

# Curriculum Vitae and Bibliography

## Robert A. Greenes, MD, PhD

### PERSONAL INFORMATION

Place of Birth: Cleveland, Ohio  
Citizenship: United States  
Work Address: 1205 Pacific Hwy, Unit 1001  
San Diego, CA 92101  
Home Address: 1205 Pacific Hwy, Unit 1001  
San Diego, CA 92101  
Phone: (617) 331-7715 (cell)  
Email Address: greenes@asu.edu

### PRESENT ACADEMIC RANK AND POSITION

Emeritus Professor Ira A. Fulton Chair in Biomedical Informatics 2020 – Present  
Arizona State University, Phoenix, Arizona  
Adjunct Professor, Division of Biomedical Informatics 2025 - Present  
University of California San Diego, La Jolla, California

### EDUCATION

University of Michigan 1962  
BA  
Harvard Medical School 1966  
MD  
Harvard University 1966  
IBM Fellowship (Research)  
Harvard University and 1966 - 1969  
Massachusetts General Hospital, Laboratory of Computer Science  
National Institutes of Health Postdoctoral Fellowship (Research)  
Harvard University 1970  
PhD, Computer Science/Applied Mathematics  
Worcester City Hospital 1976  
Internship  
Worcester, MA  
Massachusetts General Hospital 1975 - 1978  
Residency  
Boston, MA

### BOARD CERTIFICATION(S)

**American Board of Radiology**  
Radiology 1978

**LICENSURE**

Massachusetts	40354	1976
	Inactive	2013 - Present

**HONORS/AWARDS**

<b>Phi Beta Kappa</b>		1961
<b>James B. Angell Scholar</b> – University of Michigan		1961 - 1962
<b>Moses Gomberg Scholarship Prize in Chemistry</b> – University of Michigan		1962
<b>Summa Cum Laude</b> – University of Michigan		1962
<b>Borden Research Award</b> – Harvard Medical School		1966
<b>Magna Cum Laude</b> – Harvard Medical School		1966
<b>Sigma Xi</b>		1970
<b>Election to Fellowship</b> – American College of Medical Informatics		1984
<b>Best Paper Award</b> – American Association of Medical Systems and Informatics		1987
<b>Election to President</b> – American College of Medical Informatics		1996
<b>Election to Fellowship</b> – American College of Radiology		1999
<b>Election to Membership</b> – Institute of Medicine (now called National Academy of Medicine), National Academies of Sciences		1999
<b>Election to Fellowship</b> – Society for Computer Applications in Radiology (now called Society for Imaging Informatics in Medicine)		2001
<b>BWH Distinguished Chair in Biomedical Informatics</b> – Department of Radiology, Brigham and Women's Hospital		2005
<b>Ira A. Fulton Chair in Biomedical Informatics</b> – Arizona State University		2007
<b>Morris F. Collen Award of Excellence</b> – American College of Medical Informatics		2008
<b>Establishment of Robert A. Greenes Distinguished Director of Biomedical Informatics</b> – Brigham and Women's Hospital		2010
<b>Board of Regents</b> , National Library of Medicine		2013 – 2017
<b>Chair</b> of Board of Regents		2016 – 2017
<b>Consultant</b> , Board of Regents		2017 – 2018
<b>Inaugural Member</b> – International Academy of Health Sciences Informatics of the International Medical Informatics Association		2017
<b>Distinguished Fellow</b> – American College of Medical Informatics		2021
<b>Inaugural Highly Ranked Scholar – Lifetime</b> – ScholarGPS <a href="https://scholargps.com/scholars/15841165804304/robert-a-greenes">https://scholargps.com/scholars/15841165804304/robert-a-greenes</a>		2024

## PREVIOUS PROFESSIONAL POSITIONS AND MAJOR APPOINTMENTS

<b>Mathematics and Computing Consultant</b> - Research Computing Center, Massachusetts General Hospital, Boston, Massachusetts	1962 - 1966
<b>Instructor in Medicine</b> - Harvard Medical School	1966 - 1969
<b>Associate in Computer Science</b> - Department of Medicine, Massachusetts General Hospital, Boston, Massachusetts	1966 - 1969
<b>Assistant Director</b> - Laboratory of Computer Science, Massachusetts General Hospital, Boston, Massachusetts	1966 - 1970
<b>Assistant Professor of Medicine</b> - Harvard Medical School	1969 - 1970
<b>Assistant Computer Scientist</b> - Department of Medicine, Massachusetts General Hospital, Boston, Massachusetts	1969 - 1970
<b>President</b> - Automated Health Systems, Inc., Wakefield, Massachusetts	1970 - 1974
<b>Associate Professor of Health Information Systems</b> - Stanford University School of Medicine, Palo Alto, California	1974 - 1975
<b>Director of Information Systems Activities</b> - Stanford University Medical Center, Palo Alto, California	1974 - 1975
<b>Assistant Professor of Radiology</b> - Peter Bent Brigham Hospital, Harvard Medical School	1978 - 1981
<b>Director</b> - Computer Science Division, Department of Radiology, Brigham and Women's Hospital	1978 - 1987
<b>Radiologist</b> - Department of Radiology, Brigham and Women's Hospital, Harvard Medical School	1978 - 2007
<b>Director</b> - Decision Systems Group, Department of Radiology, Brigham and Women's Hospital, Harvard Medical School	1980 - 2007
<b>Assistant Professor of Radiology</b> - Harvard Medical School	1981 - 1996
<b>Member of the Faculty</b> - Department of Biostatistics, Harvard School of Public Health	1983 - 1989
<b>Program Director</b> - Research Training in Biomedical Informatics, Harvard-MIT-New England Medical Center Joint Program	1986 - 2007
<b>Associate Professor of Biostatistics</b> - Harvard School of Public Health	1989 - 1996
<b>Associate Professor</b> - Division of Health Sciences & Technology, Harvard Medical School and Massachusetts Institute of Technology	1989 - 1996
<b>Faculty Coordinator</b> - Focus area in Biomedical Informatics, Division of Health Sciences and Technology, Harvard-MIT	1995 - 2007
<b>Affiliated Faculty</b> - Division of Health Sciences and Technology, Harvard-MIT	1996 - 1998
<b>Professor of Health Policy &amp; Management</b> - Harvard School of Public Health	1996 - 2007
<b>Professor of Radiology</b> - Brigham and Women's Hospital, Harvard Medical School	1996 - 2007

<b>Member of the Faculty</b> - Division of Health Sciences and Technology, Harvard-MIT	1998 - 2003
<b>Professor of Health Sciences and Technology</b> - Harvard Medical School	2004 - 2007
<b>Distinguished Chair in Biomedical Informatics</b> - Department of Radiology, Brigham and Women's Hospital	2005 - 2007
<b>Professor</b> - Department of Biomedical Informatics, Arizona State University, Phoenix, Arizona	2007 - 2020
<b>Ira A. Fulton Chair in Biomedical Informatics</b> - Arizona State University, Phoenix, Arizona	2007 - 2020
<b>Member</b> - Arizona Cancer Center, Tucson, Arizona	2007 - 2020
<b>Professor of Biomedical Informatics</b> - College of Medicine, Mayo Clinic	2012 – 2020
<b>Research Affiliate</b> , Veterans Administration, for Knowledge-Based Systems, through Independent Professional Appointment	2015 – 2018
Visiting Scholar, Division of Biomedical Informatics University of California San Diego, La Jolla, California	2023 - 2025

## PROFESSIONAL & COMMUNITY MEMBERSHIPS, SOCIETIES AND SERVICES

### Professional Memberships & Services

American Association for the Advancement of Science Member	1965 - 2010
American Association of Medical Systems and Informatics Member Board of Directors Member	1982 - 1989 1983 - 1989
American College of Medical Informatics Member President President-Elect Executive Committee Member	1985 – Present 1997 - 1998 1994 - 1996 1987 - 1991
First Retreat on Current Topics in Medical Informatics Program Chairman	02/1991
Scientific Activities Committee Chairman	1985 - 1991
American College of Radiology Member Committee on Computers Member	1978 - Present 1980 - 1988, 1992 - 1995
Imaging Network, Informatics Committee Chairman	2003 - 2006
Imaging Network, NCI Committee Chairman	2002 - 2008
Imaging Network, Quality Assurance Committee	

Chairman	2001 - 2003
American Institute for Ultrasound in Medicine	
Member	1981 - 1986
American Medical Informatics Association	
Member	1990 - Present
Treasurer	1993 - 1997
Advisory Council, Society for Medical Decision Making	
Representative	1990 - 1995
American College of Radiology	
Representative	1994 - 1997
Arizona Health-e Connection for Western Summit	
Liaison	2009 - 2011
Board of Directors	
Member	1990 - 1998
International Affairs Committee	
Member	2001 - 2007
Public Policy Committee	
Member	2010 - 2007
Association for Computing Machinery	
Member	1965 - Present
Association of University Radiologists	
Member	1983 - 2005
Biomedical Engineering Society	
Charter Member	1968 - 1975
Clinical Chemistry Laboratory Data Communications Group	
Member	1979 - 1989
Health Level Seven	
Clinical Decision Support Technical Committee	
Co-chair	2003 - 2011
Clinical Guidelines Special Interest Group	
Co-chair	2003 - 2010
Institute of Electrical and Electronics Engineers	
Member	1969 - Present
International Commission on Radiation Units	
Report Committee on ROC Analysis	
Member	1993 - 1995
International Health Evaluation Association	
Member	1972 - 1975
International Medical Informatics Association	
Publications Committee for MEDINFO 95	
Chairman	1992 - 1995
Massachusetts Medical Society	
Member	1978 - Present
Committee on Education	
Member	2004 - 2007
Committee on Information Technology	
Member	2005 - 2007
Massachusetts Radiological Society	
Member	1978 - 2007
MUMPS Users Group	
Member	1972 - 1980

Vice-Chair	1973
Program Committee Chairman	1974
National Academies of Science	
National Academy of Medicine	
Member	1998 - Present
National Educational Medical School Consortium	
Chairman	1991 - 1992
National Initiative for Healthcare Informatics	
Member	1998 - 1999
New England Roentgen Ray Society	
Member	1976 - 2007
New England Society of Ultrasound in Medicine	
Member	1978 - 1985
New York Academy of Sciences	
Conference. on Extended Clinical Consulting by Hospital Computer Networks, Boston, MA	
Program Co-chairman	1991 - 1992
Radiologic Society of North America (RSNA)	
Member	1975 - Present
Electronic Communications Committee	
Member	1990 - 1999
IHE 99: "Integrating the Health Care Enterprise", Chicago, IL	
Program Chairman	12/1999
Radiology Information Systems Consortium	
Member	1982 - 1995
Board of Directors	
Member	1986 - 1987
CBT Advisory Board	
Member	1989 - 1991
Development Task Force	
Chairman	1982 - 1986
DRILL Project Task Force	
Member	1988 - 1992
Management Committee	
Member	1982 - 1986
Society for Medical Decision Making	
Member	1979 - 2020
Program Committee	
Charter Member	1985
Software Engineering in Medical Informatics (SEMI) Conference	
Program Committee	
Member	1989 - 1990
Conference, Amsterdam, Netherlands	
Member	10/1990
Special Interest Group in Biomedical Computing (SIGBIO)	
Member	1972 - 1990
Symposium for Computer Applications in Medical Care, Inc. (SCAMC)	
Member	1986 - 1989
Board of Directors	
Member	1986 - 1990
Finance and Audit Committee	

Member 11th SCAMC Program Committee Member	1986 - 1987
Member 12th SCAMC Program Committee Member	1986 - 1987
	1987 - 1988

## JOURNAL RESPONSIBILITIES

Journal of Biomedical Informatics Associate Editor	2000 - 2020
Journal of Digital Imaging Associate Editor	1987 - 2003
Medical Computer News Editorial Board Member	1983 - 1984
Medical Decision Making Editorial Board Member	1985 - 1988
Medical Practice Management Editorial Board Member	1985 - 2006
Methods of Information in Medicine Editorial Board Member	1999 - 2015
Radiographics Associate Editor	1996 - 2002
Telemedicine and eHealth Journal Editorial Board Member	1995 - Present

## EDUCATIONAL ACTIVITIES

### Curriculum/Course Development

Director, Harvard Research Training Program in Medical Information Science  
Harvard Medical School

Doctoral Advisor, Department of Biostatistics  
Harvard School of Public Health

Director, Academic Computing, curriculum software development  
Division of Health Science and Technology,  
Harvard Medical School and Massachusetts Institute of Technology

President, National Educational Medical School Consortium

Project Director, American Board of Radiology Computer-Based Examination Project

Director, Harvard/MIT/NEMC Research Training Program in Biomedical Informatics

Harvard Medical School and Massachusetts Institute of Technology

Member and/or Chair, Academic Program Committee, Department of Biomedical Informatics, Arizona State University 2007 - 2020

### Teaching

Seminars in Medical Computing for House Officers and Fellows  
Massachusetts General Hospital 1966 - 1969

Resident and Medical Student Teaching, Informal and Didactic Sessions Brigham and Women's Hospital	1978 - 2007
Seminar Session on Medical Decision-Making Technology Evaluation in Health Care Series Harvard School of Public Health	1978 - 1980
Lectures on Radiologic Anatomy First Year Course Harvard Medical School	1978 - 1980
Lectures on Ultrasound Technology, Fetal Evaluation by Computer, and Computers in Radiology Harvard Continuing Medical Education Courses on Diagnostic Ultrasound, Computed Tomography, and Cardiovascular Radiology Harvard Medical School	1979 - 1984
Lectures on Computers in Radiology, in Computer Applications in Medicine Course Division of Health Science and Technology Harvard Medical School and Massachusetts Institute of Technology	1979 - 1987
Lectures on Medical Decision Making and Clinical Epidemiology Course Harvard Medical School	1982
Lectures on Computer Fundamentals for Radiology Residents Department of Radiology Brigham and Women's Hospital	1987 - 1989
Lectures on Computer Aided Medical Decision Making Introduction to Clinical Medicine Course Division of Health Science and Technology Harvard Medical School and Massachusetts Institute of Technology	1989 - 1992
Enhanced Clinical Problem Solving & Education in Radiology Lecture Joint Program in Nuclear Medicine	1992
Seminars on special topics in health care informatics Lecture	1995 - 2007
Lectures in HST 921 and HST 950, Medical Informatics Harvard – MIT HST program	1999 - 2007
Computer-Based Guidelines: A Core Technology for Future Health Care Systems Managing Radiology Utilization, BWH Course Boston, MA	05/2000
Integrating the Health Care Enterprise, Managing Radiology Utilization BWH Course Boston, MA	05/2000
Intranets for Health Care Enterprise Integration Lecture Department of Radiology course on Medical Management	2004
Lectures in Clinical Decision Support Lecture University of Arizona College of Medicine - Phoenix, in Partnership with Arizona State University	2007 - 2015



Guest lectures in Biomedical Informatics Applications and Methods Courses Arizona State University	2007 - 2020
Lecturer for first and second year medical student teaching University of Arizona College of Medicine-Phoenix, in Partnership with Arizona State University	2007 - 2011
BMI 506 (formerly BMI 591) Clinical Decision Support Course Director Arizona State University	2008 – 2012 2014- 20120
BMI 591 Introduction to Clinical Environments Co-Instructor Arizona State University	2010 - 2011
BMI 502 Methods in Biomedical Informatics Module on Clinical Decision Making Instructor Arizona State University	2010 - 2012
BMI 540 Problem Solving in BMI Course Director Arizona State University	2014 –2016
BMI 591 Clinical Application Development Co-Instructor Arizona State University	2014 –2020
BMI 616 Clinical Decision Support and Evidence-Based Medicine Course Director	2016 –2020
VIP-x94-BMI/CSE/HON Health IT Innovation Collaborative (HII-C) Knowledge-Based Applications for Healthcare Course Director Arizona State University	2017 –2020
MED 265 Informatics in Clinical Environments Guest lecture Clinical Decision Support & Beyond: Progress & Opportunities in Knowledge-Enhanced Health and Healthcare University of California San Diego	2023

### **Mentorship**

Resident Research Mentor Department of Radiology, Brigham and Women's Hospital	1988 - 2007
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Biomedical Informatics Predoctoral and Postdoctoral Advisor  
(most recent 10 years)

Boston Area Informatics Research Training Program

Clemenson, Steve, MD, postdoctoral	1999 - 2001
Hsing, Nelson, MD, postdoctoral	2000 - 2002
Yin, James Qinwei, MD, postdoctoral	2000 - 2002
Nadai, John, MD, postdoctoral	2000 - 2002
Denekamp, Yaron, MD, postdoctoral	2001 - 2003
Han, Heon, MD, PhD, postdoctoral	2002 - 2003
Luckmann, Roger, MD, MPH, postdoctoral	2002 - 2003
Bade, Sameer, MD, postdoctoral	2002 - 2004
Hanauer, David, MD, postdoctoral	2002 - 2004
Kimmel, Zebadiah, MD, MS, postdoctoral	2005 - 2007

Department of Biomedical Informatics, Arizona State University

Gouripeddi, Ramkiran, MS, MS committee	2007 - 2009
Kriseman, Jeffrey, PhD thesis committee	2007 - 2011
Yao, Robert, PhD committee	2008 - 2019
Jonnalagadda, Siddhartha, PhD committee	2009 - 2011
Pan, Di, PhD committee	2010 - 2012
Ashby, Aaron, PhD research advisor	2010 - 2014
Bhargava, Abhinav, MS committee	2012 - 2013
Yauch, David, PhD research advisor	2011 - 2013
Emadzadeh, Ehsan, PhD committee	2012 - 2016
Hendrickson, Bryan, MS committee	2012 - 2015
Islam, Gazi, PhD committee	2011 - 2014
Kanal, Prabal, PhD research advisor	2011 - 2014
Nikfarjam, Azadeh, PhD committee	2013 - 2016
Taylor, Blaine, MS advisor	2014 - 2018
Tajbakhsh, Nima, PhD committee	2013 - 2015
Dhamodharan, Sahithya, MS committee	2014 - 2015
Lamp, Josephine, BS Capstone committee	2016 - 2017
Ozair, Yael, BS Capstone Committee	2017 - 2018
Lee, Preston, PhD committee	2016 - 2018
Meyer, Hollie, BMI MAS Applied Project advisor	2018 - 2020
Duncan, Benjamin, PhD committee	2018 - 2021
Michne, Austin, BS Honors thesis advisor	2018 - 2019
Martinez, Rogelio, BMI MS Applied Project advisor	2019
Ozair, Yael, BMI MS Applied Project advisor	2019
Magge, Arjun, PhD committee	2018 - 2020

**INSTITUTIONAL/DEPARTMENTAL ADMINISTRATIVE RESPONSIBILITIES,  
COMMITTEE MEMBERSHIPS AND OTHER ACTIVITIES**

**Agency for Healthcare Research and Quality**

Informatics Research and Development

Invited Expert Panel

2000

**Arizona State University**

BMI Academic Program Committee	2007 – 2020
Member	
Chair	2017 – 2018
BMI Recruitment Committee	2017 – 2020
Member	
CHS Tenure Track Committee	2014 – 2020
Member	

**Brigham and Women's Hospital**

Clinical Initiatives Development Program	
Member	1992 - 1995
Computer Networking Committee	
Member	1988 - 1989
Computer Science Advisory Committee, Department of Radiology	
Chairman	1978 - 1986
Hospital Computer Advisory Committee	
Member	1981 - 1982
Quality Assurance/Risk Management Committee	
Member	1982 - 1984
Research Committee, Department of Radiology	
Member	1989 - 1994
Research Committee	
Member	1995 - 1996
Research Council	
Member	1997 - 2005

**Food and Drug Administration**

Advisory Panel	
Member	1970 - 1971

**Harvard Medical School**

Academic Computing Committee	
Member	1990 - 1994
Committee on Continuing Medical Education	
Member	2002 - 2007
Committee on Quantitative Sciences in the Medical Area	
Member	1979 - 1982
Curriculum Committee	
Subcommittee on Computers in the Curriculum	
Member	1990 - 1991
IAIMS Working Committee	
Chairman	1985 - 1987
Medical Educational Computing Systems	
Advisory Committee	
Member	1988 - 1989

**Harvard School of Public Health**

Biostatistics Department	
Ad Hoc Committee for Self Study of Applied Biomedical Computing Degree Programs	

Member	1985 - 1986
Health Science Computing Facility Oversight Committee	
Member	1979 - 1985
User Committee	
Member	1986 - 1989
<b>Harvard Medical School and Massachusetts Institute of Technology</b>	
Division of Health Science and Technology	
Administrative Committee	
Member	1989 - 1991
Biomedical Informatics	
Faculty Coordinator	1997 - 2007
Curriculum Committee	
Member	1995 - 2007
Faculty Committee	
Member	1995 - 2007
Graduate Committee	
Member	1996 - 2007
MD Committee	
Member	1995 - 2000
National Academy of Engineering, MIT	
Subcommittee on Medical Care Micro Systems	
Task Force Member	1968
<b>Institute of Medicine / National Academy of Medicine</b>	
Occupational Health and the Electronic Health Record	
Study Panel	
Member	2011
Technologies for Breast Cancer Detection and Diagnosis	
Study Panel	
Member	2003 - 2004
<b>National Aeronautics and Space Administration (NASA)</b>	
Medical Informatics for Exploration Class Space Flight	
Workshop on Image Archive Management	
Expert Panel	1999
<b>National Bureau of Standards</b>	
MUMPS Development Committee	
Member	1972 - 1976
<b>National Cancer Institute</b>	
Biomedical Imaging Program	
Workshop on Image Archive Management	
Invited Participant	2000
SBIR Review Panel	
Chairman	2001 - 2002
<b>National Center for Health Services Research and Development</b>	

Health Services Research Study Section Ad hoc Member	1971
<b>National Center for Research Resources</b> Clinical and Translational Science Awards (CTSA) Review Panel Member	2006
<b>National Health Information Infrastructure (NHII)</b> HHS Office Architectures and Standards, NHII Annual Meeting Track Co-Leader	2004
<b>National Heart Institute</b> National Blood Resource Program Advisory Committee Ad hoc Member	1968
<b>National Institutes of Health</b> Diagnostic Radiology Coordinating Committee Member	1990 - 1991
Division of Research Grants Special Study Section Member	1980
National Centers for Biomedical Computing Review Panel Member	2010
<b>National Library of Medicine</b> Biomedical Library Review Committee (Study Section) Chairman	1986 - 1987
Member	1983 - 1987
Eureka Grants Review Panel Member	2009
Interface between Informatics and Health Services Research Training (National Library of Medicine and Agency for Healthcare Research and Quality) Panel Member	1999
Board of Regents Member	2013 – 2017
Chairman	2016 – 2017
Consultant	2017 – 2018
Long-range Planning Committee	2016 – 2017
Representative to NIH Multi-Council Working Group for Big Data to Knowledge (BD2K)	2016 – 2017
<b>Partners HealthCare</b> Clinical Research Information Systems Subcommittee Member	2003 - 2005
Information Technology Steering Committee Member	2005 - 2007

Research Information Systems Committee Member	2003 - 2005
<b>Stanford University Medical School</b>	
Medical Center Computer Policy Committee Chairman	1974 - 1975
<b>University of Texas-Houston Health Sciences Center</b>	
Health Informatics Graduate Program Review Committee Chairman	2003
<b>Veterans Administration</b>	
Health Services Research and Development (HSR&D) Scientific Merit Review Board Member	2013 – 2017
Knowledge-Based Systems Research Affiliate	2015 - 2017
<b>Patient-Centered Outcomes Research – Clinical Decision Support Learning Network (PCOR-CDS-LN)</b>	
Executive Committee	2016 – 2017
<b>Mobilizing Computable Biomedical Knowledge (MCBK)</b>	
Steering Committee	2018 – present
Standards Workgroup Co-chair	2018 –2021
<b>Clinical Decision Support Innovation Collaborative (CDSiC)</b>	
Steering Committee	2021 - present

## INVITED PRESENTATIONS AND VISITING PROFESSORSHIPS

<b>Invited Presentations (most recent 10 years)</b>	
HIT Cause No Harm #2: Disruptive Implications Invited Speaker, Physician IT Symposium, HIMSS 2013, Orlando, FL	2/2014
Health Care Transformation: 11 Disruptive Changes and their Health IT Implications Invited Speaker, Arizona HIMSS Meeting, Scottsdale, AZ	4/2014
Health Care Transformation: 11 Disruptive Changes and their Health IT Implications Invited Speaker, Symposium Series, University of Indiana, Department of Biological and Health Informatics, Indianapolis, IN	4/2014
Progress on App Interoperability as an Agent of Healthcare Transformation Invited Speaker, Mayo Clinic Informatics Grand Rounds, Rochester, MN	8/2014
Interoperability for Scalable Care Models; Tackling the Data Debacle: A University-Led Sandbox Initiative Invited Speaker (2 presentations), and Session Chair, Connected Healthcare, San Diego, CA	10/2014

Health Information Technology for a Transforming Health Care System Invited Speaker, Scottsdale Second Annual Cure Corridor Event, Scottsdale, AZ	12/2014
Health Care Transformation: 11 Disruptive Changes and their Health IT Implications Keynote Speaker, Epic Southwest Users Group Meeting, Phoenix, AZ	3/2015
Evolution and Revolution in Knowledge-Driven Health IT: A 50-Year Perspective and a Look Ahead Keynote Speaker, Knowledge Representation for Health Care, Pavia, Italy	6/2015
Enabling Patient-Centered Care by Liberating Data Invited Speaker: IEEE Pre-HIMSS Workshop: Health Informatics on FHIR: Opportunities in the New Age of Interoperability, Las Vegas, NV	2/2016
Medical Education and the Transforming Healthcare System Keynote Speaker, AT Still Symposium, Mesa, AZ	5/2016
Health IT and Decision Support for a Transforming Healthcare System Invited Speaker, ASU School of Nutrition and Health Promotion, Phoenix, AZ	10/16
Clinical Decision Support for a Transforming Health/Healthcare System Invited Presenter, Patient-Centered Outcomes Research Clinical Decision Support Learning Network, National Webcast	1/17
Knowledge Infrastructure Requirements for Computable Biomedical Knowledge, Invited Presenter (with Carl Lagoze), Computable Biomedical Knowledge, University of Michigan, Ann Arbor, MI	10/17
VIP at ASU Invited Presenter (with C. Greenes), VIP Consortium Annual Symposium, Atlanta, GA,	5/18
Mobilizing Computable Biomedical Knowledge Invited Panel/Workgroup Leader, National Library of Medicine, Bethesda, MD	7/18
Symposium Honoring Edward H. Shortliffe Invited Presenter, Stanford University, Palo Alto, CA	8/18

## RESEARCH INTERESTS

1. Clinical Information Systems
2. Clinical Decision Making
3. Clinical Decision Support
4. Efficacy of Diagnostic Testing
5. Computer-Aided Medical Education
6. Interoperability and Health System Integration
7. Patient-Centered Computing
8. Structured Medical Record-Keeping
9. Information Technology and Health System Transformation

**RESEARCH GRANTS AWARDED****Completed Grants**

Principal Investigator	Investigations in Clinical Decision Making (Program Project). Funded by National Library of Medicine.	1980 - 1986
Principal Investigator	Medical Informatics Research Training Program. Funded by National Library of Medicine.	1984 - 1989
Co-Principal Investigator	Equipment Grant Program. Funded by Xerox Corp.	1986 - 1988
Principal Investigator	Investigations in Knowledge Management. Funded by National Library of Medicine.	1987 - 1996
Principal Investigator	IAIMS Planning (NLM Resource Grant Program). Funded by National Library of Medicine.	1987 - 1989
Co-Principal Investigator	Unified Medical Language Program. Funded by National Library of Medicine.	1987 - 1991
Principal Investigator	Biomedical Informatics Research Training. Funded by National Library of Medicine.	1987 - 2007
Principal Investigator	External Research Support. Funded by Apple Computer, Inc.	1988 - 1990
Principal Investigator	Computer-Assisted Instruction in Radiology. Funded by National Cancer Institute.	1988 - 1992
Principal Investigator	Electronic Knowledge Resource Support for Walter Reed Medical Center. Funded by PAIV, Inc.	1991 - 1992
Principal Investigator	Unified Medical Language System. Funded by National Library of Medicine.	1991 - 1994
Principal Investigator	Equipment Grant Program. Funded by Sun Computer, Inc.	1992 - 1993
Principal Investigator	ABR Computer-Based Examination Project. Funded by American Board of Radiology.	1992 - 1995
Principal Investigator	Wavelet Compression in Mammography. Funded by Comm. of Massachusetts.	1993 - 1995
Principal Investigator	Modeling of Human Computer Interface (subcontract to Stanford). Funded by DARPA.	1994 - 1996
Principal Investigator	An Internet-Based Collaboratory (High Perform. Comput. & Commun. Contract). Funded by National Library of Medicine.	1994 - 1997
Principal Investigator	Equipment Grant Program. Funded by Hewlett-Packard.	1995 - 1996
Principal Investigator	NAMCIC consortium on shared information repositories (consortium participant). Funded by DARPA.	1995 - 1999
Principal Investigator	Frameworks for Clinical Management. Funded by DARPA.	1995 - 2000
Co-Principal Investigator	Equipment Grant Program. Funded by Hewlett-Packard.	1996 - 1998



Principal Investigator	HealthAware: An Integrated Health & Health Care Information Network. Funded by National Library of Medicine.	1996 - 2000
Co-Principal Investigator	Heart Attack Alert Program, Planning Grant. Funded by National Library of Medicine.	1998 - 1999
Co-Principal Investigator	Next Generation Internet, Planning Grant. Funded by National Library of Medicine.	1998 - 1999
Co-Principal Investigator	InterMed Collaboratory. Funded by National Library of Medicine/U.S. Army.	1999 - 2002
Co-Investigator	Creating Guidelines that Adapt to Local Contexts. Funded by National Library of Medicine.	2001 - 2003
Co-Investigator	Shared Pathology Information Network. Funded by NCI.	2001 - 2006
Principal Investigator	Planning for a Center for Knowledge-Based Practices. Funded by U.S. Army.	2002 - 2003
Co-Investigator	Medical Vocabulary Support for Patients. Funded by National Library of Medicine.	2002 - 2005
Co-Investigator	Assessing Penetrating Trauma Under Uncertainty. Funded by National Library of Medicine.	2002 - 2005
Principal Investigator	Knowledge Management for Decision Support. Funded by Partners IS Res. Council.	2003 - 2005
Co-Investigator	Improved Tumor Resection in Image-Guided Neurosurgery. Funded by National Library of Medicine.	2003 - 2006
Co-Principal Investigator	Applic. of Advanced Network Infrastructure in Health & Disaster Mgt.: Scalable Medical Alert & Response Technology (SMART). Funded by National Library of Medicine.	2003 - 2007
Co-Investigator	National Center for Biomedical Computing: Integrating Informatics from Biology to the Bedside (i2b2). Funded by National Institutes of Health.	2004 - 2007
Principal Investigator	Interagency Service Agreement, Arizona Health Care Cost Containment System (AHCCCS), Umbrella Agreement for Task Order Contracts. Funded by ISA.	2008 - 2009
Principal Investigator	Subcontract from Thomson Reuters for Structuring Care Recommendations for Clinical Decision Support. Funded by AHRQ.	2009 - 2011
Adv. Bd.	Prime the Pipeline Project. Funded by NSF.	2009 - 2012
Principal Investigator	Subcontract from University of Arizona Technology and Research Initiative: Initial Development of Biomedical Informatics Capabilities for Health Research Alliance Arizona, the Statewide CTSA. Funded by TRIF.	2007 - 2013
Principal Investigator	Sub-recipient to Arizona Health-e Connection for Health IT Regional Extension Center. Funded by ONC.	2010 - 2014

Principal Investigator	Subcontract from University of Texas-Houston for SHARP Award, for National Center for Cognitive Informatics and Decision Making in Healthcare (NCCD). Funded by ONC.	2010 - 2014
Principal Investigator	Piper Health Solutions Consortium Award, Fostering Interoperable Health Applications Development Grant	2012 – 2014
Co- Investigator	Piper Health Solutions Consortium Award, Fostering Interoperable Health Applications Development Grant	2015 – 2018
Principal Investigator	Independent Professional Appointment (IPA) Veterans Administration	2015 – 2018
	Personal effort support	2015 – 2017
	Software architect support	2016 – 2018
Mentor	Clinical Decision Support Optimizing NEC Prevention and Early Recognition National Institutes of Health (K08) K08 HS22908-01A1 Sheila Gephart (PI)	2014 – 2019
Co-Investigator	NLP-enabled decision support for cervical cancer screening and surveillance Mayo Clinic (AHRQ) 1R21 HS022911-01 Rajeev Chaudhry (PI)	2014 – 2019
Co-Investigator	Computer-aided diagnosis of pulmonary embolism NHLBI 1R01HL128785-01A1 Jianming Liang (PI)	2016 – 2019
Executive Committee Member	Patient-Centered Outcomes Research Clinical Decision Support Learning Network, Funded by AHRQ	2016 – 2017
Co-Principal Investigator	Vertically Integrated Projects (VIP) program at Arizona State University, VIP Consortium Agreement, Helmsley Charitable Trust, Subcontract from Georgia Tech	2016 – 2017

### Active Grants

None

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#5 [Decision support system](#)

#36 [Health informatics](#)

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