Curriculum Vitae – William Richard Hersh

Work Address

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Date of Birth

July 2, 1958

Place of Birth

Chicago, Illinois

Education

1979	B.S., Biology, University of Illinois at Champaign-Urbana
1984	M.D., University of Illinois at Chicago
1990	Certificate, Computer Science, Harvard University Extension School

Postdoctoral Training

1984-1985	Internship in Internal Medicine, University of Illinois Hospital
1985-1987	Residency in Internal Medicine, University of Illinois Hospital
1987-1990	Fellowship in Medical Informatics, Harvard University

Licensure and Certification

1984-1987	Illinois Licensure Registration
1987-1990	Massachusetts Licensure Registration
1987-	American Board of Internal Medicine (Certification Active: ABIM ID 113770)
1990-	Oregon Licensure Registration (Active: MD License MD16783)
2013-	American Board of Preventive Medicine, Diplomate in Clinical Informatics (Certification Active: Certification Number 070141)

Professional Positions

1989-1990	Instructor in Medicine, Harvard Medical School
1990-1995	Assistant Professor, Department of Medicine, OHSU
1992-1994	Physician Liaison, Information Technology Group, University Hospital, OHSU
1992-1993	Adjunct Instructor in Computer Science, Portland State University
1994-	Graduate Faculty, School of Medicine, OHSU
1995-	Graduate Faculty, Dept. of Computer Science, Oregon State University
1995-1997	Associate Professor, Department of Medicine, OHSU (Joint appointment in Department of Public Health & Preventive Medicine)
1996-	Director, Graduate Program in Biomedical Informatics, OHSU
1995-2001	Associate Professor, Division of Medical Informatics & Outcomes Research, OHSU (Joint appointments in Department of Medicine and Department of Public Health & Preventive Medicine)
1997-2003	Head, Division of Medical Informatics & Outcomes Research, OHSU
1997-2007	Associate Director, Agency for Health Care Research and Quality (AHRQ) Evidence-Based Practice Center, OHSU
2001-2003	Professor with Tenure, Division of Medical Informatics & Outcomes Research, OHSU (Joint appointments in Department of Medicine and Department of Public Health & Preventive Medicine)
2003-	Professor with Tenure, Department of Medical Informatics & Clinical Epidemiology, OHSU
2003-2022	Chair, Department of Medical Informatics & Clinical Epidemiology, OHSU
2006-2014	Director, Biomedical Informatics Program, Oregon Clinical and Translational Research Center (OCTRI), OHSU
2006-2008	Chair, National Informatics Steering Committee, Clinical & Translational Science Award (CTSA) Program, National Institutes of Health
2015-2016	Program Director, Clinical Informatics Fellowship, OHSU
2016-	Associate Program Director, Clinical Informatics Fellowship, OHSU

Awards and Honors

1976-1979	University of Illinois James Scholar
1979	B.S. with Distinction, University of Illinois
1993	Fellowship, American College of Physicians (FACP)
1996	Fellowship, American College of Medical Informatics (FACMI)
1999	Excellence in Teaching Award, School of Medicine Graduate Programs, OHSU
2005	Leadership Award, American Medical Informatics Association
2006	Leadership Award, American Medical Informatics Association
2007	Alpha Omega Alpha Honor Medical Society
2007	Distinguished Faculty Award – Outstanding Teaching, OHSU Faculty Senate
2008	Donald A.B. Lindberg Award for Innovation in Informatics, AMIA
2010	Top 25 Clinical Informaticists, Modern Healthcare
2010	Chairwoman's Award, American Medical Informatics Association
2011	Top 25 Clinical Informaticists, Modern Healthcare
2012	Top 25 Clinical Informaticists, Modern Healthcare
2012	EHR Game Changer, Health Data Management
2013	Leadership Award, American Medical Informatics Association
2015	Physician IT Leadership Award, Health Information Management Systems Society
2017	Founding Fellow, International Academy of Health Sciences Informatics (FIAHSI)
2019	Inaugural Fellow, American Medical Informatics Association (FAMIA)
2020-2022	President, International Academy of Health Sciences Informatics

2022   Member, ACM Special Interest Group in Information Retrieval (SIGIR) Academy
2022   William W. Stead Award for Thought Leadership in Informatics, AMIA

Memberships in Professional Societies

American College of Physicians (ACP)
American Medical Informatics Association (AMIA; Board of Directors 1999, Secretary, 2000-2003)
Association for Computing Machinery (ACM) – Special Interest Group on Information Retrieval (SIGIR)
American Society for Information Science & Technology (ASIST)
Health Information Management Systems Society (HIMSS)

Research Interests

1. Design and evaluation of information retrieval systems
2. Biomedical informatics education for health care, biomedical research, and informatics professionals
3. Re-use of electronic health record data
4. Informatics workforce characterization and training

Biographical Statement

William Hersh, MD is a Professor in the Department of Medical Informatics & Clinical Epidemiology (DMICE) in the School of Medicine at Oregon Health & Science University (OHSU) in Portland, Oregon, USA. Dr. Hersh served as the inaugural Chair of DMICE from 2003-2022 and as Head of its predecessor free-standing Division of Medical Informatics & Outcomes Research from 1997-2003. He is a leader and innovator in biomedical informatics both in education and research.

Dr. Hersh's main research efforts are in the area of information retrieval (also known as search) applied to biomedicine. He has authored over 200 scientific papers and abstracts as well as the book, *Information Retrieval: A Health and Biomedical Perspective, 4th Edition* (Springer, 2020). His current work focuses on the application of search techniques to electronic health record data, aiming to improve patient cohort discovery and amplification of signals of rare diseases.

His research activities have also included conducting systematic reviews of the efficacy of informatics interventions, including telemedicine and health information exchange. He has also investigated the quantity and characteristics of the workforce needed to implement health information technology, especially in clinical settings.

Dr. Hersh is also a leader in informatics education. He serves as Director of OHSU's Biomedical Informatics Graduate Program, which is one of the oldest and largest in the world, and has awarded nearly 1000 Master's and PhD degrees as well as a Graduate Certificates. He also spearheaded OHSU's efforts in distance learning for biomedical informatics. He also has served as PI since 2002 of OHSU's National Library of Medicine (NLM) T15 Training Grant, which is the largest and second-oldest training grant at OHSU.

Dr. Hersh has led a number of innovations in biomedical informatics education. He conceptualized and implemented the first offering of the American Medical Informatics Association (AMIA) 10x10 ("ten by ten") program, which has been completed by over 3000 people. Some of these innovations have been funding by grants. These grants include funding from the National Institutes of Health

(NIH) Fogarty International Center in its Informatics Training for Global Health initiative, the US Office of the National Coordinator for Health IT (ONC) to develop national curricula for health IT, the NIH Big Data to Knowledge (BD2K) program to develop open educational resources in biomedical data science, the NIH Data Science Initiative for Africa, and the NIH Bridge2AI Program. He is Editor of the introductory textbook, *Health Informatics: Practical Guide, 8th Edition* (Lulu.com, 2022), which has an associated [Web site](#).

Dr. Hersh has also been active in the development of the physician subspecialty of clinical informatics. He was among the first cohort of physicians to be certified in the new subspecialty in 2013. He also has been the Course Director of the AMIA Clinical Informatics Board Review Course (CIBRC) since its inception. He also served as the Founding Program Director of OHSU's Accreditation Council for Graduate Medical Education (ACGME)-accredited Clinical Informatics Fellowship.

Dr. Hersh has won numerous awards for his innovations. These include the OHSU Faculty Senate Distinguished Faculty Award for outstanding teaching in 2007, the 2008 AMIA Donald A.B. Lindberg Award for Innovation in Informatics, the 2015 Healthcare Information Management Systems Society (HIMSS) Physician Leadership Award, and the 2022 AMIA William W. Stead Award for Thought Leadership in Informatics.

Dr. Hersh is an elected fellow of several honorific societies, including the American College of Physicians (FACP), the American College of Medical Informatics (FACMI), the International Academy of Health Science Informatics (FIAHSI – founding Fellow), and American Medical Informatics Association (FAMIA – inaugural Fellow). He is also an Elected Member of the ACM Special Interest Group in Information Retrieval (SIGIR) Academy.

Dr. Hersh obtained his B.S. in Biology from the University of Illinois at Champaign-Urbana in 1980 and his M.D. from the University of Illinois at Chicago in 1984. After finishing a residency in Internal Medicine at University of Illinois Hospital in Chicago in 1987, he completed a Fellowship in Medical Informatics at Harvard University in 1990.

Bibliography

Peer-Review Papers

1. Hersh WR, Kronfol NO. A microcomputer database for the outpatient hemodialysis setting, *Proceedings of the American Association for Medical Systems and Informatics Congress*, 1987, 129-133.

2. Kronfol NO, Hersh WR, Barakat MM. Effects of 25(OH)-Vitamin D in hypocalcemic patients on chronic hemodialysis, *Transactions of the American Society for Artificial Internal Organs*, 1987, 33:289-292.

3. Greenes RA, Tarabar DB, Krauss M, Anderson G, Wolnik WJ, Cope L, Slosser E, Hersh WR. Knowledge management as a decision support method: a diagnostic workup strategy application, *Computers and Biomedical Research*, 1989, 22: 113-135.

4. Greenes RA, Tarabar DB, Krauss M, Cope L, Slosser E, Hersh WR, Pattison-Gordon E, Abendroth T, Rathe R, Snydr-Michal J. Explorer-2: an object-oriented framework for knowledge management, *MEDINFO 89*, 1989, 29-33.

5. Hersh WR, Greenes RA, SAPHIRE: an information retrieval system featuring concept matching, automatic indexing, probabilistic retrieval, and hierarchical relationships, *Computers and Biomedical Research*, 1990, 23: 410-425.

6. Hersh WR, Greenes RA, Information retrieval in medicine: state of the art, *M.D. Computing*, 1990, 7: 302-311.

7. Hersh WR, Pattison-Gordon E, Greenes RA, Evans DA, Adaptation of Meta-1 for use in SAPHIRE, a general-purpose information retrieval system, *Proceedings of the 14th Annual Symposium on Computer Applications in Medical Care*, 1990, 156-160. PMC2245479.

8. Hersh WR, Evaluation of Meta-1 for a concept-based approach to the automated indexing and retrieval of bibliographic and full-text databases, *Medical Decision Making*, 1991,11: S120-124.
(Abstract published in *Final Program and Abstracts of the 2nd Annual Education and Research Conference of the American Medical Informatics Association*, 1991, 35.)

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(Abstract published in *Final Program and Abstracts of the 2nd Annual Education and Research Conference of the American Medical Informatics Association*, 1991, 34.)

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11. Hersh WR, Hickam DH, A comparative analysis of retrieval effectiveness for three methods of indexing medical literature, *American Journal of the Medical Sciences*, 1992, 303: 293-300.
(Preliminary version published in *Proceedings of the 54th Annual Meeting of The American Society for Information Science*, 1991, 205-216. Abstract published in *Program Supplement of the 14th Annual Meeting of the Society for General Internal Medicine*, 1991, 8, and *Clinical Research*, 1991, 39:587A.)

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(Abstract published in *Final Program and Abstracts of the 2nd Annual Education and Research Conference of the American Medical Informatics Association*, 1991, 63.)

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15. Hersh WR, Hickam DH, A comparison of two methods for indexing and retrieval from a full-text medical database, *Medical Decision Making*, 1993, 13: 220-226.

(Preliminary version published in *Proceedings of the 55th Annual Meeting of The American Society for Information Science*, 1992, 221-230. Abstract published in the *Medical Decision Making*, 12: 344, 1992)

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(Also published in *Proceedings of the 18th Annual ACM SIGIR Conference on Research and Development in Information Retrieval*, 1995, 164-170.)

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(Preliminary version published in *Proceedings of the 58th Annual Meeting of The American Society for Information Science*, 1995, 112-117.)

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(Abstract published in *Final Program and Abstract Book, 1996 AMIA Spring Congress*, 1996, 91.)

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(Abstract published as: Enhancing Internet medical document retrieval with "medical core metadata," *Final Program and Abstract Book, 1998 AMIA Annual Spring Congress*, 1998, 68.)

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Under Review

None.

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Abstracts/Posters

1. Rose B, Hersh WR, Greenes RA, Rush J, Consultant: A question-driven, computer-based medical and nephrological information system, *Kidney International*, 1989, 37: 283.

2. Hersh, WR, Hickam DH, Impact of a computerized information system in a university general medicine clinic, *Clinical Research*, 1992, 40: 567A.

3. Zacks M, Hersh W, Indexing the Cochrane systematic reviews, *Colloquium Handbook, Fourth International Cochrane Colloquium*, 1996, A-19.

4. Brodner R, Hersh W, Helfand M, Brown B, ORCAS: Network-based management of cancer clinical trials, *Proceedings of the 1997 AMIA Annual Symposium*, 1997, 915. PMC2233404.

5. Lowe HJ, Hersh W, Smith CA, The multimedia medical record as a virtual library: a multidimensional model for indexing the content of medical images using the Unified Medical Language System, *Final Program and Abstract Book, 1998 AMIA Annual Spring Congress*, 1998, 83.

6. Hersh WR, Price S, Identifying randomized controlled trials in conference proceedings abstracts. *Abstract Book, Sixth International Cochrane Colloquium*, 1998, 52.

7. Hersh WR, Malveau SE, DynamiQuest: a system for asking clinical examination questions based on content viewed, *Proceedings of the 1998 AMIA Annual Symposium*, 1998, 1013. PMC2232303.

8. Huey CG, Hersh WR, A needs assessment of a web-based smoking cessation program, *Proceedings of the 1998 AMIA Annual Symposium*, 1998, 1020. PMC2232334.

9. Rose LL, Crabtree K, Hersh WR, Factors influencing successful use of information retrieval systems by nurse practitioner students, *Proceedings of the 1998 AMIA Annual Symposium*, 1998, 1067. PMC2232395.

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11. Patterson PK, Salveson C, Hersh W, Duell PB, Carlson J, Videophones for wellness coaching in an overweight population, *Proceedings of the 1999 AMIA Annual Symposium*, 1999, 1136. PMC2232674.

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13. Lyman JA, Hersh W, Spackman K, Representing clinical information in an internal medicine teaching image database, *Proceedings of the 2000 Annual AMIA Symposium*, 2000, 1074. PMC2244043.

14. Hersh W, Distance learning techniques for medical informatics, *Proceedings of the 2000 Annual AMIA Symposium*, 2000, 1170. PMC2243969.

15. Hersh WR, Helfand M, Shapiro SE, Wallace JA, Eilers GM, Coverage and quality of diagnostic and outcomes studies of telemedicine services, *Abstract Book, Eighth International Cochrane Colloquium*, 2000, 49.

16. Gong Y, Hersh W, A preliminary trial of tagging on-line documents using "Medical Core Metadata," *Proceedings of the 2001 AMIA Annual Symposium*, 914. PMC2243688.

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21. Hersh WR, Text Retrieval Conference (TREC) Genomics Pre-Track, *Pacific Symposium on Biocomputing*, 2003, 83.

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(Also in *Proceedings of the 2003 IAIMS Consortium Meeting*, 2003, 5.)

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24. Rose E, Zeiger R, Corley S, Gorman P, Yackel T, Hersh W, Development methodology for a "next generation" medical informatics curriculum for clinicians, *Proceedings of the 2003 AMIA Annual Symposium*, 986. PMC1480023.

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26. Yang J, Cohen AM, Hersh WR, Functional gene group summarization by clustering MEDLINE abstract sentences, *Proceedings of the AMIA 2006 Annual Symposium*, CD-ROM. PMC1839696.

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34. McClay J, Nielson J, Wadman M, Hersh W, The Emergency Informatics Transition Course: a flexible, on-line course in health informatics for emergency medicine clinicians and trainees, *Innovations in Emergency Medicine Education 2009 Annual Meeting*, 2009.

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42. Hersh W, McWeeney S, Haendel M, Vasilevsky N. Open educational resources for big data science. improving knowledge discovery through development of a big data to knowledge skills course. *OHSU Research Week*, Portland, OR, 2015.

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46. Timmons T, Hersh W, Wu S, Creating topics for cohort identification in patient-level information retrieval, *4th Pacific Northwest Regional NLP Workshop: NW-NLP 2016*, 2016.

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48. Laderas T, Vasilevsky N, Haendel M, McWeeney S, Dorr D, Get real: a synthetic dataset illustrating clinical and genetic covariates, *NIH Big Data to Knowledge (BD2K) All-Hands Meeting*, Bethesda, MD, 2016.

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3. Hersh WR, Gorman PN, Sacherek LS, The applicability and quality of information for answering clinical questions on the World Wide Web, *Journal of the American Medical Association*, 1998, 280: 1307-1308.

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Reviews

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2. Hersh WR, Review of: Berg M, *Rationalizing Medical Work: Decision-Support Techniques and Medical Practices*, Cambridge, MA: MIT Press, 1997, *Information Processing and Management*, 1998, 34: 133-134.

3. Hersh WR, Review of: Witten IH, Moffat A, Bell TC, *Managing Gigabytes - Compressing and Indexing Documents and Images*, San Francisco: Morgan Kaufmann, 1999, *Information Retrieval*, 2001, 4: 79-83.

4. Hersh W, The way of the future? Review of: Biomed Central, *Nature*, 2001, 413: 680.

5. Hersh W, Review of: Goodman K, *Ethics, Medicine, and Information Technology*, Cambridge, England: Cambridge University Press, *Journal of Biomedical Informatics*, 2017, 66: 159-160.

Grant and Contract Support

Current (Dollar amounts indicate total costs unless otherwise specified.)

Principal Investigator

5T15LM007088 (Hersh)   7/2007-6/2027   10%
NIH/NLM $3,361,423 (2022-2027 cycle)
Research Training in Biomedical Informatics and Data Science at Oregon Health & Science University

Predoctoral and postdoctoral training grant in biomedical informatics and data science.

2R01LM011934 (Hersh MPI with Liu)   9/2014-7/2026   20%
NIH/NLM $3,013,666
Semi-structured Information Retrieval in Clinical Text for Cohort Identification

Use of natural language processing and information retrieval techniques for cohort discovery for research studies from electronic health records. (Competitive renewal submitted.)

1U2RTW012131 (Hersh MPI with Mutsvangwa)   10/2021-7/2026   10%
NIH/NIGHR/NIBIB/FIC $1,739,224
Computational Omics and Biomedical Informatics Program (COBIP)

Develop and implement graduate degree programs to train African biomedical data scientists and faculty in rigorous fundamental data science, computational omics, clinical informatics and imaging data science. Courses in clinical informatics to be provided by OHSU.

1R25LM014207 (Hersh PI)   9/2022-6/2027   5%
NIH/NLM $677,000
Attracting Talented and Diverse Students to Biomedical Informatics and Data Science Careers Through Short-Term Study at OHSU

Summer internship program for underrepresented college undergraduates in biomedical informatics and data science.

Other

1R01HS027796 (Eden, PI)   10/2020-9/2025   10%
AHRQ $1,993,583
Implementing USPSTF Recommendations for Breast Cancer Screening and Prevention by Integrating Clinical Decision Support Tools with the Electronic Health Record

Demonstrate the ability of the EHR to securely exchange information with MammoScreen using interoperable, standards-based approaches; provide appropriate clinical and patient decision support for users; and to evaluate its use among patients and clinicians using mixed methods based on the RE-AIM framework.

1OT2OD032720 (Bensoussan, PI)   09/1/2022-8/31/2026   10%
NIH Common Fund $3,817,302 (Year 1)
Voice as a Biomarker of Health: Building an ethically sourced, bioaccoustic database to understand disease like never before

Data acquisition project for voice as biomarker for health and disease in NIH Bridge2AI Program.

R18 HS027119 (Gold, PI)   9/1/2019-6/30/2024   5%
AHRQ $1,976,903
A Turn-Key EHR Simulation Program to Reduce Diagnostic Error in Ambulatory Care

Develop and validate a library of EHR based simulation exercises designed to reduce the likelihood of diagnostic error across 5 major ambulatory care specialties, and create, using Fast Healthcare Interoperability Resources (FHIR), a novel simulation tool which will allow for importation of these simulated charts into the major EHR vendors in the U.S.

<u>Pending</u>

None.

<u>Completed</u>

Principal Investigator

1. Principal Investigator, NLM Purchase Order 467-MZ-001022, *A Comparison of Retrieval Effectiveness for Three Methods of Indexing AIDS-Related Abstracts*, July 1990-January 1991. ($25,000)

2. Principal Investigator, Medical Research Foundation of Oregon Grant 9040, *Evaluation of a Concept-Based Approach to Information Retrieval by Computer*, December 1990-November 1991. ($16,720)

3. Principal Investigator, NIH NLM FIRST Award 1R29-LM05307, *SAPHIRE: A Concept-Based Approach to Information Retrieval*, June 1991-May 1996. ($477,403)

4. Principal Investigator, Office of the Surgeon General, Department of the Army, *SAPHIRE Information Retrieval for the Textbook of Military Medicine*, January-March 1993. ($15,013)

5. Principal Investigator, School of Medicine Research Equipment Fund, *Hard Disk Space to Enhance Medical Informatics Research at the BICC*, January 1994. ($7,700)

6. Principal Investigator, MD Consult LLC, *Conversion of Medical Book Indexes to MeSH Structure*, August 1995-August 1996. ($395,301)

7. Principal Investigator, NIH NLM 1U01-LM05879, *Vocabulary and Text Data Extraction from the EMR*, February 1995-January 1998. ($954,027)

8. Principal Investigator, Mr. Paul Mongerson, *Physician Order Entry Study*, July 1996-December 1996. ($20,000)

9. Principal Investigator, Kumamoto Institute of Computer Software (Kumamoto, Japan), *Co-Development of a Japanese Language Interface to Medical Information*, October 1999-February 2000. ($50,000)

10. Principal Investigator, NIH NLM 1R01-LM06311, *A New Model & Approach to Retrieval System Evaluation*, October 1997-September 2000. ($550,561)

11. Principal Investigator, SMS Corp., *OHSU-SMS Joint Development Agreement*, January 1999-December 2000. ($400,000)

12. Core Principal Investigator, NIH 1P50-AT00066, Oregon Center for Complementary and Alternative Medicine in Neurology, October 1999-June 2004. ($1,273,207)

13. Principal Investigator, NIH NLM Purchase Order 467-MZ-001707, *Distributed Medical Informatics Education Using Internet2*, July 2000-July 2001. ($100,000)

14. Principal Investigator, Agency for Healthcare Research and Quality, Project Number 290-97-0018, Task Order No. 3, *Medical Informatics and Telemedicine Coverage Under the Medicare Program*, May 1999-April 2001. ($208,285)

15. Principal Investigator, Eugene Garfield Foundation, (no number), *Professional Information Link (PiL) - A Novel Approach to Providing Contextual Information with Rapid Turnaround to Oregon Health Care Providers*, April 2001-March 2004. ($100,000)

16. Principal Investigator, Agency for Healthcare Research and Quality, Project Number 290-97-0018, Task Order No. 4, *Telemedicine Workshop - Planning, Research, Evidence Report, and Organization*, May 2004-November 2005. ($215,000)

17. Principal Investigator, NIH/NLM, Contract 467-MZ-501576, *Methods for Reporting Clinical Trials Results*, September 2005-May 2006. ($66,264)

18. Principal Investigator, NIH/NLM, 1G08 LM008235, *Discovering Standards-Based Learning at Point of Care*, October 2004-September 2007. ($421,905)

19. Principal Investigator, NSF, ITR-0325160, *Enhancing Access to the Bibliome for Genomics*, October 2003-September 2008. ($1,206,377) Included supplement: *Enhancing Access to Multimodal Information in Biomedicine*, September 2004-September 2008. ($90,900)

20. Principal Investigator, *Understanding and Improving Image Retrieval in Medicine*, Google Research, April 2008- October 2009. ($80,000)

21. Principal Investigator, *Characterizing the Health Information Technology Workforce*, Jobs for the Future Foundation, March 2009-June 2009. ($75,000)

22. Principal Investigator, NIH Fogarty Center and NLM, 1D43TW008439, *Translational Informatics for Global Health: An Argentina-Oregon Collaboration*, September 2009-June 2015. ($1,200,000)

23. Principal Investigator, Office of the National Coordinator for Health IT (HHS), *OHSU HITECH Curriculum Development/National Training and Dissemination Center*, 1U24OC000015, April 2010-March 2013. ($2,720,000)

24. Principal Investigator, Office of the National Coordinator for Health IT (HHS), *OHSU HITECH Graduate Certificate and Master's Degree Training Grant*, 1T15OC000054, April 2010-September 2013. ($3,085,812)

25. Principal Investigator, NIH/NLM 1R25LM011168, *OHSU Summer Internship in Biomedical Informatics for College Undergraduates*, June 2011-May 2014. ($162,616)

26. Principal Investigator, National Institute for Standards & Technology (NIST), 70NANB11H38, *TREC MED Retrieval Task for TREC 2011*, August 2011-February 2012. ($23,988)

27. Principal Investigator, National Institute for Standards & Technology (NIST), 70NANB12H180, *TREC MED Retrieval Task for TREC 2012*, June 2012-December 2012. ($59,566)

28. Principal Investigator, AHRQ, HHSA290201200014I Task Order No. 11, *Evidence Report: Health Information Exchange*, September 2013-May 2015. ($625,000)

29. Principal Investigator, National Institute for Standards & Technology (NIST), 60NANB14D224, *TREC Clinical Decision Support Task for TREC 2014*, July 2014-December 2014. ($53,963)

30. Principal Investigator, AHRQ, HHSA290201500009I Task Order No. 2, Technical Brief: Telehealth: *Mapping the Evidence for Patient Outcomes from Systematic Reviews*, April 2015-November 2015 ($200,000)

31. Principal Investigator, National Institute for Standards & Technology (NIST), 2B1341-15-RQ-0669, *Text Retrieval Conference (TREC) – Clinical Decision Support Effort*, August 2015-November 2015 ($43,518)

32. Principal Investigator, National Institute for Standards & Technology (NIST), SB1341-16-SE-0161, *Text Retrieval Conference (TREC) – Clinical Decision Support Effort*, August 2016-November 2016 ($49,821)

33. Principal Investigator, Office of the National Coordinator for Health IT (HHS), *OHSU Update and Expansion of the ONC Health IT Curriculum*, July 2015-June 2017 ($966,436)

34. Principal Investigator, National Institute for Standards & Technology (NIST), SB1341-17-RQ-0289, *Text Retrieval Conference (TREC) – Clinical Decision Support Effort*, August 2017-October 2017 ($57,564)

35. Principal Investigator, NIH/NIGMS, 1R25GM114820, *Adding Big Data Open Educational Resources to the ONC Health IT Curriculum*, September 2014-June 2018 ($645,903)

36. Principal Investigator, National Institute for Standards & Technology (NIST), 1333ND18PNB770111, *Text Retrieval Conference (TREC) – Clinical Decision Support Effort*, August 2018-October 2018 ($59,797)

37. Principal Investigator, Alnylam Pharmaceuticals, *Alnylam Porphyria Recruitment Project*, November 2018-December 2019 ($247,060)

38. Principal Investigator, National Institute for Standards & Technology (NIST), 1333ND19PNB770469, *Text Retrieval Conference (TREC) – Precision Medicine Support Effort*, August 2019-October 2019 ($60,200)

39. Principal Investigator, Intelligent Medical Objects, *NLP Annotation Project*, September-December 2019 ($29,045)

40. Principal Investigator, National Institute for Standards & Technology (NIST), 133ND20PNB770574, *Text Retrieval Conference (TREC) Precision Medicine Task*, August 2020-October 2020 ($62,381)

41. Principal Investigator, National Institute for Standards & Technology (NIST), 1333ND21PNB770437, *Text Retrieval Conference (TREC) Clinical Trials Task*, August 2021-October 2021 ($59,889)

Other

1. Consultant, NIH NLM Contract N01-LM13539, *Unified Medical Language System Project*, July 1991-July 1994. (PI: Robert Greenes, M.D., Ph.D., Hersh Costs: $30,000)

2. Co-Investigator, DE-FG06-94ER61918, Department of Energy, *Models of an Advanced Information Communication Research Network for Regional Health and Environmental Research*, September 1994-September 1996. (PI: Lesley Hallick, Ph.D., Hersh Costs: $194,000)

3. Co-Investigator, DE-FG03-94ER61918, *Multi-User, Patient-Centered Health Care Network Transition Systems Development and Community Trials*, October 1996-October 1997. (PI: Lesley Hallick, Ph.D., Hersh Costs: $155,000)

4. Co-Investigator, DE-FG03-94ER61918, *The OHSU Digital Capstone Project: Outreach Information Services for Oregon Health Care Practitioners, Researchers, Patients, and Students; Deployment Through Robust Interactive Digital Utility Upgrades and Seed Database and Knowledge Collection-Development Support Activity*, October 1997-January1999. (PI: Lesley Hallick, Ph.D., Hersh Costs: $872,900)

5. Co-Principal Investigator (OHSU Principal Investigator in three-institution collaboration), National Science Foundation, *High Performance Metropolitan and Internet2 Connectivity for Portland Oregon Research Institutions*, September 1999-August 2001. (PI: Calton Pu, Ph.D., OHSU Direct Costs: $243,314)

6. Co-Investigator, Medical Research Foundation of Oregon, *Telehealth for Wellness Coaching*, September 1998-August 2001. (PI: Patricia Patterson, Ph.D., $25,000)

7. Co-Investigator, Robert Wood Johnson Foundation, *Tele-video Nursing for Congestive Heart Failure Self-Management: A Controlled Trial*, December 2000-May 2002.
(PI: Patricia Patterson, Ph.D., $99,531)

8. Co-Investigator, NINR 1 R15 NR04978, *Videophone Field Testing for Senior Care*, August 2000-July 2002.
(PI: Patricia Patterson, Ph.D., $100,000)

9. Subcontractor, NIH NLM 1N01-LM43507, *ImageEngine: Biomedical Aspects of High Performance Computing and Communications*, January 1996-September 2002.
(PI: Henry Lowe, M.D., Hersh Direct Costs: $62,490)

10. Co-Investigator, Contract 290-97-0018, task order no. 10, Agency for Healthcare Research and Quality, *The Effect of Healthcare Working Conditions on Patient Safety*, September 2001-August 2002.
(PI: David Hickam, M.D., Direct Costs: $283,436)

11. Co-Investigator, NIH NLM 1R01-LM06942, *Physician Order Entry: Field Study of Success Factors*, April 2000-October 2003.
(PI: Joan Ash, Ph.D., Direct Costs: $1,019,250)

12. Co-Investigator, NIH 1R25 AT01773, *CAM Curriculum for OHSU*, July 2002-April 2007.
(PI: Anne Nedrow, M.D., Direct Costs: $450,000)

13. Co-Investigator, NIH, 1K30 RR022506, *Oregon Human Investigations Project*, October 2000-September 2006. (PI: Cynthia Morris, Ph.D., Direct Costs: $185,000)

14. Co-Investigator, AHRQ Contract 290-02-0024, Task Order No. 9, *Barriers and Drivers of Health IT Use for the Elderly, Chronically Ill and Underserved*, July 2007-October 2008. (PI: Holly Jimison, Ph.D., Direct Costs: $299,411)

15. Co-Investigator, NIH/NLM 1R01 LM009501, *Assisting Systematic Review Preparation Using Automated Document Classification*, July 2007-July 2011. (PI: Aaron Cohen, M.D., M.S., Direct Costs: $750,000)

16. Consultant and Chair of the Training Requirements and Contents Committee, Bill & Melinda Gates Foundation, *AMIA Global Partnership Program*, March 2009-March 2011. (PI: Don Detmer, M.D., Direct Costs: $1,100,000)

17. Mentor (K99), NIH/NLM 1K99LM009889, *Clinical Image Retrieval: User Needs Assessment, Toolbox Development & Evaluation*, October 2009-September 2011 (K99 portion, Direct Costs: $736,789)

18. Collaborator, ONC 90RC0030, *Oregon Health IT Regional Extension Center*, February 2010-January 2013 (PI: Abby Sears)

10. Director, Biomedical Informatics Program, NIH/NCATS 1U54 RR023424, *Oregon Clinical and Translational Science Institute*, October 2006-October 2014 (PI: Eric Orwoll, M.D., $55,000,000)

20. Consultant, HRSA D09HP09074, *Health Informatics as a Bridge to the Underserved: Primary Care Strategy*, October 2012-September 2015. (PI: Gayle Roux, Ph.D., Direct Costs: $956,087)

21. Co-Investigator, 1R18HS021637, *Use of Simulation to Improve Use and Safety of Electronic Health Records*, September 2012-July 2015 (PI: Jeff Gold, M.D., Direct Costs: $1,041,890)

22. Co-Investigator, 1R25EB020379, *OHSU Informatics Analytics BD2K Skill Course*, September 2014-August 2017 (PI: David Dorr, M.D., Direct Costs: $486,000)

23. Co-Investigator, American Medical Association, *Preparing Future Physicians: A Bold Proposal for Oregon and Beyond*, September 2013-August 2018 (PI: George Mejicano, M.D., Direct Costs: $1,000,000)

24. Co-Investigator, NIH/NCATS 1U24TR002306, *A National Center for Digital Health Informatics Innovation*, September 2017-2019. (PI: Melissa Haendel, Ph.D., $5,014,915)

25. Co-Investigator, SRA-21-164, *Research Collaboration for AADC Deficiency*, 2021-2023, (PI: Aaron Cohen, M.D., M.S, $257,060)

Teaching Experience

Medical School

1. Instructor, History and Physical Diagnosis Course, OHSU. Taught physical exam skills to second-year medical students, 1990-1991. Taught physical exam skills to first-year students, 1992-1993.

2. Director, OHSU Medical Student Elective in Medical Computing, 1991-1995.

3. Facilitator, Principles of Clinical Medicine, OHSU. Gave introductory lectures and organized small-group sessions for first-year students:
- *Strategies for Self-Directed Learning* and *Introduction to ORHION (MEDLINE)*, 1992.
- Gave introductory lectures and organized small-group sessions and for second-year students: *Introduction to Statistics* and *Applications of Evidence-Based Medicine*, 1993.
- Gave part of lecture: *Evaluating the Medical Literature,* and organized small group sessions *Critical Appraisal of Observational Studies* and *Critical Appraisal of Clinical Trials*, 1994-1998.

4. Co-Director, JCON709V, *Using Computers to Solve Clinical Problems*, a 10-week elective course in medical informatics and evidence-based medicine, 1999.

5. Member, Complementary and Alternative Medicine Science Committee, developing curriculum for OHSU medical students in complementary and alternative medicine and presenting lecture:
- *How to Critically Review the Literature for CAM Studies*, 2005.

6. University of Zimbabwe Medical School, *Short Course in Medical Informatics*, Harare, Zimbabwe, April 10-14, 2007.

7. Lecture, *Introduction to Biomedical and Health Informatics*, Third-Year Continuity Curriculum, OHSU School of Medicine
- February 11, 2013
- September 16, 2013

8. Clinical Skills Lab, *Clinical Informatics: Improving Quality and Population Health with EHR Data*, first-year medical students
- March 31, 2015

9. Lecture, *Informatics is Different Now That You're a Doctor*, first-year medical students
- 2015-2022
- Also given to Nova Southeastern University College of Allopathic Medicine, 2021-2023

10. Lecture, *Critical Thinking, Informatics, and Evidence-Based Medicine: Access*, first-year medical students
- September 4, 2015

11. Lecture, *Critical Thinking, Informatics, and Evidence-Based Medicine: Appraisal*, first-year medical students
- October 9, 2015

Internal Medicine Residency and Fellowship

1. Attending Physician, Brigham and Women's Hospital, Supervise residents in Emergency Ward one day per week, 1989-1990.

2. Attending Physician, OHSU, Supervise residents in General Medicine Clinic one half day per week, 1990-1997.

3. Attending Physician, OHSU, Supervise residents on General Medicine Ward one month per year, 1990-1995.

4. Instructor, Internal Medicine Residency Ambulatory Care Workshop, OHSU, *Medical Informatics*, Given 6 times per academic year, 1993-1997.

5. Instructor, General Internal Medicine Fellowship Seminar Series, OHSU, *Medical Informatics* (1993, 1995), *Literature Searching* (1994).

6. Facilitator, Critical Reading Seminar, OHSU, *Systematic Reviews* and *Searching the Medical Literature*, 1998-2001.

Continuing Education

1. Course Faculty, *Using Computers to Solve Clinical Problems*, Pre-Session course
- American College of Physicians 76th Annual Session, Atlanta, GA, March 14-15, 1995.

2. Course Co-Director, *Using Computers to Solve Clinical Problems*, OHSU Continuing Medical Education Course:
- Portland, OR, September 8-9, 1995
- Portland, OR, January 26-27, 1996
- Portland, OR, September 6-7, 1996
- Portland, OR, September 5-6, 1997
- Portland, OR, May 1-2, 1998
- Portland, OR, April 30-May 1, 1999

- Portland, OR, December 1-2, 2000
- Portland, OR, December 7-8, 2001
- Portland, OR, September 13-14, 2002
- Portland, OR, September 12-13, 2003

3. Course Co-Director, *Computers in Medicine*, OHSU Family Practice Review Special Seminar:
- Portland, OR, February 14, 1996
- Portland, OR, February 11, 1998
- Portland, OR, February 12, 2003
- Portland, OR, February 5, 2004

4. *Beginning MEDLINE*, American College of Physicians 77th Annual Session, San Francisco, CA, April 27, 1996.

5. Course Co-Director, *Computers in Medicine*, OHSU School of Medicine Alumni Association, Portland, OR, October 5, 1996.

6. Track Co-Leader and Course Faculty, *Using Computers to Answer Clinical Questions*, two-day pre-session course, two four-hour workshops and one four-hour hands-on session:
- American College of Physicians 78th Annual Session, Philadelphia, PA, March 20-24, 1997
- American College of Physicians 79th Annual Session, San Diego, CA, March 31-April 5, 1998
- American College of Physicians 80th Annual Session, New Orleans, LA, April 22-26, 1999

7. Instructor, *Nursing Informatics Faculty Development Course*, Western Institute of Nursing:
- Portland, OR, May 20-24, 1997
- Tucson, AZ, August 4-8, 1997
- Bozeman, MT, August 11-15, 1997
- Denver, CO, August 18-22, 1997

8. Course Co-Director, *Using Computers to Solve Clinical Problems*, Legacy Health Systems Continuing Medical Education Course:
- Portland, OR, November 15, 1997

9. Course Co-Director, *Electronic Obstetrics and Gynecology*, *Using Computers to Solve Clinical Problems*:
- Portland, OR, October 19, 1998

10. Course Faculty, *Answering Clinical Questions with Computers and the Internet*, two four-hour workshops and one four-hour hands-on session:
- American College of Physicians 81st Annual Session, Philadelphia, PA, April 13-15, 2000
- American College of Physicians 82nd Annual Session, Atlanta, GA, March 28-30, 2001

11. Course Co-Director, *Perspectives on Complimentary and Alternative Medicine in Neurology*:
- Portland, OR, October 20-21, 2000
- Portland, OR, October 26-27, 2001

12. Course Faculty, *Answering Clinical Questions with Computers and the Internet*, two-hour workshops:
- American College of Physicians 83rd Annual Session, Philadelphia, PA, April 12-13, 2002
- American College of Physicians 84th Annual Session, San Diego, CA, April 3-5, 2003

- American College of Physicians 85th Annual Session, New Orleans, LA, April 24, 2004

13. Course Faculty, *Determining the Quality of Medical Information on the Internet*, two-hour workshops:
- American College of Physicians 83rd Annual Session, Philadelphia, PA, April 12-13, 2002
- American College of Physicians 84th Annual Session, San Diego, CA, April 3-5, 2003

14. Lecture, *Update on the National Health Information Technology Agenda*
- American College of Physicians 87th Annual Session, Philadelphia, PA, April 6-8, 2006

15. Lecture, *Practicing Medicine in a Data-Rich, Information-Driven Future*
- 44th Annual Primary Care Review: A Generalist/Specialist Collaboration, Portland, OR, February 13, 2013

16. Course Director, *Clinical Informatics Board Review Course (CIBRC)*, American Medical Informatics Association
- Offered annually 2013-

17. Course Director, *Update in Health Information Technology: Healthcare Data Analytics*, OHSU and Office of the National Coordinator for Health IT
- Six online offerings between October 2016-May 2017
- Six online offerings between August 2017-August 2018

18. Course Co-Director, Annual Update in Clinical Informatics, OHSU
- Offered annually 2019-

Continuing Librarian Education

1. Course Director, *Introduction to Medical Informatics*, OHSU, on-line course offered 2003-2005.

Graduate Nursing Education

1. Oral Comprehensive Examination Committee, OHSU School of Nursing, Student Katherine Caton, 1994.

2. Lecture, *Informatics: A Technology Exemplar*, OHSU Nursing 614, Context and Change in Nursing, given October 24 and 26, 1995.

3. Course Director, OHSU Nursing 711, *Information Systems and Technology in Healthcare*, July-September, 2007 (Doctor of Nursing Practice Program)

4. Lectures, *Selection and Implementation of Electronic Health Records* and *Meaningful Use of Electronic Health Records*, OHSU Nursing 711, *Information Systems and Technology in Healthcare*
- April 23, 2010
- May 5, 2011

Physician Assistant Education

1. Co-Instructor, *Medical Informatics for Physician Assistant Students*, OHSU Physician Assistant Program, 2000-2009.

2. Course Director, Physician Assistant Studies 551, *Introduction to Biomedical Informatics*, OHSU, adaptation of distance-learning version of Biomedical Informatics 510, taught via distance learning, two quarters per year from 2003-2007.

3. Course Director, Physician Assistant Studies 552, *Evidence-Based Medicine*, adaptation of distance-learning version of Biomedical Informatics 536, OHSU, taught via distance learning, two quarters per year from 2003-2005, one quarter per year 2006-2007.

Graduate Biomedical Informatics

1. Course Director, Biomedical Informatics 510/610, *Introduction to Medical Informatics*, OHSU, taught annually on campus 1991 to present, taught by Web-based distance learning each quarter from Fall, 1999 to present. (Course also offered as Public Health 549 at OHSU 1992-1997.)

2. Course Director, Biomedical Informatics 514/614, *Information Retrieval*, OHSU, taught 1993 and annually 1996-2015 and then biannually 2017-2019. (Course also offered as Public Health 507 at OHSU and Computer Science 410/510 at Portland State University in 1993.)

3. Course Director, Biomedical Informatics 536/636, *Evidence-Based Medicine*, taught 2004, 2006, 2008, 2010, 2013, 2015, 2017, 2019, 2021.

4. Lecture, *Natural Language Processing - The Clinical Narrative*, in Medical Informatics 516, *Artificial Intelligence and Decision Support*, OHSU, June 2, 1998, November 17, 1998.

5. Lecture, *Evaluation of Information Retrieval Systems*, in Medical Informatics 522, *Evaluation of Health Care Information Systems*, OHSU, November 3, 1998, November 2, 1999, November 14, 2000.

6. Lectures, Biomedical and Health Informatics Graduate Diploma and Master of Science Programs, Faculty of Tropical Medicine, Mahidol University, Bangkok, Thailand, March 26-29, 2013. (Taught Data Standards, Electronic Health Records, and Information Retrieval.)

7. Lectures, Biomedical and Health Informatics and Master of Science and Doctoral Programs, Faculty of Tropical Medicine, Mahidol University, Bangkok, Thailand, September 15-17, 2014. (Taught Electronic Health Records, Data Standards, Clinical Decision Support, and Information Retrieval.)

8. Lecture, *Secondary Use of Electronic Health Record Data*, Seminar on Health Informatics, School of Engineering, Universidad de la República, Montevideo, Uruguay (delivered remotely), September 24, 2014.

9. Course Co-Director (with Steven Chamberlin, ND), Biomedical Informatics 527/627, *Applied Data Science and Machine Learning*, taught 2021-2023.

Human Investigations Program (training for clinical research)

1. Course Co-Director, HIP 507A, *Evidence-Based Medicine*, OHSU, nine-week seminar course taught annually 2003-2006.

2. Course Director, HIP 520, *Introduction to Biomedical Informatics*, OHSU, six-week on-line course taught annually 2003-.

Other Teaching

1. Lecture, *Health Information on the World Wide Web*, Public Health Education 355, Consumer Health Issues, Portland State University, Portland, OR, December 1, 1998, January 20, 2000, July 5, 2000, Jan. 10, 2001.

2. Course Director, 10x10 ("ten by ten") Program - Adaptation of BMI 510 course in partnership with American Medical Informatics Association, 2005-.
- July-November 2005
- November 2005-February 2006 - special offering with California Health Care Foundation
- February-May 2006
- July-November 2006
- January-April 2007 - special offering with American College of Physicians
- February-May 2007
- February-May 2007 - special offering with Scottsdale Institute
- March 2007-July 2007 - special offering with Mayo Clinic
- July-November 2007
- October 2007-January 2008 - special offering with Society for Technology in Anesthesiology
- February-May 2008
- March 2008-July 2008 - special offering with Mayo Clinic
- April 2008-November 2008 - special offering with Centers for Disease Control and Prevention
- June 2008-Octrober 2008 - special offering with American College of Emergency Physicians
- July-November 2008
- February-May 2009
- March-June 2009 - special offering with Gateway Consulting, Singapore
- June 2009-Octrober 2009 - special offering with American College of Emergency Physicians
- July-November 2009
- September 2009-January 2010 - special offering with Gateway Consulting, Singapore
- November 2009-March 2010
- February-May 2010
- March 2010-July 2010 - special offering with Gateway Consulting, Singapore
- April-August 2010
- June 2010-September 2010 - special offering with American College of Emergency Physicians
- June 2010-November 2010 - special offering with American Dietetic Association
- July-November 2010
- November 2010-March 2011 - special offering with Gateway Consulting, Singapore
- December 2010-March 2011
- February-May 2011
- April-September 2011 - special offering with American Dietetic Association
- June-October 2011 - special offering with American College of Emergency Physicians
- April-August 2011
- May-September 2011 - special offering with Gateway Consulting, Singapore
- July-October 2011
- November 2011-March 2012
- February-June 2012 - special offering with Gateway Consulting, Singapore
- March-July 2012
- April-October 2012 - special offering with American Dietetic Association

- June-October 2012 - special offering with American College of Emergency Physicians
- July-November 2012
- August 2012-January 2013 - special offering with Gateway Consulting, Singapore
- December 2012-April 2013
- March-July 2013
- March-July 2013 - special offering with Gateway Consulting, Singapore
- April-October 2013 - special offering with American Dietetic Association
- June-October 2013 - special offering with American College of Emergency Physicians
- July-November 2013
- October 2013-January 2014 - special offering with Gateway Consulting, Singapore
- November 2013-March 2014 - special offering with King Saud University, Saudi Arabia
- December 2013-April 2014
- April-July 2014
- March-July 2014 - special offering with Gateway Consulting, Singapore
- April-October 2014 - special offering with American Dietetic Association
- June-October 2014 - special offering with American College of Emergency Physicians
- July-November 2014
- October 2014-January 2015 - special offering with Gateway Consulting, Singapore
- December 2013-April 2015
- March-July 2015 - special offering with Gateway Consulting, Singapore
- April-July 2015
- April-October 2015 - special offering with American Dietetic Association
- June-October 2015 - special offering with American College of Emergency Physicians
- October 2015-January 2016 - special offering with Gateway Consulting, Singapore
- July-November 2015
- December 2015-March 2016
- February 2016-April 2016 - special offering with King Saud University, Saudi Arabia
- February 2016-June 2016 - special offering with New York State Academy of Family Physicians
- March 2016-June 2016
- April 2016-July 2016 - special offering with Gateway Consulting, Singapore
- June-October 2016 - special offering with American College of Emergency Physicians
- July-November 2016
- October 2016-January 2017 - special offering with Gateway Consulting, Singapore
- December 2016-March 2017
- April-July 2017
- April-July 2017 - special offering with Gateway Consulting, Singapore
- July-October 2017 - special offering with American College of Emergency Physicians
- July-November 2017
- October 2017-February 2018 - special offering with Gateway Consulting, Singapore
- December 2017-March 2018
- January-March 2018 - special offering with Abu Dhabi Health Services Company (SEHA), United Arab Emirates
- April-July 2018
- July-October 2018 - special offering with American College of Emergency Physicians
- July-November 2018
- September 2018-January 2019 - special offering with Gateway Consulting, Singapore
- December 2018-March 2019
- April-June 2019 - special offering with Gateway Consulting, Singapore
- April-July 2019
- June-October 2019 - special offering with American College of Emergency Physicians

- July-November 2019
- August 2019-January 2020 - special offering with Gateway Consulting, Singapore
- December 2019-March 2020
- February-July 2020 - special offering with Gateway Consulting, Singapore
- March-July 2020
- July-October 2020 - special offering with American College of Emergency Physicians
- July-November 2020
- September 2020-January 2021 - special offering with Gateway Consulting, Singapore
- December 2020-March 2021
- February-June 2021 - special offering with Gateway Consulting, Singapore
- April-July 2021
- July-October 2021 - special offering with American College of Emergency Physicians
- July-November 2021
- August-December 2021 - special offering with Gateway Consulting, Singapore
- December 2021-March 2022
- April-July 2022
- July-October 2022 - special offering with American College of Emergency Physicians
- July-November 2022
- December 2022-March 2023
- January-May 2023 - special offering with Gateway Consulting, Singapore

3. USC Master of Medical Management Program
- *Medical Informatics I - Introduction to Biomedical Informatics* – 2007-2011
- *Medical Informatics II - Electronic Health Records* – 2008-2010

4. Lecture, Introduction to Bioinformatics, BIO 330, *Human Genetics*, University of Portland, 2008.

5. Course Director, Providence-OHSU Informatics Program - Adaptation of BMI 510 course in partnership with Providence Health System
- March-August 2009
- September 2009-February 2010
- September 2010-February 2011
- February-June 2013

6. Course Director, *Allied Health Informatics Symposium 2010 - Health Informatics into the New Age*, Hong Kong Hospital Authority, Hong Kong, China, January 21-22, 2010, two-day seminar on health information for allied health professionals.

7. Lecture, Introduction to Biomedical & Health Informatics, in Health Sciences 340, *Health Care in America*, Linfield College, 2011.

8. Course Director, Clinical Informatics Board Review Course, American Medical Informatics Association
- 2013 – Bethesda, MD; Chicago, IL; Portland, OR
- 2014 – Philadelphia, PA; Chicago, IL
- 2015 – Indianapolis, IN; Portland, OR
- 2016 – Providence, RI; Denver, CO
- 2017 – Portland, OR; Bethesda, MD
- 2018 – Bethesda, MD
- 2019 – Dallas, TX

- 2020 – Virtual live offering
- 2021 – Bethesda, MD
- 2022 – Scottsdale, AZ

9. Course Director, Kaiser-OHSU Informatics Program - Adaptation of BMI 510 course in partnership with Kaiser-Permanente
- February-July 2015

10. Lecture, *Big Data in Health*, in Standards and Interoperability in Health, School of Engineering, University of the Republic, Uruguay, June 20, 2016 (delivered remotely)

11. Course Co-Director, PHE 427, *Health Informatics*, Portland State University School of Public Health
- Spring 2018
- Spring 2019

12. Course Co-Director, Annual Update in Clinical Informatics, OHSU
- 2019-2020
- 2020-2021
- 2022

Mentoring Experience

Postdoctoral Master's

1. Michael Zacks, MD, OHSU M.S. in Medical Informatics Program, 1997-1998, Advisory and Examination Committee chair.
Developing Search Strategies for Detecting High Quality Reviews in a Hypertext Test Collection
Zacks MP, Hersh WR, Developing search strategies for detecting high quality reviews in a hypertext test collection, *Proceedings of the 1998 AMIA Annual Symposium*, 1998, 663-667.

2. Calvin Huey, MD, OHSU M.S. in Medical Informatics Program, 1997-1998, Advisory and Examination Committee chair.
Designing a Web-based Smoking Cessation Program
Huey CG, Hersh WR, A needs assessment of a web-based smoking cessation program, *Proceedings of the 1998 AMIA Annual Symposium*, 1998, 1020.

3. Judy Logan, MD, OHSU M.S. in Medical Informatics Program, 1999-1998, Advisory and Examination Committee chair.
Measuring the Quality of Clinical Encounter Data in Computer-Based Patient Records
Logan JR, Gorman PN, Middleton B. Measuring the quality of medical records: a method for comparing completeness and correctness of clinical encounter data. *Proceedings of the 2001 AMIA Annual Symposium*. 2001, 408-12.

4. Susan Price, MD, OHSU M.S. in Medical Informatics Program, 1998-1999, Advisory and Examination Committee chair.
Development of a Software Tool to Aid in the Retrieval of Consumer Health Information from the World Wide Web

Price S, Hersh W, Filtering Web pages for quality indicators: an empirical approach to finding high quality consumer health information on the World Wide Web, *Proceedings of the 1999 AMIA Annual Symposium*, 1999, 911-915. (Student paper competition finalist.)

5. Jason Lyman, MD, OHSU M.S. in Medical Informatics Program, 1998-2000, Advisory and Examination Committee chair.
Representing Clinical Information in an Internal Medicine Database
Lyman JA, Hersh W, Spackman K, Representing clinical information in an internal medicine teaching image database, *Proceedings of the 2000 Annual AMIA Symposium*, 2000, 1074.

6. Mark Mailhot, MD, OHSU M.S. in Medical Informatics Program, 1999-2001, Advisory and Examination Committee chair.
Using Phrases Generated by a Shallow Syntactic Parser to Match UMLS Concepts in a Radiology Test Collection
http://www.ohsu.edu/dmice/people/ms/theses/2001/mailhot.pdf

7. Tian Xinping, MD, OHSU M.S. in Medical Informatics Program, 2001-2003, Advisory and Examination Committee chair.
A Database for Outpatients with Rheumatic Diseases at PUMCH
Tian X, Hersh W, Logan J, Bennett R, A database for Chinese outpatients with rheumatic diseases, *MEDINFO 2004*, 256-259.

8. Dat Tran, MD, OHSU M.S. in Medical Informatics Program, 2001-2004, Advisory and Examination Committee member.
Applying Task Analysis to Better Support Bioinformatics Tasks
Tran D, Dubay C, Gorman P, Hersh W, Applying task analysis to describe and facilitate bioinformatics tasks, *MEDINFO 2004*, 818-822.

9. Aaron Cohen, MD, OHSU M.S. in Medical Informatics Program, 2002-2004, Advisory and Examination Committee member.
Using Symbolic Network Logical Analysis as a Knowledge Extraction Method on MEDLINE Abstracts

10. Jayashree Kalpathy-Cramer, PhD, OHSU M.S. in Biomedical Informatics, 2007-2009, Advisory and Examination Committee chair.
Classification and Retrieval of Endoscopic Images from the Clinical Outcomes Research Initiative

10. Tracy Edinger, ND, OHSU M.S. in Biomedical Informatics, 2012-2013, Advisory and Examination Committee chair.
Segmenting Clinical Documents for Information Retrieval
Edinger T, Demner-Fushman D, Cohen AM, Bedrick S, Hersh W. Evaluation of clinical text segmentation to facilitate cohort retrieval. *AMIA Annual Symposium Proceedings*. 2017, 660-669.

Postdoctoral

1. Alan Ertle, MD, OHSU Postdoctoral Fellowship in Medical Informatics, 1994-1996.
Ertle AR, Campbell EM, Hersh WR, Automated application of clinical practice guidelines for asthma management, *Proceedings of the 1996 AMIA Annual Symposium*, 1996, 552-556.

2. Gary Malet, DO, OHSU Postdoctoral Fellowship in Medical Informatics, 1997-1999.

Malet G, Munoz F, Appleyard R, Hersh WR, A model for enhancing Internet medical document retrieval with "medical core metadata," *Journal of the American Medical Informatics Association*, 1999, 6: 183-208.

3. Andrew Turpin, PhD, Visiting Postdoctoral Scientist, OHSU, 1999-2001.
Turpin A, Hersh W, Why batch and user evaluations do not give the same results, *Proceedings of the 24th Annual ACM SIGIR Conference on Research and Development in Information Retrieval*, 2001, 225-231.

4. Said Radhouani, PhD, Visiting Postdoctoral Scientist, OHSU, 2008-2009.
Understanding and Improving Image Retrieval in Medicine

Dissertations (PhD)

1. Ray Liere, Oregon State University Computer Science Ph.D. Program, 1995-1999, Advisory and Examination Committee member.
Active Learning with Committees: An Approach to Efficient Learning in Text Categorization Using Linear Threshold Algorithms

2. Jianji Yang, OHSU Ph.D. in Biomedical Informatics Program, 2003-2007, Advisory Committee Chair and Examination Committee member.
Automatic Summarization of Mouse Gene Information for Microarray Analysis Using Functional Gene Clustering and Sentence Extraction

3. Steven Bedrick, OHSU Ph.D. in Biomedical Informatics Program, 2007-2011, Advisory Committee Chair and Examination Committee member.
Increasing Access to Medical Knowledge Using Multilingual Search Interfaces

Theses (Master of Science)

1. Linda Rose, OHSU School of Nursing M.S.N. Program, Student, 1996-1998, Advisory and Examination Committee member.
Factors Influencing Successful Use of Information Retrieval by Nurse Practitioners
Rose LL, Crabtree K, Hersh WR, Factors influencing successful use of information retrieval systems by nurse practitioner students, *Proceedings of the 1998 AMIA Annual Symposium*, 1998, 1067.

2. Bikram Day, OHSU M.S. in Medical Informatics Program, 1997-1998, Advisory and Examination Committee chair.
The Design and Implementation of a Hypertext Document Management System

3. Katherine Gorris, OHSU M.S. in Medical Informatics Program, 1998-2000, Advisory and Examination Committee chair.
Study Time Allocation of Medical Informatics Distance Education Students

4. Nicholas Anderson, OHSU M.S. in Medical Informatics Program, 2002-2004, Advisory and Examination Committee member.
A Qualitative Assessment of Bioinformatics Tasks, Tools and Workflow Within an Academic Biological Research Laboratory

5. Damien Borbolla, MD, OHSU M.S. in Biomedical Informatics Program, 2010-2012, Advisory and Examination Committee chair.
Evaluation of a continuing medical education system integrated into an electronic health record in an academic hospital in Argentina

6. Tracy Edinger, ND, OHSU M.S. in Biomedical Informatics Program, 2012-2014, Advisory and Examination Committee chair.
Evaluation of clinical text segmentation to facilitate cohort retrieval

Capstone (Master of Biomedical Informatics / Master of Science Non-Thesis)

1. Robert Postarero, MD, OHSU Master of Biomedical Informatics, 2002-2003, Advisor.
A PACS Education Presentation

2. John Hawkins, OHSU Master of Biomedical Informatics, 2002-2003, Advisor.
Electronic Health Record Utilization in the State of Oregon

3. Misbah Keen, MD, OHSU M.S. Non-Thesis in Health & Clinical Informatics, 2006-2007, Advisor.
Evidence-Based Medicine Competencies

4. Mary Stanfill, OHSU Master of Biomedical Informatics, 2008-2009, Advisor.
A Systematic Review of Automated Medical Coding and Classification Systems

5. Nicolay Nepochatov, OHSU Master of Biomedical Informatics, 2008-2009, Advisor.
Translational Research Web Application Framework

6. Dean Smith, MD, OHSU M.S. OHSU Master of Biomedical Informatics, 2009-2010, Advisor.
Global Interoperability and Archetype-Based Clinical Information Systems

7. Paul DeMuro, JD, OHSU Master of Biomedical Informatics, 2011-2012, Advisor.
Accountable Care

8. Keith Boone, OHSU Master of Biomedical Informatics, 2015-2016, Advisor.
A Search Engine for Healthcare IT Standards

9. David Gelman, MD, OHSU Master of Biomedical Informatics, 2016-2017, Advisor.
Building a Large Public Database of De-Identified Electrocardiographic Data from a Single Emergency Department

10. Matthias Kochmann, MD, OHSU M.S. Non-Thesis in Health & Clinical Informatics, 2018-2019, Advisor.
The FHIR HIEDRANT

11. Leong Hui Wong, OHSU M.S. Non-Thesis in Health & Clinical Informatics, 2018-2019, Advisor.
Annotating Clinical text Using a FHIR-Based Drug Ontology in a Natural Language Processing System

12. Ngoc Tran, MD, OHSU M.S. Non-Thesis in Health & Clinical Informatics, 2019-2020, Advisor.
Validation of an image analysis algorithm for quantifying CD138 immunohistochemical marker in plasma cell neoplasms

13. Carlos Figuero-Castro, MD, OHSU M.S. Non-Thesis in Health & Clinical Informatics, 2020-2021, Advisor.
Impact of Covid-19 infection in patients with pulmonary non-tuberculous mycobacterium (NTM) infection: a national covid collaborative cohort (N3C) study

Graduate Medical Education

1. Program Director, Clinical Informatics Fellowship, OHSU, 2015-2016.

2. Associate Program Director, Clinical Informatics Fellowship, OHSU, 2016-.

3. Faculty, Annual Update in Clinical Informatics, OHSU, 2019-.

Faculty Development

1. Course Director, *Using Computers for Medical Education*, Faculty Development Course, School of Medicine, OHSU, October 4, 1996.

Teaching Awards

1. OHSU School of Medicine Graduate Program Outstanding Teaching Award, 1999-2000.

2. OHSU School of Medicine Excellence in Teaching Award: Graduate Education, 2001.

3. OHSU Faculty Senate Excellence in Teaching Award, 2007.

Clinical Experience

1. Urgent Care Physician, Harvard Community Health Plan, 1987-1989.

2. Attending Physician, Brigham and Women's Hospital, Emergency Ward, 1989-1990.

3. Attending Physician, OHSU Hospital and Internal Medicine Clinic, 1990-2001.

4. Volunteer Physician, Wallace Medical Concern, Portland, OR, 2002.

Leadership

Local

1. Physician Liaison, Information Technology Group, OHSU, 1992-1995.

2. Research Committee, School of Medicine, OHSU, 1992-1998.

3. BICC Educational Support Task Force, OHSU, 1993-1998.

4. Physician Computer Advisory Committee, OHSU, 1994-1995.

5. Lifetime Clinical Record Implementation Committee, OHSU, 1994-1998.

6. Chair, Medical Informatics Task Force, School of Medicine, OHSU, 1994-1996.

7. Member, Graduate Council, School of Medicine, OHSU, 1996-2003.

8. Curriculum Committee, School of Medicine, OHSU, 1996-2003.

9. Chair, Curriculum Committee Sub-Committee on Medical Informatics, School of Medicine, OHSU, 1996-1999.

10. Advisory Committee, Division of Continuing Medical Education, School of Medicine, OHSU, 1996-2004.

11. Member, Faculty Council, School of Medicine, OHSU, 1997-.

12. Information Technology Advisory Board, OHSU, 1997-2000.

13. Co-Chair, Academic/Research Information Technology Steering Committee, OHSU, 1997-2000.

14. Clinical Information Systems Steering Committee, OHSU, 1997-2004.

15. President's Task Force on Functional Genomics, OHSU, 2000-2001.

16. Education Information Technology Steering Committee, OHSU, 2000-2004.

17. Steering Committee, OHSU Imaging Center, 2001-2002.

18. Health Information Committee, OHSU, 2005-2010.

19. School of Medicine Information Technology Committee, 2005-2006.

20. Global Health Center Steering Committee, OHSU, 2006-2010.

21. Director, Biomedical Informatics Program, Oregon Clinical and Translational Research Institute, 2006-2016.

22. Biolibrary Development Committee, OHSU, 2011-2012.

23. Council for Research Opportunities and Strategies, OHSU School of Medicine, 2012-2014.

24. Informatics Governance Group, OHSU, 2015-.

25. Health IT Council, OHSU, 2020-.

26. Digital Health Steering Committee, OHSU, 2020-.

Professional Experience

Professional Societies

1. Chair, Pacific Northwest Chapter, American Society for Information Science, 1993-1994.

2. Chair, Special Interest Group in Medicine, American Society for Information Science, 1994-1995.

3. Chair, Electronic Publishing Committee, Association for Computing Machinery Special Interest Group in Information Retrieval, 1995-1998.

4. Convenor, Information Retrieval Methods Group (initially Coding and Classification Methods Working Group), Cochrane Collaboration, 1995-2000.

5. Education Committee, American Medical Informatics Association, 1995-2005.

6. Awards Committee, American College of Medical Informatics, 1997-1999.

7. Book of the Year Jury, American Society for Information Science, 1997.

8. Member, Board of Directors, American Medical Informatics Association, 1999.

9. Secretary, American Medical Informatics Association, 2000-2003.

10. Medical Informatics Subcommittee, American College of Physicians, 2000-2005.

11. Publication Committee, American College of Physicians, 2000-2004.

12. Chair, American College of Medical Informatics Scientific Affairs Committee, 2001-2002.

13. Representative, Council of Medical Societies, American College of Physicians (for American Medical Informatics Association), 2002-2003.

14. Co-Chair, International Medical Informatics Association Working Group on Education, 2003-2007.

15. Chair, Medical Informatics Subcommittee, American College of Physicians, 2005-2008.

16. Meetings Committee, American Medical Informatics Association, 2005-2006.

17. Chair, Education Task Force, American Medical Informatics Association, 2005-2006.

18. Chair, International Medical Informatics Association Working Group on Education, 2007-.

19. Clinical Informatics Training Program Requirements Task Force, American Medical Informatics Association, 2007-2008.

20. Chair, Training Approaches & Contents Committee, Global Partnership Program, American Medical Informatics Association, 2008-2010.

21. Education Committee, American Medical Informatics Association, 2014-.

22. Chair, Biomedical Health Informatics Academic Leaders (BMHI-ALC) Community, 2018-2020.

23. President, International Academy of Health Sciences Informatics, 2020-2022.

1. Chair, Annual Meeting, Pacific Northwest Chapter, American Society for Information Science, Oct. 1-2, 1993.

2. Program Committee, ACM Conference on Information Retrieval and Genomics, National Library of Medicine, May 2-4, 1994.

3. Program Committee, 19th Annual ACM SIGIR Conference on Research and Development in Information Retrieval, Zurich, Switzerland, August 18-22, 1996.

4. Program Committee, 20th Annual ACM SIGIR Conference on Research and Development in Information Retrieval, Philadelphia, PA, July 27-31, 1997.

5. Program Committee, 21st Annual ACM SIGIR Conference on Research and Development in Information Retrieval, Melbourne, Australia, 1998.

6. Program Committee, 1998 AMIA Annual Spring Congress, Philadelphia, PA, 1998.

7. Program Committee, 1998 AMIA Annual Fall Symposium, Orlando, FL, 1998.

8. Program Committee, 22nd Annual ACM SIGIR Conference on Research and Development in Information Retrieval, Berkeley, CA, 1999.

9. Program Committee, The Eighth Text Retrieval Conference (TREC-8), Gaithersburg, MD, 1999.

10. Chair, Text Retrieval Conference (TREC) Interactive Track, 1998-2002.

11. Program Committee, 23rd Annual ACM SIGIR Conference on Research and Development in Information Retrieval, Athens, Greece, 2000.

12. Program Committee, 63rd Annual Meeting of the American Society for Information Science, Chicago, IL, 2000.

13. Program Committee, 24th Annual ACM SIGIR Conference on Research and Development in Information Retrieval, New Orleans, LA, 2001.

14. General Conference Chair, 2nd ACM-IEEE Joint Conference on Digital Libraries, Portland, OR, 2002.

15. Program Committee, 25th Annual ACM SIGIR Conference on Research and Development in Information Retrieval, Tampere, Finland, 2001.

16. General Conference Chair, International Medical Informatics Association Working Group on Education Meeting, Portland, OR, 2003.

17. Chair, Text Retrieval Conference (TREC) Genomics Track, 2002-.

18. Area Coordinator in Specialized Applications of Information Retrieval, Program Committee, 26th Annual ACM SIGIR Conference on Research and Development in Information Retrieval, Toronto, CA, 2003.

19. Area Coordinator in Specialized Applications of Information Retrieval, Program Committee, 27th Annual ACM SIGIR Conference on Research and Development in Information Retrieval, Sheffield, England, 2004.

20. Area Coordinator in Specialized Applications of Information Retrieval, Program Committee, 28th Annual ACM SIGIR Conference on Research and Development in Information Retrieval, Salvador, Brazil, 2005.

21. Program Committee, European Federation for Medical Informatics Special Topic Conference 2005, Athens, Greece, 2005.

22. Program Committee, Slice of Life 2005 Conference, Portland, OR, 2005.

23. Chair, Scientific Program Committee, American Medical Informatics Association Spring Congress 2006, Phoenix, AZ, 2006.

24. Program Committee, Information Technology and Communications in Health, 2007, Victoria, BC, Canada, 2007.

25. Program Committee, National Science Foundation Workshop on Biomedical Informatics, Corbett, OR, December 4-5, 2007.

26. Executive Committee Member, Scientific Program Committee, American Medical Informatics Association Annual Symposium 2011, Washington, DC, October 22-26, 2011.

27. General Conference Chair, 36th Annual ACM SIGIR Conference on Research and Development in Information Retrieval, Portland, OR, August 12-16, 2012.

28. Chair, Scientific Program Committee, American Medical Informatics Association Annual Symposium 2012, Chicago, IL, November 3-7, 2012.

29. Program Committee, Informatics Supporting Innovation in Research and Education (InSPIRE), American Medical Informatics Association, Columbus, OH, June 28-30, 2016.

30. Program Committee, The Patient, the Practitioner, and the Computer, Brown Alpert Medical School, Providence, RI, April 17-19, 2017.

31. Program Committee, Society for General Internal Medicine Annual Meeting 2018, Denver, CO, April 11-14, 2018

32. Co-Chair, Program Committee, Health on the Web Track, The Web Conference 2018, Lyon, France, April 23-27, 2018.

32. Co-Chair, Program Committee, Health on the Web Track, The Web Conference 2020, Taipei, Taiwan, April 20-24, 2020.

33. Co-Chair, Scientific Program Committee, The Patient, the Practitioner, and the Computer, Brown Alpert Medical School, Virtual, October 9, 2020.

34. Co-Chair, Scientific Program Committee, The Patient, the Practitioner, and the Computer, Brown Alpert Medical School, Providence, RI, October 14-16, 2022.

Editorial

1. Co-Editor, *SIGIR Forum*, Association for Computing Machinery Special Interest Group in Information Retrieval, 1995-1999.

2. Guest Co-Editor (with Lois Lunin), *Journal of the American Society for Information Science*, Perspectives on Medical Informatics, 46: 10, December, 1995.

3. Guest Co-Editor (with Thomas Rindfleisch), *Journal of the American Medical Informatics Association*, Special Issue on Electronic Publication of Scholarly Information, 7:3, May-June, 2000.

4. Guest Co-Editor (with Paul Over), *Information Processing and Management*, Special Issue on Interactivity at TREC, 37:3, May, 2001.

5. Editor-in-Chief, *Audio Companion to the Cochrane Library*, Oakstone Publishing, Birmingham, AL, 2000-2001.

6. Guest Co-Editor (with Paul Gorman), *International Journal of Medical Informatics*, Special Issue on the 2003 IMIA Working Group on Education Meeting.

7. Associate Editor, ACM Transactions on Information Systems, 2002-2003.

8. Deputy Editor, *Journal of Biomedical Knowledge and Discovery*, 2005-2009.

9. Editor-in-Chief for the Americas, *Information Retrieval*, 2005-2010.

Editorial Boards

1. Journal of the American Medical Informatics Association, 1997-2002.

2. Information Processing and Management, 1997-2007.

3. Information Retrieval, 1997-2005.

4. M.D. Computing, 1999-2001.

5. Medical Decision Making, 2003-2010.

6. International Journal of Medical Informatics, 2004-2012.

7. Health Information & Libraries Journal, 2004-.

8. BMC Biomedical Digital Libraries, 2004-2007.

Advisory Boards and Panels

1. Technical Expert Panel, National Practice Guidelines Clearinghouse, Agency for Health Care Research and Quality, 1998-2002. (Oversaw development of National Guidelines Clearinghouse.)

2. Medical School Accreditation Survey, Association of American Medical Colleges task force to revise Liaison Committee on Medical Education (LCME) guidelines for library and information resources in medical school accreditation, 2000. (Developed recommendations for accreditation of medical schools in information technology resources.)

3. Panel Member, Integrated Advanced Information Management Systems: The Next Generation, Association of American Medical Colleges, 2000-2002. (Developed recommendations for National Library of Medicine to redesign IAIMS initiative.)

4. Steering Committee, Association of American Medical Colleges, Group on Information Resources, 2000-2002.

5. Member, Oregon Health Policy Commission: EHR & Health Data Connectivity Subcommittee, 2004-2005. Charged by Oregon state legislature to prepare report on EHR and health information exchange in state.

6. Chair, Clinical and Translational Science Award (CTSA) National Informatics Steering Committee, National Institutes of Health, 2006-2008.

7. Board of Scientific Counselors, National Center for Public Health Informatics, Centers for Disease Control and Prevention (CDC), 2008-2011.

8. External Advisory Committee, University of Hawaii Research Centers in Minority Institutions (RCMI) Multidisciplinary and Translational Research Infrastructure Expansion (RMATRIX), 2011-2019.

9. Industry Advisory Board, Centre for Healthcare Informatics, National University of Singapore, 2012-2014.

10. Health IT Workforce Subgroup, Certification/Adoption Workgroup, Health IT Policy Committee, Office of the National Coordinator for Health Information Technology (ONC), 2012-2014.

11. Connecticut Institute for Primary Care Innovation Primary Care Policy Council (CIPCI), 2012.

12. Scientific Advisory Board, Pan African Bioinformatics Network for H3Africa (H3ABionet), Human Heredity and Health in Africa Project (H3Africa), 2018-.

13. International Advisory Board, Australasian College of Health Informatics Fellowship Training Program, 2018-.

14. Technical Advisory Panel, ECRI Guidelines Trust, 2019-.

15. External Advisory Board, University of Texas Health Science Center at Houston Center for Clinical and Translational Sciences, 2021-.

Presentations

<u>Invited Talks</u>

1. *Medical Informatics: Past, Present, Future*
- American Medical Students Association Convention, Las Vegas, NV, March 16, 1989

2. *Evaluation of SAPHIRE: An Information Retrieval System*
- National Library of Medicine, Bethesda, MD, December 6, 1990
- Northwest Region Meeting of the Society for General Internal Medicine, Portland, OR, February 15, 1991

3. *Computers and the Practice of Medicine*
- Grand Rounds, Department of Medicine, OHSU, Portland, OR, June 11, 1991
- Grand Rounds, Department of Medicine, Good Samaritan Hospital, Portland, OR, October 11, 1991
- Grand Rounds, Department of Medicine, University of Illinois, Chicago, IL, November 14, 1991
- Research Conference, Portland VA Medical Center, Portland, OR, December 4, 1991
- Dietetics Internship Program, Portland VA Medical Center, Portland, OR, March 9, 1992
- Oregon Health Information Management Association Conference, Beaverton, OR, March 11, 1993
- Texas Club of Internists CME Conference, Portland, OR, September 20, 1994
- Primary Care Update, OHSU Division of General Medicine, Portland, OR, March 26, 1995
- Ambulatory Care Conference, Department of Medicine, Portland VA Medical Center, Portland, OR, September 19, 1995
- Administrative Medicine Seminar, OHSU Department of Public Health and Preventive Medicine, Portland, OR, April 5, 1996
- Grand Rounds, St. Charles Hospital, Bend, OR, May 10, 1996
- 23rd Annual Critical Care Symposium, Portland, OR, November, 15, 1996
- Ambulatory Care Conference, Department of Medicine, Portland VA Medical Center, Portland, OR, December 4, 1996
- Reed College, Portland, OR, April 10, 1997
- Grand Rounds, Department of Pediatrics, OHSU, April 17, 1997
- Grand Rounds, Good Samaritan Hospital, Corvallis, OR, October 31, 1997
- Grand Rounds, Columbia-Douglas Medical Center, Roseburg, OR, March 2, 1998
- Grand Rounds, National College of Naturopathic Medicine, Portland, OR, April 13, 1998
- People's Liberation Army General Hospital, Beijing, China, May 5, 1998
- Grand Rounds, Department of Surgery, OHSU, Portland, OR, June 1, 1998

4. *Information Retrieval in Medicine: The SAPHIRE Experience*
- Harvard University Program in Medical Informatics, Boston, MA, October 7, 1991
- Medical Decision Making Seminar Series, University of Illinois, Chicago, IL, November 14, 1991
- Information in the Health Sciences Seminar, Oregon Center for Advanced Technology Education (OCATE), Beaverton, OR, January 24, 1992
- Health Information Sciences Lecture Series, University of Washington, Seattle, WA, February 27, 1992
- Colloquium, Department of Computer Science, Portland State University Portland, OR, May 11, 1992
- School of Information and Library Science, University of Michigan, Ann Arbor, MI, September 8, 1994
- Section on Medical Informatics, Stanford University, Palo Alto, CA, June 15, 1995

5. *The Computer in Your Future*
- Ambulatory Care Conference, Department of Medicine, Portland VA Medical Center, Portland, OR, December 4, 1991

6. *Access to Computerized Information from the OHSU Library and BICC (Without Having To Brave "The Hill")*
- Nurse Practitioner Education Conference, Oregon Nurses Association, Bend, OR, September 17, 1992

7. *End-User Searching by Physicians at Oregon Health Sciences University*
- 10th Annual Online Northwest 93, Corvallis, OR, February 5, 1993

8. *Use of a Multi-Application Computer Workstation in a Clinical Setting*
- Northwest Region Meeting, Society for General Internal Medicine, Portland, OR, February 28, 1993
- Harvard University Program in Medical Informatics, Boston, MA, September 2, 1993
- National Library of Medicine, Bethesda, MD, October 6, 1993

9. *Demystifying the Internet*
- American College of Physicians, Philadelphia, PA, January 10, 1994

10. *Research in Indexing and Retrieval: Past Work and Future Plans*
- American College of Physicians, Philadelphia, PA, January 10, 1994

11. *Biomedical Aspects of Information Retrieval*
- ACM Conference on Information Retrieval and Genomics, National Library of Medicine, May 3, 1994

12. *Medical Information Retrieval: Challenges in a Webbed World*
- Section on Medical Informatics, Stanford University, Palo Alto, CA, June 15, 1995
- Department of Computer Science, Oregon State University, Corvallis, OR, May 8, 1996
- Medical Informatics Program, University of California San Francisco, San Francisco, CA, February 5, 1997
- Department of Medical Informatics, Freiburg University, Freiburg, Germany, February 26, 1998
- Medical College of Wisconsin, Milwaukee, WI, January 29, 1999
- Medical Scholars Program and Graduate School of Library and Information Science, University of Illinois, Urbana, IL, March 12, 1999
- Center for Biomedical Informatics, University of Pittsburgh, Pittsburgh, PA, March 15, 1999
- Selected Topics in Health Informatics, Department of Medical Informatics, University of Washington, Seattle, WA, May 4, 1999
- Microsoft Corp., Redmond, WA, May 5, 1999

13. *Clinical Information on the Internet and World Wide Web: Promises and Problems*
- Lane County Medical Society, Eugene, OR, November 7, 1995
- 20th Annual Education Conference, Oregon Nurses Association/Nurse Practitioners of Oregon, Bend, OR, September 25, 1997
- Managed Care Institute, Practice Partners, Portland, OR, November 7, 1997
- American Thoracic Society Annual Meeting, Chicago, IL, April 24, 1998
- Grand Rounds, Division of Pulmonary Medicine, OHSU, Portland, OR, November 13, 1998

14. *Evaluation of Information Retrieval Systems*

- Associates Program, National Library of Medicine, Bethesda, MD, November 19, 1996
- Department of Computer Science, Oregon Graduate Institute, Portland, OR, April 2, 1997
- Department of Medical Informatics, University of Utah, Salt Lake City, UT, February 10, 1998

15. *Organizing and Mining Clinical Knowledge*
- American College of Medical Informatics Symposium, Palm Springs, CA, February, 16, 1997

16. *Translating Medical Informatics Research into Practice*
- Grand Rounds, Department of Medicine, OHSU, April 22, 1997
- Research Conference, Division of Medical Informatics & Outcomes Research, OHSU, May 2, 1997
- Keynote Speaker, Visions of Computing in Health Care Forum, Intel Corporation, Hillsboro, OR, April 21, 1998
- Public Health Informatics Program, Centers for Disease Control and Prevention (CDC), Atlanta, GA, November 20, 1998
- Third Annual Workshop, Pacific Northwest Chapter, Society of Research Administrators, Portland, OR, March 9, 1999
- Grand Rounds, Department of Family Medicine, OHSU, September 15, 1999
- Center for Health Research, Kaiser Permanente Northwest, Portland, OR, December 9, 1999

17. *The Unified Medical Language System (UMLS) Project*
- Oregon Medical Transcription Conference, May 17, 1997

18. *State of the Art: Update on Information Retrieval Technology*
- Educational Update, 1998 Annual AMIA Spring Congress, Philadelphia, PA, May 30, 1998

19. *Evidence-Based Medicine: The Next Generation*
- Research Conference, Division of Medical Informatics & Outcomes Research, OHSU, December 4, 1998
- Grand Rounds, Department of Medicine, OHSU, December 8, 1998
- Grand Rounds, Department of Medicine, Good Samaritan Hospital, Portland, OR, June 18, 1999
- Grand Rounds, Department of Medicine, Meridian Park Hospital, Tualitin, OR, June 7, 2000

20. *Factors Associated With Successful Use of On-Line Retrieval Systems*
- Northwest Region Meeting, Society for General Internal Medicine, Portland, OR, February 26, 1999
- Health Sciences Technology Fair, University of Florida, Gainesville, FL, March 12, 2002

21. *The TREC Interactive Track: Studying Real Users in a System-Centered Evaluation*
- School of Library and Information Science, University of Washington, May 4, 1999

22. *Alternative Medicine: The Perspective from Evidence-Based Medicine*
- Rotary Club, Medford, OR, May 28, 1999

23. *Quality of Health Information on the Internet*
- American College of Physicians 81st Annual Session, Philadelphia, PA,, April 13, 2000
- Three Rivers Community Hospital Lab Forum 2000, Grants Pass, OR, June 15, 2000
- Marquam Hill Lecture Series, OHSU, October 19, 2000
- American College of Physicians 82nd Annual Session, Atlanta, GA,, March 29, 2001

24. *Telemedicine for the Medicare Population: An Inventory of Programs and Systematic Review*
- Research Conference, Division of General Medicine, OHSU, June 27, 2000

- Health Care Finance Administration, Baltimore, MD, October 13, 2000
- Joint Research Conference, OHSU-University of Pittsburgh Center for Biomedical Informatics, Portland, OR, January 19, 2001

25. *Are Evidence-Based Medicine and Complimentary and Alternative Medicine Compatible?*
- Oregon Center for Complimentary and Alternative Medicine in Neurologic Diseases Conference, OHSU, October 21, 2000
- Department of Emergency Medicine Conference, Portland, OR, March 21, 2001

26. *Protecting the Privacy and Confidentiality of Our Patients in the Internet Age*
- Grand Rounds, Department of Medicine, OHSU, December 19, 2000

27. *Distributed Medical Informatics Education Using Internet2*
- Internet2 Spring Members Meeting, Washington, DC, March 8, 2001

28. *Using Medical Information and Technology in Clinical Practice: The Internet and Beyond*
- Grand Rounds, National College of Naturopathic Medicine, Portland, OR, October 19, 2001

29. *E-Health: Scientific Challenges and Practical Solutions from Medical Informatics*
- Health Sciences Technology Fair, University of Florida, Gainesville, FL, March 12, 2002

30. *Update in Medical Informatics*
- American College of Physicians-American Society of Internal Medicine Annual Session, Philadelphia, PA, April 11, 2002

31. *Medical Informatics: A General Introduction*
- Peking Union Medical College and Hospital, Beijing, China, April 23, 2002
- Biomedical Signal Processing Lab, Portland State University Portland, OR, November 26, 2002

32. *From Index Medicus to the World Wide Web: The Historical Origins of Modern Clinical Information Tools*
- History of Medicine Society, OHSU, Portland, OR, October 21, 2002

33. *Enhancing Access to the Bibliome: The TREC Genomics Track*
- School of Library and Information Science, Indiana University, Bloomington, IN, March 6, 2003
- Department of Health Management and Informatics, University of Missouri, Columbia, MO, March 10, 2003
- Division of Biomedical Informatics, University of Washington, Seattle, WA, April 14, 2003
- School of Library and Information Science, University of Iowa, Iowa City, IA, April 28, 2003
- Department of Computer Science, Oregon State University, Corvallis, OR, May 15, 2003
- Lister Hill National Center for Biomedical Communications, National Library of Medicine, Bethesda, MD, July 11, 2003
- Research Conference, Department of Medical Informatics & Clinical Epidemiology, OHSU, October 1, 2003
- Portland Bioinformatics and Biotechnology Discussion Group, Portland, OR, March 11, 2004
- Biocreative Workshop, Granada, Spain, March 29, 2004
- Intelligent Systems for Molecular Biology Text Mining SIG, Glasgow, Scotland, July 29, 2004
- Department of Computer Science, University of Illinois at Chicago, Chicago, IL, September 2, 2004
- Center for Biostatistics Computing and Informatics in Biology and Medicine, OHSU, Portland, OR, November 30, 2004

- Centre for Health Informatics, University of New South Wales, Sydney, Australia, December 13, 2004
- University of Texas Houston School of Health Information Sciences, Houston, TX, February 16, 2005
- Department of Molecular Microbiology and Immunology, OHSU, Portland, OR, January 30, 2006
- National Institute of Informatics, Tokyo, Japan, March 3, 2006
- Bioinformatics Seminar, Department of Computer Science, University of Illinois at Champaign-Urbana, Urbana, IL, April 28, 2006

34. *Is Relevance Associated with Successful Use of Information Retrieval Systems?*
- Thomson ISI Samuel Lazerow Memorial Lecture, School of Library and Information Science, Indiana University, Bloomington, IN, March 7, 2003

35. *Information Technology for Improving Chronic Care*
- Oregon Medical Home Project, Portland, OR, June 7, 2003

36. *Grand Challenges for Biomedical Information Retrieval in the 21st Century*
- Priscilla M. Mayden Lecture, Spencer S. Eccles Health Sciences Library, University of Utah, October 21, 2003, http://medstat.med.utah.edu/or/pmayden/pmayden2003.html
- Smarter Health Seminar, The Waterloo Institute for Health Informatics Research, University of Waterloo, January 26, 2005, http://infranet.uwaterloo.ca/infranet/archive-2004-2005.htm
- Lazerow Lecture, University of Kentucky School of Library and Information Science, Lexington, KY, September 8, 2005

37. *Think Globally, Act Locally: The National Health Information Infrastructure*
- Grand Rounds, Department of Medicine, OHSU, December 9, 2003
- Research Conference, Department of Medical Informatics & Clinical Epidemiology, OHSU, January 28, 2004
- Oregon Bioscience Conference, Oregon Bioscience Association, Portland, OR, May 10, 2004
- Oregon Telecommunications Coordinating Council, Salem, OR, September 23, 2004
- Oregon Telecommunications Conference, Bend, OR, October 14, 2004
- Grand Rounds, Center for Healthcare Informatics, Kansas University Medical Center, Kansas City, MO, March 3, 2005
- 6th Annual Idaho Conference on Healthcare Quality Improvement, Boise, ID, April 12, 2005
- Idaho Medical Association Annual Scientific Conference, Sun Valley, ID, July 23, 2005
- Hospital Italiano, Buenos Aires, Argentina, August 25, 2005
- Trends in Respiratory and Acute Care Conference, Troutdale, OR, September 30, 2005
- Preventing and Managing Chronic Disease in Lincoln County, Lincoln City, OR, October 7, 2005
- Marquam Hill Steering Committee, OHSU, Portland, OR, February 15, 2006
- Grand Rounds, Department of Anesthesiology, OHSU, August 6, 2007
- Grand Rounds, Department of Anesthesiology and Critical Care Medicine, Children's Hospital of Philadelphia, Philadelphia, PA, November 29, 2007
- Grand Rounds, Nurse-Midwifery Program, OHSU, January 8, 2008
- Society for Technology in Anesthesia, San Diego, CA, January 18, 2008
- Grand Rounds, Department of Medicine, Henry Ford Hospital & Medical Centers, Detroit, MI, April 3, 2008
- Cardiothoracic Surgery Teaching Conference, OHSU, May 19, 2008

38. *From the Beginning: Introduction to Medical Informatics*
- HIMSS/AMDIS/MGMA Physicians' IT Symposium, Orlando, FL, February 22, 2004

39. *Biomedical Informatics: Enabling the Future of Biomedical Research and Clinical Care*
- Software Association of Oregon Futures Forum, Portland, OR, September 30, 2004
- Linfield College, Department of Computer Science, McMinville, OR, November 30, 2004
- Fourth Congress of the Hospital de Emergencias Dr. Clemente Alvarez, Rosario, Argentina, May 12, 2005
- Idaho Medical Association Annual Scientific Conference, Sun Valley, ID, July 23, 2005

40. *Information Retrieval: A Biomedical Perspective*
- University Hospital Geneva, Geneva, Switzerland, March 17, 2005

41. *Recent Efforts in the United States to Achieve Electronic Health Records and Health Information Exchange*
- University Hospital Geneva, Geneva, Switzerland, March 17, 2005

42. *Discovering Standards-Based Learning at the Point of Care: OHSU-Medbiquitous Collaboration*
- Medbiquitous Annual Conference, Baltimore, MD, April 6, 2005

43. *Medical Informatics Training for Workforce Development*
- Northwest Medical Informatics Symposium, Inland Northwest Health Systems, Spokane, WA, April 13, 2005

44. *HIM and Biomedical Informatics Collaboration at OHSU and in Oregon*
- Oregon Health Information Management Association Annual Convention, Portland, OR, May 13, 2005

45. *Who, What, Where, Why, When, and How? The Ignored "Who" Aspect of the Health Care Information Technology Equation*
- Jochen Moehr Colloquium, University of Victoria, Victoria, BC, June 3, 2005

46. *Retrieving Images, Educational Content, and Other Digital Objects: Why it is Important and What We Have Learned from Information Retrieval Research*
- Keynote Address, Slice of Life 2005, Portland, OR, June 17, 2005

47. *ImageCLEF: Understand and Improving Image Retrieval in Biomedicine*
- University of California Davis Center for Health and Technology, Sacramento, CA, September 12, 2005
- Research Conference, Department of Medical Informatics & Clinical Epidemiology, OHSU, November 10, 2005
- Decision Systems Group, Brigham & Women's Hospital, Harvard Medical School, March 27, 2006
- University of Utah Department of Biomedical Informatics Seminar, Salt Lake City, UT, October 24, 2006

48. *The National Health Information Network: What Will It Look Like and How Do We Get There?*
- Illinois Healthcare Information Technology Summit, Oak Brook, IL, February 25, 2006
- American College of Physicians Annual Session, Philadelphia, PA, April 6, 2006
- Grand Rounds, Bay Area Hospital, Coos Bay, OR, July 20, 2006

49. *Controlled Terminologies in Biomedicine: Rationale, Challenges, and Limitations*
- Symposium, University of Tokyo, Tokyo, Japan, March 2, 2006

50. *Training the Health and Biomedical Informatics Workforce: Competencies and Approaches*
- Oregon Health Information Management Association Annual Convention, Clackamas, OR, May 13, 2006
- Assembly on Education, American Health Information Management Association, Nashville, TN, June 26, 2006
- Kay Center for E-Health Research Symposium 2006, Claremont Graduate University, Claremont, CA, December 1, 2006
- 4th International Conference on Information and Communications Technology, Cairo, Egypt, December 10, 2006
- VI International Congress on Health Informatics, Havana, Cuba, February 16, 2007
- Keynote Speaker, 12th International Symposium for Health Information Management Research, Sheffield, England, July 18, 2007
- Oregon HIMSS Annual Meeting, Portland, OR, November 5, 2007

51. *Benefits and Challenges for Health Information Technology in Patient Safety*
- 2006 Oregon Patient Safety Convocation, Portland, OR, September 29, 2006

52. *Search Research: Finding Text, Images, and Other Digital Objects in Biomedicine*
- Biomedical Informatics Research Conference, OHSU, Portland, OR, October 12, 2006

53. *Informatics Competencies for an Informed Healthcare Workforce*
- AAHSL Nina Matheson Lecture, Association of American Medical Colleges Annual Meeting, Seattle, WA, October 30, 2006

54. *Who are the Informaticians?*
- ACMI Senior Member Presentation, AMIA 2006 Annual Symposium, Washington, DC, November 14, 2006

55. *Informatics: A Necessary Tool and Science for Translational Research (and Health Care)*
- Biomedical Informatics Seminar, University of Minnesota, May 3, 2007
- Grand Rounds, Department of Medicine, Mayo Clinic, June 20, 2007
- Research Conference, Department of Medical Informatics & Clinical Epidemiology, OHSU, October 11, 2007
- Center for Biomedical Informatics, University of Pennsylvania, Philadelphia, PA, November 29, 2007
- GCRC Seminar, University of Connecticut Health Center, Hartford, CT, March 17, 2008

56. *Opportunities and Challenges for Health and Biomedical Informatics Research*
- Institute for Interdisciplinary Health Informatics Planning Retreat, University of Minnesota, May 4, 2007

57. *Toward Convergence of HIM and Medical Informatics at OHSU and Beyond*
- Oregon Health Information Management Association Annual Convention, Clackamas, OR, May 11, 2007

58. *Failure to Adhere to Informatics: A Case Study of the Oregon RHIO*
- American Medical Informatics Association Annual Symposium 2007, Late-Breaking Session, Chicago, IL, November 13, 2007

59. *Distance Learning in Biomedical Informatics at OHSU*
- Teaching Learning Technology Roundtable (TLTR), OHSU, November 16, 2007

60. *Research Challenges and Collaboration Opportunities in Search and Information Retrieval*
- Research Conference, Department of Anesthesiology, OHSU, December 12, 2007
- Cancer Research Group, OHSU Cancer Institute, December 14, 2007

61. *Biomedical Informatics: Opportunities and Challenges for a 21st Century Discipline and Profession*
- Oregon Academy of Science 2008 Annual Meeting, Keynote Speaker, Portland, OR, February 23, 2008
- Oregon State University, Department of Computer Science Colloquium, Corvallis, OR, March 3, 2008
- Greater Philadelphia Healthcare Informatics Symposium, Keynote Speaker, Philadelphia, PA, April 4, 2008

62. *The Value of Health Information Technology Requires a Competent and Professional Workforce*
- Oregon Healthcare Career Pathways Summit, Eugene, OR, April 10, 2008

63. *Recent Trends in Biomedical and Health Informatics Education: Implications for Practice, Research, and Policy*
- INFOLAC 2008: Advances in Medical Informatics and Their Impact on Healthcare Systems, IMIA Latin American Countries Conference, Buenos Aires, Argentina, October 30, 2008
- ACMI Senior Member Presentation, AMIA 2008 Annual Symposium, Washington, DC, November 10, 2008

64. *How Many Informaticians Does It Take To Screw in a Light Bulb? What We Know and Should Know About the Health Information Technology Workforce*
- Research Conference, Department of Medical Informatics & Clinical Epidemiology, OHSU, January 8, 2009

65. *Global Health Activities and Opportunities in Biomedical and Health Informatics at OHSU*
- OHSU Global Health Center Research Brownbag, January 14, 2009

66. *Biomedical and Health Informatics in the Era of ARRA*
- American Veterinary Informatics Talbot Symposium, Seattle, WA, July 13, 2009
- American Society for Clinical Oncology (ASCO) EHR Symposium, San Francisco, CA, October 6, 2009
- Lane County Health IT Consortium Meeting, Eugene, OR, October 20, 2009

67. *Health Information Technology Workforce: Identifying the Gaps*
- National Rural HIT Workforce Summit, Washington, DC, September 22, 2009

68. *Informatics in the Era of ARRA: What Workforce is Needed and What Education and Certification Should They Have?*
- ACMI Senior Member Presentation, AMIA 2009 Annual Symposium, San Francisco, CA, November 16, 2009

69. *Health Information Technology: The Need for a Competent Workforce*
- Western Interstate Commission for Higher Education (WICHE) Internet Course Exchange (ICE) Webinar, Tuesday, December 8, 2009

70. *Biomedical and Health Informatics – Strategic Importance for 21st Century Medicine*
- Mahidol University, Faculty of Medicine, Ramathibodi Hospital, Bangkok, Thailand, January 28, 2010

71. *Informatics Now Lives in HITECH World*
- Health Informatics Grand Rounds, University of Michigan, Ann Arbor, MI, February 26, 2010
- Research Conference, Department of Medical Informatics & Clinical Epidemiology, OHSU, September 30, 2010

72. *Biomedical and Health Informatics: Improving Health, Healthcare, and Biomedical Research with Information Technology*
- Natural Science and Mathematics Seminar Series, Western Oregon University, Monmouth, OR, May 5, 2010

73. *Meaningful Use of Health Information Technology Requires a Competent Workforce*
- Nevada Health Information Technology Blue Ribbon Task Force, Las Vegas, NV, May 7, 2010
- RTI/AHRQ Health IT Workforce Development Webinar, (virtual), June 8, 2010
- HIMSS Oregon Tech Topic: Career and Education Opportunities in Health IT, Portland, OR, June 10, 2010
- The IASTED African Conference on Health Informatics, AfricaHI 2010: Science and Technology Applications for Health and Sustainable Development, Gaborone, Botswana, September 6, 2010
- California eHealth Collaborative Webinar, October 4, 2011
- OCHIN Educational Conference, Portland, OR, November 2, 2011
- Indiana University School of Informatics Colloquium, Indianapolis, IN, October 19, 2012
- 2012 Transatlantic Health IT/eHealth Cooperation Assembly, Boston, MA, October 24, 2012
- HIMSS Northwest Technology & Education Symposium, Bellevue, WA, November 12, 2012
- Health Informatics 7th Annual Conference 2013, Educating the Informatics Workforce, UC Davis, Sacramento, CA, March 22, 2013

74. *ARRA, HITECH, and Informatics in Public Health*
- Council of State and Territorial Epidemiologists 2010 Annual Conference, Portland, OR, June 8, 2010

75. *The ONC Health IT Workforce Development Program*
- Academic Institutional Members Meeting, International Medical Informatics Association, Medinfo 2010, Cape Town, South Africa, September 13, 2010
- Educational Affinity Group Meeting, CTSA Informatics Annual Meeting, National Institutes of Health, Bethesda, MD, October 13, 2010
- Oregon Connections Telecommunications Conference, Hood River, OR, October 21, 2010

76. *How Can Informatics Help OCHIN?*
- OCHIN Annual Conference, Portland, OR, November 3, 2010

77. *Informatics Education and Competency: Necessary for Effective Information Technology Use in Health and Biomedicine*
- Department of Biomedical Informatics, Ohio State University, Columbus, OH, April 28, 2011

78. *HITECH: Advancing the Adoption of Electronic Health Records in the United States*
- Department of Health Informatics, Hospital Italiano, Buenos Aires, Argentina, June 16, 2011

- Consortium for Oral Health Related Informatics (COHRI) Annual Meeting, Keynote Speaker, August 4, 2011
- Department of Information Systems, School of Computing, National University of Singapore, Singapore, September 12, 2011
- Information Technology Department, Peking Union Medical College and Hospital, Beijing, China, September 15, 2011
- Certificado en Informática Médica para Puerto Rico, San Juan, Puerto Rico, August 17, 2012

79. *Biomedical and Health Informatics: Making a Difference with Information*
- Florida Dietetic Association Annual Meeting, Weston, FL, July 18, 2011

80. *The Emergence of the Informatics Practitioner: Occupational and Educational Perspectives*
- ACMI Senior Member Presentation, AMIA 2011 Annual Symposium, Washington, DC, October 25, 2011

81. *Meaningful Use and All That: Update in Clinical Informatics*
- Grand Rounds, Department of Medicine, OHSU, Portland, OR, December 20, 2011
- Grand Rounds, Department of Surgery, OHSU, Portland, OR, September 24, 2012

82. *Secondary Use of Clinical Data from Electronic Health Records: The TREC Medical Records Track*
- Research Conference, Department of Medical Informatics & Clinical Epidemiology, OHSU, Portland, OR, January 12, 2012
- Department of Biomedical Informatics, Emory University, Atlanta, GA, January 30, 2012
- Health Information Technology Center and Department of Computer Science Distinguished Lecture, University of Illinois, Urbana, IL, March 12, 2012
- Keynote Speaker, Missouri Informatics Symposium 2012, University of Missouri, Columbia, MO, October 22, 2012

83. *Overview of Health IT Workforce Curriculum Development Centers Program*
- HIMSS 2012, Las Vegas, NV, February 23, 2012

84. *The Clinical Informatics Workforce and its Education: The OHSU Experience*
- American Health Information Management Association, Assembly on Education, Orlando, FL, July 25, 2012

85. *Secondary Use of Clinical Data from Electronic Health Records*
- Certificado en Informática Médica para Puerto Rico, San Juan, Puerto Rico, August 17, 2012

86. *Finding the Future Workforce to Support Data-Driven Healthcare*
- AAMC Academic Health Center IT Leaders Forum, 2012 CHIME Fall CIO Forum, Palm Springs, CA, October 16, 2012

87. *From Implementation to Analytics: The Future Work of Informatics*, VII Jornadas Universitarias de Sistemas de Información en Salud, Hospital Italiano Department of Health Informatics, Buenos Aires, Argentina, November 28, 2012

88. *Opportunities for Collaboration Between Biomedical Informatics and Basic, Clinical, and Translational Sciences*
- OHSU Knight Cancer Research/Translational Meeting, Portland, OR, December 14, 2012

89. *Global Challenges in Biomedical Informatics: Data-Rich, Information-Driven Future of Healthcare*
- Monthly Academic Session with Biomedical Informatics Department Faculty, Facultad de Medicina, Universidad Nacional Autónoma de México (UNAM), Mexico City, Mexico, March 14, 2013

90. *Teaching Biomedical and Health Informatics: Current Concepts* (La enseñanza de la Informática Biomédica: conceptos actuals)
- Jornadas de Educación Médica 2013, e-Educación en Ciencias de la Salud: Evidencia, Teoría y Práctica, Facultad de Medicina, Universidad Nacional Autónoma de México (UNAM), Mexico City, Mexico, March 15, 2013

91. *Update on Biomedical and Health Informatics from the US Perspective*
- Faculty of Tropical Medicine, Mahidol University, Bangkok, Thailand, March 28, 2013

92. *The Data-Rich, Information-Driven Future of Healthcare*
- Intersystems Corp. Healthcare Leadership Conference, Orlando, FL, April 9, 2013
- IEEE Oregon Computer Society and IEEE Oregon Engineering in Medicine and Biology Chapter, Beaverton, OR, April 23, 2013

93. *Informatics is Not Just for Clinicians: Opportunities for a Future in Informatics*
- OHSU Information Technology Group Meet the Expert Session, Portland, OR, April 19, 2013

94. *Caveats and Recommendations for Use of Operational Electronic Health Record Data for Research and Quality Improvement*
- Biomedical Informatics Grand Rounds, Dartmouth-Hitchcock Medical Center Informatics Program, Hanover, NH, May 3, 2013
- International Conference on Big Data and Analytics in Healthcare Conference, Singapore, July 10, 2013
- Clinical Informatics Grand Rounds, Mayo Clinic, Rochester, MN, September 7, 2014
- Geisinger Health System, Danville, PA, October 20, 2014
- Carolina Health Informatics Program, University of North Carolina, Chapel Hill, NC, March 5, 2015

95. *Health IT Workforce in the Post-HITECH Era: Challenges and Opportunities*
- School of Biomedical Informatics, University of Texas Health Sciences Center at Houston, Houston, TX, October 18, 2013

96. *Information Retrieval in the Ubiquitous Search Era: A View from the Biomedical/Health Domain*
- Keynote Talk, ImageCLEF Medical Image Retrieval Workshop, Washington, DC, November 15, 2013
- Department of Computer Science, Georgetown University, Washington, DC, November 15, 2013
- Yahoo! Labs, Haifa, Israel, April 24, 2014

97. *Re-Use of Operational Electronic Health Record Data for Research and Other Purposes*
- National Center for Health Statistics, Centers for Disease Control and Prevention, Hyattsville, MD, November 15, 2013

98. *Clinical Informatics Subspecialty: What It Is and Why It's Important*
- Grand Rounds, Department of Medicine, University of New Mexico Health Sciences Center, Albuquerque, NM, February 13, 2014

99. *Informatics: What Every Clinician Needs to Know*

- Texas Woman's University, Dallas TX, February 21, 2014

100. *Impact of HIT on Quality, Safety, and Cost and the Workforce Needed for Implementation*
- Essentials of Health Informatics, King Saud University, Riyadh, Saudi Arabia, March 13, 2014

101. *Biomedical and Health Informatics: Improving Health, Healthcare, and Biomedical Research with Information and Technology*
- Seminar, Oregon Institute of Occupational Health Sciences, OHSU, Portland, OR, May 28, 2014

102. *Informatics: Opportunities to Improve Healthcare Through Rewarding Careers*
- Samaritan Hospital, Corvallis, OR, September 10, 2014

103. *Update in Clinical Informatics: The Newest Subspecialty*
- Grand Rounds, Department of Cardiothoracic Surgery, OHSU, Portland, OR, September 29, 2014

104. *Biomedical and Health Informatics: State of the Field, State of the Program*
- Research Conference, Department of Medical Informatics & Clinical Epidemiology, October 2, 2014

105. *Informatics Year in Review*
- American Medical Informatics Association Annual Symposium 2014, Washington, DC, November 18, 2014

106. *What Workforce is Needed for Large-Scale Informatics Projects?*
- HIMSS Middle East Integrated Health Innovations Conference, Dubai, UAE, December 17, 2014

107. *Big Data in Healthcare and Biomedicine: Opportunities and Challenges*
- NewRelic Future Talks, Portland, OR, March 9, 2015

108. *Competencies in Clinical Informatics for Informaticians and Healthcare Professionals*
- Applied Clinical Informatics Conference, University of Arizona College of Medicine Phoenix, Phoenix, AZ, March 13, 2015

109. *Healthcare Data Analytics*
- 73rd Oregon Health Information Management Association Annual Convention, Portland, OR, May 14, 2015

110. *Clinical Informatics Subspecialty for Physicians in the U.S.: Rationale, Current Status, and Future Directions*
- Saudi Association of Health Informatics, Riyadh, Saudi Arabia, May 18, 2015

111. *Opportunities for Careers and Training in Biomedical and Health Informatics*
- Trans-NIH BioMedical Informatics Coordinating Committee, Bethesda, MD, June 24, 2015

112. *The Evidence Base for Health Information Exchange*
- Connecting California to Improve Patient Care in 2015, Redwood MedNet Annual Conference, Santa Rosa, CA, July 31, 2015

113. *The Grand Experiment of HITECH: Results and Future Directions*
- Clinical Informatics Grand Rounds, OHSU, Portland, OR, September 24, 2015
- St. Charles Hospital Grand Rounds, Bend, OR, October 16, 2015

114. *Teaching Quality Use of the Electronic Health Record*
- American Society of Clinical Oncology Program Director's Retreat, Alexandria, VA, October 23, 2015

115. *IR Meets EHR: A Patient Cohort Discovery Task*
- Department of Biomedical Informatics Seminar, Columbia University, New York, NY, October 26, 2015

116. *Health Information Exchange: Systematic Review and Future Research Directions*
- Clinical Informatics Grand Rounds, OHSU, Portland, OR, February 25, 2016
- Webinar, National Web Conference on the Factors Contributing to the Use of Health Information Exchange (HIE) in Health Care Organizations, Agency for Healthcare Research & Quality (AHRQ), March, 16, 2016

117. *Clinical Informatics: An Essential Competency for 21st Century Healthcare*
- National Association for Medical Direction of Respiratory Care (NAMDRC) 39th Annual Conference, Palm Springs, CA, March 4, 2016

118. *Clinical Informatics: Board Certification through the Practice Pathway – and Beyond*
- Webinar, American Medical Informatics Association, March 18, 2016

119. *Clinical Informatics Certification for Physicians & Non-Physicians*
- Roundtable, Society for Imaging Informatics in Medicine, Portland, OR, July 1, 2016 (with S Halabi and JJ Morrison)

119. *Challenges for Information Retrieval and Text Mining in Biomedicine: Imperatives for Systems and Their Evaluation*
- Keynote Talk, Medical Information Retrieval (MedIR) Workshop (SIGIR 2016 workshop), Pisa, Italy, July 21, 2016

120. *Information Retrieval and Text Mining Evaluation Must Go Beyond "Users": Incorporating Real-World Context and Outcomes*
- Keynote Talk, Joint International Conference on Biological Ontology and BioCreative 2016, Corvallis, OR, August 1, 2016

121. *Advancing Digital and Patient-Centered Care Requires Competent Clinicians and Informatics Professional*
- Keynote Talk, HIMSS AsiaPac 16, Bangkok, Thailand, August 25, 2016

122. *What Competencies in Clinical Informatics are Required of 21st Century Clinicians and Informaticians?*
- Grand Rounds, Geisinger Medical Center, Danville, PA, October 19, 2016

123. *Domain-Specific TREC Challenge Evaluations in Biomedicine*
- TREC 25th Anniversary, National Institute for Standards and Technology, Gaithersburg, MD, November 15, 2016

124. *Big Data Is Not Enough: People and Systems Are Needed to Benefit Health and Biomedicine*
- Data Day Health, Austin, TX, January 15, 2017

- H3Africa Bioinformatics Network Webinar, April 20, 2017

125. *Supporting the Patient-Practitioner Relationship Through Clinical Informatics*
- The Patient, the Practitioner, and the Computer: Holding on to the Core of Our Healing Professions in a Time of Technological Change, Providence, RI, March 19, 2017

126. *Implementing Clinical Informatics in the MD Curriculum and Beyond*
- Association of Faculties of Medicine of Canada (AFMC) Webinar, June 13, 2017

127. *Research in Biomedical Information Retrieval at OHSU*
- OHSU-Pacific Northwest National Laboratory-Fred Hutchinson Cancer Research Center Webinar, July 13, 2017

128. *A Quarter-Century of Innovation in Informatics Education at OHSU: History and Lessons Learned*
- Clinical Informatics Grand Rounds, OHSU, Portland, OR, September 28, 2017
- School of Medicine Educators' Collaborative Grand Rounds, OHSU, Portland, OR, October 4, 2017

129. *Biomedical and Health Informatics: Careers and Opportunities at the Intersection of Computer Science and Biomedicine*
- New Beginnings Program, Department of Computer Science, Portland State University, Portland, OR, October 6, 2017

130. *IR Meets EHR: Retrieving Patient Cohorts for Clinical Research Studies*
- Centre International de Mathématiques et d'Informatique (CIMI), University of Toulouse, Toulouse, FR, February 9, 2018

131. *Caveats and Recommendations for Re-Use of Large-Scale Operational Electronic Health Record Data*
- Association for Medical and BioInformatics Singapore (AMBIS) and National Supercomputing Centre (NSCC) Singapore, Singapore, February 23, 2018

132. *Biomedical and Health Informatics: Careers and Opportunities for Graduate Study*
- Oregon Computer Science Teachers Association, Newberg, OR, March 17, 2018

133. *Update in Clinical Informatics: Machine Learning, Interoperability, and Professional Opportunities*
- OHSU Department of Medicine Grand Rounds, Portland, OR, December 11, 2018

134. *Information Retrieval from Electronic Health Records for Patient Cohort Discovery*
- Center for Genome Research & Biocomputing, Oregon State University, Corvallis, OR, February 25, 2019
- MU Informatics Institute, University of Missouri, Columbia, MO, March 7, 2019

135. *The Clinical Impact of Clinical Informatics*
- Inspiring Experts Clifford G. Pilz Memorial Lecture, University of Illinois Chicago, Chicago, IL, April 16, 2019
- Dermatology Faculty Forum, OHSU, July 17, 2019
- OHSU Department of Pathology Grand Rounds, August 12, 2020

136. *Applying Information Retrieval to the Electronic Health Record for Cohort Discovery and Rare Disease Detection*
- Keynote talk, Health Search and Data Mining Workshop, Web Search and Data Mining (WSDM) Conference, Houston, TX, February 3, 2020
- UCLA Institute for Biomedical Data Science, Los Angeles, CA, February 13, 2020
- Department of Computer Science, Brown University, October 13, 2022

137. *Part of the Problem, Part of the Solution: The Role of Informatics in Clinician Burnout*
- ACMI Winter Symposium, Scottsdale, AZ, February 8, 2020

138. *Informatics Competencies and Education for Non-Informaticians*
- University of Utah Biomedical Informatics Grand Rounds, Salt Lake City, UT, March 5, 2020

139. *The Informatics Workforce and its Certification in the United States*
- XV Jornadas de Informática en Salud - Hospital Italiano Annual Conference, Buenos Aires, Argentina (virtual), November 3, 2020

140. *Impact of COVID-19 on Digital Health and Health Informatics*
- CBIS '20 - XVII Congresso Brasileiro de Informatica em Saude, Sao Paulo, Brazil (virtual), December 8, 2020

141. *The Informatics Response to COVID-19*
- OHSU Department of Medicine Grand Rounds, Portland, OR (virtual), December 8, 2020

142. *AMIA Update on Academic, Education and Certification Initiatives*
- CAHIIM Fall Festival: Navigating Higher Education 2021 (virtual), October 7, 2021

143. *Artificial Intelligence in Medicine: The Need to Translate from Basic Science to Clinical Value*
- Keynote talk, Jornadas de Informática en Salud del Hospital Italiano de Buenos Aires (virtual), November 16, 2021

144. *Biomedical and Health Informatics: Impact, Challenges, and Opportunities*
- Nevada Institute of Personalized Medicine, University of Nevada Las Vegas (virtual), January 27, 2022
- Department of Pathology, Indiana University School of Medicine (virtual), July 19, 2023

145. *Journal Club: Systematic Review of Clinical Impact and Quality of Randomized Controlled Trials Involving Interventions Evaluating Artificial Intelligence Prediction Tools*
- OHSU Department of Medical Informatics & Clinical Epidemiology Conference, Portland, OR, March 31, 2022

146. *Translational Artificial Intelligence (AI): The Need to Translate from Basic Science to Clinical Value*
- OHSU Casey Eye Institute Monthly Research Seminar, Portland, OR, May 16, 2022
- University of Alabama Birmingham PowerTalk Seminar Series (virtual), September 2, 2022
- University of Iowa Distinguished Biomedical Scholars Lecture Series, Iowa City, IA, March 9, 2023

147. *Competencies and Curricula Across the Spectrum of Learners for Biomedical and Health Informatics*

- Keynote Talk, IEEE International Conference on Healthcare Informatics, First International Workshop on Health Informatics Education, Rochester, MN, June 11, 2022
- Symposion on Achievements, Milestones, and Challenges in Biomedical and Health Informatics, Athens, Greece, October 29, 2022
- University of Texas Southwestern Clinical Informatics Research Colloquium (virtual), May 18, 2023

148. *From the Longwood Medical Area to Oregon: An Informatics Career Journey*
- Harvard Clinical Informatics Lecture Series (virtual), January 24, 2023

149. *Introduction to Informatics: What You Should Know as a Health Services Researcher*
- VA Health Services Research & Development Advanced Fellowship Program (virtual), March 7, 2023

150. *Informatics Innovation: Quarter-Century of OHSU Leadership*
- HIMSS Oregon Chapter Annual Conference 2023, Portland, OR, June 1, 2023

Workshops

1. *Coping with the Medical Literature: Retrieval and Critical Assessment*
- Northwest Region Meeting of the Society for General Internal Medicine, Seattle, WA, February 28, 1992 (with David H. Hickam, M.D.)

2. *Coding and Classification*
- MEDINFO 92, Geneva, Switzerland, September 8, 1992 (with five others)

3. *Health Sciences Resources on the Internet*
- Information Canada 94, Toronto, Ontario, September 30, 1994 (with three others)

4. *Information Retrieval Methods for the Cochrane Collaboration*
- 2nd Annual Cochrane Colloquium, Hamilton, Ontario, October 1, 1994

5. *From the Desktop to the Internet: Meeting Clinician Information Needs*
- Northwest Region Meeting of the Society for General Internal Medicine, Portland, OR, February 24, 1995 (with Paul Gorman, M.D.)

6. *Indexing Reviews*
- 3rd Annual Cochrane Colloquium, Oslo, Norway, October 5, 1995

7. *Indexing Trials*
- 3rd Annual Cochrane Colloquium, Oslo, Norway, October 7, 1995

8. *Medical Informatics for General Internists*
- Northwest Region Meeting of the Society for General Internal Medicine, Seattle, WA, February 23, 1996

9. *Indexing and Retrieval Methods for the Cochrane Collaboration*
- 4th Annual Cochrane Colloquium, Adelaide, Australia, October 23, 1996
- 5th Annual Cochrane Colloquium, Amsterdam, Holland, October 8, 1997
- 7th Annual Cochrane Colloquium, Rome, Italy, October 7, 1999

- 8th Annual Cochrane Colloquium, Cape Town, South Africa, October 29, 2000
- 11th Annual Cochrane Colloquium, Barcelona, Spain, October 28, 2003

10. *Using Computers in General Medicine*
- Northwest Region Meeting of the Society for General Internal Medicine, Portland, OR, February 28, 1997 (with Paul Gorman, M.D.)

11. *Computer-Based Resources in Pulmonary and Critical Care Medicine*
- 1998 American Lung Association/American Thoracic Society, Chicago, IL April 24, 1998 (with seven others)

12. *Using Evidence-Based Medicine in Teaching and Practice*
- Association of American Medical Colleges Group on Information Resources Conference, Pittsburgh, PA, June 29, 1999

13. *Interactive Retrieval Evaluation at TREC and Beyond*
- 23rd Annual ACM-SIGIR Conference on Research and Development in Information Retrieval, Athens, Greece, July 28, 2000 (with Paul Over, Ph.D.)

14. *Distance Learning Techniques and Technologies*
- 8th Annual Cochrane Colloquium, Cape Town, South Africa, October 29, 2000
- 11th Annual Cochrane Colloquium, Barcelona, Spain, October 28, 2003

15. *TREC (Text Retrieval Conference) Genomics Pre-Track*
- Joint Conference on Digital Libraries 2002, Portland, OR, July 18, 2002

16. *Text Analysis and Search for Bioinformatics*
- 26th Annual ACM-SIGIR Conference on Research and Development in Information Retrieval, Toronto, Canada, July 31, 2003 (with Eric Brown, Ph.D. and Alfonso Valencia, Ph.D.)

17. *Strategic Workshop on Information Retrieval in Lorne (SWIRL)*
- Three-day workshop for international leaders in field in Lorne, Australia, December 8-10, 2004

18. *Harmonizing Biomedical & Health Informatics Competencies and Curricula*
- 12th International Health (Medical) Informatics Congress, Medinfo 2007, Brisbane, Australia, August 19, 2007 (with Janise Richards, Ph.D., Paul Gorman, M.D., Laverne Snow, M.P.A.)
- AMIA 2007 Annual Symposium, Chicago, IL, November 10, 2007 (with Janise Richards, Ph.D., Paul Gorman, M.D., Laverne Snow, M.P.A., Bryant Karras, M.D.)

19. *Family Medicine and Informatics Education - Rising to the Challenge to Teach Students to Care for Patients in the Information Age*
- 34th Annual Predoctoral Education Conference, Portland, OR, January 24, 2008 (with Thomas Agresta, M.D., Shawn Blanchard, M.D., Paul Gorman, M.D., David Dorr, M.D., Nancy Clark, M.Ed., Jacob Reider, M.D.)

20. *Public Health Informatics - Everything You Need to Know to Do Your Job Better*
- Navigating the Winds of Change: 2009 Public Health Conference for Utah, Midway, Utah (with Laverne Snow, Ph.D.(C), Wu Xu Ph.D., David Jackson)

21. *Biomedical Informatics and Medical Education*

(Informática Biomédica. ¿Cómo enseñarla y favorecer el desarrollo de las competencias profesionales del médico?)
- Jornadas de Educación Médica 2013, e-Educación en Ciencias de la Salud: Evidencia, Teoría y Práctica, Facultad de Medicina, Universidad Nacional Autónoma de México (UNAM), Mexico City, March 13, 2013 (with Israel Martínez Franco, M.D.)

21. *Coutre Curricula - BD2K Data Science Tailored to Your Needs*
 - FORCE 2016, Portland, OR, April 17, 2016 (with Nicole Vasilevsky, Ph.D., Bjorn Pederson, Ph.D., Jackie Wirz, Ph.D., and Shannon McWeeney, Ph.D.)

22. *Informatics and HIT in Support of General Internal Medicine: An Overview*
- Society for General Internal Medicine 2018 Annual Meeting, Denver, CO, April 11, 2018 (with David Dorr, M.D. and others)

Tutorials

1. *Expert Decision Support: Current Status and Future Trends*
- 14th Annual Meeting of the Society for Medical Decision Making, Portland, OR, October 18, 1992 (with Holly Jimison, Ph.D.)

2. *Text Information Retrieval*
- 16th Annual Symposium on Computer Applications in Medical Care, Baltimore, MD, November 8, 1992
- 18th Annual Symposium on Computer Applications in Medical Care, Washington, DC, November 6, 1994
- 19th Annual Symposium on Computer Applications in Medical Care, New Orleans, LA, October 28, 1995
- 1996 AMIA Annual Fall Symposium, Washington, DC, October 27, 1996
- 1997 AMIA Annual Fall Symposium, Nashville, TN, October 26, 1997
- 1998 AMIA Annual Fall Symposium, Orlando, FL, November 7, 1998

3. *Evaluation of Information Retrieval Systems*
- 18th Annual ACM-SIGIR Conference on Research and Development in Information Retrieval, Seattle, WA, July 9, 1995 (with Micheline Beaulieu, Ph.D.)
- 19th Annual ACM-SIGIR Conference on Research and Development in Information Retrieval, Zurich, Switzerland, August 18, 1996 (with Micheline Beaulieu, Ph.D.)
- 20th Annual ACM-SIGIR Conference on Research and Development in Information Retrieval, Philadelphia, PA, July 27, 1997 (with Stephen Robertson, Ph.D.)
- 21st Annual ACM-SIGIR Conference on Research and Development in Information Retrieval, Melbourne, Australia, August 24, 1998

4. *Medical Knowledge Resources* - Part of *Introduction to Clinical Information Systems* (with Jonathan Teich, M.D. and others)
- 1998 AMIA Annual Symposium, Orlando, FL, November 8, 1998
- 1999 AMIA Annual Symposium, Washington, DC, November 7, 1999
- 2000 AMIA Annual Symposium, Los Angeles, CA, November 6, 2000
- 2001 AMIA Annual Symposium, Washington, DC, November 4, 2001
- 2002 AMIA Annual Symposium, San Antonio, TX, November 10, 2002

5. *Medical Informatics - Acquisition, Storage, and Use of Information in Health Care*

- 22nd Annual ACM-SIGIR Conference on Research and Development in Information Retrieval, Berkeley, CA, August 15, 1999

6. *Information Retrieval and Digital Libraries*
- 1999 AMIA Annual Symposium, Washington, DC, November 6, 1999
- 2000 AMIA Annual Symposium, Los Angeles, CA, November 6, 2000 (with Susan Price, M.D.)
- 2001 AMIA Annual Symposium, Washington, DC, November 3, 2001 (with Susan Price, M.D.)
- 2002 AMIA Annual Symposium, San Antonio, TX, November 10, 2002 (with Susan Price, M.D.)
- 2003 AMIA Annual Symposium, Washington, DC, November 9, 2002 (with Susan Price, M.D.)

7. *Introduction to Retrieval System Evaluation, Including TREC*
- 23rd Annual ACM-SIGIR Conference on Research and Development in Information Retrieval, Athens, Greece, July 24, 2000 (with Donna Harman, Ph.D.)

8. *Bioinformatics and Digital Libraries*
- Joint Conference on Digital Libraries 2002, Portland, OR, July 18, 2002 (with Christopher Dubay, Ph.D.)

9. *Bioinformatics and Genomics for Information Retrieval*
- 26th Annual ACM-SIGIR Conference on Research and Development in Information Retrieval, Toronto, Canada, July 28, 2003 (with Peter Smookler, Ph.D.)
- 27th Annual ACM-SIGIR Conference on Research and Development in Information Retrieval, Sheffield, UK, July 25, 2004
- 28th Annual ACM-SIGIR Conference on Research and Development in Information Retrieval, Salvador, Brazil, August 15, 2005 (with Hugh Williams, Ph.D.)

Panels

1. *Medical Information Retrieval Systems: State of the Art*
- Advanced Science and Technology Institute Executive's Conference '92, Portland, OR, May 4, 1992 (Panelist)

2. *Decision Support Systems in the UMLS*
- 55th Annual Meeting of the American Society for Information Science, Pittsburgh, PA, October 27, 1992 (Panelist)

3. *CANON: Toward a Medical-Concept Representation Language for Electronic Medical Records*
- Fourth Spring Congress of the American Medical Informatics Association, St. Louis, MO, May 12, 1993 (Panelist)

4. *Information Retrieval Meets Medicine: Needs and Systems in Clinical Settings*
- 56th Annual Meeting of the American Society for Information Science, Columbus, OH, October 28, 1993 (Moderator and Organizer)

5. *Empowering Medical Applications via the Network*
- 1994 Mid-Year Meeting of the American Society for Information Science, Portland, OR, May 24, 1994 (Moderator and Organizer)

6. *Access vs. Confidentiality: The Dilemma of Open Networks vs. Information Accuracy and Personal Rights*

- 1994 Mid-Year Meeting of the American Society for Information Science, Portland, OR, May 25, 1994 (Moderator and Organizer)

7. *Health Sciences Resources on the Internet*
- 58th Annual Meeting of the American Society for Information Science, Chicago, October 12, 1995 (Moderator and Organizer)

8. *The Cochrane Collaboration*
- 18th Annual Symposium on Computer Applications in Medical Care, New Orleans, LA, November 1, 1995 (Moderator and Organizer)

9. *Beyond Recall and Precision: New Approaches to Evaluation of Information Retrieval Systems*
- 1997 AMIA Annual Fall Symposium, Nashville, TN, October 27, 1997 (Moderator and Organizer)

10. *What are the Optimal Computer Science Competencies for Medical Informatics Professionals?*
- MEDINFO 98, Seoul, South Korea, August 19, 1998 (Moderator and Organizer)
- 1998 AMIA Annual Fall Symposium, Orlando, FL, November 9, 1998 (Moderator and Organizer)

11. *Defining the Goals for Health Informatics Education - Perspectives of Those Who Have Been There, Done That*
- 1999 AMIA Spring Congress, Chicago, IL, May 25, 1999 (Panelist)

12. *Use the Internet to Access, Measure, and Apply Disease Management Outcomes*
- 1999 National Managed Health Care Congress, Los Angeles, CA, October 20, 1999 (Panelist)

13. *Cornerstone IV: Integrating Information*
- 1999 AMIA Fall Symposium, Washington, DC, November 8, 1999 (Panelist)

14. *Internet Tools and Resources*
- Integrating the Health Care Enterprise (IHE) Symposium at the Radiological Society of North America 1999 Meeting, Chicago, IL, December, 2, 1999 (Panelist)

15. *Primary Care Informatics: An Emerging Discipline*
- 2001 AMIA Fall Symposium, Washington, DC, November 5, 2001 (Panelist)

16. *Distributed Learning in Health Informatics*
- 2001 AMIA Fall Symposium, Washington, DC, November 7, 2001 (Moderator and Organizer)

17. *The Many Dimensions of Informatics*
- Health Sciences Technology Fair, University of Florida, Gainesville, FL, March 12, 2002 (Panelist)

18. *Overcoming Impediments to Effective Health and Biomedical Digital Libraries*
- Joint Conference on Digital Libraries, Portland, OR, July 15, 2002 (Moderator and Organizer)

19. *Meeting the Needs of the Applied/Professional Informatician*
- 2002 AMIA Fall Symposium, San Antonio, TX, November 11, 2002 (Moderator and Organizer)

20. *Ethics in Informatics Education*
- 2002 AMIA Fall Symposium, San Antonio, TX, November 12, 2002 (Panelist)

21. *Integrating Health Information Resources with Web-based Clinical Information Systems*
- 2003 AMIA Fall Symposium, Washington, DC, November 12, 2003 (Panelist)

22. *Bringing Clinical Knowledge to the Point of Care and to Patients*
- Connecting Communities for Better Health, Washington, DC, June 25, 2004 (Panelist)

23. *Collaboration Between NSF/ITR and FP6/IST Research Groups*
- eChallenges 2005, Ljubljana, Slovenia, October 21, 2005 (Panelist)

24. *Enabling Biomedical Research with Literature Access and Mining: Progress and Challenges*
- AMIA 2005 Annual Symposium, Washington, DC, October 24, 2005 (Moderator and Organizer)

25. *Benefits and Challenges for Health Information Technology in the Developed and Developing Worlds*
- Fourth Annual Western Regional International Health Conference, Portland, OR, February 18, 2006 (Panelist)

26. *Focusing on Competencies*
- MedBiquitous Consortium Annual Conference, Baltimore, MD, April 26, 2006 (Panelist)

27. *Applied Informatics Curricula in the Health Professions: Similarities and Contrasts*
- AMIA Webinar, October 4, 2006 (Moderator and Panelist)

28. *AMIA Special 10x10 Offering for SI Members*
- Scottsdale Institute Webinar, October 13, 2006 (Panelist)

29. *ImageCLEF and ImageCLEFmed: Toward Standard Test Collections for Image Storage and Retrieval Research*
- ASIS&T Annual Meeting 2006, Austin, TX, November 6, 2006 (Panelist)

30. *The Clinical and Translational Science Awards (CSTA) and Informatics*
- AMIA 2006 Annual Symposium, Washington, DC, November 13, 2006 (Panelist)

31. *Text Corpora for Natural Language Processing in the Medical Domain*
- AMIA 2006 Annual Symposium, Washington, DC, November 13, 2006 (Panelist)

32. *CTSA Informatics Panel*
- ACMI 2007 Symposium, Miami Beach, FL, January 21, 2007 (Moderator and Panelist)

33. *Programas Académicos Para Informática Medica en Estados Unidos*
- VI International Congress on Health Informatics, Havana, Cuba, February 15, 2007 (Moderator)

34. *Clinical and Translational Science Awards*
- AAMC GBA/GIP/GIR Joint Spring Meeting, Chicago, IL, May 5, 2007 (Panelist, *CTSA National Steering Committee Update*)

35. *The NIH Clinical and Translational Science Award (CTSA) Program and Biomedical Informatics*
- AMIA 2007 Spring Congress, Orlando, FL, May 22, 2007 (Moderator and Panelist, *CTSA National Steering Committee Update*)

36. *Image Retrieval in Medicine: Motivations, Methods, and Results of the ImageCLEF Medical Image Retrieval Task*
- 12th International Symposium for Health Information Management Research, Sheffield, England, July 19, 2007 (Moderator and Panelist)

37. *Healthcare Industry Perspective, Healthcare Transformation: What it means for the CEO's agenda, How IT will need to respond*
- HIMSS Oregon Chapter 2007 Annual Meeting, Portland, OR, November 5, 2007 (Panelist, *Healthcare Transformation Though a Competent and Professional Informatics Workforce*)

38. *The CTSA National Informatics Steering Committee: Activities and Challenges*
- National Science Foundation Workshop on Biomedical Informatics, Portland, OR, December 5, 2007 (Panelist)

39. *Recognizing and Responding to Emerging Occupations: Health and Medical Informatics as a Case Study*
- Health Care Career Pathways Summit, Eugene, OR, April 10, 2008 (Panelist, *The Value of Health Information Technology Requires a Competent and Professional Workforce*)

40. *Consumer Health Informatics Education and Information Seeking*
- Kay-CGU Symposium 2008: A Course in Consumer Health Informatics, Claremont, CA, April 13, 2008 (Panelist, *The Value of Health Information Technology Requires a Competent and Professional Workforce*)

41. *Training an HIT-Enabled Healthcare Workforce: Addressing Shortages*
- Briefing at Capitol Hill Steering Committee on Telehealth and Healthcare Informatics, Washington, DC, April 17, 2008 (Panelist, *The Value of Health Information Technology Requires a Competent and Professional Workforce*)

42. *Innovations in Healthcare - Technology and Policy*
- TIE Entrepreneurs' Forum, Portland, OR, May 21, 2008 (Panelist, *Better Information for Better Health in Oregon and at OHSU*)

43. *CTSA and its Impacts on the Clinical Research Informatics Community*
- AMIA 2008 Spring Congress, Phoenix, AZ, May 30, 2008 (Panelist, *Think Globally, Act Locally: What Can the CTSA Do for Me? National and Local Experiences*)

44. *Competency to Curriculum: Public Health Informatics Workforce Development*
- AMIA 2008 Spring Congress, Phoenix, AZ, May 30, 2008 (Moderator)

45. *Informatics at NIH*
- NLM Informatics Training Conference 2008, Washington, DC, July 9, 2008 (Panelist, *Clinical Research Informatics in the CTSA program*)

46. *Information Needs of the Healthcare Team - Medical Informatics as a Solution*
- INFOLAC 2008: Advances in Medical Informatics and Their Impact on Healthcare Systems, IMIA Latin American Countries Conference, Buenos Aires, Argentina, October 30, 2008 (Panelist, *Information Needs of the Healthcare Team - Medical Informatics as a Solution*)

47. *A 360 Degree View of Translational Medicine*

- AMIA 2008 Annual Symposium, Washington, DC, November 12, 2008 (Panelist, *National Efforts to Advance Translational Informatics: The CTSA Consortium*)

48. *Opportunities for Entrepreneurs in Health Information Technology in the American Recovery and Reinvestment Act (ARRA) of 2009*
- TiE Oregon, Portland, OR, May 20, 2009 (Moderator and Panelist)

49. *Building Global eHealth Capacity With Distance Learning*
- AMIA Spring Congress 2009, Orlando, FL, May, 29, 2009 (Moderator and Panelist)

50. *Healthcare Technology: IT - the Missing Piece to the Healthcare Puzzle*
- Silicon Forest Technology & Financial Forum, Hillsboro, OR, August 26, 2009 (Panelist, *Opportunities in Health Information Technology: An Industry and Academic Perspective*)

51. *Informatics for Public Health Professionals at the Front Lines*
- Public Health Information Network (PHIN) 2009, Atlanta, GA, August 31, 2009 (Panelist, *The AMIA 10x10 at OHSU Course: Public Health Informatics Experience*)

52. *Achieving Meaningful Use of Electronic Health Records*
- OHSU Monthly Evening Informatics Conference, Portland, OR, October 8, 2009 (Moderator and Panelist)

53. *Building the Health Information Technology Workforce*
- National Council for Workforce Education Annual Conference, Seattle, WA, October 18, 2009 (Panelist, *Health Information Technology Workforce: Overview and Needs*)

54. *Oldies but Goodies - A Retrospective on the Pre-Electronic Informatics Literature*
- AMIA 2009 Annual Symposium, San Francisco, CA, November 17, 2009 (Panel organizer and moderator)

55. *Fostering Human Resources Involved in Health Information Systems*
- 6th Conference of the Asia Pacific Association for Medical Informatics (APAMI) 2009, Hiroshima, Japan, November 24, 2009 (Panelist, *Health Information Technology Workforce and its Education: Perspective from the United States*)

56. *Financial and Human Resources for Health Information Systems (HIS)*
- Prince Mahidol Award Conference, Bangkok, Thailand, January 29, 2010 (Panelist, *Human Resources Capacity for Health Information Systems in Developing Countries*)

57. *Informatics Education for Clinical and Translational Researchers: Activities from the CTSA Program*
- AMIA Clinical Research Informatics Summit, San Francisco, CA, March 12, 2010 (Panelist, *Overview of CTSA Informatics Activities and Local Efforts at OHSU*)

58. *Oregon Health Exchange - Electronic Health Records*
- 15th Annual Oregon Connections Telecommunications Conference, Hood River, OR, October 21, 2010 (Panelist, *Meaningful Use of EHR/HIE Requires a Competent Workforce*)

59. *Convergence of Health Information Technology and Telehealth*

- Telehealth Alliance of Oregon Annual Meeting and Summit, Portland, OR, November 3, 2010, Panelist, *Health Information Technology, Meaningful Use, and the Need for a Competent Workforce*)

60. *The HITECH National Effort to Develop a Skilled HIT Workforce*
- AMIA Annual Symposium 2010, Washington, DC, November 16, 2010 (Panelist)

61. *Is an EHR More Like a Pair of Pants or a Bridge? Customization vs. Standardization to Promote Adoption*
- AMIA Annual Symposium 2010, Washington, DC, November 16, 2010 (Panelist, *The Need for Standardization in the EHR*)

62. Relevant Training for the Future Health Care Workforce
- Academy Health National Health Policy Conference, Washington, DC, February 7, 2011 (Panelist, *The Perspective of Clinical Informatics*)

63. *ONC Workforce Development Program*
- HIMSS Annual Conference 2011, Orlando, FL, February 22, 2011 (Panelist, Curriculum Development Centers Program)

64. *Personalized Medicine Requires Personalized Clinical Decision Support*
- AMIA Clinical Research Informatics Summit, San Francisco, CA, March 9, 2011 (Panelist, *Personalized Medicine Solutions – Academic Perspective*)

65. *Perspectives on Clinical Research Informatics Education*
- AMIA Clinical Research Informatics Summit, San Francisco, CA, March 10, 2011 (Panelist, *ONC HITECH Workforce Development Program and Its Pertinence to Clinical Research Informatics*)

66. *Evidence Generating Medicine: Integrating Research and Practice to Accelerate Discovery-Driven Healthcare*
- AMIA Clinical Research Informatics Summit, San Francisco, CA, March 10, 2011 (Panelist, *Integrating the EGM Paradigm into Informatics and Biomedical Training*)

67. *90th Anniversary Celebration Academic Forum*
- Peking Union Medical College Hospital, Beijing, China, September 15, 2011 (Panelist: *Translational Research: The Essential Role of Biomedical Informatics*)

68. *Informatics and the Workforce*
- Association of American Medical Colleges, Group on Information Resources Webinar, September 22, 2011 (Panelist, *Meaningful Use of Information Technology Requires a Competent Workforce*)

69. *Perspectives on the Information Professions*
- American Society for Information Science & Technology Annual Meeting, New Orleans, LA, October 10, 2011 (Panelist, *Perspective on the Information Professions in Health and Biomedicine*)

70. *Developing an Informatics Program to Meet Market Needs*
- Association of American Medical Colleges, Annual Meeting, Denver, CO, November 7, 2011 (Panelist, *Training Faculty [and Others] in Biomedical Informatics*)

71. *Education for the Clinical Informatics Subspecialist*

- AMIA Annual Symposium 2011, Washington, DC, October 25, 2011 (Panelist, *Education for the Clinical Informatics Subspecialist – The Role of Existing Educational Programs*)

72. *Identifying Patients for Clinical Studies from Electronic Health Records: The TREC Medical Records Track*
- AMIA Clinical Research Informatics Summit 2012, San Francisco, CA, March 21, 2012 (Panelist, *Task Selection, Topic Development, and Relevance Judgments*)

73. *AcademyHealth Electronic Data Methods Forum*
- AMIA Clinical Research Informatics Summit 2012, San Francisco, CA, March 22, 2012 (Panelist, *Operational Electronic Health Record Data for Comparative Effectiveness Research: Opportunities and Challenges*)

74. *Higher-Ed and Tech Industry Collaboration for Economic Development and Improving Health in Oregon*
- Ninth Annual InnoTech Oregon, Portland, OR, May 3, 2012 (Panelist, Higher-Ed and Tech Industry Collaboration for Economic Development and Improving Health in Oregon: Why Oregon? Why Not Oregon?)

75. *Fuzzy Math: Avoiding Common Pitfalls in Reporting Statistics and Clinical Research*
- National Association of Cancer Center Development Officers/National Cancer Institute Public Affairs & Marketing Network (NACCDO/PAN) 2012 Conference, Portland, OR, May 8, 2012 (Panelist, Reporting Statistics and Clinical Research: What the Research Shows and Some Future Directions)

76. *Informatics Symposium*
- OHSU Research Week, Portland, OR, May 10, 2012 (Panelist, Identifying Patients for Clinical Studies from Electronic Health Records: The TREC Medical Records Track)

77. *New Ideas on the Future of Healthcare*
- Webvisions Portland, Portland, OR, May 17, 2012 (Panelist)

78. *The Changing National Landscape of BMI Training and Education*
- AMIA Academic Forum Sixth Annual Conference, Minneapolis, MN, May 23, 2012 (Panelist)

79. *Coordinated Care Organizations – Where Oregon is Now*
- HIMSS Oregon Tech Talk, Portland, OR, September 13, 2012 (Panelist, Health Information Technology in Oregon CCOs: What Can Be Learned from the National Landscape)

80. *Workforce/eSkills – US and EU Approaches to Health IT Workforce and Health*
- Fall 2012 Transatlantic Health IT/eHealth Cooperation Symposium, Boston, MA, October 24, 2012 (Panelist)

81. *Late Breaking Session - Update on the Subspecialty Certification in Clinical Informatics*
- AMIA Annual Symposium 2012, Chicago, IL, November 5, 2012 (Panelist, Concerns That Must Be Addressed for Building Capacity of the Clinical Informatics Subspecialty)

82. *Health IT Training Needs for the Future*
- 2012 ONC Annual Meeting – Workforce Program Day, Washington, DC, December 11, 2012 (Panelist)

83. *Are There Generations in Medical Education? Generation X, Y, Net and Millennium*
(¿Hay generaciones informáticas (X, Y, Net, Milenio) en Educación Médica?)
- Jornadas de Educación Médica 2013, e-Educación en Ciencias de la Salud: Evidencia, Teoría y Práctica, Facultad de Medicina, Universidad Nacional Autónoma de México (UNAM), Mexico City, March 15, 2013 (Panelist)

84. *Patient Rights and Responsibilities*
- Intersystems Corp. Healthcare Leadership Conference, Orlando, FL, April 9, 2013 (Panelist)

85. *Informatics Practica and Internships – Definitions, Value Proposition, Best Practices*
- AMIA Academic Forum, Nashville, TN, May 22, 2013 (Panelist, Informatics Practicums and Internships – Experience of OHSU)

86. *The AMIA 10×10 ("Ten by Ten") Program: An International Approach to Building Informatics Capacity*
- Medinfo 2013, Copenhagen, Denmark, August 21, 2013 (Panelist)

87. *The New Clinical Informatics Medical Subspecialty in the United States*
- Medinfo 2013, Copenhagen, Denmark, August 21, 2013 (Panelist)

88. *Use of Electronic Data for Feedback in Learning and Practice*
- Accelerating Change in Medical Education Consortium Meeting, American Medical Association, Chicago, IL, October 3, 2013 (Panelist)

89. *Informatics at the Cutting Edge: Update from OHSU*
- HIMSS Northwest Technology & Education Symposium, Portland, OR, October 15, 2013 (Panelist)

90. *Informatics Research Workforce I – Training for Future Informatics Workforce Needs*
- AMIA 2013 Annual Symposium, Washington, DC, November 18, 2013 (Panelist)

91. *Informatics Research Workforce II – Innovative Technologies for Online Teaching*
- AMIA 2013 Annual Symposium, Washington, DC, November 18, 2013 (Panelist)

92. *Health IT Workforce of the Future*
- AMIA 2013 Annual Symposium, Washington, DC, November 19, 2013 (Panelist)

93. *Clinical Informatics Fellowship Curriculum*
- AMIA Academic Forum, Ann Arbor, MI, May 20, 2014 (Panelist)

94. *Informatics without Borders: International Outreach of US-based Training Programs*
- AMIA 2014 Annual Symposium, Washington, DC, November 17, 2014 (Panelist)

95. *Evolving Career Landscapes in Biomedical and Health Informatics*
- AMIA 2014 Annual Symposium, Washington, DC, November 17, 2014 (Panelist)

96. *Workforce Training and Clinical/Health Informatics Competencies: An International Perspective*
- MEDINFO 2015, Sao Paulo, Brazil, August 22, 2015 (Panelist)

97. *Accelerating Change in Medical Education Consortium Efforts Fostering Competency in Clinical Informatics*
- AMA ChangeMedEd 2015 Conference, Chicago, IL, Oct. 2, 2015 (Panelist)

98. *Educating the Digital Doctors of Tomorrow*
- SINAInnovations 2015, Mount Sinai School of Medicine, New York, NY, October 27, 2015 (Panelist)

99. *What Data Science Can Learn from Training in Biomedical Informatics: The OHSU Experience*
- UCSF-Moore Foundation Convening on Clinical Data Science and Scientists, , San Francisco, CA, January 19, 2016 (Panelist)

100. *Clinical Informatics Certification for Physicians & Non-Physicians*
- Society for Imaging Informatics 2016 Annual Meeting, Portland, OR, July 1, 2016 (Panelist)

101. *The OHSU Clinical Informatics Experience: A Showcase of Biomedical Informatics Research*
- Society for Imaging Informatics 2016 Annual Meeting, Portland, OR, July 1, 2016 (Panelist)

102. *Innovation in Teaching Cross-Cutting Disciplines: Case Study of Biomedical Informatics & Data Science*
- OHSU Symposium on Educational Excellence on Friday, April 14, 2017.

103. *Optimal Use of Health IT Requires Competency of Clinicians and Patients*
- AMIA iHealth 2017, Philadelphia, PA, May 4, 2017 (Panelist)

104. *Updating the ONC Health IT Curriculum and Using it to Provide Training for Incumbent Healthcare and Health IT Professionals*
- AMIA InSpire 2017, San Diego, CA, June 7-8, 2017 (Panelist)

105. *Toward Multi-Disciplinary Synergy in Academic Health Informatics Programs: CCIPD, NIPD, and Beyond*
- AMIA InSpire 2017, San Diego, CA, June 7-8, 2017 (Panelist)

106. *Certification of Informatics Physicians: Nearly a Decade of Experience in the United States*
- MedInfo 2017, Hangzhou, China, August 21-25, 2017 (Panelist)

107. *Advancing High-Quality Degree Programs in Health Informatics for Low- and Middle-Income Countries*
- MedInfo 2017, Hangzhou, China, August 21-25, 2017 (Panelist)

108. *Clinical Informatics in Medical Education: Innovations from the AMA Accelerating Change in Medical Education Initiative*
- AMIA Annual Symposium 2017, Washington, DC, November 8, 2017 (Panelist)

109. *Collaborative Science Within Academic Medical Centers: Opportunities and Challenges for Informatics*
- ACMI 2018 Symposium, Scottsdale, AZ, February 3, 2018 (Moderator and Panelist)
- AMIA Annual Symposium 2018, San Francisco, CA, November 6, 2018 (Panelist)

110. *Governance of the Pluripotent Research Database*
- AMIA Summit 2018, San Francisco, CA, March 13, 2018 (Panelist)

111. *The Continuum of Informatics Education: Competencies for General Internists at All Professional Stages*
- Society for General Internal Medicine 2018 Annual Meeting, Denver, CO, April 13, 2018 (Panelist)

112. *Using Informatics to Improve the Health of Populations*
- Webinar, American Association of Colleges of Nursing and Association of American Medical Colleges, April 18, 2018 (Panelist)

113. *What are the Optimal Data Science and Machine Learning Competencies for Informatics Professionals?*
- MEDINFO 2019, Lyon, FR, August 27, 2019 (Moderator and Panelist)

114. *Supporting the Growth of Informatics in Allied Health*
- MEDINFO 2019, Lyon, FR, August 28, 2019 (Panelist)

115. *Thriving in Your Biomedical Informatics Career While Balancing, Work, Personal, and Family Life*
- AMIA Annual Symposium 2019, Washington, DC, November 18, 2019 (Panelist)

116. *Educational Communities in the Academic Forum: Sharing Knowledge and Promoting Standards*
- AMIA Annual Symposium 2019, Washington, DC, November 20, 2019 (Panelist)

117. *Incentivizing Change: The Impact of SDOH Using Blockchain Technology*
- HIMSS 2020, Orlando, FL, March 11, 2020 (Panelist)

118. *Translational Research of Machine Learning and Artificial Intelligence Advances in Clinical Settings – Experiences and Challenges*
- AMIA Annual Symposium 2020, Virtual, November 17, 2020 (Moderator and Panelist)

119. *Digital Health during COVID-19: Opportunities and Challenges*
- World Health Organization, Geneva, Switzerland (virtual), December 16, 2020 (Panelist)

120. *Data for Artificial Intelligence*
- Healthcare in Post-Pandemic – Will Value for Health be the Way?, Value for Health Collaborative, Lisbon, Portugal (virtual), June 18, 2021 (Panelist)

121. *Career Development Issues for Women in Biomedical Informatics Within Professional Organizations*
- AMIA Annual Symposium 2021, San Diego, CA, November 1, 2021 (Panelist)

122. *Debate: Informatics and Big Data*
- The Patient and The Practitioner in the Age of Technology: Promoting Healing Relationships conference, Providence, RI, October 15, 2022

123. *Beyond Wrangling and Modeling: Data Science and Machine Learning Competencies and Curricula for The Rest of Us*
- AMIA Annual Symposium 2022, Washington, DC, November 7, 2022 (Moderator and Panelist)

124. *A Debate on the Extension of the Practice Pathway for ABMS Clinical Informatics Board Certification for Physicians in the United States*

- AMIA Annual Symposium 2022, Washington, DC, November 8, 2022 (Panelist)

125. *Current Clinical Evidence and Available Technology*
- Voice AI Symposium, Bridge2AI-Voice Consortium, Washington, DC, April 19, 2023 (Panelist)