

University of Minnesota Health Informatics Graduate Program: Education, Research and Practice

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Roadmap

- Program Offerings
- Recent/Current Analytics Research Work
- UPHI Training Opportunity
- Future of the field

HINF Program Offerings

- MHI-Masters of Health Informatics
- MS-Masters of Science
- PhD-Doctor of Philosophy
- Minor in Health Informatics (U of M Graduate Students)
- 84 current students (mix of full and part-time)
- Approximate 35 PhD students
- Most core offerings available as online/hybrid content

Core Training

- Database training (SQL and Data Modeling)
- Human Computer Interaction and Python programming for interface development
- Project Management
- Clinical Training (Informatics and Workflow)
- Ontology: LOINC, SNOMED, etc
- Data Standards: HL7, NCPDP, RxNorm, etc.
- Natural Language Processing (Intro/Directed)
- Data Mining (Intro Req/Directed)
- University Electives: Computer Science, Statistics, Knowledge Management, others

Ongoing Research

- Nursing Minimal Data Sets—Data exploration and knowledge discovery
- Natural Language Processing—Development of open source toolset: BioMedicus
- Telehealth: Great Plains Telehealth Resource and Assistance Center
- Drug Safety: Drug-drug Interaction and Adverse Drug Assessment
- Clinical Decision Support—Many types
- Peri-operative Clinical Safety—Preoperative to post-operative outcomes

Recent Developments

- Planned recruitment and program expansion into additional areas including health data analytics
- Planned expansion of part-time professors— opportunity for those with skills to train the next generation of Health Informatiscs experts
- Awaiting results of CTSA-Clinical Translational Science Award Grant
 - Create multi-site clinical data warehouse
 - Programmatic support of information infrastructure
 - Coordination of existing bench to bedside data will provide substantial research opportunities.

Training and Collaboration Opportunities



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University Partnership for Health Informatics

UPHI

University of Minnesota – Twin Cities

College of St. Scholastica

University of Minnesota – Crookston

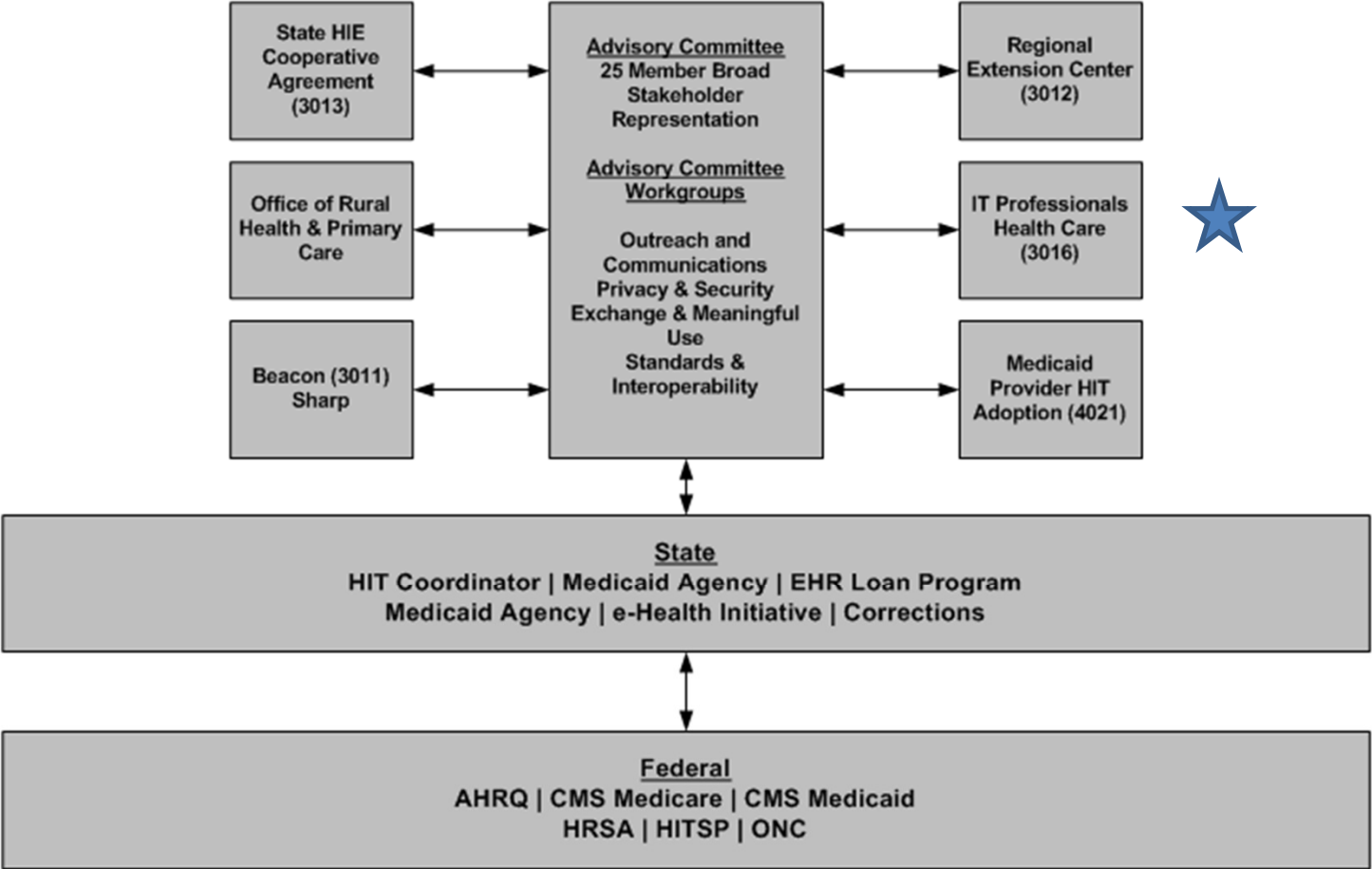
ONC funded training program for
the next two years

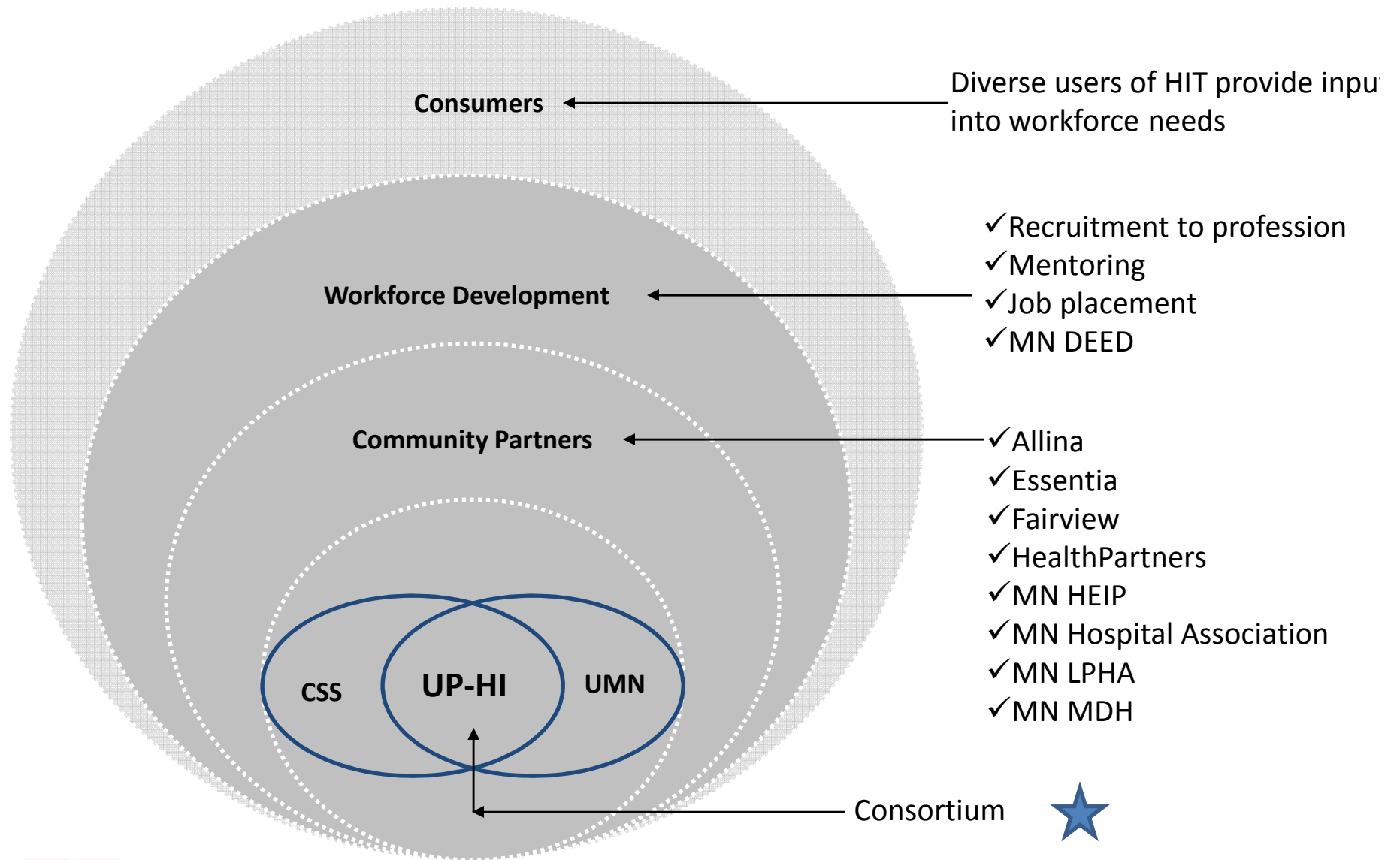


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Key Relationships for Supporting ARRA and HITECH Activities in Minnesota





Diverse users of HIT provide input into workforce needs

- ✓ Recruitment to profession
- ✓ Mentoring
- ✓ Job placement
- ✓ MN DEED

- ✓ Allina
- ✓ Essentia
- ✓ Fairview
- ✓ HealthPartners
- ✓ MN HEIP
- ✓ MN Hospital Association
- ✓ MN LPHA
- ✓ MN MDH



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University Partnership for Health Informatics

- Private-public partnership
- UMN – Twin Cities
 - Institute for Health Informatics
 - School of Nursing
 - School of Public Health
 - Computer Science Department
- UMN – Crookston
 - Software Engineering
 - Applied Health program
- College of St. Scholastica
 - School of Health Sciences
 - School of Nursing

UP-HI Mission

Committed to improving human health and the delivery of health care services, The University Partnership for Health Informatics' mission is to recruit, train, and place university graduates in vital health information technology roles to meet our nation's healthcare workforce needs.



Funding Support

- \$5,145,705 million grant was awarded
- 2nd highest of 9 grants given by ONC
- 3 year funding (going into year 2 this fall)
- Supports
 - Course enhancement
 - Collaborative activities
 - Tuition for students
 - Community partnership

Advantages of UP-HI

- Collaboration across institutions to provide premier, world-class health informatics education
- Student tuition of up to \$10,000 (some stipends for longer MS programs)
- Web-portal for sharing across schools
- Journal club to exchange ideas
- Work context immersion
- Community-partnership for advice, teaching, mentorship and career placement

Training Roles

- Focused areas of training directed by Office of the National Coordinator
- 6 primary roles for training
- Provide specific tailored training to support health informatics related work as well as for future work
- Mix of training levels from certificate to MS degrees are supported.

| Roles | Description |
|---|---|
| Clinician/Public Health Leader | Lead the successful deployment and use of health IT to achieve transformational improvement in the quality, safety, outcomes, and thus in the value. |
| Health Information Management and Exchange Specialist | Support the collection, management, retrieval, exchange, and/or analysis of information in electronic form, graduates of this training would typically not enter directly into leadership or management roles. |
| Health Information Privacy and Security Specialist | Be qualified to serve as institutional/organizational information privacy or security officers. |
| Research and Development Scientist | Support efforts to create innovative models and solutions that advance the capacities of health IT and conduct studies on the effectiveness of health IT and its effect on health care quality. |
| Programmers and Software Engineer | Be the architects and developers of advanced health IT solutions. These individuals will be cross-trained in IT and health domains. |
| Health IT Sub-specialist | Combine health care or public health generalist knowledge, knowledge of IT, and disciplines that inform health IT policy or technology. They could be employed in research and development settings, and could serve as teachers. |



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Types of Education

- Type 1
 - Typically of one year duration or less, leading to award of an institutional certificate or a master's degree without thesis.
 - Funding up to \$10,000 for informatics courses
 - Funding for 218 (174 certificate, 44 degree) students
- Type 2
 - Typically of a maximum of two years' duration, leading to award of a master's degree with thesis.
 - Up to \$16,000 tuition and mandatory fees, up to \$15,000 stipend, up to \$2,000 in health insurance
 - Funding for 19 degree students

Program Delivery

- All content operationalized this year— including extensive online offerings
- Some are in person only
- Moving toward primarily web-based courses or mixed model of web and in person
- Programs may have “petitioning” process to opt out of courses based on equivalent education/ experience

Programs by Role in UP-HI

| Academic Entity in UP-HI | Program | Certificate/ Degree |
|--------------------------------------|--|---|
| UMN Institute for Health Informatics | Health Informatics | <ul style="list-style-type: none"> • Master in Health Informatics • Master of Science in Health Informatics (MHI) • Minor in Health Informatics |
| UMN School of Public Health | Public Health Informatics | <ul style="list-style-type: none"> • Preparedness, Response, Recovery Certificate (electives in HI) • MS in Health Services Research, Policy, Administration (minor in HI) |
| UMN School of Nursing | School of Nursing | <ul style="list-style-type: none"> • Post DNP Certificate in Nursing Informatics • Clinical/ Public Health Leader in Health Information Technology |
| UMN Computer Science and Engineering | Computer Science | <ul style="list-style-type: none"> • Masters in Computer Science (minor in Health Informatics) |
| UMN Crookston | Software Engineering Applied Health Program | <ul style="list-style-type: none"> • Health Informatics Minor for Software Engineers • Health Informatics Specialist Certificate |
| College of St. Scholastica | School of Nursing School of Health Sciences | <ul style="list-style-type: none"> • Nursing Informatics Certificate • Health Information Management & Exchange Specialist Certificate • MS In HIM/ HIM Exchange |

Process

- Students admitted to University programs first
 - May choose to enroll in UP-HI based on potential funding and interest
- Apply to UP-HI for tuition support
- First enrollment into ONC funding under UP-HI this fall
- Enrollment depends on match between student qualifications and funded slots by program



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Funding Eligibility

- Admission into one of the certificate or degree programs under the UP-HI consortium
- Apply for funding under a specific role
- Completion of two essay questions
 - Background in informatics, reason interested in specific role
 - Plans for applying the skills and knowledge from UP-HI education to improve human health and the delivery of health care services?
- Emphasis on public health in addition to clinical, IT, and HIM professionals

Requirements

- Completion of all required courses within appropriate time frames for program
- Participation in journal club
- Participate in feedback and evaluation
- Commitment to applying education to support meaningful use of EHRs and HIT

http://www.uphi.umn.edu/

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University Partnership for Health Informatics (UP-HI)

About UP-HI Admissions Programs Roles & Training UP-HI Partners & Projects Workforce Development



What is UP-HI?

UP-HI (University Partnership for Health Informatics) has been created to train new health professionals who can assist in the transition of health care systems from paper to digital records – in the form of patients' electronic health records, prescriptions, best treatments/therapies and more. UP-HI members include the University of Minnesota Twin Cities, College of St. Scholastica and the University of Minnesota-Crookston. The consortium will train Health Informatics professionals in six different specialties that take 6-24 months to complete with the aim of improving the efficiency of the health care system to save money for providers and patients.



News & Announcements

[What is the media saying about UP-HI?](#)
Read recent media articles on the partnership.
04/23/10

More Information



Join Our Online Community



How Can You Participate?

- Keep informed
- Inform others
- Enroll in a program/ get educated
- Be a community partner
- Volunteer to teach/ mentor
- Notify of career placements available

Future of Health Informatics

- Accountable Care Organization needs will heavily leverage informatics tools and techniques
 - Use of information technology to better understand and measure health care delivery, quality and risk assessment
- Budget limits will force rationing? If so, better to use Clinical Informaticians to understand what works and does not to prioritize resources
 - VA
 - IHS
- Development of formal Clinical Informatics medical subspecialty
 - Likely to occur in next calendar year
 - Opportunity for clinicians to get formal recognition of the specialty
 - Plans to extend specialty to non-clinicians in later years
- Full implementation of electronic records likely to continue in years to come
 - Expansion of computable health data will increase demand
 - Just getting to interesting work of health informatics (Implementation of EMR=turn on computer)
 - Substantial need to understand health data analytics and clinical text processing to better appreciate clinical setting

Questions?

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