

Principal Investigator/Program Director (Last, First, Middle):		Malin, Bradley, A	
BIOGRAPHICAL SKETCH			
Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2. Follow this format for each person. DO NOT EXCEED FOUR PAGES.			
NAME Malin, Bradley Adam, Ph.D.		POSITION TITLE Associate Professor of Biomedical Informatics Associate Professor of Computer Science	
eRA COMMONS USER NAME			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION		DEGREE <i>(if applicable)</i>	YEAR(s)
Carnegie Mellon University		B.S.	2000
Carnegie Mellon University		M.S.	2002
Carnegie Mellon University		M.Phil.	2003
Carnegie Mellon University		Ph.D.	2006
			FIELD OF STUDY
			Biological Sciences
			Computer Science
			Public Policy & Management
			Computer Science

A. PERSONAL STATEMENT

B. POSITIONS AND HONORS

Positions and Employment

1997-2000 Research Assistant, Department of Biological Sciences, Carnegie Mellon University
 Summer 1998 Research Intern, National Cancer Institute at Frederick, NIH
 Summer 1999 Research Intern, Georgetown University Law Center
 2000-2003 Research Assistant, School of Public Policy & Management, Carnegie Mellon University
 2003-2006 Research Assistant, School of Computer Science, Carnegie Mellon University
 2006-2011 Assistant Professor of Biomedical Informatics, Vanderbilt University
 2006-2011 Assistant Professor of Computer Science, Vanderbilt University
 2008-Present Director, Vanderbilt Health Information Privacy Laboratory (<http://www.hiplab.org>)
 2011-Present Associate Professor of Biomedical Informatics (with Tenure), Vanderbilt University
 2011-Present Associate Professor of Computer Science, Vanderbilt University
 2013-Present Affiliated Faculty, Center for Biomedical Ethics and Society, Vanderbilt University

Selected Honors and Awards

1998 ABL Basic Research Fellowship, National Cancer Institute, National Institutes of Health
 1999 Tom Johnson Fellowship, Engineering & Public Policy Department, Carnegie Mellon University
 2000 Howard Hughes Medical Institute Undergraduate Research Grant Recipient
 2004-2006 National Science Foundation Graduate Fellowship
 2006 Publication [7] selected by the International Medical Informatics Association (IMIA) for reprint in the 2006 Yearbook of Medical Informatics as one of the best papers of 2004-2005
 2008 Stahlman Faculty Scholar, Vanderbilt Center for Biomedical Ethics and Society
 2009 Distinguished Paper Award, American Medical Informatics Association Annual Symposium
 2010 Presidential Early Career Award for Scientists and Engineers (PECASE)
 2011 Top Paper Award, IEEE International Conference on Intelligence and Security Informatics
 2011 Elected Fellow, American College of Medical Informatics (ACMI)

C. SELECTED PEER-REVIEWED PUBLICATIONS (selected from over 70)

Most relevant to the current application

1. **Malin B**, Karp D, Scheuermann R. Technical and policy approaches to balancing patient privacy and data sharing in clinical and translational research. *Journal of Investigative Medicine*. 2010; 58(1): 11-18. [PMID: 20051768]

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2. Benitez K, **Malin B.** Evaluating re-identification risks with respect to the HIPAA privacy rule. *Journal of the American Medical Informatics Association.* 2010; 17(2): 169-177. [PMID: 20190059]
3. **Malin B,** Benitez K, Masys D. Never too old for anonymity: a statistical standard for demographic data sharing via the HIPAA privacy rule. *Journal of the American Medical Informatics Association.* 2010; 18: 3-10. [PMID:21169618]
4. Tamersoy A, Loukides G, Nergiz M, Saygin Y, **Malin B.** Anonymization of longitudinal electronic medical records. *IEEE Transactions on Information Technology in Biomedicine,* 2012; 16(3): 413-423. [PMID: 22287248]
5. Atreya R, Smith J, McCoy A, **Malin B,** Miller R. Reducing patient re-identification risk for laboratory results within research datasets. *Journal of the American Medical Informatics Association.* 2013; 20(1):95-101.. [PMID: 22822040]

Additional recent publications of importance to the field (in chronological order)

6. Karp D, Carlin S, Cook-Deegan R, Ford D, Geller G, Glass D, Greely H, Guthridge J, Kahn J, Kaslow R, Kraft C, Macqueen K, **Malin B,** Scheuerman R, Sugarman J. Ethical and practical issues associated with aggregating databases. *PLoS Medicine.* 2008; 5(9): e190. [PMID: 18816162]
7. **Malin B.** Secure construction of k -unlinkable patient records from distributed providers. *Artificial Intelligence in Medicine.* 2010; 48: 29-41. [PMCID: 19875273]
8. Aberdeen J, Bayer S, Yeniterzi R, Wellner B, Clark C, Hanauer D, **Malin B,** Hirschman L. The MITRE Identification Scrubber Toolkit: design, training, and assessment. *International Journal of Medical Informatics.* 2010; 12: 849-859. [PMID: 20951082]
9. Loukides G, Gkoulalas-Divanis A, **Malin B.** Anonymization of electronic medical records for validating genome-wide association studies. *Proceedings of the National Academy of Sciences USA.* 2010; 107(17): 7898-7893. [PMID: 20385806]
10. Durham E, Xue Y, Kantarcioglu M, **Malin B.** Private medical record linkage with approximate matching. *Proceedings of the American Medical Informatics Association Annual Symposium.* 2010: 182-186. [PMID: 21346965]
11. **Malin B,** Nyemba S, Paulett J. Learning relational policies from electronic health record access logs. *Journal of Biomedical Informatics.* 2011; 44: 333-342. [PMCID: PMC3063332]
12. Airoidi E, Bai X, **Malin B.** An entropy approach to disclosure risk assessment: lessons from real applications and simulated domains. *Decision Support Systems.* 2011; 51: 10-20. [PMID: 21647242]
13. **Malin B,** Loukides G, Benitez K, Clayton EW. Identifiability in biobanks: models, measures, and mitigation strategies. *Human Genetics.* 2011; 130(3): 383-392. [PMID: 21739176]
14. Carrell D, **Malin B,** Aberdeen J, Bayer S, Clark C, Wellner B, Hirschman L. Hiding in plain sight: use of realistic surrogates to reduce exposure of protected health information in clinical text. *Journal of the American Medical Informatics Association.* 2013; in press. [PMID: 22771529]
15. Kuzu M, Kantarcioglu M, Durham EA, Toth C, **Malin B.** A practical approach to achieve private medical record linkage in light of public resources. *Journal of the American Medical Informatics Association.* 2013; in press. [PMID: 22847304]

D. RESEARCH SUPPORT

Ongoing Research Support

R01 HG006844

Malin (PI)

9/15/12 – 9/14/16

National Library of Medicine, National Institutes of Health

A Risk Management Framework for Identifiability in Genomics Research

Principal Investigator/Program Director : **Malin, Bradley A.**

Goal: Developing socio-technical strategies for reasoning, and informing policy makers, about the extent to which genomic data should be designated as readily identifiable.

R01 LM009989 Carrell (PI) 9/15/12 – 9/14/15

National Library of Medicine, National Institutes of Health
Scalable and Robust Clinical Text De-identification

Goal: To improve natural language de-identification tools through the integration of a “hiding in plain sight” mechanism. This mechanism replaces redacted text with real-looking surrogates. We will define the theory behind this mechanism and evaluated its efficacy using human readers in multiple types of clinical notes in two large academic medical centers.

Role: Subcontract PI

U01 HG006385 Haines (PI) 8/15/11 – 8/14/15

National Human Genome Research Institute, National Institutes of Health
Coordination Center for the Electronic Medical Records and Genomics Network – Phase 2 (eMERGE-2)

Goal: Provide support in quality control for genotyping, phenotyping, and data privacy for all research teams participating in the eMERGE network. Develop software tools and guidelines to assist in data usage and sharing to the NIH-sponsored Database of Genotypes and Phenotypes (dbGaP)

Role: Co-investigator

U01 HG006378 Roden (PI) 8/15/11 – 8/14/15

National Human Genome Research Institute, National Institutes of Health
Vanderbilt Genome Electronic Records Project – Phase 2 (VGER-2)

Goal: Evaluate the utility of electronic medical records data for various genome wide association studies of patients clinically actionable pharmacogenomic phenotypes, assess ethical and social concerns in actionability; and develop formal privacy protection models for longitudinal medical records.

Role: Co-investigator

CNS-0964063 Malin (Co-PI) 4/1/10 – 3/31/14

Division of Computer and Network Systems, National Science Foundation
Experience-Based Access Management for Hospital Information Technology

Goal: Develop data-driven methods to evolve role-based access control schemas procedures as applied to electronic medical record systems. A collaborative project between Northwestern University (Medicine), University of Illinois at Urbana-Champaign (Computer Science), and Vanderbilt University (Biomedical Informatics).

CIHR-I200909EOG EI Emam (Co-PI) 3/1/10 – 2/28/13

Canadian Institutes of Health Research
Privacy Preserving Methods for Sharing Longitudinal Electronic Health Records

Goal: Develop methods to de-identify various types of clinical notes through a combination of machine learning and rule-based techniques. Assess the feasibility of privacy preserving record linkage strategies.

Role: Co-investigator

R01 LM010207-0110 Malin (PI) 9/30/09 – 9/29/13

National Library of Medicine, National Institutes of Health
Automated Detection of Anomalous Access to Electronic Health Records

Goal: Engineer data mining methods to extract patterns of use of patients’ medical records and to discover anomalies with respect to expected use.

R01LM009989-01A109 Malin (PI) 9/1/09 – 8/31/15

National Library of Medicine, National Institutes of Health
Technologies to Enable Privacy in Biomedical Databanks

Principal Investigator/Program Director : **Malin, Bradley A.**

Goal: Design and implement data protection models for personal biomedical records based on formal privacy and security methods.

SA4900-10808PG Sastry (PI) 9/1/07 – 6/31/14

Trustworthy Computing, National Science Foundation

Team for Research in Ubiquitous Secure Technologies (TRUST)

Goal: Develop new science and technology that transforms the ability of organizations to design, build, and operate trustworthy information systems for our critical infrastructure. This is an NSF Science and Technology Center, which is directed by the University of California at Berkeley and includes Investigators from Carnegie Mellon University, Cornell University, Stanford University, and Vanderbilt University.

Role: Co-Investigator

Completed Research Support

U01 HG004603-01 Roden (PI) 9/30/07 – 7/29/11

National Human Genome Research Institute, National Institutes of Health

Vanderbilt Genome Electronic Records Project (VGER)

Goal: Evaluate the utility of electronic medical records data for a genome wide association study of patients with extreme QRS duration; assess ethical and social concerns; and develop formal privacy protection models for clinical text and genetic data.

Role: Co-investigator

Stahlman Scholar Grant Malin (PI) 1/1/08 – 12/30/08

Vanderbilt Center for Biomedical Ethics and Society

Ethical Application of Electronic Health Privacy Technologies

Goal: Investigate and characterize the ethical issues associated with the analysis of de-identified biomedical records.

Seed Grant Malin (PI) 6/1/08 – 9/30/08

Software Tools for Protecting Medical Information Privacy

Vanderbilt International Office

Goal: Systematically evaluate the computational correctness, complexity, and accuracy of various clinical text de-identification software toolkits with a range of medical record types.
