



Informatics Innovation: Quarter-Century of OHSU Leadership

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Overview

- After 25 years of leading academic informatics at Oregon Health & Science University (OHSU), I have stepped down from leadership roles while continuing as a Professor
- Aim of this talk is to describe what we have accomplished and plans for going forward

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Jay Cummings @LongFormMath · 6h ***

When you were a carefree tenured professor living your best life, and then are suddenly forced to chair your department



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Beginnings

- Oregon Senator Mark Hatfield procured federal earmark to establish Biomedical Information Communication Center (BICC) in 1980s
- Funded by National Library of Medicine (NLM) Integrated Advanced Information Management System (IAIMS) grant
- BICC was an OHSU Center that would
 - Establish computer network and services
 - Support library expansion
 - Develop academic informatics program
- In 1989, OHSU recruited initial Director, J. Robert Beck, who came from Dartmouth College with Kent Spackman
- In 1990, first two faculty recruited, William Hersh and Mark Helfand, with academic appointments in Department of Medicine

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BICC Building opened in 1991



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Toward DMICE

- In early 1990s, faculty of BICC became academically productive
 - Research accomplishments, publications, and grants
 - Established educational courses and programs
 - Received funding for NLM T15 training grant
- SOM Dean Joseph Bloom noted we needed to be more identifiable, i.e., become a recognized unit (seat at the table)
- In 1997 (quarter-century ago), free-standing Division of Medical Informatics & Outcomes Research (DMIOR) established with Hersh as Head
- In 2003, SOM Dean Joseph Robertson established Department of Medical Informatics & Clinical Epidemiology (DMICE), with Hersh as first Chair

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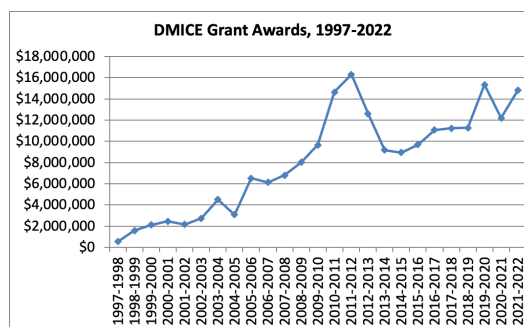
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Research accomplishments of DMICE

- In 1990s, recognized leadership and grant funding in many areas
 - Information retrieval (search) – Hersh
 - People and organizational issues – Joan Ash
 - Clinician information needs and seeking – Paul Gorman
 - SNOMED – Kent Spackman
 - Systematic reviews and meta-analysis – Helfand
- Research success and impact has continued into 21st century with ~20 faculty (primary, with ~30 jointly appointed)



Over \$200M since 1997

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A passion I never knew I had: education

- Started teaching introductory informatics course as PH 549 elective in OHSU Master of Public Health (MPH) Program in 1993
- Began planning for first graduate program, Master of Science (MS) in 1994
- After state approval, matriculated 7 students in 1996
- First graduates of program in 1998
- 1999 – first online course: introductory course converted to online format

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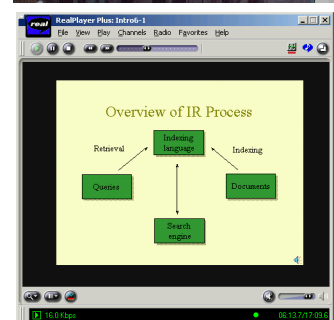
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Subsequent educational program milestones

- 2000 – Graduate Certificate (GC) online approved and launched
- 2002 – MS approved for online delivery, non-thesis master's degree established
- 2003 – PhD program approved and launched, mostly funded by NLM T15 training grant
 - Hersh became PI
- 2006 – establishment of Bioinformatics & Computational Biology (BCB) track, headed by Shannon McWeeney
 - Original track renamed to Health & Clinical Informatics (HCIN)
 - HCIN and BCB now called Majors



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More educational accomplishments

- 2005 – establishment of 10x10 (“ten by ten”) program
 - Standalone version of introductory course offered in partnership with AMIA
 - Congressman David Wu (D-OR) introduces and passes HR 461 – *10,000 Trained by 2010 Act*, although never taken up by Senate
- 2010 – awarded \$5.8M for health IT workforce development in HITECH Act
 - One of five Curriculum Development Centers (CDCs)
 - Designation as National Training and Dissemination Center to support CDCs
 - One of nine University-Based Training (UBT) Programs, which funded students in GC and MS programs
- 2015 – launched ACGME-accredited Clinical Informatics Fellowship
 - First of four programs (now ~55) – half-dozen of which use OHSU online courses
 - Program Director, Vishnu Mohan
 - Funding from OHSU, Portland VA, and OCHIN
 - Strengthened ties to OHSU clinical operations

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Informatics education for non-informaticians

- Grant from AMA, *Preparing Future Physicians: A Bold Proposal for Oregon and Beyond*, 2013-2018
 - Sr. Associate Dean George Mejicano opened door to clinical informatics curriculum in MD curriculum
- Publication of paper on competencies for health professions students (Hersh, AMEP, 2014)
- Introductory course adapted for medical students early in pandemic – 222 students from 17 medical schools in early-mid 2020
 - Still available to OHSU medical students as elective

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1. Find, search, and apply knowledge-based information to patient care and other clinical tasks
2. Effectively read from, and write to, the electronic health record for patient care and other clinical activities
3. Use and guide implementation of clinical decision support (CDS)
4. Provide care using population health management approaches
5. Protect patient privacy and security
6. Use information technology to improve patient safety
7. Engage in quality measurement selection and improvement
8. Use health information exchange (HIE) to identify and access patient information across clinical settings
9. Engage patients to improve their health and care delivery through personal health records and patient portals
10. Maintain professionalism through use of information technology tools
11. Provide clinical care via telemedicine and refer patients as indicated
12. Apply personalized/precision medicine
13. Participate in practice-based clinical and translational research
14. Apply machine learning applications in clinical care

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Where graduate program is today



International students from: Argentina, Singapore, Egypt, Israel, Saudi Arabia, Zimbabwe, Thailand, China, South Africa, and others

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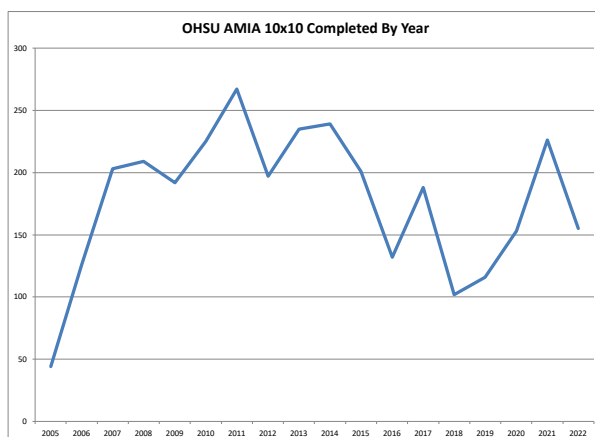
Degree	Total	BCB	HCIN
GC	483	0	483
MS	422	71	351
PhD	38	15	23
Total	943	86	857



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10x10 – passed milestone of 3000 by 2022

<https://dmice.ohsu.edu/hersh/10x10.html>



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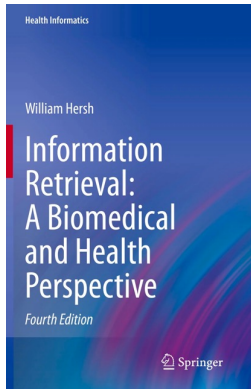
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Organization	Course Offerings	People Completing
AMIA	48	1953
American College of Emergency Physicians	14	221
American College of Physicians	1	25
Academy of Nutrition and Dietetics	7	126
Centers for Disease Control	1	18
California Health Care Foundation	1	16
Gateway Consulting (Singapore)	26	377
Ministry of Health (Israel)	1	11
King Saud University (Saudi Arabia)	4	83
Mayo Clinic	2	87
New York State Academy of Family Practice	3	22
Abu Dhabi Health Services (United Arab Emirates)	1	54
Scottsdale Institute	1	15
Society for Technology in Anesthesiology	1	5
Total	111	3013

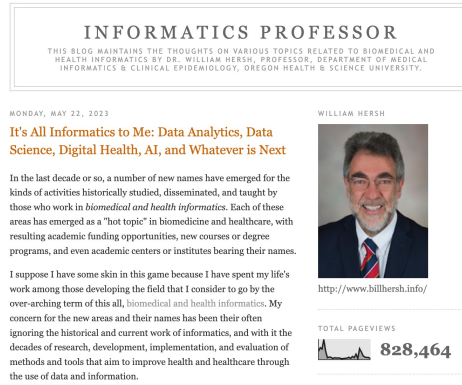


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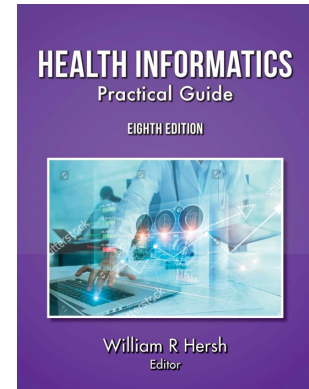
Another activity: writing



(Hersh, 2020)
<http://www.irbook.info>



Informatics Professor Blog
<https://informaticsprofessor.blogspot.com>



(Hersh, 2022)
<http://www.informaticsbook.info>

Plus over 200 papers in scientific journals and proceedings

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Future directions for DMICE

- A vibrant and internationally renowned department
 - <http://www.ohsu.edu/informatics>
- Current leadership
 - Karen Eden, Interim Chair
 - Vishnu Mohan, Vice Chair for Education
 - David Dorr, Vice Chair for Strategic Planning
- Future plans
 - National recruitment for permanent Chair likely to be launched later this year

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Reports of my retirement are greatly exaggerated

- Introductory course – BMI 510, 10x10, and MINF 705B
- NLM R01 – *Semi-structured Information Retrieval in Clinical Text for Cohort Identification*, 2021-2026
- NIH Data Science Initiative for Africa – *Computational Omics and Biomedical Informatics Program (COBIP)*, 2021-2026
- NLM T15 – *Research Training in Biomedical Informatics and Data Science at Oregon Health & Science University*, 2022-2027
- NLM R25 – *Attracting Talented and Diverse Students to Biomedical Informatics and Data Science Careers Through Short-Term Study at OHSU*, 2022-2027
- NIH Bridge2AI – *Voice as a Biomarker of Health*, Dorr (OHSU PI), 2022-2027

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Thank you!

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