



KLINGLER
College of Arts & Sciences

MARQUETTE UNIVERSITY

Department of Mathematics, Statistics and Computer Science

SPECIAL COLLOQUIUM ANNOUNCEMENT

Predictive Modeling of Drug Effects: Learning from Biomedical Knowledge and Clinical Records

Ping Zhang
Research Staff Member
IBM Research Center

1:00 p.m., Friday, February 2, 2018

Abstract

Drug discovery is a time-consuming and laborious process. Lack of efficacy and safety issues are the two major reasons for which a drug fails clinical trials, each accounting for around 30% of failures. By leveraging the diversity of available molecular and clinical data, predictive modeling of drug effects could lead to a reduction in the attrition rate in drug development. In this talk, I will introduce my recent work on machine-learning techniques for analyzing and predicting clinical drug responses (i.e., efficacy and safety), including: 1) integrating multiple drug/disease similarity networks via joint matrix factorization to infer novel drug indications; and 2) revealing previously unknown effects of drugs, identified from electronic health records and drug information, on laboratory test results. Experimental results demonstrate the effectiveness of these methods and show that predictive models could serve as a useful tool to generate hypotheses on drug efficacy and safety profiles.

1313 W. Wisconsin Avenue, Cudahy Hall, Room 401, Milwaukee, WI 53201-1881

For further information <http://www.msccs.mu.edu/msccs/resources/colloquium.html> or contact Dr. Daniel Rowe at #414-288-5228, daniel.rowe@marquette.edu

POST-COLLOQUIUM REFRESHMENTS SERVED IN ROOM 342 AFTER 2:00 P.M.