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Work History

- July 2004–*current*: Professor (Distinguished Professor since July 2024)
  Department of Computer Science, University of California at Davis
- July 1997–June 2004: Associate Professor
  Department of Computer Science, University of California at Davis
- July 1993–June 1997: Assistant Professor
  Department of Computer Science, University of California at Davis
- July 1987–June 1993: Assistant Professor
  Department of Mathematics and Computer Science, Dartmouth College
- October 1984–June 1987: Research Scientist
  Research Institute for Advanced Computer Science, NASA Ames Research Center
- May 1982–August 1982 *and* May 1983–September 1984: Systems Programmer
  Megatest Corporation

Education

- Ph.D. in Computer Science from Purdue University, West Lafayette, IN (May 1984)
  THESIS TITLE: *Practical Take-Grant Systems: Do They Exist?*
  THESIS ADVISOR: Prof Dorothy Denning
- M.S. in Computer Science from Purdue University, West Lafayette, IN (May 1981)
- M.A. in Mathematics from the University of California at Berkeley, Berkeley, CA (June 1978)
- A.B. in Astronomy and Applied Mathematics from the University of California at Berkeley, Berkeley, CA (June 1976)

Publications

Books

1. M. Bishop, *Computer Security: Art and Science, Second Edition*, Addison-Wesley Professional, Boston, MA. (2018); ISBN: 978-0-321-71233-2 (1390+l pages).
2. M. Bishop, *Introduction to Computer Security*, Addison-Wesley Professional, Boston, MA (2005); ISBN: 978-0-321-24744-5 (747+xxxii pages).
3. M. Bishop, *Computer Security: Art and Science*, Addison-Wesley Professional, Boston, MA (2003); ISBN: 978-0-201-44099-7 (1084+xli pages).

Book Chapters

4. S. Furnell, P. Haskell-Dowland, M. Agrawal, R. Baskerville, A. Basu, M. Bishop, J. Cuellar, S. Foresti, L. Futcher, N. Gal-Oz, T. Herath, C. Damsgaard Jensen, A. Johnson, W. Joosen, G. Livraga, J. Lopez, S. Marsh, F. Martinelli, F. Massacci, A. Pasic, S. Schinagl, A. Shahim, K.-L. Thompson, J. Vaidya, T. Vance, and M. Warkentin, "Information Security and Privacy —Challenges and Outlook," pp. 383–401 in *Advancing Research in Information and Communication Technology: IFIP's Exciting First 60+ Years, Views from the Technical Committees and Working Groups*, in the series *IFIP Advances in*

Information and Communication Technology **600**, M. Goedicke, E. Neuhold, and K. Rannenberg, eds., Springer Nature, Cham, Switzerland (2021); DOI: 10.1007/978-3-030-81701-5_16.

5. M. Bishop, "Insider Threat," article in *Encyclopedia of Cryptography, Security, and Privacy, Third Edition*, S. Jajodia, P. Samarati, and M. Yung, eds., Springer Berlin Heidelberg, Germany; DOI: 10.1007/978-3-642-27739-9_1586-1.
6. M. Bishop, D. Burley, and L. Futcher, "Cybersecurity Curricular Guidelines," chapter 9 in *Cybersecurity Education for Awareness and Compliance*, I. Vasileiou and S. Furnell, eds., IGI Global, Hershey, PA, USA; ISBN: 978-1-5225-7847-5.
7. M. Bishop and V. Neagoe, "Some Attributes of a Language for Property-Based Testing," *Computer Technology and Computer Programming: Research and Strategies* pp. 306–326 (2016); ISBN: 978-1-4665-6259-2.
8. C. Probst, J. Hunker, D. Gollmann, and M. Bishop, "Aspects of Insider Threats," Chapter 1 in *Insider Threats in Cyber Security and Beyond*, C. Probst, J. Hunker, D. Gollmann, and M. Bishop, eds., Springer Verlag, Berlin (2010); ISBN: 978-1-4419-7133-3.
9. M. Bishop, S. Engle, D. Frincke, C. Gates, F. Greitzer, S. Peisert, and S. Whalen, "A Risk Management Approach to the 'Insider Threat'," Chapter 6 in *Insider Threats in Cyber Security and Beyond*, C. Probst, J. Hunker, D. Gollmann, and M. Bishop, eds., Springer Verlag, Berlin (2010); ISBN: 978-1-4419-7133-3.
10. M. Bishop, "Mathematical Models of Computer Security," Chapter 9 in *Computer Security Handbook*, 5th Edition, S. Bosworth and M. Kabay, eds., John Wiley and Sons, Hoboken, NJ (2008); ISBN: 978-0-471-71652-5.
11. M. Bishop, "Security Management and Policies," Chapter 4.2 in *Handbook of Network and System Administration*, J. Bergstra and M. Burgess, eds., Elsevier, Burlington, MA (2007); IISBN: 978-0-444-52198-9.
12. M. Bishop, "Psychological Acceptability Revisited," Chapter 1 in *Designing Secure Systems That People Can Use*, by L. Cranor and S. Garfinkel, O'Reilly and Associates, Petaluma, CA (2005); ISBN: 978-0-596-00827-7.
13. M. Bishop, S. Cheung, J. Frank, J. Hoagland, S. Samorodin, and C. Wee, "Internet Security," Chapter 7 in *Statistical Methods in Computer Security*, by W. Chen, Marcel Dekker, Inc., New York, NY (2004); ISBN: 978-0-8247-5939-1.
14. M. Bishop, "Computer Viruses," Article 6.45.6.3 in *Encyclopedia of Life Support Systems: Encyclopedia of Technology, Information, and Systems Management Resources*, Z. Nabavi and D. Kaeli, eds., UNESCO, Geneva, Switzerland; http://www.eolss.net (2002); ISBN: 978-1-84826-677-3.
15. M. Bishop, "Authentication," Chapter 7 in *UNIX Unleashed*, 4th Edition, by A. Johnston and R. Anderson, SAMS, Inc., Indianapolis, IN (2001); ISBN: 978-0-672-32251-8.

Papers

2025

16. D. Kariuki, I. Ngambeki, J. Dai, M. Bishop, X. Sun, M. Dark, J. Daugherty, A. Lowrie, M. Geissler, P. Nico, and A. Noor, "Strengthening Workforce Education: Excellence in Programming Securely (SWEEPS)," *Proceedings of the 56th ACM Technical Symposium on Computer Science Education* **1** pp. 561–567 (Feb. 2025); DOI: 10.1145/3641554.3701897.
17. E. Sanchez, M. Zheng, M. Bishop, and X. Zou, "Case Study 2: Mapping between an E-Voting Curriculum and the DHS/NSA CAE Knowledge Units," *Proceedings of the 56th ACM Technical Symposium on Computer Science Education* **1** pp. 1022–1028 (Feb. 2025); DOI: 10.1145/3641554.3701960.

2024

18. R. Hull, M. Bishop, J. Gendreau, K. Levitt, M. Sadoghi. and M. Lange "Conceptual Modeling to Advance Agrifood Cybersecurity Ontologies," *Proceedings of the Joint Ontology Workshops — Episode X: The Tukker Zomer of Ontology* (July 2024); URI: https://ceur-ws.org/Vol-3882/semantic-shields-1.pdf.

2023

19. D. Nicol, G. Shannon, M. Akbar, M. Bishop, M. Chaney, and M. Luallen, "Toward Common Weakness Enumerations in Industrial Control Systems," *IEEE Security & Privacy* **21**(4) pp. 94–93 (July 2023); DOI: 10.1109/MSEC.2023.3279515.
20. M. Zheng, N. Swearingen, W. Silva, M. Bishop, and X. Zou, "An Adaptive Plug-and-Play (PnP) Interactive Platform for an E-Voting Based Cybersecurity Curricula," *Human Aspects of Information Security and Assurance* pp. 36–52 (July 2023); DOI: 10.1007/978-3-031-38530-8_4.
21. M. Zheng, N. Swearingen. S. Mills, C. Gyurek, M. Bishop, and X. Zou, "Mapping an E-Voting Based Curriculum to CSEC2017: A Case Study," *Proceedings of the 54th ACM Technical Symposium on Computer Science Education* pp. 514–520 (Mar. 2023); DOI: 10.1145/3545945.3569811.
22. K. Ferguson-Walter, M. Bishop, C. Wang, and S Fugate, "Introduction to the HICSS-56 Minitrack on Cyber Deception and Cyber Psychology for Defense," *Proceedings of the 56th Hawaii International Conference on System Sciences* pp. 845 (Jan. 2022); URI: http://hdl.handle.net/10125/102734.

2022

23. M. Clifford, M. Bishop K. Levitt, and M. Heller, "Autonomous Vehicle Security: Composing Attack, Defense, and Policy Surfaces," *Proceedings of the 2022 New Security Paradigms Workshop* (Oct. 2022).; DOI: 10.1145/3584318.3584325.
24. I. Ngambeki, M. Bishop, J. Dai, P. Nico, S. Mian, O. Thao, T. N. B. Huynh, Z. Chance, I. Alhasan, and M. Afolabi, "SecTutor: An Intelligent Tutoring System For Secure Programming," *Proceedings of the 15th World Conference on Information Security Education* pp. 17–28 (June 2022); DOI: 10.1007/978-3-031-08172-9_2.
25. I. Ngambeki, M. Bishop, J. Dai, and P. Nico, "Validation of a Secure Programming Concept Inventory," *Proceedings of the 54th ACM Technical Symposium on Computer Science Education* **2** p.1423 (Mar. 2023); DOI: 10.1145/3545947.3576367.
26. N. Rastogi, S. Rampazzi, M. Clifford, M. Heller, M. Bishop, and K. Levitt, "Explaining RADAR Features for Detecting Spoofing Attacks in Autonomous Vehicles," *Proceedings of the Explainable Agency in Artificial Intelligence Workshop* pp. 5–12 (Mar. 2022); URI: https://www.dropbox.com/scl/fi/h0ibtwbk54lixajsuorm4AAAI22_workshop_proceedings.pdf?e=2&rlkey=vnf7kafa0kgsuevg81ksi78t4&dl=0.
27. R. Sun, M. Botacin, N. Sapountzis, X. Yuan, M. Bishop, D. Porter, X. Li, A. Gregio, and D. Oliveira, "A Praise for Defensive Programming: Leveraging Uncertainty for Effective Malware Mitigation," *IEEE Transactions on Dependable and Secure Computing* **19**(1) pp. 353–369 (Jan. 2022); DOI: 10.1109/TDSC.2020.2986112.
28. K. Ferguson-Walter, M. Bishop, C. Wang, and S Fugate, "Introduction to the HICSS-55 Minitrack on Cyber Deception and Cyber Psychology for Defense," *Proceedings of the 55th Hawaii International Conference on System Sciences* pp. 2185–2186 (Jan. 2022); URI: http://hdl.handle.net/10125/79607.

2021

29. R. Aranovich, M. Wu, D. Yu, K. Katsy, B. Ahmadnia, M. Bishop, V. Filkov, and K. Sagae, "Beyond NVD: Cybersecurity meets the Semantic Web," *Proceedings of the 2021 New Security Paradigms Workshop* pp. 59–69 (Oct. 2021); DOI: 10.1145/3498891.3501259.
30. M. Bishop, I. Ngambeki, S. Mian, J. Dai, and P. Nico, "Measuring Self-Efficacy in Secure Programming," *Proceedings of the 14th World Conference on Information Security Education* pp. 81–92 (June 2021); DOI: 10.1007/978-3-030-80865-5_6.
31. R. Hosler, X. Zou, and M. Bishop, "Electronic Voting Technology Inspired Interactive Teaching and Learning Pedagogy and Curriculum Development for Cybersecurity Education," *Proceedings of the 14th World Conference on Information Security Education* pp. 28–43 (June 2021); DOI: 10.1007/978-3-030-80865-5_3.
32. M. Bishop, L. Drevin, L. Futcher, W. Leung, N. Miloslavskaya, E. Moore, J. Ophoff, and S. von Solms, "A Brief History and Overview of WISE," *Proceedings of the 14th World Conference on Information Security Education* pp. 3–9 (June 2021); DOI: 10.1007/978-3-030-80865-5_1.

33. C. Pontes, M. Souza, J. Gondim, M. Bishop, and M. Marotta, "A New Method for Flow-Based Network Intrusion Detection Using the Inverse Potts Model," *IEEE Transactions on Network and Service Management* **18**(2) pp. 1125–1136 (June 2021); DOI: 10.1109/TNSM.2021.3075503.
34. K. Ferguson-Walter, S Fugate, C. Wang, and M. Bishop, "Introduction to the HICSS-54 Minitrack on Cyber Deception and Cyber Psychology for Defense," *Proceedings of the 54th Hawaii International Conference on System Sciences* pp. 1956–1957 (Jan. 2021); URI: http://hdl.handle.net/10125/70852.

2020

35. A. Singer and M. Bishop, "Trust-Based Security; Or, Trust Considered Harmful," *Proceedings of the 2020 New Security Paradigms Workshop* pp. 76–89 (Oct. 2020); DOI: 10.1145/3442167.3442179.
36. C. Sample, S. M. Loo, and M. Bishop, "Resilient Data : An Interdisciplinary Approach," *Proceedings of the 2020 Resilience Week* pp. 1–10 (Oct. 3030); DOI: 10.1109/RWS50334.2020.9241268.
37. S. Furnell and M. Bishop, "Education for the Multifaith Community of Cybersecurity," *Proceedings of the 13th World Information Security Education Conference* pp. 32–45 (Sep. 2020); DOI: 10.1007/978-3-030-59291-2_3.
38. R. Gegan, B. Perry, D. Ghosal, and M. Bishop, "Insider Attack Detection for Science DMZs Using System Performance Data," *Proceedings of the Sixth IEEE Workshop on Security and Privacy in the Cloud* pp. 1–9 (June 2020); DOI: 10.1109/CNS48642.2020.9162260.
39. R. Gegan, C. Mao, D. Ghosal, M. Bishop, and S. Peisert, "Anomaly Detection for Science DMZs Using System Performance Data," *Proceedings of the 2020 International Conference on Computing, Networking and Communications* pp. 492–496 (Feb. 2020); DOI: 10.1109/ICNC47757.2020.9049695.
40. S. Furnell and M. Bishop, "Addressing Cyber Security Skills: The Spectrum, Not the Silo," *Computer Fraud & Security* **2020**(2) pp. 6–11 (Feb. 2020); DOI: 10.1016/S1361-3723(20)30017-8.
41. J. Clark, M. Bishop, and C. Hoke, "Introduction to the Minitrack on Inside the Insider Threat," *Proceedings of the 53rd Hawaii International Conference on System Sciences* pp. 2228–2229 (Jan. 2020); DOI: 10.24251/HICSS.2020.272.

2019

42. M. Dupuis, M. Bishop, B. Lagesse, C. Bejan, and S. David, "Design Patterns for Compensating Controls for Securing Financial Sessions," *Proceedings of the 2019 International Workshop on Security Measurements of Cyber Networks* (Aug. 2019); DOI: https://doi.org/10.1109/SmartWorld-UIC-ATC-SCALCOM-IOP-SCI.2019.00260.
43. K. Nance, V. Nestler, and M. Bishop, "Use My Digital Forensics Tool . . . It's Shiny," *Journal of International Technology and Information Management* **28**(3) pp. 91–100 (2019); URI: https://scholarworks.lib.csusb.edu/jiti
44. S. Templeton, M. Bishop, K. Levitt, and M. Heckman, "A Biological Framework for Characterizing Mimicry in Cyber-Deception," *Proceedings of the European Conference on Cyber Warfare and Security* pp. 508–517 (July 2019).
45. M. Bishop, M. Dark, L. Futcher, and J. van Niekerk, "Learning Principles and the Secure Programming Clinic," *Proceedings of the 12th World Conference on Information Security Education* pp. 17–29 (June 2019); DOI: 10.1007/978-3-030-23451-5_2.
46. J. Clark, M. Bishop, and C. Hoke, "Introduction to the Minitrack on Inside the Insider Threats," *Proceedings of the 52nd Hawaii International Conference on System Sciences* pp. 3200–3201 (Jan. 2019); DOI: 10.24251/HICSS.2019.386.

2018

47. I. Ngambeki, J. Dai, P. Nico, and M. Bishop, "Concept Inventories in Cybersecurity Education: An Example from Secure Programming," *Proceedings of the 2018 IEEE Frontiers in Education Conference* pp. 1–5 (Oct. 2018); DOI: 10.1109/FIE.2018.8658474.
48. M. Bishop, "A Design for a Collaborative Make-the-Flag Exercise," *Proceedings of the 2018 World Information Security Education Conference* pp. 3–14 (Sep. 2018); DOI: 10.1007/978-3-319-99734-6_1.
49. M. Bishop, C. Gates, and K. Levitt, "Arguing for Argumentation in Break-the-Glass Scenarios," *Proceedings of the 2018 New Security Paradigms Workshop* pp. 1–11 (Aug. 2018); DOI: 10.1145/3285002.3285005.

50. M. Bishop, "A Constructive Build-the-Flag Contest," *Report of the Workshop on New Approaches to Cybersecurity Education* (June 2018); URI: https://www.cerias.purdue.edu/nace/papers/Bishop.pdf.
51. K.-K. Choo, M. Bishop, W. Glisson, and K. Nance, "Internet- and Cloud-of-Things Cybersecurity Research Challenges and Advances," *Computers & Security* **74** pp. 275–276 (May 2018); DOI: 10.1016/j.cose.2018.02.008.
52. D. Burley, M. Bishop, S. Kaza, D. Gibson, S. Buck, A. Parrish, and H. Mattord, "Special Session: Joint Task Force on Cybersecurity Education," *Proceedings of the 49th ACM Technical Symposium on Computer Science Education* pp. 918–919 (Mar. 2018); DOI: 10.1145/3159450.3159635.
53. W. Conklin and M. Bishop, "Contrasting the CSEC 2017 and the CAE Designation Requirements," *Proceedings of the 51st Hawaii International Conference on System Sciences* pp. 2435–2441 (Jan. 2017); DOI: 10.24251/HICSS.2018.306.
54. M. Bishop, J. Kesan, and J. Clark, "Introduction to the Minitrack on Insider Threats to Governments and Organizations," *Proceedings of the 51st Hawaii International Conference on System Sciences* p. 2434 (Jan. 2018); DOI: 10.24251/HICSS.2018.305.

2017

55. S. Peisert, M. Bishop, and E. Talbot, "A Model of Owner Controlled, Full-Provenance, Non-Persistent, High-Availability Information Sharing," *Proceedings of the 2017 New Security Paradigms Workshop* pp. 80–89 (Oct. 2017); DOI: 10.1145/3171533.3171536.
56. R. Sun, X. Yang, A. Lee, M. Bishop, D. Porter, X. Li, A. Gregio, and D. Oliveira, "The Dose Makes the Poison — Leveraging Uncertainty for Effective Malware Detection," *Proceedings of the 2017 IEEE Conference on Dependable and Secure Computing*, pp. 123–130 (Aug. 2017); DOI: 10.1109/DESEC.2017.8073803.
57. A. Sarkar, S. Köhler, B. Ludäscher, and M. Bishop, "Insider Attack Identification and Prevention in Collection-Oriented Dataflow-Based Processes," *IEEE Systems Journal* **11**(2) pp. 522–533 (June 2017); DOI: 10.1109/JSYST.2015.2477472.
58. M. Bishop, D. Burley, and L. Futcher, "Workshop on the Joint Task Force Cybersecurity Curricular Guidelines," *Proceedings of the 10th World Conference on Information Security Education* pp. ix–x (May 2017); DOI: 10.1007/978-3-319-58553-6.
59. M. Bishop, D. Burley, S. Buck, J. Ekstrom, L. Futcher, D. Gibson, E. Hawthorne, S. Kaza, Y. Levy, H. Mattord, and A. Parrish, "Cybersecurity Curricular Guidelines," *Proceedings of the 10th World Conference on Information Security Education* pp. 3–13 (May 2017); DOI: 10.1007/978-3-319-58553-6_1.
60. M. Bishop, J. Dai, M. Dark, I. Ngambki, P. Nico, and M. Zhu, "Evaluating Secure Programming Knowledge," *Proceedings of the 10th World Conference on Information Security Education* pp. 51–62 (May 2017); DOI: 10.1007/978-3-319-58553-6_5.
61. H. Fu, Z. Zheng, S. Bose, M. Bishop, and P. Mohapatra, "LeakSemantic: Identifying Abnormal Sensitive Network Transmissions in Mobile Applications," *IEEE Conference on Computer Communications* pp. 1–9 (May 2017); DOI: 10.1109/INFOCOM.2017.8057221.
62. L. Osterweil, M. Bishop, H. Conboy, H. Phan, B. Simidchieva, G. Avrunin, L. Clarke, and S. Peisert, "Iterative Analysis to Improve Key Properties of Critical Human-Intensive Processes: An Election Security Example," *ACM Transactions on Privacy and Security* **20**(2) pp. 5:1–5:30 (Mar. 2017); DOI: 10.1145/3041041.
63. D. Burley, M. Bishop, S. Kaza, D. Gibson, E. Hawthorne, and S. Buck, "ACM Joint Task Force on Cybersecurity Education," *Proceedings of the 2017 ACM SIGCSE Technical Symposium on Computer Science* pp. 683–684 (Mar. 2017); DOI: 10.1145/3017680.3017811.
64. K. Nance and M. Bishop, "Deception, Digital Forensics, and Malware Minitrack (Introduction)," *Proceedings of the 50th Hawaii International Conference on System Science* p. 6059 (Jan. 2017); URI: http://hdl.handle.net/10125/41895.
65. M. Bishop, K. Nance, and J. Clark, "Inside the Insider Threat Minitrack (Introduction)," *Proceedings of the 50th Hawaii International Conference on System Science* p. 2637 (Jan. 2017); URI: http://hdl.handle.net/10125/41474.
66. R. Linger, L. Goldrich, M. Bishop, and M. Dark, "Agile Applied Research for Cybersecurity: Creating

Authoritative, Actionable Knowledge When Speed Matters," *Proceedings of the 50th Hawaii International Conference on System Sciences* pp. 5958–5967 (Jan. 2017); DOI: 10.24251/HICSS.2017.723.

67. M. Bishop, K. Nance, and J. Clark, "Inside the Insider Threat (Introduction)," *Proceedings of the 50th Hawaii International Conference on System Science* p. 2637 (Jan. 2017); URI: http://hdl.handle.net/10125/41474.

2016

68. R. Sun, A. Lee, A. Chen, D. Porter, M. Bishop, D. Oliveira, "Bear: A Framework for Understanding Application Sensitivity to OS (Mis) Behavior," *Proceedings of the 27th IEEE International Symposium on Software Reliability Engineering* pp. 388–399 (Oct. 2016); DOI: 10.1109/ISSRE.2016.18.
69. M. Fioravanti II, M. Bishop, and R. Ford, "I'm Not Sure If We're Okay: Uncertainty for Attackers and Defenders," *Proceedings of the 2016 New Security Paradigms Workshop* pp. 1–10 (Sep. 2016); DOI: 10.1145/3011883.3011889.
70. M. Dark, L. Stuart, I. Ngambeki, and M. Bishop, "Effect of the Secure Programming Clinic on Learners' Secure Programming Practices," *Proceedings of the 20th Colloquium on Information Systems Security Education* pp. 1–18 (June 2016); URI: https://cisse.info/archives/category/41-papers.
71. B. Copos, K. Levitt, M. Bishop, and J. Rowe, "Is Anybody Home? Inferring Activity From Smart Home Network Traffic," *Proceedings of the 2016 IEEE Security and Privacy Workshops* pp. 245–251 (May 2016); DOI: 10.1109/SPW.2016.48.
72. D. Burley, M. Bishop, E. Hawthorne, S. Kaza, S. Buck, and L. Futcher, "Special Session: ACM Joint Task Force on Cyber Education," *Proceedings of the 47th ACM Technical Symposium on Computing Science Education* pp. 234–236 (Feb. 2016); DOI: 10.1145/2839509.2844672.
73. K. Nance and M. Bishop, "Introduction to HICCS-49 Digital Forensics — Education, Research and Practice Minitrack," *Proceedings of the 49th Hawaii International Conference on System Sciences* p. 5596 (Jan. 2016); DOI: 10.1109/HICSS.2016.692.
74. M. Bishop, K. Nance, and W. Claycomb, "Inside the Insider Threat (Introduction)," *Proceedings of the 49th Hawaii International Conference on System Sciences* p. 2728 (Jan. 2016); DOI: 10.1109/HICSS.2016.342.

2015

75. S. Belcher, M. Bishop, M. Dark, and I. Ngambeki, "Practice, Practice, Practice . . . Secure Programmer," *Proceedings of the 19th Colloquium on Information Systems Security Education* pp. 1–16 (June 2015); URI: https://cisse.info/archives/category/28-papers.
76. S. Belcher, M. Bishop, M. Dark, and I. Ngambeki, "Teach the Hands, Train the Mind . . . A Secure Programming Clinic," *Proceedings of the 19th Colloquium on Information Systems Security Education* pp. 1–15 (June 2015); URI: https://cisse.info/archives/category/28-papers.
77. M. Dark, M. Bishop, R. Linger, and L. Goldrich, "Realism in Teaching Cybersecurity Research: The Agile Research Process," *Proceedings of the 9th World Conference on Information Security Education* pp. 3–14 (May 2015); DOI: 10.1007/978-3-319-18500-2_1.
78. R. Sun, D. Porter, D. Oliveira, and M. Bishop, "The Case for Less Predictable Operating System Behavior," *Proceedings of the 15th Workshop on Hot Topics in Operating Systems* (May 2015); URI: https://www.usenix.org/system/files/conference/hotos15/hotos15-paper-sun.pdf.
79. R. Sun, M. Bishop, N. Ebner, D. Oliveira, and D. Porter, "The Case for Unpredictability and Deception as OS Features," *;login:: The Magazine of USENIX & SAGE* **40**(4) pp. 12–17 (Jan. 2015); URI: https://www.usenix.org/system/files/login/articles/login_aug15_03_sun.pdf.

2014

80. E. Talbot, S. Peisert, and M. Bishop, "Principles of Authentication," *Proceedings of the WAY Workshop* (July 2014); DOI: 10.1109/SPW.2014.41.
81. M. Bishop, H. Conboy, H. Phan, B. Simidchieva, G. Avrunin, L. Clarke, L. Osterweil, and S. Peisert, "Insider Detection by Process Analysis," *Proceedings of the 2014 Workshop on Research for Insider Threat* pp. 251–264 (May 2014); DOI: 10.1109/SPW.2014.40.
82. A. Sarkar, S. Köhler, S. Riddle, B. Ludäscher, and M. Bishop, "Insider Attack Identification and Prevention Using a Declarative Approach," *Proceedings of the 2014 Workshop on Privacy in the Electronic Society* pp. 265–276 (May 2014); DOI: 10.1109/SPW.2014.41.

2013

83. R. Ford, M. Carvalho, L. Mayron, and M. Bishop, "Antimalware Software: Do We Measure Resilience?" *Proceedings of the First Workshop on Anti-Malware Testing Research* pp. 1–7 (Oct. 2013); DOI: 10.1109/WATeR.2013.6707877.
84. M. Bishop, "Caution: Danger Ahead (with Big Data)," *ISSA Journal* **11**(10) pp. 1–7 (Oct. 2013); URI: http://www.issa.org/resource/resmgr/journalpdfs/feature1013.pdf.
85. J. Ard, M. Bishop, C. Gates, and M. Sun, "Information Behaving Badly," *Proceedings of the 2013 New Security Paradigms Workshop* pp. 107–118 (Sep. 2013); DOI: 10.1145/2535813.2535825.
86. M. Bishop, E. Butler, K. Butler, C. Gates, and S. Greenspan, "Forgive and Forget: Return to Obscurity," *Proceedings of the 2013 New Security Paradigms Workshop* pp. 1–10 (Sep. 2013); DOI: 10.1145/2535813.2535814.
87. M. Bishop and C. Hoke, "The Risk of Propagating Standards" (*position paper*), *Proceedings of the Workshop on Risk Perception in IT Security and Privacy* (July 2013); URI: https://cups.cs.cmu.edu/soups/2013/risk/ris
88. H. Armstrong, M. Bishop, and C. Armstrong, "Virtual Penetration Testing: A Joint Education Exercise Across Geographic Boundaries," *Proceedings of the Eighth World Information Systems Education Conference* pp. 11–19 (July 2013); DOI: 10.1007/978-3-642-39377-8_2.
89. M. Bishop, B. Taylor, E. Hawthorne, D. Burley, and S. Kaza, "Introducing Secure Coding in CS0 and CS1 (abstract)," *Proceedings of the 44th ACM Technical Symposium on Computer Science Education* p. 761 (Mar. 2013); DOI: 10.1145/2445196.2445512.
90. M. Bishop, E. Hawthorne, K. Nance, and B. Taylor, "Teaching Secure Coding — The Myths and the Realities," *Proceedings of the 44th ACM Technical Symposium on Computer Science Education* pp. 281–282 (Mar. 2013); DOI: 10.1145/2839509.2844672.
91. S. Whalen, S. Peisert, and M. Bishop, "Multiclass Classification of Distributed Memory Parallel Computations," *Pattern Recognition Letters* **34**(3) pp. 322–329 (Feb. 2013); DOI: 10.1016/j.patrec.2012.10.007.
92. K. Nance, M. Bishop, and A. Phillips, "Introduction to Digital Forensics — Education, Research, and Practice Minitrack," *Proceedings of the 46th Hawaii International Conference on System Science* p. 4879 (Jan. 2016); DOI: 10.1109/HICSS.2013.288.

2012

93. D. Fu and M. Bishop, "Metaphor Computing," *Proceedings of the Artificial Intelligence and Interactive Digital Entertainment Conference* pp. 29–32 (Oct. 2012); URI: http://www.aaai.org/-ocs/index.php/AIIDE/AIIDE12/paper/view/5531/5759.
94. S. Peisert, E. Talbot, and M. Bishop, "Turtles All The Way Down: A Clean-Slate, Ground-Up, First-Principles Approach to Secure Systems," *Proceedings of the 2012 New Security Paradigms Workshop* pp. 15–26 (Sep. 2012); DOI: 10.1145/2413296.2413299.
95. M. Bishop and S. Peisert, "Security and Elections," *IEEE Security and Privacy* **10**(5) pp. 64–67 (Sep. 2012); DOI: 10.1109/MSP.2012.127.
96. M. Bishop, "Learning and Experience in Computer Security Education," *Actas de la XII Reunión Española sobre Criptología y Seguridad de la Información* pp. 1–6 (Sep. 2012); URI: http://recsi2012.mondragon.edu/es/
97. H. Phan, G. Avrunin, M. Bishop, L. Clarke, and L. Osterweil, "A Systematic Process-Model-Based Approach for Synthesizing Attacks and Evaluating Them," *Proceedings of the 2012 USENIX/ACCURATE Electronic Voting Technology Workshop* (Aug. 2012); URI: https://www.usenix.org/conference/evtwote12/workshop-program/presentation/phan.
98. M. Bishop, M. Doroud, C. Gates, and J. Hunker, "Effects of Attribution Policies: The Second Summer of the Sisterhood," *Proceedings of the 11th European Conference on Information Warfare and Security* pp. 63–69 (July 2012); URI: http://connection.ebscohost.com/c/articles/89671052/attribution-future-internet-second-summer-sisterhood.
99. K. Nance, M. Bishop, and B Hay, "Secure Coding Education: Are We Making Progress?," *Proceedings of the 16th Colloquium on Information System Security Education* (June 2012); URI: https://cisse.info/resources/archives papers?download=299:p13-2012.
100. R. Ford, M. Carvalho, L. Mayron, and M. Bishop, "Towards Metrics for Cyber Resilience," *Proceedings of the 21st EICAR Annual Conference* pp. 151–159 (May 2012); *official version not available on the*

web; author copy available at URI: http://nob.cs.ucdavis.edu/∼bishop/papers/2012-eicar/resilience.pdf.

101. S. Whalen, S. Engle, S. Peisert, and M. Bishop, "Network-Theoretic Classification of Parallel Computation Patterns," *International Journal of High Performance Computing* **26**(2) pp. 159–169 (May 2012); DOI: 10.1177/1094342012436618.
102. M. Bishop, S. Engle, D. Howard, and S. Whalen, "A Taxonomy of Buffer Overflow Characteristics," *IEEE Transactions on Dependable and Secure Computing* **9**(3) pp. 305–317 (May 2012); DOI: 10.1109/TDSC.2012.10.
103. B. Taylor, M. Bishop, D. Burley, S. Cooper, R. Dodge, and R. Seacord, "Teaching Secure Coding—Report from Summit on Education in Secure Software," *Proceedings of SIGCSE '12* pp. 581–582 (Feb. 2012); DOI: 10.1145/2157136.2157304.
104. B. Hay, K. Nance,M. Bishop, and L. McDaniel, "Are Your Papers in Order? Developing and Enforcing Multi-Tenancy and Migration Policies in the Cloud," *Proceedings of the 2012 Hawaii International Conference on System Sciences* pp. 5473–5479 (Jan. 2012); DOI: 10.1109/HICSS.2012.121.

2011

105. M. Bishop, C. Gates, P. Yellowlees, and G. Silberman, "Facebook Goes to the Doctor," *Proceedings of the Workshop on Governance of Technology, Information, and Policy* pp. 13–20 (Dec. 2011); DOI: 10.1145/2076496.2076498.
106. J. Hunker, C. Gates, and M. Bishop, "Attribution Requirements for the Next Generation Internet," *Proceedings of the 2011 IEEE Conference on Technologies for Homeland Security* (Nov. 2011); DOI: 10.1109/THS.2011.6107894.
107. M. Ramilli, M. Bishop, and S. Sun, "Multiprocess Malware," *Proceedings of the 6th International Conference on Malicious and Unwanted Software* pp. 8–13 (Oct. 2011); DOI: 10.1109/MALWARE.2011.6112320.
108. M. Bishop, R. Ford, and M. Ramilli, "Results-Oriented Security," *Proceedings of the 6th International Conference on Malicious and Unwanted Software* pp. 42–49 (Oct. 2011); DOI: 10.1109/MALWARE.2011.6112325.
109. M. Bishop, M. Carvalho, R. Ford, and L. Mayron, "Resilience is More Than Availability," *Proceedings of the 2011 New Security Paradigms Workshop* pp. 95–104 (Sep. 2011); DOI: 10.1145/2073276.2073286.
110. C. Gates and M. Bishop, "One of These Records Is Not Like the Other," *Proceedings of the Third USENIX Workshop on the Theory and Practice of Provenance* (June 2011); URI: https://www.usenix.org/legacy/events/
111. S. Whalen, S. Peisert, and M. Bishop, "Network-Theoretic Classification of Parallel Computation Patterns," *Proceedings of the First International Workshop on Characterizing Applications for Heterogeneous Exascale Systems* pp. 159–169 (June 2011); DOI: 10.1177/1094342012436618.
112. M. Clifford and M. Bishop, "Trust of Medical Devices, Applications, and Users in Pervasive Healthcare," *Proceedings of the Fourth International Conference on Pervasive Technologies Related to Assistive Environments* pp. 51–54 (May 2011); DOI: 10.1145/2141622.2141686.
113. M. Bishop and C. Elliott, "Robust Programming by Example," *Proceedings of the Seventh World Conference on Information Security Education* pp. 140–147 (June 2011); DOI: 10.1007/978-3-642-39377-8_15.
114. M. Bishop and K. Nance, "The Strengths and Challenges of Analogical Approaches to Computer Security Education," *Proceedings of the Seventh World Conference on Information Security Education* pp. 211–217 (June 2011); DOI: 10.1007/978-3-642-39377-8_24.
115. M. Bishop, "Teaching Security Stealthily," *IEEE Security and Privacy* **9**(2) pp. 69–71 (Mar. 2011); DOI: 10.1109/MSP.2011.43.
116. M. Bishop, B. Hay, and K. Nance, "Applying Formal Methods Informally," *Proceedings of the 2011 Hawaii International Conference on System Sciences* pp. 1–8 (Jan. 2011); DOI: 10.1109/HICSS.2011.71.
117. B. Hay, K. Nance, and M. Bishop, "Storm Clouds Rising: Security Challenges for IaaS Cloud Computing," *Proceedings of the 2011 Hawaii International Conference on System Sciences* (Jan. 2011); DOI: 10.1109/HICSS.2011.386.
118. M. Bishop, "Computer Security in the Future," *The ISC International Journal of Information Security* **3**(1) pp. 3–27 (Jan. 2011); DOI: 10.22042/isecure.2015.3.1.2.

2010

119. M. Bishop, S. Greenwald, and M. Locasto, "New Security Paradigms Workshop," *;login:* **35**(6) pp. 117–124 (Dec. 2010); URI: https://www.usenix.org/system/files/login/articles/NSPW10Reports.pdf.
120. M. Ramilli and M. Bishop, "Multi-Stage Delivery of Malware," *Proceedings of the 5th IEEE International Conference on Malicious and Unwanted Software* pp. 91–97 (Oct. 2010); DOI: 10.1109/MALWARE.2010.5665788.
121. M. Bishop, J. Cummins, S. Peisert, A. Singh, B. Bhumiratana, D. Agarwal, D. Frincke, and M. Hogarth, "Relationships and Data Sanitization: A Study in Scarlet," *Proceedings of the 2010 New Security Paradigms Workshop* pp. 151–164 (Sep. 2010); DOI: 10.1145/1900546.1900567.
122. S. Whalen, M. Bishop, and J. Crutchfield, "Hidden Markov Models for Automated Protocol Learning," *Proceedings of SecureComm 2010* pp. 415–428 (Sep. 2010); DOI: 10.1007/978-3-642-16161-2_24.
123. M. Bishop, "Technology, Training, and Transformation," *IEEE Security and Privacy* **8**(5) pp. 72–75 (Sep. 2010); DOI: 10.1109/MSP.2010.165.
124. B. Simidchieva, S. Engle, M. Clifford, A. Jones, S. Peisert, M. Bishop, L. Clarke, and L. Osterweil, "Modeling and Analyzing Faults to Improve Election Process Robustness," *Proceedings of the 2010 USENIX/ACCURATE Electronic Voting Technology Workshop* (Aug. 2010); URI: http://www.usenix.org/events/evtwo
125. M. Bishop and C. Hoke, "Essential Baseline Research for UOCAVA-MOVE Act Implementation at the State-Local Levels," *Workshop on UOCAVA Remote Voting Systems* (Aug. 2010); URI: http://csrc.nist.gov/groups/ST/AVAPosPaper.pdf.
126. C. Gates and M. Bishop, "The Security and Privacy Implications of Using Social Networks to Deliver Healthcare," *Proceedings of the 3rd International Conference on Pervasive Technologies Related to Assistive Environments* pp. 29:1–29:6 (June 2010); DOI: 10.1145/1839294.1839329.
127. M. Bishop, "Ten Years Past and Ten Years from Now," *Actas de la X Journada de Seguridad Informática* (June 2010); *official version not available on the web; author copy available at* URI: http://nob.cs.ucdavis.edu/~acis/colombiatalk.pdf.
128. E. Talbot, D. Frincke, and M. Bishop, "Demythifying Security," *IEEE Security and Privacy* **8**(3) pp. 56–59 (May 2010); DOI: 10.1109/MSP.2010.95.
129. P. Neumann, M. Bishop, S. Peisert, and M. Schaefer, "Reflections on the 30th Anniversary of the IEEE Symposium on Security and Privacy," *Proceedings of the 2010 IEEE Symposium on Security and Privacy* pp. 109–113 (May 2010); DOI: 10.1109/SP.2010.43.
130. M. Bishop, "A Clinic for 'Secure' Programming," *IEEE Security and Privacy* **8**(2) pp. 54–56 (Mar. 2010); DOI: 10.1109/MSP.2010.62.

2009

131. M. Bishop, "Reflections on UNIX Security," *Proceedings of the 25th Annual Computer Security Applications Conference* pp. 161–184 (Dec. 2009); includes the previously unpublished 1983 paper [273]; DOI: 10.1109/ACSAC.2009.25.
132. S. Cooper, C. Nickell, V. Piotrowski, B. Oldfield, A. Abdallah, M. Bishop, B. Caelli, M. Dark, E. Hawthorne, L. Hoffman, L. Pérez, C. Pfleeger, R. Raines, C. Schou, and J. Brynielsson, "An Exploration of the Current State of Information Assurance Education," *ACM SIGCDE Bulletin* **41**(4) pp. 109–125 (Dec. 2009); DOI: 10.1145/1709424.1709457.
133. S. Peisert, M. Bishop, L. Corriss, and S. Greenwald, "*Quis Custodiet ipsos Custodes*? A New Paradigm for Analyzing Security Paradigms," *Proceedings of the 2009 New Security Paradigms Workshop* pp. 71–84 (Sep. 2009); DOI: 10.1145/1719030.1719041.
134. M. Bishop, C. Gates, and J. Hunker, "Sisterhood of the Traveling Packets," *Proceedings of the 2009 New Security Paradigms Workshop* pp. 59–70 (Sep. 2009); DOI: 10.1145/1719030.1719039.
135. R. Gardner, M. Bishop, and T. Kohno, "Are Patched Machines Really Fixed?," *IEEE Security and Privacy* **7**(5) pp. 82–88 (Sep. 2009); DOI: 10.1109/MSP.2009.116.
136. M. Bishop, S. Peisert, C. Hoke, M. Graff, and D. Jefferson, "E-Voting and Forensics: Prying Open the Black Box," *Proceedings of the 2009 USENIX/ACCURATE Electronic Voting Technology Workshop* (Aug. 2009); URI: http://www.usenix.org/events/evtwote09/tech/full_papers/bishop.pdf.
137. M. Bishop, "Some 'Secure Programming' Exercises for an Introductory Programming Class," *Proceedings of the Sixth World Conference on Information Security Education* pp. 226–232 (July 2009); DOI:

10.1007/978-3-642-39377-8_26.

138. B. Bhumiratana and M. Bishop, "Privacy Aware Data Sharing: Balancing the Usability and Privacy of Datasets," *Proceedings of the 2nd International Conference on Pervasive Technologies Related to Assistive Environments* (June 2009); DOI: 10.1145/1579114.1579144.
139. Z. Le, M. Bishop and F. Makedon, "Strong Mobile Device Protection from Loss and Capture," *Proceedings of the 2nd International Conference on Pervasive Technologies Related to Assistive Environments* (June 2009); DOI: 10.1145/1579114.1579144.
140. M. Bishop and C. Taylor, "A Critical Analysis of the Centers of Academic Excellence Program," *Proceedings of the 13th Colloquium for Information Systems Security Education* (June 2009); URI: https://cisse.info/resources/archives/category/12-papers?download=125:s01p04-2009.
141. M. Bishop, C. Gates, D. Frincke, and F. Greitzer, "AZALIA: A to Z Assessment of the Likelihood of Insider Attack," *Proceedings of the 2009 IEEE International Conference on Technologies for Homeland Security* (May 2009); DOI: 10.1109/THS.2009.5168063.
142. B. Hay, K. Nance, and M. Bishop, "Live Analysis: Progress and Challenges," *IEEE Security and Privacy* **7**(2) pp. 30–37 (Mar. 2009); DOI: 10.1109/MSP.2009.43.
143. K. Nance, B. Hay, and M. Bishop, "Investigating the Implications of Virtual Machine Introspection for Digital Forensics," *Proceedings of the 2009 International Conference on Availability, Reliability and Security* pp. 1024–1029 (Mar. 2009); DOI: 10.1109/ARES.2009.173.
144. M. Bishop, S. Engle, S. Peisert, S. Whalen, and C. Gates, "Case Studies of an Insider Framework," *Proceedings of the 2009 Hawaii International Conference on System Sciences* (Jan. 2009); DOI: 10.1109/HICSS.2009.104.
145. S. Peisert, M. Bishop, and A. Yasinsac, "Vote Selling, Voter Anonymity, and Forensic Logging of Electronic Voting Machines," *Proceedings of the 2009 Hawaii International Conference on System Sciences* (Jan. 2009); DOI: 10.1109/HICSS.2009.503.
146. K. Nance, B. Hay, and M. Bishop, "Digital Forensics: Defining a Research Agenda," *Proceedings of the 2009 Hawaii International Conference on System Sciences* (Jan. 2009); DOI: 10.1109/HICSS.2009.160.

2008

147. M. Bishop and D. Frincke, "Information Assurance Education: A Work In Progress," *IEEE Security and Privacy* **6**(5) pp. 54–57; DOI: 10.1109/MSP.2008.123
148. M. Bishop, S. Engle, C. Gates, S. Peisert, and S. Whalen, "We Have Met the Enemy and He Is Us," *Proceedings of the 2008 New Security Paradigms Workshop* pp. 1–12 (Sep. 2008); DOI: 10.1145/1595676.1595678.
149. K. Nance, M. Bishop, and B. Hay, "Virtual Machine Introspection: Observation or Interference?," *IEEE Security and Privacy* **6**(5) pp. 32–37 (Sep. 2008); DOI: 10.1109/MSP.2008.134.
150. S. Peisert, M. Bishop, and K. Marzullo, "Computer Forensics In Forensis," *Proceedings of the Third International IEEE Workshop on Systematic Approaches to Digital Forensic Engineering* pp. 102–122 (May 2008); DOI: 10.1109/SADFE.2008.18.
151. M. Bishop and C. Gates, "Defining the Insider Threat," *Proceedings of the Cyber Security and Information Intelligence Research Workshop*, article 15 (May 2008); DOI: 10.1145/1413140.1413158.
152. A. Yasinsac and M. Bishop, "The Dynamics of Counting and Recounting Votes," *IEEE Security and Privacy* **6**(3) pp. 22–29 (May 2008); DOI: 10.1109/MSP.2008.75.
153. S. Peisert, M. Bishop, and K. Marzullo, "Computer Forensics in Forensis," *ACM SIGOPS Operating Systems Review* **42**(3) pp. 112–122 (Apr. 2008); DOI: 10.1145/1368506.1368521.
154. A. Yasinsac and M. Bishop, "Of Paper Trails and Voter Receipts," *Proceedings of the 2008 Hawaii International Conference on System Sciences* (Jan. 2008); DOI: 10.1109/HICSS.2008.330.

2007

155. M. Bishop, "New Security Paradigms Workshop," *;login:* **32**6 pp. 115–119 (Dec. 2007); URI: https://www.usenix.org/system/files/login/articles/543-NSPW07summaries.pdf.
156. M. Bishop and D. Wagner, "Risks of E-Voting," *Communications of the ACM* **50**(11) p. 120 (Nov. 2007); DOI: 10.1145/1297797.1297827.

157. E. Proebstel, S. Riddle, F. Hsu, J. Cummins, F. Oakley, T. Stanionis, and M. Bishop, "An Analysis of the Hart Intercivic DAU eSlate," *Proceedings of the 2007 USENIX/ACCURATE Electronic Voting Technology Workshop* (Aug. 2007); URI: https://www.usenix.org/legacy/events/evt07/tech/full_papers/proebstel/proebstel.pdf.
158. S. Peisert and M. Bishop, "I'm a Scientist, Not a Philosopher!" *IEEE Security and Privacy* **5**(4) pp. 48–51 (July 2007); DOI: 10.1109/MSP.2007.84.
159. C. Gates, C. Taylor, and M. Bishop, "Dependable Security: Testing Network Intrusion Detection Systems," poster paper, *Proceedings of the Third Workshop on Hot Topics in System Dependability*, paper 19 (June 2007); *official version not available on the web; author copy available at* URI: http://nob.cs.ucdavis.edu/∼bishop/papers/2007-hotdep/poster19.pdf.
160. S. Peisert and M. Bishop, "How to Design Computer Security Experiments," *Proceedings of the World Conference on Information Security Education* pp. 141–148 (June 2007); DOI: 10.1007/978-0-387-73269-5_19.
161. M. Bishop, "E-Voting as a Teaching Tool," *Proceedings of the World Conference on Information Security Education* pp. 17–24 (June 2007); DOI: 10.1007/978-0-387-73269-5_3.
162. S. Peisert, M. Bishop, S. Karin, and K. Marzullo, "Towards Models for Forensic Analysis," *Proceedings of the Second International Workshop on Systematic Approaches to Digital Forensic Engineering* pp. 3–15 (Apr. 2007); DOI: 10.1109/SADFE.2007.23.
163. S. Peisert, M. Bishop, S. Karin, and K. Marzullo, "Analysis of Computer Intrusions Using Sequences of Function Calls," *IEEE Transactions on Dependable and Secure Computing* **4**(2) pp. 137–150 (Apr. 2007); DOI: 10.1109/TDSC.2007.1003.
164. E. Barr, M. Bishop, and M. Gondree, "Fixing Federal E-Voting Standards," *Communications of the ACM* **50**(3) pp. 19–24 (Mar. 2007); DOI: 10.1145/1226736.1226754.
165. J. Zhou, M. Heckman, B. Reynolds, A. Carlson, and M. Bishop, "Modeling Network Intrusion Detection Alerts for Correlation," *ACM Transactions on Information and System Security* **10**(1) pp. 1–31 (Feb. 2007); DOI: 10.1145/1210263.1210267.
166. M. Bishop and D. Frincke, "Achieving Learning Objectives through E-Voting Case Studies," *IEEE Security and Privacy* **5**(1) pp. 53–56 (Jan. 2007); DOI: 10.1109/MSP.2007.1.

2006

167. M. Bishop, "Teaching Context in Information Security," *Journal on Educational Resources in Computing* **6**(3) article 3 (Sep. 2006); DOI: 10.1145/1243481.1243484.
168. R. Crawford, M. Bishop, B. Bhumiratana, L. Clark, and K. Levitt, "Sanitization Models and their Limitations," *Proceedings of the New Security Paradigms Workshop* pp. 41–56 (Sep. 2006); DOI: 10.1145/1278940.1278948.
169. V. Neagoe and M. Bishop, "Inconsistency in Deception for Defense," *Proceedings of the New Security Paradigms Workshop* pp. 31–38 (Sep. 2006); DOI: 10.1145/1278940.1278946.
170. E. Ceesay, J. Zhou, M. Gertz, K. Levitt, and M. Bishop, "Using Type Qualifiers to Analyze Untrusted Integers and Detecting Security Flaws in C Programs," *Proceedings of the GI/IEEE SIG SIDAR Conference on Detection and Intrusions and Malware and Vulnerability Assessment* pp. 1–16 (July 2006); DOI: 10.1007/11790754_1.
171. D. Gilliam, J. Powell, M. Bishop, C. Andrews, and S. Jog, "Security Verification Techniques Applied to PatchLink COTS Software," *Proceedings of the 15th IEEE International Workshop on Enabling Technologies: Infrastructure for Collaborative Enterprises* pp. 319–325 (June 2006); DOI: 10.1109/WETICE.2006.59.
172. M. Bishop, R. Crawford, B. Bhumiratana, L. Clark, and K. Levitt, "Some Problems in Sanitizing Network Data," *Proceedings of the 15th IEEE International Workshop on Enabling Technologies: Infrastructure for Collaborative Enterprises* pp. 307–312 (June 2006); DOI: 10.1109/WETICE.2006.62.
173. D. Gilliam and M. Bishop, "WETICE 2006 Eleventh Securities Technologies (ST) Workshop Report," *Proceedings of the 15th IEEE International Workshops on Enabling Technologies: Infrastructure for Collaborative Enterprise* pp. 305–306 (June 2006); DOI: 10.1109/WETICE.2006.32.
174. M. Bishop and S. Engle, "The Software Assurance CBK and University Curricula," *Proceedings*

from the Tenth Colloquium on Information Systems Security Education pp. 14–21 (June 2006); URI: https://www.cisse.info/resources/archives/file/46-s01p03-2006.

175. M. Bishop and B. J. Orvis, "A Clinic to Teach Good Programming Practices," *Proceedings from the Tenth Colloquium on Information Systems Security Education* pp. 168–174 (June 2006); URI: https://www.cisse.info/resources/archives/file/68-s05p05-2006.
176. M. Bishop and D. Frincke, "Who Owns Your Computer?," *IEEE Security and Privacy* **4**(2) pp. 61–63 (Mar. 2006); DOI: 10.1109/MSP.2006.56.

2005

177. J. Zhou, A. Carlson, and M. Bishop, "Verify Results of Network Intrusion Alerts Using Lightweight Protocol Analysis," *Proceedings of the 21st Annual Computer Security Applications Conference* pp. 117–126 (Dec. 2005); DOI: 10.1109/CSAC.2005.62.
178. S. Peisert, M. Bishop, S. Karin, and K. Marzullo, "Principles-Driven Forensic Analysis," *Proceedings of the 2005 New Security Paradigms Workshop* pp. 85–93 (Sep. 2005); DOI: 10.1145/1146269.1146291.
179. M. Bishop, "Position: 'Insider' is Relative," *Proceedings of the New Security Paradigms Workshop* pp. 77–78 (Sep. 2005); DOI: 10.1145/1146269.1146288.
180. M. Bishop, "The Insider Problem Revisited," *Proceedings of the New Security Paradigms Workshop* pp. 75–76 (Sep. 2005); DOI: 10.1145/1146269.1146287.
181. M. Bishop and D. Frincke, "Teaching Secure Programming," *IEEE Security and Privacy* **3**(5) pp. 54–56 (Sep. 2005); DOI: 10.1109/MSP.2005.133.
182. M. Bishop and D. Frincke, "A Human Endeavor: Lessons from Shakespeare and Beyond," *IEEE Security and Privacy* **3**(4) pp. 49–51 (July 2005); DOI: 10.1109/MSP.2005.87.
183. D. Gilliam, J. Powell, and M. Bishop, "Application of Lightweight Formal Methods to Software Security," *Proceedings of the 14th IEEE International Workshop on Enabling Technologies: Infrastructure for Collaborative Enterprises* pp. 160–165 (June 2005); DOI: 10.1109/WETICE.2005.19.
184. M. Bishop, "Best Practices and Worst Assumptions," *Proceedings of the 9th Colloquium for Information Systems Security Education* pp. 18–25 (June 2005); URI: https://www.cisse.info/resources/archives/file/24-s02p01-2005.
185. M. Bishop and H. Armstrong, "Uncovering Assumptions in Information Security," *Proceedings of the Fourth World Conference on Information Security Education* pp. 223–231 (May 2005); URI: http://nob.cs.ucdavis.edu/∼bishop/papers/2005-wise4/.

2004

186. T. Walcott and M. Bishop, "Traducement: A Model for Record Security," *ACM Transactions on Information Systems Security* **7**(4) pp. 576–590 (Nov. 2004); DOI: 10.1145/1042031.1042035.
187. M. Bishop and D. Frincke, "Academic Degrees and Professional Certification," *IEEE Security and Privacy* **2**(6) pp. 56–58 (Nov. 2004); DOI: 10.1109/MSP.2004.91.
188. D. Frincke and M. Bishop, "Joining the Security Education Community," *IEEE Security and Privacy* **2**(5) pp. 61–63 (Sep. 2004); DOI: 10.1109/MSP.2004.75.
189. M. Bishop, "Teaching Context in Information Security," *Proceedings of the Sixth Workshop on Education in Computer Security* pp. 29–35 (July 2004); URI: https://apps.dtic.mil/dtic/tr/fulltext/u2/a598624.pdf.
190. D. Frincke and M. Bishop, "Back to School," *IEEE Security and Privacy* **2**(4) pp. 54–56 (July 2004); DOI: 10.1109/MSP.2004.35.
191. M. Bishop, B. Bhumiratana, R. Crawford, and K. Levitt, "How to Sanitize Data," *Proceedings of the 13th IEEE International Workshop on Enabling Technologies: Infrastructure for Collaborative Enterprises* pp. 217–222 (June 2004); DOI: 10.1109/ENABL.2004.36.
192. D. Frincke and M. Bishop, "Guarding the Castle Keep: Teaching with the Fortress Metaphor," *IEEE Security and Privacy* **2**(3) pp. 69–72 (May 2004); DOI: 10.1109/MSP.2004.13.
193. M. Bishop and D. Frincke, "Teaching Robust Programming," *IEEE Security and Privacy***2**(2) pp. 54–57 (Mar. 2004); DOI: 10.1109/MSECP.2004.1281247.
194. R. Bajcsy, T. Benzel, M. Bishop, B. Braden, C. Brodley, S. Fahmy, S. Floyd, W. Hardaker, A. Joseph, G. Kesidis, K. Levitt, B. Lindell, P. Liu, D. Miller, R. Mundy, C. Neuman, R. Ostrenga,

V. Paxson, P. Porras, C. Rosenberg, J. D. Tygar, S. Sastry, D. Sterne, and S. Wu, "Cyber Defense Technology Networking and Evaluation," *Communications of the ACM* **47**(3) pp. 58–61 (Mar. 2004); DOI: 10.1145/971617.971646.

2003

195. M. Clifford, D. Faigin, M. Bishop, and T. Brutch, "Miracle Cures and Toner Cartridges: Finding Solutions to the Spam Problem," *Proceedings of the 19th Annual Computer Security Applications Conference* pp. 428–429 (Dec. 2003); DOI: 10.1109/CSAC.2003.1254347.
196. D. Gilliam, J. Powell, E. Haugh, and M. Bishop, "Addressing Software Security Risk Mitigation in the Life Cycle," *Proceedings of the 28th Annual NASA/IEEE Goddard Software Engineering Workshop* pp. 201–206 (Dec. 2003); DOI: 10.1109/SEW.2003.1270744.
197. M. Bishop and E. Goldman, "The Strategy and Tactics of Information Warfare," *Contemporary Security Policy* **24**(1) pp. 113–139 (June 2003); DOI: 10.1080/13523260312331271839.
198. D. Gilliam, T. Wolfe, J. Sherif, and M. Bishop, "Software Security Checklist for the Software Life Cycle," *Proceedings of the 12th IEEE International Workshop on Enabling Technologies: Infrastructure for Collaborative Enterprises* pp. 243–248 (June 2003); DOI: 10.1109/ENABL.2003.1231415.
199. M. Bishop, "Teaching Undergraduate Information Assurance," *Security Education and Critical Infrastructure: Proceedings of the Third World Conference on Information Security Education* pp. 169–171 (June 2003); URI: https://www.springer.com/gp/book/9781402074783.
200. E. Haugh and M. Bishop, "Testing C Programs for Buffer Overflow Vulnerabilities," *Proceedings of the 2003 Symposium on Networked and Distributed System Security* pp. 123–130 (Feb. 2003); URI: https://www.ndss-symposium.org/ndss2003/testing-c-programs-buffer-overflow-vulnerabilities/.
201. M. Bishop, "What Is Computer Security?" *IEEE Security and Privacy* **1**(1) pp. 67–69 (Jan. 2003); DOI: 10.1109/MSECP.2003.1176998.

2002

202. D. Peterson, M. Bishop, and R. Pandey, "A Flexible Containment Mechanism for Executing Untrusted Code," *Proceedings of the 11th USENIX UNIX Security Symposium* pp. 207–225 (Aug. 2002); URI: https://www.usenix.org/legacy/publications/library/proceedings/sec02/peterson.html.
203. M. Bishop, "Computer Security Education: Training, Scholarship, and Research," *IEEE Computer* **35**(4), Privacy and Security Supplement pp. 31–33 (Apr. 2002); DOI: 10.1109/MC.2002.1012429.
204. M. Bishop, "Trends in Academic Research: Vulnerabilities Analysis and Intrusion Detection," *Computers and Security* **21**(7) pp. 609–612 (2002); DOI: 10.1016/S0167-4048(02)01106-9.

2001

205. J. Reynolds, M. Bishop, A. Ghosh, and J. Whittaker, "How Useful is Software Fault Injection for Evaluating the Security of COTS Products," *Proceedings of the 17th Annual Computer Security Applications Conference* pp. 339–340 (Dec. 2001); URI: 10.1109/ACSAC.2001.991549.
206. D. Gilliam, J. Powell, J. Kelly, and M. Bishop, "Reducing Software Security Risk Through an Integrated Approach," *Proceedings of the 26th Annual NASA/IEEE Goddard Software Engineering Workshop* pp. 36–42 (Nov. 2001); DOI: 10.1109/WETICE.2000.10000.
207. D. Gilliam, J. Kelly, J. Powell, and M. Bishop, "Development of a Software Security Assessment Instrument to Reduce Software Security Risk," *Proceedings of the 10th IEEE International Workshop on Enabling Technologies: Infrastructure for Collaborative Enterprises* pp. 144–149 (June 2001): DOI: 10.1109/ENABL.2001.953404.

2000

208. D. Faigin, M. Clifford, M. Bishop, and M. Abrams, "Defining, Computing, and Interpreting Trust," *Proceedings of the 16th Annual Computer Security Applications Conference* p. 88 (Dec. 2000); DOI: 10.1109/ACSAC.2000.898861.
209. M. Bishop, "Education in Information Security," *IEEE Concurrency* **8**(4) pp. 4–8 (Oct. 2000): DOI: 10.1109/4434.895087.

210. T. Aura, M. Bishop, and D. Sniegowski, "Analyzing Single-Server Network Inhibition," *Proceedings of the 13th IEEE Computer Security Foundations Workshop* pp.108–117 (July 2000); DOI: 10.1109/CSFW.2000.856930.
211. B. Hashii, S. Malabarba, R. Pandey, and M. Bishop, "Supporting Reconfigurable Security Policies for Mobile Programs," *Computer Networks* **33**(1-6) pp. 77–93 (June 2000); DOI: 10.1016/S1389-1286(00)00075-X.
212. J. Hughes, T. Aura, and M. Bishop, "Using Conservation of Flow as a Security Mechanism in Network Protocols," *Proceedings of the 2000 IEEE Symposium on Security and Privacy* pp. 132–141 (May 2000); DOI: 10.1109/SECPRI.2000.848451.

1999

213. M. Bishop, "What Do We Mean By 'Computer Security Education'?" *Proceedings of the 22nd National Information Systems Security Conference* p. 604 (Oct. 1999); URI: https://csrc.nist.gov/csrc/media/publications/confer paper/1999/10/21/proceedings-of-the-22nd-nissc-1999/documents/papers/o12.pdf.
214. M. Bishop, "Vulnerabilities Analysis," *Proceedings of the Symposium on Recent Advances in Intrusion Detection*pp. 125–136 (Sep. 1999); DOI: http://nob.cs.ucdavis.edu/bishop/papers/1999-raid/.

1998

215. M. Clifford, C. Lavine, and M. Bishop, "The Solar Trust Model: Authentication Without Limitation," *Proceedings of the 14th Annual Computer Security Applications Conference* pp. 300–307 (Dec. 1998); URI: 10.1109/CSAC.1998.738650.
216. M. Bishop, S. Cheung, J. Frank, J. Hoagland, S. Samorodin, and C. Wee, "Internet Attacks: How they Occur and How to Protect Against Them," *Engineering World* **8**(3) pp. 32–38 (June/July 1998); abridged from [217].

1997

217. M. Bishop, S. Cheung, J. Frank, J. Hoagland, S. Samorodin, and C. Wee, "The Threat from the Net," *IEEE Spectrum* **34**(8) pp. 56–63 (Aug. 1997); DOI: 10.1109/6.609475.
218. G. Fink and M. Bishop, "Property Based Testing: A New Approach to Testing for Assurance," *ACM SIGSOFT Software Engineering Notes* **22**(4) pp. 74–80 (July 1997); DOI: 10.1145/263244.263267.
219. M. Bishop, "The State of INFOSEC Education in Academia: Present and Future Directions," *Proceedings of the National Colloquium on Information System Security Education* pp. 19–33 (Apr. 1997); URI: http://nob.cs.ucdavis.edu/history/ourpapers/1997d.html.
220. P. Denning and M. Bishop, *Network and Data Security, ACM Professional Knowledge Program* (Mar. 1997); URI: http://denninginstitute.com/modules/acmpkp/security/map_frm.html.
221. M. Bishop, "Information Survivability, Security, and Fault Tolerance," *Proceedings of the Information Survivability Workshop*, paper 6 (Feb. 1997); URI: http://nob.cs.ucdavis.edu/∼bishop/papers/1997-cihw/.
222. M. Bishop, "Teaching Computer Security," *Proceedings of the Workshop on Education in Computer Security* pp. 78–82 (Jan. 1997); URI: http://nob.cs.ucdavis.edu/bishop/papers/1997-wecs/.

1996

223. M. Bishop, "Conspiracy and Information Flow in the Take-Grant Protection Model," *Journal of Computer Security* **4**(4) pp. 331–359 (1996); DOI: 10.3233/JCS-1996-4404.
224. L. Heberlein and M. Bishop, "Attack Class: Address Spoofing," *Proceedings of the Nineteenth National Information Systems Security Conference* pp. 371–377 (Oct. 1996); *official version not available on the web; author copy available at* URI: http://nob.cs.ucdavis.edu/∼bishop/papers/1996-nissc-2/.
225. M. Bishop and L. Heberlein, "An Isolated Network for Research," *Proceedings of the Nineteenth National Information Systems Security Conference* pp. 349–360 (Oct. 1996); URI: https://csrc.nist.gov/csrc/media/publica paper/1996/10/22/proceedings-of- -the-19th-nissc-1996/documents/paper055/bishop.pdf.
226. M. Bishop and M. Dilger, "Checking for Race Conditions in File Accesses," *Computing Systems* **9**(2) pp. 131–152 (Spring 1996); URI: https://www.usenix.org/legacy/publications/compsystems/1996/spr_bishop.pdf.

1995

227. M. Bishop, "A Standard Audit Trail Format," *Proceedings of the Eighteenth National Information Systems Security Conference* pp. 136–145 (Oct. 1995); URI: https://csrc.nist.gov/CSRC/media/Publications/conference-paper/1995/10/10/proceedings-of-the-18th-nissc-1995/documents/1995-18th-NISSC-proceedings-vol-1.pdf.
228. M. Bishop and D. Klein, "Improving System Security Through Proactive Password Checking," *Computers and Security* **14**(3) pp. 233–249 (May/June 1995); DOI: 10.1016/0167-4048(95)00003-Q.
229. M. Bishop, "Theft of Information in the Take-Grant Protection Model," *Journal of Computer Security* **3**(4) pp. 283–309 (1994/1995); DOI: 10.3233/JCS-1994/1995-3405.

1994

230. M. Bishop, "Guest Editorial," *Computing Systems* **7**(1) pp. v–vii (Winter 1994); URI: https://-www.usenix.org/legacy/publications/compsystems/1994/win_guested.pdf.

1993

231. M. Bishop, "Teaching Computer Security," *Proceedings of the Eighth International Conference on Information Security* pp. 43–52 (May 1993); *official version not available on the web; author copy available at* URI: http://nob.cs.ucdavis.edu/∼bishop/papers/1993-icis/.
232. M. Bishop, "Recent Changes to Privacy-Enhanced Electronic Mail," *Journal of Internetworking: Research and Experience* **4**(1) pp. 47–59 (Mar. 1993); *official version not available on the web; author copy available at* URI: http://nob.cs.ucdavis.edu/∼bishop/papers/1993-jire/.

1992

233. M. Bishop, "Privacy Enhanced Electronic Mail," *;login:* **17**(6) pp. 20–22 (Nov. 1992).
234. M. Bishop, "Anatomy of a Proactive Password Checker," *Proceedings of the Third UNIX Security Symposium* pp. 130–139 (Sep. 1992); *official version not available on the web; author copy available at*URI: http://nob.cs.ucdavis.edu/∼bishop/papers/1992-unixsec/.
235. M. Bishop, "Proactive Password Checking," *Proceedings of the Fourth Workshop on Computer Security Incident Handling* pp. W11:1–9 (Aug. 1992).
236. M. Bishop, "Executive Summary," *Proceedings of the Workshop on Future Directions in Computer Misuse and Anomaly Detection*, pp. 1–4 (Mar. 1992)
237. M. Bishop, "Overview of the Workshop and Technical Summary," *Proceedings of the Workshop on Future Directions in Computer Misuse and Anomaly Detection*, pp. 5–15 (Mar. 1992)
238. M. Bishop, "A Cautionary Tale," *Proceedings of the Workshop on Future Directions in Computer Misuse and Anomaly Detection*, pp. 110–114 (Mar. 1992).

1991

239. M. Bishop, "Privacy-Enhanced Electronic Mail," *Journal of Internetworking: Research and Experience* **2**(4) pp. 199–233 (Dec. 1991).
240. M. Bishop, "The Role of Technology in the Cracker Problem," *Proceedings of the 14th National Computer Security Conference* p. 665 (Oct. 1991).
241. M. Bishop, "Comparing Authentication Systems," *Proceedings of the Third Workshop on Computer Incident Handling* pp. G-II:1–10 (Aug. 1991).
242. M. Bishop, "A Proactive Password Checker," *Proceedings of the Seventh International Conference on Information Security* pp. 169–181 (May 1991).
243. M. Bishop, "An Overview of Computer Viruses in a Research Environment," *Proceedings of the Fourth Annual Computer Virus and Security Conference* pp. 111–144 (Mar. 1991).
244. M. Bishop, "Password Management," *Proceedings of Compcom Spring '91: Digest of Papers* pp. 167–169 (Feb. 1991); DOI: 10.1109/CMPCON.1991.128801.
245. M. Bishop, "Authenticated Network News," *Proceedings of the 1991 Winter USENIX Conference* pp. 281–287 (Jan. 1991).

1990

246. M. Bishop, "A Security Analysis of the NTP Protocol," *Proceedings of the 6th Annual Computer Security Applications Conference* pp. 20–29 (Dec. 1990); DOI: 10.1109/CSAC.1990.143746.
247. M. Bishop, "An Extensible Password Changing Program," *Proceedings of the UNIX Security Workshop II* pp. 15–16 (Aug. 1990).
248. M. Bishop, "Password Checking Techniques," *Proceedings of the Second Invitational Workshop on Computer Security Incident Response* III-D-1 (June 1990).
249. M. Bishop, "Collaboration Using Roles," *Software—Practice and Experience* **20**(5) pp. 485–498 (May 1990).
250. M. Bishop, "Storage in C," *C Users' Journal* **8**(5) pp. 73–78 (May 1990); *official version not available on the web; author copy available at* URI: http://nob.cs.ucdavis.edu/∼bishop/papers/1990-cjourv8n5/.
251. M. Bishop, "Managing Superuser Privileges Under UNIX," *README* **5**(2) pp. 1–13 (Spring 1990).

1989

252. M. Bishop, "A Model of Security Monitoring," *Proceedings of the 5th Annual Computer Security Applications Conference* pp. 46–52 (Dec. 1989); DOI: 10.1109/CSAC.1989.81024.
253. M. Bishop, "UNIX Security in a Supercomputing Environment," *Proceedings of the 1989 ACM/IEEE Conference on Supercomputing* pp. 693–698 (Nov. 1989); DOI: 10.1145/76263.76341.
254. M. Bishop, "Privacy-Enhanced Electronic Mail," *Proceedings of the DIMACS Workshop on Distributed Computing and Cryptography* pp. 93–106 (Oct. 1989).

1988

255. M. Bishop, "Auditing Files on a Network of UNIX Machines," *Proceedings of the UNIX Security Workshop* pp. 51–52 (Aug. 1988); *official version not available on the web; author copy available at* URI: http://nob.cs.ucdavis.edu/∼bishop/papers/1988-unixsec/.
256. M. Bishop, "Theft of Information in the Take-Grant Protection Model," *Proceedings of the Workshop on Foundations of Computer Security*, MITRE TR M88-37, pp. 194–218 (June 1988).
257. M. Bishop, "An Application of a Fast Data Encryption Standard Implementation," *Computing Systems* **1**(3) pp. 221–254 (Summer 1988); URI: https://www.usenix.org/legacy/publications/compsystems/1988/sum_bishop.pd

1987

258. M. Bishop, "Profiling under UNIX by Patching," *Software—Practice and Experience* **17**(10) pp. 729–740 (Oct. 1987); DOI: 10.1002/spe.4380171006.
259. M. Bishop, "File Protection in UNIX," *The DEC Professional Special Edition* pp. 44–48 (June 1987); *official version not available on the web; author copy available at*http://nob.cs.ucdavis.edu/∼bishop/papers/1987-decpro/.
260. M. Bishop, "Sharing Accounts," *Proceedings of the Large Installation System Administrator's Workshop* p. 135 (Apr. 1987); *official version not available on the web; author copy available at* URI: http://nob.cs.ucdavis.edu/∼bishop/papers/1987-lisa/.
261. M. Bishop, "Array Names and Pointers," *The C Journal* **3**(1) pp. 44–46 (Spring 1987); *official version not available on the web; author copy available at* URI: http://nob.cs.ucdavis.edu/∼bishop/papers/1987-cjourv3n1/.
262. M. Bishop, "How To Write A Setuid Program," *;login:* 12(1) pp. 5–11 (Jan./Feb. 1987); *official version not available on the web; author copy available at* URI: http://nob.cs.ucdavis.edu/-∼bishop/papers/1987-login/.

1986

263. M. Bishop and B. Leiner, "Access Control and Privacy in Large Distributed Systems," *Proceedings of the AIAA/ASIS/DODCI Second Aerospace Computer Security Conference* pp. 95–98 (Dec. 1986); DOI: 10.2514/6.1986-2781.
264. M. Bishop, "Analyzing the Security of an Existing Computer System," *Proceedings of the 1986 Fall Joint Computer Conference* pp. 1115–1119 (Nov. 1986); DOI: 10.5555/324493.325066.

265. M. Bishop, "Trnum–A Program to Number Figures," *Text in Computers* **1**(1) pp. 9–15 (July 1986); *official version not available on the web; author copy available at* URI: http://nob.cs.ucdavis.edu/∼bishop/papers/1986-textcomp/.
266. M. Bishop, "How To Write A Setuid Program," *Cray User Group Proceedings* pp. 110–111 (Spring 1986); *official version not available on the web; author copy available at* URI: http://nob.cs.ucdavis.edu/∼bishop/papers/cug/.
267. M. Bishop, "Scope in C," *The C Journal* **2**(1) pp. 40–47 (Spring 1986); *official version not available on the web; author copy available at* URI: http://nob.cs.ucdavis.edu/∼bishop/papers/1986-cjourv2n1/.
268. M. Bishop, "Portability in C—A Case Study," *The C Journal* **1**(4) p. 25–31 (Winter 1986); *official version not available on the web; author copy available at* URI: http://nob.cs.ucdavis.edu/-∼bishop/papers/1986-cjourv1n4/.
269. M. Bishop, "A Pauper's Callback Scheme," *Computers and Security* **5**(2) pp. 141–144 (June 1986); DOI: 10.1016/0167-4048(86)90137-9.

1981

270. M. Bishop, "Hierarchical Take-Grant Protection Systems," *Proceedings of the Eighth Symposium in Operating Systems Principles* pp. 107–123 (Dec. 1981); DOI: 10.1145/1067627.806598.

1979

271. M. Bishop and L. Snyder, "The Transfer of Information and Authority in a Protection System," *Proceedings of the Seventh Symposium in Operating Systems Principles* pp. 45–54 (Dec. 1979); DOI: 10.1145/800215.806569.

Unpublished

272. M. Bishop, "Some Issues in Medium-Term Incident Handling," position paper prepared for the CERT Invitational Workshop on Research in Incident Handling (Nov. 1992).
273. M. Bishop, "Security Problems with the UNIX Operating System," Department of Computer Sciences, Purdue University, West Lafayette, IN 47907 (1983); but see [131].

Editor

274. M. Bishop, A. Nascimento (*editors*), *Information Security: Proceedings of the 19th International Conference on Information Security, September 3–6, 2016*, Lecure Notes in Computer Science **9866**, Springer, New York, NY (2015); ISBN 978-3-319-45870-0.
275. M. Bishop, N. Miloslavskaya, and M. Theocharidou (*editors*), *Information Security Education Across the Curriculum: Proceedings of the 9th IFIP WG 11.8 World Conference on Information Security Education, May 26–28, 2015*, Springer, New York, NY (2015); ISBN 978-3-319-18499-9.
276. M. Bishop (*editor*), *History of Computer Security Part I: A Collection Of Seminal Papers*, on CD and on the WWW (http://seclab.cs.ucdavis.edu/projects/history).
277. M. Bishop, S. Northcutt, and A. Paller (*editors*), *Proceedings of the UC Davis Intrusion Detection and Response Data Sharing Workshop*, SANS Institute, Bethesda, MD (July 1998).
278. M. Bishop (*editor*), *Proceedings of the Third Computer Misuse and Anomaly Detection Workshop*, Office of INFOSEC Computer Security, National Security Agency, Ft. Meade, MD (Jan. 1995).
279. M. Bishop (*editor*), Special Issue on Security in Open Systems, *Computing Systems* **7**(4) (Winter 1994).
280. M. Bishop (*editor*), *Proceedings of the Second Computer Misuse and Anomaly Detection Workshop*, Office of INFOSEC Computer Security, National Security Agency, Ft. Meade, MD (Sep. 1993).

Technical and Research Reports

1. J. Ganz, M. Bishop, and S. Peisert, "Security Analysis of Scantegrity, an Electronic Voting System," Technical Report, Dept. of Computer Science, University of California at Davis, Davis, CA 95616-8562(June 2016).

2. D. Chung, M. Bishop, and S. Peisert, "Distributed Helios - Mitigating Denial of Service Attacks in Online Voting," Technical Report, Dept. of Computer Science, University of California at Davis, Davis, CA 95616-8562(Oct. 2015).
3. S. Peisert and M. Bishop, "Dynamic, Flexible, and Optimistic Access Control," Technical Report CSE-2013-76, Dept. of Computer Science, University of California at Davis, Davis, CA 95616-8562 (July 2013).
4. D. Burley and M. Bishop, "Summit on Education in Secure Software: Final Report," Technical Report CSE-2011-15, Dept. of Computer Science, University of California at Davis, Davis, CA 95616-8562 (June 2011).
5. S. Peisert, M. Bishop, and K. Marzullo, "What Do Firewalls Protect? An Empirical Study of Firewalls, Vulnerabilities, and Attacks," Technical Report CSE-2010-8, Dept. of Computer Science, University of California at Davis, Davis, CA 95616-8562 (Mar. 2010).
6. M. Bishop, D. Howard, S. Engle, and S. Whalen, "A Taxonomy of Buffer Overflow Preconditions," Technical Report CSE-2010-1, Dept. of Computer Science, University of California at Davis, Davis, CA 95616-8562 (Jan. 2010).
7. M. Bishop, "Report on the Workshop on GENI and Security," Technical Report CSE-2009-28, Dept. of Computer Science, University of California at Davis, Davis, CA 95616-8562 (Aug. 2009).
8. S. Engle, S. Whalen, and M. Bishop, "Modeling Computer Insecurity," Technical Report CSE-2008-14, Dept. of Computer Science, University of California at Davis, Davis, CA 95616-8562 (2008).
9. S. Engle and M. Bishop, "A Model for Vulnerability Analysis and Classification," Technical Report CSE-2008-5, Dept. of Computer Science, University of California at Davis, Davis, CA 95616-8562 (2008).
10. M. Bishop, "Overview of Red Team Reports," Technical Report, Office of the Secretary of State of California, Sacramento, CA 95814 (July 2007).
11. A. Yasinsac, D. Wagner, M. Bishop, T. Baker, B. de Medeiros, G. Tyson, M. Shamos, and M. Burmester, "Software Review and Security Analysis Of The ES&S IVOTRONIC 8.0.1.2 Voting Machine Firmware," Report to the Division of Elections, Security and Assurance in Information Technology Laboratory, Florida State University, Tallahassee, FL (Feb. 2007).
12. M. Bishop and S. Peisert, "Your Security Policy is What??" Technical Report CSE-2006-20, Dept. of Computer Science, University of California at Davis, Davis, CA 95616-8562 (2006). item S. Engle, S. Whalen, D. Howard, A. Carlson, E. Proebstel, and M. Bishop, "A Practical Formalism for Vulnerability Comparison," Technical Report CSE-2006-11, Dept. of Computer Science, University of California at Davis, Davis, CA 95616-8562 (Aug. 2006).
13. S. Engle, S. Whalen, D. Howard, and M. Bishop, "Tree Approach to Vulnerability Classification," Technical Report CSE-2006-10, Dept. of Computer Science, University of California at Davis, Davis, CA 95616-8562 (May 2006).
14. D. Wagner, D. Jefferson, M. Bishop, C. Karlof, and N. Sastry, "Security Analysis of the Diebold ACCUBASIC Interpreter," Technical Report, Voting Systems Technology Assessment Advisory Board, Office of the Secretary of State of California, Sacramento, CA 95814 (Feb. 2006).
15. E. Barr, M. Bishop, D. DeFigueiredo, M. Gondree, and P. Wheeler, "Toward Clarifying Election Systems Standards," Technical Report CSE-2005-21, Dept. of Computer Science, University of California at Davis, Davis, CA 95616-8562 (Sep. 2005).
16. S. Whalen, M. Bishop, and S. Engle, "Protocol Vulnerability Analysis," Technical Report CSE-2005-4, Dept. of Computer Science, University of California at Davis, Davis, CA 95616-8562 (May 2005).
17. B. Hashii, S. Malabarba, R. Pandey, and M. Bishop, "Supporting Reconfigurable Security Policies for Mobile Programs," Technical Report CSE-2000-8, Dept. of Computer Science, University of California at Davis, Davis, CA 95616-8562 (2000).
18. M. Bishop and S. Northcutt, "Executive Summary of the UC Davis Intrusion Detection and Response Data Sharing Workshop," Technical Report CSE-98-7, Dept. of Computer Science, University of California at Davis, Davis, CA 95616-8562 (Sep. 1998).
19. M. Bishop and D. Bailey, "A Critical Analysis of Vulnerability Taxonomies," Technical Report CSE-

96-11, Dept. of Computer Science, University of California at Davis, Davis, CA 95616-8562(Sep. 1996).

20. G. Fink, M. Helmke, M. Bishop, and K. Levitt, "An Interface Language Between Specifications and Testing," Technical Report CSE-95-15, Dept. of Computer Science, University of California at Davis, Davis, CA 95616-8562 (Aug. 1995).
21. M. Bishop and M. Dilger, "Checking for Race Conditions in File Accesses," Technical Report CSE-95-10, Dept. of Computer Science, University of California at Davis, Davis, CA 95616-8562 (Sep. 1995).
22. M. Bishop, "Race Conditions, Files, and Security Flaws; or the Tortoise and the Hare Redux," Technical Report CSE-95-9, Dept. of Computer Science, University of California at Davis, Davis, CA 95616-8562 (Sep. 1995).
23. M. Bishop, M. Valence, and L. Wisniewski, "Process Migration for Heterogeneous Distributed Systems," TTechnical Report PCS-TR95-264, Dept. of Mathematics and Computer Science, Dartmouth College, Hanover, NH 03755 (Aug. 1995).
24. M. Bishop, "A Taxonomy of UNIX System and Network Vulnerabilities," Technical Report CSE-95-8, Dept. of Computer Science, University of California at Davis, Davis, CA 95616-8562 (May 1995).
25. P. Su and M. Bishop, "How to Encrypt /usr/dict/words in About a Second," Technical Report PCS-TR92-182, Dept. of Mathematics and Computer Science, Dartmouth College, Hanover, NH 03755 (1992).
26. D. Kotz, F. Makedon, M. Bishop, R. Drysdale, D. Johnson, and P. Metaxas, "Parallel Computer Needs at Dartmouth College," Technical Report PCS-TR92-176, Dept. of Mathematics and Computer Science, Dartmouth College, Hanover, NH 03755 (June 1992).
27. M. Bishop, "Implementation Notes on *bdes*(1)," Technical Report PCS-TR91-158, Dept. of Mathematics and Computer Science, Dartmouth College, Hanover, NH 03755 (Apr. 1991).
28. M. Bishop, "An Overview of Computer Viruses in a Research Environment,? Technical Report PCS-TR91-156, Dept. of Mathematics and Computer Science, Dartmouth College, Hanover, NH 03755 (Mar. 1991).
29. M. Bishop, "A Security Analysis of Version 2 of the Network Time Protocol NTP: A Report to the Privacy and Security Research Group,? Technical Report PCS-TR91-154, Dept. of Mathematics and Computer Science, Dartmouth College, Hanover, NH 03755 (Feb. 1991).
30. M. Bishop, "Privacy-Enhanced Electronic Mail," Technical Report PCS-TR91-150, Dept. of Mathematics and Computer Science, Dartmouth College, Hanover, NH 03755 (Jan. 1991).
31. M. Bishop, "Administrator's Guide to the Digital Signature Facility 'Rover'," Technical Report PCS-TR90- 153, Dept. of Mathematics and Computer Science, Dartmouth College, Hanover, NH 03755 (Aug. 1990).
32. M. Bishop, "A Proactive Password Checker," Technical Report PCS-TR90-152, Dept. of Mathematics and Computer Science, Dartmouth College, Hanover, NH 03755 (June 1990).
33. M. Bishop, "Applying the Take-Grant Protection Model," Technical Report PCS-TR90-151, Dept. of Mathematics and Computer Science, Dartmouth College, Hanover, NH 03755 (May 1990).
34. M. Bishop, "Theft of Information in the Take-Grant Protection Model," Technical Report PCS-TR88-137 (revised), Dept. of Mathematics and Computer Science, Dartmouth College, Hanover, NH 03755 (May 1990).
35. M. Bishop, "Privacy-Enhanced Electronic Mail," Technical Report PCS-TR90-150, Dept. of Mathematics and Computer Science, Dartmouth College, Hanover, NH 03755 (May 1990).
36. M. Bishop, "An Application of a Fast Data Encryption Standard Implementation," Technical Report PCS-TR88-138, Dept. of Mathematics and Computer Science, Dartmouth College, Hanover, NH 03755 (Aug. 1988); *also appeared as* "A Fast Version of the DES and a Password Encryption Algorithm," Technical Report 87.18 (revised), Research Institute for Advanced Computer Science, NASA Ames Research Center, Moffett Field, CA 94035 (Aug. 1988).
37. M. Bishop, "Theft of Information in the Take-Grant Protection Model," Technical Report PCS-TR88-137, Dept. of Mathematics and Computer Science, Dartmouth College, Hanover, NH 03755 (July

1988).

38. M. Bishop, "The Sharing of Rights and Information in a Capability-Based Protection System," Technical Report PCS-TR88-136, Dept. of Mathematics and Computer Science, Dartmouth College, Hanover, NH 03755 (July 1988).
39. M. Bishop, "A Fast Version of the DES and a Password Encryption Algorithm," Technical Report 87.18, Research Institute for Advanced Computer Science, NASA Ames Research Center, Moffett Field, CA 94035 (July 1987; revised Aug. 1988).
40. M. Bishop, "A Mechanism for Sharing Accounts," Technical Report 87.10, Research Institute for Advanced Computer Science, NASA Ames Research Center, Moffett Field, CA 94035 (Mar. 1987).
41. M. Bishop, "The RIACS Mail System," Technical Report 87.6, Research Institute for Advanced Computer Science, NASA Ames Research Center, Moffett Field, CA 94035 (Feb. 1987).
42. M. Bishop, "Profiling under UNIX by Patching," Technical Report 86.24, Research Institute for Advanced Computer Science, NASA Ames Research Center, Moffett Field, CA 94035 (Oct. 1986).
43. M. Bishop, "A User's Guide to PEGS," Technical Report 86.18, Research Institute for Advanced Computer Science, NASA Ames Research Center, Moffett Field, CA 94035 (Sep. 1986).
44. M. Bishop, "Analyzing the Security of an Existing Computer System," Technical Report 86.13, Research Institute for Advanced Computer Science, NASA Ames Research Center, Moffett Field, CA 94035 (May 1986).
45. B. Leiner and M. Bishop, "Access Control and Privacy in Large Distributed Systems," Technical Report 86.6, Research Institute for Advanced Computer Science, NASA Ames Research Center, Moffett Field, CA 94035 (Mar. 1986).
46. M. Bishop, "Trnum — A Program to Number Figures," Technical Report 85.7, Research Institute for Advanced Computer Science, NASA Ames Research Center, Moffett Field, CA 94035 (July 1985).
47. M. Bishop, "How To Write a Setuid Program," Technical Report 85.6, Research Institute for Advanced Computer Science, NASA Ames Research Center, Moffett Field, CA 94035 (May 1985).
48. M. Bishop and L. Snyder, "The Transfer of Information and Authority in a Protection System," Research Report 166, Department of Computer Science, Yale University, New Haven, CT 06520 (July 1979).

Other Reports

1. M. Bishop, "Key Challenges in Sanitizing Transportation Data to Protect Sensitive Information," Policy Brief, Institute of Transportation Studies, University of California, Davis, CA 95616 (Nov. 2021); DOI: 10.7922/G2SJ1HXN.
2. M. Bishop, "Sanitization of Transportation Data: Policy Implications and Gaps," Technical Report UCD-ITS-RR-21-62, Institute of Transportation Studies, University of California, Davis, CA 95616 (Nov. 2021); DOI: /10.7922/G2NS0S6B
3. M. Bishop, "Some Thoughts on Secure Programming," Dept. of Computer Science, University of California at Davis, Davis, CA 95616-8562 (Feb. 2012).
   Available at http://seclab.cs.ucdavis.edu/∼bishop/notes/2012-secprog/
4. T. Heberlein, M. Bishop, E. Ceesay, M. Danforth, C. Senthilkumar, and T. Stallard, "A Taxonomy for Comparing Attack-Graph Approaches," NetSq, Davis, CA (2011).
   Available at https://d1wqtxts1xzle7.cloudfront.net/105339088/AttackGraphPaper-libre.pdf?-1693230518=&response-content disposition=inline%3B+filename%3DA_Taxonomy_for_Comp-paring_Attack_Graph_Ap

   eyoCsQrfqhszeuzaKft o7EFjedkctsiq1amZwfhhloybThlE0hVJ5e3iBbBr8̃JhYox6na5rKsdjQk-ChOZw3vkUfU5Q0QI3zW8jQ8O7Z4H87tp6k6i3pltNE0OTGiWMMYjAJlXha6gXHXomJZe-kfgz7EjmnPksJvbRSr4us-ykAMCqZ7dgxB7YzYhvMxe5Fãxwpe-2sDẼFL9L2IOXwIKWM81-1ElmcuReA4IYzPQr25K8yVdA4eR6DdrjzXuj3DQa-vpoG45p81MrTdNY5wYz6nM0mM7R-g72I6VKB3FUjJFfu9-mMycIc2c41NJiwTeg__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA.
5. M. Bishop, M. Graff, C. Hoke, D. Jefferson, and S. Peisert, "Resolving the Unexpected in Elections: Election Officials' Options," Center for Election Excellence (Oct. 2008).
   Available at http://www.electionexcellence.org/documents/electionofficialtechguide-2008-10-08.pdf

6. L. Osterweil, L. Millett, and J. Winston (editors), *Social Security Administration Electronic Service Provision: A Strategic Assessment*, National Academies Press, Washington DC 20055 (Aug. 2007); member of NAS review panel.
   Report available at http://www.nap.edu/catalog/11920/social-security-administration-electronic-service-provision-a-strategic-assessment
7. R. Gardner, A. Yasinsac, M. Bishop, T. Kohno, Z. Hartley, J. Kerski, D. Gainey, R. Walega, E. Hollander, and M. Gerke, "Software Review and Security Analysis of the Diebold Voting Machine Software," Security and Assurance in Information Technology Laboratory, Florida State University, Tallahassee, FL 32306-4530 (July 2007).
   Available at http://seclab.cs.ucdavis.edu/~bishop/notes/2007-fsusait-2/
8. M. Bishop, "Overview of Red Team Reports," Office of the Secretary of State of California, 1500 11th St, Sacramento, CA 95814 (July 2007).
   Available at http://votingsystems.cdn.sos.ca.gov/oversight/ttbr/red-overview.pdf
9. A. Yasinsac, D. Wagner, M. Bishop, T. Baker, B. de Medeiros, G. Tyson, M. Shamos, and M. Burmester, "Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware," Security and Assurance in Information Technology Laboratory, Florida State University, Tallahassee, FL 32306-4530 (Feb. 2007).
   Available at http://seclab.cs.ucdavis.edu/~bishop/notes/2007-fsusait-1
10. Voting Technology Assessment Project, *The Machinery of Democracy: Voting System Security, Accessibility, Usability, and Cost*, Brennan Center for Justice, New York University School of Law, New York, NY (Oct. 2006); member of panel.
    Available at https://www.brennancenter.org/publication/machinery-democracy
11. Task Force on Voting System Security, *The Machinery of Democracy: Protecting Elections in an Electronic World*, Brennan Center for Justice, New York University School of Law, New York, NY (June 2006); member of panel.
    Available at https://www.brennancenter.org/publication/machinery-democracy-protecting-elections-electronic-world-0
12. D. Wagner, D. Jefferson, M. Bishop, C. Karlof, and N. Sastry, "Security Analysis of the Diebold AccuBasic Interpreter," Voting Systems Technology Assessment Advisory Board, Office of the Secretary of State of California, Sacramento, CA 95814 (Feb. 2006).
    Available at http://votingsystems.cdn.sos.ca.gov/vendors/premier/security-analysis-of-the-diebold-accubasic-interpreter.pdf
13. M. Bishop, "Spam and the CAN-SPAM Act," Federal Trade Commission, Washington DC 20580 (Dec. 2005).
    Available at http://seclab.cs.ucdavis.edu/~bishop/notes/2005-canspam
14. M. Bishop, L. Guarino, D. Jefferson, D. Wagner, and M. Orkin, "Analysis of Volume Testing of the AccuVote TSx/AccuView," Voting Systems Technology Assessment Advisory Board, Office of the Secretary of State of California, Sacramento, CA 95814 (Oct. 2005).
    Available at http://votingsystems.cdn.sos.ca.gov/vendors/premier/vstaab-volume-test-report.pdf
15. M. Bishop, "Issues for a 'Do Not Email' List," Federal Trade Commission, Washington DC 20580 (June 2004).
    Available at http://seclab.cs.ucdavis.edu/~bishop/notes/2004-dne
16. J. Chambers and J. Thompson, "Vulnerability Disclosure Framework: Final Report and Recommendations by the Council," National Infrastructure Advisory Council (Jan. 2004); contributor.
    Available at http://www.dhs.gov/sites/default/files/publications/niac-vulnerability-framework-final-report-01-13-04-508.pdf
17. RABA Innovative Solution Cell, "Trusted Agent Report Diebold AccuVote-TS Voting System," RABA Technologies LLC, Columbia, MD 21045 (Jan. 2004).
    Available at http://seclab.cs.ucdavis.edu/~bishop/notes/2004-RABA
18. M. Bishop, "An Overview of Electronic Voting and Security," Yolo County Clerk/Recorder, Woodland, CA 95695 (Dec. 2003).

Available at http://seclab.cs.ucdavis.edu/~bishop/notes/2003-yolo

Reviews

1. J. J. Dongarra, S. W. Otto, M. Snir, and D. Walker, "A Message Passing Standard for MPP and Workstations," *Communications of the ACM 39*(7) pp. 84–90 (July 1996)
   in *Computing Reviews* **38**(6) p. 310 (June 1997)
2. D. E. Denning and D. K. Branstad, "A Taxonomy for Key Escrow Encryption Systems," *Communications of the ACM 39*(3), pp. 34–40 (Mar. 1996)
   in *Computing Reviews* **37**(12) p. 646 (Dec. 1996)
3. B. Barkee, D. C. Can, J. Ecks, T. Moriarity, and R. F. Ree, "Why You Cannot Even Hope to Use Gröbner Bases in Public Key Cryptography: An Open Letter to a Scientist Who Failed and a Challenge to Those Who Have Not Yet Failed," *Journal of Symbolic Computation* **18**(6) pp. 497–501 (Dec. 1994)
   in *Computing Reviews* **37**(9) p. 476 (Sep. 1996)
4. C. H. Lin, C. C. Chang, and R. C. Lee, "A New Public-Key Cipher System Based Upon the Diophantine Equations," *IEEE Transactions on Computers* **44**(1) pp. 13–19 (Jan. 1995)
   in *Computing Reviews* **37**(3) p. 165 (Mar. 1996)
5. H. Schildt, *The Craft of C: Take-Charge Programming*, Osborne/McGraw-Hill (1992)
   in *Computing Reviews* **34**(11) pp. 572–573 (Nov. 1993)
6. P. A. Karger, M. E. Zurko, D. W. Bonin, A. H. Mason, and C. E. Kahn, "A Retrospective on the VAX VMM Security Kernel," *IEEE Transactions on Software Engineering* **17**(11), pp. 1147–1165 (Nov. 1991)
   in *Computing Reviews* **34**(5) pp. 259–260 (May 1993)
7. D. Spuler, *Comprehensive C*, Prentice-Hall, Inc. (1992)
   in *Computing Reviews* **34**(4)) pp. 292–292 (Apr. 1993)
8. Æ. Frisch, *Essential System Administration*, O'Reilly & Associates, Inc. (1991)
   in *Computing Reviews* **33**(9) pp. 481–482 (Sep. 1992)
9. Comparative Review of L. Ammeraal, *C for Programmers*, John Wiley & Sons, Inc. (1986); J. Gardner, *From C to C: an Introduction to ANSI Standard C*, Harcourt Brace Jovanovich (1989); R. Hutchison, *Programming Using the C Language*, McGraw-Hill, Inc. (1988); R. Johnsonbaugh and M. Kalin, *Applications Programming in C*, Macmillan Publishing Co., Inc. (1989); and K. Pugh, *C Language for Programmers: 2nd Edition*, Q. E. D. Information Sciences, Inc. (1989)
   in *Computing Reviews* **33**(3) pp. 137–139 (Mar. 1992)
10. S. Garfinkel and E. Spafford, *Practical UNIX Security*, O'Reilly and Associates, Inc. (1991)
    Computers and Security **11**(2) pp. 135–136 (Apr. 1992)
11. K. W. Yu and T. L. Yu, "Data Encryption based upon Time Reversal Transformations, *The Computer Journal* **32**(3) pp. 241–245 (June 1989)
    in *Computing Reviews* **31**(3) p. 160–161 (Mar. 1990)
12. R. A. Finkel, *An Operating Systems Vade Mecum*, 2nd Edition, Prentice-Hall, Inc. (1988)
    in *Computing Reviews* **30**(11) p. 559 (Nov. 1989)
13. O. Goldreich, "Two Remarks Concerning the Goldwasser-Micali-Rivest Signature Scheme," *Advances in Cryptology—Proceedings of CRYPTO '86* pp. 104–110 (Aug. 1986)
    in *Computing Reviews* **30**(10) p. 533 (Oct. 1989)
14. J. Boyer, "Inferring Sequences Produced by Pseudo-Random Number Generators," *Journal of the ACM* **36**(1) pp. 129–141 (Jan. 1989)
    in *Computing Reviews* **30**(7) p. 366 (July 1989)
15. M. Bentley, *The Viewport Technician: A Guide to Portable Software Design*, Scott, Foresman & Co. (1988)
    in *Computing Reviews* **30**(3) pp. 130–131 (Mar. 1989)
16. P. Darnell and P. Margolis, *Software Engineering in C*, Springer-Verlag New York, Inc. (1988)
    in *Computing Reviews* **29**(7) pp. 343-344 (July 1988)
17. Kemal Efe, "A Proposed Solution to the Problem of Levels in Error-Message Generation," *Communications of the ACM* **30**(11) pp. 948–955 (Nov. 1987)

in *Computing Reviews* **29**(5) p. 262 (May 1988)
18. K. Andreassen, *Computer Cryptology: Beyond Decoder Rings*, Prentice-Hall, Inc. (1987)
in *Computing Reviews* **29**(3) p. 140 (Mar. 1988)
19. V. D. Gligor, C. S. Chandersekaran, L. J. Dotterer, M. S. Hecht, W.-D. Jiang, A. Johri, G. L. Luckenbaugh, and N. Vasudevan, "The Design and Implementation of Secure Xenix™," *IEEE Transactions on Software Engineering* **13**(2), pp. 208–221 (Feb. 1987)
in *Computing Reviews* **28**(11) p. 591 (Nov. 1987)
20. L. F. Marshall and J. A. Anyanwu, "A Crash Resistent UNIX™ File System," *Software—Practise and Experience* **16**(2) pp. 107–118 (Feb. 1986)
in *Computing Reviews* **27**(9) pp. 456–457 (Sep. 1986)
21. M. J. Rochkind, *Advanced UNIX™ Programming*, Prentice-Hall Inc. (1985)
in *Computing Reviews* **27**(5) pp. 233–234 (May 1986)
22. T. Plum and J. Brodie, *Efficient C*, Plum Hall Inc. (1985)
in *Computing Reviews* **27**(3) p. 121 (Mar. 1986)

Software

1. *passwd+*, a set of programs to force users to select good password (see [228,234,235,242,247])
2. *lsu*, a set of programs to implement roles in a standard UNIX environment (see [249])
3. *binaudit*, a package to analyze files statically for alterations (see [255])
4. *deszip*, a set of programs and library routines to guess passwords rapidly (see [257])

Talks and Presentations

Keynote and Invited Addresses

1. "Resilience and Security," 21st World Conference on Information Security Applications, Seoul, South Korea (Aug. 2020)
2. "How Anonymous Is My Anonymous Data?',' USENIX Enigma 2020 , San Francisco, CA (Jan. 2020)
3. "Is Practical Data Sanitization Possible?," CyberSecurity and Privacy Summer School, Stockholm, Sweden (June 2019)
4. "Cybersecurity Curricular Guidelines 2017," Colloquium on Information Systems Security Education, New Orleans, LA (June 2018)
5. "Some Ethics Puzzles," Colloquium on Information Systems Security Education, New Orleans, LA (June 2018)
6. "CSEC 2017 Update: Joint Task Force on Cybersecurity Education," Cybersecurity Education Workshop, Lake Tahoe, CA (Apr. 2018)
7. "A Brief, *Personal* History of Computer Security Education," Cybersecurity Education Workshop, Lake Tahoe, CA (Apr. 2018)
8. "Education Interventions in the Context of 'Secure' Programming," Norwegian University of Science and Technology (Oct. 2017)
9. "Secure Programming: A Way of Life (or Death)," SikkertNOK 2017 (Oct. 2017)
10. "The NOT Top 10: Public Cybersecurity Trends Continue to Change" (with Bob Smock), State of California Cybersecurity Education Summit (Oct. 2017)
11. "Effects of the Secure Programming Clinic (SPC) on Learners' Secure Programming Practices," Nelson Mandela University, Port Elizabeth, South Africa (Sep. 2017)
12. "'Secure' Programming," North West University, Potchefstroom, South Africa (Sep. 2017)
13. "Electronic Voting Systems: Problems, Questions, and Answers," Institute of Information Technology Professionals South Africa, Eastern Cape Chapter, Port Elizabeth, South Africa (Sep. 2017).
14. "Cybersecurity Curricular Guidelines," Colloquium for Information Systems Security Education (June 2017)

15. "Secure Programming: A Way of Life (or Death)," Colloquium for Information Systems Security Education (June 2017)
16. "Resilience and Security," International Conference on Cyber Warfare and Security, Dayton, OH (Mar. 2017)
17. "Why Can't We Do Security Right?," Socio-Technical Aspects in Security and Trust Workshop, Los Angeles, CA (Dec. 2016)
18. "Resilience and Security," Resilience Models and Measures track, Resilience Week, Chicago, IL (Feb. 2016)
19. "Insider Problem and Elections," Center for Applied Cybersecurity Research, Indiana University, Bloomington, IN (Feb. 2016)
20. "Insider Problem and Elections," TRESPASS, Technical University of Denmark, Copenhagen, Denmark (Jan. 2016)
21. "Research Challenges for Electronic Voting: E-Voting and Assurance," US/Brazil Workshop on Cyber Security and Privacy, Brasilia, Brazil (Dec. 2015)
22. "Characterizing the Insider Problem," Workshop on Managing Insider Security Threats, Seoul, South Korea (Nov. 2014)
23. "An Analysis of the Buffer Overflow Problem," California State University Sacramento, Sacramento, CA (Oct. 2014)
24. "Testing the Resistance of Pervasive Technologies to Attack," Seventh International Conference on Pervasive Technologies Related to Assistive Environments, Rhodes, Greece (June 2014)
25. "An Analysis of the Buffer Overflow Problem," Symposium on Information Security and Computer Systems, Manaus, Brazil (Nov. 2014)
26. "'Secure' Programming," Security & Privacy Symposium 2013, Kanpur, India (Feb. 2013)
27. "The Insider Problem, Inside Out," The 7th International Workshop on Security, Fukuoka, Japan (Nov. 2012)
28. "Learning and Experience in Computer Security Education," XII Reunión Española sobre Criptología y Seguridad de la Información, San Sebastián, Spain (Sep. 2012)
29. "Computers and Elections: The Good, the Bad, and the Ugly," Oregon Security Day, Eugene, OR (Apr. 2012)
30. "Electronic Voting Systems: Problems, Questions, and Answers," E-Voting in Bangladesh, Dhaka, Bangladesh (Mar. 2012)
31. "Vulnerabilities in Cryptography for the Future," Standing Committee for Technology Insight–Gauge, Evaluate, and Review, National Research Council, Charlottesville, VA (Aug. 2011)
32. "Teaching Secure Programming," Summit on Education in Secure Software, Washington DC (Oct. 2010)
33. "Computer Security in the Future," ISCISC 2010 Conference, Tehran, Iran (Sep. 2010)
34. "Vulnerability Analysis," Amir Kabir (Polytechnique) University, Tehran, Iran (Sep. 2010)
35. "The Insider Problem Inside Out," Isfahan University of Technology, Isfahan, Iran (Sep. 2010)
36. "Reflections on UNIX Vulnerabilities," 25th Annual Computer Security Applications Conference, Honolulu, HI (Dec. 2009)
37. "Analyzing Security in Pervasive Assistive Environments," Second International Conference on Pervasive Technologies Related to Assistive Environments (June 2009)
38. "The SANS/CWE Top 25 Checklist: Friend or Foe?" CISO Lecture Series, The California Office of Information Security and Privacy Protection, Sacramento, CA (Feb. 2009)
39. "Pervasive Technology and Pervasive Security," First International Conference on Pervasive Technologies Related to Assistive Environments (July 2008)
40. "How to Evaluate the Security of New Technology," Institute of Internal Auditors' International Conference, San Francisco (July 2008)
41. "Computers and Elections: The Good, the Bad, and the Ugly," Sun Security Ambassador Day, Santa Clara, CA (Apr. 2008)
42. "Framework for Data Anonymization," First International Symposium on Global Information Gover-

nance 2008, Pisa, Italy (Mar. 2008)
43. "Securing the Internet Infrastructure: *Huh?*" University of Colorado at Colorado Springs Security Forum, Colorado Springs, CO (Mar. 2007)
44. "Teaching Assurance Using Checklists", Sixth Workshop on Education in Computer Security (*WECS 6*), Naval Postgraduate School, Monterey, CA (Jan. 2006)
45. "Threats and Assurance", Information Technology Workshop, Department of Health and Human Services, State of California, Rancho Cordova, CA (Nov. 2003)
46. "E-Business Security: Fact, Fiction, or Both?", Information System Security Association Conference, Sacramento Chapter, Sacramento, CA (2001)
47. "Academia and Education in Information Security: Four Years Later", National Colloquium on INFOSEC System Security Education, Washington, DC (2001)
48. "The State of INFOSEC Education in Academia: Present and Future Directions", National Colloquium on INFOSEC System Security Education, Bethesda, MD (1997)

Selected Talks Not Associated With Published Papers

49. "Computers and Elections: The Good, the Bad and the Ugly," WiCyS Silicon Valley (Oct. 2020)
50. "Computers and Elections: The Good, the Bad and the Ugly," Netflix (July 2020)
51. "Computers and Elections: The Good, the Bad, and the Ugly," Federal Bureau of Investigation, Los Angeles, CA (Apr. 2020)
52. "Elections, Voting, Computers and All That," League of Women Voters, Seattle, WA (Mar. 2018)
53. "The Insider Threat and Response," University of California Security Symposium, Berkeley, CA (Nov. 2016)
54. "Faculty and Security," panel presentation for CENIC Annual Conference, Davis, CA (Mar. 2016)
55. "How I Learned to Teach Programming—And Other Misadventures," University of Houston, Houston, TX (Mar. 2015)
56. "Is Practical Data Sanitization Possible?," Discovery 2020, Lawrence Berkeley National Laboratory, Berkeley, CA (June 2014)
57. "Is Practical Data Sanitization Possible?," Amazon ZonCon Conference, Seattle, WA (Mar. 2014)
58. "Robust Programming," University of California Computer Security Conference, Davis, CA (June 2013).
59. "Secure Programming: A Way of Life (or Death)," SANS Application Security Conference, Las Vegas, NV (Apr. 2012)
60. "The Threat of the Insider Threat," CA Labs, Santa Clara, CA (Oct. 2011)
61. "Summit on Education in Secure Software: Summary Findings," Workshop on Shaping the Future of Cybersecurity Education, Gaithersburg, MD (Sep. 2011)
62. "Multistage Malware: Delivery and Execution," University of California Computer Security Conference, Davis, CA (June 2011)
63. "Robust Programming," University of California Computer Security Conference, Davis, CA (June 2011)
64. "The Insider Problem, Inside Out," Dept. of Computer Science, Florida Institute of Technology, Melbourne, FL (Feb. 2011)
65. "Computers and Elections: The Good, the Bad, and the Ugly," Dept. of Computer Science, Florida Institute of Technology, Melbourne, FL (Feb. 2011)
66. "Data Sanitization for Fun and Aggravation," Booz Allen Hamilton, Vienna, VA (Sep. 2009)
67. "The Insider Problem Inside Out," Dept. of Computer Science, Carleton University, Ottowa, Canada (Apr. 2009)
68. "Report on the Workshop on GENI and Security; or, What Happens When the GENI Leaves the Bottle?" GENI Engineering Conference, Miami, FL (Mar. 2009)
69. "The Insider Problem, Inside Out," Dept. of Computer Science, University of Alaska Fairbanks, Fairbanks, AK (Sep. 2008)
70. "Defining the Insider Threat" (with S. Engle, S. Peisert, S. Whalen, and C. Gates), Countering Insider Threats, Dagstühl, Germany (June 2008)

71. "Elections and Computers: What's Going On?," University of California Computer Security Conference, Davis, CA (June 2007)
72. "What Are the Issues We Want to See Funded?", Pacific Northwest National Laboratory, Richland, WA (Feb. 2007)
73. "Elections and Computers: A Match Made in ... Someplace?", Naval Postgraduate School, Monterey, CA (Nov. 2006)
74. "GENI and Security" (with D. Frincke, C.-N. Chuah, and K. Levitt), *GENI Town Hall Meeting*, San Francisco, CA (July 2006)
75. "E-Voting Machines: Measuring What?", *Threat Analyses for Voting System Categories: A Workshop on Rating Voting Methods* (*VSWR 2006*), George Washington University, Washington DC, USA (June 2006)
76. "Principles and their Use", *Common Body of Knowledge for Software Assurance Workshop*, Monterey, CA (Feb. 2006)
77. "Teaching Assurance Using Checklists", *Seventh Workshop on Education in Computer Security* (*WECS 6*), Naval Postgraduate School, Monterey, CA (Jan. 2006)
78. "Security and Standards; Or, What Should This System Do and How Well Does It Do That", *California E-Recording Summit: Implementing the Electronic Recording Delivery Act*, Sacramento, CA (Feb. 2006)
79. "A Survey of Vulnerabilities", NASA Jet Propulsion Laboratory (Mar. 2004)
80. "Vulnerabilities Analysis", Dept. of Computer Science, Naval Postgraduate School (Dec. 2003)
81. "Threats and Assurance", Dept. of Health and Human Services, State of California (Nov. 2003)
82. "Vulnerabilities Analysis", Dept. of Computer Science, University of Maryland/Baltimore County (Sep. 2003)
83. "Vulnerabilities Analysis", Dept. of Computer Science, Mississippi State University (Sep. 2003)
84. "Auditing" and "Intrusion Detection" lectures for CS 526, Dept. of Computer Science and CERIAS, Purdue University Summer Institute (July 2003)
85. "Thoughts on a Research Agenda", panel presentation, *Colloquium on Information System Security Education* (June 2003)
86. "A Survey of Vulnerabilities", IEEE/North American Taiwanese Engineers' Association (Apr. 2003)
87. "Computer Security Education", INFOTEC (Apr. 2002)
88. "Vulnerabilities and Sanitization", Georgia Institute of Technology (Nov. 2001)
89. "Electronic Recordation and the Internet", panel presentation, *Real Estate Frauds Seminar*, California District Attorneys Association (2001)
90. "Analysis of Computer Vulnerabilities", NASA Jet Propulsion Laboratory (2001)
91. "Vulnerabilities Analysis", *SANS* (2001)
92. "Security and Electronic Commerce", Student Management Group, Krannert School of Management, University of California at Davis (2001)
93. "Trust and Security", Linux Users' Group of Davis (2001)
94. "Go Port-Scan Yourself", *Information Security Awareness Forum*, Department of Information Technology, State of California (2000)
95. "Adapting Formal Methods for Informal Use", *SANS Network Security* (2000)
96. "ECS 153, Introduction to Computer Security", panel presentation, *National Colloquium on Information System Security Education* (1999)
97. "Research in Intrusion Detection", *I4 Conference* (1999)
98. "Results from Workshops on Intrusion Detection" (with S. Northcutt), *Network Security Conference* (1998)
99. "Unlearned Lessons", panel presentation, *21st National Information Systems Security Conference* (1998)
100. "The UC Davis Vulnerabilities Database", *SANS Conference* (1998)
101. "Attacking the Internet Infrastructure", *SEARCH Conference* (1997)
102. "Writing Safe Privileged Programs", *Network Security Conference* (1997)

103. "UNIX Security", *SHARE Conference* (1997)
104. "Teaching Computer Security", *ACM Workshop on Computer Security Education* (1997)
105. "Adventures in Hackery", *System Administration, Networking and Security Conference* (1996)
106. "Top Ten Security Threats to a UNIX System and What to Do About Them", *SHARE 86* (1996); ***Best Session Award***
107. "Patch-and-Catch", *UNIFORUM 1996* (1996)
108. "Research, Development, and Operations", *Defensive Information Warfare Symposium* (1995)
109. "Intruders and UNIX", *Network Security* (1995)
110. "An Overview of Computer Viruses in a Research Environment", *Fourth Annual Computer Virus and Security Conference* (1991)
111. "Password Management", *COMPCON '91* (1991)
112. "A Security Analysis of the NTP Protocol", *Sixth Annual Computer Security Conference Proceedings* (1990)
113. "Password Checking Techniques", *Second Invitational Workshop on Computer Security Incident Response* (1990)
114. "Privacy-Enhanced Electronic Mail", *Student ACM Chapter, St. Michael's College* (1989)
115. "Selling C Shells By the C Shore", *IRIS Users' Group, NASA Ames Research Center* (1985)
116. "A Day in the Life of a UNIX User", *15th Virginia Computer Users' Conference* (1985)

Grants and Contracts

Ongoing

1. July 14, 2023–*current*: *Strengthening Workforce Education: Excellence in Programming Securely (SWEEPS)*, National Security Agency, $2,500,000 [PI]
2. Oct. 2020–*current*: *Security of Sensors in Autonomous Vehicles*, gift from Toyota InfoTech Labs, $215,000 [PI]
3. May 2020–*current*: *Collaborative Research: SaTC: EDU: Collaborative: Building an Electronic Voting Technology Inspired Interactive Teaching and Learning Framework for Cybersecurity Education*, National Science Foundation, $170,000 [PI]
4. May 2020–*current*: *Data Anonymization and Sanitization*, gift from LexisNexis, $145,000 [PI]
5. Oct. 2019–*current*: *SaTC: EDU: Collaborative: An Assessment Driven Approach to Self-Directed Learning in Secure Programming (SecTutor)*, National Science Foundation, $151,008 [PI]
6. Aug. 2014–*current*: *Introductory Exercises for Computer Security*, gift from Intel Corp., $24,910 [PI]

Completed

7. July 2021–June 2022: *UC Davis Institute for Hardware and AI-Enabled Cyber Security*, College of Engineering, University of California Davis, $60,000 [co-PI with Prof. Houman Homayoun, Department of Electrical and Computer Engineering, University of California Davis]
8. Jan. 2020–Dec. 2020: *Intrusion Detection and Deception for Industrial Control Systems*, Sandia National Laboratory, $25,000 [PI]
9. Oct. 2019–Sep. 2020: *Data Anonymization and Data Analysis in the Field of Transportation: Discovering the Gaps*, University of California Institute of Transportation Studies SB 1 (Public Transportation Account and the Road Repair and Accountability Act of 2017) Research Program, $22,579 [PI]
10. June 2017–May 2021: *CICI: CE: Improving the Security of a Science DMZ*, National Science Foundation, $738,094 [co-PI with Prof. Dipak Ghosal and Vice-Provost of Information and Education Technology Viji Murali of the University of California at Davis]
11. Mar. 2019–June 2020: *Computers and Networks for Cybersecurity Experiments and Education*, Department of the Army Research Laboratory, $200,000 [PI]
12. Oct. 2017–Sep. 2019: *Developing a Secure Programming Concept Inventory*, National Security Agency via Purdue University, $74,999 [PI]
13. Aug. 2017–Aug. 2019: *Dynamic Adversary Modeling and Experimentation (DAME)*, Air Force Research Laboratory via BBN Raytheon, $215,699 [PI]

14. July 2017–Sep. 2018: *Modeling the Insider Threat*, Davis Division of the Academic Senate, University of California, $24,945 [PI]
15. July 2013–June 2017: *Modeling the Process of Internet Voting*, National Institute for Standards and Technology, $228,000 [co-PI with Prof. Leon Osterweil, Prof. Lori Clarke, and Prof. George Avrunin of the University of Massachusetts Amherst]
16. June 2017–Sep. 2018: *Modeling the Insider Threat*, University of California Davis Division of the Academic Senate, $24,945 [PI]
17. Aug. 2014–June 2020: *Collaborative: Development and Testing of a Secure Programming Clinic*, National Science Foundation, $482,683 [PI]
18. July 2013–June 2015: *INSuRE EAGER*, National Science Foundation, $88,000 [co-PI with Prof. Melissa Dark of Purdue University (PI); Prof. Brandeis Marshall of Purdue University; Prof. Thomas Morris of Mississippi State University; and Prof. Alan Sherman of the University of Maryland Baltimore County]
19. Jan. 2013–Dec. 2015: *CC-NIE Integration: Improved Infrastructure for Data Movement and Monitoring*, National Science Foundation, $992,746 [co-PI with Vice-Provost of Information and Education Technology P. Siegel of the University of California at Davis]
20. Sep. 2012–Aug. 2014: *EAGER: Collaborative: Process-Based Technology to Support Comparison and Evaluation of the Security of Elections*, National Science Foundation, $75,000 [co-PI with Prof. L. Osterweil and Prof. L. Clarke of the University of Massachusetts at Amherst]
21. Aug. 2012–Aug. 2013: *GOALI: TC: Medium: Collaborative Research: Technological Support for Improving Election Processes (Graduate Student Industry Fellowship/Traineeship) (supplemental)*, National Science Foundation, $33,505 [PI]
22. Aug. 2012–Aug. 2013: *GOALI: TC: Medium: Collaborative Research: Technological Support for Improving Election Processes (Faculty-in-Industry) (supplemental)*, National Science Foundation, $56,466 [PI]
23. July 2010–June 2013: *Auditing Voting Systems While Preserving Secrecy and Anonymity*, National Science Foundation, $90,000 [co-PI with Dr. S. Peisert of Lawrence Berkeley National Laboratory and the University of California at Davis]
24. May 2010–May 2013: *Summit on Education in Secure Software*, National Science Foundation (subcontract from George Washington University, $36,098 [co-PI with Prof. Diana Burley of George Washington University]
25. Oct. 2009–June 2013: *Attribution for GENI*, GENI Projects Office, $145,000 [co-PI with Dr. Jeffrey Hunker of Jeffrey Hunker Associates LLC and Dr. Carrie Gates of CA Labs, Inc.]
26. Sep. 2010–Dec. 2011: *Basic Proposal for Information Assurance Scholarship Program*, National Security Agency, $63,359 [PI]
27. Dec. 2009–May 2010: *Data Sanitization and Analysis*, Institute for Information Infrastructure Protection, $80,000 [PI]
28. Oct. 2009–Sep. 2012: *A Mathematical and Data-Driven Approach to Intrusion Detection for High-Performance Computing*, U.S. Department of Energy, $750,000 [co-PI with Dr. D. Bailey of Lawrence Berkeley National Laboratory and Dr. S. Peisert of Lawrence Berkeley National Laboratory and the University of California at Davis]
29. Sep. 2009–Aug. 2013: *TC: Medium: Collaborative Research: Technological Support for Improving Election Processes*, National Science Foundation, $449,999 [co-PI with Prof. L. Osterweil and Prof. L. Clarke of the University of Massachusetts at Amherst]
30. Aug. 2009–Aug. 2010: *Basic Proposal for Information Assurance Scholarship Program*, National Security Agency, $55,614 [PI]
31. Apr. 2009–Dec. 2009: *Emerging Research in Detecting Cyber Attacks*, Lockheed Martin Corp., $100,000 [PI]
32. Mar. 2009–Feb. 2010: *CT-M: Computer System Vulnerabilities and the Efficacy of Defensive Mechanisms*, National Science Foundation, $50,000 [co-PI with Prof. K. Marzullo of the University of California at San Diego and Dr. S. Peisert of Lawrence Berkeley National Laboratory and the University

of California at Davis]

33. Aug. 2008–Aug. 2009: *Basic Proposal for Information Assurance Scholarship Program*, National Security Agency, $66,464 [PI]
34. June 2008–Aug. 2008: *Review of Electronic Voting Systems Certified in the State of California*, California Secretary of State, $450,921 [co-PI with Prof. D. Wagner of the University of California at Berkeley]
35. Sep. 2007–Aug. 2010: *CT-ISG: Collaborative Research: Detecting and Preventing Attacks in Recommendation Systems*, National Science Foundation, $228,374 [co-PI with Prof. F. Makedon of the University of Texas at Arlington]
36. Jan. 2007–Dec. 2009: *Planning Grant for Joining the NSF Center for Information Protection I/UCRC*, National Science Foundation, $10,000 [PI]
37. Aug. 2007–Aug. 2008: *Basic Proposal for Information Assurance Scholarship Program*, National Security Agency, $64,954 [PI]
38. Aug. 2006–Aug. 2007: *Basic Proposal for Information Assurance Scholarship Program*, National Security Agency, $48,746 [PI]
39. Aug. 2006–Aug. 2009: *Workshop: Security of the Cyber Infrastructure*, National Science Foundation, $70,001 [PI]
40. Aug. 2005–Aug. 2006: *Capacity Building: Secure Programming Clinic*, National Security Agency, $80,000 [PI]
41. Sep. 2003–Aug. 2006: *Data Management of Protected Information for Data Sharing and Collaboration*, National Science Foundation, $414,919 [co-PI with Prof. F. Makedon of Dartmouth College (PI) and Prof. A. Saykin, Dartmouth College (co-PI)]
42. Aug. 2003–Aug. 2006: *Vulnerabilities Analysis*, National Science Foundation, $240,000 [PI]
43. Aug. 2003–Aug. 2006: *Balancing Privacy and Analysis in Data Sanitization*, National Science Foundation, $220,000 [PI]
44. Feb. 2003–June 2004: *Security and Intra-Agency Recordation at the County Level*, Yolo County, $19,742 [PI]
45. Sep. 2002–Mar. 2004: *Denial of Service at the Data Link Layer*, UC Micro with Captus Networks, $31,308 [PI]
46. May 2001–Oct. 2005: *Intrusion Detection Analysis Project*, Promia, Inc., $289,000 [PI]
47. May 2000–Oct. 2005: *An Environment for Verifying Security Properties of Programs*, NASA Jet Propulsion Laboratory, $354,000 [PI]
48. Oct. 1999–Sep. 2000: *Denial of Service in Windows Environments*, Microsoft Corp., $39,000 [PI]
49. Oct. 1998–Sep. 1999: *Denial of Service in the Infrastructure*, NASA Ames Research Center, $97,250 [PI]
50. Sep. 1997–Sep. 2000: *Computer Vulnerabilities and Policy-Based Security*, Intel Corp., $225,000 [co-PI with Prof. K. Levitt and C. Wee of the University of California at Davis]
51. Jan. 1997–June 1997: *Program and System Vulnerabilities*, Trident Data Systems, Inc., $50,000 [PI]
52. Sep. 1996–Aug. 1997: *Testing Security Properties of Protocols and Their Implementations*, National Security Agency, $96,312 [PI]
53. July 1996–Oct. 1996: *Detection of Vulnerabilities*, SRI International, $16,568 [PI]
54. Aug. 1994–June 1996: *Analysis of System Vulnerabilities*, Trident Data Systems, Inc., $228,000 [PI]
55. July 1994–Nov. 1995: *Distributed Auditing*, Lawrence Livermore National Laboratory, $98,000 [PI]
56. July 1994–June 1995: *Remote Tutor Project: UNIX-to-DOS Interface*, Office of the Provost, University of California at Davis, $6,700 [co-PI with Prof. R. Walters of the University of California at Davis]
57. June 1994–June 1995: Third Workshop on Future Directions in Computer Misuse and Anomaly Detection: *National Security Agencyand Air Force Information Warfare Center*, $77,000, Prof. K. Levitt, Prof. B. Mukherjee, and T. Heberlein of the University of California at Davis [PI]
58. Sep. 1993–Sep. 1997: *Towards a Tester's Assistant for Property-Based System Testing*, DARPA/ONR, $195,000 [co-PI with Prof. K. Levitt and Prof. R. Olsson of the University of California at Davis]
59. Sep. 1993–Mar. 1994: *Adding Mutual Authentication to DIDS*, Trident Data Systems, Inc., $46,323

[PI]

60. June 1993–June 1994: *Second Workshop on Future Directions in Computer Misuse and Anomaly Detection*, National Security Agency, $60,000.00 [co-PI with Prof. K. Levitt, Prof. B. Mukherjee, and T. Heberlein of the University of California at Davis]
61. July 1992–June 1993: *Formal Model of Security Monitoring*, National Security Agency, $58,502.00 [PI]
62. March 1992–April 1992: *Workshop on Future Directions in Computer Misuse and Anomaly Detection*, Lawrence Livermore National Laboratory and Los Alamos National Laboratory, $65,000.00 [co-PI with Prof. K. Levitt and Prof. B. Mukherjee of the University of California at Davis G. Liepens, H. Vaccaro, J. Prommel and S. Smaha of Los Alamos National Laboratory, and D. Mansur of Lawrence Livermore National Laboratory]
63. October 1989–September 1992: *UNIX™ Password Security and Distributed Computation*, NASA Ames Research Center, $121,365.00 [PI]
64. June 1989–August 1989: *Analyzing the UNIX™ Password Algorithm*, NECUSE, $2,500 [PI]
65. September 1987–August 1989: *A Network System Administration System*, NASA Ames Research Center, $35, 807 [PI]
66. July 1987–June 1990: *Applications of the Take-Grant Model and Authentication in Computer Systems*, Burke Research Initiation Award, Dartmouth College, $14,775 [PI]

Professional Service

Editorial Boards

- *Computers & Security* (2020–*current*)
- *IEEE Privacy and Security*; also co-editor of the Education Department, with Dr. Deborah Frincke and Prof. Cynthia Irvine (2003–2011)
- *Journal of Computer Security* (1988–2010)

International Board of Reviewers

- *Computers & Security* (1993–2004)

Advisory Boards

- Johns Hopkins University, Whiting School of Engineering, Engineering for Professionals CS, IA, and ISE Programs (2013–2018)
- AlienVault Technical Advisory Board (2012–2018)
- *The ISC International Journal of Information Security* (2009–*current*)
- Electronic Recording Delivery System (ERDS) Advisory Committee, Office of the Attorney General, State of California (2008–*current*)
- Fortify Software Technical Advisory Board (2002–2011)

Working Groups

- Secretariat, IFIP Technical Committee 11, Working Group 8 — Computer Security Education (2015–*current*)
- NIST-EAC Public Working Groups, CyberSecurity Working Group (2016–2018)
- ACM/IEEE Computer Society/AIS SIGSEC/IFIP TC11 WG11.8 Joint Task Force on Cybersecurity Education; co-chairperson (2015–2018)
- UC Davis Computer Security Laboratory representative to the Institute for Information Infrastructure Protection (I3P) (2002–*current*; member, Executive Committee 2009–2011, 2013–*current*; vice chairperson, 2010)
- Responsible Disclosure Task Force, National Infrastructure Assurance Council (2003)
- Distributed Systems Advisory Board (1986–1988)
- Privacy and Security Research Group, Internet Research Task Force (1985–1997)

Other

- Senior Member, Applied Computer Security Associates (2014–*current*)
- California Cybersecurity Workforce Development and Education; member, Objective 2.3 (Undergraduate/Graduate State and Private Schools) working group (2014–*current*)
- Member, Committee on Professionalizing the Nation's Cybersecurity Workforce: Criteria for Future Decision-Making, National Research Council (2012–2013)
- NSF Secure and Trustworthy Computing PI Meeting; steering committee (2012)

Program Chairs and Committees

- 53rd Hawaii International Conference on System Science; insider mini track co-chair (2020)
- 2019 Workshop on Cyber Security Experimentation and Test; program committee (2019)
- 12th World Information Security Education Conference (WISE 2019); program committee (2019)
- 52nd Hawaii International Conference on System Science; insider mini track co-chair (2019)
- Secure Coding Workshop; co-organizer (2018)
- 2018 New Security Paradigms Workshop (NSPW2018); general chair (2018)
- 11th World Information Security Education Conference (WISE 2018); program committee (2018)
- 10th Annual National Cyber Security Summit (NCS 2018); program committee (2018)
- 2018 European Conference on Cyber Warfare and Security (ECCWS 2018); program committee (2018)
- 2018 Workshop on Research in Insider Threat (WRIT 2018); program committee (2018)
- 51st Hawaii International Conference on System Science; insider mini track co-chair (2018)
- 2018 Workshop on Usable Security (USEC 2018); program committee (2017–2018)
- 2017 Socio-Technical Aspects in Security and Trust Workshop (STAST 2017); program committee (2017)
- 2017 New Security Paradigms Workshop (NSPW2017); vice chair (2017)
- 9th Annual National Cyber Security Summit (NCS 2017); program committee (2017)
- 10th World Information Security Education Conference; program co-chair (2017)
- 32nd International Conference on ICT Systems Security and Privacy Protection (IFIP SEC 2017); program committee (2017)
- IEEE BigData Service 2017; program committee (2017)
- 50th Hawaii International Conference on System Science; digital forensics mini track co-chair, insider mini track co-chair (2017)
- Third IEEE International Conference on Big Data Service Computing Service and Applications; program committee (2016-2017)
- 32nd Annual Computer Security Applications Conference; program committee (2016)
- Eighth ACM CCS International Workshop on Managing Insider Security Threats (MIST 2016); program committee (2016)
- African Cyber Citizenship Conference 2016 (ACCC2016); program committee (2016)
- IEEE Workshop on Cybersecurity Education and Workforce (CEW 2016); program committee (2016)
- Ninth International Conference on Trust & Trustworthy Computing (TRUST 2016); program committee (2016)
- 2016 USENIX Workshop on Advances in Security Education (ASE 2016); program committee (2016)
- 2016 New Security Paradigms Workshop (NSPW 2016); program committee (2016)
- First International Workshop on Education for Secure Digital Information Processing, Data Mining and Wireless Communications (ESDIPDMWC 2016); program committee (2016)
- 2016 National Cyber Summit (2016); program committee (2016)
- 2016 Workshop on Learning from Authoritative Security Experiment Results (LASER 2016); program committee (2016)
- Ninth World Information Security Education Conference; program co-chair (2016)
- 31st IFIP TC-11 SEC 2016 International Information Security and Privacy Conference; program committee (2016)
- 2016 Workshop on Research in Insider Threats (WRIT 2016); program committee (2016)

- 49th Hawaii International Conference on System Science; digital forensics mini track co-chair, insider track co-chair (2016)
- 31st Annual Computer Security Applications Conference; program committee (2015)
- 2015 Workshop on Managing Insider Security Threats; program committee (2015)
- Second ACM Workshop on Information Sharing and Collaborative Security; program committee (2015)
- Fifth International Workshop on Socio-Technical Aspects in Security and Trust; program committee (2015)
- 2015 Workshop on Cyber Security Experimentation and Test; program committee (2015)
- 2015 New Security Paradigms Workshop; program committee, financial aid co-chair, steering committee (2015)
- 19th Colloquium on Information System Security Education; program committee (2015)
- Eighth International Conference on Pervasive Technologies Related to Assistive Environments; program committee (2015)
- Fifth International Workshop on Information Systems Security Engineering; program committee (2015)
- 14th European Conference on Information Warfare and Security; program committee (2015)
- Ninth World Conference on Information Security Education; program committee, program co-chair (2015)
- 2015 International Conference on ICT Systems Security and Privacy Protection; program committee (2015)
- First IEEE International Conference on Big Data Service Computing Service and Applications; program committee (2014–2015)
- First ACM Workshop on Information Sharing and Collaborative Security; program committee (2014)
- 2014 New Security Paradigms Workshop; financial aid co-chair, steering committee (2014)
- 2014 Learning from Authoritative Security Experiment Results; program committee (2014)
- 48th Hawaii International Conference on System Science; digital forensics mini track co-chair (2015)
- First African Cyber Citizenship Conference; program committee (2014)
- 2014 Workshop on Cyber Security Experimentation and Test; program committee (2014)
- Fourth International Workshop on Socio-Technical Aspects in Security and Trust; program committee (2014)
- 12th International Conference on Privacy, Security, and Trust; program committee (2014)
- 18th Colloquium on Information System Security Education; program committee (2014)
- Seventh International Conference on Pervasive Technologies Related to Assistive Environments; program committee (2014)
- 2014 Workshop on Research for Insider Threat; program committee (2014)
- 12th International Conference on Practical Applications of Agents and Multi-Agent Systems; program committee (2014)
- 2014 Workshop on Graphical Models for Security; program committee (2014)
- 47th Hawaii International Conference on System Science; digital forensics mini track co-chair (2014)
- 2013 New Security Paradigms Workshop; financial aid co-chair, steering committee (2013)
- 2013 Learning from Authoritative Security Experiment Results; program committee (2013)
- 2013 IEEE Technologies for Homeland Security (Cyber Security track); program committee (2013)
- 2013 ACM Computer and Communication Security Conference; program committee (2013)
- Third International Workshop on Socio-Technical Aspects in Security and Trust; program committee (2013)
- Eleventh Annual International Conference on Privacy, Security, and Trust; program committee (2013)
- Eighth World Conference on Information Security Education; program committee (2013)
- Sixth International Conference on Pervasive Technologies Related to Assistive Environments; program committee (2013)
- 2013 Workshop on Research for Insider Threats; program committee (2013)
- 2013 European Conference on Information Warfare; program committee (2013)
- 46th Hawaii International Conference on System Science; program committee, digital forensics mini

track co-chair (2013)
- 2012 New Security Paradigms Workshop; financial aid co-chair, program committee, steering committee (2012)
- 2012 IEEE Technologies for Homeland Security (Cyber Security track); program committee (2012)
- Second International Workshop on Socio-Technical Aspects in Security and Trust; program committee (2012)
- Fifth Workshop on Cyber Security Experimentation and Test; program committee (2012)
- 2012 Learning from Authoritative Security Experiment Results; organizing committee, program co-chair (2012)
- First Moving Target Defense Research Symposium; program committee (2012)
- 11th European Conference on Information Warfare and Security; session chair (2012)
- 2012 Colloquium on Information System Security Education; program committee (2012)
- First International Workshop on Information Systems Security Engineering (2012)
- 2012 Digital Forensics Conference; program committee (2012)
- 2012 Usable Security Workshop; program committee (2011–2012)
- 45th Hawaii International Conference on System Science; digital forensics mini track co-chair (2012)
- 2011 Workshop on Governance of Technology, Information, and Policies; program committee (2011)
- 2011 NDSS Symposium; program committee (2011)
- 27th Annual Computer Security Applications Conference; program committee (2011)
- 2011 Cyber Security Experimentation and Test; program committee (2011)
- 2011 New Security Paradigms Workshop; program committee, financial aid co-chair (2011)
- Fifteenth Colloquium on Information Systems Security Education; program committee (2011)
- Eleventh Annual Digital Forensics Research Conference; program committee (2011)
- Seventh World Conference on Information Security Education; program committee (2011)
- Workshop on Governance of Technology, Information, and Policy; chair, program committee (2010)
- Summit on Education in Secure Software; co-chair (2010)
- Second International Symposium on Global Information Governance; program co-chair (2009)
- Workshop on GENI and Security; chair, program co-chair (2009)
- Colloquium for Information System Security Education; program committee (2003–2007)
- Information Security Workshop; program committee (2007)
- International Workshop on Systematic Approaches to Digital Forensic Engineering; program committee (2007)
- Secure Knowledge Management Workshop; program committee (2006)
- New Security Paradigms Workshop; program committee (2006–2007); general co-chair (2007); general chair (2008); financial aid co-chair (2009–*current*)
- Annual Conference on Education in Information Security (2006–2007)
- International Conference on Security and Privacy in Communication Networks (SecureComm); program committee (2006–2007)
- Workshop on Secure Software Engineering Education and Training; program co-chair (2006)
- IEEE International Symposium on Secure Software Engineering; program committee (2006)
- Fourth World Conference on Information Security Education; program committee (2005)
- IEEE International Workshop on Enabling Technologies: Infrastructure for Collaborative Enterprises (WETICE); program co-chair (2005?2007); program committee (2004–2007)
- Annual Computer Security Applications Conferences, student awards chair (1996–2000); pro- gram committee (1990, 1996–2000)
- Symposium on Networked and Distributed System Security, program co-chair (1997–1998); program committee (1996–2000)
- Workshop on Computer Misuse and Anomaly Detection, workshop chair (1995); program committee (1993–1994)
- Winter 1993 USENIX Technical Conference (1993)
- CERT Workshop on Research in Incident Handling, working group chair for "Medium Term Issues in

Incident Handling: Tools and Techniques" group (1992)
- Workshop on Foundations in Computer Security II; session chair, program committee (1992)
- Third USENIX UNIX Security Symposium; program committee (1992)
- Dartmouth Summer Institute on Issues and Obstacles in the Practical Implementation of Parallel Algorithms and the Use of Parallel Machines; co-organizer (1991)
- UNIX Security Workshop, workshop chair (1988, 1990)
- UNIX Security Workshop, workshop chair (1988)

Reviewer for Journals

- *ACM Computing Reviews*
- *ACM Computing Surveys*
- *ACM Transactions on Programming Languages and Systems*
- *Communications of the ACM*
- *Computers and Security*
- *Information Processing Letters*
- *IEEE Computer*
- *IEEE Security and Privacy*
- *IEEE Software*
- *IEEE Transactions*
- *IEEE Transactions on Computers*
- *IEEE Transactions on Dependable and Secure Computing*
- *IEEE Transactions on Software Engineering*
- *International Journal of Information Security*
- *International Journal of Secure Software Engineering*
- *Journal of the ACM*
- *Journal of Computer Security*
- *Journal of Microprocessors and Microsystems*
- *Scientia Iranica*
- *Software—Practice and Experience*
- *South African IEEE Africa Research Journal*

Reviews for Funding Organizations

- National Research Foundation (South Africa)
- National Science Foundation
- Institute for Security Technology Studies, Dartmouth College

Other Reviews for Working Groups and Organizations

- *National Strategy for Critical Infrastructure Protection*, for the President's Critical Infrastructure Protection Board

Academic Service

University of California

University of California System Committees

- Member, University Committee on Academic Computing and Communications (2015–2017, 2018–*current*); chairperson (2021–2023)

University of California at Davis Campus Committees

- Faculty Advisory Board, UC Extension (2017–*current*)
- CIO Strategic Advisory Council (member, 2016–*current*)
- Davis Division of the Academic Senate Committee on Information Technology (chairperson, 2015–2017, 2018–2021; member, 2017–2018)

- Davis Division of the Academic Senate Committee on Elections, Rules, and Jurisdiction (member, 2014–2015)
- Advisory Board for Web Site Development Certificate Program at UC Extension (member, 1997–2002, 2013–2017)
- Campus Council for Information Technology (member, 2005–2006, 2007–2009, 2010–2015; chairperson 2010–2012)
  - CCFIT Subcommittee on Research Support Services (chairperson, 2013–2014)
  - CCFIT Wireless Task Group (chairperson, 2006–2007)
  - CCFIT Wireless Working Group (chairperson, 2007–2009)
- Academic Senate Committee on Undergraduate Scholarships, Honors, and Prizes (member, 2012–2014)
- Big Data Committee (member, 2012–2013)
  - Infrastructure Subcommittee (chairperson, 2012–2013)
- Chief Information Security Officer, UC Davis, Search Committee (member, 2013)
- Telecommunications Advisory Board (chairperson, 2008–2009)
- Academic Senate Committee on Instruction (member, 2006–2009)
- Campus Judicial Board (member, 2006–2008)
- Academic Senate Undergraduate Council (member, 2005–2008)
- Academic Computing Coordinating Council Educational Computing Subcommittee (chairperson, 1999–2002)
- Instructional Space Advisory Group (member, 1999–2002)
- Academic Computing Coordinating Council (member, 1998–2002)
- Incident Response working group (member, 1998–2002)
- Core Team of the Learning Environment Architecture Development (LEAD) Project (member, 1998–2001)
- Minority Undergraduate Research Program in the Physical Sciences steering committee (member, 1998–2002)
- Academic Senate Undergraduate Preparatory Committee (member, 1994–1998)

College of Engineering

- Information Technology Shared Services Advisory Board (member, 2013–2019; chairperson, 2016–2018)
- Student Development and Welfare Committee (member, 2010–2011)

Department of Computer Science

- Information Technology Committee (1993–2009; chairperson 1994–1996, 1997–2009, 2013–2014)
- Space Committee (member, 2013)
- Industrial Relations Committee (member, 2003–2004)
- Undergraduate Affairs Committee (member, 1997–1999)
- Faculty Recruiting Committee (member, 1996–1997)
- Industrial Affiliates Committee (member, 1993–1994)

Dartmouth College

Department of Computer Science

- Advisor to computer science majors (1992–1993)
- Undergraduate Education Program Committee (member, 1989–1993; chairperson 1992–1993)
- Graduate Admissions Committee (member, 1990–1991)
- Mellon Colloquium Committee (member, 1987–1989; chairperson 1988–1989)

Student Advising and Co-Advising

Ph.D. Dissertations

- Anhad Singh, University of California at Davis (2014)
  DISSERTATION TITLE: "An Iterative Approach to Examining the Effectiveness of Data Sanitization"

- Michael Clifford, University of California at Davis (2013)
  DISSERTATION TITLE: "The Solar Trust Model, Identity, and Anonymity"
- Sean Whalen, University of California at Davis (2010)
  DISSERTATION TITLE: "Security Applications of the ϵ-Machine"
- Sophie Engle, University of California at Davis (2010)
  DISSERTATION TITLE: "A Policy-Based Vulnerability Analysis Framework"
- Bhume Bhumiratana, University of California at Davis (2009)
  DISSERTATION TITLE: "Privacy Aware Micro Data Sanitization"
- S. Terry Brugger, University of California at Davis (2009)
  DISSERTATION TITLE: "The Quantitative Comparison of Computer Networks"
- Jingmin Zhou, University of California at Davis (2008)
  DISSERTATION TITLE: "Alert Reduction for Network Intrusion Detection"
- Sean Peisert, University of California at San Diego (2007)
  DISSERTATION TITLE: "A Model of Forensic Analysis Using Goal-Oriented Logging"
  Unofficial co-chair with Prof. Sidney Karin, Dept. of Computer Science, University of California at San Diego
- Thomas Walcott, University of California at Davis (2004)
  DISSERTATION TITLE: "Malfeasance: A Foundation for Traducement, Libel, Heresy, and Other Traditional Security Policies"
- Andrew Gross, University of California at San Diego (1997)
  DISSERTATION TITLE: "Analyzing Computer Intrusions"
  Co-chair with Prof. Réné Cruz, Dept. of Computer Science, University of California at San Diego
- George Fink, University of California at Davis (1996)
  DISSERTATION TITLE: "Discovering Security and Safety Flaws using Property-Based Testing"

M.S. Theses

- Ibrahim Ahmed, University of California at Davis (2018)
  THESIS TITLE: "A Method for Packet Correlation to Improve Snort Rules"
- Somdutta Bose, University of California at Davis (2017)
  THESIS TITLE: "Network Anonymization and Its Effect on Security Analysis"
- Daniel Chung, University of California at Davis (2015)
  THESIS TITLE: "Distributed Helios—Defending Online Voting"
- Arthur Arlt, University of Heidelberg (2014)
  THESIS TITLE: "Determining Rates of False Positives and Negatives in Fast Flux Botnet Detection"
  Second Supervisor; Chair, Prof. Michael Gertz, Institut für Informatik, Universität Heidelberg
- Bolun Zhao, University of California at Davis (2014)
  THESIS TITLE: "Formalization of Requirements for Online Healthcare Groups"
- Julia Ard, University of California at Davis (2012)
  THESIS TITLE: "Internet Protocol version Six (IPv6) at UC Davis: Traffic Analysis with a Security Perspective"
- William Orvis, University of California at Davis (2009)
  THESIS TITLE: "A Method for Automatically Generating Rules for a Requires-Provides Security Model of a System"
- Nina Gholami, University of California at Davis (2008)
  THESIS TITLE: "Detecting the TOCTOU Vulnerability: A Hybrid Approach"
- Elliot Proebstel, University of California at Davis (2007)
  THESIS TITLE: "Characterizing and Improving Distributed Network-based Intrusion Detection Systems (NIDS): Timestamp Synchronization and Sampled Traffic"
- Damien Howard, University of California at Davis (2007)
  THESIS TITLE: "Developing an Attack Tool Database"
- Lisa Clark, University of California at Davis (2007)
  THESIS TITLE: "Sanitizing Data to Prevent Disclosing Exact Network Topology"

- Patrick Wheeler, University of California at Davis (2006)
  THESIS TITLE: "Techniques for Improving the Performance of Signature-Based Network Intrusion Detection Systems"
- Adam Carlson, University of California at Davis (2006)
  THESIS TITLE: "The Unifying Policy Hierarchy Model"
- Thomas Ristenpart, University of California at Davis (2005)
  THESIS TITLE: "Time Stamp Synchronization of Distributed Sensor Logs: Impossibility Results and Approximation Algorithms"
- Deanna Rogers, University of California at Davis (2004)
  THESIS TITLE: "Using Deception to Enhance Anomaly Detection"
- Vincent Law, University of California at Davis (2003)
  THESIS TITLE: "Vulnerability Database Integration with Intrusion Detection Systems"
- Guillermo Marro, University of California at Davis (2003)
  THESIS TITLE: "Attacks at the Data Link Layer"
- David Peterson, University of California at Davis (2002)
  THESIS TITLE: "A Flexible Containment Mechanism for Executing Untrusted Code"
- Eric Haugh, University of California at Davis (2002)
  THESIS TITLE: "Testing C Programs for Buffer Overflow Vulnerabilities"
- Patrick LeBlanc, University of California at Davis (2002)
  THESIS TITLE: "A Property-Based Static Code Analysis"
- John Hughes, University of California at Davis (2000)
  THESIS TITLE: "Using Conservation of Flow as a Security Mechanism in Network Protocols"
- Peter Mell, University of California at Davis (1998)
  THESIS TITLE: "Automatic Policy Satisfaction and Verification for Intranet Wide Defense Systems using Signature-Based Intrusion Detection and Response Systems"
- Joel Dodson, University of California at Davis (1996)
  THESIS TITLE: "Specification and Classification of Generic Security Flaws for the Tester's Assistant Library"
- George Lin, University of California at Davis (1994)
  THESIS TITLE: "Counting Cleartext Passwords in the Internet"

Courses Taught

University of California at Davis

- ECS 293A, *Research in Computer Science*, graduate class
- ECS 289M, *Introduction to Research in Computer and Information Security*, graduate class
- ECS 289M, *Policy and Vulnerabilities Analysis*, graduate class
- ECS 253, *Cryptography and Data Security*, graduate class
- ECS 251/EEC 282, *Formal Models of Operating Systems*, graduate class
- ECS 235B, *Foundations of Computer and Information Security*, graduate class
- ECS 235A, *Computer and Information Security*, graduate class
- ECS 235, *Computer and Information Security*, graduate class
- ECS 155, *Computer Security for Non-Majors*, undergraduate class
- ECS 153, *Computer Security*, undergraduate class
- ECS 150, *Operating Systems*, undergraduate class
- ECS 50, *Introduction to Machine-Dependent Programming*, undergraduate class
- ECS 40, *Introduction to Software Development*, undergraduate class
- ECS 36A, *Introduction to Programming and Problem Solving*, undergraduate class
- ECS 30, *Introduction to Programming and Problem Solving*, undergraduate class
- ECS 15, *Introduction to Computers*, undergraduate class
- ECS 10, *Basic Concepts of Computing*, undergraduate class

- FRS 1, *E-Voting and Elections*, freshman seminar
- MHI 289I, *Programming for Health Informatics*, graduate class

Dartmouth College

- COSC 108, *Programming Languages and Systems II*, undergraduate class
- COSC 88/188, *Cryptography and Data Security*, undergraduate/graduate class
- COSC 88/188, *Computer System Security Seminar*, undergraduate/graduate class
- COSC 88/188, *Computer System Security*, undergraduate/graduate class
- COSC 85/185, *Mathematical Cryptography*, undergraduate/graduate class (co-taught with Prof. Jeff Shallitt)
- COSC 58, *Operating Systems*, undergraduate class
- COSC 37, *Computer Architecture*, undergraduate class
- COSC 23, *Software Engineering*, undergraduate class

Tutorials

1. *"Secure" Programming*: a week-long class presented to the Cybersecurity Education & Research Center, IIIT-Delhi and CISO Academy, New Delhi, India (remotely from Davis, CA) (Dec. 2014)
2. *"Secure" Programming*: presented at the Seventh International ISC Conference on Information Security and Cryptology 2010, held at Tehran, Iran, sponsored by the Iranian Society of Cryptology (Sep. 2010).
3. *"Secure" Programming*: presented at the Tenth National Computer and Information Security Conference, held at Bogata, Columbia, sponsored by the Colombian Society for Systems and Engineering (June 2010).
4. *A Short Course in Computer Security*: presented at the Summer Session for Korean Faculty, held at Seoul, South Korea, sponsored by the Advanced Institute of Information Technology (Aug. 2007).
5. *Basic UNIX Security* and *Advanced UNIX Security*: presented at the University of California Security Symposium, held at Davis, CA, sponsored by UC Davis Information and Educational Technology (June 2003).
6. *UNIX Security: Threats and Solutions*: presented at LISA, sponsored by the USENIX Association (Nov. 2002).
7. *UNIX Security: Threats and Solutions*: presented at the USENIX Security Symposium, sponsored by the USENIX Association (Aug. 2002).
8. *UNIX Security: Threats and Solutions*: presented at USENIX, sponsored by the USENIX Association (June 2002).
9. *How Attackers Break Programs, and How to Write Programs More Securely*: presented at SANS, sponsored by SANS (Apr. 2002).
10. *UNIX Security: Threats and Solutions*: presented at LISA, sponsored by the USENIX Association (Dec. 2001).
11. *Basic UNIX Protection*, *UNIX Security Tools*, and *How Attackers Break Programs, and How to Write Programs More Securely*: presented at SANS, sponsored by SANS (May 2001).
12. *Basic UNIX Protection*, *UNIX Security Tools*, and *How Attackers Break Programs, and How to Write Programs More Securely*: presented at Network Security, sponsored by SANS (Nov. 2000).
13. *How Attackers Break Programs, and How to Write Programs More Securely*: presented in conjunction with Infidel Corp. (Aug. 2000).
14. *UNIX Security Tools: Use and Comparison*: presented at GIAC, sponsored by SANS (July 2000).
15. *UNIX Security Tools: Use and Comparison*: presented at USENIX, sponsored by the USENIX Association (June 2000).
16. *Basic UNIX Protection*, *UNIX Security Tools*, and *How Attackers Break Programs, and How to Write Programs More Securely*: presented at SANS (May 2000).
17. *How Attackers Break Programs, and How to Write Programs More Securely*: presented in conjunction with ARCA Corporation (Mar. 2000).

18. *Basic UNIX Protection*, *UNIX Security Tools*, and *How Attackers Break Programs, and How to Write Programs More Securely*: presented at SANS Security, sponsored by SANS (Dec. 1999).
19. *UNIX Security Tools: Use and Comparison*: presented at LISA, sponsored by the USENIX Association (Dec. 1999).
20. *Basic UNIX Protection*, *UNIX Security Tools*, and *How Attackers Break Programs, and How to Write Programs More Securely*: presented at Network Security, sponsored by SANS (Nov. 1999).
21. *How Attackers Break Programs, and How to Write Programs More Securely*: presented at USENIX Security Symposium, sponsored by the USENIX Association (Aug. 1999).
22. *UNIX Security Tools*: presented at USENIX, sponsored by the USENIX Association (June 1999).
23. *Basic UNIX Protection*, *UNIX Security Tools*, and *How Attackers Break Programs, and How to Write Programs More Securely*: presented at SANS (May1999).
24. *Basic UNIX Protection*, *UNIX Security Tools*, and *How Attackers Break Programs, and How to Write Programs More Securely*: presented at SANS Intrusion Detection, sponsored by SANS (Feb. 1999).
25. *UNIX Security Tools*: presented at USENIX, sponsored by the USENIX Association (Dec. 1998).
26. *UNIX Security Tools*: presented at LISA, sponsored by the USENIX Association (Dec. 1998).
27. *UNIX Security: Threats and Solutions*, *Tools for UNIX Security*, *UNIX Security: Threats and Solutions from the Network*, and *UNIX Security: Security in Programming*: presented at Network Security, sponsored by SANS (Nov. 1998).
28. *UNIX Security: Threats and Solutions*, *Tools for UNIX Security*, *UNIX Security: Threats and Solutions from the Network*, and *UNIX Security: Security in Programming*: presented at SANS Australia, sponsored by SANS (June 1998).
29. *UNIX Security: Threats and Solutions*, *Tools for UNIX Security*, *UNIX Security: Threats and Solutions from the Network*, and *UNIX Security: Security in Programming*: presented at SANS, sponsored by SANS (May 1998).
30. *UNIX Security: Threats and Solutions*, *Wargames: Network Security*, and *UNIX Security Tools*: presented at Network Security, sponsored by SANS (Nov. 1997).
31. *UNIX Security: Threats and Solutions*, *Wargames: Network Security*, and *UNIX Security Tools*: presented at SANS, sponsored by SANS (May 1997).
32. *UNIX Security: Threats and Solutions* and *UNIX Security: Threats and Solutions from the Network*: presented in conjunction with Sequent Users' Group (Feb. 1997).
33. *UNIX Security Tools*: presented at USENIX, sponsored by the USENIX Association (Jan. 1997).
34. *Advanced Topics in UNIX Security*: presented at Sun Users' Group (Dec. 1996).
35. *UNIX Vulnerabilities and Security Toolkit*: presented in conjunction with Securities Industry Automation Corp. (Dec. 1996).
36. *UNIX Security: Threats and Solutions*, *Tools for UNIX Security*, *UNIX Security: Threats and Solutions from the Network*, and *UNIX Security: Security in Programming*: presented at Network Security, sponsored by SANS (May 1996).
37. *UNIX Security: Security in Programming*: presented in conjunction with Los Alamos National Laboratories (Aug. 1996).
38. *UNIX Security Tools*: presented at USENIX, sponsored by the USENIX Association (July 1996).
39. *Advanced Topics in UNIX Security*: presented at UNIFORUM (May 1996).
40. *UNIX Security: Threats and Solutions*, *Tools for UNIX Security*, *UNIX Security: Threats and Solutions from the Network*, and *UNIX Security: Security in Programming*: presented at SANS, sponsored by SANS (May 1996).
41. *Advanced Topics in UNIX Security*: presented at SHARE (Mar. 1996).
42. *Advanced Topics in UNIX Security* and *UNIX Security Tools*: presented at USENIX, sponsored by the USENIX Association (Jan. 1996).
43. *UNIX System Security* and *UNIX Security: Threats and Solutions from the Network*: presented at LISA, sponsored by the USENIX Association (Dec. 1995).
44. *UNIX Security: Threats and Solutions* and *UNIX Security Tools: Use and Comparison*: presented at Network Security, sponsored by SANS (Nov. 1995).

45. *UNIX Security: Threats and Solutions*, *Tools for UNIX Security*, *UNIX Security: Threats and Solutions from the Network*, and *UNIX Security: Security in Programming*: presented at SANS, sponsored by SANS (May 1995).
46. *Advanced Topics in UNIX Security*: presented at USENIX, sponsored by the USENIX Association (Dec. 1994).
47. *Basic UNIX Security*, *Advanced UNIX Security*, and *Tools for UNIX Security*: presented at FedUNIX (Dec. 1994).
48. *Advanced Topics in UNIX Security*: presented at USENIX, sponsored by the USENIX Association (June 1994).
49. *Basic UNIX Security*, *Advanced UNIX Security*, and *Tools for UNIX Security*: presented at FedUNIX (June 1994).
50. *UNIX Security: Threats and Solutions*, *UNIX Security: Threats and Solutions from the Network*, and *Writing Privileged Programs*: presented at SANS-III (Apr. 1994).
51. *Topics in UNIX Security*: presented at USENIX, sponsored by the USENIX Association (Jan. 1994).
52. *Introduction to UNIX Security*, *Advanced UNIX Security*, and *Tools for UNIX Security*: presented at FedUNIX (Dec. 1993).
53. *Advanced UNIX Security*: presented at CERT Workshop on Computer Security Incident Handling (Aug. 1993).
54. *Advanced UNIX Security*: presented at Sun Users' Group (June 1993).
55. *Introduction to UNIX Security* and *Advanced UNIX Security*: presented at SANS-II (Apr. 1993).
56. *Advanced UNIX Security*: presented at USENIX, sponsored by the USENIX Association (Jan. 1993).
57. *Introduction to UNIX Security* and *Advanced UNIX Security*: presented at FedUNIX (Dec. 1992).
58. *Advanced UNIX Security*: presented at Sun Users' Group (Dec. 1992).
59. *Introduction to UNIX Security* and *Advanced UNIX Security*: presented at World Conference on System Administration and Security (July 1992).
60. *Advanced UNIX Security*: presented at USENIX, sponsored by the USENIX Association (June 1992).
61. *Introduction to UNIX Security*: presented at USENIX, sponsored by the USENIX Association (Jan. 1992).
62. *Introduction to UNIX Security*, *Advanced UNIX Security*, and *Computer Viruses, Trojan Horses, and Logic Bombs*: presented at FedUNIX (Dec. 1991).
63. *Introduction to UNIX Security*: presented at EurOpen (Sep. 1991).
64. *Introduction to UNIX Security*: presented at USENIX, sponsored by the USENIX Association (June 1991).
65. *Introduction to UNIX Security*, *Introduction to Network Security*, and *Computer Viruses, Trojan Horses, and Logic Bombs*: presented at FedSecurity (June 1991).
66. *Introduction to UNIX Security*: presented at FedUNIX (Dec. 1990).

Honors

- Global Cybersecurity Hall of Fame (2023)
- Best Paper in Position and Curriculum Initiatives track (with M. Zheng, N. Swearingen. S. Mills, C. Gyurek, and X. Zou); see [21] (2023)
- ACM Distinguished Member (2022)
  "For outstanding scientific contributions to computing"
- Information Systems Security Association Hall of Fame (2022)
- Taylor L. Booth Education Award, IEEE (2022)
  "For contributions as an educator, author, and technical leader in cybersecurity education."
- Outstanding Teacher of the Year, College of Engineering, University of California at Davis (2015)
- Founder's Award, Colloquium for Information Systems Security (2009)
- Academia Award, Colloquium for Information Systems Security (2006)
- Best Paper Award (with L. Todd Heberlein), National Computer Security Conference; see [224] (1996)
- Regents' Scholar, University of California at Berkeley (1973–1976)

Personal

Programming Languages

APL, ASPOL, BASIC, C, C++, FORTRAN, LISP, PASCAL, Python, SNOBOL, Scheme; Assembly languages for LSI-11, PDP-11, PDP-10, DECSystem-2050, VAX-11, MC680x0, MIPS R4000; various domain-specific languages (*awk*, *sed*, *sh*, *etc.*); various markup languages and meta-languages (SGML, HTML, XML, *etc.*)

Personal Interests

Philately (especially US and UN stamps), history (particularly classical history and history of England in the reign of Henry VIII), foreign languages, literature, games