

Board Meeting
January 19, 2017

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 Chancellor, University of Illinois at Urbana-Champaign, and Vice President, University of Illinois recommends the following list of Associates selected for the 2017-2018 academic year, and offers brief descriptions of their projects:

Donna Buchanan, Professor, Musicology, *Audible Cosmology: Engendered Bells in Bulgarian Belief*

Donna Buchanan's focus in a new book, *The Girl in the Bell: Audible Cosmologies of Bulgarian Belief*, addresses the pivotal significance of bells in contemporary Bulgarian expression, whether as artistic and historical objects, gendered instruments of spirituality and politics, or sonic metaphors of musical beauty and world view. Buchanan argues that bells, which figure prominently in animal husbandry, ritual practice, testimonial monuments, and heritage displays, as well as musical and literary creativity of all sorts, are the most powerful sonic signifier linking the cosmos (and the spiritual), place (landscape), time (history), and nature in a Bulgarian "ecology of sound" as intrinsic to past pastoral lifeways as to the national ethos.

Minh Do, Professor, Electrical and Computer Engineering, *Visual Representation and Sensing from Mobile Cameras*

Cameras are ubiquitously embedded on mobile and autonomous devices like smartphones, autonomous vehicles, robots, and body-worn devices. Professor Do proposes to develop efficient visual representation and sensing from mobile cameras using ideas from geometric vision, plenoptic functions, information theory, sensor fusion, and bio-inspired algorithms.

Nathan Dunfield, Professor, Mathematics, *The Linkage Between Topology and Geometry in Dimension 3*

In topology, a 2-manifold is an object that looks locally like a plane: for example, a sphere or the surface of a doughnut. This research project will explore the relationship between the geometry and topology of 3-manifolds, specifically in the context of torsion growth, which is a question motivated in part by number theory and global analysis.

Iwona Jasiuk, Professor, Mechanical Science and Engineering, *Multiscale Study of Bone Fracture, Adaptation, Regeneration and Bone-Inspired Materials*

This project addresses a multiscale experimentally-based study of bone fracture, adaptation, regeneration and design of novel bone-inspired materials. Research will provide more accurate predictions of bone risk of fracture and response to exercise, will enhance regeneration capacity of bone, and will lead to new nature-inspired materials for various technological applications.

Ezekiel Kalipeni, Professor, Geography, *The Impact of Deforestation on Vector-borne Diseases in Southern Malawi: The Case of the Blantyre Fuelwood Project Area*

This proposed study will examine the link between biodiversity and disease in the Blantyre City Fuelwood Project (BCFP) area of southern Malawi using the case of malaria. It will shed light on the following two questions: (1) How do changes in biodiversity (animal life) affect human health and/or the risk of a vector borne disease such as malaria transmission? (2) Can an interdisciplinary approach to studying the relationships among structural diversity, habitat availability, vector ecology, epidemiology, and human behavior be used to reduce the risk of malaria transmission in the BCFP area?

Silvina Montrul, Professor, Spanish and Portuguese, *Native Speakers, Interrupted: Agents of Change in Heritage Languages*

Some linguists have invoked the monolingual child as the main agent of language change; others contend that non-native speakers, i.e., adult second language learners and their imperfect language learning ability, are the most obvious agents. This project will compare the intergenerational transmission of Hindi, Spanish, and Romanian in the United States and intends to show that bilingual native speakers who combine some qualities of child monolingual speakers and adult second language speakers can act as significant agents of language change, especially in the Spanish spoken in the United States.

Emanuel Rota, Professor, French and Italian, *Before Unemployment: Work, Idleness and the Uber-working Class*

This project will reconstruct the Western attitudes toward idleness from the first to the third Industrial Revolution. Using a diachronic approach, the study aims to recover the historicity of the idea of idleness, challenging its representation both as a distinctive feature of premodern and preindustrial societies, *and* as a permanent human vice, in order to debunk the use of narratives of idleness as a justification of the superiority of modernity over the past and as an explanation of the economic success of the West over the rest of the world.

D. Fairchild Ruggles, Professor, Landscape Architecture, *Tree of Pearls: The Extraordinary Architectural Patronage of the 13th-Century Egyptian Slave-Queen Shajar al-Durr*

“Tree of Pearls” was a slave of obscure origins who rose to become queen-sultan of Egypt in the summer of 1250, using the opportunities and strategies employed by male and female slaves in the premodern world: beauty, sex, charm, intelligence, and political savvy. The study examines the impact on architecture, urbanism, history, and culture of this outstanding woman, who was emblematic of her time and yet contradicts everything we think we know about Islamic political history.

Dallas Trinkle, Professor, Materials Science and Engineering, *Mass Transport in Random Environments*

The processing of materials as well as their technologically important properties are controlled by a combination of thermodynamics -- which determines equilibrium -- and kinetics -- how a material evolves. This project will develop new quantitative and predictive modeling for how atoms move in a solid. The general approach will impact the development of advanced alloys, battery materials, control of corrosion, and new materials processing methods.

Julie Turnock, Professor, Media and Cinema Studies, *Special Visual Effects: Digital Rendering in the Global Effects Industry*

Special visual effects in Hollywood's expensive, CGI-driven blockbusters have had an outsized impact on how we perceive the reality effect of images in other moving image media, such as television, advertising, journalism, and internet video. This project will examine the industrial, historical and aesthetic practices of digital imaging since 1990 in order to argue that rather than intensifying digital convergence as many believe, new rendering technology has in fact led to many digitals, instigating turmoil in moving image labor relations, professional identities, and visual aesthetics.

Amy Wagoner Johnson, Professor, Mechanical Science and Engineering, *Coral Reef Restoration using Additive Manufacturing (3D Printing)*

Professor Wagoner Johnson's research project will apply additive manufacturing -- also known as 3D printing -- to the global environmental challenge of coral reef restoration. The goal is to produce engineered substrates with sub-millimeter features that enhance and accelerate coral polyp reproduction and growth. This project is an entirely new application for additive manufacturing, with potential for transformative impact on coral reef restoration approaches.

Craig Williams, Professor, Classics, *Orpheus Crosses the Atlantic: Greek and Latin Texts by Native Americans in Colonial New England*

Williams' project will collect, translate, and interpret a body of texts never before assembled: writings in Ancient Greek and Latin by Native Americans from 17th- and 18th-century New England, at least one of which has not previously been published. He will use the interpretive tools of classical philology as well as of Native American and postcolonial studies to read these texts both within the tradition of Greek and Latin literature and as instances of double consciousness, adoption, adaptation, and survival by Native North American individuals, tribes, and cultures.

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

concur.

The President of the University recommends approval.