

CURRICULUM VITAE

(Revised May 10, 2007)

Name: George Hripcsak
Address: 622 West 168th Street, VC-548, New York, NY 10032
Phone: (212) 305-5712 voice; (212) 305-3302 fax
Email: hripcsak@columbia.edu

ACADEMIC TRAINING

Haverford College, B.S. (Chemistry), 1981
Columbia University, M.D., 1985
Columbia University, M.S. (Biostatistics, Mailman School of Public Health), 2000
NYS Medical License

TRAINEESHIP AND BOARD CERTIFICATION

Internship: Internal Medicine, Presbyterian Hospital in the City of New York, 1985–1986
Residency: Internal Medicine, Presbyterian Hospital in the City of New York, 1986–1988
Certification: Internal Medicine Boards, 1988
Certification: Good Clinical Practices, Columbia University & New York-Presbyterian, 2000
Certification: HIPAA Training Course, Columbia University, 2003

APPOINTMENTS

Post-Doctoral Research Scientist, Center for Medical Informatics, Columbia University, 7/1/88–3/31/89
Associate Research Scientist, Center for Medical Informatics, Columbia University, 4/1/89–6/30/91
Assistant Professor of Medical Informatics (in Medicine), Columbia University, 7/1/91–6/30/98
Associate Professor of Medical Informatics (with tenure), Columbia University, 7/1/98–6/30/03
Acting Chair, Department of Medical Informatics, Columbia University, 9/8/98–12/31/99
Director of Clinical Information Services, New York-Presbyterian, 9/8/98–12/31/99
Vice Chair, Department of Biomedical Informatics, Columbia University, 1/1/00–3/11/07
(the department changed its name from Medical Informatics on 6/7/03)
Associate Director, Medical Informatics Services, New York-Presbyterian, 1/1/00–present
Professor of Biomedical Informatics, Columbia University, 7/1/03–present
Senior Informatics Advisor, New York City Department of Health and Mental Hygiene, 4/24/2006–present
Interim Chair, Department of Biomedical Informatics, Columbia University, 3/12/07–present

PROFESSIONAL ORGANIZATIONS AND SOCIETIES

- American College of Medical Informatics
Awards Committee, 2001–present
Nominations Committee, 2002–present
- American Medical Informatics Association
Board of Directors, 1998–2000
Executive Committee of the Board (as Board Member at Large), 2000
Chair—AMIA Standards Committee, 1997–1998
AMIA Meetings Committee, 1994–1997
AMIA Nominations Committee, 1995–1996
- American National Standards Institute
AMIA representative—Healthcare Informatics Standards Board, 1996–1998
- Association of American Medical Colleges
Voting member—Professional Development Group on Information Resources (GIR), 1998–2001
IAIMS: The Next Generation Review Panel, 1999–2001
- ASTM International Standards Organization
Secretary—Subcommittee E31.15 Health Knowledge Representation, 1991–1998
Chair—Task Group E31.15.02 Arden Syntax, 1991–1998
- National Library of Medicine
Biomedical Library and Informatics Review Committee, 2001–2005 (Chair 2004–2005)
- New York Academy of Medicine, 2000–present
Library Committee, 2002–present
- Institute of Medicine
Committee on the Assessment of the U.S. Drug Safety System, 2005–2006

HONORS

- Desmond Costello Scholarship, 1977–1981
- Phi Beta Kappa, Haverford College, 1980
- Summa Cum Laude, Haverford College, 1981
- Honors in Chemistry, Haverford College, 1981
- Alpha Omega Alpha, Columbia University, 1984
- Fellow of the American College of Medical Informatics, 1995
- National Information Infrastructure Award in Health, 1996
- Fellow of the New York Academy of Medicine, 2000
- AMIA Fall Symposium Best Paper on an Application, 1996
Jain NL, Knirsch C, Friedman C, Hripcsak G. Identification of suspected tuberculosis patients based on natural language processing of chest radiograph reports. Proc AMIA Annu Fall Symp 1996:542–6.
- AMIA Symposium Best Theoretical Paper, 1998
Friedman C, Hripcsak G, Shablinsky I. An evaluation of natural language processing methodologies. Proc Amia Symp 1998:855–9.

AMIA Symposium Best Paper on an Application, 2002

Stetson PD, Johnson SB, Scotch M, Hripcsak G. The sublanguage of cross-coverage. Proc AMIA Symp 2002: 742–6.

Papers selected for Annual IMIA Yearbook of Medical Informatics: 1994, 1996, 1999, 2007

FELLOWSHIP AND GRANT SUPPORT (LEADERSHIP ROLES)

Principal Investigator—National Library of Medicine R01 LM06910-07 “Discovering and applying knowledge in clinical databases,” September 2006 to September 2009 (\$1,083,735 award)

Principal Investigator for Columbia University subcontract (Farzad Mostashari overall PI)—Centers for Disease Control and Prevention, Centers of Excellence in Public Health Informatics, 2006 to 2009 (\$125,000 subcontract award; \$1,000,000 total award)

Co-Principal Investigator (Carol Friedman PI)—National Library of Medicine R01 LM08635 “A biomedical natural language processing resource,” July 2005 to June 2009

Principal Investigator—National Library of Medicine R01 LM06910-04 “Discovering and applying knowledge in clinical databases,” June 2003 to May 2006 (\$1,143,134 award)

Principal Investigator—National Library of Medicine R01 LM06910-01 “Discovering and applying knowledge in clinical databases,” April 2000 to March 2003 (\$1,216,034 award)

Principal Investigator—Agency for Healthcare Research and Quality 1 R18 HS11806 “Mining complex clinical data for patient safety research,” September 2001 to August 2004 (\$1,085,608 award)

Principal Investigator—Pfizer Inc. NY01-002153889 “Using information systems to advance clinical research and clinical care,” January 2001 to December 2001 (\$100,000 award)

Principal Investigator—New York State Science and Technology Foundation “Wearable computers,” April 2001 to June 2001 (\$10,000 award)

Principal Investigator—National Library of Medicine R29 LM05627 “Linking knowledge-based systems to clinical databases” (First Award), June 1994 to May 1999 (\$564,000 award)

Principal Investigator—Pfizer Inc. “Community acquired pneumonia management,” January 1998 to December 1998 (\$56,000 award)

Principal Investigator—New York State Science and Technology Foundation “Wireless access to clinical information and physician-driven reminders,” July 1996 to June 1997 (\$70,000 award)

Principal Investigator—US Department of Commerce TIIAP 36-40-94065 “Applied Informatics,” October 1994 to April 1996 (\$2,600,000 total project cost: \$733,000 from US Dept. of Commerce; \$80,000 from CTIA Foundation for Wireless Telecommunications and NYNEX Mobile Communications; \$1,000,000 from IBM; balance from Visiting Nurse Service of New York, New York City Dept. of Health, and Trustees of Columbia University)

Principal Investigator—Agency for Health Care Policy and Research R13 HS08761 “Capturing the Clinical Encounter” (Conference Grant), June 1995 to May 1996 (\$23,000 award)

Principal Investigator—The Smart Family Foundation Inc. grant, “Computer Technology to Improve Health Care,” November 1995 to October 1996 (\$10,000 award)

Principal Investigator for Columbia University subcontract (Carol Friedman overall PI)—National Library of Medicine R01 LM06274 (continuation) “Unlocking data from medical records with text processing,” January 2001 to December 2003 (\$432,581 subcontract award, \$878,193 total award)

Principal Investigator for Columbia University subcontract (Carol Friedman overall PI)—National Library of Medicine R01 LM06274 “Unlocking data from medical records with text processing,” July 1997 to June 2000 (\$315,000 subcontract award, \$632,000 total award)

Faculty Sponsor (for PI Joseph Finkelstein)—New York State Science and Technology Foundation “Computerized pulmonary monitoring center,” July 1997 to June 1998 (\$100,000 award)

DEPARTMENTAL AND UNIVERSITY COMMITTEES

Chair—Research Committee, Department of Medical Informatics, Columbia University, 1992–1998

Chair—Departmental Committee on Human Investigation, Department of Medical Informatics, Columbia University, 1995–1998

Research Advisory Committee, College of Physicians and Surgeons, Columbia University, 1994–1999

Faculty Council of the Faculty of Medicine, Columbia University, 1997–present
Executive Committee of the Faculty Council (elected), 2004–2006

Health Sciences Task Force on New Media, Columbia University, 1999–2001

Ad Hoc Committee on Research in Error Reduction, Columbia University, Cornell University, and New York Presbyterian Healthcare, 2000–2002

Information Technology Committee of the Board of Trustees of New York-Presbyterian Healthcare, 2000–present

Health Sciences Conflict of Interest Committee, Columbia University, 2000–2007

P & S Club Faculty Advisory Board, College of Physicians and Surgeons, Columbia University, 2001–2005

Executive Subcommittee of the Strategic Planning Committee for Patient Care, Columbia University, 2001–2002

University Senate Committee on Online Learning and Digital Media Initiatives, Columbia University, 2002–present (as non-senator committee member until 2006)

University Senate, Columbia University, 2006–present

Clinical Trials Advisory Committee, Columbia University, 2000–2005

Clinical Trials Office Strategic Advisory Committee, Columbia University, 2005–present

Space Advisory Committee, CUMC, Columbia University, 2007–present

TEACHING EXPERIENCE AND RESPONSIBILITIES

Course director—MINF G4060 Evaluation Methods in Medical Informatics; 7 students per year, 1997–2004

Course director—Research Elective in Medical Informatics; 26 students total, 1995–1998

Course director—MINF G4001 Introduction to Medical Informatics; 25 students per year, 1993–1995

Course director—Arden Syntax Tutorial, Symposium on Computer Applications in Medical Care; 50 students per year, 1993–1995

Director—Center for Medical Informatics Seminar Series, 1991–1992

Instructor—W4995 Topics in Medical Informatics; 4 students, 1994

Instructor—MINF G4003 Methods in Biomedical Informatics; 30 students, 2005–present

Instructor—Medical Informatics course, held at Woods Hole, MA, sponsored by the National Library of Medicine; 30 students per year, 1996–1999, 2003–present

Guest Lecturer—NIH Clinical Elective in Medical Informatics for medical students, 1998–2002

Doctoral research advisees

Adam Wilcox, Ph.D.—“Automated classification of medical text reports,” 1995–2000

now Assistant Professor of Biomedical Informatics, Columbia University

(First Place Student Paper Award, AMIA 2000 Symposium)

(HIMSS scholarship, 2000)

(Student Paper Finalist, AMIA 1999 Symposium)

Jen-Hsiang Chuang, M.D., Ph.D.—“Automated abstraction of medical records for patient outcomes,” 2000–2002

now Assistant Professor of Medical Informatics, National Yang-Ming University, Taiwan

(Student Paper Finalist, AMIA 2000 Symposium)

(Student Paper Finalist and Homer Warner Award nominee, AMIA 2002 Symposium)

Michael Krauthammer, M.D., Ph.D.—“Natural language processing for the extraction of molecular pathways from journal articles,” 2001–2004

now Assistant Professor of pathology and bioinformatics, Department of Pathology, Yale University

(Third Place Student Paper Award, AMIA 2001 Symposium)

Hui Cao, M.S.—“Abstracting patient features from narrative medical records using a semantic, knowledge-based approach,” 2001–2006

(Student Paper Finalist, AMIA 2005 Symposium)

(Passed thesis defense with distinction)

Li Zhou, B.Med., M.S.—“Extracting, representing and reasoning with temporal information in clinical narrative reports,” 2002–2007

(Student Paper Finalist, AMIA 2005 Symposium)

Other graduate research advisees (masters, fellowship)

Nilesh Jain, D.Sc.—health information networks, 1995–1996

(Best Paper on an Application, AMIA 1996 Fall Symposium)

Joseph Finkelstein, M.D., Ph.D.—telemedicine, 1996–1999

now Assistant Professor, Department of Epidemiology and Preventive Medicine, University of Maryland

(New York State Science and Technology Foundation grant)

(Travel award, MEDINFO '98)

Min Wu—Statistical approaches to security auditing, 1996–1997

Jinsong Cai, Ph.D., M.A.—Telemedicine and data mining, 1998–2000

(Student Paper Finalist, AMIA 2000 Symposium)

Jacob Elkins, M.D.—Applying natural language processing to neuroradiology research, 1998–1999

David Baorto, M.D., Ph.D.—Data warehousing, 1999–2000

now Knowledge Engineer, NYP Clinical Info & Ops Supp

Hong Yu, Ph.D.—Genomic data mining in clinical databases, 1999–2000

now Associate Research Scientist in Biomedical Informatics, Columbia University

Mona Chang—Automatically predicting patient classification using machine learning and knowledge-based imputations of risk factors, 2001

Matthew Scotch—Wireless wearable computing, 2001–2002

Paola Karina Tulipano—Automated detection of NYPORTS events, 2001–2003

Alexander Yu—Calibrating adverse event detection to the literature, 2001–2003

Davis Bu, M.D., M.A.—Uncovering adverse events via conflicts in the medical record, 2001–2004

now Informatician, Partners Healthcare, Boston

Peter Stetson, M.D., M.A.—Data mining for patient safety research, 2001–2003

now Assistant Professor of Clinical Medicine and Clinical Medical Informatics, Columbia University

(Best Paper on an Application, AMIA 2002 Symposium)

Shameek Biswas—Variance estimation in machine learning, 2003—2004
Genevieve Melton-Meaux, M.D., M.A.—Adverse event detection using narrative data, 2003–2005
now Surgery Administrative Chief Resident, The Johns Hopkins University
Tara Borlawsky, M.A.—Pressure ulcer risk assessment model, 2004
Adam Rothschild, M.D., M.A.—Problem-driven computerized physician order entry, 2004–2005
Gerald Cohen, M.D.—Implementing preventive care guidelines in ambulatory practice, 2005–2006
Jason Shapiro, M.D.—Evaluating regional clinical data exchange, 2006–present
Anshu Sinha, M.Eng.—Implementing regional clinical data exchange, 2006
Lily Li—Syndromic Surveillance via natural language processing, 2007—present

Doctoral thesis committee member

Jou-Wei Lin, M.D., Ph.D.—“Improving image-based quantification of physiological functions through noise reduction: the use of wavelet methods on dynamic cardiac PET studies,” 1996–1999
(now Assistant Professor of Medical Informatics, Taipei, Taiwan)
Qing Zeng, Ph.D.—“Concept-oriented views of electronic medical records,” 1996–1999
(now Research Associate, Decision Systems Group, Harvard University)
Eneida A. Mendonça, M.D., Ph.D.—“Improving access to medical knowledge using automated extraction from the medical record,” 1999–2002
David Campbell, Ph.D.—“Natural language processing and lexicon design,” 2000–2004
(Second Place Student Paper Award, AMIA 2001 Symposium)
Dongwen Wang, Ph.D.—“Clinical guideline development and maintenance,” 2000–2003
Guoguang (Julie) Ma, Ph.D.—“Extensions of the index of sensitivity to nonignorability (ISNI),” 2001
Hong Yu, Ph.D.—“Synonyms/homonym resolutions of gene and protein symbols and names,” 2001–2003
Indra Neil Sarkar, Ph.D.—“Characteristic attribute organization system (CAOS),” 2001–2004
Elizabeth Chen, Ph.D.—“Knowledge discovery in clinical information system log files and the implications for wireless handheld clinical applications,” 2002–2004
Hui Xie, Ph.D.—“An index of sensitivity to nonignorability: extensions and applications,” 2003
Hong Tian, Ph.D.—“Cross-validation estimates of performance of learning algorithms: issues in variance estimation,” 2003–2005
Katie Zhu.—Case similarity, 2006–present
Paola Karina Tulipano—Classification of images incorporating clinical information, 2006–present
Xin Liu—Image processing using bilateral asymmetry, 2007–present
Hua Xu—Knowledge discovery based on natural language processing of biomedical text, 2007–present

Developed the “Online Lecture Notes in Medical Informatics” while teaching MINF G4001 (1993–1995); the notes, which comprised 200 pages of outlined material, was downloaded by over 1000 persons interested in medical informatics and was used in over 90 courses and curricula around the world

OTHER PROFESSIONAL ACTIVITIES

WebCIS—Responsible for the design, development, and management of WebCIS, the Web-based clinical information system of Columbia University Medical Center and New York-Presbyterian Hospital's Columbia Campus, 1997–present

Associate editor—Journal of the American Medical Informatics Association, 2003–present

Associate editor—Computers in Biology and Medicine, 1994–present

Editorial board member

Journal of the American Medical Informatics Association, 2001–2002

Journal of Biomedical Informatics, 2001–present

Committee member—Institute of Medicine’s Committee on the Assessment of the U.S. Drug Safety System, 2005–2006

Guest editor—Special issue on the Arden Syntax, *Computers in Biology and Medicine* 1994;24(5)

Guest editor—Annual IMIA Yearbook of Medical Informatics, 1994 and 1995 (Jan H. van Bommel and Alexa T. McCray, editors. Stuttgart: Schattauer)

Program vice chair—American Medical Informatics Association Annual Symposium, November 10–14, 2007, Chicago

Program chair—American Medical Informatics Association Spring Congress, June 24–28, 1995; Boston

Scientific program or steering committee

American Medical Informatics Association Symposium (formerly SCAMC), 1991, 1996, 1999, 2003

Health Information Systems Technology Forum of the New York Academy of Medicine, 1997

Intelligent Data Analysis in Medicine and Pharmacology, 2004

National Health Information Infrastructure Conference topic expert in Measuring Progress, 2004

BioNLP ACL Workshop on NLP for Biology, Bench-to-Bedside, and Clinical Care, 2007

Grant reviewer

National Library of Medicine

Agency for Health Care Policy and Research

National Cancer Institute

John A. Hartford Foundation of New York

The Robert Wood Johnson Foundation

Indiana 21st Century Research and Technology Fund

Manuscript reviewer

Annals of Internal Medicine (acknowledged as one of the highest quality reviews 1997, 1999, 2000, 2001, 2002, 2003)

Journal of the American Medical Informatics Association

Journal of Biomedical Informatics

Computers and Biomedical Research

Computers in Biology and Medicine

International Journal of Medical Informatics

Gastrointestinal Endoscopy

American Medical Informatics Association Symposium (formerly SCAMC) and AMIA Spring Congress

MEDINFO

Artificial Intelligence in Medicine

Search committees

CIO for National Institutes of Health Clinical Center, 1998

Judge

Student Paper Competition, American Medical Informatics Association Symposium, 1998

National Information Infrastructure Awards, 1998

Technical Advisory Panel

Commissioned by Governor Phil Bredesen of Tennessee to oversee the AHRQ Volunteer eHealth Initiative of the Vanderbilt Center for Better Health, 2004–present (Chair, 2006–present)

Presentation to Tommy G. Thompson, Secretary of Health and Human Services, on health information infrastructure and patient safety, March 14, 2003.

Presentation to Leonel Fernandez, President of the Dominican Republic, on success factors for deploying information systems in health care, February 12, 2004

Presentation at Princeton University on mining a clinical data repository for clinical research and patient safety, March 23, 2004

Presentation at the Fox Chase Cancer Center on “Clinical Data Warehousing,” July 28, 2004

Presentation on “Mining a clinical data repository for clinical research and patient safety,” Distinguished Lecture Series, University of South Alabama, October 15, 2004

Presentation to the National Library of Medicine Board of Regents on “Discovering and applying knowledge in clinical databases,” February 15, 2005

Review panel member for the M. D. Anderson Cancer Center Electronic Medical Record Project, June 27, 2005

American Health Information Community Biosurveillance Data Elements Ad Hoc Group, 2006

Presentation at the Scottsdale Institute Fall 2006 Conference on “The IT-Quality Link,” September 29, 2006

Patent No. 5,555,191 “Automated Statistical Tracker,” issued September 10, 1996

Patent No. 6,241,685 “Asthma monitoring technology,” issued June 5, 2001

PUBLICATIONS—PEER-REVIEWED JOURNALS (EXCLUDING PROCEEDINGS AND SUPPLEMENTS)

Xu H, Fan JW, Hripcsak G, Mendonca EA, Markatou M, Friedman C. Gene symbol disambiguation using knowledge-based profiles. *Bioinformatics*, accepted for publication.

Chapman WW, Dowling JN, Hripcsak G. Evaluation of training with an annotation schema for manual annotation of clinical conditions from emergency department reports. *Int J Med Inform*, accepted for publication.

Yu H, Lee M, Kaufman D, Ely J, Osheroff JA, Hripcsak G, Cimino J. Development, implementation, and a cognitive evaluation of a definitional question answering system for physicians. *J Biomed Inform*, accepted for publication with minor revision.

Zhou L, Hripcsak G. Temporal reasoning with medical data—A review with emphasis on medical natural language processing. *J Biomed Inform*, accepted for publication with minor revision.

Sengupta S, Hripcsak G, Mostashari F, Calman N. A model for expanded public health reporting in the context of HIPAA. *J Am Med Inform Assoc*, accepted for publication.

Hripcsak G, Sengupta S, Wilcox A, Green RA. Emergency department access to a longitudinal medical record. *J Am Med Inform Assoc* 2007;14:235–8.

Cao H, Hripcsak G, Markatou M. A statistical methodology for analyzing cooccurrence data from a large sample. *J Biomed Inform* 2007;40:343–52.

Hripcsak G, Knirsch C, Zhou L, Wilcox A, Melton GB. Using discordance to improve classification in narrative clinical databases: an application to community-acquired pneumonia. *Comput Biol Med*, in press.

Melton GB, Parsons S, Morrison FP, Rothschild AS, Markatou M, Hripcsak G. Inter-patient distance metrics using SNOMED CT defining relationships. *J Biomed Inform*, in press.

Zhou L, Tao Y, Cimino JJ, Chen ES, Liu H, Lussier YA, Hripcsak G, Friedman C. Terminology model discovery using natural language processing and visualization techniques corresponding. *J Biomed Inform* 2006;39:626–36.

Zhou L, Melton GB, Parsons S, Hripcsak G. A temporal constraint structure for extracting temporal information from clinical narrative. *J Biomed Inform* 2006;39:424–39.

Markatou M, Tian H, Biswas S, Hripcsak G. Analysis of variance of cross-validation estimators of the generalization error. *Journal of Machine Learning Research* 2005;6:1127–68.

Miller RA, Gardner RM, Johnson KB, Hripcsak G. Clinical decision support and electronic prescribing systems: a time for responsible thought and action. *J Am Med Inform Assoc* 2005;12:403–9.

Melton GB, Hripcsak G. Automated detection of adverse events using natural language processing in discharge summaries. *J Am Med Inform Assoc* 2005;12:448–57.

- Zhang L, Hripcsak G, Perl Y, Halper M, Geller J. An expert study for evaluation of the lexical metaschema of the UMLS Semantic Network. *Artificial Intelligence in Medicine* 2005;34:219–33.
- Sittig DF, Shiffman RN, Leonard K, Friedman C, Rudolph B, Hripcsak G, Adams LL, Kleinman LC, Kaushal R. A draft framework for measuring progress towards the development of a national healthcare information infrastructure. *BMC Medical Informatics and Decision Making* 2005, 5:14.
- Hripcsak G, Rothschild AS. Agreement, the F-measure, and reliability in information retrieval. *J Am Med Inform Assoc* 2005;12:296–8.
- Hripcsak G, Zhou L, Parsons S, Das AK, Johnson SB. Modeling electronic discharge summaries as a simple temporal constraint satisfaction problem. *J Am Med Inform Assoc* 2005;12:55–63.
- Zhang L, Perl Y, Halper M, Geller J, Hripcsak G. A lexical metaschema for the UMLS semantic network. *Artificial Intelligence in Medicine* 2005;33:41–59.
- Friedman C, Shagina L, Lussier Y, Hripcsak G. Automated encoding of clinical documents based on natural language processing. *J Am Med Inform Assoc* 2004;11:392–402.
- Bakken S, Hripcsak G. An informatics infrastructure for patient safety and evidence-based practice in home healthcare. *Journal of Healthcare Quality* 2004;26:24–30.
- Hripcsak G, Stetson PD, Gordon P. Using the FCIM curricular guide and administrative codes to assess internal medicine resident breadth of experience. *Acad Med* 2004;79:557–63.
- Bakken S, Cimino JJ, Hripcsak G. Enabling patient safety and evidence-based practice through informatics. *Medical Care* 2004; 42:S49–56.
- Hripcsak G, Bakken S, Stetson PD, Patel VL. Mining complex clinical data for patient safety research: a framework for event discovery. *J Biomed Inform* 2003;36:120–30.
- Cao H, Stetson P, Hripcsak G. Assessing explicit error reporting in the narrative electronic medical record using keyword searching. *J Biomed Inform* 2003;36:99–105.
- Murff HJ, Patel VL, Hripcsak G, Bates DW. Detecting adverse events for patient safety research: a review of current methodologies. *J Biomed Inform* 2003;36:131–43.
- Wilcox AB, Hripcsak G. The role of domain knowledge in automating medical text report classification. *J Am Med Inform Assoc* 2003;10:330–8.
- Bates DW, Evans RS, Murff H, Stetson PD, Pizziferri L, Hripcsak G. Detecting Adverse Events Using Information Technology. *J Am Med Inform Assoc* 2003;10:115–28.
- Bates DW, Evans RS, Murff H, Stetson PD, Pizziferri L, Hripcsak G. Policy and the Future of Adverse Event Detection Using Information Technology. *J Am Med Inform Assoc* 2003;10:226–8.
- Hripcsak G, Heitjan D. Measuring agreement in medical informatics reliability studies. *J Biomed Inform* 2002;35:99–110.
- Hripcsak G, Austin JHM, Alderson PO, Friedman C. Use of natural language processing to translate clinical information from a database of 889,921 chest radiographic reports. *Radiology* 2002;224:157–63.
(Editorial in: Langlotz CP. Automatic structuring of radiology reports: harbinger of a second information revolution in radiology. *Radiology* 2002;224:5–7.)
- Hripcsak G, Wilcox A. Reference standards, judges, comparison subjects: roles for experts in evaluating system performance. *J Am Med Inform Assoc* 2002;9:1–15.
(Editorial in: Miller RA. Reference standards in evaluating system performance. *J Am Med Inform Assoc* 2002;9:87–88.)
- Chuang JH, Hripcsak G, Heitjan DF. Design and analysis of controlled trials in naturally clustered environments: implications for medical informatics. *J Am Med Inform Assoc* 2002;9:230–8.
- Yu H, Hripcsak G, Friedman C. Mapping abbreviations to full forms in biomedical articles. *J Am Med Inform Assoc* 2002;9:262–72.
- Starren J, Hripcsak G, Sengupta S, Abbruscato C R, Knudson P, Weinstock RS, Shea S. Columbia University's Informatics for Diabetes Education and Telemedicine (IDEATel) Project: Technical Implementation. *J Am Med Inform Assoc* 2002;9:25–36.

- Shea S, Starren J, Weinstock RS, Knudson P, Teresi J, Holmes D, Palmas W, Field L, Goland R, Tuck C, Hripcsak G, Capps L, Liss D. Columbia University's Informatics for Diabetes Education and Telemedicine (IDEATel) Project: Rationale and Design. *J Am Med Inform Assoc* 2002;9:49–62.
(Editorial in: Hersh WR, Patterson PK, Kraemer DF, Shea S. Telehealth: The Need for Evaluation Redux. *J Am Med Inform Assoc* 2002;9:89–91.)
- Elkins JS, Friedman C, Boden-Albala B, Sacco RL, Hripcsak G. Coding neuroradiology reports for the Northern Manhattan Stroke Study: a comparison of natural language processing and manual review. *Comput Biomed Res* 2000;33:1–10.
- Finkelstein J, Cabrera MR, Hripcsak G. Internet-based home asthma telemonitoring: can patients handle the technology? *Chest* 2000;117:148–55.
- Hripcsak G, Kuperman GJ, Friedman C, Heitjan DF. A reliability study for evaluating information extraction from radiology reports. *J Am Med Inform Assoc* 1999;6:143–50.
(Editorial in: Friedman CP. Toward a measured approach to medical informatics. *J Am Med Inform Assoc* 1999;6:176–7.)
- Hripcsak G, Knirsch C, Jain NL, Stazesky RC, Pablos-Mendez A, Fulmer T. A health information network for managing inner-city tuberculosis: bridging clinical care, public health, and home care. *Comput Biomed Res* 1999;32:67–76.
- Friedman C, Hripcsak G. Natural language processing and its future in medicine. *Acad Med* 1999;74:890–5.
- Friedman C, Hripcsak G, Shagina L, Liu H. Representing information in patient reports using natural language processing and the extensible markup language. *J Am Med Inform Assoc* 1999;6:76–87.
- Friedman C, Hripcsak G. Evaluating natural language processors in the clinical domain. *Methods Inf Med* 1998;37:334–44.
- Hripcsak G, Kuperman GJ, Friedman C. Extracting findings from narrative reports: software transferability and sources of physician disagreement. *Methods Inf Med* 1998;37:1–7.
- Knirsch C, Jain NL, Pablos-Mendez A, Friedman C, Hripcsak G. Respiratory isolation of tuberculosis patients using clinical guidelines and an automated clinical decision support system. *Infect Control Hosp Epidemiol* 1998;19:94–100.
- Wilcox A, Hripcsak G, Johnson S, Hwang J, Wu M. Developing online support for system developers: the FAQ approach. *Comput Biomed Res* 1998;31:112–21.
- Hripcsak G, Knirsch CA, Jain NL, Pablos-Mendez A. Automated tuberculosis detection. *J Am Med Inform Assoc* 1997;4:376–81.
- Hripcsak G, Allen B, Cimino JJ, Lee R. Access to data: comparing AccessMed to Query by Review. *J Am Med Inform Assoc* 1996;3:288–99.
- Hripcsak G, Clayton PD, Jenders RA, Cimino JJ, Johnson SB. Design of a clinical event monitor. *Comput Biomed Res* 1996;29:194–221.
- Hripcsak G, Friedman C, Alderson PO, DuMouchel W, Johnson SB, Clayton PD. Unlocking clinical data from narrative reports: a study of natural language processing. *Ann Intern Med* 1995;122:681–8.
(Editorial in: Tierney WM, Overhage JM, McDonald CJ. Toward electronic medical records that improve care. *Ann Intern Med* 1995;122:725–6.)
- Friedman C, Hripcsak G, DuMouchel W, Johnson SB, Clayton PD. Natural language processing in an operational clinical information system. *Natural Language Engineering* 1995;1:83–108.
- Clayton PD, Hripcsak G. Decision support in healthcare. *Int J Biomed Comput* 1995;39:59–66.
- Hripcsak G. Writing Arden Syntax medical logic modules. *Comput Biol Med* 1994;24:331–63.
- Starren JB, Hripcsak G, Jordan D, Allen B, Weissman C, Clayton PD. Encoding a post-operative coronary artery bypass surgery care plan in the Arden Syntax. *Comput Biol Med* 1994;24:411–7.
- Hripcsak G, Ludemann P, Pryor TA, Wigertz OB, Clayton PD. Rationale for the Arden Syntax. *Comput Biomed Res* 1994;27:291–324.
- Sengupta S, Clayton PD, Molholt P, Sideli RV, Cimino JJ, Hripcsak G, Johnson SB, Allen B, McCormack M, Hill C. IAIMS and sharing. *Int J Biomed Comput* 1994; 34:339–348.

- Cimino JJ, Clayton PD, Hripcsak G, Johnson SB. Knowledge-based approaches to the maintenance of a large controlled medical terminology. *J Am Med Inform Assoc* 1994;1:35–50.
- Pryor TA, Hripcsak G. The Arden Syntax for Medical Logic Modules. *Int J Clin Monit Comput* 1993;10:215–24.
- Hripcsak G. Monitoring the monitor: automated statistical tracking of a clinical event monitor. *Comput Biomed Res* 1993;26:449–66.
- Giuse NB, Giuse DA, Miller RA, Bankowitz RA, Janosky JE, Davidoff F, Hillner BE, Hripcsak G, Lincoln MJ, Middleton B, Peden JG. Evaluating consensus among physicians in medical knowledge base construction. *Methods Inf Med* 1993;32:137–45.
- Hendrickson G, Anderson RK, Clayton PD, Cimino J, Hripcsak G, Johnson SB, McCormack M, Sengupta S, Shea S, Sideli R, Roderer N. The integrated academic information system at Columbia-Presbyterian Medical Center. *MD Comput* 1992;9(1):35–42.
- Hripcsak G. Using connectionist modules for decision support. *Methods Inf Med* 1990;29:167–81.
- Hripcsak G. Problem solving using neural networks. *MD Comput* 1988;5(3):25–37.

PUBLICATIONS—PEER-REVIEWED CONFERENCE PROCEEDINGS

- Wilcox A, Kuperman G, Dorr DA, Hripcsak G, Narus SP, Thornton SN, Evans RS. Architectural strategies and issues with health information exchange. *Proc AMIA Symp 2006*, accepted for publication.
- Chen ES, Hripcsak G, Friedman C. Disseminating natural language processed clinical narratives. *Proc AMIA Symp 2006*, accepted for publication.
- Cao H, Markatou M, Melton GB, Chiang MF, Hripcsak G. Mining a clinical data warehouse to discover disease-finding associations using co-occurrence statistics. *Proc AMIA Symp 2005*:106–10.
- Rothschild AS, Lehmann HP, Hripcsak G. Inter-rater agreement in physician-coded problem lists. *Proc AMIA Symp 2005*:644–8.
- Zhou L, Friedman C, Parsons S, Hripcsak G. System architecture for temporal information extraction, representation and reasoning in clinical narrative reports. *Proc AMIA Symp 2005*:869–73.
- Wang D, Peleg M, Bu D, Cantor M, Landesberg G, Lunenfeld E, Tu SW, Kaiser GE, Hripcsak G, Patel VL, Shortliffe EH. GESDOR – a generic execution model for sharing of computer-interpretable clinical practice guidelines. *Proc AMIA Symp 2003*:694–8.
- Krauthammer M, Kra P, Iossifov I, Gomez SM, Hripcsak G, Hatzivassiloglou V, Friedman C, Rzhetsky A. Of truth and pathways: chasing bits of information through myriads of articles. *The 10th International Conference on Intelligent Systems for Molecular Biology (ISMB 2002)*. Also published as *Bioinformatics* 2002;18:249S–57S.
- Stetson PD, Johnson SB, Scotch M, Hripcsak G. The sublanguage of cross-coverage. *Proc AMIA Symp 2002*: 742–6.
- McKnight LK, Wilcox A, Hripcsak G. The effect of sample size and disease prevalence on supervised machine learning of narrative data. *Proc AMIA Symp 2002*:519–22.
- Krauthammer M, Johnson SB, Hripcsak G, Campbell DA, Friedman C. Representing nested semantic information in a linear string of text using XML. *Proc AMIA Symp 2002*:405–9.
- Chuang JH, Friedman C, Hripcsak G. A comparison of the Charlson comorbidities derived from medical language processing and administrative data. *Proc AMIA Symp 2002*: 160–4.
- Krauthammer M, Hripcsak G. A knowledge model for the interpretation and visualization of NLP-parsed discharge summaries. *Proc AMIA Symp 2001*: 339–43.
- Friedman C, Liu J, Shagina L, Johnson S, Hripcsak G. Evaluating the UMLS as a source of lexical knowledge for medical language processing. *Proc AMIA Symp 2001*:189–93.
- Starren J, Sengupta S, Hripcsak G, Ring G, Klerer R, Shea S. Making grandma’s data secure: a security architecture for home telemedicine. *Proc AMIA Symp 2001*:657–61.
- Wilcox A, Hripcsak G. Medical text representations for inductive learning. *Proc AMIA Symp 2000*:923–7.
- Chuang J, Hripcsak G, Jenders RA. Considering clustering: a methodological review of clinical decision support system studies. *Proc AMIA Symp 2000*:146–50.

- Chuang JH, Hripcsak G, Jenders R. Considering clustering: a methodological review of clinical decision support systems studies. *Medical Informatics Symposium in Taiwan*, 2000 Oct. 28–29; Taipei, Taiwan, R.O.C. (adapted with permission from JAMIA).
- Cai J, Hripcsak G, Johnson S. Generic data modeling for home telemonitoring of chronically ill patients. *Proc AMIA Symp* 2000:116–20.
- Hripcsak G, Cimino JJ, Sengupta S. WebCIS: large scale deployment of a web-based clinical information system. *Proc Amia Symp* 1999:804–8.
- Friedman C, Knirsch C, Shagina L, Hripcsak G. Automating a severity score guideline for community-acquired pneumonia employing medical language processing of discharge summaries. *Proc Amia Symp* 1999:256–60.
- Wilcox A, Hripcsak G. Classification algorithms applied to narrative reports. *Proc Amia Symp* 1999:455–9.
- Friedman C, Hripcsak G, Shablinsky I. An evaluation of natural language processing methodologies. *Proc Amia Symp* 1998:855–9.
- Wilcox A, Hripcsak G. Knowledge discovery and data mining to assist natural language understanding. *Proc Amia Symp* 1998:835–9.
- Finkelstein J, Hripcsak G, Cabrera MR. Patients' acceptance of internet-based home asthma telemonitoring. *Proc Amia Symp* 1998:336–40.
- Jenders RA, Huang H, Hripcsak G, Clayton PD. Evolution of a knowledge base for a clinical decision support system encoded in the Arden Syntax. *Proc Amia Symp* 1998:558–62.
- Finkelstein J, Hripcsak G, Cabrera M. Telematic system for monitoring of asthma severity at patients' homes. *Medinfo* 1998;9 Pt 1:272–6.
- Finkelstein J, Cabrera MR, Hripcsak G. Web-based monitoring of asthma severity. In: Laxminarayan S, Micheli-Tzanakou E (eds). *Proceedings—1998 IEEE International Conference on Information Technology Applications in Biomedicine*. IEEE Engineering in Medicine and Biology Society, 1998:139–43.
- Wilcox A, Hripcsak G, Chen C. Creating an environment for linking knowledge-based systems to a clinical database: a suite of tools. *Proc AMIA Annu Fall Symp* 1997:303–7.
- Friedman C, Hripcsak G. Evaluating natural language processors in the clinical domain. In: Chute CC (ed). *Proceedings of the Conference on Natural Language and Medical Concept Representation, IMIA*, 1997:41–52.
- Jain NL, Knirsch C, Friedman C, Hripcsak G. Identification of suspected tuberculosis patients based on natural language processing of chest radiograph reports. *Proc AMIA Annu Fall Symp* 1996:542–6.
- Johnson SB, Forman B, Cimino JJ, Hripcsak G, Sengupta S, Sideli R, Clayton PD. A technological perspective on the computer-based patient record. In: Steen EB (ed). *Proceedings of the First Annual Nicolas E. Davies CPR Recognition Symposium*, 1995 April 4–6; Washington (DC). Washington (DC): Computer-based Patient Record Institute, 1995:35–51.
- Cimino JJ, Johnson SB, Hripcsak G, Hill CL, Clayton PD. Managing vocabulary for a centralized clinical system. *Medinfo* 1995;8 Pt 1:117–20.
- Jenders RA, Hripcsak G, Sideli RV, DuMouchel W, Zhang H, Cimino JJ, Johnson SB, Sherman EH, Clayton PD. Medical decision support: experience with implementing the Arden Syntax at the Columbia Presbyterian Medical Center. *Proc Annu Symp Comput Appl Med Care* 1995:169–73.
- Sherman EH, Hripcsak G, Starren J, Jenders RA, Clayton P. Using intermediate states to improve the ability of the Arden Syntax to implement care plans and reuse knowledge. *Proc Annu Symp Comput Appl Med Care* 1995:238–42.
- Hripcsak G, Clayton PD. User comments on a clinical event monitor. *Proc Annu Symp Comput Appl Med Care* 1994:636–40.
- Johnson SB, Hripcsak G, Chen J, Clayton P. Accessing the Columbia Clinical Repository. *Proc Annu Symp Comput Appl Med Care* 1994:281–5.
- Hripcsak G, Johnson SB, Clayton PD. Desperately seeking data: knowledge base-database links. *Proc Annu Symp Comput Appl Med Care* 1993:639–43.
- Pryor TA, Hripcsak G. Sharing MLM's: an experiment between Columbia-Presbyterian and LDS Hospital. *Proc Annu Symp Comput Appl Med Care* 1993:399–403.

- Cimino JJ, Johnson SB, Hripcsak G, Sideli RV, Fink DJ, Friedman C, Clayton PD. One year's experience with the Unified Medical Language System (UMLS) in academia and patient care. *Medinfo* 1992:1501–5.
- Johnson SB, Clayton PD, Fink DJ, Sengupta S, Shea S, Bourne P, Sideli RV, Aguirre A, Cimino JJ, Hripcsak G, McCormack M, Hill C. Achievements in Phase III of an Integrated Academic Information Management System. *Medinfo* 1992:117–23.
- Hripcsak G, Cimino JJ, Johnson SB, Clayton PD. The Columbia-Presbyterian Medical Center decision-support system as a model for implementing the Arden Syntax. *Proc Annu Symp Comput Appl Med Care* 1991:248–52.
- Johnson SB, Friedman C, Cimino JJ, Clark T, Hripcsak G, Clayton PD. Conceptual data model for a central patient database. *Proc Annu Symp Comput Appl Med Care* 1991:381–5.
- Hripcsak G, Clayton PD, Pryor TA, Haug P, Wigertz OB, van der Lei J. The Arden Syntax for Medical Logic Modules. *Proc Annu Symp Comput Appl Med Care* 1990:200–4.
- Clayton PD, Hripcsak G, Pryor TA. Emerging standards for medical logic. *Proc Annu Symp Comput Appl Med Care* 1990:27–31.
- Cimino JJ, Hripcsak G, Johnson SB, Friedman C, Fink DJ, Clayton PD. UMLS as knowledge base—a rule-based expert system approach to controlled medical vocabulary management. *Proc Annu Symp Comput Appl Med Care* 1990:175–9.
- Johnson SB, Cimino JJ, Friedman C, Hripcsak G, Clayton PD. Using metadata to integrate medical knowledge in a clinical information system. *Proc Annu Symp Comput Appl Med Care* 1990:340–4.
- Friedman C, Hripcsak G, Johnson SB, Cimino JJ, Clayton PD. A generalized relational schema for an integrated clinical patient database. *Proc Annu Symp Comput Appl Med Care* 1990:335–9.
- Hripcsak G. Toward data analysis using connectionist modules. *Proc Annu Symp Comput Appl Med Care* 1989:271–5.
- Clayton PD, Pryor TA, Wigertz OB, Hripcsak G. Issues and structures for sharing knowledge among decision-making systems: The 1989 Arden Homestead Retreat. *Proc Annu Symp Comput Appl Med Care* 1989:116–21.
- Cimino JJ, Hripcsak G, Johnson SB, Clayton PD. Designing an introspective, multipurpose, controlled medical vocabulary. *Proc Annu Symp Comput Appl Med Care* 1989:513–8.
- Hripcsak G. The estimation of posterior probabilities using neural networks. *Proc Annu Symp Comput Appl Med Care* 1988:240–4.
- Clayton PD, Pryor TA, Wigertz OB, Johnson SB, Hripcsak GM. Sharing medical knowledge for automated decision-making. *Proc Annu Symp Comput Appl Med Care* 1988:591–4.

PUBLICATIONS—ABSTRACTS

- Hripcsak G, Bamberger A, Friedman C. Fever detection in clinic visit notes using a general purpose processor (abstract). Fifth Annual Syndromic Surveillance Conference; 2006 September 19–20; Baltimore, MD: International Society for Disease Surveillance, 2006.
- Zhou L, Parsons S, Hripcsak G. Handling implicit and uncertain temporal information in medical text (poster). *Proc AMIA Symp* 2006.
- Chen ES, Wajngurt D, Qureshi K, Hyman S, Hripcsak G. Automated real-time detection and notification of positive infection cases (poster). *Proc AMIA Symp* 2006.
- Stetson PD, Keselman A, Rappaport D, Van Vleck T, Cooper M, Boyer A, Hripcsak G. Electronic discharge summaries (poster). *Proc AMIA Symp* 2005:1121.
- Zhou L, Hripcsak G, Parsons S, Das AK, Johnson SB. Reasoning about time in electronic discharge summaries using temporal constraint satisfaction techniques (abstract). *Intelligent Data Analysis in Medicine and Pharmacology Workshop (IDAMAP-2004)*; 2004 September 6; Stanford, CA; 2004.
- Yu A, Stetson PD, Hripcsak G. Detection of adverse events using conflicts in the electronic medical record (poster). *Medinfo* 2004:1923.
- Cao H, Chiang MF, Cimino JJ, Friedman C, Hripcsak G. Automatic summarization of patient discharge summaries to create problem lists using medical language processing (poster). *Medinfo* 2004:1540.

- Chen ES, Hripcsak G, Patel VL, Sengupta S, Gallagher RJ, Cimino JJ. Automated identification of shortcuts to patient data for a wireless handheld clinical information system (poster). Proc AMIA Symp 2003:809.
- Cao H, Stetson P, Hripcsak G. Assessing explicit error reporting in the narrative electronic medical record using keyword searching (poster). Proc AMIA Symp 2003:803.
- Chiang MF, Cao H, Sharda P, Hripcsak G, Starren JB. An experimental system for comparing speed, accuracy, and completeness of physician data entry using electronic and paper methods (poster). Proc AMIA Symp 2003:812.
- Johnson SB, Campbell DA, Krauthammer M, Tulipano PK, Medonca EA, Friedman C, Hripcsak G. A native XML database design for clinical document research (poster). Proc AMIA Symp 2003:883.
- Malhotra R, Austin JHM, Mujoomdar A, Powell CA, Pearson GDN, Shiau MC, Raftopoulos H, Hripcsak G. Non-small cell carcinoma of lung: size of the primary cancer, gender, and age of the patient as predictors of metastasis to thoracic lymph nodes, lung, bone, liver, and adrenal glands (abstract). RSNA 2002.
- Wilcox A, Hripcsak G, Knirsch C. Knowledge discovery using the electronic medical record (poster). Proc AMIA Symp 2002: 1198.
- Bu D, Hripcsak G. Case-based reasoning for medical risk stratification: contrast associated nephropathy (poster). Proc AMIA Symp 2002: 986.
- Scotch M, Hripcsak G. The Companion Project — a wearable computing device for the patient for reducing medical errors and improving patient care (poster). Proc AMIA Symp 2002: 1157.
- Starren J, Shea S, Weinstock RS, Knudson P, Morin PC, Teresi J, Holmes D, Palmas W, Field L, Goland R, Hripcsak G, Hilliman C, Ashraf M, Liss JD. IDEATel: up and running (abstract). Journal of Telemedicine and e-Health 2002;8:212.
- Mujoomdar A, Anderson WJ, Austin JHM, Shiau MC, Pearson GDN, Powell CA, Hripcsak G. Non-small cell carcinoma of the lung: size of the primary cancer and age of the patient as predictors of metastasis to the central nervous system (abstract). RSNA 2000.
- Yu H, Hripcsak G. Hereditary disease discovery from a clinical data warehouse (poster). Proc AMIA Symp 2000:1161.
- Yu H, Hripcsak G. A large scale, cross-disease family health history data set (poster). Proc AMIA Symp 2000:1162.
- Wilcox A, Hripcsak G, Friedman C. Using knowledge sources to improve classification of medical text reports (abstract). Sixth ACM SIGKDD International Conference on Knowledge Discovery and Data Mining; 2000 August 20; Boston; 2000:115–6.
- Cai J, Leibel R, Hripcsak G. Use of clinical data in genetic research: the value of narrative data in electronic medical records (poster). Proc Amia Symp 1999:1036.
- Finkelstein J, Hripcsak G, Cabrera M. Knowledge discovery in clinical information system to analyze patterns of asthma hospitalization (poster). Proc Amia Symp 1999:1057.
- Finkelstein J, Hripcsak G, Cabrera M. Experience in building and implementation of a web-based asthma telemonitoring program (abstract). Telemed J 1999;5(1):54.
- Gallagher RJ, Sengupta S, Hripcsak G, Barrows RC, Clayton PD. An audit server for monitoring clinical information systems (poster). Proc Amia Symp 1998:1002.
- Wilcox A, Friedman C, Hripcsak G. Natural language as a tool in the development of a controlled vocabulary (poster). Proc Amia Symp 1998:1098.
- Finkelstein J, Hripcsak G, Cabrera MR. Real-time decision-support in home asthma telemonitoring (abstract). In: Proceedings of the 1998 AMIA Spring Congress; 1998 May 27–30; Philadelphia. Washington, D.C.: American Medical Informatics Association, 1998.
- Finkelstein J, Cabrera MR, Hripcsak G. Forced vital capacity (FVC) test validity in home asthma telemonitoring (abstract). Eur Respir J 1998;12:115s.
- Finkelstein J, Cabrera MR, Hripcsak G. How many maneuvers are required for forced vital capacity test (FVC) in serial monitoring at patients' homes? (abstract). Clin Physiol 1998;18(3):256.
- Wilcox A, Hripcsak G, Knirsch C. Using palmtop computers to retrieve clinical information (poster). Proc AMIA Annu Fall Symp 1997:1017.

- Hripcsak G, Jain NL, Knirsch C. Tuberculosis decision support on a health information network (abstract). In: Proceedings of the 1997 AMIA Spring Congress; 1997 May 28–31; San Jose. Washington, D.C.: American Medical Informatics Association, 1997:62.
- Finkelstein J, Hripcsak G. Monitoring of asthma severity in patients' homes using wireless technology (abstract). In: Proceedings of the 1997 AMIA Spring Congress; 1997 May 28–31; San Jose. Washington, D.C.: American Medical Informatics Association, 1997:123.
- Sengupta S, Gallagher R, Hripcsak G, Wu M, Barrows RC, Clayton PD. Searching for patterns in an audit log of clinical information access (abstract). In: Proceedings of the 1997 AMIA Spring Congress; 1997 May 28–31; San Jose. Washington, D.C.: American Medical Informatics Association, 1997:55.
- Jenders RA, Sherman EH, Hripcsak G, Fulmer TL, Clayton PD. Use of a computer-based decision support system for clinical research (abstract). In: Proceedings of the 1997 AMIA Spring Congress; 1997 May 28–31; San Jose. Washington, D.C.: American Medical Informatics Association, 1997:100.
- Hripcsak G, Jain NL, Knirsch C, Frieden T, Stazesky RC, Fulmer T, Pablos-Mendez A. Applied Informatics: using the NII to coordinate health care (abstract). In: Proceedings of the 1996 AMIA Spring Congress; 1996 June 5–8; Kansas City. Washington, D.C.: American Medical Informatics Association, 1996:103.
- Jain NL, Hripcsak G, Knirsch C, Frieden TR. A tuberculosis information resource for patients and health care providers (abstract). In: Proceedings of the 1996 AMIA Spring Congress; 1996 June 5–8; Kansas City. Washington, D.C.: American Medical Informatics Association, 1996:83.
- Hripcsak G, DuMouchel W, Friedman C, Knirsch C, Jain N. Linking natural language processing and clinical event monitoring (poster). Workshop on Evaluation of Knowledge-Based Systems, December 7–8, 1995, National Library of Medicine, Bethesda, MD.
- Hripcsak G, Johnson SB, Sideli RV, Cimino JJ, Clayton PD. Using data access modules for legacy databases (abstract). In: Rindfleisch TC, editor. Proceedings of the 1994 AMIA Spring Congress; 1994 May 4–7; San Francisco. Washington, D.C.: AMIA, 1994:107.
- Cimino JJ, Hripcsak G, Johnson SB, Sideli RV, Clayton PD. Integrating systems by integrating vocabularies (abstract). In: Rindfleisch TC, editor. Proceedings of the 1994 AMIA Spring Congress; 1994 May 4–7; San Francisco. Washington, D.C.: AMIA, 1994:75.
- Sideli RV, Sengupta S, Chernizer I, Hripcsak G, Clayton PD. An HL7 toolkit (poster). Proc Annu Symp Comput Appl Med Care 1993:904.
- Sideli RV, Johnson SB, Hripcsak G, Sengupta S, Cimino JJ, Allen B, Clayton PD. Accessing the electronic medical record using HL7 (abstract). In: Kahn MG, editor. Proceedings of the 1993 AMIA Spring Congress; 1993 May 9–12; St. Louis. Washington, D.C.: AMIA, 1993:49.
- Hripcsak G. A neural network for medical diagnosis that accommodates unreliable data. In: Hammond WE, editor. Proceedings of the American Association for Medical Systems and Informatics Congress 89; 1989 May 11–13; San Francisco. Washington, D.C.: AAMSI Publishers, 1989:159–63.

PUBLICATIONS—REVIEWS, CHAPTERS, EDITORIALS, INVITED PAPERS, AND SUPPLEMENTS

- Hripcsak G. Automated public health reporting: a familiar but cantankerous friend. *Advances in Disease Surveillance* 2007; in press.
- Hripcsak G. Synopsis: decision support, knowledge representation and management. In: Haux R, Kulikowski C, editors. 2005 IMIA Yearbook of Medical Informatics. Stuttgart: Schattauer, 2005.
- Sittig DF, Shiffman R, Leonard K, Friedman C, Rudolph B, Hripcsak G, Adams L, Kleinman LC. A draft framework for measuring progress towards the development of a National Healthcare Information Infrastructure. In: National Health Information Infrastructure 2004: Cornerstones for Electronic Healthcare; 2004 July 20–23; Washington, DC.
- Bakken S, Cimino JJ, Hripcsak G. Promoting patient safety and enabling evidence-based practice through informatics. In: *Measuring and Improving Health Care Quality: Towards Meaningful Solutions to Pressing Problems: Nursing's Contributions to the State of the Science*; 2002 Apr 18–20; Philadelphia.
- Hripcsak G. IAIMS architecture. *J Am Med Inform Assoc* 1997;4:S20–30.

- DuMouchel W, Friedman C, Hripcsak G, Johnson SB, and Clayton PD. Two applications of statistical modelling to natural language processing. In: Fisher D and Lenz H, editors. *AI and Statistics V*. New York: Springer-Verlag, 1996:413–21.
- Hripcsak G, Pryor TA, Wigertz OB. Transferring medical knowledge bases between different HIS environments. In: Prokosch HU, Dudeck J, editors. *Hospital Information Systems: Design and Development Characteristics; Impact and Future Architecture*. Amsterdam: Elsevier Science B.V., 1995:241–64.
- Clayton PD, Hripcsak G. Decision support in healthcare. In: Hammond WE, Bakker AR, Ball MJ, editors. *Information Systems with Fading Boundaries*. Shannon: Elsevier, 1995:59–66.
- Hripcsak G. The Arden Syntax for medical logic modules: introduction. *Comput Biol Med* 1994;24:329–30.
- Hripcsak G. Synopsis: health and clinical management. In: van Bommel JH, McCray AT, editors. *1994 Yearbook of Medical Informatics*. Stuttgart: Schattauer, 1994.
- Hripcsak G, Wigertz OB, Kahn MG, Clayton PD, Pryor TA. ASTM E31.15 on health knowledge representation: the Arden Syntax. *Stud Health Technol Inform* 1993;6:105-12.
- McDonald CJ, Hripcsak GH. Data exchange standards for computer-based patient records. In: Ball MJ, Collen MF, editors. *Aspects of the Computer-based Patient Record*. New York: Springer-Verlag, 1992:157–64.
- Hripcsak G. Arden Syntax for Medical Logic Modules. *MD Comput* 1991;8(2):76–8.
- Hripcsak G, Clayton PD, Cimino JJ, Johnson SB, Friedman C. Medical decision support at Columbia-Presbyterian Medical Center. In: Timmers T, Blum BI, editors. *Software Engineering in Medical Informatics*. Amsterdam: North-Holland, 1991:471–9.
- Cimino JJ, Hripcsak G, Johnson SB, Friedman C, Clayton PD. Prototyping a vocabulary management system in an object-oriented environment. In: Timmers T, Blum BI, editors. *Software Engineering in Medical Informatics*. Amsterdam: North-Holland, 1991:429–39.
- Wigertz OB, Clayton PD, Hripcsak G, Linnarsson R. Knowledge representation and data model to support medical knowledge base transportability. In: Talmon J, Spiegelhalter J, editors. *System Engineering in Medicine*. Heidelberg: Springer Verlag, 1989.