 Member Steering Committee for AT&T Teaching Theater (1988- )  
 Member University Senate (September 1991-September 1994).  
 Member Search Committee: Dean of College of Library and Information Services (1992-93).  
 Chair, Instructor Evaluation Criteria Committee (1994-95).  
 Member Promotion Committee for Yiannis Aloimonos (1997)  
 Member, University Senate (1997- 2000)  
 Member, College of Library and Information Services, Search Committee (1998-99)  
 Member Search Committee: Dean of College of Library and Information Services (2000-2001)  
 Chair of Software Engineering & Programming Languages Field Committee (2000-2001)  
 Chair Dept of Computer Science Distinguished Lecture Series (2002)  
 Member, Hornbake Library Advisory Committee (2002- )  
 Chair, Tenure Committee for Ben Bederson (2003)  
 Member, CS Department Awards Committee (2004- )  
 Member, Tenure Committee for Alison Druin (2004)  
 Reviewer for 3-year renewal for Francois Guimbretiere (2005)  
 Chair of Software Engineering & Programming Languages Field Committee (Fall 2005)  
 Member Promotion Committee for Amitabh Varshney (2005)  
 UMIACS Newsletter/Brochure (2006)  
 HCIL Symposium (2006)  
 Chair, Tenure Committee for Francois Guimbretiere (2007-2008)  
 Member, UMIACS Promotion Committee for Catherine Plaisant (2008-2009)  
 Reviewer for Chau-Wen Tseng (2009)  
 Reviewer for Ben Bederson (2010)  
 Member, University Senate (2009-2013)  
 Member, Dept of Computer Science Chair Search Committee (2011-2012)  
 Member, Promotion Committee for Lise Getoor (2012)  
 Member, Dept of Computer Science Faculty Teaching Review committee (2013-2016)  
 Member, Promotion Committee for Mihai Pop (2015)

IV.B.4. Campus Service - Special Administrative Assignment

IV.B.5. Campus Service - Other

IV.B.6. Offices and Committee Memberships



Co-chair and Founder, Software Psychology Society (1975-96), more than 600 members.  
Member, Association for Computing Machinery, National ACM Lecturer.  
Member, International Commission on Human Aspects in Computing (1986-92 )  
Member of the Executive Committee of the Special Interest Group on  
Computer-Human Interaction (SIGCHI) (1987-89).  
Member of the Executive Committee of the USACM, Public Policy Group .  
Member ACM SIGART, CAS, CHI, CSE, IR, MOD, PC, PLAN, SOFT.  
Member, CODASYL Stored Data Definition and Translation Task Group (1973-76)

and Database Program Conversion Task Group (1977-80).

Senior Member, IEEE Society (2004 - )

Affiliate Member, IEEE Computer Society.

Member, Human Factors Society, Computer Systems Technical Group.

Program committee member for 28 conferences.

IV.B.7. Leadership Roles in Meetings and Conferences

IV.B.8. Other Non-University Committees, Memberships, Panels, etc.

IV.B.9. Historical Committees, etc. (10+ years ago)

IV.B.10. Other

#### IV.C. External Service and Consulting

IV.C.1. Community Engagements, Local, State, National, International

IV.C.2. International Activities

IV.C.3. Corporate and Other Board Memberships

##### **Corporate Advisory Boards:**

October 2015- current, Technical Advisory Board for Visual Action [www.visualaction.com](http://www.visualaction.com)

October 2011-current, Technical Advisor for Centrifuge Systems,  
[www.centrifugesystems.com](http://www.centrifugesystems.com)

October 2002- 2015, Technical Advisory Board for HiveGroup [www.hivegroup.com](http://www.hivegroup.com)

November 2006 - August 2009, Technical Advisory Board for Groxis [www.grokker.com](http://www.grokker.com)

January 2001-June 2006, Technical Advisory Board for ILOG [www.ilog.com](http://www.ilog.com) , Paris, France

August 2000 – Dec 2005, Technical Advisory Board for Clockwise3d  
[www.clockwise3d.com](http://www.clockwise3d.com), Tel Aviv, Israel

March 2000 – Dec 2000, Member Advisory Board for TheDotComGroup, Reston, VA

March 2000 – June 2002, Computer Science Advisor, [www.Smartmoney.com](http://www.Smartmoney.com) New York,  
NY

1996-2001, Member, Board of Directors, Spotfire Inc., [www.spotfire.com](http://www.spotfire.com) Somerville, MA

##### **Government Advisory Boards:**

May 2006 – April 2010, Member, Board of Scientific Counselors – National Library of  
Medicine Lister Hill Center

May 2006 – October 2008, Member, National Academies Committee on Technical and  
Privacy Dimensions of Information for Terrorism Prevention and Other National Goals.

Report: *Protecting Individual Privacy in the Struggle Against Terrorists: A Framework for  
Program Assessment*, National Academies Press, Washington, DC (2008), Available at:

[http://www.nap.edu/catalog.php?record\\_id=12452](http://www.nap.edu/catalog.php?record_id=12452)

June 2006 – June 2008, Member, President’s Council of Advisors on Science and Technology, Networking and Information Technology Technical Advisory Group (TAG).

**Professional Advisory Boards**

2010-2015, IEEE Information Visualization Conference Steering Committee

2008- 2012, SEMVAST Advisory Board.

2007 - 2010, State of the USA Product Advisory Group.

2007 - 2010, Web Science Trust, Scientific Council

2005 - 2007, Member, IEEE Von Neumann Medal Award Committee.

2018 – Current, Chair ACM Policy Award Committee

Consulting for industrial corporations (AT&T, Apple, GE, CDC, IBM, Intel, Bell Labs, Microsoft, Honeywell, etc.), government agencies (Library of Congress, NASA, Office of Technology Assessment, Dept. of Energy, etc.), international agencies (Int’l Atomic Energy Agency, World Bank), university research groups (CCNY, NYU, VPI), and publishers (Ablex (series editor), Harcourt Brace Jovanovich, Addison-Wesley, Prentice-Hall, McGraw-Hill, Van Nostrand Reinhold (Consulting Editor, University Series in Computer Science), etc.).

Data Structures: Description, Manipulation and Evaluation, Ph.D. Thesis, State University of New York at Stony Brook, May, 1973.

IV.C.4. Entrepreneurial Activities

Founding Board of Directors member, Spotfire (1996-2001), worked with Christopher Ahlberg

IV.C.5. Consultancies (to local, state and federal agencies; companies; organizations)

Many consultancies, especially as expert witness in patent & copyright cases

IV.C.6. Historical External Service and Consulting (10+ years ago)

IV.C.7. Other

IV.D. Non-Research Presentations

IV.D.1. Outreach Presentations

IV.D.2 Other

IV.E. Media Contributions

IV.E.1. Internet

IV.E.2. TV

IV.E.3. Radio

IV.E.4. Digital Media

IV.E.5. Print Media

IV.E.6. Blogs

IV.E.7. Feeds

IV.E.8. Other

1. *TROOLS: techniques, rules and tools*, half-hour television interview, WCQR,
2. *It's About Time*, half-hour television interview, WTIU (Public Broadcasting System), Bloomington, IN (1975).
3. Audio cassettes of talks at National Computer Conference 1979, 1975, and ACM National Conference, 1978, 1974.
4. *Software Psychology: Human Factors in Computer and Information Systems*, 12 one hour videotape cassettes, with printed visual aids and related readings, Ethnotech, Inc., Lincoln, NE (1979).
5. *Designing the User Interface*, 5 hour videotape with accompanying notes, University of Maryland Instructional Television, College Park, MD (1987).
6. *User Interface Strategies '88*, 10 hour videotape course with accompanying notes, University of Maryland Instructional Television, College Park, MD (1988), with D. Norman, T. Malone, and J. Foley.
7. *User Interface Strategies '90*, 5 hour videotape course with accompanying notes, University of Maryland Instructional Television (1990), with A. Marcus, J. Carroll, and J. Mountford.
8. *User Interface Design for Advanced Workstations*, Flagship Channel, 29 min., (1990).
9. *User Interface Strategies '91*, 5 hour videotape course with accompanying notes, University of Maryland Instructional Television (1991), with A. Van Dam, E. Soloway, and B. Curtis.
10. Scheduling ON-OFF home control devices, *SIGGRAPH Video Review 63/64*, 6 min. (Refereed) (1991), with Catherine Plaisant.
11. Human-Computer Interaction Laboratory Open House Video (1991), 64 min.
12. Ahlberg, C., Shneiderman, B., and Williamson, C., Dynamic Queries, *SIGGRAPH Video Review 77*, 10 min. (Referreed) (1991).
13. *User Interface Strategies '92*, 5 hour videotape course with accompanying notes, University of Maryland Instructional Television (1992), with T. Landauer, B. Myers, and B. Laurel.
14. Human-Computer Interaction Laboratory Open House Video (1992), 78 min, compiled by Plaisant, C.

15. *Managing the Human-Computer Interface*, 2 hour videotape course with accompanying notes, University of Maryland Instructional Television (June 1992).
16. *User Interface Strategies '93*, 5 hour videotape course with accompanying notes, University of Maryland Instructional Television (1993), with Mantei, M., Furness, T., and Martin, J.
17. Human-Computer Interaction Laboratory Open House Video (1993), 49 min.compiled by Plaisant, C.
18. *User Interface Strategies '94*, 5 hour videotape course with accompanying notes, University of Maryland Instructional Television (1994), with Nielsen, J., Olson, J., and Krueger, M.
19. Ahlberg, C. and Shneiderman, B., Visual Information Seeking: Tight coupling of dynamic query filters with starfield displays, *SIGGRAPH Video Review 97*, 7 min.(April 1994) (Referreed).
20. Human-Computer Interaction Laboratory Open House Video (1994), 80 min.compiled by Plaisant, C.
21. *User Interface Strategies '95*, 5 hour videotape course with accompanying notes, University of Maryland Instructional Television (1995), with Stein, F., Norman, K., Hartson, H. R., and Hix, D.
22. Asahi, T., Shneiderman, B., and Turo, D., Visual Decision-Making: Using Treemaps for the Analytic Hierarchy Process, *SIGGRAPH Video Review*, (April 1995) (Referreed).
23. *User Interface Strategies '96*, 5 hour videotape course with accompanying notes, University of Maryland Instructional Television (1996), with Kreitzberg, C. B. and Yourdon, E.
24. Shneiderman, B., *Designing the User Interface: Third Edition*, 5-hour videotape course with accompanying notes, University of Maryland Instructional Television (September 1997).
25. Shneiderman, B., *Treating Web Fever: Human Values for Educational Technology*, 1-hour videotape, available from Wisconsin Educational Technology Center, Madison, WI (November 1998).
26. Kandogan, E. and Shneiderman, B., Using Elastic Windows for World-Wide Web browsing, *CHI98 Video and Proc. ACM CHI98 Conference: Summary*, ACM, New York (April 1996), 189-190.

27. Shneiderman, B., World Usability Day talk during 14<sup>th</sup> ACM Conference on Information and Knowledge Management in Bremen, Germany (November 4, 2005), 77 minutes, available on the net:  
<http://netzspannung.org/cat/servlet/CatServlet?cmd=netzkollektor&subCommand=showEntry&entryId=316147&lang=en>
28. Ben Shneiderman featured on NPR's Kojo Nnamdi Show, Oct 30, 2013  
<https://www.cs.umd.edu/article/2013/11/ben-shneiderman-featured-npr%E2%80%99s-kojo-nnamdi-show>

#### IV.F Community & Other Service

### **V. Awards, Honors and Recognition**

#### V.1. Research Fellowships, Prizes and Awards

Visiting International Scholar, Peter Wall Institute for Advanced Studies, University of British Columbia (CAN \$30,000)  
 (September 2018-April 2019).

Chair ACM Policy Award Committee (2018-2022)

\*\*\*September 2018: Honorary Doctorate, University of Pretoria, South Africa

\*\*\*July 25, 2018: Honorary Doctorate of Science, Swansea University, Wales, UK.

\*\* University of British Columbia, Peter Wall Institute for Advanced Studies -  
 International Visiting Research Scholar Award 2018-2019

\*\* Chair, Organizing Committee for National Academy of Sciences' Sackler Colloquium:  
 Creativity and Collaboration: Revisiting Cybernetic Serendipity, March 13-14, 2018,  
 Washington, DC <http://www.nasonline.org/sackler-creativity-collaboration>  
 Editor, Special Feature PNAS 1/2019

\*\*\*December 13, 2017: Honorary Doctorate of Engineering, University of Melbourne. |  
<https://go.umd.edu/xjd>

\*May 9, 2016: University of Maryland Corporate Connector of the Year Award.

\*\*\*December 15, 2015: Elected National Academy of Inventors Fellow

\*\*\*May 21, 2015: Honorary Doctorate of Science, Stony Brook University.  
<http://sb.cc.stonybrook.edu/news/general/2015-04-20-stony-brook-universitys-honorary-degrees.php>  
<https://www.cs.stonybrook.edu/about-us/News/May-21-Shneidermans-Commencement-Address-Inspires-All>

\*\*\*October 8, 2013: Distinguished University Professor, Univ of Maryland.

\*May 7, 2013: Univ. of Maryland Graduate Faculty Mentor of the Year Award.

\*\*\*October 16, 2012: IEEE Visualization Career Award,  
[http://www.vgtc.org/PDF/awards/vis\\_career12.pdf](http://www.vgtc.org/PDF/awards/vis_career12.pdf)  
Video: <http://www.youtube.com/watch?v=QmUpgw7FhJs>),

\*\*\*Nov 2011: Elected IEEE 2012 Fellow for contributions to human-computer interaction and information visualization,  
[http://www.ieee.org/membership\\_services/membership/fellows/index.html](http://www.ieee.org/membership_services/membership/fellows/index.html)

Nov 2011: Best Paper Award for 2009, *AIS Transactions on Human-Computer Interaction*.

February 28, 2011, Miles Conrad Lecture Award, National Federation of Advanced Information Services, <http://www.nfais.org/page/39-miles-conrad-lectures>

Guest Editor: Cover Feature: Technology-Mediated Social Participation: Reports from National Science Foundation Workshops, *IEEE Computer* 43, 11 (November 2010), 20-67, with P. Pirolli and J. Preece.

\*\*\* February 17, 2010 - Elected to National Academy of Engineering  
<http://www.newsdesk.umd.edu/scitech/release.cfm?ArticleID=2083>  
<http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=02172010>

\*\*\*February 9, 2010 - Honorary Doctorate, University of Castilla-LaMancha, Spain.  
<http://www.cs.umd.edu/hcil/UCLM-honorary-doctorate/>

December 10-11, 2009 (Palo Alto, CA) and April 22-23, 2010 (Ballston, VA) - Co-Chair, National Science Foundation sponsored workshops on Technology-Mediated Social Participation, <http://www.tmsp.umd.edu>

May 2008 - Distinguished Faculty Award from Board of Visitors of the University of Maryland College of Computing, Mathematics, and Physical Sciences.

\*\*\* December 2007 - Special issue in honor of Ben Shneiderman's 60<sup>th</sup> Birthday, *International Journal of Human-Computer Interaction* Vol. 23, Issue 3, Edited by C. Plaisant and C. North. <http://www.leaonline.com/toc/ijhc/23/3>

June 13-15, 2007 - General Chair, Creativity & Cognition Conference, Washington, DC  
<http://www.cs.umd.edu/hcil/CC2007>

\*\*\* March 7, 2006 - **US patent 7,010,751**, Methods for the Electronic Annotation, Retrieval, and Use of Electronic Images. Sold Summer 2007.

June 13-14, 2005 - Co-Chair, National Science Foundation sponsored workshop on Creativity Support Tools, Washington, DC <http://www.cs.umd.edu/hcil/CST/>

\*February-March 2003 - Erskine Fellowship recipient for sabbatical visits to Univ. of Waikato (Hamilton, NZ) and Univ of Canterbury (Christchurch, NZ).

\*\*\*November 16, 2001 – Testimony (Representing USACM) National ID Cards before House Committee on Government Reform, Subcommittee on Government Efficiency, Financial Management and Intergovernmental Relations:  
[http://www.house.gov/reform/gefmir/hearings/2001hearings/1116\\_nationa\\_id/1116\\_witnesses.htm](http://www.house.gov/reform/gefmir/hearings/2001hearings/1116_nationa_id/1116_witnesses.htm)

\*\*\*May 2001 – ACM SIGCAS Making a Difference Award (Interview 2009)  
<https://dl.acm.org/citation.cfm?doid=1621918.1621926>

\*\*\*April 2001 – ACM SIGCHI Lifetime Achievement Award and CHI Academy.  
<http://www1.acm.org/sigchi/documents/awards.html>  
<http://www.cs.umd.edu/~ben/CHI-award.htm>

\*\*\*February 2001 – Fellow of the American Association for the Advancement of Science  
[http://www.aaas.org/about/aaas\\_fellows/AAAS\\_Intro\\_AFellows.html](http://www.aaas.org/about/aaas_fellows/AAAS_Intro_AFellows.html)

November 2000 – Founding General Chair for ACM Conference on Universal Usability (Washington, DC) <http://www.acm.org/sigchi/cuu/>

May 1998 - General Co-Chair, ACM Policy '98 Conference (Washington, DC)  
<https://web.archive.org/web/20040218083332/http://www.acm.org:80/usacm/events/policy98/gfxAgenda.html>

\*\*\*March 1997 - Association for Computing Machinery Fellow.  
<http://www.acm.org/awards/fellows/>

\*\*\*June 1995 - Honorary Doctorate of Science, University of Guelph, Ontario, Canada.

June 1995 - Co-Chair for Conference on Society and the Future of Computing (Durango, CO)

\*\*\*1983-2000 – Founding Director, Human-Computer Interaction Laboratory.  
<http://www.cs.umd.edu/hcil>

1985-91, 97 - current, Member, University of Maryland Institute for Advanced Computer Studies. <http://www.umiacs.umd.edu/>

1991-2006, University of Maryland Institute for Systems Research. [www.isr.umd.edu](http://www.isr.umd.edu)

June 1986 - Program Chairman for Conference on Empirical Studies of Programmers.

July 1982 - July 1986 - Consultant with IBM Federal Systems Division.

August 1978 - Program Chairman International Conference on Databases: Improving Usability and Responsiveness, Technion, Haifa, Israel.

July 1978 - IBM Systems Research Institute, Course 56 - Designing Effective Person/Computer Interfaces.

November 1977 - Member of NSF Sponsored U.S. Delegation to Moscow and Novosibirsk, USSR.

Summer 1975 - Summer Faculty Research Fellowship, Indiana University.

Summer 1973 - Taught Summer Session, Computer Science Department, University of British Columbia, Vancouver, Canada.

Summer 1969 - Research in the Department of Applied Mathematics, Weizmann Institute of Science, Rehovoth, Israel. Advisor: Amir Pnueli.

## V.2 Teaching Awards

## V.3 Service Awards and Honors

## V.4 Recognition in Media (Selected items)

Claus Atzenbeck, Interview with Ben Shneiderman, ACM SIGWEB

<https://dl.acm.org/citation.cfm?id=3320497>, Spring 2019, Article 1

Jessica Hullman, The purpose of visualization is insight, not pictures: An interview with visualization pioneer Ben Shneiderman, Medium, March 12, 2019

<https://medium.com/multiple-views-visualization-research-explained/the-purpose-of-visualization-is-insight-not-pictures-an-interview-with-visualization-pioneer-ben-beb15b2d8e9b>

ACM Interactions blog, August 5, 2019

<http://interactions.acm.org/blog/view/the-purpose-of-visualization-is-insight-not-pictures-an-interview-with-ben>

Citations show academic and non-academic researchers 'win' when they collaborate  
AAAS Eureka Alert, December 11, 2018

[https://www.eurekaalert.org/pub\\_releases/2018-12/uom-csa121118.php#](https://www.eurekaalert.org/pub_releases/2018-12/uom-csa121118.php#)

Don Monroe, AI, Explain Yourself

Communication of the ACM 61, 11, November 2018, pp 11-13.

<https://cacm.acm.org/magazines/2018/11/232193-ai-explain-yourself/fulltext>

Steve Lohr, **Humanizing Technology: A History of Human-Computer Interaction**

(New York Times, September 7, 2015)

<http://bits.blogs.nytimes.com/2015/09/07/humanizing-technology-a-history-of-human-computer-interaction/>

Tom Ventsias. Health IT: an RX for health care. *Terp*, 7(1):20-23, 2009.

[http://issuu.com/umaryland/docs/fall2009\\_final](http://issuu.com/umaryland/docs/fall2009_final)

Between the Columns, University of Maryland (March 2008)

<http://betweenthecolumns.org/2008/03/01/pioneering/>

**User Experience Pioneers (Interview by T. Adlin, July 2007)**



[http://www.adlininc.com/uxpioneers/original\\_pioneers/ben\\_shneiderman.html](http://www.adlininc.com/uxpioneers/original_pioneers/ben_shneiderman.html)

Interview by Ivo Weevers & Wouter Sluis (June 2004)

<http://www.ivowevers.nl/HCI/Docs/Weevers-Interview%20Ben%20Shneiderman.pdf>

The New Computing (Ubiquity, ACM Interview, 2003)

[http://www.acm.org/ubiquity/interviews/b\\_shneiderman\\_3.html](http://www.acm.org/ubiquity/interviews/b_shneiderman_3.html)

A Visual Rather Than Verbal Future, Leslie Walker, *Washington Post* (May 9, 2002)

<http://www.washingtonpost.com/ac2/wp-dyn?pagename=article&node=&contentId=A56499-2002May8&notFound=true>

Experts: Computers slouching toward usability, Mathew Schwartz, *Computerworld* (April 12, 2001) [http://www.computerworld.com/cwi/story/0,1199,NAV47\\_STO59553,00.html](http://www.computerworld.com/cwi/story/0,1199,NAV47_STO59553,00.html)

Computer Controls? Save Your Breath, Anne Eisenberg, *New York Times* (November 2, 2000) <http://www.nytimes.com/2000/11/02/technology/02NEXT.html>

\*\*\* Humans Unite! Tim Beardsley, *Scientific American* profile (March 1999)

<http://www.sciam.com/1999/0399issue/0399profile.html>

Banks that chat, and other irrelevancies, Carrie Shook, *Forbes Magazine* (April 20, 1998)

<http://www.forbes.com/forbes/1998/0420/6108224a.html>

The Passion to Know: An Interview with Ben Shneiderman, Amy Friedlander, *D-Lib Magazine* (September 1997). <http://www.dlib.org/dlib/september97/09editorial.html>

## VI. Other Information

Ben Shneiderman's biography appears in Marquis's *Who's Who in America*, *Who's Who in Science and Technology*, and *Who's Who in Education*. He is listed in the American Men and Women of Science. He is listed among the top 1000 creative people in the USA in the book: *1000: Richard Wurman's Who's Really Who* (2002). His Wikipedia page is [https://en.wikipedia.org/wiki/Ben\\_Shneiderman](https://en.wikipedia.org/wiki/Ben_Shneiderman)

Ben Shneiderman's broad impact is seen in citation counts (December 9, 2015) from Google Scholar (65041, h-index 101) and Microsoft Academic Search (reports only up to 2012) puts him at the top of the Human-Computer Interaction field with 22356 citations. His h-index of 81 at (<http://www.cs.ucla.edu/~palsberg/h-number.html>) ranks him as 56 among all computer scientists of all time.

Ben Shneiderman explored the artistic side of information visualization in his Treemap Art Project (<http://treemapart.wordpress.com>), which was titled "Every AlgoRiThm has ART in it". Three sets of the twelve large images were produced: (1) hangs in the Computer Science Instructional Center at the University of Maryland, (2) is in the collection of the National Academies in Washington, DC (<http://www.cpnas.org/exhibitions/archive/every->

[algorithm-has-art-in.html](#)), and (3) is in the collection of the Museum of Modern Art in New York City.

An important component of his work has been related to photography, including development of the [Photofinder](#) and [PhotoMesa](#) tools. His devotion to photography includes a long history of photographing professional events, which has resulted in the 3300 photos at the ACM SIGCHI [PhotoHistory](#) and the Univ. of Maryland Dept. of Computer Science [PhotoHistory](#). The March/April 2007 issue of ACM Interactions has an 8-page portfolio of [100+ photos from the 25-year history of ACM CHI conferences](#).

During his professional career Ben Shneiderman photographed conferences and colleagues. His [MyLifePix](#) archive of 12,000 photos is available with descriptions and indexing by name, date, and location. He has selected a set of key personalities who are leading HCI researchers and developers to profile with text and photos with [Encounters with HCI Pioneers: A Personal Photo Journal](#), which was featured in the [New York Times \(September 7, 2015\)](#)