

**EXHIBIT A TO THE DECLARATION OF
DOUG JACOBSON**

IOWA STATE UNIVERSITY
Electrical and Computer Engineering Department

Revised 8/1/2012

I. PERSONAL DATA

Name: Douglas W. Jacobson
Address: 2419 Coover Hall, 515-294-8307
Fax: 515-294-8432
Email: dougj@iastate.edu
Orig. Date of Employment: July 1, 1985
Citizenship: U.S.A.

II. EDUCATION

Ph.D. CprE Iowa State University 1985
M.S. EE Iowa State University 1982
B.S. CprE Iowa State University 1980

III. ACADEMIC EXPERIENCE

7/08 - present University Professor
Electrical and Computer Engineering, Iowa State University
5/07 – present Professor
Electrical and Computer Engineering, Iowa State University
9/05 – 7/11 Director NSF I/U CRC Center for Information Protection
9/03 – present Computer Forensics Analyst, ISU Police Department
9/01 – present Director of Graduate Education, Information Assurance Program
11/00-present Director, ISU Information Assurance Center
7/89 - 5/2007 Associate Professor
Electrical and Computer Engineering, Iowa State University
1986 - 6/89 Assistant Professor
Electrical and Computer Engineering, Iowa State University
1985 - 1986 Temporary Instructor
Electrical and Computer Engineering, Iowa State University

IV. INDUSTRIAL AND NON-ACADEMIC EXPERIENCE

1996 - 2010 Chief Technical Officer Palisade Systems
1996 Founded Palisade Systems, Inc.
1983 – 1996 Founded D & D Digital Systems
1982 - 1985 Senior Design Engineer- ISU Computation Center

V. HONORS AND AWARDS (past 12 years)

2011 2011 Security & Award (top 7 security professionals)
 2011 Fellow IEEE
 2010 2010 Cyber 7 Award (top 7 cyber security professionals in government)
 2008 Mervin S. Coover Distinguished Service Award
 2007 Educator of the Year, Technology Association of Iowa
 2006 Distinguished Service Award, Iowa Academy of Science
 2005 InfraGard Meeting the Challenge Award
 2004 Board of Regents Faculty Excellence Award
 2004 Faculty Escort College Engineering summer commencement
 2004 ISU Inventor
 2003 R&D 100 Award
 2003 Warren Boast Undergraduate Teaching award
 2003 Certificate of Appreciation, Department of Public Safety
 2002 Engineering Student Body, e-Week professor of the semester
 2002 Finalist, EY Entrepreneur of the year
 2002 Louis Thompson Distinguished Undergraduate Teaching Award
 2001 R&D 100 Award
 2001 Iowa diVinci Award

VI. ACADEMIC AREAS OF SPECIALIZATION

Teaching (past 5 years)

CprE 530 Advanced Computer Networks (01F, 01S, Every fall 2002 though 2011)
 CprE 532 Information Warfare(Every spring 1996S through 2009)
 CprE 632 IA Captstone
 CprE 699 Research (87F-current)

Course Supervision (Current courses)

CprE 530 Advanced Computer Networks
 CprE 532 Information Warfare
 CprE 632 IA capstone
 CprE 131 Computer security literacy

VII. GRANTS AND CONTRACTS (past 5 years)

In Progress

Submitted

- 1. Jacobson, D.W.,** Rursch, Rover, Zamberno, Heaverlo, Kemis “Research in information technology and RET in Engineering and Computer Science Site”, NSF, 9/1/2012-8/31/2015, \$499,788

Funded

1. **Jacobson, D.W.** "IT-Adventures", Iowa Department of Economic Development, 2/1/2011-12/31/2011, \$50,000
2. **Jacobson, D.W.** "ISEAGE: Internet-Scale Event and Attack Generation Environment ", Department of Justice, 12/31/10-12/31/13, \$400,000
3. **Jacobson, D.W.** "ISEAGE: Internet-Scale Event and Attack Generation Environment ", Department of Justice, 12/31/10-12/31/13, \$200,000
4. **Jacobson, D.**, "Iowa community college information assurance and computer security training", NSF, 9/1/2010-8/30/2012, \$245,303
5. **Jacobson, D.W.**, "NSF I/U CRC Collaborative Research: Security and Software Engineering Research Center (SSERC)", NSF, 2/10/2010-1/31/2015, \$275,000
6. **Jacobson, D.W.** "ISEAGE: Internet-Scale Event and Attack Generation Environment ", Department of Justice, 12/31/09-12/31/12, \$650,000
7. **Jacobson, D.W.**, Licklider, B., Bergman, C., Wong, J., "SFS Fellowships for information assurance students", 5/1/09-4/30/13, NSF, \$1,956,883
8. **Jacobson, D.W.** "IT-Adventures", Iowa Department of Economic Development, 3/1/2010-12/31/2010, \$50,000
9. **Jacobson, D.W.** "IT-Adventures", Iowa Math and Science Education", 5/30/2009-5/1/2010, \$60,000
10. **Jacobson, D.W.** "IT-Adventures", Iowa Department of Economic Development, 3/1/2009-12/31/2010, \$50,000
11. **Jacobson, D.W.** "IT-Adventures", Iowa Math and Science Education", 3/1/2009-5/1/2009, \$43,200
12. Daniels, T., **Jacobson, D.W.** "Scalable Virtual Machine Laboratory Systems", NSF, 9/1/08-8/31/10, \$180,000
13. **Jacobson, D.W.** "ISEAGE: Internet-Scale Event and Attack Generation Environment ", Department of Justice, 12/31/07-12/31/10, \$611,000
14. **Jacobson, D.W.** "IT-Adventures", Iowa Department of Economic Development, 3/1/2008-12/31/2009, \$50,000
15. **Jacobson, D.W.** "ISEAGE: Internet-Scale Event and Attack Generation Environment ", Department of Justice, 8/1/06-7/31/09, \$148,048

VIII. TECHNICAL PUBLICATIONS (past 5 years)

Refereed Journals

1. Luse, Andy; Mennecke, Brian E.; Triplett, Janea; Karstens, Nate; and **Jacobson, Doug** (2011) "A Design Methodology and Implementation for Corporate Network Security Visualization: A Modular-Based Approach," *AIS Transactions on Human-Computer Interaction* (3) 2, pp. 104-132
2. Julie Rursch, Andy Luse, and **Doug Jacobson**, "IT-Adventures -- A Program to Spark IT Interest in High School Students using Inquiry-Based Learning with Robotics, Game Design, and Cyber Defense", *IEEE Transactions on Education*, Vol. 53, Issue 1, pages 71-79, 2009. (IEEE Education Society 2011 Transactions on Education best paper award 2011)

Proceeding Articles

1. Rursch, J., **Jacobson, D.W.**, “The Building of Teams During an IT Competition: Success with Combining Multiple Schools into Teams to Perform Collaborative Challenges During a Two-Day Competition”, In Proceedings of the 2011 ASEE Annual Conference. Vancouver, B.C. 26-29 June, 2011.
2. Rursch, J., **Jacobson, D.W.**, “A.A.S. + 2 = Iowa State University Bachelors of Engineering Technology: A Iowa Grassroots Success Story of Developing a 2+2 for "Career Track" Students.”, In Proceedings of the 2011 ASEE Annual Conference. Vancouver, B.C. 26-29 June, 2011.
3. Idziorek, J., Tannian, M., **Jacobson, D.W.**, “Teaching Computer Security Literacy to Students from Non-Computing Disciplines”, In Proceedings of the 2011 ASEE Annual Conference. Vancouver, B.C. 26-29 June, 2011.
4. Idziorek, J., Tannian, M. and Jacobson, D. "Modeling Web Usage Profiles of Cloud Services for Utility Cost Analysis." In Proceedings of the 2011 Winter Simulation Conference (WSC). Phoenix, AZ. 11-14 Dec. 2011. (Invited Paper, In Press)
5. Idziorek, J., Tannian, M. and Jacobson, D. "Detecting Fraudulent Use of Cloud Resources." In Proceedings of the 2011 ACM Workshop on Cloud Computing Security (CCSW) at CCS. Chicago, IL. 21 Oct. 2011. (Acceptance Rate 13/45 = 29%, In Press)
6. Evans, J., Jacobson, D.W., “A Computer Engineering Technology Body of Knowledge”, *Proc. Frontiers in Education* (Washington D.C, Oct. 27-29, 2010).
7. Rursch, J., **Jacobson, D.W.**, “Using Cyber Defense Competitions to Build Bridges Between Community Colleges and Four Year Institutions: A Footbridge for Students into an IT Program”, *Proc. Frontiers in Education* (San Antonio, TX, Oct. 18-21, 2009).
8. Rursch, J., Burkhardt, B., **Jacobson, D.W.**, “Training Non-IT Teachers to Advise and Facilitate Inquiry-Based Learning in IT: A Pilot Study”, *Proc. Frontiers in Education* (San Antonio, TX, Oct. 18-21, 2009).
9. Rursch, J., **Jacobson, D.W.**, “IT-Adventures: Turning High School Students “ON” to Information Technology”, *Proc. Frontiers in Education* (San Antonio, TX, Oct. 18-21, 2009).
10. Evans, N., Blakely, B., **Jacobson, D.**, “A Security Capstone Course: An Innovative Practical Approach to Distance Education”, *Proc. Frontiers in Education* (San Antonio, TX, Oct. 18-21, 2009).
11. Pubali Banerjee, **Doug Jacobson**, “Optimal Configuration of Clustering Protocols for Sensor Networks”, 18th IASTED International Conference on Parallel and Distributed Computing and Systems, Dallas, TX, November 13-15, 2007
12. Pubali Banerjee, **Doug Jacobson**, "Optimal configuration of a secure clustering protocol for sensor networks", 20th ISCA International Conference on Parallel and Distributed Computing Systems, September 24-26, 2007, Las Vegas, Nevada, pp. 145-150. ISBN 978-1-880843-64-2.
13. Pubali Banerjee, **Doug Jacobson**, Soumendra Lahiri “Security and performance analysis of a secure clustering protocol for sensor networks”, 6th IEEE International Symposium on Network Computing and Applications, Cambridge, MA, July 12-14, 2007, pp134-144

Books or Chapters of Books

1. **Jacobson, D. W.**, Idziorek, J. " Computer Security Literacy: Staying Safe in a Digital World”, Under contract with Chapman & Hall/CRC to be published in early 2012.
2. Rursch, J. **Jacobson, D. W.**, "Cyber Defense Competitions as Learning Tools: Serious Applications for Information Warfare Games”, a chapter in a book entitled “Serious Games as Educational, Business, and Research Tools: Development and Design” to be published in February 2012

3. **Jacobson, D. W.**, "Introduction to Network Security", ISBN 1584885432, Chapman & Hall/CRC; 1 edition (November 18, 2008)

IX. TECHNICAL PRESENTATIONS (past 5 years)

1. **Jacobson, D.W.** "Next Generation of Computer Security Professionals", 2011 Information Security Conference, Des Moines, IA, Aug. 16, 2011. (Invited)
2. **Jacobson, D.W.** "A safer Community: Avoid Being a Victim via Technology", Grundy County IA parent group, Grundy Center, IA, Aug. 27, 2011. (Invited)
3. **Jacobson, D.W.** "Computer Security", Maryland parent group, Baltimore, MD, Oct. 28, 2010. (Invited)
4. **Jacobson, D.W.**, Idziorek, J. "Computer Security Literacy", IBEA, Cedar Rapids, Iowa, Oct. 8, 2010. (Invited)
5. **Jacobson, D.W.** "Computer Security", Dallas County Rotary, Dallas Center, Iowa, Sept. 28, 2010. (Invited)
6. **Jacobson, D.W.** "Computer Security", IEEE Central Iowa Section, Ames, Iowa, April 15, 2010. (Invited)
7. **Jacobson, D.W.** "Computer Security", Iowa ISACA, Des Moines, Iowa, March 16, 2010. (Invited)
8. **Jacobson, D.W.** "Computer Security", Story County foster parent group, Ames, Iowa, March 11, 2010. (Invited)
9. **Jacobson, D.W.** "ISEAGE", Computer Science Department Indiana University Purdue University Indianapolis, Indianapolis, IN, April 30, 2010. (Distinguished speaker, Invited)
10. **Jacobson, D.W.** "Information Warfare", IEEE Central Iowa Section, Ames, Iowa, April 16, 2009. (Invited)
11. **Jacobson, D.W.** "Computer Security", Newton Rotary, Eldora, Iowa, April 7, 2009. (Invited)
12. **Jacobson, D.W.** "Academic Support for Cyber Safety", 2009 Cyber Crime Awareness Conference, DMACC, 2/21/2009 (Invited)
13. **Jacobson, D.W.** "Computer Security", Hardin County foster parent group, Eldora, Iowa, November 18, 2008. (Invited)
14. **Jacobson, D.W.**, Rursch J, "IT-Adventures, ITEC, Des Moines, IA, October 21, 2008
15. **Jacobson, D.W.** "Cyber Crime", ISSA, Mankato, MN, March 20, 2008. (Invited)
16. **Jacobson, D.W.** "Computer Security", Senior Citizen group, Des Moines, Iowa, March 4, 2008. (Invited)
17. **Jacobson, D.W.** "Identity Theft", IEEE Central Iowa Section, Ames, Iowa, February 28, 2008. (Invited)
18. **Jacobson, D.W.** "Computer security", Des Moines Lions Club, Des Moines, IA, August, 23, 2007. (Invited)

X. OUTREACH ACTIVITIES

Off Campus Courses

CprE 530 Advanced Protocols and Network Security	2001 through 2012
CprE 532 Information warfare	1996 through 2012
CprE 587 Local Area Network	F88
CprE 580 Advanced Computer Networks	1986 through 2000
CprE 489 Computer Networks	F86, F87, F91

Tutorials & workshops (past 5 years)

1. **Jacobson, D.W.** & Rursch, J.A. "Community College Cyber Security Workshop," ISU, June 6-9, 2011
2. **Jacobson, D.W.** & Rursch, J.A. "Cyber Security Workshop," presented at DMAACC, (Des Moines, IA, March 4, 2010)
3. **Jacobson, D.W.** & Rursch, J.A. "Cyber Intrusion Workshop," presented at Working Connections IT Conference, (Council Bluffs, IA, June 22-26, 2009)
4. **Jacobson, D.W.** & Rursch, J.A. "Workshop - Using Cyber Defense Competitions (CDCs) to Engage and Recruit Students with IT: How to Organize and Run Your Own Cyber Defense Competition," in *Proc. Frontiers in Education* (San Antonio, TX, Oct. 18-21, 2009).
5. **Jacobson, D.W.** "Computer security", ISACA, May 30 – June 1 2007

XI. PATENTS

1. **Jacobson, D.W.** and J.A. Davis. "Network Connection Blocker, Method, and Computer Readable Memory for Monitoring Connections in a Computer Network and Blocking the Unwanted Connections." US Patent #6,044,402, awarded March 28, 2000
2. **Jacobson, Douglas**, "Network Security Bridge and associated method." US Patent #5,548,649, Awarded Aug 20, 1996

XII. GRADUATE STUDENTS

ME & MS Non-Thesis Degrees (78 total students)

Masters Degree Theses (104 total MS students)

Ph.D. Degree Dissertations

- | | | | |
|----|------|--|------------------|
| 1. | 2010 | Information technology social engineering: an academic definition and study of social engineering-analyzing the human firewall | Evans, Nate |
| 2. | 2010 | Exploring utilization of visualization for computer and network security * | Luse, Andrew |
| 3. | 2009 | Wireless Sensor Network Integrity Model | Qleibo, Haider |
| 4. | 2007 | Performance and security measures of clustering protocols for sensor networks | Banerjee, Pubali |
| 5. | 2006 | Security Enhancement in Passive Optical Networks through Wavelength Sequences Cycling Technique* | Walid Shawbaki |

6.	2005	Incorporating TQM and CQI techniques into evaluation tools for a computer engineering learning community	Freeman, Richard
7.	2004	MAC-Level Approaches for security and performance enhancement in IEEE 802.11	Wang, Haoli
8.	1999	Test suite development using a structured framework*	Hastings, Nelson
9.	1999	Bandwidth Allocation and Routing in Virtual Path based ATM Networks	Ahn, Byungjan
10.	1995	A Continuous Media Transport Protocol	Freeman, Paul
11.	1993	Multimedia Synchronization on a High Speed Transport Layer	Kang, Hun
12.	1992	Design of a multiprocessor High Bandwidth Communication Gateway Based on a Protocol Processor Pool Architecture	Jangkyung, Kim
13.	1990	Transport Interoperability Using a Virtual Transport Layer	Ahuja, Ratinder
14.	1989	Design and Analysis of a Medium Access and Control Strategy for Extending ISDN Services to LAN Users	Shafiq, Muhammad
15.	1988	Performance Investigation of a Document Retrieval System on a Voice/Data Integrated Token Ring Local Area Network	Gaitonde, Sunil
16.	1987	Performance Analysis of Token Bus Protocol with Maintenance Functions *	Kim, Joon-Kyun
17.	1986	A Distributed Channel-Sense Non-Preemptive Static Priority Ring for Local Area Computer Networks and its Performance *	Ghansah, Isaac
18.	1986	Design and Performance Analysis of an Integrated Voice-Data (IVD) Protocol for a Token Ring Network *	Lee, Jai

Note: * indicates co-major professor.

XIII. PROFESSIONAL ACTIVITIES

2010-2011	Member	Iowa IT-Sector planning group
2007-2011	Member	IT Career Pathways Sector Board
2007-2010	Member	IDED IT Council
2005-2010	Member	Advisory board CMNet
2004-present		Certified Computer Forensic Examiner
2004-present	Member	The International Association of Computer Investigative Specialists
2001-present	Member	InfraGard
2000-2001	Member	International Advisory Board, Software and Internet Quality Week Conference
1991- Present	Member	ASEE
1991- Present	Member	Internet Society
1990-1991	Chairman	IEEE Central Iowa Section
2011-present	Fellow	IEEE
1990-2011	Senior Member	IEEE

1989	Member	IEEE 802.10 Standards Committee
1989-1990	Vice Chairman	IEEE Central Iowa Section
1988-1989	Sec/Treas	IEEE Central Iowa Section
1987	Member	SME
1987	Member	MAP/TOP Users Group
1986	Member	ACM
1979-1990	Member	IEEE

Expert Testimony:

- 1) September 9th 2003, I testified in front of the U.S. Senate Judiciary Committee on the uses of peer-to-peer protocols.
- 2) February 23 2007, I gave a deposition in the case UMG Recordings v. Marie Lindor, Case No. 05-cv-1095 (E.D.N.Y.).
- 3) October 1 & 2 2007, I testified at the trial in the case of Virgin Records v. Jammie Thomas, Case No. 06-cv-1497 (D. Minn.).
- 4) April 2 2009, I gave a deposition in the case of Atlantic Recording Corp. v. Jenna Raleigh, Case No. 06-cv-01708 (E.D. MO).
- 5) June 3 2009, I gave a deposition in the case of Tanya Andersen v. Atlantic Recording Corp, Case Bo. 07-cv-934 (OR)
- 6) June 16 2009, I testified at the trial in the case of Virgin Records v. Jammie Thomas, Case No. 06-cv-1497 (D. Minn.).
- 7) July 29 2009, I testified at the trial in the case of Sony BMG Music v. Joel Tenenbaum, Case No. 03-cv-11446 (D. MA.).
- 8) Nov 2 2010, I testified at the trial in the case of Virgin Records v. Jammie Thomas, Case No. 06-cv-1497 (D. Minn.).

XIV. UNIVERSITY AND PROFESSIONAL ACTIVITIES

Book Reviews

2003	TCP/IP Protocol Suite	Forouzan	McGraw-Hill
2001	TCP/IP Protocol Suite	Forouzan	McGraw-Hill
1998	Computer Networks: A systems Approach	Larry Peterson and Bruce Davie	Morgan Kaufmann
1998	Information Security	Neil Rowe	Morgan Kaufmann
1997	Communications Networks	Jean Walrand	McGraw-Hill
1995	Data and Computer Communications	Stallings	Prentice Hall
1995	Advanced Data and Computer Communications	Stallings	Prentice Hall (Book Proposal)
1993	Scientific C++: A primer for Engineers and Scientists	Salmon	MacMillan Publishing (Book Proposal)
1993	Data Communications and Object Orientation: Concepts and Implementations	Anil Ananthaswamy	Addison-Welsey (Book Proposal)

1993	Data Communications, Computer Networks, and Open Systems, Third edition	Fred Halsall	Addison-Wesley
1993	Mathematical toolkit in C++	Lawrence Williamson	MacMillan Publishing
1992	Open for Business: Introducing the open Systems Movement	Howard Berkowitz	Addison-Wesley
1992	Distributed Systems Software Development	Aggarwal & Kintala	Addison-Wesley (Book proposal)
1989	Digital Logic and Computer Design	Stephen Ben-Avi	Saunders College Publishing
1989	An Introduction to Distributed Operating Systems	Andrzej Goscinski	Addison-Wesley
1988	Local Area Networks	Keiser	McGraw-Hill

Journals and Conferences reviews

2012	CISSE 2012
2012	2012 ASEE Conference
2011	CISSE 2011
2010/11	2011 ASEE Conference
2009	2010 FIE conference
2006	ASEE Conference
2005	International Journal of Computers and Applications
2005	SDCS 2005 Conference
2005	2005 IEEE EIT conference
2005	2 nd international workshop on security in distributed systems
2001	ASEE Conference
2000	Software Quality Week 2000
1999	IEEE transactions on Education
1998	Infocom
1997	Electronics and Telecommunications Research Institute journal
1997	12 Articles on network installation for Electrical Contractor
1996	Electronics and Telecommunications Research Institute journal
1992	IEEE Transactions on Systems, Man and Cybernetics
1991	IEEE Transactions on Knowledge and Data Engineering
1990	International Journal of Microcomputer Applications
1989	IEEE Software

Proposal Review

2010	NSF	ATE proposal review panel
2005	NSF	CRI proposal review panel
2004	South Dakota	Reviewer for South Dakota 2010 Initiative
2002	NSF	SBIR proposal review panel
1987	NSF	Division of networking and communications

Other

Attended NSF sponsored “Information Assurance Education and Workforce Development workshop, Washington D.C., Oct 13-15, 2010.

Planning committee for Information Assurance Education and Workforce Development workshop, 2010.

ABET Evaluator, 2008-2011

Program Chair Annual Conference on Education in Information Security September 2006

Program committee for 2005 University Synergy Program International Conference

Program committee for SDCS 2005 conference

Program committee for 2nd international workshop on security in distributed systems

Program committee for 2005 Electro/Information Technology Conference

Steering Committee “NSF Cyber Defense Exercise Workshop”, 2004

Attended “NSF Cyber Defense Workshop”, February 26-28 2004, San Antonio TX.

Planning committee Partnership for Homeland Security, Iowa Business Council, Infrastructure interdependencies table top exercise (Amber waves), 2004

Attended the CRA “Grand Challenges in Computer Security Workshop” November 16-19 2003, Airlie Center, Warrenton Virginia

Participated in a NSF workshop on Cyber Infrastructure hosted by the engineering directorate. June 5 & 6, 2003. (invited)

Coordinated and developed curriculum material for the ISU summer connections program, Summer 1999.

Program review for MS program in Computer Science at Winona State University, March 1998

Detailed study of State Fiber Optic Network for State Auditor

Attended and helped organize the local viewing of the IEEE Video Conference on the Interdisciplinary World of Computing, 1989

Voting Member in the IEEE 802.10 Network Security Standardization Committee, 1989-92

Voting member in the IEEE P1003 UNIX standardization committee, 1987-1989