The Full Spectrum Biomedical and Health Informatics Education at Oregon Health & Science University

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The full spectrum

- Informaticians
  - Academic ⬅➡ Professional
- Informatics domains
  - Bio ⬅➡ Clinical
- Educational experience
  - Primary ⬅➡ Continuing
- Beyond informaticians
  - Informaticians ⬅➡ Clinicians, researchers, etc.

OHSU

Full spectrum of OHSU informatics education programs

- Graduate
  - PhD, MS – with/without thesis
  - Online – MS, Graduate Certificate
- Fellowships
  - NLM – T15 training grant
  - Clinical – ACGME-accredited
- Continuing education
  - Clinical informaticians of all stripes
  - CME and MOC-II for clinical informatics physicians
- 10x10 – partnership with AMIA
- Health and other professionals
  - Medical students, nursing graduate students

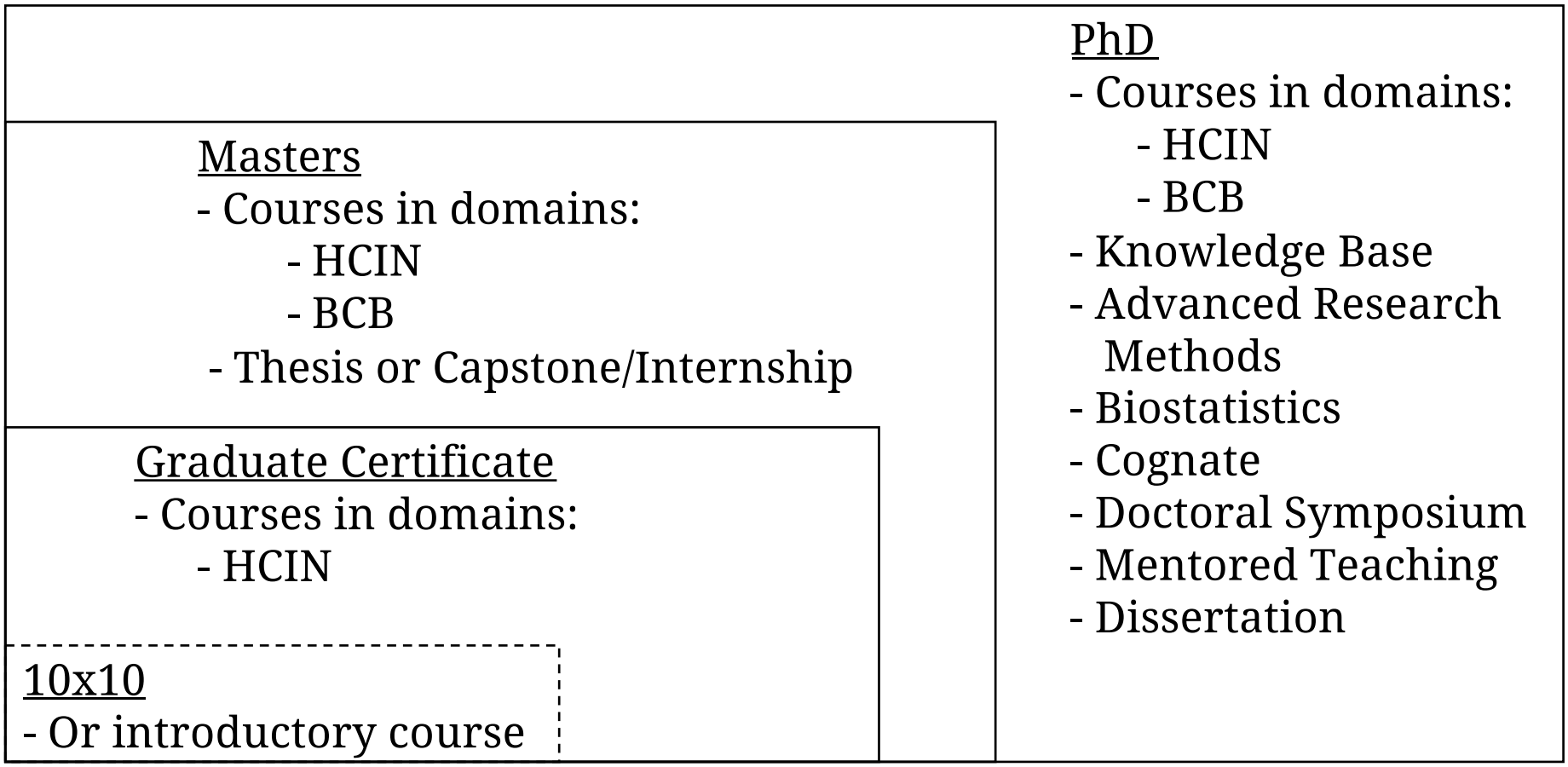
OHSU

OHSU Biomedical Informatics Graduate Program

- Aims to train future professionals, researchers, and leaders
  - http://www.ohsu.edu/informatics-education
- Two Majors
  - Health & Clinical Informatics (HCIN)
  - Bioinformatics & Computational Biomedicine (BCB)

Degree/Certificate Major	PhD	MS thesis	MS non-thesis	Graduate Certificate
HCIN	On-campus	On-campus	On-campus On-line	On-campus On-line
BCB	On-campus	On-campus	On-campus	

Curriculum building block approach



Students and alumni

International students from (among others): Singapore, Thailand, Argentina, Egypt, Israel, Saudi Arabia, Zimbabwe, China, and more

Degree	Total	BCB	HCIN
Graduate Certificate	455	0	455
Master's (any)	348	46	302
PHD	28	9	19
Total	831	55	776

Fellowships

- Primary source of financial aid for students
- NLM T15 Training Grant
  - Since 1992
  - Renewed in 2017 for another 5 years (with additional funding from NIEHS)
  - https://www.ohsu.edu/school-of-medicine/medical-informatics-and-clinical-epidemiology/fellowships
- ACGME-accredited Clinical Informatics Fellowship
  - 4th program (of ~40 now) to receive accreditation
    - Launched in 2015
    - Three cohorts graduated
    - 6th cohort will start in 2020
  - Funded by OHSU, Portland VA Medical Center, and OCHIN
  - Six other programs use OHSU online courses
  - https://www.ohsu.edu/school-of-medicine/medical-informatics-and-clinical-epidemiology/clinical-informatics-subspecialty

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Alumni accomplishments

- Faculty leaders at many universities
  - OHSU
  - Regenstrief Institute
  - Vanderbilt University
  - Harvard Medical School
  - Children's Hospital of Philadelphia
  - University of Virginia
  - University of Utah
  - University of Washington
- 11% (15 of 130) of first class of Fellows of AMIA (FAMIA)

- Some employers of our graduates
  - OHSU
  - OHSU Knight Cancer Institute
  - Providence Health System
  - Kaiser-Permanente
  - OCHIN
  - Intelligent Medical Objects
  - Intersystems
  - Deloitte
  - Epic
  - Cerner
  - National Library of Medicine
  - WebMD
  - Institute for Systems Biology

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How have OHSU students and graduates done?

- Over 20 years of experience…
- General observation: What people do when they graduate is partially dependent on what they did when they entered, e.g.,
  - Physicians, nurses, public health, etc. draw on their clinical/professional background
  - Information technology professionals draw on their unique background and experience
- Graduates have obtained jobs in a variety of settings, e.g., clinical, academic, and industry
- Growing number of opportunities in data science/analytics

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Continuing education

- 10x10 (“ten by ten”)
  - In partnership with AMIA, original and still largest 10x10 offering
    - Currently 2600 by 2019
  - Standalone version of introductory course
  - Allows entry into OHSU Graduate Program
  - https://dmice.ohsu.edu/hersh//10x10.html
- Update in Clinical Informatics
  - Update on key topics
  - CME and MOC-II credit for clinical informatics subspecialists
  - https://www.ohsu.edu/school-of-medicine/medical-informatics-and-clinical-epidemiology/2019-ohsu-annual-update-clinical

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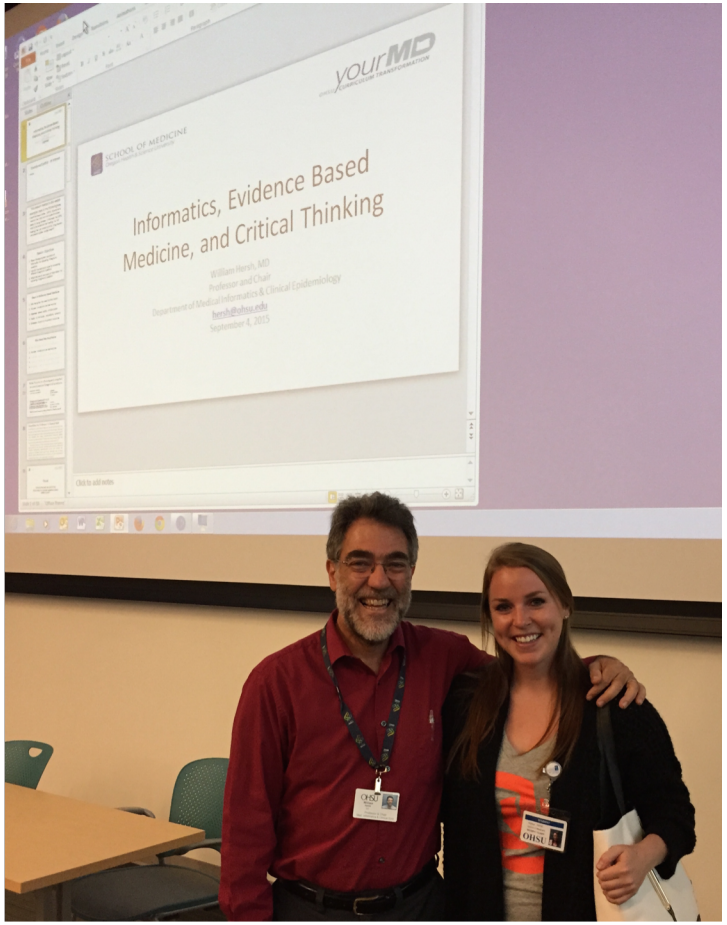
Other happenings at OHSU

- Dr. Frank Naeymi-Rad and Dr. Theresa Kepic Scholarship for Biomedical Informatics
- Teaching of informatics in other programs
  - MD curriculum
  - Basic science graduate programs
  - Undergraduate health informatics course at Portland State University



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Data science at OHSU

- First data analytics course launched in 2015
- Funding from NIH BD2K, ONC, and NLM aiding in development of curricular content
  - https://dmice.ohsu.edu/bd2k/
  - Data science for basic science PhD students and postdocs
  - Internship for college undergraduates

https://blogs.ohsu.edu/health-data/2019/03/29/data-science-biomedical-informatics-and-the-ohsu-department-of-medical-informatics-clinical-epidemiology/

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For more information

- OHSU Department of Medical Informatics & Clinical Epidemiology (DMICE)
  - Department Web site – http://www.ohsu.edu/informatics
  - Department blog – http://www.ohsu.edu/blogs/health-data/
  - Video overview – http://www.youtube.com/watch?v=T-74duDDvwU
  - Research conference videos archive – https://www.youtube.com/channel/UCCekPERb6i3xXEDQxwlCeIA
  - Twitter – @OHSUInformatics
- Bill Hersh
  - Web site – http://www.billhersh.info
  - What is Biomedical & Health Informatics? – http://informatics.health
  - Twitter – @williamhersh
  - Informatics Professor blog – http://informaticsprofessor.blogspot.com

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