

# James W. Walden

## Curriculum Vitae

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## Education

**Carnegie Mellon University**, Pittsburgh, PA, 1992-1997

Ph.D. in Physics (1997)

M.S. in Physics (1994)

**Miami University**, Oxford, OH, 1988-1992

B.S. in Physics with Honors, Magna Cum Laude

## Experience

- 2017-Present **Professor of Computer Science**, Northern Kentucky University.
- 2021-Present **Director of the Center for Information Security**, Northern Kentucky University.
- 2014-2019 **Director of the Center for Information Security**, Northern Kentucky University.
- 2011-2017 **Associate Professor of Computer Science**, Northern Kentucky University.
- 2011-2012 **Visiting Research Professor**, Katholieke Universiteit Leuven, Belgium.
- 2005-2011 **Assistant Professor of Computer Science**, Northern Kentucky University.
- 2003-2005 **Visiting Assistant Professor**, University of Toledo, Toledo, OH.
- 1997-2002 **Senior Software Engineer**, Intel, Hillsboro, OR.

## Awards and Honors

- 2022 Distinguished Paper Award at the EDSIG Conference on Information Systems and Computing Education (EDSIGCON 2022).
- 2022 Best Faculty Paper in Political Science Award at the 80th Annual Ohio Association of Economists and Political Scientists (OAEPS 2022).
- 2020 FOSS Impact Paper Award at the International Conference on Mining Software Repositories (MSR 2020).
- 2015 NKU Faculty Excellence in Research Award.
- 2014 Best Research Paper Award at IEEE International Symposium on Software Reliability Engineering (ISSRE 2014).
- 2008 NKU Infrastructure Management Institute (IMI) Faculty Award.

## Leadership

- 2021-Present Director of NKU's Center for Information Security.
- 2020-2021 Led creation of online Master of Science in Cybersecurity.
- 2019-2020 Led creation of Bachelor of Science in Cybersecurity.
- 2017-2018 Served on ACM/IEEE Joint Task Force on Cybersecurity Education to help develop curricular guidelines for Bachelor degrees in cybersecurity.
- 2014-2019 Founding director of NKU's Center for Information Security.
- 2012-2014 Led effort for NKU to become a National Center of Academic Excellence in Cybersecurity (NCAE-C).
- 2011-2013 Led creation of Bachelor of Science in Data Science.
- 2007-2008 Co-developed curriculum of Master of Science in Information Technology.
- 2007 Founded and organized NKU's annual Cybersecurity Symposium.
- 2006 Created NKU's first minors and certificate programs in cybersecurity.

## Curriculum Development

I led the creation of three degree programs at NKU, including

- Master of Science in Cybersecurity (2020-2021)
- Bachelor of Science in Cybersecurity (2019-2020)
- Bachelor of Science in Data Science (2011-2013)

Additional curriculum development included:

- Updated Cybersecurity track for Bachelor of Science in CIT (2022)
- Created Cybersecurity track for Bachelor of Science in CIT (2015)
- Developed online certificate in cybersecurity (2013-2014)
- Updated Bachelor of Science in CIT degree for 5-year Review (2009)
- Co-developed curriculum of Master of Science in CIT (2007-2008)
- Created graduate certificate in Secure Software Engineering (2006)
- Collaborated with Business Informatics to create graduate certificate in Corporate Information Security (2006)
- Collaborated with Criminal Justice to create minor in Computer Forensics (2006)
- Collaborated with Business Informatics to create minor in Information Security (2006)
- Created new curriculum for Network and System Administration and Security track of Bachelor of Science in Computer Information Technology (CIT) degree (2006)

## Lab Creation

2017-2018	Designed network and systems for JRG Cyber Threat Intelligence Lab.
2009-2011	Designed and implemented CIT labs for Griffin Hall.
2007-2008	Designed and built NKU's first Cisco networking lab.
2005-2006	Setup NKU's first Linux lab in Founder's Hall.

## Accreditation

I led the initial effort for NKU to become a National Center of Academic Excellence in Cybersecurity (NCAE-C) in 2014, as well as leading two re-accreditation cycles.

2022-Present	Led effort for re-accrediting NKU as a NCAE-C.
2018-2019	Led effort to re-accredit NKU as a NCAE-C.
2012-2014	Led effort for NKU to become a National Center of Academic Excellence in Cybersecurity (NCAE-C).

## Course Creation

I created initial syllabi and added the following classes to NKU's curriculum:

- |   |  |
|---|--|
| ■ CIT 380: Securing Computer Systems *  | ■ CIT 501: Scripting *                   |
| ■ CIT 383: Administrative Scripting *   | ■ CIT 637: Wireless Networks             |
| ■ CIT 384: Network Administration *     | ■ CIT 644: Web Security                  |
| ■ CIT 438: Computer Forensics           | ■ CIT 661: Routing                       |
| ■ CIT 438: Cloud Computing              | ■ CIT 662: Switching                     |
| ■ CIT 465: Storage Administration       | ■ CIT 668: System Architecture *         |
| ■ CIT 480: Securing Computer Systems *  | ■ CSC 482: Computer Security *           |
| ■ CIT 481: Cybersecurity Capstone *     | ■ CSC 593: Secure Engineering Seminar *  |
| ■ CIT 483: Advanced Scripting           | ■ CSC 666: Secure Software Engineering * |
| ■ CIT 484: Network Security             | ■ CSC 682: Advanced Computer Security *  |
| ■ CIT 485: Advanced Cybersecurity *     | ■ CYS 444 Software Security *            |
| ■ CIT 500: IT Technology Fundamentals * |  |

- DSC 250: Introduction to Data Science
- DSC 250: Data Analytics
- DSC 301: Data Visualization
- DSC 411: Data Mining
- DSC 421: Network Analysis
- DSC 431: Big Data
- DSC 496: Data Science Capstone
- INF 128: Principles of Informatics \*
- MCY 601 Cybersecurity Fundamentals \*
- MCY 680 Operating Systems Security

\* Created course materials and served as first instructor for the class.

## Teaching

### Classes Taught at NKU

- INF 128: Principles of Informatics
- CIT 140: Introduction to CIT
- CIT 380: Securing Computer Systems
- CIT 383: Administrative Scripting
- CIT 384: Network Administration
- CIT 470: Advanced System Admin
- CIT 480: Securing Computer Systems
- CIT 481: Cybersecurity Capstone
- CIT 485: Advanced Cybersecurity
- CIT 499: Penetration Testing
- CIT 668: System Architecture
- CSC 260L: Programming Laboratory
- CSC 440: Software Engineering
- CSC 482: Computer Security
- CIT 500: IT Technology Fundamentals
- CSC 501: Programming Workshop
- CSC 593: Secure Engineering Seminar
- CSC 640: Adv. Software Engineering
- CSC 660: Adv. Operating Systems
- CSC 666: Secure Software Engineering
- CSC 682: Advanced Computer Security
- CYS 444: Software Security
- MCY 601 Cybersecurity Fundamentals

### Classes Taught at University of Toledo

- Computer Security
- Database Systems
- Finite Automata
- Operating Systems
- Software Engineering
- Senior Design Project

### Independent Studies and Research

- Advisor for 4 master's theses.
- Advisor for 3 honors theses.
- Advised 8 graduate research students.
- Advised 31 undergraduate research students.

## Professional Memberships

- Association of Computing Machinery (ACM)
- Institute of Electrical and Electronics Engineers (IEEE)
- Open Web Application Security Project (OWASP)

## Skills

<b>Current Languages</b>	bash, Python, R
<b>Past Languages</b>	Assembly, BASIC, C, C++, Forth, FORTRAN, Java, Javascript, Pascal, perl, ruby, scheme, SML, SQL, tcl/tk
<b>Machine Learning</b>	Keras, Rasa, scikit-learn, tidymodels, Weka
<b>Operating Systems</b>	Cisco IOS, Linux (Debian, CentOS, Kali, Ubuntu), Microsoft Windows, UNIX (AIX, HPUX, IRIX, FreeBSD, OpenBSD, Solaris, SunOS, Ultrix, UNICOS), VMS
<b>Cloud</b>	Amazon Web Services (AWS), Google Cloud Platform (GCP)
<b>Databases</b>	Microsoft SQL Server, MySQL, PostgreSQL, SQLite
<b>Programming Tools</b>	ddd, gdb, lex, make, rake, vim, yacc
<b>Version Control</b>	git, subversion, CVS, RCS
<b>Static Analysis</b>	flawfinder, Fortify SCA, ITS4, RATS, splint
<b>Markup/Data Languages</b>	HTML, CSS, L <sup>A</sup> T <sub>E</sub> X, Markdown, Quarto, XML, YAML
<b>Security Tools</b>	Argus, bettercap, Burp Suite, iptables, Kali Linux, Metasploit, Nessus, ngrep, nmap, recon-ng, tcpdump, Wireshark, ZAP.

## Publications

### *Publications Under Review*

- 2023 David Reid, Kristiina Rahkema, and **James Walden**. A Large Scale Study of Orphan Vulnerabilities in the Software Supply Chain. 39th IEEE International Conference on Software Maintenance and Evolution (ICSME 2023).
- 2022 Shauna Reilly and **James Walden**, "Kentucky Election Administration and Security" for inclusion in *Kentucky Politics v. II*. Eds. James Clinger, Joel Turner and Scott Lasley.

### *Peer Reviewed Conference Publications*

- 2022 **James Walden**, Nicholas Caporusso, and Ludiana Atnafu. A Chatbot for Teaching Secure Programming. EDSIG Conference on Information Systems and Computing Education (EDSIGCON 2022).
- 2022 **James Walden**. OpenSSL 3.0.0: An Exploratory Case Study. IEEE/ACM 19th International Conference on Mining Software Repositories (MSR 2022).
- 2021 **James Walden**, Noah Burgin, and Kuljit Kaur. An Exploratory Study of Project Activity Changepoints in Open Source Software Evolution. IEEE/ACM 18th International Conference on Mining Software Repositories (MSR 2021).
- 2020 **James Walden**. The Impact of a Major Security Event on an Open Source Project: The Case of OpenSSL. IEEE/ACM 17th International Conference on Mining Software Repositories (MSR 2020) (*FOSS Impact Paper Award*, 29% acceptance rate).
- 2018 Matt Beck and **James Walden**. Using Software Birthmarks and Clustering to Identify Similar Classes and Major Functionalities. 2018 ACM Southeast Conference. (March 2018).
- 2014 **James Walden**, Jeff Stuckman, and Riccardo Scandariato. Predicting Vulnerable Components: Software Metrics vs Text Mining. IEEE International Symposium on Software Reliability Engineering (ISSRE 2014) (*Best Paper Award*).
- 2013 Riccardo Scandariato, **James Walden**, and Wouter Joosen. Static Analysis Versus Penetration Testing: a Controlled Experiment. IEEE International Symposium on Software Reliability Engineering (ISSRE 2013).

- 2013 **James Walden**, Maureen Doyle, Rudy Garns, and Zach Hart. An Informatics Perspective on Computational Thinking. 18th Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE 2013).
- 2013 Wei Hao, **James Walden**, and Chris Trenkamp. Accelerating e-commerce sites in the cloud. Consumer Communications and Networking Conference (CCNC) 2013 IEEE.
- 2013 Bojan Simic and **James Walden**. Eliminating SQL Injection and Cross Site Scripting Using Aspect Oriented Programming. International Symposium on Engineering Secure Software and System (ESSoS 13), Paris, France, Feb 27-Mar 1, 2013. (25% acceptance rate)
- 2012 Riccardo Scandariato and **James Walden**. Predicting vulnerable classes in an Android application. International Workshop on Security Measurements and Metrics 2012, September 21, 2012.
- 2012 Aram Hovsepyan, Riccardo Scandariato, Wouter Joosen, and **James Walden**, Software Vulnerability Prediction using Text Analysis Techniques. International Workshop on Security Measurements and Metrics 2012, September 21, 2012.
- 2011 Maureen Doyle, Brooke Buckley, Wei Hao and **James Walden**, "Work In Progress - Does Maintenance First Improve Student's Understanding And Appreciation Of Clean Code And Documentation," 2011 Frontiers in Education Conference, Rapid City, South Dakota, October 12 - 15, 2011.
- 2011 Maureen Doyle, **James Walden**, "An Empirical Study of the Evolution of PHP Web Application Security," International Workshop on Security Measurements and Metrics 2011, September 21, 2011. (35% acceptance rate)
- 2010 Yi Hu, Alina Campan, **James Walden**, Irina Vorobyeva and Justin Shelton, "An Effective Log Mining Approach for Database Intrusion Detection," IEEE International Conference on Systems, Man, and Cybernetics, Istanbul, Turkey, October 10-13, 2010.
- 2010 **James Walden**, Maureen Doyle, Robert Lenhof, John Murray, Andrew Plunkett, "Impact of Plugins on the Security of Web Applications," International Workshop on Security Measurements and Metrics 2010, September 15, 2010. (35% acceptance rate)
- 2010 Kevin Kirby, **James Walden**, Rudy Garns, Maureen Doyle, "The Great Chains of Computing: Informatics at Multiple Scales," Fourth International Conference on the Foundations of Information Science, Beijing, China, August 21-24, 2010.
- 2010 **James Walden**, Maureen Doyle, Robert Lenhof, John Murray, "Idea: Java vs. PHP: Security Implications of Language Choice for Web Applications," International Symposium on Engineering Secure Software and Systems (ESSoS), Pisa, Italy, February 2-3 2010. (15% acceptance rate)
- 2009 **James Walden**, Maureen Doyle, Grant Welch, Michael Whelan, "Security of Open Source Web Applications," International Workshop on Security Measurements and Metrics 2009, October 14 2009. (26% acceptance rate)
- 2009 **James Walden**, Adam Messer, and Alex Kuhl, "Measuring the Effect of Code Complexity on Static Analysis," Proceedings of the International Symposium on Engineering Secure Software and Systems (ESSoS), Leuven, Belgium, February 4-6, 2009. (24% acceptance rate)
- 2008 **James Walden**, "Integrating Web Application Security into the IT Curriculum," Proceedings of the 9th ACM SIGITE Technical Symposium on Information Technology Education, Cincinnati, OH, October 14-16, 2008.
- 2008 **James Walden**, "Web Application Security Exercise Development Approaches," Faculty Workshop on Secure Software Development, Lake Buena Vista, FL, April 14-15, 2008.
- 2006 **James Walden** and Charles Frank, "Secure Software Engineering Teaching Modules," Proceedings of the 2006 Information Security Curriculum Development (InfosecCD) Conference, Kennesaw, GA, September 22-23, 2006.

- 2006 Rose Shumba, **James Walden**, Stephanie Ludi, Carol Taylor, Andy Ju An Wang, "Teaching the Secure Development Lifecycle: Challenges and Experiences," Proceedings of the 10th Annual Colloquium for Information Systems Security Education (CISSE), Baltimore, MD, June 2006.
- 2006 **James Walden** and Rose Shumba, "Integrating Secure Development Practices into the Software Engineering Curriculum," 2006 American Society for Engineering Education (ASEE) Annual Conference, June 2006.
- 2006 Carol Taylor, Rose Shumba, and **James Walden**, "Computer Security Education: Past, Present and Future," Proceedings of the Seventh Workshop on Education in Computer Security (WECS7), January 2006.
- 2005 **James Walden**, "A Real-Time Information Warfare Exercise on a Virtual Network," Proceedings of the 36th ACM SIGCSE Technical Symposium on Computer Science Education, February 2005. Acceptance Rate: 28%.

#### Peer Reviewed Journal Publications

- 2023 **James Walden**, Nicholas Caporusso, and Ludiana Atnafu. Evaluation of a Custom Secure Programming Chatbot. *Cybersecurity Pedagogy and Practice Journal*. (2023).
- 2017 Jeff Stuckman, **James Walden**, Riccardo Scandariato. The Effect of Dimensionality Reduction on Software Vulnerability Prediction Models. *IEEE Transactions on Reliability* 66.1 (March 2017).
- 2014 Riccardo Scandariato, **James Walden**, Aram Hovsepian and Wouter Joosen. Predicting Vulnerable Software Components via Text Mining. *IEEE Transactions on Software Engineering* 40.10 (October 2014).
- 2012 Yi Hu, Charles Frank, **James Walden**, Emily Crawford, Dhanuja Kasturiratna. Mining File Repository Accesses for Detecting Data Exfiltration Activities. *Journal of Artificial Intelligence and Soft Computing Research*.
- 2012 **James Walden** and Maureen Doyle, "SAVI: Static-Analysis Vulnerability Indicator," *IEEE Security & Privacy*, vol.10, no.3, pp.32-39, May-June 2012.
- 1997 Martin J. Savage and **James Walden**, "SU(3) Breaking in Neutral Current Axial Matrix Elements and the Spin Content of the Nucleon," *Phys. Rev. D* 55 (1997) 5376-5384
- 1997 David E. Brahm and **James Walden**, "Large  $N_C$  Relations Among Isgur Wise Functions," *Mod. Phys. Lett. A* 12 (1997) 357-362
- 1996 Ming Lu, Martin J. Savage, and **James Walden**, "The Radiative Charmed Baryon Decay  $\Xi_{c2}^{0*} \rightarrow \Xi_{c1}^0 \gamma$ ," *Phys. Lett. B* 369 (1996) 337-340
- 1996 John K. Elwood, Mark B. Wise, Martin J. Savage, and **James W. Walden**, "Final State Interactions and CP Violation in  $K_L \rightarrow \pi^+ \pi^- e^+ e^-$ ," *Phys. Rev. D* 53 (1996) 4078-4081
- 1994 P.R. Rice, X.Yin, **J.Walden**, J.Gea-Manacle, and L.M.Pedrotti, "Laser with Injected Squeezing," *Phys. Rev. A* 50 (1994), 4176

## Presentations

#### Invited Academic Talks

- 2023 **James Walden**, "The Impact of a Major Security Event on the Evolution of OpenSSL." Department of Computer Science and Engineering Seminar. University of Louisville. Louisville, KY, February 24, 2023.
- 2020 **James Walden**, "The Impact of a Major Security Event on an Open Source Project: The Case of OpenSSL." Department of Computer Science Colloquium. Northern Kentucky University. Highland Heights, KY, September 18, 2020.



- 2019 **James Walden**, “Evolution the OpenSSL Library after Heartbleed.” Florida Institute of Cybersecurity Research. Gainesville, FL, November 21, 2019.
- 2019 **James Walden**, “Evolution the OpenSSL Library after Heartbleed.” University of Gothenburg. Gothenburg, Sweden. September 11, 2019.
- 2019 **James Walden**, “Changes in an Open Source Library After a Major Security Event: The Case of OpenSSL” Department of Computer Science Colloquium. Northern Kentucky University. Highland Heights, KY, February 22, 2019.
- 2018 **James Walden**, “Visualizing Changes in an Open Source Library After a Major Security Event” 46th Annual Department of Mathematics Conference. Miami University. Oxford, OH, September 21, 2018.
- 2018 Dennis Leber, Jason Luttrell, **James Walden**, Junjie Zhang. “Cybersecurity and Machine Learning.” Panel presentation. ACM Southeast Conference. Richmond, KY, March 30, 2018.
- 2015 **James Walden**, “Predicting Vulnerable Components: Software Metrics vs. Text Mining” Southwest Jiaotong University, Chengdu, China, July 1, 2015.
- 2011 **James Walden**, “Empirical Analysis of the Evolution of Web Application Security,” DistriNet Seminar at KU Leuven, Leuven, Belgium, December 8, 2011.
- 2009 **James Walden** and Maureen Doyle, “How Secure is your Web App? Open Source PHP Web Application Security,” Invited Talk, University of Kentucky, Lexington, KY, October 12, 2009.
- 2009 **James Walden**, “Web Security Essentials for Universities,” Kentucky Convergence 2009, Somerset, KY, October 8, 2009.
- 2007 **James Walden**, “The Impact of Code Complexity on Static Analysis Results,” Invited Talk, Miami University, Oxford, OH, November 1, 2007.
- 2007 **James Walden**, “Software Security,” Invited Talk, Recent Advances in Information Assurance, Network and Software Security 2007, St. Cloud State University, St. Cloud, MN, May 2, 2007.
- 2006 **James Walden**, “Incorporating Security into Software Engineering,” Invited Talk, University of Louisville, Louisville, KY, March 8, 2006.
- 2004 **James Walden**, “Honeypots,” Invited Talk, University of Toledo, Toledo, OH, November 10, 2004.

## Professional Talks

- 2022 **James Walden**. “Cybersecurity of US Elections.” Six@Six Lecture Series. September 21, 2022.
- 2021 **James Walden**. “Cybersecurity and Elections.” Community of Reason (COR) Monthly Meeting. Online, October 12, 2021.
- 2020 **James Walden**. “Elections & Security Issues.” Informatics Plus and Northern Kentucky Forum. Online, October 21, 2020.
- 2018 **James Walden**. “An Introduction to Machine Learning for Security.” Cincinnati ISACA (Information Systems Audit and Control Association), Cincinnati, OH, October 2 2018.
- 2017 Matt Kominsky, Greg Akers, Richard Harknett, Chris Huntington, Mark Schnitter, **James Walden**. “Cyber Security in Smart Cities.” Panel presentation. Smart Regions Conference. Highland Heights, KY, October 25, 2017.
- 2017 **James Walden**, Brian Ruschman, Dave Miyamasu. “Cybersecurity Seminar.” Kentucky Innovation Network. Covington, KY, June 29, 2017.
- 2017 **James Walden**. “Cybersecurity Trends and Careers.” Regional Economic Development Initiative (REDI) Cincinnati. Highland Heights, KY, June 16, 2017.
- 2017 **James Walden**. “Censys: a better search engine for IPv4 scan data.” Infragard, Cincinnati, OH, March 9, 2017.

- 2016 **James Walden**. "Censys: a better search engine for IPv4 scan data." 9th Annual NKU Cybersecurity Symposium, Covington, KY, October 22, 2016.
- 2016 Pam Schmelz, John Knight, and **James Walden**. "CAE-2Y Panel." Tri-State Women in Computing Conference. Cincinnati, OH. February 19, 2016.
- 2016 **James Walden** and Mark Stockman. "Cybersecurity Education in the Greater Cincinnati Region." Digital Forensics Working Group. Mason, OH. January 13, 2016.
- 2015 **James Walden**. "Exploring security data with R." 8th Annual NKU Cybersecurity Symposium, Erlanger, KY, October 9, 2015.
- 2014 Pamela Atkinson, Tamara O'Callaghan, **James Walden**, "Transcending Boundaries: Transdisciplinary Approaches to Teaching." Meet, Greet, and Grab a Seat. Erlanger, KY. August 11, 2014.
- 2013 **James Walden** and Maureen Doyle, "Data Manipulation and Graphics with R," CINSAM Seminar Series, Northern Kentucky University, Highland Heights, KY. November 13, 2013.
- 2013 **James Walden**, "Mobile Security: Hacking Android," CAI Mobile Cincy 2013, Erlanger, KY. November 1, 2013.
- 2012 **James Walden**, "Predicting Android Application Vulnerabilities," 6th Annual CAI Security Symposium, Erlanger, KY, October 12, 2012.
- 2012 **James Walden**, "Cloud Computing Security," Cloud Intelligence Conference, Hebron, KY, May 22, 2012.
- 2012 **James Walden** and Zach Hart, "Transdisciplinary Informatics Curriculum Development," Kentucky Innovations Conference, Hebron, KY, May 16, 2012.
- 2011 **James Walden**, "Cloud Computing Security," Ohio Information Security Forum, Dayton, OH, July 16, 2011.
- 2011 **James Walden**, "Security of Cloud Computing," Cincinnati OWASP, Cincinnati, OH, February 22, 2011.
- 2010 **James Walden** and Maureen Doyle, "Effect of Plugins on Web Application Security," 4th Annual IMI Security Symposium, Erlanger, KY, October 15, 2010.
- 2010 **James Walden** and Maureen Doyle, "Security of Web Application Systems with Plugins," 4th Anniversary Ohio Information Security Forum, Dayton, OH, July 10, 2010.
- 2010 **James Walden** and Maureen Doyle, "Impact of Plugins on Web Application Security," Cincinnati OWASP, Cincinnati, OH, June 29, 2010.
- 2010 **James Walden**, "Open Source Security," panel coordinator, 2nd Annual Open Source and Security Symposium, May 17 2010.
- 2010 Gaut Ragsdale, Jimmie Manning, Steven Weiss, Maureen Doyle, **James Walden**, Toru Sakaguchi, "Cutting Diagonally across Multiple Disciplines: Communication in a College of Informatics, panel presentation, Central States Communication Association Conference, April 14-18 2010.
- 2010 **James Walden**, "Web Security Risk Assessment with Protection Poker," J. Walden, Cincinnati Agile Round Table, Cincinnati, OH, April 6, 2010.
- 2010 **James Walden**, "Evolution of Web Application Security," J. Walden, Cincinnati ISACA (Information Systems Audit and Control Association), Cincinnati, OH, March 2 2010.
- 2009 **James Walden** and Maureen Doyle, "Evolution of Open Source Web Security," 3rd Annual IMI Security Symposium, Erlanger, KY, October 30, 2009.
- 2009 **James Walden** and Maureen Doyle, "An Empirical Study of Web Application Security Trends," Cincinnati OWASP, Cincinnati, OH, July 21, 2009.
- 2009 **James Walden** and Maureen Doyle, "Open Source Security," Metricon 3.5, San Francisco, CA, April 20, 2009. (*peer-reviewed online presentation archive*)
- 2009 **James Walden**, "Information Security in Electronic Health Records," Kentucky Primary Care Association, Lexington, KY, July 22, 2009.



- 2009 **James Walden**, “Web Application Security,” Invited Talk, Kroger Company, June 19, 2009.
- 2009 **James Walden**, Bruce Perens, Nick Hoffmann, “Open Source Security,” panel presentation, 1st Annual Open Source and Security Symposium, May 2009.
- 2009 **James Walden**, “Software Security in a Perimeterless World,” IT Leadership Forum (ITLF), Erlanger, KY, April 3, 2009.
- 2009 **James Walden**, “Web 2.0 Security,” Ohio Information Security Conference, Dayton, OH, March 12 2009.
- 2008 **James Walden**, “Election Security,” College of Informatics, Highland Heights, KY, November 18, 2008.
- 2008 **James Walden**, “Attack Surface of Web Applications,” Ohio Information Security Forum, Dayton, OH, November 13, 2008.
- 2008 **James Walden**, Maureen Doyle, Grant Welch, Michael Whelan, “OWASP Source Code Review,” Open Web Application Security Project (OWASP) EU Summit 2008, Algarve, Portugal, November 4-7, 2008. (*peer-reviewed online presentation archive*)
- 2008 **James Walden**, “Application Security Through a Hacker’s Eyes,” 2nd Annual IMI Security Symposium, Erlanger, KY, October 3, 2008.
- 2008 **James Walden** and Adam Messer, “Code Complexity and Static Analysis,” MetriCon 3.0, San Francisco, CA, July 29, 2008. (*peer-reviewed online presentation archive*)
- 2008 **James Walden**, “SQL Injection,” Cincinnati OWASP, Cincinnati, OH, June 24, 2008.
- 2008 **James Walden**, “Web Application Security Exercise Development Approaches,” Faculty Workshop on Secure Software Development, Lake Buena Vista, FL, April 14-15, 2008.
- 2008 **James Walden**, “Injection Attacks,” Ohio Information Security Conference, Dayton, OH, March 18 2008.
- 2008 **James Walden**, “Software Security,” Cincinnati ISACA (Information Systems Audit and Control Association), Cincinnati, OH, March 4 2008.
- 2007 **James Walden**, “Web Application Security,” AFCEA InfoTech 2007, Dayton, OH, October 24, 2007.
- 2007 **James Walden**, “Secure Development Lifecycle,” IMI Security Symposium, Erlanger, KY, October 22, 2007.
- 2007 **James Walden**, “Software Security,” IEEE Toledo meeting, Toledo, OH, July 19, 2007.
- 2007 **James Walden**, “Web Application Security,” Kroger Company, Cincinnati, OH, June 14, 2007.
- 2007 **James Walden**, “Software Security,” NKU Final Friday, Highland Heights, KY, April 27, 2007.
- 2007 **James Walden**, “Software Security,” Ohio Information Security Conference, Dayton, OH, March 14, 2007.
- 2006 **James Walden**, “Software Security,” J. Walden, ISSA Cincinnati, Cincinnati, OH, November 15, 2006.
- 2006 “XP and Software Security,” XP Cincinnati meeting, Cincinnati, OH, August 1, 2006.
- 2006 “Changes in Computer Security,” Butler County Torch Club meeting, Oxford, OH, May 9, 2006.

## Workshops and Tutorials

- 2014 **James Walden**, “Teaching with Humanitarian Free/Open Source Software,” CCSC: Midwest.
- 2006-2010 **James Walden**, “Web Application Security Workshop,” Infrastructure Management Institute.
- 2006-2010 **James Walden**, “Secure Programming Workshop,” Infrastructure Management Institute.

- 2009 **James Walden**, “Web Application Security Workshop,” 40th ACM SIGCSE Technical Symposium, March 4-7 2009. Acceptance rate: 52%.
- 2008 **James Walden** and Charles Frank, “Web Application Security,” 38th ACM SIGCSE Technical Symposium on Computer Science Education, March 12-15 2008. Acceptance rate: 51%.
- 2008 **James Walden** and Charles Frank, “Secure Programming Workshop: Buffer Overflows and Other Common Mistakes,” 38th ACM SIGCSE Technical Symposium on Computer Science Education, March 12-15 2008. Acceptance rate: 51%.
- 2007 **James Walden** and Charles Frank, “Web Application Security Tutorial,” Consortium for Computing Sciences in College: Midwest Region, September 29-30, 2007.
- 2007 **James Walden**, Charles Frank, and Rose Shumba, “Software Security Workshop,” 37th ACM SIGCSE Technical Symposium on Computer Science Education, March 7-10 2007. Acceptance rate: 54%.
- 2007 **James Walden**, Charles Frank, and Rose Shumba, “Secure Programming Workshop: Buffer Overflows and Other Common Mistakes,” 37th ACM SIGCSE Technical Symposium on Computer Science Education, March 7-10 2007. Acceptance rate: 54%. (Expand version of 2006 workshop with hands-on exercises.)
- 2006 **James Walden**, Charles Frank, and Rose Shumba, “Software Security Workshop,” Consortium for Computing Sciences in College: Midwest Region, September 29-30, 2006.
- 2006 **James Walden**, Charles Frank, and Laurie Werner, “Secure Programming Workshop: Buffer Overflows and Other Common Mistakes,” 36th ACM SIGCSE Technical Symposium on Computer Science Education, March 1-5 2006. Acceptance rate: 74%.
- 2005 **James Walden**, Charles Frank, and Laurie Werner, “Secure Programming Workshop: How to Keep Our Students From Causing Buffer Overflows,” Consortium for Computing Sciences in College: Midwest Region, September 23-24, 2005.

## Grants and Awards

### External Grants and Awards

- NSA/NSF. NKU GenCyber High School Teacher Camp (\$146,981). 2022-2023.
- NSA. Secure Coding Curriculum Development (\$6000). 2018.
- Google Faculty Institute (travel funding). 2018.
- Google Cloud Platform Education Grant (\$600). 2018.
- Google Cloud Platform Education Grant (\$550). 2017.
- NSA CAE Community Travel Award. 2013-2016, 2018, 2021.
- Amazon Web Services Teaching Grant (\$3000). 2014.
- Amazon Web Services Teaching Grant (\$4000). 2013.
- NSF CPATH Grant: Informatics at Multiple Scales. (\$295,814,) 2009-2013.
- OWASP EU Summit Travel Award (\$1000). 2008.
- OWASP Summer of Code Grant (\$2500). PI. 2008.
- Cisco Equipment Grant Request (\$86,687). PI. 2007.

### Internal Grants and Awards

- NKU Project Grant (\$4,841). PI. Evolution of Software Security in Core Infrastructure Projects. 2019-2020.
- NKU Sabbatical. 2019-2020.
- Summer Fellowship (\$6,000). Predicting Security Vulnerabilities in OpenSSL. 2016.
- CINSAM Grant (\$13,459). PI. Mapping Vulnerable Devices using Internet Scale Scan Data. 2016.
- UR-STEM Undergraduate Research (\$1400). 2016.

- UR-STEM Undergraduate Research (\$1400). 2015.
- NKU International Travel Award (\$980). 2014.
- NKU International Travel Award (\$1000). 2013.
- UR-STEM Undergraduate Research (\$1400). 2012.
- NKU Sabbatical. 2011-2012.
- UR-STEM Undergraduate Research (\$1400). 2011.
- CINSAM Grant (\$8,181). PI. Predicting Vulnerabilities in Web Applications using Open Source Repository Data. 2011-2012.
- NKU Project Grant (\$5,995). PI. Improving Web Application Security via Data-Driven Software Engineering. 2011-2012.
- CINSAM Grant (\$13,179). PI. Evaluating Web Application Security in an Open Source World. 2009-2010.
- Summer Fellowship (\$6,000). Web Application Security Metrics. 2009.

## Service

### Department Service

- 2021-2023. Member. Department RPT Committee.
- 2021-2022. Chair. Bachelor of CIT Cybersecurity track committee.
- 2021-2022. Member. Faculty Search Committee.
- 2021-2022. Member. Bachelor of Cybersecurity committee.
- 2020-present. Faculty mentor.
- 2020-2021. Director. Bachelor of Cybersecurity degree.
- 2020-2021. Chair. Bachelor of Cybersecurity committee.
- 2020-2021. Chair. Master of Cybersecurity committee.
- 2018-2019. Chair. Bachelor of Cybersecurity committee.
- 2017-2019. Member. Department Promotion Committee.
- 2016-2017. Member. Department RPT Committee.
- 2012-2015. Member. Department RPT Committee.
- 2014. Chair. Lab Committee.
- 2010-2011. Chair. Lab Committee.
- 2011-present. Member. Lab Committee.
- 2014-2015. Co-Chair. Faculty Search Committee.
- 2013-2014. Member. Faculty Search Committee.
- 2012-2013. Chair. Faculty Search Committee.
- 2006-2009. Member. Faculty Search Committee.
- 2014-2015. Member. RPT Policy Committee.
- 2013-2015. Member. MS/CS Curriculum Committee.
- 2009-2011. Member. MS/CIT Admissions Committee.
- 2009-2010. Member. BS/CIT 5-year Review Committee.
- 2007-2008. Member. MS/CIT Curriculum Development Committee.
- 2005-2006. Member. BS/CIT Network Track Curriculum Sub-committee.
- 2007-2008. Built Cisco networking lab for CIT program.
- 2006-2007. Built Linux lab for CIT program.

### College-Level Service

- 2022. Organizer. Cyber Career Networking Event.
- 2017-2019. Member. College of Informatics Technology Committee.
- 2017-2018. Member. JRG Cyber Threat Intelligence Lab planning committee.
- 2016-2017. Chair. Informatics Core Knowledge Committee.

- 2008-2016. Member. Informatics Core Knowledge Committee.
- 2013-2014. Member. College of Informatics Grants Group.
- 2012-2013. Chair. College of Informatics Grants Group.
- 2011-2012. Member. BI Department Faculty Search Committee.
- 2009-2011. Member. Griffin Hall design committee.

### University-Level Service

- 2022-present. Chair. NCAE-C re-accreditation committee.
- 2022. Member. Common Experience Panel on *Weapons of Math Destruction*.
- 2021. Member. Chief Information Security Officer (CISO) Search Committee.
- 2020-2021. Member. Intellectual Property Policy Committee.
- 2018-2019. Led effort to renew NKU's accreditation as an NSA CAE CDE.
- 2015-2019. Member. University Research Council.
- 2018. Member. Spotlight on Scholarship Organization Committee.
- 2018. Member. CISO Search Committee.
- 2016-2018. Board Member. NKU Research Foundation.
- 2016-2017. Member. Faculty Benefits Committee.
- 2014-2016. Member. LMS Workgroup.
- 2013-2014. Led effort to obtain NKU's accreditation as an NSA CAE CDE.
- 2013-2014. Chair. Center of Academic Excellence Application Committee.
- 2013-2015. Member. Post Grant Award Policy Committee.
- 2012-2013. Member. Faculty International Travel Awards Committee.
- 2012-2013. Member. Extra Pay Policy Committee.
- 2011-2013. Author. Data Science B.S. Degree Program Proposal.
- 2008-2010. Member. Professional Concerns Committee.

### Professional Service

#### *Conference Leadership*

- 2007-Present. Founder and Program Chair. NKU Annual Cybersecurity Symposium.
- 2023. Advisory Committee Member. Kentucky Cybersecurity & Forensics Conference.
- 2012. Program Chair. International Workshop on Security Measurements and Metrics.
- 2011. Program Chair. International Workshop on Security Measurements and Metrics.

#### *Conference Program Committee*

- 2023. International Conference on Availability, Reliability and Security (ARES 2023)
- 2022-2023. International Conference on Mining Software Repositories (MSR 2023)
- 2022-2023. MSR 2023 Mining Challenge Track.
- 2016. IEEE ISI Workshop on Cybersecurity Education Workforce.
- 2010-2011. International Workshop on Security Measurements and Metrics.
- 2009-2017. IADIS International Conference on WWW/Internet.

#### *Journal Reviewer*

- 2018-present. Reviewer. Journal of Information and Software Technology.
- 2017-present. Reviewer. IEEE Transactions on Information Forensics & Security.
- 2017-2018. Reviewer. Artificial Intelligence Review.
- 2014-2015. Review Board Member. Journal of Empirical Software Engineering.
- 2013-present. Reviewer. Journal of Empirical Software Engineering.
- 2013-present. Reviewer. IEEE Transactions on Dependable and Secure Computing.

- 2012-present. Reviewer. Computers & Security.
- 2011-2020. Reviewer. IEEE Transactions on Software Engineering.

#### *Conference Reviewer*

- 2022. EDSIG Conference on Information Systems and Computing Education.
- 2021-present. Kentucky Cybersecurity and Forensics Conference (KCFC).
- 2018. Annual ACM Southeast Conference.
- 2015-2017. Colloquium for Information Systems Security Education (CISSE).
- 2007-2009. ACM SIGCSE Conference.
- 2008. ACM SIGITE Conference.
- 2007. Worldcomp.
- 2006. InfosecCD Conference.
- 2005. Frontiers in Education Conference.

#### *Book and Other Reviews*

- 2007-2008. CERT Build Security In (BSI) Project.
- 2006. Open Web Application Security Project (OWASP) Guide.
- 2005. DHS Software Assurance Body of Knowledge.
- 2006. *Secure Programming with Static Analysis*, Addison-Wesley.
- 2003-2004. *Handbook of Information Security*.

#### *Advisory Board Memberships*

- 2021-present. Lakota Cyber Academy.
- 2016-2018. NKU Research Foundation.

#### *External Program Reviewer*

- 2022. University of Tennessee, Chattanooga. Bachelor of Applied Science in IT-Cybersecurity.
- 2021. University of Tennessee, Martin. Bachelor of Science in Cybersecurity.

#### *Other Professional Service*

- 2008-2010 CWE/SANS Top 25 Most Dangerous Programming Errors Project.
- 2007-2010 Fortify/OWASP Open Source Code Review Project.
- 2007-2008 Helped develop GIAC Secure Software Programming Certification.