

Board Meeting  
January 24, 2013

APPOINT FELLOWS TO THE  
CENTER FOR ADVANCED STUDY, URBANA

**Action:** Appoint Fellows to the Center for Advanced Study for the Academic Year 2013-14

**Funding:** Private Gift Funds from the Beckman Endowment

Each year the Center for Advanced Study awards appointments as Fellows in the Center, providing one semester of release time for creative work. Fellows are selected in an annual competition from the faculty of all departments and colleges to carry out self-initiated programs of scholarly research or professional activity.

The Vice President, University of Illinois and Chancellor, University of Illinois at Urbana-Champaign recommends the following list of Fellows selected for the 2013-14 academic year, and offers a brief description of their projects:

**\*\*Matthew Caesar, Assistant Professor, Computer Science, *Engineering Secured Networks with Scalable Network Verification***

The tremendous complexity and scale of the Internet makes it subject to a vast array of failure modes, attacks, software errors, misconfigurations, and vulnerabilities. To address this challenge, this project will construct a system that can automatically verify security and correctness of computer networks in real time, providing provable guarantees of correctness, discovering vulnerabilities, and assisting network operators in discovering their cause.

**\*\*Matthew Gilbert, Assistant Professor, Electrical and Computer Engineering,** *Transformative Information Processing in 3D Heterogeneously Integrated Topological Networks*

This project involves theoretical studies of the use of correlated surface states and interactions between dissimilar materials in topological insulators in order to form a 3D integrated network. The goal is to achieve a more power efficient and robust information processing architecture capable of replacing CMOS functionality at the system level rather than the single device level.

**\*\*Logan Liu, Assistant Professor, Electrical and Computer Engineering,** *Wireless Mobile Nanosensors for Citizen Participatory Water Sensing Network*

This research is to create a citizen participatory environmental sensing network by using mobile smart phones, associated water nanosensors, wireless networks, and a cloud computing platform to allow all citizens to quantitatively measure water quality using their mobile phones and transmit the spatiotemporally relevant water sensing information to a supercomputer cloud and constitute a water information map based on the crowd sourced "Big Data."

**\*\*Matthew Winters, Assistant Professor, Political Science,** *Local-Level Foreign Interventions, Generalized Trust, and the Formation of Beliefs about Outsiders*

This project will study the way in which the branding of foreign-funded development interventions affects the attitudes of citizens in developing countries toward the foreign donor, their own government and the project itself. This research assesses the foreign policy impacts of development aid, including possible unintended consequences.

**\*\*Mao Ye, Assistant Professor, Finance,** *Using the Strength of Science and Engineering at the University of Illinois to Tackle Important Questions in Finance*

This project will use the strength of science and engineering at the University of Illinois to tackle challenging questions in finance. Two lines of research will be furthered: 1) using supercomputers to analyze high-frequency trading; 2) using modern optical character recognition technology to digitize the historical trading data of the New York Stock Exchange (NYSE) from 1818 through 1952.

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\*\*These faculty members have been recommended for appointment as Beckman Fellows in the Center for Advanced Study named for the donor of a gift that permits additional recognition for outstanding younger Fellow candidates who have already made distinctive scholarly contributions.

The Board action recommended in this item complies in all material respects with applicable State and federal laws, *University of Illinois Statutes, The General Rules Concerning University Organization and Procedure*, and Board of Trustees policies and directives.

The Vice President for Academic Affairs concurs.

The President of the University recommends approval.