

Board Meeting  
July 13, 2017

APPOINT PROFESSORS, CENTER FOR ADVANCED STUDY, URBANA

**Action:** Appoint Professors, Center for Advanced Study

**Funding:** State Appropriated Funds

The Chancellor, University of Illinois at Urbana-Champaign, and Vice President, University of Illinois with the recommendation of the Vice Chancellor for Academic Affairs in consultation with the Professors in the Center, recommends the following faculty members for appointment as Professors\* in the Center for Advanced Study, and offers brief descriptions of their current research:

**Antoinette Burton, History**

Professor Burton is a historian of 19<sup>th</sup>- and 20<sup>th</sup>-century Britain and its empire, with a specialty in colonial India and an ongoing interest in Australasia and Africa. She is the author of six books and editor or co-editor of 14 collected volumes and many special issues of journals. She is currently working on an “ABC” of Victoria’s empire; coauthoring a world history textbook; and a Bloomsbury series on the cultures of western imperialism.

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\* Professors in the Center for Advanced Study (Center) are permanent members of the Center community, chosen for their outstanding scholarship. Appointment to a professorship in the Center is one of the highest academic recognitions that the campus can bestow upon a member of its faculty. Center Professors continue to serve as full members of their home department.

Concurrently, the Professors in the Center are: James Anderson, Renée L. Baillargeon, Tamer Başar, May R. Berenbaum, Bruce C. Berndt, David M. Ceperley, Leon Dash, Matthew W. Finkin, Martha U. Gillette, Nigel Goldenfeld, Bruce Hajek, Anthony J. Leggett, Stephen Long, Michael S. Moore, Tere O’Connor, Gene E. Robinson, Jay Rosenstein, Jonathan Sweedler, Maria Todorova, Lou van den Dries, and Dale J. Van Harlingen.

**Gary Dell, Psychology**

Professor Dell's work deals with how people produce and understand sentences, and how these processes can be modelled using neural networks. He has developed a neural net model that makes predictions about the qualitative and quantitative properties of speech errors. A particularly interesting aspect of the model is that it can be used to understand patterns of behavior resulting from brain damage. By changing the processing characteristics of the model, one can produce speech error patterns that are characteristic of certain types of aphasic patients.

**Eduardo Fradkin, Physics**

Professor Fradkin is an internationally recognized leader in theoretical physics, who has contributed to many problems at the interface between quantum field theory (QFT) and condensed matter physics (CMP). He has recently developed a theory of electronic liquid crystal phases in strongly correlated systems and formulated a mechanism of high temperature superconductivity based on this new concept.

**Martin Gruebele, Chemistry**

Professor Gruebele's research group is engaged in experiments and computational modeling to study a broad range of fundamental problems in chemical and biological physics. A common theme in these experiments is the implementation of state-of-the-art laser techniques to interrogate and manipulate complex molecular systems, coupled with quantum or classical simulations. The results of these efforts are contributing to a deeper understanding of the way that proteins fold into functional 3-dimensional molecules, the details of how chemical bonds are broken by vibrational motion and how this can be controlled, and the switching of energy flow in large molecular structures on surfaces.

**Sharon Hammes-Schiffer, Chemistry**

Professor Hammes-Schiffer's research group centers on the development and application of theoretical and computational methods for describing chemical reactions in condensed phases and at interfaces. The group is divided into three general areas: proton-coupled electron transfer reactions, enzymatic processes, and non-Born-Oppenheimer electronic structure methods. The group's overall objective is to elucidate the fundamental physical principles underlying charge transfer reactions. These theories also assist in the interpretation of experimental data and provide experimentally testable predictions.

**Harry Liebersohn, History**

Professor Liebersohn is a professor of modern European history and author of four books. His research centers on cultural encounters between European and non-European peoples since the late eighteenth century. He attempts to understand how

people from diverse cultures communicate in a broad variety of geographic settings, especially in North America and the Pacific. His current research is on globalization and music since the late 19<sup>th</sup> century.

### **Catherine Murphy, Chemistry**

Professor Murphy's research group is situated at the interface of materials chemistry, inorganic chemistry, biophysical chemistry, and nanotechnology. The group's primary goal is to develop inorganic nanomaterials for biological and energy-related applications, and to understand the chemical interactions of these nanomaterials with their surroundings. A diverse range of projects are currently pursued in the group: inorganic nanoparticle fabrication and functionalization; cellular imaging, chemical sensing, and photo thermal therapy using gold nanorods; and environmental implications of nanoparticles.

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 Executive Vice President and Vice President for Academic Affairs concurs.

The President of the University recommends approval.