



# New Student Orientation

Health and Clinical Informatics Graduate Program

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Nicole Weiskopf, PhD  
Associate Director, Health & Clinical Informatics Graduate Program  
Department of Medical Informatics & Clinical Epidemiology  
School of Medicine  
Oregon Health & Science University  
Portland, OR, USA

# Agenda

- HCIN Program Personnel
  - Teaching Faculty
  - Education Staff
- Student Body
- Curriculum Overview
- Course Specifics
- University Resources
- Career Information

# Who We Are

## HCIN Teaching Faculty

Bill Hersh	James McCormack
Steven Bedrick	Vishnu Mohan
Steve Chamberlin	Ben Orwoll
Aaron Cohen	Abhijit Pandit
Karen Eden	Kathryn Pyle
Tracy Edinger	Joanne Valerius
Chris Hoekstra	Lorne Walker
Michael Lieberman	Nicole Weiskopf

## Education Staff

Vanessa Reeves – Education Coordinator (Masters & Certificate Students)	Lauren Ludwig – Student Support (PhD Students)
Lynne Schwabe – Program Coordinator, CI Fellowship	Monica Garlough – Administrative Assistant

# Who You Are

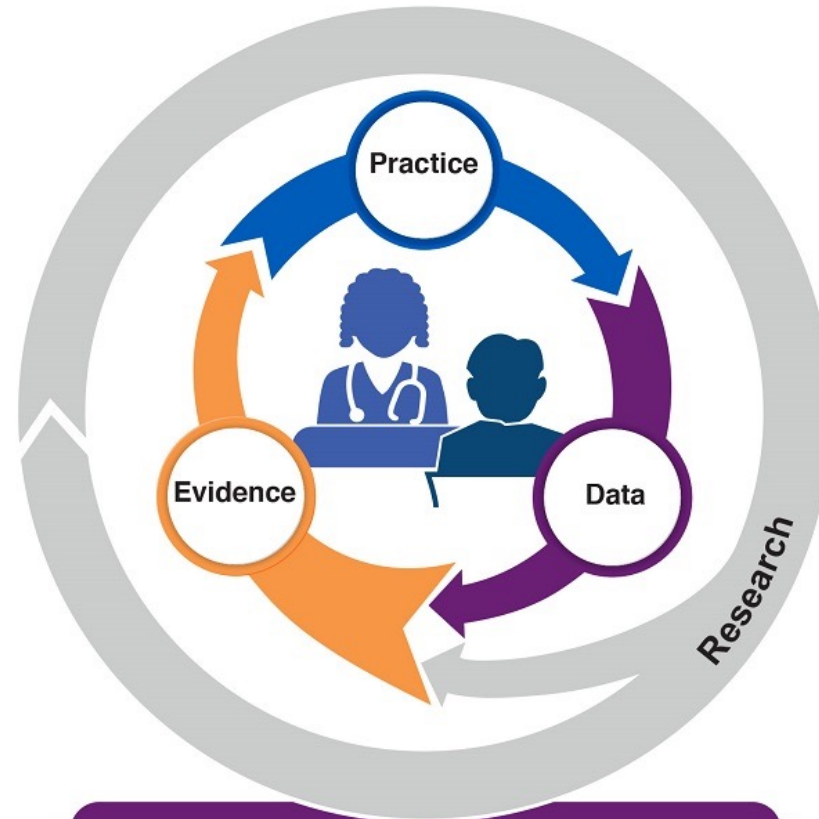
## Health & Clinical Informatics

2023 HCIN Matriculating Class	Current HCIN Student Body
0 – PhD Students	5 - PhD Students
9 – Master's Students	41- Master's Students
13 – Certificate Students	35 - Certificate Students

# Health & Clinical Informatics (HCIN) major

- Our goal is to educate future researchers, analysts, developers and managers of health information systems, and operational leaders
- Students are provided a strong grounding in
  - clinical informatics
  - health and medicine
  - computer science
  - data science
  - organizational behavior
  - research methods
- ...so that they may assume positions that require domain knowledge of the health care environment and systems, and expertise in relevant methodological approaches

# Learning Health Systems



**Systematically gather and create evidence.**

**Apply the most promising evidence to improve care.**

# Curriculum

- Curriculum in each major for degree programs (certificate, master's and PhD) organized into domains, each of which may have courses that are
  - Required
  - Individual competency (selective)
  - Elective
- Core curriculum of degree programs is knowledge base plus additional courses
  - MS thesis = knowledge base + thesis
  - MS non-thesis = knowledge base + capstone (can be project-based or internship)
  - PhD = knowledge base + advanced coursework + dissertation

# Curriculum – organized by degree and domains, each of which have specified courses

Graduate Certificate – 21 credits	
Core Courses	Required (9 cr.) BMI 510 - Introduction to Biomedical Informatics BMI 512 – Clinical Information Systems BMI 517 – Organizational Behavior
Electives	Electives (12 cr.) Four - BMI 500 Level courses in the course catalog (ensuring any prerequisites have been met)





Domain Names for HCIN Major	Master of Science Thesis – 55 credits, Capstone/Internship – 49 credits
Biomedical Informatics	<u>Required (3 cr.)</u> BMI 510 – Introduction to Biomedical Informatics <u>Individual Competency (3 cr.)</u> BMI 512 - Clinical Information Systems (3 cr.) BMI 516 – Standards for Interoperability (3 cr.)
Healthcare	<u>Required (3 cr.)</u> BMI 530 – The Practice of Healthcare <u>Individual Competency (3 cr.)</u> BMI 537 – Healthcare Quality BMI 538 – Medical Decision Making
Computer Science	<u>Required (6 cr.)</u> BMI 540 – CS and Programming for Clinical Informatics (3 cr.) BMI 544 – Databases (3 cr.) <u>Individual Competency (3 cr.)</u> BMI 524 – Analytics for Healthcare (3 cr.) BMI 546 – Software Engineering (3 cr.) BMI 548 – Human Computer Interaction (3 cr.)
Evaluative Sciences	<u>Required (7 cr.)</u> BMI 560 – Design and Evaluation in Informatics (3 cr.) BSTA 525 – Introduction to Biostatistics (4 cr.) <u>Individual Competency (3 cr.)</u> BMI 561 – Qualitative Research Methods (3 cr.)
Organizational Behavior and Management	<u>Required (6 cr.)</u> BMI 517 – Organizational Behavior and Management BMI 518 – Project Management
Thesis/Capstone/Internship Prep	<u>Required (6 cr.)</u> BMI 570 – Scientific Writing and Communication for Informatics BMI 576 – Managing Ethics in Biomedical Informatics
Thesis/Capstone/Internship	BMI 503 – Thesis (12 cr.) – or – BMI 580 Capstone (6 cr.) – or – BMI 591 Internship (6 cr.)



# Mapping out course of study Masters and Certificate Students

- Work with Vanessa Reeves (and your mentor if appropriate) to plan your individual course of study for Masters and Certificate Students.
  - [Student Resources](#) webpage has the program major requirements and [curriculum forecasting sheets](#) by degree
  - [Class Information](#) webpage has information for schedule of courses taking place during the academic year

# Mapping out course of study PhD Students

- Work with Lauren Ludwig (and your mentor if appropriate) to plan your individual course of study for PhD Students.
  - [Student Resources](#) webpage has the program major requirements and [curriculum forecasting sheets](#) by degree
  - [Class Information](#) webpage has information for schedule of courses taking place during the academic year

# Course Registration

Complete registration online.

Course schedules are provided class information webpage:

<https://www.ohsu.edu/school-of-medicine/medical-informatics-and-clinical-epidemiology/class-information>

Forecasting worksheets are available and can be used as guidelines for planning your schedule:

<https://www.ohsu.edu/school-of-medicine/medical-informatics-and-clinical-epidemiology/curriculum-forecasting>

9.0+ credits = full-time student status; 5.0 credits = part-time student status.

# Course Evaluations

The Sakai Course Evaluation Tool has been created to allow increased access to the course evaluations that are a required part of the School of Medicine curriculum. The tool is built into Sakai online courses.

Course evaluations are completed on a term-by-term basis and are a required part of the curriculum.

The feedback is instrumental in faculty planning future course offerings.

# Academic Calendar

Fall 2023	Schools of Medicine & Dentistry
Registration begins (7:30 AM Pacific)	8/14/2023
Term begins	9/25/2023
Last day to register or add classes	9/29/2023
Last day to drop classes (no W on transcript)	10/6/2023
Last day to change grading option to audit	10/6/2023
Last day for 100% refund	10/6/2023
Last day for 50% refund	10/20/2023
Last day to apply to graduate for the term	10/20/2023
Last day to withdraw from classes with a W (withdraw) mark	10/27/2023
Last day to withdraw from classes with a WP (withdraw passing) or WNP (withdraw non-passing) mark	12/8/2023
Term ends	12/15/2023
Grades due	12/22/2023

Winter 2024	Schools of Medicine & Dentistry
Registration begins (7:30 AM Pacific)	11/27/2023
Term begins	1/8/2024
Last day to register or add classes	1/12/2024
Last day to drop classes (no W on transcript)	1/19/2024
Last day to change grading option to audit	1/19/2024
Last day for 100% refund	1/19/2024
Last day for 50% refund	2/2/2024
Last day to apply to graduate for the term	2/2/2024
Last day to withdraw from classes with a W (withdraw) mark	2/9/2024
Last day to withdraw from classes with a WP (withdraw passing) or WNP (withdraw non-passing) mark	3/15/2024
Term ends	3/22/2024
Grades due	3/29/2024

Spring 2024	Schools of Medicine & Dentistry
Registration begins (7:30 AM Pacific)	2/20/2024
Term begins	4/1/2024
Last day to register or add classes	4/5/2024
Last day to drop classes (no W on transcript)	4/12/2024
Last day to change grading option to audit	4/12/2024
Last day for 100% refund	4/12/2024
Last day for 50% refund	4/26/2024
Last day to apply to graduate for the term	4/26/2024
Last day to withdraw from classes with a W (withdraw) mark	5/3/2024
Last day to withdraw from classes with a WP (withdraw passing) or WNP (withdraw non-passing) mark	6/14/2024
Term ends	6/21/2024
Grades due	6/28/2024



# University Resources

- Curriculum requirements
- Information for enrolled students
- Course information (catalog, schedule, etc.)
- Rules and requirements
- Professional conduct policy

<https://www.ohsu.edu/school-of-medicine/medical-informatics-and-clinical-epidemiology/current-student-resources>

# Thursday Research Conferences

Most Thursdays, at 11:30, the department will host an Informatics Research Conference

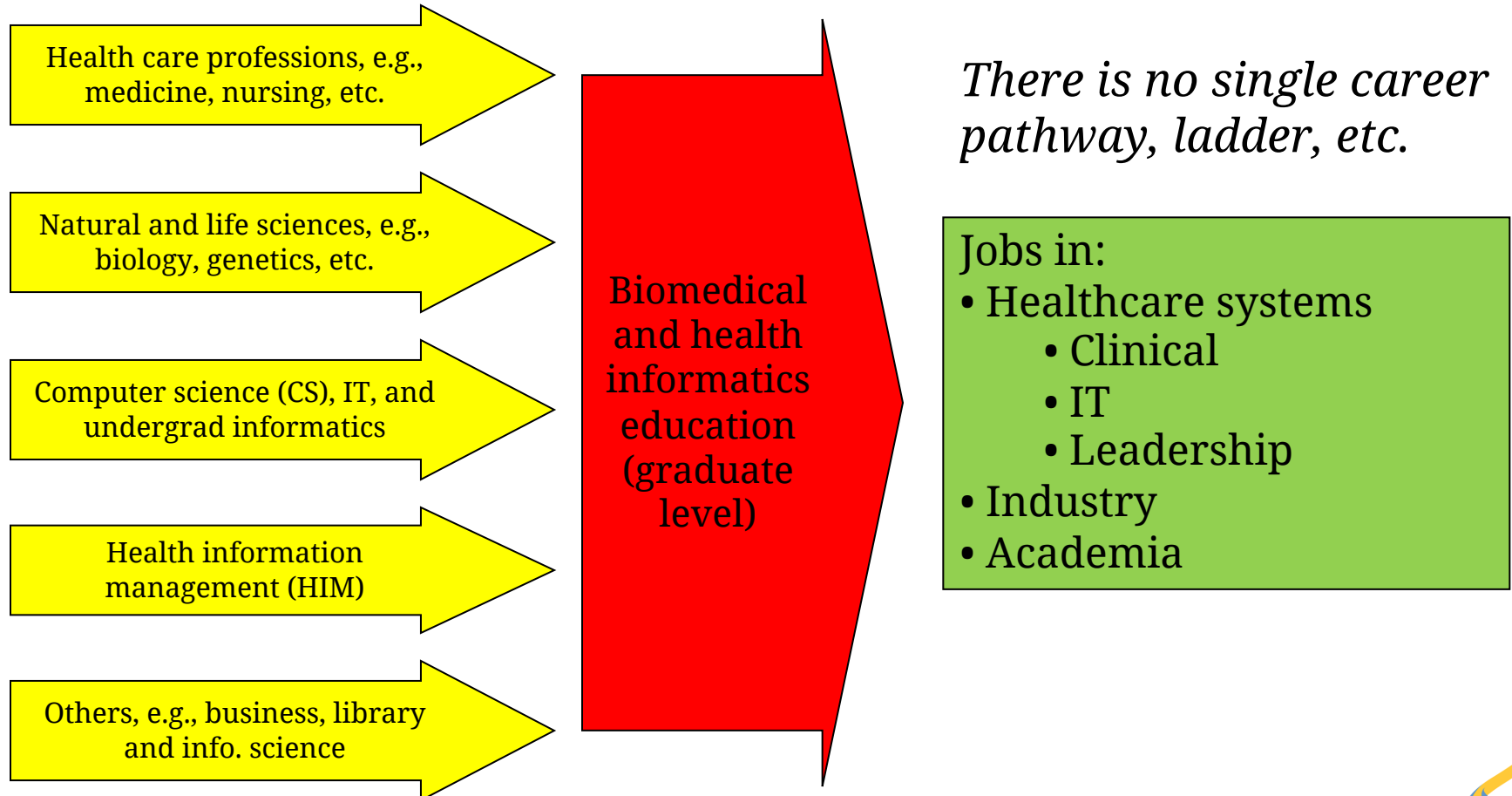
- An opportunity to learn about new developments in the field
- Forum for students to present proposal, symposium, defense, and research in progress talks
- Forum for faculty to present current research in progress talks
- Presentations are recorded and posted to the DMICE YouTube channel



# Informatatics is not a spectator sport

- Many possible “on the ground” activities available, even by virtual means
  - Faculty research projects
  - Experiences in operational settings, including within OHSU Health system
- Can be done as internship or practicum experiences, possibly evolving into more

# HCIN career pathways have diverse inputs and outputs



# Some job titles and employers –

- Healthcare Data Analyst
- Quality Associate
- Physician/Clinical Informaticist
- Data Scientist
- Application System Analyst
- Data Reporting
- Chief Medical Information Officer
- User Experienced Lead
- Medical Liaison
- Clinical Safety Officer
- Consultant
- Chief Medical Advisor
- OHSU
- Providence Health System
- Kaiser-Permanente
- OCHIN
- Impact Advisors
- Genentech
- Cambia
- Schroedinger
- Stanford University
- National Library of Medicine
- Peace Health
- Amazon
- Disney

# Who to go to

In the past, students have voiced concern about where to go with problems. You should try the most direct route to get your answers.

**Course issues:** First go to your instructor about issues. If you do not hear from your instructor, contact your TA. If you do not hear from the TA, contact Vanessa Reeves.

**Program Issues:** General education issues should be directed to Vanessa Reeves for Masters and Certificate Students; Lauren Ludwig for PhD Students.

**Other issues:** If you have issues that are NOT about coursework, but are more about administrative issues (registration, program completion, etc) contact Vanessa Reeves.

# Thank You!

Nicole Weiskopf

Associate Director, Health & Clinical Informatics Graduate  
Program

Department of Medical Informatics & Clinical Epidemiology  
School of Medicine

Oregon Health & Science University

Portland, OR, USA

Email: [Weiskopf@ohsu.edu](mailto:Weiskopf@ohsu.edu)

# Domains of applied health informatics practice (Gadd, 2020)

- Domain 1: Foundational Knowledge
  - Fundamental knowledge and skills that provide health informaticians with a common vocabulary, basic knowledge across all health informatics domains, and understanding of the environment in which they function.
- Domain 2: Enhancing Health Decision-making, Processes, and Outcomes
  - Support and enhance decision-making by clinicians, patients, and public health professionals; analyze existing health processes and identify ways that health data and health information systems (HIS) can enable improved outcomes; evaluate the impact of HIS on practice; pursue discovery and innovation in HIS and informatics practice.
- Domain 3: Health Information Systems
  - Plan, develop or acquire, implement, maintain, and evaluate health information systems that are integrated with existing information technology systems across the continuum of care including clinical, consumer, and public health domains, while addressing security, privacy, and safety considerations.
- Domain 4: Data Governance, Management, and Analytics
  - Establish and maintain data governance structures, policies, and processes. Acquire and manage health-related data to ensure their quality and meaning across settings and to utilize them for analysis that supports individual and population health and drives innovation.
- Domain 5: Leadership, Professionalism, Strategy, and Transformation
  - Build support and create alignment for informatics best practices; lead health informatics initiatives and innovation through collaboration and stakeholder engagement across organizations and systems.

# Clinical informatics subspecialty practice (Silverman, 2019)

- Domain 1: Fundamental Knowledge and Skills
  - Fundamental knowledge and skills which provide clinical informaticians with a common vocabulary, basic knowledge across all Clinical Informatics domains, and understanding of the environment in which they function.
- Domain 2: Improving Care Delivery and Outcomes
  - Develop, implement, evaluate, monitor, and maintain clinical decision support; analyze existing health processes and identify ways that health data and health information systems can enable improved outcomes; support innovation in the health system through informatics tools and processes.
- Domain 3: Enterprise Information Systems
  - Develop and deploy health information systems that are integrated with existing information technology systems across the continuum of care, including clinical, consumer, and public health domains. Develop, curate, and maintain institutional knowledge repositories while addressing security, privacy, and safety considerations.
- Domain 4: Data Governance and Data Analytics
  - Establish and maintain data governance structures, policies, and processes. Incorporate information from emerging data sources; acquire, manage, and analyze health-related data; ensure data quality and meaning across settings; and derive insights to optimize clinical and business decision making.
- Domain 5: Leadership and Professionalism
  - Build support and create alignment for informatics best practices; lead health informatics initiatives and innovation through collaboration and stakeholder engagement across organizations and systems.

# AMIA informatics practice workforce analysis

## Health Informatics

Domains	Task statements	KS statements
Domain 1. Foundational Knowledge and Skills	NA	31
Domain 2. Enhancing Health Decision-making, Processes, and Outcomes	11	21
Domain 3. Health Information Systems	26	36
Domain 4. Data Governance, Management, and Analytics	17	28
Domain 5. Leadership, Professionalism, Strategy, and Transformation	20	28
Total	74	144

## Clinical Informatics Subspecialty (CIS)

Domains	Task statements	KS statements
Domain 1. Foundational Knowledge and Skills	NA	26
Domain 2. Improving Care Delivery and Outcomes	7	28
Domain 3. Enterprise Information Systems	16	33
Domain 4. Data Governance and Analytics	10	27
Domain 5. Leadership and Professionalism	9	28
Total	42	142

(Silverman, 2019; Gadd, 2020)