Career Opportunities and Education in Biomedical Informatics

Webinar Presented by: William Hersh, MD
Runtime: 30 Minutes
Date: January 31, 2013
 Agenda

• Welcome

• Career Opportunities in Biomedical Informatics

• Overview of OHSU Biomedical Informatics Graduate Program

• Applicant Contact

• Questions
Biomedical Informatics

• The field at the intersection of health, biomedicine, computer science, and information technology that uses information to improve human health

• Main areas of focus include
  – Clinical informatics
  – Bioinformatics and computational biology
Career opportunities in Biomedical Informatics

• Largest quantity of jobs in healthcare settings but plenty of other opportunities in
  – Biomedical and clinical research, including the application of genomics and molecular biology
  – Consumer health
  – Public health
  – Imaging
Career pathways have diverse inputs and outputs

- Health care professions, e.g., medicine, nursing, etc.
- Natural and life sciences, e.g., biology, genetics, etc.
- Computer science (CS), IT, and undergrad informatics
- Health information management (HIM)
- Others, e.g., business, library and info. science

Biomedical and health informatics education (graduate level)

Jobs in:
- Healthcare systems
  - Clinical leadership
  - IT leadership
- Biomedical research
- Industry
- Academia
Job growth exceeding healthcare and general economy
Some of the job titles of our alumni

• Chief Medical Information Officer – Dwight Eisenhower Army Medical Center, Children’s Hospital of Pennsylvania
• Research Associate – OHSU Knight Cancer Institute
• Academic Faculty – OHSU, Harvard University, University of Virginia, Cornell-Weill Medical Center
• Chief Information Officer – Univ. of California Davis Medical Center
• Director of Medical Informatics, Family Medicine – University of Connecticut
• Health IT Technology Manager – State of Oregon
• Medical Director – Pfizer
• Clinical Consultant – NEOS, Ince
• Biomedical Terminology Engineer – Humedica
• Sr. Management IS Analyst – Santa Clara Valley Health & Hospital Systems
• Applications System Analyst – Legacy Health
• Area Lab Manager – Kaiser Permanente, California
• Policy Analyst – Office of Health Information Technology, Oregon
• Clinical Informaticist – Providence Health & Services
OHSU Biomedical Informatics Graduate Program

• Overall goal of program is to train future professionals, researchers, and leaders in area of biomedical and health informatics
  – Tracks focus on different areas of larger field

• Diverse students who typically fall into one of two categories
  – “First-career”
  – “Career-changers”
Program tracks

Clinical Informatics
• Original track, focused on informatics in health, healthcare, public health, and clinical research settings

Bioinformatics and Computational Biology (BCB)
• Focused on informatics in genomics, molecular biology, and their translational research aspects

Health Information Management (HIM)
• Overlapping with clinical informatics, focused on HIM profession and leading to Registered Health Information Administrator (RHIA) certification
Degrees and certificates offered

**Doctor of Philosophy (PhD)**
- For those who wish to pursue research, academia, or leadership careers

**Master of Science (MS)**
- Research master’s, including for those with doctoral degrees in other fields who wish to pursue research careers

**Master of Biomedical Informatics (MBI)**
- Professional master’s degree for practitioners and leaders

**Graduate Certificate**
- Subset of master’s degree as an introduction or career specialization
# Tracks, degrees and certificates, and availability

<table>
<thead>
<tr>
<th>Degree/Certificate Track</th>
<th>PhD</th>
<th>MS</th>
<th>MBI</th>
<th>Grad Cert</th>
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<tbody>
<tr>
<td>Clinical Informatics</td>
<td>On-campus</td>
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<tr>
<td>Bioinformatics and Computational Biology</td>
<td>On-campus</td>
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<td>On-line</td>
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<td>Health Information Management</td>
<td>On-campus</td>
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## Building block approach to graduate program

<table>
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<tr>
<th>Masters</th>
<th>PhD</th>
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<td>- Courses in domains:</td>
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<td>- Clinical Informatics</td>
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<td>- Bioinformatics</td>
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<td>- Health Information Management</td>
<td>- Knowledge Base</td>
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<tr>
<td>- Thesis or Capstone</td>
<td>- Advanced Research Methods</td>
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<tr>
<td>Graduate Certificate</td>
<td>- Biostatistics</td>
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<tr>
<td>- Courses in domains:</td>
<td>- Cognate</td>
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<tr>
<td>- Clinical Informatics</td>
<td>- Doctoral Symposium</td>
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<tr>
<td>- Health Information Management</td>
<td>- Mentored Teaching</td>
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<td>10x10</td>
<td>- Dissertation</td>
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<td>- Or introductory course</td>
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How much does it cost?

- Tuition and fees for OHSU program are comparable to other programs and we offer more value, due to
  - World-renowned faculty
  - Longevity of our program (since 1996)
  - Success at job placement in many settings
- Cost per credit varies modestly by
  - On-line vs. on-campus
  - Oregon residency
Cost and comparisons

**Online Masters Non-Residential Tuition**
- Avg: $33,665.00
- Min: $19,260.00
- Max: $60,300.00
- OHSU-MBI: $34,320.00

**On Campus Masters Non-Residential Tuition**
- Avg: $38,684.00
- Min: $19,260.00
- OHSU-MBI: $34,320.00
- OHSU-MS: $39,600.00
- Max: $79,196.00

**Graduate Certificates Non-Residential Tuition**
- Avg: $13,666.00
- Min: $4,995.00
- Max: $29,718.00
- OHSU-MBI: $21,780.00
- OHSU-CI: $15,840.00
Other programs

- Fellowships
  - Predoctoral and postdoctoral funding from National Library of Medicine, National Institutes of Health, VA, Kaiser Permanente, and others

- 10x10 (“ten by ten”)
  - Continuing education course in clinical informatics
  - Adaptation of on-line introductory course (BMI 510), with option to pursue further study at OHSU
By the numbers

- Alumni – 473 degrees awarded to 441 people
  - PhD – 12
  - MS – 71
  - MBI – 112
  - Graduate Certificate – 278

- Current enrollment
  - 55 on-campus
  - 235 distance learning

- Students from 42 states and 6 continents
Department of Medical Informatics & Clinical Epidemiology

- DMICE is a department in the OHSU School of Medicine but collaborates with others in and outside of the School

- Department leadership includes
  - William Hersh, MD - Chair
  - Cynthia Morris, PhD - Vice Chair for Education and Training
  - Joan Ash, PhD - Vice Chair for Faculty Development
  - Shannon McWeeney, PhD - Head, Division of Bioinformatics & Computational Biology
  - David Dorr, MD, MS - Vice Chair for Clinical Informatics
  - Heidi Nelson, MD, MPH - Vice Chair for Clinical Epidemiology
National and International Leadership

- 1 of 14 programs to have a National Library of Medicine Training Grant for PhD and postdoctoral students
- 1 of 9 programs funded under the Office of the National Coordinator Health IT Workforce Development Program
- 1 of 8 programs funded by the NIH Fogarty Center Informatics Training for Global Health Program, in collaboration with Hospital Italiano de Buenos Aires
- Consistent recipient of research funding, appointment to national leadership positions, publication in high-profile journals, etc.
- Clinical epidemiology program also highly successful, especially in areas of evidence-based medicine, comparative effectiveness research, etc.
Opportunities for practicum and internship experiences

Locally and remotely:

- OHSU Hospitals and Clinics
- Oregon Clinical and Translational Research Institute
- OHSU Knight Cancer Institute
- Kaiser Permanente
- Providence Health & Systems
- Office of the National Coordinator for Health IT
- Institute for Systems Biology
- Impact Advisors
- Intel Corp.

- And many more!
Program Contact

For additional questions about the program, please contact:

• Lauren Ludwig, Recruiting & Admissions Coordinator
  Email: ludwigl@ohsu.edu
  Phone: 503-494-2252

Also visit:

• http://www.ohsu.edu/informatics-education
• http://informaticsprofessor.blogspot.com