INDIANA UNIVERSITY

University Graduate School
2007-2008
Academic Bulletin

University Graduate School
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Indiana University
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Informatics

School of Informatics
Bloomington

Dean
J. Michael Dunn*

Departmental E-mail
graduate@informatics.indiana.edu

Departmental URL
informatics.indiana.edu

Faculty

(An asterisk [*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

Professors
William Aspray*, J. Michael Dunn*, Geoffrey Fox*, David James Hakken*, Michael McRobbie*, Javed Mostafa*, Christine Ogan*, Edward Robertson*, Martin Siegel*, Erik Stolterman*, Peter Todd*, Alessandro Vespignani*, Larry Steven Yaeger*

Associate Professors
L. Jean Camp*, Markus Jakobsson*, Filippo Menczer*, John Paolillo*, Christopher S. Raphael*, Luis M. Rocha*

Assistant Professors
Mu-Hyun Baik*, Jeffrey Bardzell*, Eli B. Blevis*, Mehmet M. Dalkilic*, Alessandro Flammini*, Dennis Patrick Groth*, Esfandiar Haghverdi, Matthew Hahn*, Raquel Hill*, Sun Kim*, Youn-kyung Lim*, Eden Medina*, Steve Myers*, Predrag Radivojac*, Santiago David Schnell*, Kalpana Shankar*, Haixu Tang*, XiaoFeng Wang*, Yuqing (Melanie) Wu*, Catharine Wyss*

Degrees Offered

The Doctor of Philosophy (Ph.D.) degrees in Informatics and Computer Science and the Ph.D Minor in Bioinformatics are offered through the University Graduate School. In addition, the School of Informatics offers the Master of Science in Bioinformatics, the Master of Science in Chemical Informatics, the Master of Science in Computer Science, and the Master of Science in Human-Computer Interaction Design (see the School of Informatics graduate bulletin).

Ph.D. Minor in Bioinformatics

Bioinformatics draws on knowledge and information from various fields such as biology, computer science, medicine, chemistry and physics. Students in relevant Ph.D. programs such as biochemistry and molecular biology, medical and molecular genetics, medicine, chemistry, or biology are the target audience for the Ph.D. minor in bioinformatics.

Requirements
A minor in bioinformatics requires 12 credit hours. The core curriculum consists of graduate level courses in informatics. Electives may be chosen based on personal interests from a broad list of courses in biology, chemistry, computer science, information science, and medical and molecular genetics.

The graduate bioinformatics courses in the School of Informatics assume a minimal knowledge of cell and molecular biology. That level of understanding could be gained with at least 6 undergraduate credit hours in molecular biology, genetics, or evolution.

Courses

Core Courses

I601 Introduction to Complex System (3 cr.)
I604 Human-Computer Interaction Design Theory (3 cr.)
I605 Social Foundations of Informatics (3 cr.)
I611 Mathematical and Logical Foundations of Informatics (3 cr.)
I617 Informatics In Life Sciences and Chemistry (3 cr.)
I651 The Ethnography of Informatics (3 cr.)

Other Courses

I500 Fundamental Computer Concepts for Informatics (3 cr.)
I501 Introduction to Informatics (3 cr.)
I502 Information Management (3 cr.)
I504 Social Dimensions of Science Informatics (3 cr.)
I506 Globalization and Information (3 cr.)
I519 Introduction to Bioinformatics (3 cr.)
I525 Organizational Informatics and Economics of Security (3 cr.)
I529 Machine Learning in Bioinformatics (3 cr.)
I530 Legal and Social Informatics of Security (3 cr
I531 Seminar in Health Informatics (1-3 cr.)
I532 Seminar in Bioinformatics (1-3 cr.)
I533 Seminar in Chemical Informatics (1-3 cr.)
I534 Seminar in Human-Computer Interaction (1-3 cr.)
I541 Human-Computer Interaction Design I (3 cr.)
I543 HCI Design and Evaluation Methods (3 cr.)
I546 Music Information Processing: Symbolic (3 cr.)
I547 Music Information Processing: Audio (3 cr.)
I571 Chemical Information Technology (3 cr.)
I572 Computational Chemistry and Molecular Modeling
I590 Topics in Informatics (1-3 cr.)
I573 Programming for Science Informatics (3 cr.)
I590 Topics in Informatics (3 cr.)
I619 Structural Bioinformatics (3 cr
I621 Computational Techniques in Comparative Genomics (3 cr.)
I624 Advanced Seminar I in Human-Computer Interaction (3 cr.)
I627 Advanced Seminar I in Bioinformatics (3 cr.)
I628 Advanced Seminar I in Complex Systems (3 cr.)

I634 Advanced Seminar II in Human-Computer Interaction (3 cr.)
I637 Advanced Seminar II in Bioinformatics (3 cr.)
I638 Advanced Seminar II in Complex Systems (3 cr.)
I690 Topics in Informatics (1-3) cr
I699 Independent Study in Informatics (1-3 cr.)

Required Graduate Course
BIOL L519 Bioinformatics: Theory and Application (3 cr.) Note: With approval of the instructor, advanced students could be allowed to substitute L529 for L519 Bioinformatics in Molecular Biology and Genetics: Practical Applications (4 cr.).