Health Informatics Short Course

Our dependence on information grows every day. To meet this need, informaticians around the world are making advances that enable us to better use information to improve human health. The Duke Center for Health Informatics’ innovative curriculum focuses on the future of health informatics and provides practical knowledge that investigators, research teams, informaticians, and administrators can use.

The Duke Health Informatics Short Course, led by Dr. Ed Hammond, is designed to provide an intense and comprehensive overview of the field of health informatics.

William Ed Hammond, PhD  
DCHI Director

Who should attend?

This program is designed for individuals who:

- want to learn more about the field of health informatics.  
  (Prior knowledge about health informatics is not required!)
- work in the fields of health care, technology, or research and have general knowledge about informatics but would like to deepen their expertise.
- are interested in learning how to apply informatics solutions to real world problems.

Training Programs

- Each Duke Short Course is custom-designed to meet the needs and interests of the attendees.
- Instructors are Duke faculty members and subject matter experts.
- A Short Course can entail between one to five days of classroom time.
- Interactive exercises are provided to reinforce learning.
- Our Short Courses are held either on Duke’s campus or at your site.
What is informatics? Definition of the discipline
A broad overview of the history of health care, research, and genomics informatics, defining the industry, and reviewing the current trends.

The Political Scene: Who are the stakeholders and what are the goals?
A primer on current legislation and key organizations that influence informatics on the national and international scene.

Clinical Information Systems II; EHR, RHIOs, and HIEs; NHIN
A description of the various networks and methods that link information systems across organizations, states, regions, and the nation. Examples are included of current networks and the gaps that need to be addressed to fully implement these systems.

Meaningful Use and Electronic Health Records
Overview of the Meaningful Use program, its purpose, and the stages to meet the goal of improving outcomes. This class includes a look at the principles behind the design, development, implementation, and evaluation of Electronic Health Records (EHRs) as defined within the Meaningful Use program.

Imaging and Visualization Informatics
Uses of imaging and visual simulation in healthcare settings, education, and research informatics. Includes demos of various virtual reality tools used in multiple settings to promote learning and communication.

Usability and Human Factors
Understanding how user interfaces are designed for effective human interaction and a look at various approaches to evaluation and testing designs for multiple types of users.

Evaluation Techniques
Description of the various types of evaluation techniques used to assess system design, implementation, and usability. Learn what types of techniques to use and when.
Secondary Data Use/Data Mining
Definition of primary and secondary data use, examples of secondary data uses, and an overview of data quality in healthcare.

Geospatial Analysis
An overview of the use of community and medical information in geospatial mapping to identify population healthcare needs used to design interventions and support programs that foster health.

Public Health Informatics
Tools and methods used to improve surveillance and reporting for public health.

Creating the Business Case for HIT
Insights on lowering the cost of medicine using Health Information Technology (HIT) can impact outcomes. Includes a review of a case study and cost simulations.

Clinical Decision Support
A broad overview of Clinical Decision Support (CDS), the standards to support CDS, and a view of current research on CDS projects and their potential impact on the community.

Health Standards for Networking and Interoperability
A description of the various data standards available, their application in HIT, and how they influence interoperability.

Data Elements and Data Governance
Definition of data elements, their purpose, and the methodology used to develop common data elements. Also an overview of the national data standards development projects in progress.

Data Structures
Controlled Terminologies and Ontologies: Explores the various terminologies currently used in health care and research, and the definition of ontologies and their benefits in creating HIT more efficiently. Includes a review of SNOMED, LOINC, ICD, MedDRA, RxNorm, and others.
Clinical Data Warehousing and Data Mining
Applications of clinical data warehouse analytics and approaches for secondary data use for registries, clinical research, comparative effectiveness research (CER), health quality improvement, and population and public health research.

Genomics Informatics
An overview of the basic principles for advancing genomic and personalized medicine using informatics. Approaches for how EHRs consume and display genomic information for decisions, taking into account privacy issues.

CPOE/ePrescribing
The benefits of computerized physician order entry (CPOE) and the challenges in implementation and evaluating the impact on clinical outcomes.

The Roles and Workflow for HIT
A description of the changing workforce with the expansion of HIT, and the skills needed to develop, implement, and use information systems.

Privacy and HIPAA: What does this mean in HIT?
Defining the Health Insurance Portability and Accountability Act (HIPAA) and discussing how it is applied in the clinical setting with new technology.

Translational Medicine
A review of current challenges in realizing the goal of using HIT to foster translational medicine from the basic sciences to the community.

Clinical Research Informatics
A description of this emerging field, the standards available, the gaps in informatics support, and examples of how informatics advances are used in clinical research.

Natural Language Processing
A high-level discussion of algorithms used to process human language, or linguistic information, to solve practical problems.