

Robert H. Sloan

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Education

Massachusetts Institute of Technology

Ph.D. in Computer Science, June, 1989.

Thesis: Computational Learning Theory: New Models and Algorithms.

Ph.D. adviser: Prof. Ronald Rivest.

S.M. in Electrical Engineering and Computer Science, September 1986.

S.M. thesis Adviser: Prof. Silvio Micali; thesis area: cryptography.

Yale Law School

Classes in law, 1983–1984.

Yale College

B.S. in mathematics, May, 1983. Graduated *summa cum laude* with honors in mathematics; Phi Beta Kappa.

Work

Experience

University of Illinois at Chicago

Professor, Department of Computer Science, August 2006–present.

Computer Science Department Head, August 2009–present.

Interim Department Head, 2008–2009; Acting Department Head, 2007–2008.

Director of Graduate Studies, 2004–2007.

Associate Professor, Department of Computer Science (combined EECS Department until July 2001), August 1996–August 2006.

Director of Undergraduate Studies, 1998–2000.

Assistant Professor, Department of Electrical Engineering and Computer Science, 1990–1996.

National Science Foundation

Program Director for Theory of Computing Program.

Division of Computer-Communications Research (now called Computer-Communications Foundations) in CISE Directorate, Jan. 2001–Aug. 2002.

Managed \$8.1 million base program budget as well as \$11 million of Information Technology Research (ITR) grants.

Harvard University

Postdoctoral fellow under Prof. Leslie Valiant, Computer Science, 1989–1990.

Publications

Books

- [1] R. Warner and R. H. Sloan. *Why Don't We Defend Better? Data Breaches, Risk Management, and Public Policy*. Book under contract, currently in preparation. CRC Press.
- [2] R. H. Sloan and R. Warner. *Unauthorized Access: The Crisis in Online Privacy and Security*. CRC Press, 2013.
- [3] R. Shackelford, J. H. Cross, G. Davies, J. Impagliazzo, R. Kamali, R. LeBlanc, B. Lunt, A. McGettrick, R. H. Sloan, and H. Topi. *Computing Curricula 2005: The Overview Report*. IEEE Computer Society Press, 2005.
- [4] J. Kivinen and R. H. Sloan, eds. *Computational Learning Theory: Proceedings of COLT 2002*. Springer, 2002.
- [5] E. Roberts, C. Chang, J. H. Cross, G. Engle, R. Shackelford, R. H. Sloan, R. Austing, D. Carver, C. F. Cover, G. Davies, R. Eckhouse, W. King, F. Lau, A. McGettrick, G. M. Schneider, P. Srimani, and U. Wolz. *Computing Curricula 2001*. IEEE Computer Society Press, 2001.

Journal Articles

- [6] R. Warner and R. H. Sloan. “The Ethics of the Algorithm: Autonomous Systems and the Wrapper of Human Control”. *Cumberland Law Review* (2018). Accepted for publication. Available at SSRN: <https://ssrn.com/abstract=3004016>.
- [7] S. Ohlsson, R. H. Sloan, G. Turán, and A. Urasky. “Measuring an artificial intelligence system’s performance on a Verbal IQ test for young children”. *Journal of Experimental & Theoretical Artificial Intelligence* 29.4 (2017), pp. 679–693.
- [8] R. H. Sloan, D. Stasi, and G. Turán. “Hydras: Directed hypergraphs and Horn formulas”. *Theoretical Computer Science* 658 (2017), pp. 417–428.
- [9] R. H. Sloan and R. Warner. “Relational Privacy: Surveillance, Common Knowledge, and Coordination”. *U. St. Thomas JL & Pub. Pol’y* 11 (2017), pp. 1–24. Available at: <https://ir.stthomas.edu/cgi/viewcontent.cgi?article=1115&context=ustjlp>.
- [10] R. H. Sloan and R. Warner. ““I’ll See”: How Surveillance Undermines Privacy by Eroding Trust”. *Santa Clara High Tech. L.J.* 32 (2016), pp. 221–267. Available at: <http://digitalcommons.law.scu.edu/cgi/viewcontent.cgi?article=1614&context=chtlj>.
- [11] R. H. Sloan and R. Warner. “The Self, the Stasi, the NSA: Privacy, Knowledge, and Complicity in the Surveillance State”. *Minnesota Journal of Law, Science and Technology* 17 (2016). Also on SSRN. Available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2577308.
- [12] J. Goldsmith, N. Mattei, and R. H. Sloan. “Who is Watching You Eat?” *AI Matters* 1 (2015). Preliminary version appeared in 8th Multidisciplinary Workshop on Advances in Preference Handling (MPREF), 2014., pp. 13–22. Available at: <http://dl.acm.org/citation.cfm?doid=2757001.2757004>.
- [13] R. H. Sloan and R. Warner. “The Harm in Merely Knowing: Privacy, Surveillance, and the Self”. *Journal of Internet Law* 19 (2015).

- [14] R. H. Sloan and R. Warner. “Beyond notice and Choice: Privacy, Norms, and Consent”. *Suffolk University Journal of High Technology Law* 14 (2014), pp. 370–412.
- [15] R. Warner and R. H. Sloan. “Self, Privacy, and Power: Is It All Over?” *Tulane Journal of Technology & Intellectual Property* 17 (2014), pp. 61–108.
- [16] D. Diochnos, R. H. Sloan, and G. Turán. “On multiple-instance learning of halfspaces”. *Information Processing Letters* 112.23 (2012), pp. 933–936.
- [17] R. H. Sloan, D. Stasi, and G. Turán. “Random Horn Formulas and Propagation Connectivity for Directed Hypergraphs”. *Discrete Mathematics and Theoretical Computer Science* 14 (2012), pp. 29–36.
- [18] R. Warner and R. Sloan. “Vulnerable Software: Product-Risk Norms and the Problem of Unauthorized Access”. *University of Illinois Journal of Technology, Law & Policy* 2012.1 (2012), pp. 101–150.
- [19] R. Warner and R. H. Sloan. “Behavioral Advertising: From One-Sided Chicken to Informational Norms”. *Vanderbilt Journal of Entertainment & Technology Law* 15 (2012), pp. 49–83.
- [20] M. Langlois and R. H. Sloan. “Reinforcement learning via approximation of the Q-function”. *Journal of Experimental & Theoretical Artificial Intelligence* 22.3 (2010), pp. 219–235.
- [21] M. Langlois, R. H. Sloan, and G. Turán. “Horn Upper Bounds and Renaming”. *JSAT: Journal on Satisfiability, Boolean Modeling and Computation* 7 (2009), pp. 1–15.
- [22] R. H. Sloan, B. Szörényi, and G. Turán. “On k -term DNF with the maximal number of prime implicants”. *SIAM J. Discret. Math.* 21.4 (2008), pp. 987–998.
- [23] R. H. Sloan, B. Szörényi, and G. Turán. “Projective DNF formulae and their revision”. *Discrete Appl. Math.* 156.4 (2008), pp. 530–544.
- [24] P. Berman, B. DasGupta, D. Mubayi, R. Sloan, G. Turán, and Y. Zhang. “The inverse protein folding problem on 2D and 3D lattices”. *Discrete Appl. Math.* 155 (2007), pp. 719–732.
- [25] R. H. Sloan, B. Szörényi, and G. Turán. “Revising threshold functions”. *Theor. Comput. Sci.* 382.3 (2007), pp. 198–208.
- [26] Z. Füredi, R. H. Sloan, K. Takata, and G. Turán. “On set systems with a threshold property”. *Discrete Appl. Math.* 306 (2006), pp. 3096–3111.
- [27] J. Goldsmith and R. H. Sloan. “New Horn Revision Algorithms”. *J. Machine Learning Research* 6 (2005), pp. 1919–1938.
- [28] J. Goldsmith, R. Sloan, B. Szörényi, and G. Turán. “Theory revision with queries: Horn, read-once, and parity formulas”. *Artificial Intelligence* 156.2 (2004), pp. 139–176.
- [29] J. Goldsmith, R. H. Sloan, and G. Turán. “Theory revision with queries: DNF formulas”. *Machine Learning* 47.2-3 (2002), pp. 257–295.
- [30] T. S. Messerges, E. A. Dabbish, and R. H. Sloan. “Examining smart-card security under the threat of power analysis attacks”. *IEEE Transactions on Computers* 51.5 (2002), pp. 541–552.
- [31] U. Buy and R. H. Sloan. “Automatic real-time analysis of reactive systems with the PARTS toolset”. *Automated Software Engineering* 8.3-4 (2001), pp. 227–273.
- [32] C. K. Chang, G. Engle, W. King, E. Roberts, R. Shackelford, R. H. Sloan, and P. K. Srimani. “Curricula 2001: Bringing the Future to the Classroom”. *IEEE Computer* (1999).

- [33] A. P. Sistla, O. Wolfson, Y. Yesha, and R. Sloan. “Towards a theory of cost management for digital libraries and electronic commerce”. *ACM Transactions on Database Systems (TODS)* 23.4 (1998), pp. 411–452.
- [34] R. H. Sloan, K. Takata, and G. Turán. “On Frequent Sets of Boolean Matrices”. *Annals of Mathematics and Artificial Intelligence* 24 (1998), pp. 193–209.
- [35] D. Angluin, M. Kriķis, R. H. Sloan, and G. Turán. “Malicious Omissions and Errors in Answers to Membership Queries”. *Machine Learning* 28 (1997), pp. 211–255.
- [36] R. H. Sloan and U. Buy. “Reduction rules for time Petri nets”. *Acta Informatica* 33 (1996), pp. 687–706.
- [37] S. A. Goldman and R. H. Sloan. “Can PAC Learning Algorithms Tolerate Random Attribute Noise?”. *Algorithmica* 14 (1995), pp. 70–84.
- [38] R. H. Sloan. “Four types of noise in data for PAC learning”. *Information Processing Letters* 54 (1995), pp. 157–162.
- [39] S. A. Goldman and R. H. Sloan. “The power of self-directed learning”. *Machine Learning* 14.3 (1994), pp. 271–294.
- [40] R. L. Rivest and R. Sloan. “A Formal Model of Hierarchical Concept-Learning”. *Inform. Comput.* 114 (1994), pp. 88–114.
- [41] R. L. Rivest and R. H. Sloan. “On Choosing between Experimenting and Thinking when Learning”. *Inform. Comput.* 106 (1993), pp. 1–25.
- [42] D. Helmbold, R. Sloan, and M. K. Warmuth. “Learning Integer Lattices”. *SIAM Journal on Computing* 21.2 (1992), pp. 240–266.
- [43] D. Helmbold, R. Sloan, and M. K. Warmuth. “Learning Nested Differences of Intersection-Closed Concept Classes”. *Machine Learning* 5.2 (1990), pp. 165–196.
- [44] S. Micali, C. Rackoff, and R. Sloan. “The Notion of Security for Probabilistic Cryptosystems”. *SIAM Journal on Computing* 17.2 (1988), pp. 412–426.

Refereed Conference and Workshop Papers

- [45] T. Berger-Wolf, B. Igić, C. Taylor, R. H. Sloan, and R. Poretsky. “A Biology-themed Introductory CS Course at a Large, Diverse Public University”. In: *Proc. SIGCSE technical symposium on Computer Science Education*. Accepted for publication. To appear. 2018.
- [46] R. H. Sloan, C. Taylor, and R. Warner. “Initial Experiences with a CS + Law Introduction to Computer Science (CS 1)”. In: *Proceedings of the 2017 ACM Conference on Innovation and Technology in Computer Science Education*. ITiCSE ’17. 2017, pp. 40–45. Available at: <http://doi.acm.org/10.1145/3059009.3059029>.
- [47] T. Berger-Wolf, D. I. Diochnos, A. London, A. Pluhár, R. H. Sloan, and G. Turán. “Commonsense knowledge bases and network analysis”. In: *Proc. 11th Int. Symp. On Logical Formalizations of Commonsense Reasoning*, 2013. Available at: <http://www.commonsense2013.cs.ucy.ac.cy/program.html>.
- [48] S. Ohlsson, R. H. Sloan, G. Turán, and A. Urasky. “Verbal IQ of a Four-Year Old Achieved by an AI System”. In: *Proc. Annu. Conf. Assoc. Advancement Artificial Intelligence (AAAI)*. 2013.

- [49] R. H. Sloan and R. Warner. “Big Data and the “New” Privacy Tradeoff”. In: *Big Data & Privacy: Workshop Paper Collection*. Future of Privacy Forum. 2013. Available at: <http://www.futureofprivacy.org/big-data-privacy-workshop-paper-collection/>.
- [50] K. Adaricheva, R. H. Sloan, B. Szörényi, and G. Turán. “Horn Belief Contraction: Remainders, Envelopes and Complexity”. In: *Proc. 13th Int. Conf. Principles of Knowledge Representation and Reasoning (KR)*. Preliminary version appeared in Commonsense Workshop in 2011. May 2012. Available at: <https://www.aaai.org/ocs/index.php/KR/KR12/paper/view/4497>.
- [51] S. Ohlsson, R. H. Sloan, G. Turán, D. Uber, and A. Urasky. “An Approach to Evaluate AI Commonsense Reasoning Systems”. In: *Proc. 25th Int. Florida Artificial Intelligence Research Society Conference*. 2012, pp. 371–374.
- [52] R. H. Sloan, D. Stasi, and G. Turán. “Hydra formulas and related problems for Horn minimization”. In: *Graph-Theoretic Concepts in Computer Science (WG)*. LNCS. Springer, 2012, pp. 237–248.
- [53] M. Russom, R. Warner, and R. H. Sloan. “Legal concepts meet technology: a 50-state survey of privacy laws”. In: *Proc. 2011 Workshop on Governance of Technology, Information, and Policies (GTIP)*. 2011, pp. 29–37. Available at: <http://www.cs.uic.edu/~sloan/papers/RussomEtAl50StateSurvey.pdf>.
- [54] R. H. Sloan and R. Warner. “Developing foundations for accountability systems: informational norms and context-sensitive judgments”. In: *Proc. 2010 Workshop on Governance of Technology, Information and Policies (GTIP)*. GTIP ’10. New York, NY, USA, 2010, pp. 21–26. Available at: <http://www.acsac.org/2010/workshop/p21-sloan.pdf>.
- [55] L. N. Cassel, M. Caspersen, G. Davies, R. McCauley, A. McGettrick, A. Pyster, and R. Sloan. “Curriculum update from the ACM education board: CS2008 and a report on masters degrees”. In: *ACM SIGCSE Bulletin*. Vol. 40. 1. ACM. 2008, pp. 530–531.
- [56] M. Langlois, D. Mubayi, R. H. Sloan, and G. Turán. “Combinatorial problems for Horn clauses”. In: *Tenth Int. Symp. Artificial Intelligence and Mathematics*. 2008. Available at: <http://isaim2008.unl.edu/index.php?page=proceedings>.
- [57] M. Langlois, R. H. Sloan, B. Szörényi, and G. Turán. “Horn Complements: Towards Horn-to-Horn Belief Revision”. In: *Proc. AAAI 2008*. 2008, pp. 466–471.
- [58] R. H. Sloan and P. Troy. “CS 0.5: a better approach to introductory computer science for majors”. In: *Proc. 39th SIGCSE technical symposium on Computer Science Education*. 2008, pp. 271–275.
- [59] L. N. Cassel, A. McGettrick, G. Davies, H. Topi, and B. Sloan. “An Initiative to Attract Students to Computing”. In: *Proc. 38th SIGCSE Technical Symposium on Computer Science Education*. 2007, pp. 133–134.
- [60] L. N. Cassel, R. H. Sloan, G. Davies, H. Topi, and A. McGettrick. “The Computing Ontology Project—The Computing Education Application”. In: *Proc. 38th SIGCSE Technical Symposium on Computer Science Education*. 2007, pp. 519–520.
- [61] J. Goldsmith and R. H. Sloan. “The Conference Paper Assignment Problem”. In: *Proc. AAAI Workshop on Preference Handling for Artificial Intelligence*. 2007.
- [62] M. Langlois, R. H. Sloan, and G. Turán. “Horn Upper Bounds and Renaming”. In: *Proc. SAT 2007: Tenth Int. Conf. Theory and Applications of Satisfiability Testing*. Vol. 4501. Lecture Notes in Computer Science. 2007, pp. 80–93.

- [63] L. B. Cassel, A. McGettrick, and R. H. Sloan. “A Comprehensive Representation of the Computing and Information Disciplines”. In: *Proc. 37th SIGCSE Technical Symposium on Computer Science Education*. 2006, pp. 199–200.
- [64] S. Dranger, R. H. Sloan, and J. A. Solworth. “The Complexity of Discretionary Access Control”. In: *Proc. Advances in Information and Computer Security, First Intl. Workshop on Security (IWSEC 06)*. Lecture Notes in Computer Science. Springer, 2006, pp. 405–420.
- [65] M. Langlois, R. H. Sloan, and G. Turán. “Horn Upper Bounds of Random 3-CNF: A Computational Study”. In: *Ninth Int. Symp. Artificial Intelligence and Mathematics*. 2006. Available at: <http://anytime.cs.umass.edu/aimath06/>.
- [66] R. Shackelford, A. McGettrick, R. Sloan, H. Topi, G. Davies, R. Kamali, J. Cross, J. Impagliazzo, R. LeBlanc, and B. Lunt. “Computing Curricula 2005: The Overview Report”. In: *Proc. 37th SIGCSE Technical Symposium on Computer Science Education*. 2006, pp. 456–457.
- [67] L. B. Cassel, R. Shackelford, and R. H. Sloan. “A Synthesis and Ontology of All of Computing”. In: *Proc. 36th SIGCSE Technical Symposium on Computer Science Education*. 2005, pp. 65–66.
- [68] J. Goldsmith, R. H. Sloan, B. Szörényi, and G. Turán. “Theory Revision with Queries: Results and Problems”. In: *Proceedings of the Workshop on Learning with Logics and Logics for Learning (LLLL)*. 2005, pp. 39–44.
- [69] M. Irodova and R. H. Sloan. “Reinforcement Learning and Function Approximation”. In: *Proc. 18th International Florida Artificial Intelligence Research Symposium Conference—FLAIRS 2005*. 2005, pp. 455–460.
- [70] P. Berman, B. DasGupta, D. Mubayi, R. Sloan, G. Turán, and Y. Zhang. “The Protein Sequence Design Problem in Canonical Model on 2D and 3D Lattices”. In: *Proc. 15th Annual Symp. Combinatorial Pattern Matching (CPM)*. Vol. 3109. Lecture Notes in Computer Science. Springer, 2004, pp. 244–253.
- [71] J. Goldsmith, R. H. Sloan, B. Szörényi, and G. Turán. “New Revision Algorithms”. In: *Proc. Algorithmic Learning Theory (ALT)*. Vol. 3244. Lecture Notes in Artificial Intelligence. Springer, 2004, pp. 395–409.
- [72] R. Shackelford, L. Cassel, J. Cross, J. Impagliazzo, E. Lawson, R. LeBlanc, A. McGettrick, R. Sloan, and H. Topi. “Computing Curricula 2004: The Overview Project”. In: *Proc. 35th SIGCSE Technical Symposium on Computer Science Education*. 2004, p. 501.
- [73] J. A. Solworth and R. H. Sloan. “A Layered Design of Discretionary Access Controls with Decidable Safety Properties”. In: *Proc. 2004 IEEE Symposium on Security and Privacy*. 2004.
- [74] J. A. Solworth and R. H. Sloan. “Security Property Based Administrative Controls”. In: *Proc. 9th European Symposium on Research in Computer Security (ESORICS)*. Vol. 3139. Lecture Notes in Computer Science. Springer, 2004, pp. 244–259.
- [75] T. Horváth, R. H. Sloan, and G. Turán. “Learning Logic Programs with Unary Partial Function Graph Background Knowledge”. In: *First International Workshop on Mining Graphs, Trees and Sequences (MGTS-2003)*. 2003. Available at: <http://www.ar.sanken.osaka-u.ac.jp/MGTS-2003CFP.html>.
- [76] J. Impagliazzo, R. Sloan, A. McGettrick, and P. K. Srimani. “Computer Engineering Computing Curricula”. In: *Proc. 34th SIGCSE Technical Symposium on Computer Science Education*. 2003, pp. 355–356.

- [77] R. H. Sloan, B. Szörényi, and G. Turán. “Projective DNF Formulae and Their Revision”. In: *Proc. COLT 2003: 16th Annual Conf. on Learning Theory*. Vol. 2777. Lecture Notes in Artificial Intelligence. Springer, 2003, pp. 625–639.
- [78] R. H. Sloan and B. Szörényi. “Revising projective DNF in the presence of noise”. In: *Proc. Kalmár Workshop on Logic and Computer Science*. Szeged, Hungary: Dept. of Informatics, University of Szeged, 2003, pp. 143–152.
- [79] E. Roberts, C. F. Cover, G. Davies, M. Schneider, and R. Sloan. “Computing Curricula 2001 implementing the recommendations”. In: *Proc. 33rd SIGCSE Technical Symposium on Computer Science Education*. 2002, pp. 167–168.
- [80] J. Goldsmith and R. H. Sloan. “More Theory Revision with Queries”. In: *Proc. 32nd Annu. ACM Sympos. Theory Comput.* 2000, pp. 441–448.
- [81] J. Goldsmith and R. H. Sloan. “The Complexity of Model Aggregation”. In: *Proc. 5th Int. Conf. Artificial Intelligence Planning & Scheduling (AIPS)*. 2000, pp. 122–129.
- [82] J. Goldsmith, R. H. Sloan, B. Szörényi, and G. Turán. “Improved Algorithms for Theory Revision with Queries”. In: *Proc. 13th Annu. Conf. on Comput. Learning Theory*. 2000, pp. 236–247.
- [83] T. S. Messerges, E. A. Dabbish, and R. H. Sloan. “Investigations of Power Analysis Attacks on Smartcards”. In: *Proceedings of the USENIX Workshop on Smartcard Technology*. 1999, pp. 151–161.
- [84] T. S. Messerges, E. A. Dabbish, and R. H. Sloan. “Power Analysis Attacks of Modular Exponentiation in Smartcards”. In: *Workshop on Cryptographic Hardware and Embedded Systems*. Springer-Verlag, 1999, pp. 144–157.
- [85] R. H. Sloan and G. Turán. “On Theory Revision with Queries”. In: *Proc. 12th Annu. Conf. on Comput. Learning Theory*. 1999, pp. 41–52.
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- [87] T. Horváth, R. H. Sloan, and G. Turán. “Learning Logic Programs with Random Classification Noise”. In: *Proc. 6th Int. Workshop on Inductive Logic Programming (ILP-96)*. Vol. 1314. Lecture Notes in Artificial Intelligence. Springer, 1996, pp. 97–118.
- [88] U. Buy and R. H. Sloan. “Analysis of Real-Time Programs with Simple Time Petri Nets”. In: *Proc. 1994 Int. Symp. Software Testing and Analysis*. 1994, pp. 228–239.
- [89] U. Buy and R. Sloan. “A Petri-Net-Based Approach to Real-Time Program Analysis”. In: *Proc. Seventh Int. Workshop Software Specification and Design*. 1993, pp. 56–60.
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- [92] R. L. Rivest and R. Sloan. “A New Model for Inductive Inference”. In: *Proc. of the Second Conference on Theoretical Aspects of Reasoning about Knowledge*. Morgan Kaufmann, Mar. 1988, pp. 13–27.
- [93] R. L. Rivest and R. H. Sloan. “Learning Complicated Concepts Reliably and Usefully.” In: *AAAI*. 1988, pp. 635–640.

- [94] R. Sloan. “Types of noise in data for concept learning”. In: *Proc. 1st Annu. Workshop on Comput. Learning Theory*. Morgan Kaufmann, 1988, pp. 91–96.
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In Collection

- [96] R. H. Sloan. “Why Computer Science?” In: *Computer Science for the Curious: Why Study Computer Science?* Ed. by K. Vaidya. 2016.
- [97] R. Warner and R. H. Sloan. “The Undermining Impact of Information Processing on Informational Privacy”. In: *Rights of Personality in The XXI Century*. Ed. by J. Balcarczyk. Wolters-Kluwer, 2012, pp. 384–402.
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- [99] M. Langlois, D. Mubayi, R. H. Sloan, and G. Turán. “Combinatorial problems for Horn clauses”. In: *Graph Theory, Computational Intelligence and Thought*. Springer, 2009, pp. 54–65.
- [100] R. H. Sloan. “Pac Learning, Noise, and Geometry”. In: *Learning and Geometry: Computational Approaches*. Birkhäuser, 1996, pp. 21–41.

Unrefereed

- [101] R. H. Sloan and R. Warner. “How Much Should We Spend to Protect Privacy?: Data Breaches and the Need for Information We Do Not Have”. At SSRN. 2017. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3032143.
- [102] R. H. Sloan and R. Warner. “When Is an Algorithm Transparent?: Predictive Analytics, Privacy, and Public Policy”. At SSRN. 2017. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3051588.
- [103] R. Warner and R. H. Sloan. “Defending Our Data: The Need for Information We Do Not Have”. At SSRN. 2016. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2816010.
- [104] J. Goldsmith and R. H. Sloan. “Write it Right: 4: Several Matters of Mechanics,” *IEEE Professional Communication Society Newsletter* 52.1 (2008).
- [105] J. Goldsmith and R. H. Sloan. “Write it Right: 5: Considerations for Experimental Work”. *IEEE Professional Communication Society Newsletter* 52.2 (2008).
- [106] J. Goldsmith and R. H. Sloan. “Write it Right: 1: The Very Basics”. *IEEE Professional Communication Society Newsletter* 51.8 (2007).
- [107] J. Goldsmith and R. H. Sloan. “Write it Right: 2: Relevant Forms of Technical Writing”. *IEEE Professional Communication Society Newsletter* 51.10 (2007).
- [108] J. Goldsmith and R. H. Sloan. “Write it Right: 3: Reviews, Coauthorship, and Citations”. *IEEE Professional Communication Society Newsletter* 51.11 (2007).

- [109] R. H. Sloan. “The Joys of being an NSF Program Director”. *ACM SIGACT News* 38.1 (2007), pp. 7–8.
- [110] R. H. Sloan. “Mathematics Comes Up Trumps”. *The Economist* 7510 (1987). No byline published, in August 8, 1987 issue, p. 80.

**Grants &
Contracts
Awarded**

Diversifying CS with a Biology-themed Introductory CS Course at a Large, Diverse Public University

National Science Foundation, 2016–2019, PI, \$299,255.

Designing and Evaluating a CS + Law Introduction to Computer Science

National Science Foundation, 2016–2019, PI, \$254,499.

Scholarships for Services (SFS): Scholarships in Cybersecurity and Information Assurance

National Science Foundation, 2012–2018, co-PI with PI Prof. V. Venkatakrishnan of UIC CS Dept., \$1.15 million.

IGERT: Electronic Security and Privacy. Technological, Human, Enterprise and Legal Perspectives

National Science Foundation, 2011–2018, one of five co-PIs, \$3,200,000.

S-STEM: UIC CS Scholars

National Science Foundation, 2009–2015, PI with three co-PIs, \$598,000.

DHS-STEM Fellowships in Electronic Security

Department of Homeland Security, 2012–2015, co-PI with PI Prof. V. Venkatakrishnan of UIC CS Dept., \$249,925.

GEM Fellow Program

The National GEM Consortium, 2012–2013, sole PI, \$58,000.

Privacy with Respect to Private Corporation in the 21st Century: Legal and Computer Security Issues

National Science Foundation, 2009–2011, sole PI, \$100,000.

Theoretical Foundations of Evolving Knowledge Bases

National Science Foundation, 2009–2012, co-PI with PI Prof. Gy. Turán (of UIC Mathematics Dept.), \$500,000.

Collaborative Research: Broadening Participation in Computing Alliance Planning Grant

National Science Foundation, one of four UIC co-PIs in four-institution planning grant, 2009–2010 (18 months), \$400,000 total, \$60,000 UIC share.

IGERT: Graduate Program in Computational Transportation Science

National Science Foundation, 2006–2011, one of five co-PIs, \$3,097,976.

Complexity of Knowledge Representation

National Science Foundation, 2004–2007, PI with co-PI Prof. Gy. Turán (of UIC Mathematics Dept.), \$300,000.

CRI: The SecLab at UIC

National Science Foundation, 2006–2009, one of five co-PIs, \$159,715.

**Grants &
Contracts
Awarded
(cont.)**

A Multimedia Introduction to Computer Science: Two courses from one
National Science Foundation Division of Undergraduate Education, July 2004–July 2006, \$99,269, PI (with co-PI Lecturer Pat Troy).

Theory Revision and Related Problems in Learning Theory.
National Science Foundation, 2001–2004, PI with co-PI Prof. Gy. Turán (of UIC Mathematics Dept.), approximately \$265,000.

Theory of Computation Research
National Science Foundation, 2000–2001, \$137,333, 100% Sloan.
Add-on for 2002 extension (National Science Foundation) \$102,545, 100% Sloan.

Logic-based approaches to learning and knowledge discovery.
National Science Foundation, 1998–2001, with Prof. Gy. Turán (of UIC Mathematics Dept.), \$253,001.

Analyzing Real-time Properties of Concurrent Programs.
National Science Foundation Award, 1994–96, with Assistant Professor Ugo Buy (of UIC EECS Dept.), \$90,000.

A Software Engineering Course Sequence for Distributed and Real-Time Systems.
DISA award. 1994–1995, with Assistant Professor Ugo Buy (of UIC EECS Dept.), \$67,035.

GTECH/UIC Consortium, Yr. 5.
GTECH. 1994–1995, with Associate Professor Tom Moher (of UIC EECS Dept.), \$250,000.

Some Practical Issues in Computational Learning Theory.
National Science Foundation Research Initiation Award, 1991–1993. \$35,176.

**Selected
Invited
Talks &
Presentations**

“When Is an Algorithm Transparent?: Predictive Analytics, Privacy, and Public Policy,” Brussels Privacy Symposium (Future of Privacy Forum and IEEE Security & Privacy), November 2017.

“Improving Our Defenses,” at IIT Chicago-Kent College of Law Defending our Data Conference, April 2017.

“How Much Should We Spend to Protect Privacy?: The Need for Information We Do Not Have,” Fifth Annual Public Policy Symposium on the Law & Economics of Privacy and Data Security: Developing a Benefit-Cost Framework for Data Policy, George Mason Law School and Future of Privacy Forum, June 2017.

“I’ll See”: How Surveillance Undermines Privacy By Eroding Trust, by Robert Sloan, Computer Science, Privacy Law Scholars Conference, Washington, DC, June 2016.

“Responding to the Wave of Data Breaches,” Argonne National Lab Security Seminar Series, June 2015.

**Selected
Invited
Talks
(cont.)**

“The Self, the Stasi, the NSA: Privacy, Knowledge, and Complicity in the Surveillance State,” Privacy Law Scholars Conference, Berkeley, CA, June 2015.

“Responding to the Wave of Data Breaches,” Keynote for the ARMA Chicago Chapter Annual Meeting, May 2015.

“Self, Privacy, and Power: Is It All Over?,” Privacy Law Scholars Conference, Washington, DC, June 2014.

“Security Risks of Big Data: Privacy, Openness, Data Management,” presentation at joint FBI and American Academy for the Advancement of Science meeting on Big Data, Life Sciences, & National Security, Washington, DC, April 2014.

“Software Vulnerabilities: The Obvious Legal Responses and Why They Will Not Work,” Information Analysis of Economic and Financial Crimes, Warsaw, Poland, May 2013.

“Beyond Notice and Choice, Privacy Law Scholars Conference,” Berkeley, CA, June 2013.

“Behavioral Advertising: From One-Sided Chicken to Informational Norms,” Privacy Law Scholars Conference, Washington, DC, June 2012.

“Do Not Track: What Do We Want? What Can We Get?,” Conference on Internet Privacy, Social Networks, and Data Aggregation, Chicago-Kent Law School, March 2012.

“Software Vulnerabilities: The Obvious Legal Responses Why They Will Not Work,” Eötvös Loránd University (ELTE), Budapest, Hungary, December 2011.

“Software Vulnerabilities: The Obvious Legal Responses Why They Will Not Work,” University of Szeged, Szeged, Hungary, November 2011.

“Software Vulnerabilities: The Obvious Legal Responses and Why They Will Not Work,” Workshop on Cybersecurity Incentives (WoCI), Fairfax, VA, June 2011.

“Theory Revision in Formal Learning Models,” invited seminar talk at Illinois Institute of Technology Computer Science Dept., November 2005.

“Layered Design of Discretionary Access Controls,” invited seminar talk given at University of Louisville, Louisville, KY, April 2004.

“Power Attacks on Smart Cards,” invited seminar talk (Research Center), at University of Kentucky, March 2004.

Mathematics and Computer Science Department seminar, Loyola University of Chicago, Spring 2002.

Several NSF Program Director’s Reports at conferences such as IEEE FOCS, ACM STOC, and COLT in 2001 and 2002.

Invited departmental seminar speaker, Rutgers University, December 2001.

**Selected
Invited
Talks
(cont.)**

Distinguished seminar series speaker for Ars Digita University, Cambridge Mass., June 2001.

“Computing Curricula 2001 panel presentation at Midwest Computing Conference,” Northern Illinois University, March 2001.

“Computing Curricula 2001: How will it work for You?,” panel presentation at Thirty-second ACM Special Interest Group on Computer Science Education (SIGCSE) Symposium on Computer Science Education, February 2001.

“Theory Revision,” invited Computer Science Dept. seminar talk at University of Kentucky, Fall 2000.

“Noise in Data for Probably Approximately Correct Learning,” invited talk given to Artificial Intelligence Division of Hungarian Academy of Science, Szeged, Hungary, December 1999.

“Noise in Data for Probably Approximately Correct Learning,” invited talk given to Mathematics Institute, Budapest, Hungary, December 1999.

Computer Science Department Colloquium, Northwestern University, Spring 1995.

Annual Argonne Lab Series: Invited Speaker on cryptography, Fall 1994.

Invited speaker, U.S. Army Workshop on Geometry and Learning, Arlie, Virginia, 1992.

Computer and Information Science Department Colloquium, University of Delaware, December 1991.

Computer Science Department Colloquium, Carnegie-Mellon University, Fall 1990.

Computer Science Department Colloquium, Washington University, Fall 1990.

Computer Science Department Colloquium, University of Chicago, Fall 1990.

**Selected
Service**

Member Department of Homeland Security Privacy and Integrity Advisory Committee, 2017–present. (Appointed by Secretary of Homeland Defense Jeh Johnson in January 2017.)

Member, IL Governor’s Technology Advisory Board, CyberSecurity subcommittee, 2015–present.

BRAID (Building, Recruiting, And Inclusion for Diversity) initiative (<https://anitab.org/braid-building-recruiting-and-inclusion-for-diversity/>) CS Department head, 2014–present. Enrolled UIC CS in BRAID; lead BRAID service activities at UIC; receive \$30,000 annual support of diversity initiatives, e.g., sending UIC students to Grace Hopper Celebration of Women in Computing and Tapia Celebration of Diversity in Computing.

**Service
(cont.)**

Program evaluator for undergraduate computer science programs for Computing Accreditation Commission of ABET, 2001–present.

Member IEEE Computer Society Educational Activities Board 2001–2015; chair committee on diversity 2001–2005; chair model curriculum committee 2006–2007.

Member, external review team, Graduate Computer Science program at University of Buffalo Department of Computer Science, 2015.

Member Illinois Terrorism Task Force Cybersecurity Committee, 2010–2012.

Chair, site visit to recipients of major NSF grant, 2010.

Member, external review team, University of New Mexico Computer Science Department, 2010.

Member CSAB Board: Director: 2009–2010 Alternate Director, 2008.

IEEE Computer Society Board of Governors, 2006–2008 term.

Director of Graduate Studies, UIC CS Dept., August 2004–July 2007.

Member IEEE Computer Society Conferences and Tutorials Board, 2001–2005

Testified before Illinois State Board of Professional Engineers on “Computer Science as an Engineering Discipline”, and issues relating to licensing of software engineers on March 24, 2005.

Member of UIC Campus Research Board (awards internal research grants) 2002–2007; co-chair of Natural Sciences and Engineering Subcommittee 2005–2007.

Program Director, National Science Foundation, Jan. 2001–Aug. 2002.

Computer Society delegate and Secretary, ACM–IEEE Computer Society joint task force to write Computing Curricula 2001: Computer Science volume. Also chair of knowledge focus group on discrete mathematics. (See above under Computer Science Education.), 1997–2001.

Computer Society delegate to ACM–IEEE Computer Society joint task force for 2008 revision of Computing Curricula 2001.

Computer Society delegate, ACM–IEEE Computer Society joint task force to write Computing Curricula 2004: Computer Engineering volume.

Computer Society delegate Member, ACM–IEEE Computer Society–AIS joint task force to create overview volume for various model computing curricula, 2003–2005.

- Service (cont.)** Chair, external review of computer science program at University of Massachusetts at Boston, Spring 2000.
- Local Arrangements Chair, Twelfth Annual Conference on Computational Learning Theory, 1998 (COLT 1998).
- Panel member and reviewer for both NSF and DARPA, early 1990s–present.
- Numerous UIC departmental, College of Engineering, and university level committees, 1990–present.
- Editorial Boards, Program Committees Etc.** Editorial Board, *Electronic Proceedings in Theoretical Computer Science*, 2009–present.
- Editorial Board, *Information and Computation*, 2007–present.
- Editorial Board Member, *ACM Transactions on Computing Education* (previously titled *ACM Journal of Educational Resources in Computing (JERIC)*), 2003–2010.
- Editorial Board Member, *Machine Learning*, 2003–2006.
- Guest Editor, Special Issue of *Journal of Computer Systems and Sciences (JCSS)* on computational learning theory.
- Program Committees: Resilience Week 2017 for International Symposium on Resilient Cyber Physical Systems; IJCAI 2011 Doctoral Consortium Program Committee; SAT 2010; SAT 2009; AAAI Workshop on Preferences, 2007; International Conference on Advanced Data Mining and Applications 2005; European Conference on Machine Learning (ECML), 2003, 2004, and 2005; Computational Learning Theory Conference, 2000, 2001, 2002.
- Program Committee chair, Twelfth International Symposium on AI and Mathematics (ISAIM 2012).
- Program Committee co-chair, Fifteenth Annual Conference on Computational Learning Theory (COLT 2002)
- Local arrangements committee, STOC 2004.
- Computational Learning Theory Conference (COLT) Steering Committee regular member, 1997–1998, and 1999–2002; Steering Committee Secretary, 2001–present.
- Articles refereed for numerous journals, including *Journal of the ACM*, *ACM Transactions on Internet Technology*, *Ethics and Information Technology*, *Artificial Intelligence Review*, *Information and Computation*, *SIAM Journal on Computing*, *Journal of Computing Systems and Software*, *Machine Learning*, *Journal of Artificial Intelligence Research*, *IEEE Software*, *IEEE Transactions on Computers*, and *IEEE Transactions on Systems, Man and Cybernetics*.

**Selected
Awards**

IEEE Computer Society Golden Core Recognition “for long-standing service to the society,” 2007.

UIC Award for Excellence in Teaching, October 2006. (Permanent \$5,000 increase in base salary).

IEEE Computer Society, Outstanding Contribution Award, “For the establishment of Computing Curricula 2005 for Computer Engineering,” 2006.

UIC Teaching Recognition Program, 2005, “recognizes the documented excellence of UIC faculty in their teaching activities.” (Permanent \$1,500 increase to base salary.)