

Board Meeting
January 21, 2016

APPOINT ASSOCIATES TO THE CENTER FOR ADVANCED STUDY, URBANA

Action: Appoint Associates to the Center for Advanced Study

Funding: State Appropriated Funds

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

The Interim Chancellor, University of Illinois at Urbana-Champaign, and Interim Vice President, University of Illinois recommends the following list of Associates selected for the 2016-17 academic year, and offers brief descriptions of their projects:

Jozsef Balog, Professor, Mathematics, *Sparse Discrete Structures*

A broad range of projects in extremal combinatorics will be studied. This area often employs a variety of tools and results from other parts of mathematics, and in return, it has many interesting applications in fields such as number theory, linear algebra, probability, geometry, information theory, and theoretical computer science.

Xinyuan Dai, Professor, Political Science, *The Compliance Gap and Effects of International Agreements*

What does the compliance gap tell us about the effects of international institutions? In contrast to much of the recent empirical scholarship, Professor Dai argues that international institutions are often more effective in issue areas and/or in countries where the compliance gap is larger.

Jerry Davila, Professor, History, *Antiracism in Brazil: A New History of Challenges to Racial Discrimination*

This proposal supports writing a book that examines antiracism in Brazil. The book does three things: maps black and white Brazilians' perceptions of race relations in the second half of the twentieth century; analyzes the efforts by black Brazilians to define racial discrimination; and examine challenges black Brazilians mounted to discrimination.

Jane Desmond, Professor, Anthropology, *When the Patient is a Dog: Towards the Development of a Veterinary Medical Humanities*

This research explores the possibilities for and potentially transformative impact of the new applications of the humanities to the field of veterinary medicine. By assessing the culturally significant dimensions of veterinary medicine as a site where human relations with animals are particularly salient, we can understand more fully how the intersection of science, health, ethics, and social value are revealed in the realms of companion and farm animal medicine, including public health.

Rosa Espinosa-Marzal, Professor, Civil and Environmental Engineering, *Energy Efficiency via Nano-Mosaics*

Satisfying the high energy and water demand of our society relies on being able to control the behavior of liquid molecules confined in narrow spaces. The proposed approach is based on decorating the pore surface with topographic or chemical motifs to enhance molecular motion while maintaining high surface affinity.

Negar Kiyavash, Professor, Industrial and Enterprise Systems Engineering, *Causal Inference - From Mere Observation to Intervention*

This project addresses cross-disciplinary research in the area of statistical causal inference with forays into the areas of information theory, machine learning, stochastic dynamical systems, and social networks. Specifically, it proposes a unifying framework for assessing causality both from mere observation as well as when interventions are possible.

Paul Kwiat, Professor, Physics, *Pursuing Human Vision at the Quantum Level*

Professor Kwiat and colleagues have already created a quantum light source and experimental methods to investigate whether people can directly see single photons. This CAS appointment will allow him to develop the necessary adaptive optical techniques which will enable the reliable targeting of individual rod cells, thereby producing a unique, versatile, and very powerful capability for studying human visual response at the single-photon level.

Christopher Leininger, Professor, Mathematics, *Geometric Group Theory*

Geometric group theory is a rapidly developing area of pure mathematics that blends the notions of symmetry and geometry in a variety of ways. Professor Leininger's research involves the area of geometric group theory stemming from the study of both surfaces and graphs, making new connections between these two topics and relating them to other areas of mathematics.

Zhi-Pei Liang, Professor, Electrical and Computer Engineering, *Molecular Imaging Using Magnetic Resonance*

The project is aimed at developing a new technology for molecular imaging using magnetic resonance signals. This technology will enable label-free, noninvasive acquisition of biochemical information from biological systems with a wide range of potential applications.

Ruby Mendenhall, Professor, Sociology, *Black Mothers in the "Hidden America": Documenting How Living in Neighborhoods with High Levels of Violence Affects Mental and Physical Health*

The Black Mothers in the "Hidden America" project uses mixed-methods to examine structural, community, psychological, and biological factors that protect against or create mental and physical health challenges for low-income single mothers living in Chicago neighborhoods with high levels of violence.

Cynthia Oliver, Professor, Dance, *Virago-Man Dem*

Cynthia Oliver is creating "Virago-Man Dem," an evening-length, dance-theatre work examining black masculinities, which she will develop over the next year, including local individuals in her process and will premiere the work in New York in 2017. A work which troubles "Virago"'s reference to characteristically male behaviors as well as female cultural transgressions, Virago-Man Dem will be a nuanced study in masculinities, and their multiplicities within cultures of Caribbeanist and African American communities.

Michel Regenwetter, Professor, Psychology, *Bridging the Theory-Behavior Gap in Decision Research*

Decision making research is hampered by tremendous variability within and between people. This project will develop a general framework to reconcile theory and behavior in the decision sciences.

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.