

BIOGRAPHICAL SKETCH

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NAME: **CIMINO**, James J

eRA COMMONS USER NAME (credential, e.g., agency login): CIMINOJ

POSITION TITLE: Director, Informatics Institute

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.*)

INSTITUTION AND LOCATION	DEGREE (if applicable)	END DATE MM/YYYY	FIELD OF STUDY
Brown University	ScB	06/1977	Biomedical Sciences
New York Medical College	MD	06/1981	Medicine
Saint Vincent's Medical Center	Resident	06/1984	Internal Medicine
Massachusetts General Hospital and Harvard University	NIH Fellowship	06/1988	Medical Informatics

A. Personal Statement

My experience with research informatics research and service, including clinical data repositories, genomic data stores, biorepositories, and systems to address researcher information needs extends back 30 years, beginning with the construction of the Columbia-Presbyterian clinical database in 1988.[1] That database, initially constructed to support patient care systems, incorporated many seminal aspects, including a simple, fact-based data model and an enterprise data warehouse (the Medical Entities Dictionary,[2] mentioned in 161 PubMed Central articles). It has widely expanded in scope and purpose over the years and continues to be the enterprise data warehouse for patient care, research, and operational purposes at Columbia University Medical Center.[3] In 2008, I accepted the position of Chief of the Laboratory for Informatics Development at the NIH Clinical Center, where I designed and built an NIH-wide Biomedical Translational research Information System (BTRIS; mentioned in 39 PubMed Central articles),[4] that comprises data from clinical care, clinical research and bioinformatics systems. A key component of BTRIS is the Research Entities Dictionary, an NIH enterprise ontology server. As Director of the Informatics Institute and Co-Director for Informatics of the Center for Clinical and Translational Science at the University of Alabama-Birmingham School of Medicine, I maintain the perspectives of an active clinician, a clinical researcher, and an informatics researcher. In these roles, I am uniquely positioned to lead activities that will create an informatics ecosystem for researchers across the spectrum of biomedical research. I work daily to integrate information systems to make their data available for research. As part of that effort, I have initiated development of the UAB Foundational Ontology (UFO) to support data exchange and aggregation in order to design novel solutions to researchers' problems and implement improvements to address them. This work is being brought to bear not only on the UAB CCTS, but on state-wide and national projects such as the All of Us initiative, the IGNITE consortium, the Accrual to Clinical Trials network, and the Alabama Genome Health Initiative.

1. **Cimino JJ**, Socratous SA, Clatyrn PD. Internet as clinical information system: application development using the World Wide Web. *J Am Med Inform Assoc.* 1995 Sep-Oct; 2(5): 273–284.
2. Baorto D, Li L, **Cimino JJ**. Practical experience with the maintenance and auditing of a large medical ontology. *Journal of biomedical informatics.* 2009;42(3):494-503. PMID: [19285569](#); PMCID: [PMC3508433](#).
3. Hripcsak G, **Cimino JJ**, Sengupta S. WebCIS: large scale deployment of a Web-based clinical information system. *Proc AMIA Symp.* 1999:804-808.
4. **Cimino JJ**, Ayres EA, Remennik L, Rath S, Freedman R, Beri A, Chen Y, Huser v. The National Institutes of Health's Biomedical Translational Research Information System (BTRIS): Design, Contents, Functionality and Experience to Date. *J Biomed Inform.* 2014 Dec; 52: 11–27. PMCID: [PMC4026354](#)

B. Positions and Honors

Positions and Employment

1984 – 1985	Attending Physician, Department of Community Medicine, Saint Vincent's Hospital and Medical Center, New York, NY
1988 – 2007	Professor of Biomedical Informatics and Medicine, Columbia University College of Physicians and Surgeons, New York, NY
2007 – 2015	Chief, Laboratory for Informatics Development, NIH Clinical Center, Bethesda, MD
2015 – present	Director, Informatics Institute, University of Alabama-Birmingham, Birmingham, AL

Other Experience and Professional Memberships

1988 – 2007	Attending Physician, New York-Presbyterian Hospital
2007 – 2015	Attending Physician, NIH Clinical Center
2015 – present	Professor and Attending Physician, University of Alabama-Birmingham Department of Medicine
2016 – present	Biomedical Library and Informatics Review Committee, National Library of Medicine Medical Licensure New York (1982), Boston (1985), Alabama (2016)

Honors

1984	Board Certification, Internal Medicine (maintained)
1992	Fellow, American College of Medical Informatics
1995	Priscilla Mayden Award for Excellence in Medical Informatics, University of Utah
1998	Fellow, American College of Physicians
2002	President's Award, American Medical Informatics Association
2006	Member, American Clinical and Climatological Association
2006	Medal of Honor, New York Medical College
2006	Fellow, New York Academy of Medicine
2009	Director's Award, NIH Clinical Center
2012	Donald A. B. Lindberg Award for Innovation in Informatics, American Medical Informatics Association
2013	Director's Award, NIH Clinical Center
2014	Member, Institute of Medicine (now National Academy of Medicine)
2015	Subspecialty Certification in Clinical Informatics (maintained)

C. Contribution to Science

1. Clinical Research Informatics: My work at the NIH's Clinical Center involved the application of novel informatics approaches, based on his work at Columbia University, to create the Biomedical Translational Research Information System (BTRIS), an NIH-wide repository of clinical and genomic research data that is used by NIH researchers to obtain data sets from their clinical studies or, in de-identified form, from across all intramural NIH studies going back to 1976. The implementation of BTRIS addressed a wide variety of technical issues related to querying data drawn from disparate resources (including both phenomic and genomic data) and creating dynamic displays of the results, both through the use of the Research Entities Dictionary (see above). I also defined and operationalized new NIH policies to address the methods by which researchers could re-use research data that lowered administrative barriers while improving the protection of the rights of research subjects and the intellectual interests of the original investigators.
 - a. **Cimino JJ.** The false security of blind dates: chrononymization's lack of impact on data privacy of laboratory data. *Appl Clin Inform.* 2012; 3(4): 392-403. PMID: [PMC3613034](#).
 - b. **Cimino JJ.** Improving the electronic health record--are clinicians getting what they wished for? *JAMA* 2013; 309(10): 991-2. PMID: [PMC3858675](#).
 - c. **Cimino JJ, Ayres EJ, Remennik L, Rath S, Freedman R, et al.** The National Institutes of Health's Biomedical Translational Research Information System (BTRIS): design, contents, functionality and experience to date. *J Biomed Inform.* 2014; 52: 11-27. PMID: [PMC4026354](#).
 - d. Cahan A, **Cimino JJ.** Computer-Aided Assessment of the Generalizability of Clinical Trial Results. *International Journal of Medical Informatics* 2017; 99: 60-66. PMID: [PMC28118923](#)

2. Advanced Representation of Biomedical Terminologies: I defined a set of “desiderata” for controlled biomedical terminologies that has served as a basis for terminology development for over 20 years. Among these desiderata was the inclusion of formal definitional knowledge which could be used for auditing and maintaining the terminology itself.
 - a. **Cimino JJ.** Saying what you mean and meaning what you say: coupling biomedical terminology and knowledge. *Acad Med.* 1993; 68(4): 257-60. PMID: [8466601](#).
 - b. **Cimino JJ.** Desiderata for controlled medical vocabularies in the twenty-first century. *Methods Inf Med.* 1998; 37(4-5): 394-403. PMCID: [PMC3415631](#).
 - c. **Cimino JJ.** In defense of the Desiderata. *J Biomed Inform.* 2006; 39(3): 299-306. PMID: [16386470](#).
 - d. **Cimino JJ,** Hayamizu TF, Bodenreider O, Davis B, Stafford GA, et al. The caBIG terminology review process. *J Biomed Inform.* 2009; 42(3): 571-80. PMCID: [PMC2729758](#).

3. Mentoring: I have over 30 years of experience mentoring trainees in biomedical informatics. To date, 8 of my trainees have been inducted as fellows into the American College of Medical Informatics.
 - a. *Kukafka R, Lussier YA, Patel VL, Cimino JJ.* Web-based tailoring and its effect on self-efficacy: results from the MI-HEART randomized controlled trial. *Journal of the American Medical Informatics Association.* 2002;9 (suppl.):410-414.
 - b. *Chen ES, Mendonca EA, McKnight LK, Stetson PD, Lei J, Cimino JJ.* PalmCIS: A Wireless Handheld Application for Satisfying Clinician Information Needs *J Am Med Inform Assoc.* 2004;11(1): 19-28.
 - c. *Chiang MF, Casper DS, Cimino JJ, Starren J.* Representation of ophthalmology concepts by electronic systems; adequacy of controlled medical terminologies. *Ophthalmology* 2005;112:175–183.
 - d. *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.* 2007 Jun;40(3):236-51.
 - e. *Zeng Q, Cimino J.* A knowledge-based, concept-oriented view generation system for clinical data. *Journal of Biomedical Informatics.* *Journal of Biomedical Informatics*; 2001;34(2): 112-122.

4. Infobuttons: I was an early developer of methods for linking on-line knowledge resources, such as clinical decision support tools, to electronic health records, in ways that automatically execute context-aware queries to the resources using patient-specific and user-specific information. I coined the term “infobuttons” for these methods and created “infobutton managers” that use context-specific information to select the resources and automatically customize the queries. An international standard (HL7) has been developed specifically to support the integration of clinical information systems to institution-independent infobutton managers and resources and the use of infobuttons in electronic health records is now mandated by the federal government.
 - a. **Cimino JJ.** Linking patient information systems to bibliographic resources. *Methods Inf Med.* 1996; 35(2): 122-6. PMID: [8755385](#).
 - b. **Cimino JJ,** Li J, Graham M, Currie LM, Allen M, Bakken S, Patel VL. Use of online resources while using a clinical information system. *AMIA Annu Symp Proc.* 2003: 175-9. PMCID: [PMC1479924](#)
 - c. **Cimino JJ.** An integrated approach to computer-based decision support at the point of care. *Trans Am Clin Climatol Assoc.* 2007; 118: 273-88. PMID: [18528510](#)
 - d. **Cimino JJ,** Overby CL, Devine EB, Hulse NC, Jing X, Maviglia SM, Del Fiol G. Practical choices for infobutton customization: experience from four sites. *AMIA Annu Symp Proc.* 2013: 236-45. PMCID: [PMC3900175](#).

5. Novel Clinical Information Systems: I have been a lead designer of clinical systems, including a diagnostic decision support system (DXplain), for which I was responsible for the knowledge base that is still in use after almost 30 years. I pioneered the development of World Wide Web-based electronic health records on desk-top and hand-held platforms, for clinicians and patients.
 - a. **Barnett GO, Cimino JJ,** Hupp JA, Hoffer EP. DXplain. An evolving diagnostic decision-support system. *JAMA* 1987; 258(1): 67-74. PMID: [3295316](#).

- b. **Cimino JJ**, Socratous SA, Clayton PD. Internet as clinical information system: application development using the World Wide Web. *J Am Med Inform Assoc.* 1995; 2(5): 273-84. PMID: [PMC116267](#).
- c. **Cimino JJ**, Patel VL, Kushniruk AW. The patient clinical information system (PatCIS): technical solutions for and experience with giving patients access to their electronic medical records. *Int J Med Inform.* 2002; 68(1-3): 113-27. PMID: [12467796](#).
- d. **Cimino JJ**, Bakken S. Personal digital educators. *N Engl J Med.* 2005; 352(9): 860-2. PMID: [15745975](#).

Complete List of Published Work in My Bibliography:

<http://www.ncbi.nlm.nih.gov/myncbi/browse/collection/42526188>

D. Additional Information: Research Support and/or Scholastic Performance

Ongoing Research Support

2017/10/01 – 2019/09/30

171F33890015

American Heart Association

AHA-Data Grant Fellowship

Cimino, James (PI)

Cardiovascular diseases are common but very complexed. According to the Centers for Disease Control and Prevention, about 610,000 people die of heart disease in the United States every year, which is one in every four deaths. Heart disease can be attributed to many factors such as genetic, epigenetic, environmental and a combination of them. Great efforts have been made to push the cardiovascular research moving forward to a Precision Cardiovascular Medicine era. In companion, there are vast columns of data generated both at the University of Alabama at Birmingham (UAB) and the community including genomics, epigenomics, transcriptomics, proteomics and detailed clinical information. There is an urgent need to systematically and comprehensively analyze the large datasets under a high-capability computational platform, such as the AHA Precision Medicine Cloud Computing Platform. Under this rationale and with our resources and expertise, we would like to apply for the Cohort Fellowship Program of the Institutional Data Fellowship Program to educate the next generation researchers in precision cardiovascular research and cloud computing.

Role: PI

2017/06/01 – 2018/05/31

0055353 (129324-25)

University of Pittsburgh- NIH - National Institutes of Health/DHHS/

Cimino, James (PI)

University of Pittsburgh Clinical and Translational Science

The overall goal of this project is to integrate the UAB i2b2 data repository to the ACT SHRINE network.

Role: UAB Site PI

2016/09/15 – 2020/06/30

U0160044737UAB/2016799

Starren, J (PI)

Northwestern University-NIH-National Institutes of Health/DHHS

Improving Patient Reported Outcome Data for Research through Seamless Integration of the PROMIS Toolkit into EHR Workflows

The overall goal of this project is to integrate a patient-reported outcomes survey instrument into an electronic health record (EHR) such that clinicians can order an assessment and the EHR patient portal will provide the patient with a link to the survey. Once the survey has been completed, detailed results will be stored in the EHR for display to the physician and transmission to the enterprise data warehouse. The research is focused on the integration technologies.

Role: UAB Site PI

2017/08/26 – 2018/05/31

OT2OD025284 NIH Office of the Director

Korf, Bruce (PI)

Southern All of Us Network

The goal of this project is to gather data from 8,000 participants over a period of 9 months to accelerate research and improve health. This is a participant-engaged, data-driven enterprise supporting research at the intersection of human biology, behavior, and genetics to produce new knowledge with the goal of developing more effective ways to treat disease.

Role: Co-Investigator

2015/08/18-2019/03/31

UL1TR001417, National Center for Advancing Translational Sciences (NCATS)

Kimberly, Robert P. (PI)

UAB Center for Clinical and Translational Science (CCTS)

The UAB CCTS will enhance human health by driving scientific discovery and dialogue across the bench, bedside, and community continuum. The CCTS Components support this overall mission in a highly integrative network of relationships. Success in creating such an environment is dependent upon success in achieving five strategic priorities: 1) enhancing research infrastructure; 2) promoting investigator education, training and development; 3) accelerating discovery across the T1 interface; 4) expanding value-added partnerships; and 5) building sustainability.

Role: Co-investigator