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Education

Ph.D.	Computer Science, University of Texas at Austin, 1988.
M.A.	Computer Science, University of Texas at Austin, 1980.
M.A.	Philosophy, University of Texas at Austin, 1976.
B.A.	Philosophy, University of Texas at Austin, *with high honors*, 1976.
B.S.	Mathematics, University of Texas at Austin, *with honors*, 1975.

Professional Experience

2004–present:	Research Scientist and Lecturer, The University of Texas at Austin.
2001–2004:	Adjunct Associate Professor, The University of Texas at Austin.
2000–2001:	Instructor, Austin Community College.
1997–1999:	Research Scientist, EDS CIO Services, Austin, Texas.
1987–1997:	Senior Computing Research Scientist, Computational Logic, Inc., Austin, Texas.
1984–1987:	Research Scientist and Consultant, Honeywell Secure Computing Tech. Center, St. Anthony, MN..
1978–1987:	Research Engineering/Scientist Assistant, Systems Analyst, The University of Texas at Austin.
1980–1986:	Instructor, Southwest Texas State University.
1978–1980:	Instructor, Austin Community College.

Title of Dissertation

A Verified Code Generator for a Subset of Gypsy, UT Austin, 1988.

Dissertation Advisors

Robert S. Boyer and J Strother Moore.

Current Research Interests

Formal methods, computer security.

Professional Societies

Association for Computing Machinery (ACM), Institute of Electrical and Electronics Engineers (IEEE).

Grants

Previous Funding

1. (as PI) Raytheon Corporation, "Master Agreement for the Center for Information Assurance and Security," $50,000, 2010–2011.

Current Funding

1. (as Co-PI) Progeny Systems Corporation, "Information Assurance for Team Sub" (with Fred Chang), $1,629,923, 2009–2014.
2. (as Co-PI) National Science Foundation, "Toward a Verified Virtual Machine Monitor" (with Mike Dahlin), $499,920, 2009–2012.

Pending Funding

None.

Publications

Papers in Press or Preparation

1. Michael McCoyd, Robert Bellarmine Krug, Deepak Goel, Mike Dahlin and William Young. "Building a Hypervisor on a Verified Protection Layer," accepted for presentation at the 46th Hawaii International Conference on Systems Science, January, 2013.

Surveys, Editorials, Reviews, Notes

2. William D. Young. "Computational Logic 1994 Research Review," *Association for Automated Reasoning Newsletter*, No. 26, June 1994, pp. 10–12.
3. Dolly J. Young and William D. Young. "The Role of the Family in 'There Are No Madmen Here' by Gina Valdes," *Revista Chicano-Riquena*, vol. XIII, no. 1 (Spring, 1985), pp. 97–99.
4. William D. Young, W. Earl Boebert, and Richard Y. Kain. "The Extended Access Matrix Model of Computer Security," *Software Engineering Notes*, (August, 1985), vol. 10, no. 4, pp. 119–125.
5. Anand R. Tripathi, William D. Young, Donald I. Good, James C. Browne. "HAL/S/V: A Verifiable Subset of HAL/S," *Sigplan Notices* (March, 1981), pp. 102–113.
6. William D. Young and Donald I. Good. "Steelman and the Verifiability of (Preliminary) Ada," *Sigplan Notices* (February, 1981), pp. 113–119.

Chapters in Books

7. William D. Young. "Modeling and Verification of a Simple Real-Time Gate Controller," in Michael Hinchey and Jonathan Bowen, editors, *Applications of Formal Methods*, Prentice-Hall Series in Computer Science, 1995, pp. 181–202.

8. William D. Young. "System Verification and the CLI Stack," Jonathan Peter Bowen, editor, *Towards Verified Systems*, Elsevier Science Publishers Series on Real-Time Safety Critical Systems: Amsterdam, 1993, pp. 225–248.

9. William R. Bevier and William D. Young. "The Design and Proof of Correctness of a Fault-Tolerant Circuit," in *Dependable Computing for Critical Applications*, J.F. Meyer and R.D. Schlichting, editors, Springer-Verlag, Vienna, 1991, pp. 243–260.

Journal Articles

10. William D. Young. "Comparing Verification Systems: Interactive Consistency in ACL2," *IEEE Transactions on Software Engineering*, Vol. 23, no. 4, (April, 1997), pp. 214–223 (expanded version of [27]).

11. William R. Bevier and William D. Young. " A State-Based Approach to Noninterference," *Journal of Computer Security*, Vol. 3, No. 1, 1994/95, pp. 55–70 (expanded version of [52]).

12. William R. Bevier and William D. Young. "Machine Checked Proofs of the Design of a Fault-Tolerant Circuit," *Formal Aspects of Computing* 4, pp. 755–775, 1992.

13. William R. Bevier, Warren A. Hunt, Jr., J S. Moore, and William D. Young. "An Approach to Systems Verification," *Journal of Automated Reasoning* , Vol. 5, Number 4, (December, 1989), pp. 411–428.

14. William D. Young. "A Mechanically Verified Code Generator," *Journal of Automated Reasoning*, Vol. 5, Number 4, (December, 1989), pp. 493–518.

15. William D. Young, W. Earl Boebert, and Richard Y. Kain. "Proving a Computer System Secure," *The Scientific Honeyweller* (July, 1985), vol. 6, no. 2, pp. 18–27. Reprinted in *Tutorial: Computer and Network Security*, eds. Marshall D. Abrams and Harold J. Podell, IEEE Computer Society Press, Washington, D.C., October, 1986. Reprinted in Rein Turn (editor), *Advances in Computer System Security, Volume III*, Artech House, Inc., 1988.

16. W. Earl Boebert, Richard Y. Kain, and William D. Young. "Secure Computing: The Secure Ada Target Approach," *The Scientific Honeyweller* (July, 1985), vol. 6, no. 2, pp. 1–17. Reprinted in *Tutorial: Computer and Network Security*, eds. Marshall D. Abrams and Harold J. Podell, IEEE Computer Society Press, Washington, D.C., October, 1986. Reprinted in Rein Turn (editor), *Advances in Computer System Security, Volume III*, Artech House, Inc., 1988.

17. J. Thomas Haigh, Richard A. Kemmerer, John McHugh and William D. Young. "Experience using Two Covert Channel Analysis Techniques on a Real System Design," *IEEE Transactions on Software Engineering*, January, 1987, pp. 157–168 (expanded version of [38]).

18. J. Thomas Haigh and William D. Young. "Extending the Non-Interference Version of MLS for SAT," *IEEE Transactions on Software Engineering*, January, 1987, pp. 141–150 (expanded version of [37]).

19. Dolly J. Young and William D. Young. "The New Journalism in Mexico: Two Women Writers," *Chasqui Revista de Literatura Latinoamericana* 12:2, Febrero/Mayo, 1983, pp. 72–80.

20. Anand R. Tripathi, William D. Young, Donald I. Good, James C. Browne. "Design of a Verifiable Subset for HAL/S," *Journal of Guidance and Control* (January, 1981), pp. 86–87.

Articles in Conference Proceedings

21. William Young. "Developing a Blended Computer Security Course," 2012 Colloquium on Information Systems Security Education (CISSE), June 2012 (electronic proceedings).

22. B.C. Baldwin, W.D. Young, S.M.B. O'Hare, R.C. Johnson, A.M. Lawyer, J.N. Gentle, A. White, J.A. Duncanson, "Using Simulation in Medical Communications Training," 2011 International Conference on Modelling, Simulation, and Identification (MSI 2011), 2011 (electronic proceedings).

23. Ryan Johnson, William Young, Brian Baldwin, Sheilagh OHare, Aubrey White, Aaron Lawyer, John Gentle and John Duncanson. "SMDS: Simulation and Stimulation of Army Medical Business Systems," SpringSim'11 Conference of the Society for Modeling and Simulation International, April, 2011 (electronic proceedings).

24. Warren A. Hunt, Jr., Robert B. Krug, Sandip Ray, and William D. Young. "Mechanized Information Flow Analysis through Inductive Assertions," Proceedings of Formal Methods in Computer Aided Design (FMCAD 2008), Portland, OR, November, 2008 (electronic proceedings).

25. William D. Young. "Introducing Abstractions Via Rewriting," in D. Borrione and W. Paul, editors, *Proceedings of the 13th Advanced Research Working Conference on Correct Hardware Design and Verification Methods* (CHARME '05), Lecture Notes in Computer Science, Volume 3725, Springer Verlag, 2005, pp. 402–405.

26. William D. Young and William R. Bevier. "Mathematical Modeling and Analysis of an External Memory Manager," in *FME'97: Industrial Applications and Strengthened Foundations of Formal Methods*, Springer-Verlag Lecture Notes in Computer Science 1313, 1997, pp. 237–257.

27. William D. Young. "Comparing Verification Systems: Interactive Consistency in ACL2," *Proceedings of the Eleventh Annual Conference on Computer Assurance*, 1996, pp. 35–45.

28. Bishop C. Brock, Warren A. Hunt, Jr., and William D. Young. "Introduction to a Formally Defined Hardware Description Language," in *Proceedings of the International Conference on Theorem Provers in Circuit Design: Theory, Practice and Experience*, North-Holland: Amsterdam, 1992, pp. 3–36.

29. Donald I. Good and William D. Young. "Mathematical Methods for Digital Systems Development," *VDM'91 Formal Software Development Methods*, S. Prehn, W.J. Toetenel, editors, Springer-Verlag Lecture Notes in Computer Science 552, 1991, pp. 406–430.

30. Warren A. Hunt, Jr. and William D. Young. "Maintaining Abstractions with Verification," *Proceedings of the Fifth Annual Conference on Computer Assurance*, June 1990, pp. 117–125.

31. William D. Young. "Comparing Specification Paradigms: Gypsy and Z," *Proceedings of the 12th National Computer Security Conference*, Baltimore, MA, 1989, pp. 83–97.

32. William D. Young. "Formal Methods versus Software Engineering: Is There a Conflict?" *Proceedings of the Fourth Testing, Analysis, and Verification Symposium*, Victoria, British Columbia, October, 1991, pp. 188–189.

33. William D. Young. "Verified Compilation in Micro-Gypsy," *Proceedings of the Software Testing, Analysis and Verification Symposium*, Key West, Florida, December, 1989, pp. 20–26.

34. Matthew J. Kaufmann and William D. Young. "Comparing Specification Paradigms for Secure Systems: Gypsy and the Boyer-Moore Logic," *Proceedings of the 10th National Computer Security Conference*, 1987, pp. 122–128.

35. William D. Young and John McHugh. "Coding for a Believable Specification to Implementation Mapping," *Proc. IEEE Symposium on Security and Privacy,* April, 1987, pp. 140–149

36. William R. Bevier, Warren A. Hunt, Jr., and William D. Young. "Toward Verified Execution Environments," *Proc. IEEE Symposium on Security and Privacy*, April, 1987, pp. 106–115. Reprinted in Rein Turn (editor), *Advances in Computer System Security, Volume III*, Artech House, Inc., 1988.

37. J. Thomas Haigh and William D. Young. "Extending the Non-Interference Version of MLS for SAT," *Proc. IEEE Symposium on Security and Privacy*, April, 1986, pp. 232–239. Received best paper award at the Symposium. Reprinted in Rein Turn (editor), *Advances in Computer System Security, Volume III*, Artech House, Inc., 1988.

38. J. Thomas Haigh, Richard A. Kemmerer, John McHugh and William D. Young. "Experience using Two Covert Channel Analysis Techniques on a Real System Design," *Proc. IEEE Symposium on Security and Privacy*, April, 1986, pp. 14–24.

39. William D. Young, Paul A. Telega, W. Earl Boebert, and Richard Y. Kain. "A Verified Labeler for the Secure Ada Target," , *Proceedings of the 9th National Computer Security Conference*, September, 1986, pp. 55–61.

40. W. Earl Boebert, William D. Young, Richard Y. Kain, and Scott A. Hansohn. "Secure Ada Target: Issues, System Design, and Verification," *Proc. IEEE Symposium on Security and Privacy*, March, 1985, pp. 176–183.

41. William D. Young and Donald I. Good. "Program Verification and Embedded Aerospace Software," *Proceedings of the AIAA Computers in Aerospace Conference III*, October, 1981, pp. 246–250.

42. William D. Young and Donald I. Good. "Generics and Verification in ADA," *Proceedings of the ACM Symposium on the ADA Programming Language*, November, 1980, pp. 123–127.

43. Anand R. Tripathi, William D. Young, Donald I. Good. "A Preliminary Evaluation of Verifiability in ADA," *Proceedings of the ACM National Conference*, October, 1980, pp. 218–224.

44. William D. Young, Anand R. Tripathi, Donald I. Good, and James C. Browne. "Evaluation of Verifiability in HAL/S," *Proceedings of the AIAA Computers in Aerospace Conference II*, October, 1979, pp. 359–366.

Articles in Workshop Proceedings

45. Mike Dahlin, Ryan Johnson, Robert B. Krug, Michael McCoyd, William Young, "Toward the Verification of a Simple Hypervisor," Tenth International Workshop on the ACL2 Theorem Prover and its Applications, November, 2011, pp. 28–46.

46. John Cowles, David Greve, and William D. Young. "The While Language Challenge: First Progress," Proceedings of the Seventh International Workshop on the ACL2 Theorem Prover and its Applications, November, 2007.

47. David S. Hardin, Eric W. Smith, and William D. Young. "A Robust Machine Code Proof Framework for Highly Secure Applications," Proceedings of the Sixth International Workshop on the ACL2 Theorem Prover and its Applications, August, 2006, pp. 11–20.

48. William D. Young. "Introducing Abstractions via Rewriting" (abstract only), 2005 South Central Information Security Symposium, University of Texas at Austin, April, 2005.

49. William D. Young. "Reverse Abstraction in ACL2," Proceedings of the Fifth International Workshop on the ACL2 Theorem Prover and its Applications, November, 2004, (electronic proceedings).

50. William D. Young. "Using ACL2 to Model Noninterference Security Policies" (abstract only) 2004 South Central Information Security Symposium, Rice University, April, 2004.
51. William R. Bevier, Richard M. Cohen, and William D. Young. "Connection Policies and Controlled Interference," *Proceedings of the Eighth IEEE Computer Security Foundations Workshop*, pp. 167–76, June, 1995.
52. William R. Bevier and William D. Young. " A State-Based Approach to Noninterference," *Proceedings of the Computer Security Foundations Workshop VII*, IEEE Computer Society Press, pp. 11–21, June, 1994.
53. Miren Carranza and William D. Young. "Verifying a Fuzzy Controller," *Proceedings of the Second International Workshop on Industrial Fuzzy Control and Intelligent Systems*, Texas A&M University, December, 1992, pp. 194–203.
54. William D. Young. "Verified Program Support Environments," *Proceedings of the International Workshop on Formal Methods in Software Development*, Napa, California, May, 1990, pp. 147–149.

Technical Reports

55. William D. Young. "Verifying the Interactive Convergence Clock Synchronization Algorithm Using the Boyer-Moore Theorem Prover," NASA Contractor Report 189649, April 1992.
56. Robert L. Akers, Bret Hartman, Lawrence Smith, Millard Taylor, and William D. Young. "Gypsy Verification Environment User's Manual," CLI technical report 61, Computational Logic, Inc., August, 1990.

Awards and Honors

Elected member of the following honor societies: Phi Beta Kappa, Phi Kappa Phi, Phi Eta Sigma, Pi Mu Epsilon.

Service

Departmental

- UTCS Elements Program committee, 2009–2012.
- UTCS Faculty Evaluation committee, 2011–2012.
- Faculty affiliate: Center for Information Assurance and Security, 2007–present.
- Faculty affiliate: Center for Identity, 2010–2012.
- Faculty advisor for UT Student Chapter of the ACM, 2005–2006.

Community

- Member of UT ARiSE (Advanced Research in Software Engineering) team performing IV&V evaluation of Office of the Texas Attorney General Child Support Division's development of new Texas Child Support Enforcement System, 2012.
- Member Board of Directors: Together for Manor (community service non-profit), 2009–present.
- Member Board of Directors: Austin Area Interreligious Ministries (community service non-profit), 2003–2009.

College/University

- Faculty Fellow, Simkins Dormitory, 2006–07.
- Founding board member and webmaster, Pride and Equity Faculty Staff Association. 2005–2007.
- Faculty advisor, UT Austin Student Chapter of oSTEM (Out in Science, Technology, Engineering and Mathematics), 2012

Lectures

- Invited lecture: "Cyber Security for Utilities," Cyber Security for Utilities Symposium (March 29, 2011) Austin, Texas.
- Invited lecture: "Cyber Warfare," Prof. Ethan Kapstein's PA393L class, LBJ School of Public Affairs, March 21, 2011.
- Tutorial presenter: "Introduction to Computer Security," Texas Symposium on Software Engineering, August 27–28, 2004.
- Tutorial co-presenter (with J Moore): "ACL2: A Computational Logic for Applicative Common Lisp," Eleventh Annual Conference on Computer Assurance, Gaithersburg, Maryland, June, 1996.
- Tutorial presenter: "ACL2: An Industrial Strength Version of Nqthm," Third International Symposium of Formal Methods Europe, Oxford, March, 1996.
- Tutorial presenter: "The Boyer-Moore Theorem Prover," First International Symposium of Formal Methods Europe, Odense, Denmark, April, 1993.
- Invited lecture: "Introduction to a Formally Defined Hardware Description Language," Motorola Workshop on Computer-Aided Verification of Digital Circuits, Austin, Texas, October 30, 1992.
- Invited lecture: "Hardware Verification using the Boyer-Moore Theorem Prover," Advanced Course on Formal Techniques in VLSI Design, L'Aquila, Italy, July 6-10, 1992.
- Invited lecture: "The CLI Stack," Mount Allison University, Moncton, New Brunswick, Canada, November 8, 1991.
- Tutorial co-presenter (with Don Good): "The CLI Stack," VDM'91, Noordvijkerhout, The Netherlands, October, 1991.
- Invited lecture: "Gypsy and the GVE," International Workshop on Formal Methods in Software Development, Napa, California, May, 1990.

Professional Service

Journal Editing and Editorial Boards

- Member editorial board (1995–2001), *Journal of Computer Security.*

Conference Chair Positions

None.

Major Conference Program Committees

- Member program committee for the Colloquium for Information Systems Security Education (2011 and 2012).

Workshop and Specialized Conference Program Committees

- Local arrangements chair, 2005 South Central Information Security Symposium, Austin, Texas, April, 2005.
- Member program committee and publications chair, IEEE Computer Security Foundations Workshops (1996 and 1997).
- Member program committee, Symposium on Software Analysis, Testing, and Verification, 1991.
- Chair of panel on formal methods, Symposium on Software Analysis, Testing, and Verification, 1991.
- Chair of panel "Toward Foundations of Security," Computer Security Foundations Workshop II, Franconia, N.H., June, 1989.

Journal, Conference and Book Reviewing

Reviewer for numerous technical publications including *Formal Aspects of Computing*, *IEEE Transactions on Software Engineering*, *Lisp and Symbolic Computation*, and *Distributed Computing*, for numerous conferences, and for various organizations such as the National Science Foundation.