Welcome to the spring edition of the quarterly Research Newsletter for faculty and graduate students at WSU Vancouver. The purpose of the newsletter is to share with the university academic community the accomplishments of our faculty in the publication of books, chapters, and journal articles, conference presentation, exhibits, invited lectures and awards during the previous quarter (October 1 – December 31, 2011). We will announce research project awards and contracts and grants from philanthropic foundations that have been funded in the previous quarter. Periodically, we will include feature articles or matters of interest to the research community as well as honors and awards received by faculty. We expect that this newsletter will evolve as we gain more experience in preparing it. We welcome your comments, ideas, and participation.

Books

Linda Frederiksen (Library)
Global Resource Sharing.
Cambridge, UK: Chandos, 2011.

An essential guide for librarians implementing or expanding interlending services, offering practical advice and real-life examples of global resource sharing practices and procedures.

Linda Mabry (Teaching and Learning)

A comprehensive textbook of challenges, issues, and strategies in program evaluation in national and international settings, with co-authors M. Bamberger and J. Rugh.

Xiuyu Wang (History)
China’s Last Imperial Frontier: Late Qing Expansion in Sichuan’s Tibetan Borderlands.

This book examines how Chinese-Tibetan relations changed from peaceful co-existence to intensifying confrontation around the turn of the 20th century. Foreign imperial pressures were seized upon by a regional power in the Qing Empire to impose direct control over eastern Tibet, producing important institutional change as well as ethnic resistance.
Recent Publications
Journal Articles and Book Chapters

Avantika Bawa (Fine Arts)
“Power.” Drain: Journal of Contemporary Art and Culture, 14 (2011). Co-edited by Bawa, A. and O. Mundy. If power connects the virtual and the actual, how does cultural creativity channel or destabilize this connectivity? The corporate-academic-entertainment-military-industrial complex floods us with images to cause sensory overload and yet, at the same time, acute sensory deprivation. This issue of Drain presents works to actualize answers to these questions and re-channel them into different connectivities, ways of becoming, and conceptual production.

John Bishop (Biology)

Michael Jahi Chappell (School of the Environment/Sciences)

David Chiu (Computer Science)
Chiu, D., T. Hall, E. Kabir, and G. Agrawal. 2011. “An Approach towards Automatic Workflow Composition through Information Retrieval.” Proceedings of the 15th International Database Engineering and Applications Symposium, IDEAS ’11. Understanding how to design, manage, and execute scientific workflows has become increasingly esoteric. This paper describes a system that can automatically compose a set of relevant workflows, which may or may not have been previously defined by other users, given only a keyword query. A case study was conducted in geoinformatics with a set of real geospatial Web services, data, and their metadata annotations. This system was capable of answering six keyword queries with fast search times (2.16 ms on average) and high Top-N precision.

Claire Latham (Accounting)
Cote, J. J. Goodstein, and C. Latham. 2011. “Giving Voice to Values: A Framework to Bridge Teaching and Research Efforts.” Journal of Business Ethics Education, 8: 360-375. Giving Voice to Values (GVV) serves as a framework to teach individuals methods to speak up when they witness actions that are contrary to their professional and personal values. This article illustrates how GVV serves as a catalyst to advance both research and teaching activities.

Linda Frederiksen (Library)
Frederiksen, L. J. Cummings, L. Cummings, and D. Carroll. 2011 “Ebooks and ILL: Licensed to Fill?” Journal of Interlibrary Loan, Document Delivery and Electronic Reserve, 21/3: 1-15. Increasingly, academic libraries are adding electronic books (ebook) titles to their collections. A survey was used to explore the implications of ebook licensing and interlibrary use. A widespread preference for handling print materials was found along with a need for more information about ebook interlibrary loan rights and a means to identify format type available from potential lenders.
Recent Publications continued
Journal Articles and Book Chapters

Clayton Mosher (Sociology)
Mosher, C. 2011. “Racial Profiling/Biased Policing.” Sociology Compass, 5/9: 763-774. This article examines the history of biased policing in the United States, discusses the results of some of the more recent studies as well as studies of biased policing in other countries, and devotes considerable attention to important theoretical and methodological issues in conducting research on racial profiling.

Mosher, C. 2011. “Convergence or Divergence? Recent Developments in Drug Policies in Canada and the United States.” American Review of Canadian Studies, 41/4: 370-386. Drawing on official government data and publications from Canada and the United States, as well as a number of media sources, this article presents a comparison of drug laws in the two countries, with a particular focus on recent attempts by U.S. officials to influence Canadian drug policies.

Karen Schmaling (Academic Affairs)

Stephen Solovitz (Mechanical Engineering)


Jie Xu (Mechanical Engineering)
Aberle, C., M. Lewis, G. Yu, N. Lei, J. Xu. 2011. “Liquid Marbles as Thermally Robust Droplets: Coating-Assisted Leidenfrost-Like Effect.” Soft Matter, 7: 11314-11318. Discovered in 1756, the Leidenfrost effect—prolonged evaporation of droplets on a superheated surface—happens only when the surface temperature is above a certain transitional value. This paper demonstrates that specially engineered droplets—liquid marbles—can exhibit a similar effect at any superheated temperatures without a transition. These thermally unique liquid marbles are potentially useful for many microfluidics applications.

Recent Presentations
Conference Presentations, Exhibits, Invited Lectures, Awards

John Barber (Creative Media and Digital Culture) presented at the International Digital Media and Arts Association conference in Savannah, Georgia, October 2011. The study, “Thoughts Toward Situation-Centered Mobile App Usability,” links theory and application practices to a developing body of knowledge regarding mobile app situation-centered user experience, succinct content, functionality, and medium affordances.

John Barber (Creative Media and Digital Culture) presented “Learning to Design and Build Mobile Apps” at the HASTAC International conference at the University of Michigan, December 2011. This study follows Creative Media and Digital Culture faculty and student efforts to produce two apps highlighting app design and development in digital humanities classrooms, effective curriculum design, emerging perspectives of app aesthetics, associated technical requirements, and teaching resources.
Recent Presentations continued
Conference Presentations, Exhibits, Invited Lectures, Awards

Avantika Bawa (Fine Arts) was part of the curated group exhibition “Pulp: Exploring Paper” at the Pacific Northwest College of Arts in Portland, Oregon, on view October 6-30, 2011. Bawa was also invited to give an Artist Talk at Lindfield College in McMinville, Oregon, November 17, 2011.

John Bishop (Biology) delivered two invited presentations at Stockholm University’s Department of Botany and a third presentation as a featured speaker at “Blodbad 2012,” the annual retreat of the Zoology Department, on “The Role of Insect Herbivores and Nutrient Stoichiometry in Volcanic Primary Succession – A Paradox of Enrichment?” He also delivered the first annual lecture of the Swedish Plant Geographical Society at Uppsala University. Travel to Stockholm, Tovetorp, and Uppsala occurred in October, November, and December 2011.

Cory Bolkan (Human Development) and co-authors Laura Bonner, Duncan Campbell, Lisa Rubenstein, Ed Chaney, and Andy Lanto presented their research study on “Patient Satisfaction with Family Involvement in Care and Depression Treatment Adherence in Older Men” at the 64th Annual Scientific Meeting of the Gerontological Society of America in Boston, Massachusetts, November 2011. Based on a longitudinal telephone survey of veterans with significant depression symptoms, this study investigated how social support related variables were associated with medication adherence and clinical outcomes.

June Canty (Teaching and Learning) was an invited presenter at the 15th Annual Educator Certification Conference in Lacey, Washington, October 2011. She presented a paper titled “Professional Educators Standards Board: Legislative and Policy Update” and answered questions about the role of a policy maker who is also a practitioner. Canty also participated in the WSU College of Education Homecoming Research Showcase in Pullman, Washington, and shared the “Teacher Induction in Southwest Washington: The Stories of Four Beginning Teachers” poster she prepared for the 2011 WSU Research Showcase.

Linda Chen and Jie Xu (both Mechanical Engineering) and their student Gan Yu presented their research study at the ASME International Mechanical Engineering Conference and Exposition in Denver, Colorado, November 11-17, 2011. The presentation was on acoustic manipulation of particles in variously shaped liquid droplets.

Jane Cote and Claire Latham (both Accounting) conducted a continuing professional education workshop titled “Ethics in Action” for public accountants in Portland, Oregon, December 5, 2011. The workshop presented recent changes to state and national ethics regulatory requirements and professional responsibilities. Participants gained practice in an innovative approach to enabling ethical behavior when an individual is faced with an ethical dilemma.

David Chiu (Computer Science) was an invited speaker at the 4th Workshop on Many-Task Computing on Grids and Supercomputers, held in conjunction with ACM/IEEE Supercomputing 2011 in Seattle, Washington, November 2011. Chiu presented his research with collaborators from Ohio State University on “MATE-EC2: A Middleware for Processing Data with AWS.” This study explored various optimization methods for processing massive amounts of data hosted on the cloud.
Daniel Jaffee (Sociology) presented a paper titled “Weak Coffee: Certification and Cooptation in the Fair Trade Movement” at the conference on “Rethinking Development” at Cornell University in Ithaca, New York, November 10-12, 2011. This event was organized by the Development Sociology section of the American Sociological Association.

Kristin Lesseig (Education) presented a paper at the International Group for the Psychology of Mathematics Education – North American Chapter in Reno, Nevada, October 2011, “Mathematical Knowledge for Teaching Proof: Evidence From and Implications for Professional Development.” This paper presents a framework for Mathematical Knowledge for Teaching Proof that couples research on justification and proof in mathematics and mathematics education with Ball and colleagues’ (2008) conceptualization of Mathematical Knowledge for Teaching (MKT). An empirical study of teachers’ proof-related activity in professional development demonstrated the utility of this framework and provides further insights into mathematical knowledge that would support the teaching of proof.

Thabit Lewis (English) was an invited keynote speaker at Kansas University (English, American Studies, and Journalism) in Lawrence, Kansas, October 24, 2011. He presented “Can Michael Vick Be Forgiven? Mythologies of Race and Gender in American Sports Culture.” This paper examines how the media representation of professional athletes, those refusing to fit norms, is one that labels them unfamiliar figures not to be emulated. Instead the media accounts represent a covert or sometimes overt campaign of discrimination, contradictions, and inequity that often spills into the stands of stadiums, televisions, schools, policing and prison sentencing, hiring practices, banking policies, etc., poisoning what could be more substantial racial progress and promise.
Recent Presentations continued

Conference Presentations, Exhibits, Invited Lectures, Awards

Thabit Lewis (English) was an invited presenter at Willamette University (Ethnics Studies Program) in Salem, Oregon, October 5, 2011. His presentation, “Measurements of Success on the Academic Front and Beyond,” addressed diversity and discrimination in academe, proposing that such discussion challenge narratives that hold to mythologies with clear measurements of success and failure.

Brett Oppegaard (Creative Media and Digital Culture) was an invited presenter at the 2011 International Digital Media and Arts Association conference in Savannah, Georgia, October 14, 2011. His lecture, “Net Locality: Exploring New Ways of Storytelling (and Learning) with Mobile Devices,” shared research insights into place-based mobile media gained from work on The Fort Vancouver Mobile project. These results demonstrated increased visitor attention as well as more engaged intellectual and emotional responses to historical interpretation by comparing the Fort Vancouver app to traditional analog forms.

Sue Peabody (History) presented “Follow the Money: French Slave Smuggling in the Indian Ocean, Voyage of the Succès, 1820-1821” at the Western Society for French History in Portland, Oregon, November 11, 2011. Based on the British Admiralty Court’s prosecution of the French slave ship Succès, this paper analyzes the financing, profits, losses, and risks inherent in the Indian Ocean slave trade following British and French bans.

Yoshie Sano (Human Development) presented “Exploring Oral Health Literacy Messages among Rural, Low-Income Mothers” at the American Public Health Association’s 139th Annual Meeting and Exposition in Washington, D.C., October 29-November 2, 2011. This study examined 99 Mexican mothers who are low-income and reside in rural counties in Iowa and Washington. The findings indicated that health insurance status of mothers and partners were highly related to insurance status of children, and children’s insurance status was related to mothers’ knowledge of community resources and life skills. The strong relationship between uninsured children and mothers speaking primarily Spanish could have influenced mothers’ health seeking behaviors.

Stephen Solovitz (Mechanical Engineering) presented at the ASME International Mechanical Engineering Conference and Exposition in Denver, Colorado, November 11-17, 2011. He presented a paper co-authored with recent M.S. graduate Farhad Saffaraval on high-speed jet experiments, which can be used to model volcanic eruptions. Solovitz also presented at the American Geophysical Union Fall Meeting in San Francisco, California, December 6-10, 2011, on research conducted with Saffaraval and collaborators from UCSD and the USGS Cascades Volcanoes Observatory on adapting high-speed jet experiments to predict volcanic plume growth.

David Slavit, Tamara Holmlund Nelson, Angie Deuel Foster, and student Michele Mason (all Education) presented “A Framework for Analyzing Teachers’ Use of Data during Collaborative Inquiry” during the Conference Proceedings of the Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education in Reno, Nevada, October 22, 2011. This is a theoretical framework for understanding teachers’ uses of student learning data in collaborative inquiry processes. The framework is useful to researchers interested in describing and analyzing the ways teachers conceptualize, collect, and analyze student learning data, as well as how teachers discuss results of their analyses.

Jie Xu (Mechanical Engineering) and undergraduate students Mark Lewis and Cedric Aberle presented their studies on liquid marbles at the ASME International Mechanical Engineering Conference and Exposition in Denver, Colorado, November 11-17, 2011. This research resulted from Lewis and Aberle’s term project in Dr. Xu’s Heat Transfer class.
**Recent Presentations** continued  
Conference Presentations, Exhibits, Invited Lectures, Awards

Wei Xue and Jie Xu (both Mechanical Engineering) and their students Pengfei Li and Nan Lei presented at the ASME International Mechanical Engineering Conference and Exposition in Denver, Colorado, November 11-17, 2011. They presented three papers on “Large-scale deposition of graphene and dielectrophoresis,” “A lab-on-a-chip device using a dielectrophoresis-aligned carbon nanotube sensor array,” and “Gate-free graphene-based sensor for pH monitoring.”

**Funded Research**

**Clayton Mosher**, Clark County - $30,000  
*Substance Abuse and Mental Health Services Administration*  
Evaluation of Clark County’s Assertive Adolescent Family Treatment Program.

**Jie Xu**, Amazon - $7,500  
*Molecular Dynamics Simulation of Water and DNA Transport inside Carbon Nanotubes*  
This Amazon Web Services (AWS) in Education research grant will support Dr. Xu’s research (in collaboration with Dr. David Chiu) on molecular dynamics simulation using Amazon’s supercomputing power.

**Feng Zhao**, SEMTECH Corporation - $123,853  
*Development of 1200V SiC Schottky Barrier Diode*  
Silicon carbide (SiC) is a wide bandgap semiconductor attractive for high power, high efficiency, and high temperature electronic applications due to its superior material properties over its counterpart, silicon (Si). SiC Schottky barrier diode (SBD) is a critical element to improve energy conversion efficiency and power management in next-generation power systems. This research will investigate and develop 1200V SiC SBDs with optimized performance and long-term reliability.