

Informatics

Chair

- Juan Pablo Hourcade (Computer Science/Nursing)

Graduate degrees: MS in informatics; PhD in informatics

Graduate certificate: informatics

Faculty: <https://cs.uiowa.edu/people>

Website: <https://informatics.grad.uiowa.edu/>

The Interdisciplinary Graduate Program in Informatics (IGPI) was proposed in 2006, largely motivated by the increasing amount of research at the intersection of computational disciplines and the humanities, arts, and the natural, biological, health, and social sciences. The proposal to establish the program emphasized the rapid changes brought about by information technology and how they in turn changed approaches across a wide variety of disciplines. Among these changes were the ability to ask different types of questions and analyze information at scales not previously possible.

The program aimed to fill a gap in training for practitioners and researchers who could provide a bridge between computing and other disciplines. IGPI graduates would receive training in core computational and statistical topics and combine it with coursework in a cognate area.

Changes in computing and how it affects society and scholarship make informatics even more relevant today than it was in 2006. One of the key changes has been in the increasing ubiquity of computer devices that facilitate communication and information access. These trends clearly point toward a near future where most people will be able to communicate with most other people around the world, as well as access any information, anytime, anywhere. The main barriers are likely to be political instead of technological. These changes mean that computers are directly affecting the way most people perceive the world, remember information, pay attention, communicate, learn, and make decisions.

This ubiquity means that it is becoming increasingly difficult to exercise one's basic rights and fulfill basic needs without using interactive technologies. People use computers to vote, to stay informed, and to express and share opinions. In addition, people use computers to ride public transportation, get money from banks, and pay for groceries. Hence, there are increased responsibilities in the design of computing systems, as well as the need to study their impact on society.

One final trend that is germane to informatics is the increasing availability and low cost of digital storage and processing, together with the wide availability and use of sensors, digital instruments, and other forms of capturing digital data. The result has been a tremendous growth in the amount of data available to scientists, businesses, and government. These changes have brought about the need for novel analysis techniques, for researchers and practitioners who can understand the data and these techniques, as well as the need to design these systems so they can enable new discoveries and insights while safeguarding privacy.

This world, where computers are playing a vital role not only in academic disciplines, but in society at large, calls for practitioners and researchers who can understand computing and also interface with other fields. IGPI was developed to fill this gap. The program is interdisciplinary, involving the Graduate College, the Carver College of

Medicine, the Tippie College of Business, and the Colleges of Dentistry, Engineering, Liberal Arts and Sciences, Nursing, Pharmacy, and Public Health. Students may pursue a Master of Science degree in informatics (with one of three cognates in geoinformatics, health informatics, or human-computer interaction) or a PhD in informatics. University of Iowa graduate students in other programs may elect to earn a Certificate in Informatics in addition to their main program of study. All three programs complete the same core courses, with flexible electives which allow students to focus on the subarea of greatest interest to them.

Geoinformatics provides methods and technologies needed to measure, store, analyze, manage, and visualize information about phenomena occurring on or near the earth's surface. It is an increasingly essential technology for understanding and managing the complex world.

Health informatics uses contemporary information technologies to improve the storage, organization, retrieval, and evaluation of health information in order to support clinical, clinical research, and public health applications.

The human-computer interaction cognate is intended for students interested in designing useful and usable technologies. The cognate's courses provide an interdisciplinary foundation including psychology, sociology, and engineering.