Drug Development in the 21st Century: Are We Going To Cure All Diseases?

Hosted by:
Georgia Tech’s College of Computing and Integrated BioSystems Institute

When:
Tuesday, October 4, 2011 at 6:30pm
Light refreshments served at 6:00pm

Where:
College of Management Auditorium
800 West Peachtree Street NW
Atlanta, GA 30308

Register:
www.cc.gatech.edu/ciechanover

Abstract

Many important drugs such as penicillin, aspirin or digitalis, were discovered by serendipity. Other major drugs like statins were discovered using more advanced technologies, such as targeted screening of large chemical libraries. In all these cases, the mechanisms of action of the drug were largely unknown at the time of their discovery, and were unraveled only later. With the realization that patients with apparently similar diseases at diagnosis – breast or prostate cancer, for example - respond differently to treatment, and the clinical behavior of the disease is different in different patients, we have begun to understand that the molecular basis of what we thought is the same disease entity, is different. As a result, we are exiting the era where our approach to treatment of these and many other diseases is “one size fits all”, and enter a new one of “personalized medicine” where we shall tailor the treatment according to the patient’s molecular/mutational profile. This era will require a change in our approach to scientific research and development and to education, where interdisciplinarity will dominate and replace in many ways the traditional, discipline- oriented approach. Entry into this era will be also accompanied by complicated bioethical problems, where detailed genetic information of large populations in developed countries will be now available, and protection of privacy will become a major problem to health authorities.