UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WISCONSIN

GREAT AMERICA PAC,
STOP HILLARY PAC, and
RONALD R. JOHNSON,

Plaintiffs,

-against-

WISCONSIN ELECTIONS COMMISSION, and MICHAEL HAAS, in his official capacity as ADMINISTRATOR OF THE WISCONSIN ELECTION COMMISSION,

Defendant,

JILL STEIN,

Intervenor.

No. 16 Civ. 00795

DECLARATION OF DOUGLAS W. JONES

DOUGLAS W. JONES, declares, under penalty of perjury, pursuant to 28 U.S.C. § 1746, that the following is true and correct:

1. I am an Associate Professor of Computer Science at the University of Iowa. I have a BS degree in physics from Carnegie-Mellon University and MS and PhD degrees in computer science from the University of Illinois. I have taught at the University of Iowa since 1980. I submit this affidavit in opposition to plaintiffs' motion for a preliminary injunction.

2. My involvement in elections began in late 1994 when I volunteered to serve on the Iowa Board of Examiners for Voting Machines and Electronic Voting Systems. I was appointed to the board in 1995 and resigned from the board in 2004. I was chairman of the board in 2000, when I testified before the U.S. Commission on Civil

Rights about the Florida 2000 election, and before the House Science Committee about an early draft of what would later become the Help America Vote Act of 2002.

3. In 2004, I consulted with Miami-Dade County, Florida about problems they were having with their then-new voting system. In 2006, I helped investigate a problematic recount in Maricopa County, Arizona for a committee of the Arizona Senate. Earlier in 2016, I was a member of the Scott County, Iowa ad-hoc committee to select a new voting system for that county. I have served as an election observer in Kazakhstan in 2005 and 2007, and in Holland in 2006.

4. Between 2005 and 2011, I was a co-principal investigator in ACCURATE (A Center for Correct, Usable, Reliable, Auditable, and Transparent Elections), a 5-university research project funded by the National Science Foundation, and I served on the U.S. Election Assistance Commission's Technical Guidelines Development Committee from 2009 to 2012 when the committee went dormant. I co-wrote, with Barbara Simons, the book Broken Ballots, published by the Center for the Study of Language and Information and University of Chicago Press in 2012.

5. My up to date curriculum vita is attached as Exhibit A.

6. Many of my public statements about voting are indexed on-line at http://www.cs.uiowa.edu/~jones/voting/.

My Opinion

7. If our goal is to give as nearly equal weight as possible to the intent of each voter, then we must recognize that every voting technology has its shortcomings and that every use of voting technology must be evaluated in the context in which it is used. For that reason, I support the use of an optical scan ballot on election day and, where an audit is not available under state law, a recount, including a hand recount of the optical scan ballots and the DRE paper trails. A recount, preferably by hand, is the best way to determine voter intent and equalizes distinctions between voters that arise on election day, i.e. by use of different voting technology. A hand recount is also the only way to determine if there was any cyberattack and ensure voter confidence in the results of the election.

The Importance of Recounts to Equalize Voter Treatment

8. In my experience, hand-marked paper ballots that are then scanned by ballot tabulating machines, as used in localities throughout the state in Wisconsin, are the best available technology for conducting a general election in the United States. I understand that some parts of Wisconsin use DRE machines with a paper trail, and some Wisconsin localities hand count their votes. I support use of ballot scanning software because, when multiple races must be tabulated, hand counting is too prone to clerical error, and we have ample evidence of the problems posed by the user interfaces of computerized direct-recording electronic voting machines. In recounts, where only a single race is being counted, the risk of clerical errors is greatly reduced and hand counts are the best choice.

9. That said, no optical scan technology, including that used in Wisconsin, is capable of perfectly uniform and reliable scanning and electronic tabulation of voter-marked ballots. The same ballot scanned by the same genuinely impartial machine may be seen as containing a vote on one pass through the scanner and not containing a vote on the next pass through the identical scanner. Most marks made with the intent of casting a vote will be counted, and most accidental marks and smudges will be ignored. However, problematic marks are possible, both marks intended as votes that some scanners will ignore, and accidental marks that may be counted as votes. A few marks that are obviously not votes, to a person, can be counted as votes by some scanners, and some that are obviously votes will be ignored by some scanners.

10. My analysis of the data from the unofficial Florida 2000 recount done by the media shows that from one to ten votes per thousand votes counted involved a problematic mark; with considerable variation between local jurisdictions. Mark Ritchie, who was the Minnesota Secretary of State during the 2008 senatorial hand recount of optical scan ballots, informed me that the rate of problematic marks in that election was on the order of one or two marks per thousand votes cast.

11. When the margin in an election is wide, this is unlikely to make any difference, but when the margin is small, this can be a problem. The statewide totals published by the Wisconsin Elections Commission on Nov. 23 show a margin of 0.75 percent (7.5 per thousand) between the leading candidates. This is within the range of problem ballot markings observed in Florida 2000 but larger than the rate of problem ballots in the Minnesota 2008 recount. Furthermore, the state reports a “scattering” of invalid write-in votes at a rate of 0.87 percent. I note that the Wisconsin Elections

Commission data does not indicate the number of undervotes – that is, ballots where the scanner saw no presidential vote.

12. A manual recount of the ballots can address the problems of scanner accuracy and voter misunderstanding of the purpose of the write-in blank. A hand recount offers meaningful assurance that borderline marks on ballots are correctly interpreted. It can compensate for local differences in how over-voted and blank ballots are handled. A hand recount can also reveal whether a ballot scanner has been hacked with malware. The security requirements set by current voting system standards are rudimentary at best and products built to these standards are vulnerable. Specifically, Harri Hursti has demonstrated several attacks on the AccuVote OS scanners used in Wisconsin, showing how easily those machines can be hacked. The Ohio EVEREST report and the California Top to Bottom Review—inquiries commissioned by those states to examine the security risks of voting machine technologies—found serious vulnerabilities in every voting system hey examined. For example, in addition to the AccuVote OS system, the California Top to Bottom Review found "significant security weaknesses throughout the Sequoia system," including the Sequoia Insight tabulator, which is in use in Wisconsin. And the Ohio EVEREST report found that the ES&S M100 optical scan systems—which are used by more than 100 municipalities across Wisconsin—"lack the fundamental technical controls necessary to guarantee a trustworthy election under operational conditions. Exploitable vulnerabilities allow even persons with limited access – voters and precinct poll workers – to compromise voting machines and precinct results, and, in some cases, to inject and spread software viruses into the central election management system." Fundamentally, because all voting

machines are computers, they are all vulnerable to cyberattacks, and we know that we cannot rely on pre-election testing to detect hacked voting equipment because there are well-known ways of evading such tests. Therefore, again, examination of the ballots is essential.

13. It is noteworthy that the 2015 Wisconsin Act 261 allows election inspectors significant discretion in the use of the override function when overvotes are encountered *on election day*. This means that in some Wisconsin jurisdictions, overvoted ballots may have been simply counted, while in other jurisdictions, overvoted ballots will have been returned to voters or to the canvassing board for re-making. The Wisconsin Election Day Manual, on page 98, recommends but does not require uniformity of treatment within any one jurisdiction.

14. In contrast, *during a recount* Wisconsin inspectors must evaluate voter intent on overvotes (for both manual and automatic recounts), using detailed standards described below.

15. Accordingly, a recount significantly improves the voters' likelihood of having their votes counted as intended and diminishes the impact of local variations between the types of machines used and the procedures employed to handle overvotes on election day.

Wisconsin's Instructions to Its Ballot Inspectors concerning Recounts

16. I have long advocated uniform standards statewide for recounting ballots.

17. I have reviewed Wisconsin's standards for determining voter intent in the Wiscon Elections Commission manual entitled Counting Votes at the Spring Primary,

Spring Election & General Election, revised August 2014; these instructions are cited in the Election Recount Procedures manual of November 2016. While these procedures are not perfect, they will significantly reduce the number of voters whose vote is not counted as intended on the first count.

18. Wisconsin provides detailed instructions to its ballot examiners on *how* to evaluate voters' marks to determine their intent. I consider Wisconsin's manuals appear to be quite good.

19. I have also read Wisconsin Statutes, Section 7.50(2) discussing the determination of elector intent. The statutes and the Counting Votes manual complement each other. Taken together, the statute and manual provide excellent guidance for ascertaining voter intent.

20. To take just some examples, Wisconsin instructs examiners what areas on the ballot should be reviewed for marks, provides examples of the types of marks that should be counted, and provides insight on how to address erasure marks. It specifically instructs examiners how to deal with the "enthusiastic voter," the voter who both marks the section for his or her candidate *and* writes that candidate's name in the "write in" line.

21. These guidelines, in my opinion, provide substantial instruction to ballot examiners and diminish the chance that different ballot examiners will apply the "intent of the voter" standard differently.

Wisconsin Today vs. Florida in 2000

22. The Florida recounts of 2000 raised serious questions about determining voter intent that are not raised in the 2016 Wisconsin recount.

23. I researched punched-card ballots of the type that were used in the Florida 2000 election (the Votomatic and Data-Punch voting machines). I reported some of my experiments with punched-card ballots in my testimony before the U.S. Commission on Civil Rights during their Jan. 11, 2001 hearing in Tallahassee. All of my experiments with Votomatic ballots are available on my website: http://www.cs.uiowa.edu/~jones/cards/chad.html (last updated, January 2006).

24. During the Florida recount, it was generally agreed that a piece of chad hanging by one corner was intentionally punched by the voter, while a piece of chad hanging by three or more corners was agreed by most to be unpunched. Chad hanging by two corners was the subject of debate.

25. After the 2000 Florida recount, I conducted experiments to determine if those distinctions based on the number of corners left on the chad were consistent with voter intent—i.e. was it true that a piece of chad hanging by one corner or just dimpled was likely not intentionally punched by the voter?

26. My experiments revealed that standards based on the number of detached corners make no sense. I discovered that the effect of the amount of force a voter used varied widely depending on how well the voting machine was maintained. In fact, the force required to punch that piece of chad on a well maintained voting machine was *less* than the force that would only dimple a piece of chad without detaching any of its corners on a poorly-maintained machine. So whether a chad was merely dimpled or pushed out entirely was more a reflection of maintenance history than voter intent.

27. Yet these standards appear to have lasted from the invention of the Votomatic card ballot by Joseph P. Harris in the mid-1960s all the way to the end of the

punched card era. The survival of such flawed standards until the end of the punched card era demonstrates that human intuition is not a particularly good guide for interpreting a punched-card chad. Counting corners on chads is far removed from the everyday experiences of almost all of us. Human interpretation of dangling or dimpled chad requires technical expertise that was largely unavailable in Florida in 2000.

28. In contrast, paper ballots marked with a pen or pencil are very close to our everyday experience. Children begin their formal study of pen and pencil marks on paper in kindergarten, and by the time we graduate from high school, we have had years of formal study and informal experience making marks on paper and interpreting the meanings of those marks. The average person can easily distinguish erasures and smudges from deliberate marks and can easily discern intent in people's marks on paper.

29. An inspector looking at an optical scan ballot has years of real-life experience to understand the voters' likely purpose in marking an X, for example. The inspector, based on his years of experience with pen/pencil marks, can discern the import of that X in a way that an inspector looking at a hanging chad could not.

30. Additionally, the punched card ballots used in Florida are fragile, so each time they were counted, the record of voters' intent could be inadvertently altered. In contrast, Wisconsin's optically scanned paper ballots are a completely different technology. Wisconsin law requires that they create a persistent and readily interpretable record of voters' intent. Wisconsin ballots can be counted efficiently and accurately in a manual recount. In my experience counting and recounting paper ballots on optical scan vote tabulators, I have run a deck of ballots through multiple tabulators as many as 12 times without any substantial damage to the ballots, despite my using a wide

range of different pens and pencils to mark the ballots. I would not expect punched card ballots to stand up as well to such treatment, particularly where there is any dangling or dimpled chan in question.—

Dated: Iowa City, Iowa
December 7, 2016

DOUGLAS W. JONES

Exhibit A

Curriculum Vitae
DOUGLAS W. JONES

Business Address:
Department of Computer Science
University of Iowa, Iowa City, Iowa 52242

Phone: (319)335-0740

E-mail: jones@cs.uiowa.edu

EDUCATIONAL AND PROFESSIONAL HISTORY

1. **Higher Education**
   - University of Illinois at Urbana Champaign, 1973-1980, Computer Science, MS 1976, PhD 1980.
   - Carnegie-Mellon University, 1969-1973, Physics, BS 1973.
2. **Professional and Academic Positions**
   - Associate Professor, 1988-, University of Iowa Department of Computer Science.
   - Assistant Professor, 1980-1988, University of Iowa Department of Computer Science.
   - Teaching Assistant, 1980, University of Illinois Physician Computer Science Training Program.
   - Research Assistant, 1973-1980, University of Illinois Medical Computing Laboratory.
   - Resident Visitor, 1973-1974, Bell Telephone Laboratories Acoustics Research Department, Murray Hill.
   - Programmer, 1972, Com Share Incorporated, Ann Arbor.
3. **Honors and Awards**
   - University of Iowa Office of Services for the Handicapped Certificate of Recognition, 1980.
   - Tau Beta Pi, the National Engineering Honor Society, 1980.
   - The Honor Society of Phi Kappa Phi, 1980.
4. **Memberships**
   - Senior member, Association for Computing Machinery.
   - American Association for the Advancement of Science.

TEACHING AT THE UNIVERSITY OF IOWA

1. **Teaching Assignments**

Semester		Course	Class Size	Course Name
2014	fall	CS:2630	48	Computer Organization
		CS:4908	6	Indiv Programming Project (PDP-8)
	spring	22C:60	58	Computer Organization
		22C:196	23	Compiler Construction
		22C:199	6	Indiv Programming Project (PDP-8)
2013	fall	22C:112	45	Operating Systems
	spring	22C:060	42	Computer Organization
		22C:196	23	Compiler Construction
2012	fall	22C:112	24	Operating Systems
	spring	22C:060	47	Computer Organization
		22C:112	15	Operating Systems
2011	fall	22C:060	28	Computer Organization
	spring	22C:112	20	Operating Systems
		22C:169	32	Computer Security
2010	fall	22C:60	23	Computer Organization
	spring	22C:112	31	Operating Systems
		22C:169	34	Computer Security
2009	fall	22C:60	29	Computer Organization
	spring	22C:112	33	Operating Systems
2008	fall	22C:60	30	Computer Organization
	spring	22C:112	25	Operating Systems
2007	fall	22C:60	24	Computer Organization
	spring	22C:169	38	Computer Security
2006	fall	22C:60	23	Computer Organization
	spring	22C:169	9	Computer Security
2005	fall	22C:60	25	Computer Organization
	summer	22C:60	12	Computer Organization
	spring	22C:60	37	Computer Organization
		22C:169	45	Computer Security
2004	fall	22C:60	49	Computer Organization
	summer	22C:50	11	Introduction to System Software
	spring	22C:122	27	High Perf. Computer Architecture
2003	fall	22C:40	42	Computer Org. and Hardware
		22C:50	32	Introduction to System Software

	spring	22C:122	25	High Perf. Computer Architecture
		22C:50	63	Introduction to System Software
2002	fall	22C:116	10	Advanced Operating Systems
	spring	22C:116	14	Advanced Operating Systems
		22C:294	5	Topics ... kernel design
2001	fall	22C:116	14	Advanced Operating Systems
		22C:196		Topics ... Computers in Voting and Elections
	spring	22C:122	18	High Perf. Computer Architecture
2000	fall	22C:116	25	Advanced Operating Systems
		22C:50	41	Introduction to System Software
	spring	22C:116	19	Advanced Operating Systems
1999	fall	22C:116	32	Advanced Operating Systems
		22C:122	7	High Perf. Computer Architecture
	spring	22C:116	18	Advanced Operating Systems
1998	fall	22C:116	25	Advanced Operating Systems
		22C:122	11	Advanced Computer Architecture
	spring	22C:116	31	Advanced Operating Systems
		22C:122		Advanced Computer Architecture
1997	fall	22C:116	31	Advanced Operating Systems
	summer	22C:18	11	Computer Org. and Assembly Lang. Prog.
	spring	22C:116	15	Advanced Operating Systems
1996	fall	22C:18		Computer Org. and Assembly Lang. Prog.
		22C:116		Advanced Operating Systems
	spring	22C:18		Computer Org. and Assembly Lang. Prog.
		22C:122		Advanced Computer Architecture
1995	fall	22C:116	29	Advanced Operating Systems
	spring	22C:116		Advanced Operating Systems
		22C:216	12	Topics in Operating Systems
1994	spring	22C:116		Advanced Operating Systems
1993	fall	22C:16		Intro. to Prog. and Problem Solving in Pascal
		22C:18		Computer Org. and Assembly Lang. Prog.
	spring	22C:16		Intro. to Prog. and Problem Solving in Pascal
1992	spring	22C:116		Advanced Operating Systems
	fall	22C:194		Topics ... Discrete Event Simulation
1991	spring	22C:32		Introduction to System Software
	fall	22C:5		Problem Solving and Computing
		22C:31		Digital Systems and Computers
1990	spring	22C:18		Computer Org. and Assembly Lang. Prog.

1989	fall	22C:18		Computer Org. and Assembly Lang. Prog.
	spring	22C:122		Advanced Computer Architecture
1988	spring	22C:31		Digital Systems and Computers
1987	fall	22C:31		Digital Systems and Computers
		22C:32		Introduction to System Software
	spring	22C:32		Introduction to System Software
		22C:216		Advanced Operating Systems
1986	fall	22C:32		Introduction to System Software
	spring	22C:18		Computer Org. and Assembly Lang. Prog.
		22C:116		Operating Systems
1985	fall	22C:18		Computer Org. and Assembly Lang. Prog.
	spring	22C:116		Operating Systems
1984	fall	22C:32		Introduction to System Software
		22C:216		Advanced Operating Systems
	spring	22C:116		Operating Systems
1983	fall	22C:31		Digital Systems and Computers
		22C:216		Advanced Operating Systems
	spring	22C:116		Operating Systems
1982	fall	22C:19		Discrete Structures
		22C:23		Programming Language Concepts
	spring	22C:32		Introduction to System Software
1981	fall	22C:32		Introduction to System Software
		22C:216		Advanced Operating Systems
	spring	22C:32		Introduction to System Software
1980	fall	22C:31		Digital Systems and Computers
		22C:32		Introduction to System Software

2. **Students Supervised**

Degree Objective	Student Name	Years	Outcome
PhD	Paul Cotton	2008-	quit at MS
	Robert Hansen	-2008	quit ABD
	Herbert Hoeger (co advised)	-1995	completed

	Rex Gantenbein	-1986	completed
MS+	Madhavi Reddy Chinthakuntla	-1993	completed
	Arash Barani	-1992	completed
	Frank Miller	-1989	completed
	Jing Jan	-1987	completed
	Wilson Pan	-1986	completed
	George Singer	-1985	completed

Degree Objective	Student Name	Years	Outcome
Honors	Adlai Griffith	-2000	completed
	Edward W. Sihler	-2000	completed
	Jerry Medved	-1992	completed
	Keith Miller	-1991	completed
	Reuven Shapira	-1988	completed
	Leonard Wanger	-1987	completed
	Yvette Ruiz	-1986	completed
	Kailon Goettsche	-1986	completed
	Kjell Holtsmark	-1985	completed
	Tim Bosserman	-1983	completed
	Michael Soenksen	-1983	completed
	Bryan Willman	-1982	completed
Undergraduate advisees		2011-12	9
		2010-11	13
		2009-10	10
		2008-09	11
		2007-08	11
		2006-07	14
		2005-06	15

3. **Other Contributions to Instructional Programs**

Guest Lectures

Semester		Course	Course Name
2008	fall	22C:196	Topics in CS: Privacy and Anonymity Topic: Electronic Voting
2007	spring	36:43	Rhetoric, Science and Technololgy title: E-Voting in the 2006 Dutch Elections

2006	fall	22C:196:001	Human Computer Interaction title: Ballot design.
2004	fall	55:91	Professional Seminar in Electrical Engineering title: Computers in Elections.
		30:119	Problems in American Politics: The 2004 Elections title: Voting Technology.
2001	spring	55:91	Professional Seminar in Electrical Engineering title: Computers in Elections.
1998	fall	55:91	Professional Seminar in Electrical Engineering title: The Trippy, a case study.
	spring	55:91	Professional Seminar in Electrical Engineering title: The Trippy, a case study.
1997	fall	55:91	Professional Seminar in Electrical Engineering title: The Trippy, a case study.
1992	spring	108:190	The Arts and Technologies of the Book title: Evolution of bookmaking technologies.

SCHOLARSHIP

1. **Publications or Creative Works**

For multi-authored work, the following marks indicate
** = senior author, major contribution*
*** = secondary contribution*
**** = equal contribution*
***** = minor contribution*

1. **Refereed**

- Books and Monographs

- Foreword, in *E-Voting Case Law: A Comparative Analysis*, Ardita Driza Maurer, Editor, Ashgate, publication pending, mid 2015. 3 pages.
- Computer Security Versus The Public's Right to Know, in *Was Your Vote Counted?*, Bobby M. Tuazon, Editor, Cen PEG Books, Quezon City, Philippines, 2013; pages 125-131.
- *Broken Ballots*, D.W. Jones***, Barbara Simons***, Center for the Study of Language and Information (Stanford), 2012, 445 pages. Published in Estonian as *Rikutud Sedelid*, 2012. Published in Russian (Abridged) as *Испорченные бюллетени*, 2013.
- Kazakhstan: The Sailau E-Voting System, in *Direct Democracy: Progress and Pitfalls of Election Technology*, Michael Yard, Editor, IFES, 2010; pages 57-70 (pages 74-95 in the 2011 edition).

- On Optical Mark-Sense Scanning, in *Towards Trustworthy Elections*, David Chaum, Marcus Jacobsson, Ronald Rivest, Peter Ryan, Josh Benaloh, Miroslaw Kutylowski, Ben Adida, Editors, Springer Lecture Notes on Computer Science subseries on Security and Cryptology, Vol. 6000, 2010; pages 175-190.
- *OSCE/ODIHR Election Observation Mission final report on the 18 August 2007 Parliamentary Election in the Republic of Kazakhstan,* Organization for Security and Cooperation in Europe, Office for Democratic Institutions and Human Rights, Warsaw, October 30, 2007. (19 members of the core team; D. W. Jones***, Marcin Cieslak*** and Peter Wolf** drafted the section on electronic voting.)
- Perspectives on Electronic Voting, in *From Power Outages to Paper Trails -- Experiences in Incorporating Technology into the Election Process,* IFES white paper, April 3, 2007 (15 pages out of 35).
- *OSCE/ODIHR Election Assessment Mission report on the 22 November 2006 Parliamentary Election in the Netherlands,* Organization for Security and Cooperation in Europe, Office for Democratic Institutions and Human Rights, Warsaw, March 12, 2007. (9 members of the mission; D. W. Jones*** and Tarvi Martens*** drafted the section on electronic voting.)
- *The Machinery of Democracy -- Protecting Elections in an Electronic World*, Report of the Task Force on Voting System Security Lawrence Norden, chair, Brennan Ctr. for Justice at NYU School of Law, 2006 (147 pages, 18 task-force members; D. W. Jones** contributed Appendix E, 8 pages.) Acad. Chicago Publ., 2007 (200 pages).
- *OSCE/ODIHR Election Observation Mission final report on the 4 December 2005 Presidential Election in Kazakhstan,* Organization for Security and Cooperation in Europe, Office for Democratic Institutions and Human Rights, Warsaw, Feb. 21, 2006. (34 pages, 17 members of the core observing team; D. W. Jones*** and Herman Ruddijs*** drafted section VI on electronic voting and recommendations 15-19.)
- Evaluation of Voting Technologies, Chapter 1 of *Secure Electronic Voting* Dimitris Gritzalis, ed. Kluwer Academic Publishers, 2002 (13 pages out of 240).
- *Handbook of Small Electric Motors* William H. Yeadon* and Alan W. Yeadon, eds. McGraw Hill, 2001 (1071 pages, 39 contributors). D. W. Jones*** contributed section 5.2.10 (16 pages) and sections 10.8 to 10.10 (27 pages).

- Articles
  - "Internet Voting in the U.S.," Barbara Simons***, D.W. Jones***, *Communications of the Association for Computing Machinery, 55,* 10 (Oct. 2012) 68-77.
  - "Voting Systems Would Benefit from More Attention to Human Factors," Mike Byrne***, Tiffany Jastrzembski***, Douglas W. Jones***, Bill Killam***, Whitney Quesenbery***, Human Factors and Ergonomics Society, Oct. 27, 2008.
  - "A Conversation with Douglas W. Jones and Peter G. Neumann," Douglas W. Jones***, Peter G. Neumann, *ACM Queue, 4,* 9 (Nov. 2006).
  - "System for handicapped access to voting ballots," U.S. Patent 7,134,597 (Nov. 14, 2006).
  - "Evaluation of Voting Systems," Poorvi L. Vora*, Benjamin Adida***, Ren Bucholz***, David Chaum*, David L. Dill***, David Jefferson***, Douglas W. Jones***, William Lattin***, Aviel D. Rubin***, Michael I. Shamos***, and Moti Yung*** *Communications of the Association for Computing Machinery, 47,* 11 (Nov. 2004) 144.
  - "Misassessment of Security in Computer-Based Election Systems," *Cryptobytes, 7,* 2 (Fall 2004) 9-13.
  - "Auditing Elections," *Communications of the Association for Computing Machinery, 47,* 10 (Oct. 2004) 46-50.
  - "Integrating Concurrent and Conservative Distributed Discrete-Event Simulators" H. R. Hoeger* and D. W. Jones** *Simulation, 67* 5 (Nov. 1996) 303-314.
  - "Concurrent Operations on Priority Queues," *Communications of the Association for Computing Machinery, 32,* 1 (Jan. 1989) 132-137.
  - "The Design and Implementation of a Dynamic Binding Feature for a High-Level Language," R. E. Gantenbein** and D. W. Jones*, *The Journal of Systems and Software, 8,* 4 (Sept. 1988) 259-273.
  - "Application of Splay Trees to Data Compression, *Communications of the Association for Computing Machinery, 31,* 8 (Aug. 1988) 996-1007.
  - "A Note on Bottom-Up Skew Heaps," *SIAM Journal on Computing, 16,* 1 (Feb. 1987) 108-110.
  - "An Empirical Comparison of Priority Queue and Event Set Implementations," *Communications of the Association for Computing Machinery, 29,* 4 (Apr. 1986) 300-311.

- "Improved Interpretation of UNIX-Like File Names Embedded in Data," *Communications of the Association for Computing Machinery, 27,* 8 (Aug. 1984) 782-784.
- "Assembly Language as Object Code," *Software - Practice and Experience, 13,* 8 (Aug. 1983) 715-725.
- "Programs as Higher Level Subroutines," D. W. Jones*, A. B. Baskin**, T. Chen****, and L. Bloomfield**, *Software -- Practice and Experience, 9,* 2 (Feb. 1979) 149-155.

2. **Non-refereed**

- "Some modest proposals for voter signature verification", guest editorial, *Iowa City Press-Citizen*, Nov. 29, 2012.
- *Expert Report / Conroy et al v. Dennis,* (small portions redacted), Sept. 5, 2006, 16 pages.
- *Regarding the Voting Systems Standards Proposed by the New York State Board of Elections in February 2006,* public comment to the New York State Board of Elections, Feb. 24, 2006, 5 pages.
- *Regarding the Voting Systems Standards Proposed by the New York State Board of Elections in December 2005,* public comment to the New York State Board of Elections, Jan. 23, 2006, 16 pages.
- *Regarding the Optical Mark-Sense Vote Tabulators in Maricopa County,* prepared for the Arizona Senate Government Accountability and Reform Committee, Jan. 12, 2006, 31 pages.
- *Stepping Motor Fundamentals,* R. Condit*** and D. W. Jones***, Microchip Corporation Applications Note AN907, 2004, 22 pages.
- Letter in response to the editorial question "Is Computer Science an Engineering Discipline," *The Bent of Tau Beta Pi, 93,* 1 (Winter 2002) 8-9.
- "The Digital PDP-8 Story," a 3-part series, *Historically Brewed, Newsletter of the Historical Computer Society, 7, 8, 9* (Sept-Oct 1994) 7-10, (1995) 7-10, (1996) 11-14.
- "Origins and Legacy of the IBM 701," *The Analytical Engine, Newsletter of the Computer History Association of California, 1,* 3 (Jan. 1994) 21-28.
- "How (Not) to Code a Finite State Machine," *Association for Computing Machinery Special Interest Group on Programming Languages Notices, 23,* 8 (Aug. 1988) 19-22.
- "The Ultimate RISC," *Computer Architecture News, 16,* 3 (June 1988) 48-55.
- "A Minimal CISC," *Computer Architecture News, 16,* 3 (June 1988) 56-63.
- *Iowa Capability Architecture Project ICAP Programmer's Reference Manual,* University of Iowa Computer Science Technical Report 85-06 (1985).

- "Can High-Tech Save the Iowa Economy", WSUI/KSUI Faculty Commentary, broadcast Oct. 18 and 21, 1982.
- *Machine Independent SMAL: A Symbolic Macro Assembly Language,* University of Iowa Computer Science Technical Report 82-03 (1982), revised as Technical Report 84-09 (1984).
- *The Systematic Design of a Protection Mechanism to Support a High Level Language,* revision of PhD Thesis, University of Iowa Computer Science Technical Report 81-04 (1981).
- "Tasking and Parameters: A Problem Area in Ada," *Association for Computing Machinery Special Interest Group on Programming Languages Notices, 15,* 5 (May 1980) 37-40.
- "A Note on Some Limits of the Algebraic Specification Method," *Association for Computing Machinery Special Interest Group on Programming Languages Notices, 13,* 4 (Apr. 1978) 64-67.
- "Sorting Methods for MODCOMP Computers," *MUSE News (the newsletter of the MODCOMP user's group),* Jan. 1978, 149-155.
- *Run Time Support for the TUTOR Language on a Small Computer System,* revision of MS Thesis, University of Illinois Department of Computer Science Technical Report UIUCDCS-R-77-868, May 1977.

3. **Web Based**

- *The University of Iowa's DEC PDP-8,* http://www.cs.uiowa.edu/~jones/pdp8/UI-8/, comprehensive documentation of the effort to restore a 50-year-old computer to operating condition.
- *Testing Voting Systems,* http://www.cs.uiowa.edu/~jones/voting/testing.shtml, originally posted 2004. This web page is mirrored on the Verified Voting Foundation web site and it has been used as a reading in several courses on voting systems at other universities.
- *Counting Mark-Sense Ballots,* http://www.cs.uiowa.edu/~jones/voting/optical/, originally posted 2002.
- *Chad, from Waste Product to Headline,* http://www.cs.uiowa.edu/~jones/cards/chad.html, originally posted 2000, major revisions 2001. This work led to stories in the Palm Beach Post on Dec. 9 and Dec. 31 2001; the latter on the front page.
- *Computer Control of Stepping Motors,* http://www.cs.uiowa.edu/~jones/step/, originally posted 1990, major revisions 1995 and 1998.

- *A Tutorial Introduction to Bookbinding,* http://www.cs.uiowa.edu/~jones/book/, originally posted 1995. Judged "Information Value of the Week" by the Austria Information Switchboard, July 12, 1997, "one of the best 3,000 sites of interest for New Zealanders," by the Internet Phone Book, June 1998, " `Free Stuff' Best of the Web," by C&T Publishing, November 1999, "Selected Instructional Site," WannaLearn.com, June 2000, and added to the Swedish Schoolnet Link Larder, Dec 2000.
- *The Prairie Paper Project,* http://www.cs.uiowa.edu/~jones/prairiepaper.html, originally posted 1995. Judged "Web Draw Site of the Week," February 10, 1997, by PulpandPaper.net.

2. **Published Reviews of Scholarship**
3. **Grants**
    1. External:
        - Jinn A/S: Development of Efficient Implementations for Ternary Arithmetic Operations, 2015.
        - The Democracy Fund (Omidyar Network Fund, Inc.): End-to-End Verifiable Internet Voting: Specification and Feasibility Assessment Study. (Travel and logistic support), 2013.
        - NSF Collaborative Research grant CNS-052431: CT-CS: A Center for Correct, Usable, Reliable, Auditable, and Transparent Elections (ACCURATE), awarded 8/15/05, extended 8/23/2010, ended 9/30/2011.
        - Basic Telepresence Incorporated (Summer Support), 1997, 1999, 2000.
        - Army Research Office Contract MDA903-90-C-0154, co-PI, 1991, 1992.
        - University of Iowa Department of Physics, subcontract under NASA Contract NAS5-30316 (Summer Support), 1989.
        - Rockwell International, Collins Government Avionics Division (Summer Support), 1986.
        - Norand Corporation Applied Academics Contract (Summer Support), 1985.
    2. Internal:
        - Rockwell Collins Televideo Funds (summer support), 2001, 2002, 2003
        - Developmental Leave, fall 1994.
        - Developmental Leave, fall 1988.
        - Old Gold Summer Fellowship, 1982.
        - University of Iowa Council on Teaching grant to refit computer terminals for use by students with severe motor disabilities.
        - Old Gold Summer Fellowship, 1981.

4. **Invited Papers and Conference Proceedings**

1. ``The Help America Vote Act of 2002, a Retrospective,'' address to the Iowa City Noon Rotary Club, Iowa City, Iowa, Jan. 16, 2014.
2. ``Current Trends in US Voting,'' address to the League of Woman Voters of Johnson County, Iowa City, Iowa, Dec. 7, 2013.
3. "What Do We Need in Voting System Standards," panel discussion participant, NIST/EAC Future of Voting Systems Symposium, February 27, 2013, Gaithersburg, MD.
4. "Election Technology", University of Iowa Tech Forum, May 16, 2012.
5. "SOBA: Secrecy-preserving Observable Ballot-level Audit", Josh Benaloh***, Douglas Jones***, Eric L. Lazarus***, Mark Lindeman***, Philip B. Stark***, EVT/WOTE '11: 2011 Electronic Voting Technology Workshop / Workshop on Trustworthy Elections, August 9, 2011, San Francisco, CA.
6. "Sarasota Panel: Vote-o-graph results from Iowa", panel discussion participant, EVT/WOTE '11: 2011 Electronic Voting Technology Workshop / Workshop on Trustworthy Elections, August 8, 2011, San Francisco, CA.
7. "The Conflict Between Transparency and Security", Invited presentation, FIT4E -- Filipino IT for Election Conference, June 13, 2011, Quezon City, Philippines (by video link).
8. "Current and Emerging Technology in Election and Voting Cases", Election Law and Voting Issues Seminar (ELVIS), U.S. Department of Justice National Advocacy Center, September 1, 2010, Columbia, SC.
9. "Towards Publishable Event Logs That Reveal Touchscreen Faults", Andrea Mascher***, Paul Cotton*** and Douglas Jones***, EVT/WOTE '10: 2010 Electronic Voting Technology Workshop / Workshop on Trustworthy Elections, August 10, 2010, Washington DC.
10. "Internet Voting for UOCAVA Voters — Note on the Relevance of European Experience", invited position paper, Workshop on UOCAVA Remote Voting Systems, Washington DC, August 6, 2010.
11. "Vote-O-Graph: A Dishonest Touchscreen Voting System" (Extended Abstract), Andrea Mascher***, Paul Cotton*** and Douglas Jones**, CHI 2010: 28th ACM Conference on Human Factors in Computing Systems, April 13, 2010, Atlanta.
12. "Early Requirements for Mechanical Voting Systems," invited paper, First International Workshop on Requirements Engineering for E-voting Systems, August 31, 2009, Atlanta.
13. "Improving Voting System Event Logs," Andrea Mascher***, Paul Cotton*** and Douglas Jones**, First International Workshop on Requirements Engineering for E-voting Systems, August 31, 2009, Atlanta.
14. Panelist, with John Sebes, Dan Wallach, David Wagner and Jeremy Epstein, "Technology Lessons Learned from Election 2008," RSA Security Conference, April 21, 2009, San Francisco.

15."The Trials and Tribulations of Electronic Voting," invited talk, Institute for Civic Discourse and Democracy, Kansas State University Libraries and Department of Computing and Information Sciences, Kansas State University, September 16, 2008.

16."International Election Observervation," invited talk before the Manhattan/Riley County Kansas League of Women Voters, September 16, 2008.

17.Panelist, with David Wagner, Hugh Thompson, Alec Yasinsac and Gary McGraw, "Electronic Voting, the Politics of Broken Systems," RSA Security Conference, April 10, 2008, San Francisco.

18."International Election Observer -- Kazakhstan and the Netherlands," invited talk before the Iowa City Foreign Relations Council, January 29, 2008. Broadcast on WSUI, 9 PM, February 3, 2008.

19."Observing Elections," invited talk, VoComp, July 17, 2007, Portland, Oregon.

20."Computer Security Versus the Public's Right to Know," a panel discussion on "Electronic Voting Integrity," 17th Conference on Computers, Freedom and Privacy, May 4, 2007, Montreal.

21.Participant, OSCE/ODIHR Expert Meeting on "Election Observation and Electronic Voting," 22-23 March, 2007, Warsaw.

22."The Trials and Tribulations of Electronic Voting," and "Voting Security - A Technical Perspective," invited talks for the University of South Carolina Cybersecurity Symposium, October 27, 2006, Columbia, South Carolina.

23."Technologists as Political Reformers, Lessons from the Early History of Voting Machines," presented at the Society for the History of Technology annual conference, Las Vegas, October 13, 2006.

24."The Trials and Tribulations of Electronic Voting," invited talk, Indian Hills Community College and the Ottumwa chapter of the League of Women Voters, Ottumwa, Iowa, October 9, 2006.

25."Secure Data Export and Auditing Using Data Diodes," Douglas W. Jones* and Tom C. Bowersox**, *Proceedings of the USENIX/ACCURATE Electronic Voting Technology Workshop (EVT'06)*, August 1 2006, Vancouver Canada (Proceedings published on-line at http://www.usenix.org/events/evt06/tech/). Half of the papers submitted to this workshop were accepted.

26."Update on Electronic Voting and Paper Trails," panel discussion, Coalition for A Revitalized League Caucus on Electronic Voting, League of Women Voters National Convention 2006, Minneapolis, June 10, 2006.

27."Connecting Work on Threat Analysis to the Real World," invited paper, VSRW 06 Workshop on Threat Analysis for Voting System Categories, Washington, DC, June 8, 2006.

28."Elections & Electronic Voting Machines -- Technology, technologists and public policy," Address to the IEEE Cedar Rapids Section, Iowa City, April 27, 2006.

29."Voting System Standards," Testimony before the Connecticut Voting Technology Standards Board, Hartford, Connecticut, January 13, 2006.

30."Threats to Voting Systems," NIST Workshop on Developing an Analysis of Threats to Voting Systems, Gaithersburg, Maryland October 7, 2005.

31."Keeping Electronic Voting Honest," AAAS Annual Meeting, Washington, DC, February 18, 2005.

32."Reducing the Trusted Base," Invited position statement for the Computer Science and Telecommunications Board of the National Acadamies Framework for Understanding Electronic Voting, Washington DC, December 9, 2004.

33."Reliability of US Voting Systems: An assessment in the light of recent changes," Hearing on Election Preparedness, Congressional Black Caucus, Washington, DC, October 7, 2004.

34."Voting System Transparency and Security: The need for standard models," U. S. Election Assistance Commission Hearing on Transparency and Security, National Institute of Standards and Technology, Gaithersburg, MD, September 20, 2004.

35."On Optical Scanning," DIMACS Workshop on Electronic Voting -- Theory and Practice, Rutgers University, Piscataway, NJ, May 27, 2004.

36."Electronic Voting is Hard to Certify," Workshop on Software Certification and Dependability, Computer Science and Telecommunications Board of the National Acadamies Washington DC, March 1, 2004.

37."How Do You Know Your Vote Was Counted," Invited Lecture, jointly by the Springfield Chapters of the ACLU and NAACP, University of Illinois at Springfield Office of Multicultural Affairs and Women's Studies Program, Springfield, Illinois, April 14, 2004.

38.Joint presentation on the dilemmas posed by the Help America Vote Act, Chet Culver (Iowa Secretary of State)*** and Douglas W. Jones***, Iowa State Association of Counties, Des Moines, Iowa, March 17, 2004.

39."Strengths and Weaknesses of Voting Systems," keynote address, Second Inter-American Meeting on Electoral Technology, Organization of American States, Panama City, Panama, March 1, 2004.

40."How Safe is our Voting System," Cornell College, Mount Vernon, Iowa, January 8, 2004.

41."Why Trustworthy Voting Systems Require Institutionalized Distrust," First Symposium on Building Trust and Confidence in Voting Systems, National Institute of Standards and Technology, Gaithersburg, maryland, Dec 10, 2003.

42.Featured speaker, Internet and Public Policy Project forum, School of Public Policy, Georgia Institute of Technology, Atlanta, Georgia, Oct 16, 2003.

43."The Diebold AccuVote TS Should be Decertified," Introductory remarks for a panel discussion on Electronic Voting, 12th USENIX Security Symposium, Washington, DC, Aug 6, 2003.

44."The Case Against the Diebold AccuVote TS," USACM Workshop on Voter-Verifiable Election Systems, Denver, July 28, 2003.

45."E-voting, Are our defenses adequate to defend citizen rights?" International Telecommunication Union Workshop on Challenges, perspectives and standardization issues in E-Government, Geneva, June 6, 2003.

46."Human Factors in Voting Technology, an Ethical Response," Council on Governmental Ethics Laws, Ottowa, Sept 30, 2002.

47."Voting System Standards -- Work that Remains to be Done," Hearing before the Federal Election Commission, Washington DC, Apr 17, 2002.

48."End-to-End Standards for Accuracy in Paper-Based Systems," Workshop on Election Standards and Technology, Washington DC, Jan. 31, 2002.

49."Election Reform in Iowa," National Conference on Governance, National Civic League, Washington DC, Nov. 17, 2001.

50."Problems with Voting Systems and the Applicable Standards," *Improving Voting Technology*, Hearing before the Committee on Science, House of Representatives, 107th Congress, Washington DC, May 22, 2001. USGPO Serial No. 107-20, pages 18-19 (oral statement) and pages 85-99 (written statement).

51."Counting Votes with Comptuers," keynote address to the League of Woman Voters of Johnson County, Iowa City, Iowa, May 16, 2001.

52."Evaluating Voting Technology," Testimony before the United States Civil Rights Commission, Tallahassee, Florida, January 11, 2001.

53."E-Voting -- Prospects and Problems," 31st Annual Tau Beta Pi Paul D. Scholz Symposium, University of Iowa, April 13, 2000. (reprinted without permission by FreePublic.com on Nov 16, 2000.)

54.*Step Motor Course,* an intensive 3-day shourt course, H. D. Chai***, D. W. Jones*** and W. H. Yeadon***, Small Motor Manufacturer's Association Motor College, August 6-8 1996, San Jose. (Chapters 4, 6 and 8 are by Jones.)

55.Invited Presentation, Workshop on Expanding and Refining High School Computing, March 22, 1995, Coe College, Cedar Rapids.

56."Simulation of Information Flow in Organizations," *Proceedings of the 1993 Winter Simulation Conference,* Dec. 12-15, 1993, Los Angeles, 1388-1389.

57."A Generalized Hold Model," C. C. Chou*, S. C. Bruell**, D. W. Jones**, W. Zhang**, *Proceedings of the 1993 Winter Simulation Conference,* Dec. 12-15, 1993, Los Angeles, 756-761.

58."Practical Evaluation of a Data Compression Algorithm," *Proceedings of the 1991 Data Compression Conference,* Snowbird, Utah, April 8-10 1991, 372-381.

59."Concurrent Simulation of Queueing Networks: Limitations and Potentials," S. C. Bruell***, C. C. Chou***, D. W. Jones***, W. Zhang***, D. Renk***, *Proceedings of the 21st Annual Pittsburgh Conference on Modeling and Simulation,* May 3-4, 1990, Pittsburgh, 1189-1193.

60."Experience with Concurrent Simulation," D. W. Jones***, Chien-Chun Chou***, Debra Renk***, S. C. Bruell***, *Proceedings of the 1989 Winter Simulation Conference,* Dec. 4-6, 1989, Washington DC, 756-764.

61."The Iowa Logic Specification Language," a colloquium, June 9, 1988, CERN, Geneva Switzerland.

62."Resource Protection," guest lecture, June 2, 1987, Maharishi International University, Fairfield Iowa.

63."Fault-Tolerant Real-Time Control in the PRISM Environment," *Proceedings of the Rockwell International Software Engineering Symposium,* Oct 6-8, 1986, Cedar Rapids, Iowa, 4.1.1-4.1.13.

64."Fault-Tolerant Real-Time Control in PRISM," a colloquium, September 25, 1986, Iowa State University.

65."Concurrent Simulation: An Alternative to Distributed Simulation," *Proceedings of the 1986 Winter Simulation Conference,* Dec. 8-10, 1986, Washington DC, 417-423.

66."Implementations of Time," Douglas W. Jones*, J. O. Henriksen***, C. D. Pegden***, R. G. Sargent***, R. M. O'Keefe***, and B. W. Unger***, *Proceedings of the 1986 Winter Simulation Conference,* Dec. 8-10, 1986, Washington DC, 409-416.

67."Dynamic Binding of Separately Compiled Objects Under Program Control," R. E. Gantenbein* and D. W. Jones**, *Proceedings of the 1986 Association for Computing Machinery Computer Science Conference,* Feb. 4-6, 1986, Cincinnati Ohio, 287-292.

68."Systematic Protection Mechanism Design," *Proceedings of the Symposium on Architectural Support for Programming Languages and Operating Systems,* March 1-3, 1982, Palo Alto California, 77-80.

69."A Local Node in a Medical Depository Network," T. T. Chen*, A. B. Baskin**, D. W. Jones**, L. Sherman****, L. Bloomfield****, and A. H. Levy****, *Institute of Electrical and Electronics Engineers Conference Proceedings, COMPSAC-77,* Nov. 1977, Chicago, 66-70.

5. **Other**

1. *Joseph Hanauer*, Ring of Fire Press, East Chicago, Indiana, 2013. 129 pages. First serialized on-line in *Grantville Gazette 8*, 2006, *Gazette 13*, 2007, and *Gazette 14*, 2007.
2. "Jews and Muslims in a Christian Majority Nation," with Shams M. Ghoneim, Indian Hills Community College 6th Annual Diversity Conference, Ottumwa Iowa, April 16, 2010.
3. "Schwarza Falls," a short story, in *Grantville Gazette V*, Eric Flint (ed), Baen Books, hardcover, 2009, paperback 2011.April 2012. First published on-line in *Grantville Gazette 5*, 2005.

SERVICE

1. Department

- Led effort to restore 50-year-old PDP-8 computer, 2004-
- Member, Recruiting Committee, 2008-2009.
- Member, Recruiting Committee, 2007-2008.
- Chair, Undergraduate Committee, 1999-2003.
- Member, Recruiting Committee, 1991-1992.
- Member, Graduate Committee, 1991-1992.
- Associate Chairman, 1989-1990.
- Member, Undergraduate Committee, 1984-1990.
- Chair and author of final report, Ad-Hoc Committee on Accreditation of the BS Degree Program, 1987.
- Chair, Recruiting Committee, 1982-1984.
- Member, Laboratory Committee, 1980-1983.
- Coordinator, departmental proposal to the Army Research Office for graduate fellowships in computer science, 1982.
- Recording Secretary, 1981-1982.
- Member, Graduate Committee, 1980-1981.

2. College

- Chair, Liberal Arts And Sciences Faculty Assembly, 2002-2003.
- Member, Liberal Arts Faculty Assembly, 1993-2003.
- Member, Historical Perspectives GER Coordinating Committee, 1989-1991
- Member, Graduate College Foreign Student Committee, 1982-1985.

3. University

- Secretary, Governing board of the Aliber-Hillel student center, 1998-2001 (Hillel serves the needs of Jewish students at the University of Iowa.)
- Member, Governing board of the Aliber-Hillel student center, 1994-2007.
- Member, Advanced Computing Facilities Committee, 1990-1996.
- Member, Presidential Scholarship Selection Committee, 1991-1994.
- Member, Search Committee for Associate Vice President for Research and Director of the Office of Information Technology, 1992-1993.
- Member, Goldwater Scholarship Selection Committee, 1991.
- Faculty Representative, Waste Management Committee, 1990-1991.
- Member, Ad Hoc Review Committee for the Office of Services for the Handicapped, 1983.

4. Profession

- Co-chair: 2010 Electronic Voting Technology Workshop / Workshop on Trustworthy Elections (EVT/WOTE '10).
- Co-chair: First International Workshop on Requirements Engineering for E-voting Systems (RE-Vote09).
- Judge and Program Committee: University Voting Systems Competition (VoComp 2007).
- Program Committee: IAVoSS Workshop on Trustworthy Elections (WOTE 2007).

- Program Committee: EVT'07 Electronic Voting Technology Workshop, 2007.
- Program Committee: EVT'06 Electronic Voting Technology Workshop, 2006.
- Planning committee member: NIST Workshop on Developing an Analysis of Threats to Voting Systems October, 2005.
- Founding Member, Voting Systems Performance Rating, 2005-(defunct by 2009)
- Founding Vice President and Chief Technical Officer, Open Voting Consortium, 2003-2004
- Member, Advisory Board, VerifiedVoting.org, 2004-2009
- Member, USACM Committee, the U.S. Public Policy Committee of the ACM, 2003-.
- Member, National Committee on Voting Integrity, 2003-(defunct by 2009)
- Organizing committee member: USACM Workshop on Voter-Verifiable Election Systems, July 2003, Denver.
- Organizing committee member: Georgia Tech Research Institute Internet Voting Workshop, June 2002, Atlanta.
- Session Chair, Winter Simulation Conference, Dec 1993, New Orleans.
- Session Chair, Winter Simulation Conference, Dec 1990, New Orleans.
- Session Chair, Winter Simulation Conference, Dec 1986, New Orleans.
- Referee for: *Communications of the Association for Computing Machinery, Computing Surveys, ACM Transactions on Computer Systems, ACM Transactions on Modeling and Computer Simulation, Institute of Electrical and Electronics Engineers Transactions on Computers, Institute of Electrical and Electronics Engineers Transactions on Distributed Systems, Institute of Electrical and Electronics Engineers Software, Software - Practice and Experience, International Journal of Parallel Programming, Journal of Systems and Software, Algorithmica, The Computer Journal* the National Computer Conference, the Association for Computing Machinery Computer Science Conference, the Institute of Electrical and Electronics Engineers International Symposium on Software Reliability Engineering
- Reviewed textbook manuscripts for: SRA, John Wiley and Sons, Reston Publishing Company, West Publishing Company. Benjamin Cummings.
- Reviewed grant proposals for: National Science Foundation, International Science and Technology Center (operating in Moscow, funded by the US State Department).

5. Community

- Member, Technical Guidelines Development Committee of the United States Election Assistance Commission, 2009-(defunct 2012?)
- Oral testimony, NAACP vs Cortes, US District Court for Eastern Pennsylvania, October 28, 2008.
- Oral testimony before a Washington DC Council subcommittee hearing on election problems in the September 9 primary, October 3, 2008.
- Oral testimony, In the matter of primary election ballot dispute 2008, Supreme Judicial Court of Maine, July 7, 2008.
- Member of the core team for the Election Observer Mission for the parliamentary election in Kazakhstan, Office for Democratic Institutions and Human Rights, Organization for Security and Co-operation in Europe, 2007.

- Member of the Election Assessment Mission for the parliamentary election in the Netherlands, Office for Democratic Institutions and Human Rights, Organization for Security and Co-operation in Europe, 2006.
- Expert witness, Conroy vs Dennis, District Court of the City and County of Denver, Colorado, September 20-22, 2006.
- Submitted detailed comments, New York State Board of Elections December 2005 Draft Voting System Standards.
- Examined the mark-sense ballot tabulators of Maricopa County, Arizona, at the request of the Government Accountability and Reform Committee of the Arizona Senate, 2005.
- Member of core team for the Election Observation Mission for the presidential election in Kazakhstan, Office for Democratic Institutions and Human Rights, Organization for Security and Co-operation in Europe, 2005.
- Consultant to Miami-Dade County Elections Department, 2004.
- Unpaid consultant to the Brennan Center for Justice at New York University, 2004-2008.
- Member, Iowa Election Reform Task Force, 2001.
- Submitted detailed comments, Federal Election Commission July 13 2001 Draft Voting System Standard.
- Submitted detailed comments, Federal Election Commission Dec. 13 2001 Draft Voting System Standard.
- Chair, Iowa Board of Examiners for Voting Machines and Electronic Voting Systems, 1999-2002.
- Member, Iowa Board of Examiners for Voting Machines and Electronic Voting Systems, 1994-2004.