John F Dooley
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Education

1988-1990, Graduate Work, University of Missouri – Rolla.
Research emphasis in Artificial Intelligence (Machine Learning).

M.E.E. Rice University, Houston, Texas, May, 1982.
Program emphasis in computer networks and architecture.

M.S. Computer & Information Sciences, Syracuse University, Syracuse, New York, May, 1976.
Focus on software development, computer architecture, information theory and cryptology.

B.A. in Liberal Arts, The Lindenwood Colleges, St. Charles, Missouri, May, 1974.
Concentration in mathematics. *Outstanding Senior Award*, Lindenwood College II.

Employment

September 2017 – present, **William and Marilyn Ingersoll Professor Emeritus of Computer Science**, Knox College, Galesburg, IL.
Retired from Knox College and now writing books on software development and the history of cryptology. Web page is https://www.johnfdooley.com.

September 2001 – August 2017, **William and Marilyn Ingersoll Professor of Computer Science,** Knox College, Galesburg, IL
Research in the history of cryptology, computer security, software development, and computer science education. **Chair** of the Department of Computer Science 2002 – 2012. Promoted from Associate Professor, December 2009. Named to Endowed Chair, May 2011. Interim Chair of department January – September 2014.

May 2000 – June 2001, **Vice President, Research and Development**,
Strata Decision Technology, LLC, Champaign, IL.
Directly responsible for all new product development, Software Quality Assurance, Systems Engineering, Technical Communications, System and Network Administration, and Client Support functions in a fast-growing supplier of financial analysis and budgeting software to the healthcare industry. Supervised a staff of 30.

September 1990 – May 2000 **Motorola, Inc. - Urbana Design Center**, Urbana, IL.

January 1997 – May 2000 - **Software Development Manager, Man-Machine Interface and Connectivity Group**, Motorola Personal Communications Sector.
Managed all engineering work of the 18-person MMI and Connectivity group, and acted as senior technical advisor for MMI products and projects. Successfully led the group's effort to get to SEI Levels 2 and 3.

May 1995 – January 1997 - **Software Development Manager, SCSI and Peripherals**, Motorola Computer Group
Managed all engineering work of the SCSI team, coordination of over 20 separate products, and acted as senior technical advisor for SCSI products and projects

November 1991 – May 1995 - **Section Manager, Compilers**, Motorola Computer Group.
Managed all engineering work of the compiler team, coordination of over 25 separate products.

September 1990 – November 1991 - **Staff Software Engineer**, Motorola Computer Group, Urbana Design Center, Urbana, Illinois.
Designed and developed language tools, performance analysis of the Unix operating system, planning and implementation of intelligent tools for performance analysis, monitoring, and tuning of computer systems. Represented Motorola at the SPEC Steering Committee and Unix International Performance Management Working Group.

Spring 1994 - **Adjunct Instructor of Computer Science**, Millikin University, Decatur, IL.
Taught a junior/senior level course in Computer Architecture.

1992 – 1997 - **Adjunct Instructor of Computer Science**, Parkland College, Champaign, IL.
Taught courses in Pascal, C, Data Structures, and Introduction to Operating Systems.

Summer 1989 and 1990 – **Faculty Research Intern**, Applied Mathematics and Computer Science Department, McDonnell Douglas Research Laboratories, St. Louis, MO.
Performed research in inductive classification algorithms for machine learning techniques.

August 1984 to May 1990 – **Associate Professor of Computer Science and Coordinator of the Computer Science Program,** Lindenwood College, St. Charles, MO.
Taught in an ACM Undergraduate Computer Science Curriculum, administered the Academic Computer Center, did research in program development and Artificial Intelligence. Promoted from Assistant Professor, May 1989.

June 1983 to August 1984 – **Manager of Communications Software**, Syntrex, Incorporated, Eatontown, NJ. Managed terminal emulation, asynchronous communications development group.

April 1981 to June 1983 – **Member of Technical Staff**, Bell Telephone Laboratories, Holmdel, NJ.
Designed and developed mathematical models and software for performance analysis of hardware designs of office communications systems.

September 1978 to December 1980 – **Research Assistant**, Electrical Engineering Department, Rice University, Houston, TX.
Research in program behavior in distributed processing systems, and taught laboratories for 1 – 2 upper level undergraduate courses per semester.

January 1977 to August 1978 – **Applications Analyst**, McDonnell Douglas Electronics Company, St. Charles, MO. Designed and developed software for an automated voice information system. Group commendation received, March 1978.

Books

History of Cryptography and Cryptanalysis: Codes, Ciphers, and their Algorithms. Springer-Verlag. London, UK. September 2018. ISBN 978-3319904429. Winner of a *Choice Award for Best Academic Book of 2019* by the American Library Association.

Software Development, Design and Coding, APress, Inc. New York, NY. November 2017. ISBN 978-1-4842-3152-4.

Codes and Villains and Mystery: The Best Short Stories with Codes and Ciphers 1843 – 1920. CreateSpace Independent Publishing. July 2016. ISBN 978-1535470230.

Codes, Ciphers & Spies: Tales of Military Intelligence during World War I. Springer-Verlag. London, UK. March 2016. ISBN 978-3319294148.

A Brief History of Cryptology and Cryptographic Algorithms, Springer, London, UK. October 2013. ISBN 978-3319016276.

Software Development and Professional Practice, Apress, Inc. New York, NY. July 2011. ISBN 978-1430238010.

Refereed Publications

"The Beale Ciphers in Fiction" *Cryptologia,* 43:4, June 2019, 344-358.

"The History of the SIGCSE Submission and Review Software" with Henry M. Walker, *Proceedings of the 50th ACM SIGCSE Technical Symposium,* Minneapolis, MN, February 2019.

"John Matthews Manly: The Collier's Papers" with Elizabeth Anne King (Knox '13), *Cryptologia*, 38:1, January 2014. 77-88. http://dx.doi.org/10.1080/01611194.2013.797049

"1929-1931: A Transition Period in American Cryptology" *Cryptologia*, 37:1, January 2013. 84-98. http://dx.doi.org/10.1080/01611194.2012.687432

"Was Herbert O. Yardley A Traitor?" *Cryptologia*, 35:1, January 2011. 1-15. http://dx.doi.org/10.1080/01611194.2010.533254

"The SIGCSE Submission and Review Software: 10 (Hexadecimal) Lessons," with Henry M. Walker, *Sixteenth Annual Consortium for Computing in Small Colleges – Central Plains Conference*, April 2010.

"Another Yardley Mystery," *Cryptologia*, 33:3, July 2009. 276-282. http://dx.doi.org/10.1080/01611190902894938

"Who Wrote *The Blonde Countess*? A Stylometric Analysis of Herbert O. Yardley's Fiction," with Yvonne I. Ramirez (Knox '08), *Cryptologia,* 33:2, April 2009. 108-117. http://dx.doi.org/10.1080/01611190802653244

"Codes and Ciphers in Fiction: An Overview," *Cryptologia*, 29:4, October 2005. 290-328. http://dx.doi.org/10.1080/0161-110591893898

"Moving to CC 2001 at a Small College," *ACM Conference on Innovation and Technology in Computer Science Education* (ITiCSE 2004), University of Leeds, England, June 2004.

"Software Engineering in the Liberal Arts: Balancing Theory and Practice," *inroads: The Journal of the ACM Special Interest Group on Computer Science Education*, June 2003.

"Process and Third-Party Product Development: A Case Study," with M. Campbell, *Proceedings of the 5th Motorola Technical Ladder Conference*, Tempe, AZ, August 1994.

"Creating a Configurable Compiler Driver for System V Release 4," *Proceedings of the USENIX Unix Applications Development Symposium*, Toronto, Canada, April 1994.

"Computing Chi-Square Values," with D. C. St. Clair, *Proceedings of the 25th ACM SIGCSE Technical Symposium*, March 1994.

"Looking for (Compiler) Optimizations in All the Right Places," with S. Bush, *Proceedings of the 4th Motorola Technical Ladder Conference*, Tempe, AZ, July 1993.

"SPEC Defines Two New Measures of Throughput Performance," with P. Raynoha, *SPEC Newsletter*, 3:3, October 1991.

"Testing the Performance of an Implementation of ID5", with D.C. St. Clair, *Technical Report*, McDonnell Douglas Research Laboratories, St. Louis, MO, August 1989.

"A New Paradigm of Learning Programming and its Effect on Computer Science Curricula", with D. Soda, *Proceedings of the 21st Small College Computing Symposium*, April 1988.

"An Artificial Intelligence Course in a Liberal Arts Program", *ACM SIGCSE Bulletin*, June 1988.

"Experiences in Starting and Running A Small College Computer Center", *Journal of Computing in Small Colleges*, August 1987.

Book Chapters

John Matthews Manly and Edith Rickert: Cryptologists, to appear 2020.

Computer Monitors, Computer Graphics, re-write of existing articles for World Book Encyclopedia, 2015.

ENIAC, and *Voynich Manuscript*, new articles for World Book Encyclopedia online, 2014.

Codes and Ciphers, *Gordon Moore*, *Data Center*, update of existing articles for World Book Encyclopedia, 2012 and 2013.

Computer Science, *Claude Shannon*, *Voice recognition software*, and *Optical character recognition*, new articles for World Book Encyclopedia, 2012.

Online Articles

America's First Code-Breakers – How the U.S. Military Helped Win the WW1 Intelligence War, Military History Now, 30 May 2016. https://militaryhistorynow.com/2016/05/30/uncle-sams-first-code-breakers-how-the-u-s-military-helped-win-the-ww1-intelligence-war/

Book Reviews

Review of *A Most Enigmatic War: R.V. Jones and the Genesis of British Scientific Intelligence 1939-1945* by James Goodchild, *Cryptologia*, (to appear 2020).

Review of *The Secret World* by Christopher Andrew, *Cryptologia*, 44:3, pp. 280-284, April 2020.

Review of *The Third Reich is Listening* by Christian Jennings, *Cryptologia*, 44:1, pp. 91-95, January 2020.

Review of *3 Ciphers* by Carol Ritz, *Cryptologia*, 43:6, pp. 551-552, October 2019.

Review of *Cryptographic Crimes* by Marcel Danesi, *Clues: A Journal of Detection, 36:4*, April 2019.

Review of *A Mind at Play: How Claude Shannon Invented the Information Age* by Jimmy Soni and Rob Goodman, *Cryptologia*, 42:2, pp. 183-190, March 2018.

Review of *Prisoners, Lovers, and Spies: The Story of Invisible Ink from Herodotus to Al-Qaeda* by Kristie Macrakis, *Cryptologia*, 39:3, pp. 1 – 6, July 2015.

Review of *George Fabyan* by Richard Munson, *Cryptologia*, 39:1, pp. 92 – 98, January 2015.

"Reviews of Cryptologic Fiction," *Cryptologia*, 38:1, January 2014; 36:2, April 2012; 36:1, January 2012; 34:2, April 2010; 34:1, January 2010; 33:2, April 2009; 32:3, July 2008; 31:4, October 2007; 31:2, April 2007.

Review of *Joe Rochefort's War* by Elliot Carlson, *Cryptologia* 36:2, pp. 161 – 163, April 2012.

Magazine Articles

"Erroneous Cryptograms in 'The Mystic Cipher'", *The Cryptogram* (magazine of the American Cryptogram Association), March/April, 2012.

Presentations

Who Wrote the Beale Ciphers Pamphlet? An Author Attribution Study, 17th Biennial NSA Center for Cryptologic History Symposium, Ft. Meade, MD. October 17-19, 2019.

The Beale Ciphers: Hoax or Treasure? St. Ambrose University, Davenport, IA. IEEE-CS Society Student Group. 2 October 2019.

Manly and Rickert – The Team that broke the Waberski Cipher, 16th Biennial NSA Center for Cryptologic History Symposium. Ft. Meade, MD. October 19-20, 2017.

Manly and Rickert – Working at MI-8, Knox College Fridays at Four faculty research presentation, May 2017.

Alan and Billy and Frank: U.S. and British Cryptography during WW2, presented to the Knox Fifty Year Club, June 2015 and August 2016.

Spies in America: German Spies and MI-8 in World War I, 15th Biennial NSA Center for Cryptologic History Symposium, Ft. Meade, MD, October 21, 2015.

The Signal Intelligence Service and Cipher Machines: 1930 – 1940, 14th Biennial NSA Center for Cryptologic History Symposium, Ft. Meade, MD, October 17, 2013.

Making the Most of the Assessment Process, with David Bunde and Jaime Spacco, poster presentation at the 18th Annual Conference on Innovation and Technology in Computer Science Education, University of Kent, UK, July 2013.

Turing @ War, meeting of the Iowa-Illinois section of the IEEE Computer Society at Knox College, Galesburg, IL, September 27, 2012.

1929-1931: A Transition Point in US Cryptology, 13th Biennial NSA Center for Cryptologic History Symposium, Ft. Meade, MD, October 7, 2011.

¿Era "Mi mensaje" su mensaje?, with David Naccache (ENS, France) and Timothy J. Foster (Knox College) presentation at *Codebreakers 2010: A Celebration of the 80th Birthday of David Kahn,* University of Luxembourg, June 28, 2010.

Peer Assessment using the Moodle Workshop Module, poster presentation at the *2009 ACM Conference on Innovation and Technology in Computer Science Education (ITiCSE 2009)*, Université de Pierre et Marie Curie (UPMC), Paris, France, July, 2009.

A Software Development Course for CC2001: The Third Time is Charming, poster presentation at the *2008 ACM Conference on Innovation and Technology in Computer Science Education (ITiCSE 2008)*, Polytechnic University, Madrid Spain, June, 2008.

Experience with CC 2001 in a Small College, poster presentation at the *ACM Conference on Innovation and Technology in Computer Science Education (ITiCSE 2007*), Dundee University, Dundee, Scotland, June 2007.

Planning CC 2001 in a Small School, poster presentation at the *2004 ACM SIGCSE Technical Symposium*, Norfolk, VA, March 2004.

Software Process: The CMM and Small Companies, Presented at Grinnell College, Grinnell, IA, February 25th, 2003. Supported by the Pew Midstates Speaker Series.

Software Engineering: Balancing Theory and Practice poster presentation at the *2002 ACM SIGCSE Technical Symposium*, Louisville, KY, February 2002.

Getting to SEI Level 2: Software Process Improvement, presented to the St. Louis Chapter of the ACM, September 1996.

PowerPC: An Evolutionary Architecture, presented to the St. Louis Chapter of the ACM, April 1995.

SPECtacular Benchmarks: Standardizing Computer Performance Measurement, presented to the St. Louis Chapter of the ACM, April 1992.

"Literacy, Computer Literacy and Computer Science: A Position Paper", presented at the *Conference on Humanities, Science and Technology*, Ferris State University, Big Rapids, MI, March 1988.

Honors and Awards

Recipient of the *Phillip Green Wright-Lombard College Prize* for distinguished teaching by a tenured member of the Knox College faculty, September 2016.

Faculty Exceptional Achievement Award, Knox College. 2014.

Senior Scientist of the Year Award, Quad Cities Engineering and Science Council (QCESC), 2011.

Awarded a *Summer Faculty Fellowship* for 2007 from the HHMI Grant awarded to Knox College.

Group Commendation, McDonnell Douglas Electronics Company, 1978.

Outstanding Senior Award, Lindenwood College II, 1974.

Elected to *Pi Mu Epsilon* (honorary mathematics fraternity), 1973.

Grants

Scripps Foundation grant for Computer Science laboratory improvements, with David Bunde and Jaime Spacco. July 2017. $28,000.

State Farm Foundation grant to facilitate Startup Term, with Jaime Spacco and John Spittell, March 2015. $5,000.

Mellon Foundation grant through Knox College for new course development: *Startup Term*, with Jaime Spacco and John Spittell, June 2014. $5,000.

Mellon Foundation research travel grant to the George Marshall Foundation Research Library, Lexington, VA, August 2014.

Mellon Foundation research travel grant to the National Library of Scotland, Edinburgh, Scotland, December 2012.

Mellon Foundation research travel grant to the National Archives and the NSA National Cryptologic Museum Research Library – summer 2012.

Early Adopter Award for National Science Foundation TCPP Curriculum Initiative on Parallel and Distributed Computing. (with David Bunde and Jaime Spacco), 2011. $3,000.

Mellon Foundation research travel grant to the National Archives and the NSA National Cryptologic Museum Research Library – summer 2010.

Knox College Research Travel grant to the Howard Gotlieb Archival Research Center at Boston University – August 2009.

Knox College Research Travel grant to the British National Archives, Kew, London, UK – December 2008.

Knox College Research Travel grant to the National Archives and the NSA National Cryptologic Museum Research Library – summer 2008.

Summer Faculty Fellowship from the Howard Hughes Medical Institute – 2007. $8,000.

Courses Taught at Knox College

CS 127 Computing, Technology and Society
CS 141 Introduction to Computer Science
CS 142 Program Design and Methodology
CS 147 Introduction to Scientific Computing and Visualization
CS 160 Programming Practice
CS 180f C++ Programming
CS 180b Advanced C Programming
CS 180d Unix System Administration
CS 180e Programming Challenges
CS 201 Computer Organization
CS 205 Algorithms
CS 206 Automata Theory
CS 208 Programming Languages
CS 292 Software Development and Professional Practice
CS 303 Computer Graphics
CS 317 Artificial Intelligence
CS 320 Database Systems
CS 322 Software Engineering
CS 330 Cryptography and Computer Security
IDIS 396C Startup Term – Project Management
CS 399-1 Senior Seminar - History of American Cryptology

CS 399-2 Senior Seminar – Embedded Systems
CS 399-3 Senior Seminar – Mobile Systems Applications

Industry Training Received (largely through Motorola University, 1991 through 2000)

Employment Law
Negotiating Contracts for Technology
Software Licensing Contracts
Situational Leadership
Total Quality Management (TQM)
Designing Quality Software
Project Management in a Complex Environment
Effective Interactions with Employees
SEI Software Capability Maturity Model
Managing Manager's Time
SCSI, the Nuts and Bolts
ClearCase Configuration Management Tools Training
DOORS (Distributed Object-Oriented Requirements System) Training
C++
SDL (Software Design Language)
MC88110 Architecture
Unix System V Release 4 Internals
Fagan Inspections Methodology
Analog & Digital Cellular Systems

Professional Organizations

Senior Member of the Association for Computing Machinery (ACM). (1977 – present)

Member of the ACM Special Interest Group on Computer Science Education (SIGCSE)

Senior Member of the Institute for Electrical and Electronics Engineers (IEEE) and the IEEE Computer Society. (1977 – 2014)

Member of the American Cryptogram Association 2006 - present.

Executive Board member of the IEEE Illinois-Iowa Section, 2009 – 2013. Co-Chair of the IEEE-CS Illinois-Iowa Chapter, 2009—2013. Secretary of the IEEE Illinois-Iowa Section, 2011. Treasurer, 2012. Vice-Chair, 2013.

Service

At Knox College:
Chair of the Science Council – 2016 – 2017.
Chair of the Committee on Faculty Resources – 2016.
Member of the Committee on Faculty Resources (CoFR) 2013 – 2016.
Co-chair Strategic Plan 2018 Education Committee 2013-2014.

Coordinated Computer Science Department self-study and external review 2013 – 2014.
Chair of the Instructional Support Committee 2003-2005 and 2010-2011.
Member of the Off Campus Study Committee 2011 – 2013.
Member of the Faculty Budget Committee 2010-2012.
Faculty Observer to the Board of Trustees 2008-2012.
Member of the Instructional Support Committee 2008-2011.
Member of the Business and Management Program Committee 2010 – 2017.
Wrote Computer Science Department self-study for decennial accreditation visit 2008.
Member of the Faculty Executive Committee 2005-2008.
Chair of Digital Technology Planning Task Force, 2005-2006.
Project manager for ePortfolio initiative, 2003.

Paper reviewer for the ACM Special Interest Group on Computer Science Education (SIGCSE) Technical Symposia each year since 1984.

Paper reviewer for the ACM Innovation and Technology in Computer Science Education (ITiCSE) conferences 2002-2018.

Reviewer for the journal *IEEE Transactions on Education,* 2002 - 2014.

Continuing reviewer for the journal *Cryptologia*.

Reviewer for the journal *IEEE Software,* 2002 - 2014.

Conference Committee member for the 2004 – 2015 ACM SIGCSE Technical Symposia.

Conference Committee member for the 2004 – 2015 ACM ITiCSE Conferences.

External evaluator for an NSF project on Computer Security education, 2012 at Western Illinois University.

External reviewer for the Computer Science program at Illinois Wesleyan University in February 2011.

External reviewer for the Computer Science program at Blackburn College in 2006 and 2014.

External reviewer for the Computer Science program at Eureka College in 2006.

Member of the Board of Directors, Nova Singers, Galesburg, IL 2006 – 2009.

Hardware and Software Skills

Programming Languages: Swift, Go, C, C++, Java, R, Scheme, Lisp 1.5, Common Lisp, Prolog, Fortran, Pascal, Algol, Perl, Python, Haskell, PHP, SQL, various assembly languages.

Operating System Experience: L/Unix (several flavors), OS X, VMS, RSX-11, OS/VM-370, DOS, Windows ’95, ’98, NT, XP, 2000, Windows 7, 8, 10.

References

References are available upon request.