

Contact: Diana Gonzalez

PROFESSIONAL DEVELOPMENT ASSIGNMENT REQUESTS FOR FY 2013

Actions Requested: Consider approval of the requests by the Regent universities for professional development assignments for FY 2013.

Executive Summary: Each year, the Board of Regents is asked to approve faculty professional development assignments as specified in Iowa Code §262.9(14) and Board Policy §4.09. The universities request approval of 111 faculty professional development assignments for FY 2013 which is an increase of 16 (+16.8%) proposed professional development assignments from the prior year and the first increase in four years. The request represents 1.5% of all faculty at the Regent universities. A brief description of each proposed assignment is available in Attachments A-C (pages 7-42).

As a result of legislation in 2011, HF 45 specifies that “for the period beginning on the effective date of this section and ending June 30, 2012, the state board of regents shall limit the number of leave of absence assignments granted pursuant to section 262.9, Subsection 14, to not more than the equivalent of three percent of the faculty staff members employed at each of the institutions under the state board.” This requirement was met by the three universities – SU (1.3%); ISU (1.7%); and UNI (2.2%).

This report addresses the Board of Regents Strategic Plan priority for “educational excellence and impact” and “economic development and vitality.”

Background:

- ◇ **Institutional policies.** Each university has academic policies that describe the process and requirements for professional development assignments and which guide the selection of faculty proposed for professional development assignments.
 - ☑ *University of Iowa.* Full-time faculty members with 9-month appointments who completed a minimum of 10 semesters of full-time academic service are eligible for an initial one-semester professional development assignment. Flexible load assignments may or may not be included in the 10 required semesters at the discretion of the college. Part-time faculty members with 9-month appointments become eligible for a professional development assignment at the level of their appointment upon completion of a minimum of 10 semesters of part-time service. Part-time faculty members are eligible for a ‘regular’ professional development assignment when their portions of service equal the minimum requirement of full-time service. Twelve month faculty members who completed a minimum of four years of full-time academic service or the equivalent are eligible for the first professional development assignment of one semester; those who completed eight or 11 years of full-time academic service or the equivalent are eligible for a professional development assignment of up to two semesters or 12 months.
 - ☑ *Iowa State University.* All members of the faculty employed half-time or more are eligible to apply for a professional development assignment. There is no restriction on length of service to qualify for a professional development assignment. However, priority may be given to tenured faculty over adjunct and non-tenured faculty and to persons who have not received a professional development assignment in the past five years.

- University of Northern Iowa.* Faculty members must be full-time and tenured at the time of application. A recipient of a professional development assignment is ineligible for a subsequent assignment during the three years following the assignment.
- ◇ Review process. Each university reports that a rigorous review process was conducted for each proposed professional development assignment. Faculty recipients were selected on the basis of peer review and recommendation at the department and college levels at each university and final approval by the provost. One of the criteria considered is the impact of the proposed professional development assignment.
- ◇ Proposed activities. Faculty members engage in a variety of productive activities during their professional development assignments. For example, faculty members have the opportunity to engage in intensive research, write scholarly books and articles, create new works of art and composition, present papers, work in industry, develop modeling systems, and develop grant proposals, software, course materials, and multimedia resources for their disciplines. Professional development assignments enrich the educational environment of the universities and are considered essential to the academic vitality of the universities. Educational excellence results from a vital faculty which actively pursues new developments in knowledge and teaching.
- ◇ Length of assignments. Professional development assignments are usually for one semester, although they may be granted for up to a year. For professional development assignments that are two semesters in length, compensation is limited to the amount of compensation a faculty member would receive during a semester-long assignment. Salary savings generated from faculty members on assignment for a full year are used to offset the replacement costs for other faculty members.
- ◇ Obligation to institution. Iowa Code §262.9(13) requires that a faculty member return to the institution for twice the length of time of their professional development assignment or to repay the costs associated with the professional development assignment if the faculty member does not return to the institution. Following their professional development assignments, faculty members are responsible for reporting the results of their assignments as specified by Board Policy §4.09E and their institutional guidelines.
- ◇ Average number requested. During the last six years, an average of 127 professional development assignments (PDAs) per year has been requested.

**NUMBER OF PDA RECIPIENTS AND PERCENT OF ELIGIBLE FACULTY
FY 2008 – FY 2013**

	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
SUI	74 (4.8%)	100 (4.8%)	82 (3.9%)	52 (2.4%)	58 (2.6%)	64 (1.3%)
ISU	49 (3.7%)	48 (3.7%)	41 (3.1%)	37 (2.2%)	22 (1.4%)	29 (1.7%)
UNI	18 (4.5%)	19 (4.8%)	20 (3.7%)	18 (3.4%)	15 (3.7%)	18 (2.2%)
REGENT TOTAL	141 (4.4%)	167 (3.9%)	143 (3.2%)	107 (2.4%)	95 (2.2%)	111 (1.5%)

- ◇ Faculty replacement costs. ISU and SUI identified estimates of the replacement costs for faculty members who are on professional development assignment. The Faculty Scholars program at the University of Iowa, which also provides support for research expenses, is budgeted at \$5,500 for FY 2013 for one new Faculty Scholar. There are no continuing Faculty Scholars or new/continuing Global Scholars.
 - ☑ For the recommended awards, costs will be reduced, where possible, by having colleagues cover courses or deferring non-required courses to a later time.
 - ☑ To the extent possible, ISU department chairs and deans provide flexible approaches to managing the workload and associated costs for the assignments, including reassignment or alternate scheduling of courses. Some PDA requests do not represent new costs because they are managed by the department through a reassignment of course load among current faculty. Salary savings generated from other faculty members on assignment for a full year are used to offset the replacement costs for other faculty members.
 - ☑ UNI adjusts the schedules of existing faculty members, as appropriate, to cover the teaching assignments of faculty members who have professional development assignments. If a replacement faculty member needs to be hired, the costs are borne by the faculty member's department or college.

**BUDGETED REPLACEMENT COSTS
FY 2008 – FY 2013**

	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
SUI	\$123,485	\$342,436	\$201,800	\$148,700	\$130,800	\$174,532
ISU	\$159,762	\$167,348	\$68,569	\$107,747	\$125,000	\$247,100 ¹
UNI	\$73,231	\$126,013	\$120,994	NA	\$166,483	\$87,000
REGENT TOTAL	\$356,478	\$635,797	\$391,363	NA	\$422,283	\$508,632

- ◇ Proposed professional development assignment recipients by gender.
 - ☑ There are 64 proposed professional development assignments for men; this represents 57.7% of the total proposed PDAs. Men represent 62.6% of the total number of eligible faculty.
 - ☑ There are 47 proposed professional development assignments for women; this represents 42.3% of the total proposed PDAs. Women represent 37.4% of the total number of eligible faculty.
- ◇ Proposed professional development assignment recipients by race/ethnicity.
 - ☑ There are 30 proposed professional development assignments for racial/ethnic minorities; this represents 27.0% of the total proposed PDAs. Racial/ethnic minorities represent 15.4% of the total number of eligible faculty.
 - ☑ There are 81 proposed professional development assignments for non-minorities; this represents 73.0% of the total proposed PDAs. Non-minorities represent 81.2% of the total number of eligible faculty.

¹ The expected replacement costs are \$338,900. However, seven faculty requests are for a full academic year which will generate \$91,800 in salary savings. Therefore, the net replacement cost will be \$247,100.

FY 2013 PROPOSED PDAs BY GENDER AND RACE/ETHNICITY
UNIVERSITY OF IOWA

Race/Ethnicity	Total Number of Faculty			Number of Faculty Who Submitted an Application			Number of Faculty Proposed for Assignment		
	M	F	Total	M	F	Total	M	F	Total
Hispanic	67	37	104	2	1	3	2	1	3
Am. Indian/Alaska Native	9	13	22	1	0	1	1	0	1
Asian-Am.	210	71	281	5	2	7	5	2	7
Black/African Am.	45	42	87	1	5	6	1	5	6
Native Hawaiian/Pacific Islander	0	0	0	0	0	0	0	0	0
White	2,075	1,545	3,620	26	25	51	24	21	45
Two/more races	4	6	10	1	0	1	1	0	1
Unknown R/E	411	306	717	1	0	1	1	0	1
Nonres. Alien/Intl.	126	58	184	0	0	0	0	0	0
TOTAL	2,947	2,078	5,025	37	33	70	35	29	64

FY 2013 PROPOSED PDAs BY GENDER AND RACE/ETHNICITY
IOWA STATE UNIVERSITY

Race/Ethnicity	Total Number of Faculty			Number of Faculty Who Submitted an Application			Number of Faculty Proposed for Assignment		
	M	F	Total	M	F	Total	M	F	Total
Hispanic	20	23	43	0	0	0	0	0	0
Am. Indian/Alaska Native	5	1	6	0	0	0	0	0	0
Asian-Am.	160	46	206	6	1	7	5	1	6
Black/African Am.	18	13	31	0	0	0	0	0	0
Native Hawaiian/Pacific Islander	1	0	1	0	0	0	0	0	0
White	871	517	1,388	17	10	27	15	8	23
Two/more races	3	1	4	0	0	0	0	0	0
Unknown R/E	0	0	0	0	0	0	0	0	0
Nonres. Alien/Intl.	36	17	53	0	0	0	0	0	0
TOTAL	1,114	618	1,732	23	11	34	20	9	29

**FY 2013 PROPOSED PDAs BY GENDER AND RACE/ETHNICITY
UNIVERSITY OF NORTHERN IOWA**

Race/Ethnicity	Total Number of Faculty			Number of Faculty Who Submitted an Application			Number of Faculty Proposed for Assignment		
	M	F	Total	M	F	Total	M	F	Total
Hispanic	7	10	17	1	0	1	1	0	1
Am. Indian/Alaska Native	0	1	1	0	0	0	0	0	0
Asian-Am.	33	21	54	5	2	7	4	1	5
Black/African Am.	11	7	18	1	0	1	0	0	0
Native Hawaiian/Pacific Islander	1	0	1	0	0	0	0	0	0
White	386	347	733	10	10	20	4	8	12
Two/more races	4	4	8	0	0	0	0	0	0
Unknown R/E	0	0	0	0	0	0	0	0	0
Nonres. Alien/Intl.	0	0	0	0	0	0	0	0	0
TOTAL	442	390	832	17	12	29	9	9	18

**FY 2013 PROPOSED PDAs BY GENDER AND RACE/ETHNICITY
REGENT TOTAL**

Race/Ethnicity	Total Number of Faculty			Number of Faculty Who Submitted an Application			Number of Faculty Proposed for Assignment		
	M	F	Total	M	F	Total	M	F	Total
Hispanic	94	70	164	3	1	4	3	1	4
Am. Indian/Alaska Native	14	15	29	1	0	1	1	0	1
Asian-Am.	403	138	541	16	5	21	14	4	18
Black/African Am.	74	62	136	2	5	7	1	5	6
Native Hawaiian/Pacific Islander	2	0	2	0	0	0	0	0	0
White	3,332	2,409	5,741	53	45	98	43	37	80
Two/more races	11	11	22	1	0	1	1	0	1
Unknown R/E	411	306	717	1	0	1	1	0	1
Nonres. Alien/Intl.	162	75	237	0	0	0	0	0	0
TOTAL	4,503	3,086	7,589	77	56	133	64	47	111

- ◇ Average length of service. The average length of service for the proposed professional development assignment recipients is 15.8 years at SU; 14.2 years at ISU; and 12.4 years at UNI.
- ◇ Proposed professional development assignments by rank. There are 51 (45.9%) proposed professional development assignments for professors; 59 (53.2%) for associate professors; and one (0.9%) for an adjunct assistant professor.

UNIVERSITY OF IOWA (*denotes Faculty Scholar)

ADRAIN, JONATHAN M., PROFESSOR, GEOSCIENCE, 12 YEARS OF SERVICE, FALL SEMESTER

The Treatise on Invertebrate Paleontology is the standard reference on the biological systematics of fossil invertebrate animals and has been in publication and revision for more than half a century. Professor Adrain is a coordinating author for a trilobite fossil group and will dedicate his professional development assignment to helping revise the Treatise for trilobites, which are ancient marine arthropods. The revision will be produced in Iowa and involves coordinating several dozen experts in many countries to produce a reference work on a group with more than 20,000 known species. The result will be three revised reference volumes used by researchers, graduate students, and in classrooms worldwide. The project and its international collaborations will provide many opportunities for Iowa students to make international connections. The project will identify Iowa as a major world center for trilobite research. The work is of great benefit to the reputation and international visibility of the university paleontology program.

ALI, SABA R., ASSOCIATE PROFESSOR, PSYCHOLOGICAL & QUANTITATIVE FOUNDATIONS, 8 YEARS OF SERVICE, FALL SEMESTER

The purpose of the project is to work with the National Collaborative on Career and Workforce Policy and Development (NCCWPD) to develop accountability metrics and a logic model to evaluate quality career guidance services impact on workforce readiness. For accountability, it is important that career guidance services be assessed for improving the workforce readiness of students graduating from high school. This work will result in three important contributions – (1) a research policy brief; (2) a conceptual article; and (3) a prospectus for an edited book. This work will also enhance Dr. Ali's ability to teach doctoral students in counseling psychology to be policy advocates for educational/vocational issues. This work has the potential to strengthen and improve career guidance services for K-12 students. The university can become one of the national leaders in shaping public policy demonstrating the impact of career guidance services on workforce readiness.

ARMSTRONG, MARC P., PROFESSOR, GEOGRAPHY, 26 YEARS OF SERVICE, FULL YEAR²

The purpose of the proposed professional development assignment is to complete a book project that will focus on the role of geocoding in geographic research. Geocoding is a process in which map coordinates are added to computer records that contain only postal addresses. In addition to coverage of the range of geocoding methods often employed, the book will explore how geocoding can compromise the privacy of individual-level information and how global positioning devices are changing the way that geocoding is used in numerous application domains. As an adjunct to the book project, materials will be developed for a new course on the ethical collection and use of geographic information.

ARTHUR, LOYCE L., ASSOCIATE PROFESSOR, THEATRE ARTS, 13 YEARS OF SERVICE, FALL SEMESTER

Professor Arthur will focus on writing and editing curriculum documentation and a beta version of her Carnival Arts website that will be a resource for teachers and students. The result will be a unique curriculum text completed during Summer 2013. The project is likely to attract more students to her Costume Crafts, Costume Design II, and Elements of Design: Xicotepec Mexico classes, averaging 45 U. S. and 200 Mexican students. Professor Arthur's work on the curriculum and the community-based art events will give diverse groups of people a creative opportunity to take ownership of visual representations as well as rituals and stories to re-connect and extend their sense of common ground. In an increasingly impersonal world, the carnival arts can be used to bridge differences and celebrate human creativity.

² Professor Armstrong's professional development assignment was postponed from an earlier year.

BERN-KLUG, MERCEDES E., ASSOCIATE PROFESSOR, SOCIAL WORK, 8 YEARS OF SERVICE, FALL SEMESTER

A small “pilot” study geared toward improving life among nursing home (NH) residents with Alzheimer’s disease is proposed. The study will investigate if participating in a specific group activity based on stimulating imagination can help elevate mood. Findings will be used to apply for a grant and may lead to improvements in the way NHs provide activities. It will also develop a “service learning” experience for students. Spending time in nursing homes, Professor Bern-Klug will add interest to lectures and assignments, especially in the classes “Introduction to Nursing Homes” and “Service Learning in Aging Studies.” Iowa has 70,000 persons with Alzheimer’s disease. Little is known about non-pharmaceutical options (activities) that can be used in NHs to improve life for residents. This test of a low-cost option may yield high rewards for residents, family, and staff. Nursing home staff are likely to improve their skills in working with residents with dementia.

BIANCHI, ALISON J., ASSOCIATE PROFESSOR, SOCIOLOGY, 4 YEARS OF SERVICE³, FALL SEMESTER

Using experimental methodology, Professor Bianchi intends to study group processes concerning race/ethnicity at two Baltimore, Maryland universities. This research is important as few rigorous, theory-driven studies of minority-majority relations have been done in laboratory environs. The outcomes of her project will include results from two experimental studies involving both White and Black (African-American) research participants. This work will benefit her teaching as she will be better informed about working with diverse student populations and will be better able to train undergraduate and graduate students. Any study that explores how interactions between Europeans and African-Americans are conducted will help all persons in our growing racially and ethnically diverse society. This study will help others at the university conduct research concerning group processes and race/ethnicity because Professor Bianchi will have made new bridges between universities with diverse student populations.

BURTON, STEVEN J., PROFESSOR, LAW, 34 YEARS OF SERVICE, SPRING SEMESTER

Professor Burton will research and write a lengthy law journal article on precedent and overruling in constitutional cases before the U. S. Supreme Court. The “Roberts Court” has been developing a novel, but largely unrecognized theory, that broadens the Supreme Court’s power to overrule precedents. Students in the College of Law and other law schools study Professor Burton’s book, “An Introduction to Law and Legal Reasoning.” This project will result in significant changes to the 4th edition, which is due for publication in 2015-2016. We would benefit from a better understanding of the Rule of Law under our Constitution and the Supreme Court’s role in maintaining the Rule of Law.

CHAN, KUNG-SIK, PROFESSOR, STATISTICS & ACTUARIAL SCIENCE, 20 YEARS OF SERVICE, HALF TIME FOR ONE YEAR

Due to recent advances in the implementation of multi detector-row CT (MDCT)-based imaging and automated image analysis of the lung, detailed in vivo measurements of individual human lungs have been increasingly and routinely collected by researchers. The wealth of such detailed lung data raises the interesting question of how best to empirically explore the cluster structure in a general population of lungs and/or the presence of systematic variations in the structure of lung across groups, e.g., normal subjects vs. subjects with certain lung disease (asthma or COPD). Professor Chan proposes to develop novel statistical methods for analyzing high-dimensional lung image data. The proposed work enhances teaching related to statistical computing and statistical inference with complex data. Information on the clustering structure of

³ Professor will have met the 10 semester requirement prior to undertaking the professional development assignment per SUI policy.

human lung image data advances our understanding of the etiology of the disease that may improve prevention, diagnostics and treatment of the disease.

CHEATUM, CHRISTOPHER, ASSOCIATE PROFESSOR, CHEMISTRY, 8 YEARS OF SERVICE, SPRING SEMESTER

Microscopy is a powerful tool with many applications. Professor Cheatum is an expert in 2D IR spectroscopy, which characterizes chemical environments. He plans to develop 2D IR microscopy to generate a microscopic image based on the difference in chemical environments measured by 2D IR. The development of 2D IR microscopy will lead to high impact publications and presentations to introduce this new technique and demonstrate its applications. It will also attract new research funding for further development. Students will benefit from the opportunity to work with a unique and cutting edge tool. Information about this new method will be incorporated into Professor Cheatum's teaching. The development of a new microscopy has the potential to launch new fields of science leading to applications we cannot yet imagine, advancing the state of Iowa and benefiting society. This work will raise the profile of the University of Iowa in the scientific community.

CHRISTENSEN, ALAN J., PROFESSOR, PSYCHOLOGY, 18 YEARS OF SERVICE, FALL SEMESTER

Professor Christensen's PDA activities involve developing clinical practice strategies for tailoring medical care delivery to match patient preferences and expectancies toward healthcare. He will collaborate with colleagues at the National Institutes of Health where the development of new applications for health information technology is a priority. He will review the literature on health information technologies and integrate this work with research on individualization of chronic disease management. He will work with senior investigators at the NIH on the health care delivery and develop a national, research conference in this area. Finally, he will extend his research program and funding in this area. His work will contribute to current courses he teaches, as well as the development of a new course on health information technology. His work to develop new tools to improve the delivery of health care services could help lower the cost of healthcare.

DOVE, EDWIN L., ASSOCIATE PROFESSOR, BIOMEDICAL ENGINEERING, 26 YEARS OF SERVICE, FALL SEMESTER

Congenital heart disease is the most common birth defect. Despite tremendous advances in early diagnosis and medical and surgical management, mortality remains unacceptably high for infants with complex single ventricle heart malformations. Mortality rates remain as high as 30% between the first and second stage of surgical palliation for the most common single ventricle malformation, Hypoplastic Left Heart Syndrome (HLHS). Little is known about the autonomic nervous system in HLHS patients. The long term goal is to identify at-risk patients with autonomic dysfunction. Engineering/mathematical analysis techniques will be used to assess autonomic nervous development in normal and HLHS patients, and to use the techniques to identify at-risk subjects. The techniques developed in this work will be directly transmitted to the classroom in biomedical signal processing classes used in undergraduate and graduate education. The work's intent is to reduce infant mortality.

DURHAM, FRANK D., ASSOCIATE PROFESSOR, JOURNALISM & MASS COMMUNICATION, 11 YEARS OF SERVICE, FALL SEMESTER

Professor Durham's project will involve analyzing news coverage of partisan news "pranks" by conservative media activists Andrew Breitbart and James O'Keefe, and interviewing the subjects and reporters of those stories. The project will focus on conservative and mainstream media to ask how journalism has changed since the 1980s. It will ask who controls sourcing, how has the process of cultural meaning production changed, and what does partisanship mean for the news as a site of consensus? A book proposal for a university press will be prepared. It will advance the undergraduate course and the doctoral seminar he teaches on the subject. Understanding journalism contributes to civic engagement. It is a source of democratic action, even as "democracy" changes. Understanding the ways in which society is less unified, not more, will enable Iowans to understand the world around them in meaningful ways. The study will gain prominence within national professional and scholarly media circles.

EBERLE FINK, KATHERINE A., PROFESSOR, MUSIC, 20 YEARS OF SERVICE, FALL SEMESTER

This assignment will allow artistic creation necessary for Professor Fink to mount a concert tour of art songs by women composers at concert venues in the United States and to record and edit a compact disc recording of those same composers for international publication. It will enhance and diversify the learning experience of students in her courses. This project focuses will advance the author's understanding and that of her students in an integrative approach to the challenge of adapting to societal and cultural changes, and will assist students to explore how one attains a sustainable performing future. This work provides access to and participation in the arts through the premise that the experience, understanding, and historical appreciation of women composers gives value, meaning, and enjoyment as well as enriches the educational experience of the general public, student singers, performers, and educators.

ECKSTEIN, BARBARA J., PROFESSOR, ENGLISH, 21 YEARS OF SERVICE, FALL SEMESTER

Professor Eckstein's proposed PDA project, "American Bottoms" pursues social, cultural, and environmental analysis of selected low-lying sites (bottoms) in the Upper Mississippi River Basin (UMRB), asking why these sites have declined as communities and what resources are available for transformation. Focusing on what 19th century settlement can teach the 21st century, this project studies both diverse human interactions and human engagement with other species of the bottoms-most notably, mosquitoes. The project will result in a book; chapter three will also result in a visual and verbal on-line presentation. The research adds to knowledge of the UMRB and enhances understanding of sustainability, both subjects of Eckstein's teaching about the relationship between stories and places. The study includes sites in Iowa struggling to remain viable. It builds on past research about the economic motives of settlers and looks to other desires to understand the UMRB. This research is part of UI's sustainability initiatives.

EMERY, MARY L., PROFESSOR, ENGLISH, 28 YEARS OF SERVICE, FALL SEMESTER

In this book project, Professor Emery calls attention to the significance of two kinds of houses - the plantation and the bungalow - in 20th century literature. The project contributes to a recent turn in literary criticism toward the study of material culture, an approach that has become increasingly important to understanding literary engagements with the material realities of everyday life. Professor Emery will complete two chapters and prepare applications for external grants. She will also present her work at conferences and design a new course. Work on this

project will enliven courses she already teaches, further support the work of graduate students in the fields of research, and provide material for a new course. The focus on portrayals of the plantation and bungalow illuminates ongoing dilemmas of modernity: the home and homelessness, freedom and dispossession, human culture and the natural environment. The study contributes to understanding cross-cultural encounters.

GALLANIS, THOMAS P., PROFESSOR, LAW, 2 YEARS OF SERVICE, HALF TIME FOR ONE YEAR⁴

Working in libraries in Oxford, Cambridge and London, Professor Gallanis will complete two book-length projects on 18th century English law. He is part of an international team producing a scholarly edition of a leading treatise, William Blackstone's 4-volume "Commentaries on the Laws of England". The "Commentaries" is still cited by courts, including the U.S. Supreme Court. This new edition, under contract with Oxford University Press, is expected to become the standard. He is also producing a scholarly edition of the unpublished notes of Dudley Ryder, Chief Judge of the King's Bench 1754-56. These notes, of the 290+ civil and criminal trials over which Ryder presided, provide a uniquely detailed window on English law and legal institutions. Both projects will result in published books. Both projects will help him teach Iowa students about the Anglo-American legal tradition and will illuminate the history of the common law, the foundation for the law of Iowa and the U.S.

GIDAL, ERIC, ASSOCIATE PROFESSOR, ENGLISH, 15 YEARS OF SERVICE, FALL SEMESTER

Professor Gidal will study the dialogue between poetry and geology in the reception of *The Poems of Ossian*, an 18th century rendition of Gaelic oral traditions which had an enormous influence on European and American arts and letters. During the period of the assignment, Professor Gidal will visit and research the industrial and geological histories of locations in Scotland and Northern Ireland identified by two 19th century Scottish authors whose work highlighted environmental components of the poetry. His research will result in a published monograph and course materials. This project will inform a range of offered and developing courses in 18th and 19th century literature and ecological literary studies on both the undergraduate and graduate levels. Professor Gidal's research will provide historical and cultural contexts for understandings of environmental concerns and will actively contribute to the Sustainability at Iowa initiative.

GREEN, CARIN M., PROFESSOR, CLASSICS, 20 YEARS OF SERVICE, HALF TIME FOR ONE YEAR

For over ten centuries (6th century B.C.E to 6th century C.E.) the Circus Maximus, a stadium begun by the kings, and maintained and expanded thereafter for the public by magistrates and emperors, was the iconic expression of Roman power and self-confidence. Green's book, entitled *The Gods in the Circus*, pulls together the evidence showing that the Circus Maximus was a place of religion, concerned with boundaries and guaranteeing future security for the city. Rituals gave divine authority to games and performances that, among other things, served to integrate a multi-ethnic population into a shared "Roman" identity. A book and a new course will be developed. This work will contribute to a new course on the Circus, and to Green's teaching in Roman religion and Roman culture. It offers new insight to public and religious efforts to create shared identity in a multi-ethnic society. It benefits the Classics department's growing international reputation in the study of ancient Mediterranean religion.

⁴ He was awarded a PDA after two years of service as part of his employment contract at UI.

GUENTNER, WENDELIN, PROFESSOR, FRENCH & ITALIAN, 26 YEARS OF SERVICE, FALL SEMESTER

Professor Guentner will write the last three chapters for her interdisciplinary book, "Remembrance of Things Present: Jules Claretie's 'La Vie à Paris' (1880-1913)." Its object is to trace--through Claretie's chronicle--the revolutionary impact technological innovation had on the daily life of Parisians over a more than 30 year period. Completion of three chapters will occur during the assignment. It will enhance her teaching of "Revolutions in 19th-Century France," "Technology and Cultural Expression in 19th-Century France" and a Freshman Seminar on Paris. It offers the informed reader an historical context for the impact the Digital Revolution is currently having on human subjectivity, social exchange and cultural production. Guentner's book is of scholarly importance to cultural historians in a range of disciplines, including 19th and 20th century studies, communication studies, urbanism and the history of transportation; post-colonial studies, the history of warfare and of French-German relations.

GUPTA, PRAHLAD, ASSOCIATE PROFESSOR, PSYCHOLOGY, 13 YEARS OF SERVICE, SPRING SEMESTER

Better understanding is needed of how people learn new words, because this ability underlies human language development. Professor Gupta will conduct an experimental study of the roles played by linguistic ability and memory abilities in the learning of new words, and a computational study of how meanings of new words are associated with their sound patterns. Professor Gupta will submit investigations conducted during this period for journal publication. He will also utilize this period to write two papers describing prior investigations of word learning. Professor Gupta will incorporate findings from this project into relevant class teaching. Involvement in these projects will benefit the education and research experience of graduate and undergraduate students in his lab. Improved understanding of new word learning is also important because word learning ability affects educational achievement; almost 7% of children in the U.S., including Iowa, have difficulties with it.

HEINEMAN, ELIZABETH D., ASSOCIATE PROFESSOR, HISTORY/GENDER, WOMEN'S & SEXUALITY STUDIES, 12 YEARS OF SERVICE, SPRING SEMESTER

In 1938 and 1939, ten thousand Jewish children from Germany went to England as part of "Kindertransport," or Children's Transport. Most never saw their parents again. *Kindertransport: A Family History* draws on case studies to embed Holocaust-related separations into multi-generational family histories. The assignment will result in a book written for a lay audience; and scholarly articles. It will enrich the professor's survey of 20th century Germany and courses on Nazi Germany and the Holocaust. The popularity of Holocaust-related themes provides an opening for historians to educate the public about larger historical questions. Written for a lay audience, this book addresses the relationship between "History" writ large and the family relations that shape our lives. It also addresses issues like genocide and forced migration, which continue to be relevant. It will build on UI's mission of public engagement, improve undergraduate teaching, and enhance UI's scholarly reputation in history.

HESLI, VICKI L. J., PROFESSOR, POLITICAL SCIENCE, 22 YEARS OF SERVICE, SPRING SEMESTER

Though it is one of the most politically astute and enduring Islamist organizations in the Middle East, the Muslim Brotherhood has been little studied. Hesli will fill this gap by providing analyses of the role the Muslim Brotherhood plays in Egyptian politics. Hesli will author reports, present conference papers, and publish articles about the Muslim Brotherhood. Hesli will use the knowledge gained in the following courses she teaches: Introduction to Politics in the

Muslim World, Ethnic and Religious Conflict in the Muslim World, and War in the Muslim World. Hesli is the only "expert" on the Middle East in the UI political science department. She frequently visits K-12 classrooms, provides commentary to the media, and speaks to local organizations such as the Kiwanis Club of Iowa City. Hesli participates in roundtables and workshops on subject areas related to this proposal. She also visits student dormitories through the "Call for Involvement Faculty Program."

HITLIN, STEVEN, ASSOCIATE PROFESSOR, SOCIOLOGY, 6 YEARS OF SERVICE, FALL SEMESTER

A potential book project during this PDA will engage two issues: the empirical causes and consequences of the "equality-difference paradox", and a project focused on the American attempt to deal with this paradox. Each project engages core issues to understanding self and society. There will be a collaborative book-length project, and a single-authored article building on my previous 2008 book on morality. I teach a variety of courses touching on these topics, have arranged directed study projects on the topic, and teach graduate seminars on Morality as well as Self and Society. In putting an interdisciplinary project together, I have created networking opportunities for a number of Iowa graduate students, in addition to the normal benefits that accrue to undergraduate education through scholars being actively engaged in their disciplines. Iowa's name goes on any publications, and these topics have potential wider media interest. A more engaged scholar is a better teacher and colleague.

HUCKLEBERRY, ALAN, ASSOCIATE PROFESSOR, MUSIC, 8 YEARS OF SERVICE, FALL SEMESTER

Dr. Huckleberry will video-record all major pedagogical piano works for elementary to intermediate piano students. The video recordings will be accessible to the public on YouTube. This video database will include approximately 5000 compositions, most of which have never been recorded by a professional pianist. The database will provide private piano teachers and their students a centrally located site to experience educational pieces performed at the highest artistic level. As he will be the only pianist/pedagogue to have undertaken such a massive project, Dr. Huckleberry will be in the unique position to speak with authority on topics relating to piano repertoire and teaching with technology from a practical standpoint. This database will provide a direct line of outreach to the piano teachers of our state. The more that is done to help teachers' continuing education, the higher the level of education is throughout the state.

JOHNSON, ALAN K., PROFESSOR, PSYCHOLOGY, 38 YEARS OF SERVICE, SPRING SEMESTER

A PDA will permit the applicant to make a significant contribution to "The Hunger for Salt: An Anthropological, Physiological and Medical Analysis, 2nd Ed." The original author, Derek Denton, M.D., has invited the applicant to co-author this important resource. Contemporary courses in the behavioral neurosciences address topics related to primary drives such as the hunger for salt. Co-authoring the primary scholarly resource on salt hunger will undoubtedly increase the applicant's knowledge of this field, and thereby enhance his effectiveness as a teacher and mentor. Maintaining normal sodium intake is critical for survival. Disorders such as hypertension and stroke are associated with disordered salt intake. Basic knowledge about salt hunger is of great importance for understanding processes vital for health and many major diseases. This basic text is relevant to many disciplines.

JORGENSEN, PALLE E., PROFESSOR, MATHEMATICS, 28 YEARS OF SERVICE, SPRING SEMESTER

Professor Jorgensen will examine representations of non-commuting variables, their use in engineering, e.g., in analysis/synthesis-filters in signal processing, both for transmission of speech and of images, and in quantum programs from quantum computation (QC). He will also do research in financial mathematics with application to valuation of option pricing of financial derivatives. The expected benefit is publication in refereed scientific journals, benefit to our graduate students, and interdisciplinary advances, and outreach. He currently has 5 graduate students working with him on their thesis projects who will benefit from his work. The proposed research also directly benefits his work with students in the course Financial Mathematics that he teaches regularly. The research cuts across Schools and Departments; is of relevance to Iowa industries, financial and insurance; it will contribute to economic and cultural vitality of life of Iowa. Jorgensen directs REU students in the ALIANCE-VIGRE program.

JUNG, ANITA, ASSOCIATE PROFESSOR, ART & ART HISTORY, 5 YEARS OF SERVICE, FALL SEMESTER

Professor Jung has been offered an artist residency at CHHAAP: Foundation for Printmaking Trust in Baroda, India, for the fall of 2012. During this residency Jung will create a body of work that is autobiographical, exploring life in Mid America suburbia and merging these images with her impressions and experiences of India. Jung's residency will result in an exhibition at the atelier that will then be available for exhibition in the United States. Over the past few years Jung has actively created a study abroad program for the School of Art + Art History to India; this experience will enhance those offerings. Jung regularly exhibits art in Iowa, so the experiences Jung has in India will be shared through her art with the larger Iowa society creating greater global understanding and appreciation. A PDA will provide the exciting opportunity for Jung to spend an extended time conducting her creative research in India and making important contact with peers at the Maharaja Sayajirao University.

KAYLE, JENNIFER, ASSOCIATE PROFESSOR, DANCE, 7 YEARS OF SERVICE, SPRING SEMESTER

To keep pace with the field, this research examines 3 cutting-edge Somatic Practices in Contemporary Dance: Feldenkrais Method, Skinner Releasing Technique, Klein Technique. Studio intensive research produces tangible physical/kinesthetic knowledge. Applications include: diverse and powerful teaching strategies for the technique curriculum, a recalibrated body/technique that provokes new directions in creative research, updated and relevant techniques that improve graduate recruiting. Applied as corrective measures, this work will help students prevent injury and increase longevity in the field. These stylistically neutral techniques expand the range of physical/artistic possibilities, allowing students to meet diverse artistic demands, smoothing their transition to the field. Those invested in somatic practices can model and promote a sophisticated and humane integration of inner/outer awareness, discipline, and the capacity to make choices that cause positive change over time.

KOPELSON, KEVIN R., PROFESSOR, ENGLISH, 19 YEARS OF SERVICE, FALL SEMESTER

"Tales from School" will be a work of creative nonfiction. The book will be autobiographical yet imaginative as well as both confessional and satirical. "Tales from School," will help readers understand how one's life outside of academia can affect life within it; it is currently under contract at Counterpath Press. When published, the book should attract (positive) critical attention both within academia and outside of it. Professor Kopelson plans to teach new

courses on writing creative nonfiction and autobiography – including either confessional or satirical autobiography. "Tales from School" will be an exemplary instance of both creative nonfiction and autobiography. When published, "Tales from School" should help its academic readers become better at their jobs -- better at teaching, as well as at research and writing. "Tales from School," being easy to follow, informative, and entertaining, should appeal to non-academic readers as well.

KRUGER, MARIE, ASSOCIATE PROFESSOR, ENGLISH, 6 YEARS OF SERVICE, SPRING SEMESTER

Professor Kruger will conduct field research in South Africa for her book on South African visual culture and its representation of the traumatic experiences of the victims of political repression. Her project is the first book-length study that links specific types of visual culture (films; multi-media exhibitions) to the political dialogue on trauma, racial reconciliation, and democracy in South Africa. Based on her field work, Professor Kruger will develop the first two chapters of her book, publish her research in a peer-reviewed article and present her findings at several conferences. She will use her research findings and collected multi-media sources to design a new course on these important issues and to help students develop globally-oriented knowledge and skills. Her work will provide Iowa residents with access to diverse cultural experiences and expressions. By collaborating with South African colleagues, she will raise the international profile of the University.

LARONDE, MICHEL S., PROFESSOR, FRENCH & ITALIAN, 29 YEARS OF SERVICE, FALL SEMESTER

The PDA book project studies the massacre of North Africans in Paris on October 17 1961, during a demonstration in favor of the independence of Algeria. The event was silenced for 20 years. Since the 1980s, it has resurfaced in French literature and cinema. Professor Laronde examines the process of reinserting buried memories in a historical perspective through their representation in fiction. The cultures of immigration in France are the subject of his four books. History and memory are new developments in his general research and teaching interests. He plans to complete the book in 2013. Cultures of immigration in France are his area for teaching, at the graduate and undergraduate level. The date, 17 October 1961, is present in several of his courses through films and novels. In spring 2009 he created a new course on Algeria and is teaching the course again this fall. His research and teaching bring an International Francophone World Studies perspective to the University's mission.

LARSEN, SARAH C., PROFESSOR, CHEMISTRY, 16 YEARS OF SERVICE, SPRING SEMESTER

Professor Larsen will develop nanomaterials (particle sizes less than 100 nm) for biomedical applications. Specifically, she will collaborate with biomedical researchers to prepare nanomaterials that will be used to improve the detection of diseases through imaging methods. She will also develop new analytical methods for studying biological and environmental interfaces of nanomaterials. The proposed research will be published in peer-reviewed scientific journals. Grant proposals for external support will be submitted based on the research conducted during this award. These research activities will enhance her teaching, particularly in introductory chemistry and in a first-year seminar course on Nanomedicine, in which she will introduce new materials related to nanotechnology and imaging. This research may lead to improved diagnosis and treatment of aneurysms and cancer. The development of this collaborative project will contribute to the interdisciplinary research efforts at UI.

LAURIAN, LUCIE, ASSOCIATE PROFESSOR, URBAN & REGIONAL PLANNING, 7 YEARS OF SERVICE, SPRING SEMESTER

Despite ubiquitous sustainability goals, urban development patterns remain unsustainable. Dr. Laurian will expand on her NSF-funded research to investigate the features of local government that promote the implementation of sustainability initiatives. Her current research contrasts American and New Zealand planning systems. During her professional development assignment, she will focus on Dutch and Italian cities known for their sustainability initiatives to investigate the role of supra-national mandates and of municipal autonomy for sustainability. The findings about sustainability-supportive institutional features will be published in scholarly and professional journals, and may constitute a book-length publication. The results will inform her teaching on environmental planning and prepare UI students to address institutional barriers to sustainability when they enter the workforce. The uptake of the findings by local agencies will support sustainability implementation in all interested communities.

LIDDELL, DEBORA L., ASSOCIATE PROFESSOR, EDUCATIONAL POLICY AND LEADERSHIP STUDIES, 18 YEARS OF SERVICE, FALL SEMESTER

Masters-level programs prepare graduates for work in U.S. higher education settings, but they are not bound by a single set of standards. As a result, campus professionals may be unprepared to meet the changing demands of higher education. This project supports the completion of an investigation of the experiences and influences of new professionals in higher education settings. This project supports multiple manuscripts and conference proposals on: (1) significant learning experiences that contribute to the preparation of successful new professionals, (2) identification of the best practices in graduate education for higher education professionals-in-training, (3) a call for standardization of professional preparation programs in higher education; and (4) the development of an undergraduate course on Careers in Higher Education. Results will be integrated into our graduate program curriculum. Results will help campus professionals be more effective mentors with graduate assistants.

MAIERHOFER, WALTRAUD, PROFESSOR, GERMAN, 21 YEARS OF SERVICE, FALL SEMESTER

Professor Maierhofer will do research on the illustrations (title images and frontispieces) in the Austrian editions of the complete works by Goethe who was at that time already considered Germany's most eminent writer. Such illustrations during his lifetime have been remarkably absent from scholarship on book illustration. The benefits will include publication of the images with an introduction and commentary as a "digital monograph"; scholarly article in English for presentation at a national conference; article in a scholarly print journal such as Goethe Yearbook. This project continues and complements her current research and will lead into a larger project (monograph, possibly conference) on book illustrations. Professor Maierhofer uses illustrations wherever she teaches works by Goethe. Through digital editions everyone can become a lifelong member of scholarly communities and exchange. This project and follow-up activities will contribute to its further internationalization.

MARTIN-ESTUDILLO, LUIS, ASSOCIATE PROFESSOR, SPANISH & PORTUGUESE, 6 YEARS OF SERVICE, SPRING SEMESTER

Professor Martin-Estudillo's book project examines the responses that Spanish artists and intellectuals offer to the challenge posed by the integration of Europe and its prevailing ideals. It questions the validity of these developments in a time when intolerance is growing there. He will write the final chapter of the book and revise the rest of the completed manuscript. The PDA will result in a single-authored academic book published by a major University Press. It

will enhance students' critical thinking: notions central to his research, such as modernity, otherness, exclusion, and utopia are topics which have already fostered lively debates in his courses and often lead us beyond the same spatial frontiers—those of Spain and Europe—that we were questioning. The book exposes the contradictions between the benevolent, alterity-friendly official discourse of the European Union and its nation members, and their actual policies, which often betray the principles of tolerance and progress they solemnly state. This project will result in visibility abroad.

MCGUIRE, STEVE, PROFESSOR, ART & ART HISTORY, 23 YEARS OF SERVICE, SPRING SEMESTER

The artist proposes to create the drawing and sculpture exhibition *Single Speed Geography: Deliver a Dynamic Landscape* that infuses mapping technology concepts into performance, drawing and design. While we have always been invited to both explore and be location aware, now there is the eminent challenge for artists to engage the convergence of geographical data, wilderness and performance, and do so as a multi-layered visual research project. The faculty member will accept, during the award period, an invitation to do the inaugural exhibit at the University of Kansas which has highly ranked programs. The faculty member will work on a skill-set and courses that make a substantive contribution to the realigned curriculum of the Studio Division in the School of Art and Art History, including two new courses: Locative Visual Art Practice as Research and Design and Purpose-Built. The application of new forms of visual representation used to express location will result.

MURRAY, JEFFREY C., PROFESSOR, PEDIATRICS, 27 YEARS OF SERVICE, SPRING SEMESTER

Dr. Murray proposes to acquire new skills in computational biology and bioinformatics to apply to studies of preterm birth. The PDA will enable better exploitation of DNA sequencing, computer analytic approaches to the data and collection of large sample sizes to identify genes and environmental triggers that can be directly investigated to improve care and prevention of preterm birth. The benefit to teaching and students will be better mentoring of junior faculty, graduate students and undergraduates in these critical areas. It will place the State of Iowa and the UI in a better position to compete nationally and internationally for projects related to the outcomes of the human genome project. Translation to care of Iowans and enhanced national reputation will occur. Benefits to the University include new grant applications and courses.

MUTEL, ROBERT L., PROFESSOR, PHYSICS & ASTRONOMY, 36 YEARS OF SERVICE, FALL SEMESTER

Professor Mutel will pursue research on the plasma physics of stellar and planetary magnetospheres, using radio telescopes and space-based observations of radio and x-ray emission from the astrophysical magnetospheres. The goal is to better understand how astrophysical magnetic fields form and evolve in young stars and planets. He will present research results at national and international meetings, and publish in leading scientific journals (e.g., *Astrophysical Journal*, *Geophysics Research Letters*). This research will comprise a major part of the Ph.D. thesis of a 3rd-year graduate student working under the supervision of Professor Mutel. Professor Mutel has received more than \$500K in external funding for similar research, providing student and staff jobs. The PDA will strengthen the prospects for future funding. The research is of fundamental importance to space physics and astronomy, and will enhance the international research reputation of the University.

OHLMANN, JEFFREY W., ASSOCIATE PROFESSOR, MANAGEMENT SCIENCES, 8 YEARS OF SERVICE, SPRING SEMESTER

The ability of a company to identify cost-effective plans for supply delivery is crucial for maintaining competitiveness in a global economy. For a manufacturing company with a set of geographically-dispersed suppliers, designing low-cost supply routes requires the successful solution of intractable mathematical optimization problems, necessitating the development of the state-of-the-art solution approaches that Ohlmann proposes. The PDA will include research results presented at an academic conference and published in a highly-respected journal in the logistics research community. Ohlmann's collaboration in Italy will provide the opportunity to gain first-hand experience of management practices exercised by European companies. Ohlmann can then leverage these experiences to enrich his teaching upon his return to Iowa. The development of solution approaches proposed by Ohlmann can assist U.S. manufacturing companies reduce the cost of their logistics networks and improve competitiveness. It will also result in international exposure.

ONWUACHI WILLIG, ANGELA, PROFESSOR, LAW, 5 YEARS OF SERVICE, FALL SEMESTER⁵

This project explores the past and present social meanings of the 1920s Rhinelander case. Rhinelander involved an annulment claim by Leonard Rhinelander, a white socialite, who married Alice Jones, a working-class chambermaid. Leonard alleged that Alice committed fraud upon their marriage by passing as white. Surprisingly, Alice did not try to litigate or prove her whiteness but instead admitted that she was "colored." She argued that Leonard knew her racial background before the marriage. The jury shockingly returned a verdict for Alice. This project examines various lessons from the Rhinelander case as a means of revealing how law and society function together to frame the normative ideal of family as monoracial. It focuses on two means by which law and society define this ideal: (1) by punishing racial transgressors—those who have engaged in interracial marriages and (2) by failing to acknowledge the existence of interracial couples, thereby rendering them invisible in law and life.

PAIK, ANTHONY, ASSOCIATE PROFESSOR, SOCIOLOGY, 8 YEARS OF SERVICE, FALL SEMESTER

The proposed research will investigate the use of signals by individuals in social life. Signals are observable symbols, cues, or behaviors that indicate difficult-to-observe traits. Despite the increasing popularity of signaling theory across a number of disciplines, it is rarely employed in the discipline of sociology. This project will evaluate how signaling theory can be used to explain sociological phenomena. The findings of this research will be reported in a draft book manuscript. The potential impact of this research will be an increased awareness of how signaling is relevant in social life. This research will enhance teaching activities by increasing course content that covers signaling explanations of noneconomic behaviors. This research may facilitate increased awareness about the nature of signaling in social life.

PRUSSING, ERICA, ASSOCIATE PROFESSOR, ANTHROPOLOGY, 9 YEARS OF SERVICE, SPRING SEMESTER

This project's goal is to provide the first international comparison of rising indigenous activism to promote community-based public health research, focusing on New Zealand and the United States. Comparing and contrasting how the original inhabitants of these two nation-states are responding to similar health disparities incorporates key insights from postcolonial studies more

⁵ Professor Willig's PDA was postponed from an earlier year.

fully into health research. The researcher will use ethnographic methods to document the perspectives and activities of staff at selected indigenous-controlled health research centers, focusing on two Maori-controlled epidemiology centers in New Zealand. The PDA will result in professional presentations, scholarly articles and a book. Project findings will inform teaching that promotes international and multicultural understanding among Iowa students in the liberal arts and health sciences. Benefits will include civic engagement when applied to help recruit indigenous students into public health careers as well as service to Native Studies & Global Health programs.

QIAN, YIMING, ASSOCIATE PROFESSOR, FINANCE, 9 YEARS OF SERVICE, SPRING SEMESTER

A Pre-IPO market is where investors can trade a firm's stock before the firm undertakes an initial public offering (IPO) and becomes a public firm. It is a new phenomenon and can potentially address the most challenging issue in an IPO – the efficiency in pricing the stock. This study is the first to examine the benefits and costs of pre-market. In addition to contributing to the IPO literature, it has practical importance. A research paper is to be produced for publication at a top-tier finance journal. The study will be presented to researchers, practitioners and regulators. The study will show students the latest development on a key finance topic. Professor Qian will incorporate his research into teaching, e.g., by making a case study. The study is timely in examining an important new phenomenon. The insights are useful to firms and investors. The study can also give guidance to policymakers on how to regulate pre-market. Attention to the study can increase the school's reputation (including in Asia).

ROY, CHRISTOPHER, PROFESSOR, ART & ART HISTORY, 33 YEARS OF SERVICE, SPRING SEMESTER

Professor Roy plans to carry out research in Burkina Faso, West Africa where he has studied art in social context since 1970. He will continue the research he began in 1970 on continuity and change in the art of the Mossi people. Professor Roy will travel to northern Burkina Faso to a village named Samba, where he carried out research in 1976. There he will investigate the changes that have taken place in the intervening years in artistic productivity and use of art. He will publish a book and a DVD titled "Yaaba Soore: Continuity and Change in the Art of the Mossi People of Burkina Faso. He teaches 400 students a year, who sign up for his classes to learn about West Africa. His research will enhance these classes. His work will continue to help Iowans understand the importance of cultural diversity and the value of other people's art.

SANDERS, KATRINA M., ASSOCIATE PROFESSOR, EDUCATIONAL POLICY AND LEADERSHIP STUDIES, 14 YEARS OF SERVICE, FALL SEMESTER

Professor Sanders' work on the development and dismantling of black Catholic schools contributes an understanding of black educational history and Catholic school history pre and post desegregation. It reveals why black communities felt Catholic schools were better for them than public schools. Her work will culminate in a book which reveals stakeholders' perceptions of a quality education and the decline of quality following desegregation and black Catholic school closings. Her work introduces knowledge of/from an alternative educational system and notions of educational quality as defined by minorities. Her work illuminates current reports of superior urban minority educational results at Catholic schools. It benefits Iowans as the Diocese of Des Moines considers opening a Cristo Rey school as part of its Catholic school system. Her work fills a gap between black education scholars and Catholic scholars who have not considered historically each others' contributions to quality minority education.

SCHNELL, SCOTT R., ASSOCIATE PROFESSOR, ANTHROPOLOGY, 18 YEARS OF SERVICE, FALL SEMESTER

Rural Japan evokes images of insular villages engaged in irrigated rice cultivation. This project offers a different perspective by focusing on the matagi—traditional hunters of bear and other animals in the forested mountains of Japan’s interior. The term matagi conveys a sense of stewardship and an intimate understanding of the forest ecosystem. The project will investigate the role of the matagi as vital intermediaries between the forested mountain and domesticated lowland environments, and particularly their recent promotion through ecotourism and the popular media as instructive models for “coexisting with nature.” It will generate two journal articles and a book manuscript. It will provide concrete examples for use in courses dealing with human-environmental interactions, and also promote better understanding of Japanese culture. The Japanese case example, whether positive or negative, will inform people’s approaches to similar problems at home in Iowa and will promote interdisciplinarity.

SCHULTZ, SUSAN K., PROFESSOR, PSYCHIATRY, 16 YEARS OF SERVICE, HALF TIME FOR ONE YEAR

A PDA will permit Dr. Schultz to lead a landmark effort in disease classification. The field is preparing to release the 5th edition of the Diagnostic and Statistical Manual (DSM) of Mental Disorders and Dr. Schultz will serve as Text Editor. The DSM involves ~ 1000 pages of text covering nearly 300 mental disorders, to be published by American Psychiatric Publishing Inc., in 2013. The process will have an immeasurably positive impact on Dr. Schultz’s ability to infuse new findings regarding diagnostic procedures into the training of our residents, fellows and medical students. The interaction with global leaders helps position Iowa to be at the forefront of future endeavors, such that there will be an enduring influence from Iowa in the area of disease classification. This text is used worldwide in research, policymaking, reimbursement, legal practices, drug development, etc. It will be harmonized with ICD-11,⁶ defining the way clinicians record diagnoses worldwide.

SMITH, FREDERICK M., PROFESSOR, ASIAN & SLAVIC LANGUAGES & LITERATURES, 22 YEARS OF SERVICE, SPRING SEMESTER

The applicant proposes to produce a translation from Sanskrit into English, augmented with extensive annotations and notes, of the last four books of the Mahābhārata, India’s great national epic. This represents a continuation of work undertaken during a previous PDA (2006-07). The last unabridged translation of this material was produced in the 1880s and 1890s, but was based on inadequate manuscripts and is now unreadable. The PDA will include a major monograph (to be published by the University of Chicago Press). This will be used in a variety of classes regularly taught at Iowa, from introductory classes on Asian and Indian religions to advanced seminars. The work will be both easily readable and densely philological (notes, textual annotations, and appendices). It will provide a major link to intercultural understanding and to the overall project of comparative religion. The disciplines of Indology and religious studies are looking forward to the appearance of a complete translation of this major world epic.

STEWART, KATHLEEN, ASSOCIATE PROFESSOR, GEOGRAPHY, 4 YEARS OF SERVICE, SPRING SEMESTER**

This project investigates geospatial ontologies for GIS, an active area of research in GIScience. Two application domains, flood hazard modeling and biomedical modeling are the focus of

⁶ International Statistical Classification of Diseases.

research. For the first case, a flood hazard ontology will be designed that will improve the integration of information over different domains of knowledge, e.g., hydrological, geographical, and institutional. For the second case, a process ontology will be developed capturing how cancer cells evolve. Proposals and papers will be developed on flood hazards and ontologies, and biomedical ontologies and change. A first-year seminar course for UI students on spatial thinking will be offered as well as new modules for geoinformatics courses for undergraduate and graduate students. This work contributes to ongoing flood hazard research and also to our understanding of fundamental cancer cell changes. This research will be applicable to a wide range of environmental and geospatial modeling applications.

STIPP, CHRISTOPHER, ASSOCIATE PROFESSOR, BIOLOGY, 8 YEARS OF SERVICE, FALL SEMESTER

A prevailing model of cancer metastasis invokes a transition from cohesive epithelial-like cells to solitary, invasive "mesenchymal" cells. However, this model may fail to explain metastasis in many breast cancers, which often retain epithelial traits. In this PDA, Professor Stipp seeks to establish a more realistic breast cancer model. He will create a series of breast cancer cell lines with different metastatic abilities, and a comprehensive gene expression profile describing each cell line. These cell lines will provide teaching tools in his Cell Biology lab and lecture courses and research projects for his undergraduate and graduate trainees. Metastasis is the cause of the vast majority of cancer deaths. Identifying pro-metastatic gene signatures may lead to new clinical options for cancer patients in Iowa and elsewhere. The work will also foster collaboration between multiple U.I. laboratories and create the basis for additional research grant applications.

STRATTON, MARGARET M., PROFESSOR, ART & ART HISTORY, 25 YEARS OF SERVICE, HALF TIME FOR ONE YEAR

Professor Stratton's PDA will be used to support a digital photography/video project documenting the layered visual histories embedded in contemporary Vietnam. Her photographs will document the pastiche of Vietnam's past lives: as a district of China, a French colony and a divided homeland. Her photographic research will explore the reality of contemporary Vietnam as a country poised to enter the global market as a major producer of exported goods and as an investment target for tourism and bio-ecology. This work will depict Asia's role as a major source of global expansion. The project will result in a portfolio of photographs, an interactive website with an essay on modern Vietnam. Through her work, she will teach students how to do creative research. The benefit to the state will result from publicizing a positive modern Vietnam.

SUNSTEIN, BONNIE S., PROFESSOR, TEACHING & LEARNING, 19 YEARS OF SERVICE, SPRING SEMESTER

Professor Sunstein will work on a book about "writing across the curriculum;" high schoolers, marginalized by geography, ethnicity, social class, and test scores, collaborate as they write across 1500 miles. In it, rural Iowa and urban Massachusetts students will write about geometry with low-tech media and distance technologies, linking writing and math, urban and rural, as students share, articulate, and apply geometric concepts. Under testing pressures, across language and cultural differences, students will explore, problem-solve, and describe how the curriculum fits into their (and one another's) worlds as citizens. The expected outcome is a book-length study and major grant proposal. UI students in teaching of writing courses and research team settings will benefit from the research. It documents rural Iowa high schools in "college readiness," "core standards," "interdisciplinarity," and "place-based education," offering

writing partnerships for social justice to a broad audience. The project links Sunstein's dual appointment in Nonfiction and Education.

THAGGERT, MIRIAM, ASSOCIATE PROFESSOR, ENGLISH, 5 YEARS OF SERVICE, SPRING SEMESTER

Professor Thaggert will analyze how the railroad contributed to national, racial, and gender identities in the U.S. between 1850 and 1930. The project requires significant time to conduct research at the Newberry Library in Chicago and to complete research regarding African American women's lawsuits against railroads in the late 19th and early 20th centuries. The majority of two chapters will be written and will be presented at conferences in 2013-14. The research will be presented and taught in 08:116 African American Literature Before 1900, 08:105 Literature and Culture of 19th Century America, and 08:458 Seminar in American Literature and Culture. The project will provide a historical and cultural contextualization for discussions about technology's past and current influence on U.S. race relations and ethnic identities. The work engages a broad scholarly audience, including scholars of cultural studies, American literary studies, ethnic studies, law, and history.

TINELLI, CESARE, ASSOCIATE PROFESSOR, COMPUTER SCIENCE, 12 YEARS OF SERVICE, SPRING SEMESTER

Formal methods in software engineering are mathematically-oriented techniques for the development of software systems. Thanks to recent advances in their automation, they are effective in helping produce more reliable software and reduce development costs. There is a pressing need to introduce future software developers to these methods and train them in their use. Professor Tinelli will draw on his research expertise in the field and teaching experience on the subject to develop an introductory textbook on it. The expected outcome is a first draft of the textbook. The book will be used in the formal methods course Professor Tinelli has developed and taught several times at Iowa. The textbook should help many students and faculty in this area because of the current lack of texts on the subject. This work could contribute to a wider adoption of formal methods and tools in industry, and indirectly help raise the reliability of future software.

TURNER, RICHARD, PROFESSOR, RELIGIOUS STUDIES, 10 YEARS OF SERVICE, FALL SEMESTER

The project is a book that retells the history of religion in the Civil Rights and Black Power Movements by analyzing the influence of the Muslim leader, Malcolm X and the jazz saxophonist, John Coltrane on the international dimension of Afro-American religion, music and human rights in the 1960s and beyond. It illuminates the contemporary legacy of Malcolm X through interviews with Muslim students on university campuses. The project fills an important gap in historical studies of the 1960s, as it elucidates the connections that scholars have ignored between black Muslims and Christians working together for human rights. The outcome of the proposed project is a 150 page book. The work will enrich the sections on civil rights and human rights in four of my courses. The project analyzes how black students at the University utilize the human rights legacy of the 1960s in contemporary society. The project contributes to the quality of the University in its teaching and research missions.

WASSERMAN, EDWARD A., PROFESSOR, PSYCHOLOGY, 39 YEARS OF SERVICE, FALL SEMESTER

Professor Wasserman will expand his work in comparative cognition by studying the formation of analogies—what theorists deem to be the very core of human intelligence. In Iowa (at UI and Great Ape Trust), he and his collaborators will study pigeons, bonobos, and people. In France

(at the University of Provence), he and his collaborator will study baboons. Wasserman hopes to teach any or all of the animals to complete analogies. Wasserman will involve his laboratory students in this work. He will also tell his classroom students about his results, including graduate students as well as undergraduates taking their first course in Psychology and in the Honors Program. Beyond the scientific results of this work, Wasserman's computerized methods might have practical application to teaching developmentally disabled children. Teaching animals to complete analogies would deal a devastating blow to human exceptionalism and represent a new milestone in the history of comparative cognition.

WHALEY, DEBORAH E., ASSOCIATE PROFESSOR, AMERICAN STUDIES, 4 YEARS OF SERVICE³, SPRING SEMESTER

The book examines the representation, production, and transnational circulation of women of African descent in sequential art (e.g., comics, graphic novels, and anime). This study also explores the ways Black women as producers of sequential art use the medium of comics to articulate cultural and political visions from the early 20th century until the 21st century. Sequential Subjects presents counter-visions and problematic aspects of Black women in comic art, to address their representations in mainstream comics, and to argue for the complex meanings that consumers cull from sequential art. The expected outcome is the completion of two book chapters. Two courses may emerge out of the assignment: one on African Americans in comics, the other on African American women in art. This research project will situate Iowa as a state that supports the arts and racial-ethnic diversity. The project furthers the UI mission to produce cutting edge, relevant scholarship on diverse populations.

WINDSCHITL, PAUL D., PROFESSOR, PSYCHOLOGY, 14 YEARS OF SERVICE, FALL SEMESTER

Aided by funding from the National Science Foundation, Professor Windschitl will develop, test, and distribute a computer program called JIV-Test that can be used by a broad array of researchers investigating theories of how multiple factors influence perceptions of vulnerability and behavior in the face of risks. JIV-Test will be a valuable research tool for the community of decision scientists. A website that houses and describes the program will also be produced, as will 1-2 scholarly papers and a conference presentation. Graduate and undergraduate students will have unique training experiences in designing, testing, and implementing key elements of the project. A version of JIV-Test can be used in courses to dynamically illustrate a complex decision theory and how it can be tested. The theories that this project advances could ultimately shape how health-behavior interventions are designed, which has clear relevance to the health and safety of Iowans and others.

WITTENBERG, DAVID H., ASSOCIATE PROFESSOR, ENGLISH, 13 YEARS OF SERVICE, FALL SEMESTER

The topic of irony has always played an ambiguous role, as though no one can agree even on the scope of its importance. Some have treated irony as a kind of parasite, infecting the fringes of serious ethical, political, and artistic language. Others have seen irony as a potential threat toward the very essence of discourse itself, if not of the most fundamental social and cultural values. This project considers the range of functions or meanings of irony, from a simple act of ambiguous speech, to a fully-fledged political or philosophical way of life. "The ironic" may ultimately be equivalent to "difference" itself, and therefore a basic question of human identity and cultural self-definition. An expected outcome is a book, *Anatomy of Irony*. I plan two new courses, a 100-level undergraduate, and a 200- or 400-level graduate. The book will appeal to scholars and readers interested in relations between language, culture, and politics. The topic of irony is a superb critical exercise for University students.

WU, XIAODONG, ASSOCIATE PROFESSOR, ELECTRICAL-COMPUTER ENGINEERING, 7 YEARS OF SERVICE, SPRING SEMESTER

Efficient detection of globally optimal surfaces representing object boundaries in volumetric images is fundamental and remains challenging in modern computer-assisted medical diagnosis and treatment. The outcome of this project is a novel segmentation paradigm for medical imaging, which has the potential to greatly accelerate the pace of 3D to even higher dimensional medical image processing. The results in this project will be included as class material to demonstrate the applications of theory delivered in class. It will influence the Ph.D. and MS topics of our graduate students, especially topics of advisees of the applicant. Funding this project will support performing state-of-the-art interdisciplinary research and keeping up with the upcoming challenges of medical image analysis research. The development assignment project will directly benefit many collaborative activities that are underway or planned to be developed between the Colleges of Engineering and Medicine at the University of Iowa.

WYMAN, CHRISTOPHER R., ASSOCIATE PROFESSOR, COMPUTER SCIENCE, 7 YEARS OF SERVICE, HALF TIME FOR ONE YEAR

During this PDA, Professor Wyman will work at an Intel research lab investigating novel techniques for interactive visibility computations. Visibility proves vital in many problems, e.g., efficient communications tower placement; military training simulations; and realistic, physics-based computer graphics for video games and film. Various co-authored technical publications will result from this PDA. Beyond research productivity, working in an industrial setting will improve his ability to include cutting-edge, real-world examples in an instructional setting, teach industry best practices, and expand his network of contacts to improve prospects for student job placement. Faster visibility improves computer simulations, which affect the quality of many products and services we use every day. Collaborating on important industrial problems should lead to Intel or other industry funding for future academic research.

YUEN, KEE-HO, PROFESSOR, ART & ART HISTORY, 11 YEARS OF SERVICE, SPRING SEMESTER

Professor Yuen will use the computer numeric control (CNC) technology and equipment newly acquired by UI to produce functional and expressive household design objects (table, container). The new possibilities and production capability it provides will enhance his creativity, productivity and affordability of his artwork, it also makes producing multiples possible. The projects would greatly enhance his understanding on integrating designs, technologies and materials together. They will be exhibited in 2014 in Taiwan and China with catalogs. He will build samples and a manual for a cross-disciplinary course on creativity and technologies. He has been helping students from different disciplines with new technologies, which is essential for their creativity and job options. His projects will reflect the progressive philosophy and the facilities of the School. It is crucial for recruiting both nationally and internationally, and provides design for industries in the state.

ZEBROWSKI, PATRICIA, PROFESSOR, COMMUNICATION SCIENCES & DISORDERS, 23 YEARS OF SERVICE, SPRING SEMESTER

Professor Zebrowski will further develop a new service-learning course that involves UI undergraduates and the Columbus Junction, Iowa schools; initiate data analysis and publications related to an existing grant in stuttering development; initiate two new NIH R21 grants using novel and state-of-the art approaches to the study of stuttering. The expected outcomes include course development completion, national and international presentations, publications and new grant funding. The results of the PDA allow undergraduates to apply

course content to a relevant educational problem while learning how culture influences literacy development in young bilingual children. It provides research opportunities and funding for graduate students and strengthens content of course work. Other benefits include creating a sustainable University-community relationship through service-learning; generating new data on the nature and treatment of stuttering, a relatively intractable disorder with debilitating consequences.

IOWA STATE UNIVERSITY

BERESNEV, IGOR, PROFESSOR, GEOLOGICAL AND ATMOSPHERIC SCIENCES, 13 YEARS OF SERVICE, SPRING SEMESTER

Professor Beresnev is on a new scholarship direction in the physics of earth materials. His studies target the energy and environmental applications – the technologies of enhanced petroleum production, precise methods of finding oil and gas reserves, and cleansing groundwater of organic pollutants – where vast opportunities for federal and industry funding exist. This research requires new knowledge at the boundary between geology and mechanics of materials. Dr. Beresnev will engage in a fundamental self-improvement program to learn the skills and acquire the new knowledge; the basis built will be applicable in funded projects in these energy-related and environmental fields of high societal and economic importance from which ISU and Iowans will directly benefit. His work will contribute to the national goal of achieving energy independence, and the new knowledge will enhance his teaching of students in the area of geology and geophysics.

BOBIK, THOMAS, PROFESSOR, BIOCHEMISTRY, BIOPHYSICS AND MOLECULAR BIOLOGY, 7 YEARS OF SERVICE, SPRING SEMESTER AND PART OF FALL SEMESTER

Professor Bobik proposes to conduct research focused on understanding the functional principles of bacterial microcompartments so they can be engineered for the improved production of renewable chemicals, and as drug delivery vehicles. He will learn new skills in the area of structural biology by working with Dr. Todd Yeates at the UCLA Department of Biochemistry; Dr. Yeates is an internationally known expert in structural biology and the UCLA Biochemistry Department is world-renowned. This environment, and the new skills he will gain via new state-of-the-art scientific methods and approaches, will allow him to enhance and expand his research activities and to improve the quality of education at ISU. In addition, the research conducted could lead to the discovery of valuable intellectual property in the area of renewable chemicals and drug delivery systems.

BOGDANOVE, ADAM, PROFESSOR, PLANT PATHOLOGY AND MICROBIOLOGY, 11 YEARS OF SERVICE, FALL SEMESTER AND PART OF SPRING SEMESTER

Rice is a global staple. Bacterial leaf streak of rice is an emerging disease for which control measures are limited. The proposed PDA will allow Professor Bogdanove to characterize a collection of African isolates of the pathogen. By comparing results to those obtained with Asian isolates, the project will identify common virulence factors and host responses representing strategic focal points for molecular breeding and engineering approaches to resistance. The project will lead to a publication of expected broad interest, and provide data to support further studies of virulence factor diversity and function, some of which have applications in biotechnology. Dr. Bogdanove will bring new methods back to his lab, and increase graduate student opportunities for international experiences. Thus in addition to the immediate output, the PDA will position the lab to make continued advances in research and graduate education that will further the mission of his department and college, and the University.

CARDINAL-PETT, CLARE, ASSOCIATE PROFESSOR, ARCHITECTURE, 28 YEARS OF SERVICE, FALL SEMESTER

The focus of this PDA will be a book project, *A History of Architecture and Urbanism in the Americas*, (already contracted with Routledge/Taylor Francis) which builds on and greatly extends Professor Cardinal-Pett's scholarly record. The work makes a unique and profound contribution to the study of the Americas in multiple disciplines. There is no other book in any

language that narrates the story of American urbanism as a hemispheric story. The book also approaches the topic from a perspective that engages issues of science and technology often neglected in the study of the built environment. For example, a topic in which Iowa State and Iowa figure prominently, agriculture, is a major thread of discussion from its original influence on the earliest cities in the Americas to contemporary relationships between urban and rural systems of infrastructure. This publication establishes Iowa State University, and by extension the state of Iowa, as a center of innovative historiography and multidisciplinary, multicultural thinking.

CEYLAN, HALIL, ASSOCIATE PROFESSOR, CIVIL, CONSTRUCTION AND ENVIRONMENTAL ENGINEERING, 9 YEARS OF SERVICE, FALL SEMESTER

Deterioration of highway infrastructure at an alarming rate due to aging, increased demand on infrastructure systems, and inadequate investment can seriously hamper the U.S. economy. There is a need to rapidly and cost-effectively evaluate the present condition of roadway infrastructure systems and provide solutions in real-time for making more timely and informed decisions regarding renewal and rehabilitation of these complex engineered systems. Safe, durable and long-lasting highway infrastructure systems can be engineered only by understanding: a) the complex interaction between different materials used in a design matrix to construct the pavement structures and b) the complex interaction between the pavement foundation and the pavement structure. The project proposed by Professor Halil will employ a scientific approach in attempting to fill the research and knowledge gaps in the design, monitoring and management of highway infrastructure systems.

DEBINSKI, DIANE, PROFESSOR, ECOLOGY, EVOLUTION AND ORGANISMAL BIOLOGY, 17 YEARS OF SERVICE, FALL SEMESTER

Professor Debinski proposes a PDA to research responses of biological indicators to climate change. Dr. Debinski is a conservation biologist, and her research focuses on understanding and predicting species distribution and abundance patterns across the landscape. These patterns, when analyzed for spatial or temporal trajectories, can become indicators of climate change. She will collaborate with ecologist Dr. Jeremy Kerr at the University of Ottawa to pioneer research at the interface of macroecology, global change biology, and conservation, integrating remote sensing tools, field ecology, and computer-based models. This knowledge will be incorporated into her future teaching at both the undergraduate and graduate levels. Debinski has applied for a Fulbright Fellowship to support this PDA and she will serve as an ambassador for both ISU and the U.S. if accepted. Her research will enhance the understanding of how climate change is affecting species across the North American continent.

GALLAGHER, PAUL, ASSOCIATE PROFESSOR, ECONOMICS, 23 YEARS OF SERVICE, FULL YEAR

Professor Gallagher will travel to the Office of the Chief Economist for the U.S. Department of Agriculture in Washington, DC while on PDA. The Office of Energy Policy and New Uses assists the Secretary of Agriculture and other officials in developing and coordinating energy and bioproducts policies by providing policy advice and serving as liaison with other government agencies. They also conduct economic analysis aimed at evaluating policies in renewable fuels, biomass power, life cycle analysis, and biobased products. These activities are related to his research and teaching programs at ISU. Specifically while on PDA, Dr. Gallagher will focus on: 1) the extent and location of biomass supplies from residues, crops, and regional readjustment of livestock industries, 2) land use change and global warming implications of biomass fuel development and sustainable biomass fuel development policy, and 3) prospects, barriers and potential policies regarding adoption of biomass-fuel processing technology. He

also plans to finish a book on agricultural policy, which is based on a course that he has taught for several years. ISU students will benefit from this enhanced policy expertise and a new textbook on policy, and the state of Iowa will benefit from the policy research expertise in biomass fuel, land use change and global warming.

GHOSH, ARKA, ASSOCIATE PROFESSOR, STATISTICS, 6 YEARS OF SERVICE, FALL SEMESTER

Professor Ghosh plans to investigate performance optimization of modern networks while on PDA. The faculty member has made significant contributions to similar problems where the networks are either large (e.g., wireless networks with many servers with complicated interconnectivity) or have complex probabilistic structures (e.g., streaming video data that does not follow standard probability models) and he plans to extend similar rigorous analysis for modern networks that are both large and complex. One outcome will be a new course of study of networks. The research initiatives will provide preliminary results needed to submit an NSF research proposal. In sum, the PDA will provide a valuable professional development experience, and will bring technical expertise to ISU and the state of Iowa.

GORDON, MARK, DISTINGUISHED PROFESSOR, CHEMISTRY, 19 YEARS OF SERVICE, SPRING SEMESTER

Professor Gordon will spend the spring 2013 semester at the Australian National University (ANU), with short visits to Sydney University and Monash University. The primary purpose of the PDA is to establish collaborations with several researchers at the ANU as part of a comprehensive effort by the Gordon research group to develop new paradigms for high performance computing in computational chemistry, going beyond the petascale (efficiently employing hundreds of thousands of processors). The motivation for this effort is to enable computations on grand challenge problems in chemistry, biology and materials. Examples of such problems include the design of new heterogeneous catalysts, the elucidation of the properties of liquid water, and the design of new high-energy fuels. The new methods developed during the PDA will enhance the faculty member's research capabilities, will have an important impact on the ISU efforts in high performance computing and will be incorporated into several chemistry courses.

HERRIGES, JOSEPH, PROFESSOR, ECONOMICS, 23 YEARS OF SERVICE, SPRING SEMESTER

Recent decades have seen a rapid expansion in the field of environmental economics, particularly as it relates to the valuation of environmental amenities. Understanding both the benefits and costs stemming from environmental programs allows decision makers to better evaluate and prioritize policy initiatives, particularly in times of limited budget resources. No single text has contributed more to setting the agenda for this area of research than Myrick Freeman's *The Measurement of Environmental and Resource Values: Theory and Methods*. A primary purpose of this PDA will be to write, with Cathy Kling and Myrick Freeman, the third edition to this classic text. Doing so will enhance the reputation of the environmental economics field at ISU (a highly ranked program nationally) and Dr. Herriges's teaching of courses in this field. Synthesizing and guiding the cutting edge research in this area will also enhance ongoing outreach programs advising local, state and national agencies.

HOHMANN, HEIDI, ASSOCIATE PROFESSOR, LANDSCAPE ARCHITECTURE, 11 YEARS OF SERVICE, FULL YEAR

This assignment opportunity will ultimately produce a book manuscript on the history of the Minneapolis Park System. While Professor Hohmann has collected a large amount of the primary documents needed to write such a history, the PDA will allow her to make significant progress on the project. The proposed activities for the project are to review materials she's already collected, visit additional archives, conduct field work, collect oral histories with surviving designers from the later periods of design and construction and, most importantly, build the intellectual framework for the project. While Professor Hohmann anticipates this project to be, at a minimum, a two-year duration, the PDA will also allow her the time to construct the historiographical framework of the book, locate additional outside sources of financing to support additional project time and publication, as well as produce analytical graphics and begin authoring a book.

JOHNSTON, DAVID, DISTINGUISHED PROFESSOR, PHYSICS AND ASTRONOMY, 24 YEARS OF SERVICE, FALL SEMESTER

The field of solid state physics is in dire need of an introductory textbook that bridges the gap between undergraduate and graduate level instruction and presents examples made possible by fast desktop computers available today. The standard introductory undergraduate text by C. Kittel (1965) and the standard introductory graduate text by N. W. Ashcroft and N. D. Mermin (1976) are woefully out of date and do not present sufficient examples of the theory. Professor Johnston has made a significant start on a new textbook that will rectify these deficiencies. The PDA will allow him to either finish the manuscript or make major headway on finishing it. This book will be a major contribution to the education of undergraduate and graduate students worldwide in the important field of solid state physics.

JUNG, STEPHANIE, ASSOCIATE PROFESSOR, FOOD SCIENCE AND HUMAN NUTRITION, 8 YEARS OF SERVICE, SPRING SEMESTER

High pressure processing (HPP) increases microbial safety and extends the shelf life of a wide variety of food products without use of chemical preservatives, while maintaining their quality attributes. This technology therefore contributes to the production of "natural" foods. To date, our understanding of the effect of HPP on human nutrition and particularly on in vitro gastric digestion of food nutrients is limited, yet the consumption of commercially available pressurized food products is steadily increasing due to the growing interest of the consumers for "natural" foods. This research is timely and of primary importance and will benefit U.S. consumers by contributing to the establishment of nutritional quality of pressurized foods. The knowledge acquired during this research assignment will be shared with students at undergraduate and graduate levels, and will promote collaboration with peer institutions as in vitro methods simulating gastric and small intestine digestive processes and associated "savoir faire" that will be brought back to ISU have only been developed at a few U.S. institutions.

KEINERT, FRITZ, ASSOCIATE PROFESSOR, MATHEMATICS, 23 YEARS OF SERVICE, SPRING SEMESTER

Many digital data sets can be compressed to save space, such as JPG format for images or MP3 for music. The data is measured at full resolution and then compressed. Compressed Sensing (CS) is a recent technique for producing compressed data sets directly, using far fewer measurements. Conversely, CS can produce higher resolution with the same number of measurements. This is a very active research area of great practical and commercial interest. The main focus of the proposed PDA, related to a recently-awarded grant, will be to develop

new algorithms for CS of video sequences. Possible applications include separating surveillance videos into background and moving objects, and increasing the quality of medical video sequences. The PDA is expected to produce publications and ideas for future graduate student projects and grant proposals. It will keep ISU on the forefront of cutting-edge research, and possibly lead to commercial applications.

KRIER, DANIEL, ASSOCIATE PROFESSOR, SOCIOLOGY, 7 YEARS OF SERVICE, FULL YEAR

Many Midwestern states have looked to entertainment and tourism as fertile ground to counter the loss of manufacturing jobs. Central to these non-industrial regions of the economy are spectator events: races, rallies, concerts, and sporting matches. While social scientists have long studied the cultural dynamics of such spectacles, few have studied the unique *political economy of spectacle* that differentiates such ephemeral business ventures from manufacturing and other traditional industries. Through detailed case study of the American Motorsports industry, this project maps the impact of spectator events on Midwestern communities [for example, the newly constructed National Association for Stock Car Racing (NASCAR) tracks in Newton, IA and Kansas City, KS as well as the annual Midwestern Harley-Davidson motorcycle rally in Sturgis, SD]. Financial impacts of spectator events will be tracked, as well as socio-cultural impacts on community vitality, employment, ancillary jobs and changes to the social fabric. These impacts will be assessed through document analysis, site visits and interviews with vendors, corporate marketing staff, event organizers and planning officials. As the Midwest continues to shed manufacturing jobs under the pressure of globalization, this study highlights the promises and pitfalls of an economy rooted in spectator events for the communities that rely upon them. The results of this study will be shared with the social scientific community through presentations and published reports and with ISU students enrolled in Professor Krier's courses.

LAANAN, FRANKIE SANTOS, ASSOCIATE PROFESSOR, EDUCATIONAL LEADERSHIP AND POLICY STUDIES, 8 YEARS OF SERVICE, SPRING SEMESTER

During his PDA, Professor Laanan plans to conduct research on the Mathematics, Engineering, and Science Achievement (MESA) program in Southern California. Specifically, he plans to investigate the following: 1) the role of MESA in increasing economically disadvantaged and underrepresented minorities (URMs) to excel in math and science and to pursue STEM degrees, and 2) the role of faculty in creating learning environments to increase the inclination and interest among women and URMs in STEM disciplines. As a result, he will develop strategies to scale-up the MESA program in the state of Iowa. The research design will include collecting quantitative and qualitative data to understand the factors that foster student interest and success as well as factors that relate to creating a STEM culture for diverse students.

LIU, XIAOYUAN, PROFESSOR, HISTORY, 11 YEARS OF SERVICE, SPRING SEMESTER

Professor Liu's study will complete his trilogy on frontier China in examining a succession of events along the Himalayas in the Cold War years. It will show how Beijing's policies toward Tibet contributed to destabilization and realignment of Inner Asian inter-ethnic and international relations, which led to Beijing's prolonged antagonism with the 14th Dalai Lama, border conflicts with India, serious discord with Moscow, and an unannounced armed contest with Washington. Based on multinational and multi-archival research, the study adopts an original frame of interpretation that situates the Tibetan question in three temporalities: modern transformation of Chinese territoriality since the mid-19th century, the Chinese Revolution since 1911, and the Cold War after 1945. The insights may help correct views of cultural, ideological, and political biases and bring out new thinking about the current Tibetan impasse. The project deepens the faculty member's understanding of China's foreign and frontier affairs and will benefit ISU

students in his courses. Dissemination of findings of the project will culminate in the publication of a book and result in further enhancing ISU's reputation in the field.

MILLER, WYATT ALLEN, PROFESSOR, PLANT PATHOLOGY AND MICROBIOLOGY, 23 YEARS OF SERVICE, FULL YEAR

Professor Miller will investigate novel mechanisms by which plant viruses control protein synthesis and suppress the RNA-mediated antiviral silencing system of infected plants during his PDA. These are "tricks" by which viruses gain a foothold in infection and counteract the host's defenses. His research may lead to new ways to control plant pathogens and to exploit viruses as tools for basic research and industrial applications, and will contribute to the biotechnology and agriculture sectors of the Iowa bioeconomy. Dr. Miller will work in the lab of Veronique Ziegler-Graff at the world-renowned Institute of Plant Molecular Biology (IBMP) in Strasbourg, France. The research will synergize Miller's expertise in biochemistry with Ziegler-Graff's expertise in whole plant virology, genetics, cell biology and microscopy. Dr. Miller expects to acquire many new techniques and return home well equipped to undertake new cutting-edge research projects with his students, and to share his knowledge with other researchers at ISU.

PAXSON, LYNN, PROFESSOR, ARCHITECTURE, 19 YEARS OF SERVICE, FALL SEMESTER

Popular culture has dominated our understanding of the built landscape of indigenous communities in the Americas. Everyone is familiar with certain types of Native American architecture – igloos, wigwams and teepees. But how much more do we really know about the structures that indigenous communities now build? The Indian Self-Determination Act of 1975 and the infusion of new resources through tribal gaming, have led to Tribes designing and constructing many community buildings. The result is an infusion of new building types, and the elevation of the role of indigenous and non-indigenous practitioners assisting tribal communities in responding to their unique cultures, identities and regions. Despite this, the practice of contemporary indigenous architecture remains relatively unknown to the design professions and the wider public – a neglected field of inquiry in the theory and history of design. While on PDA, Professor Paxson will collaborate with Eleni Bastea and Ted Jojola to develop a National exhibition that seeks to fill in this void by identifying and presenting outstanding examples of contemporary indigenous architecture.

POST, CONSTANCE, ASSOCIATE PROFESSOR, ENGLISH, 25 YEARS OF SERVICE, FULL YEAR

While on assignment, Professor Post will visit Beijing and Shanxi Province to complete archival research for a book project, "On the Reviewing Stand: The Life of Isabel Brown Crook." It is the biography of the first Western woman to conduct anthropological fieldwork in China. Crook also blazed a trail as an early pioneer of land reform; a leader in establishing women's co-ops; and a founding mother of a language training school known today as Beijing Foreign Studies University, China's premier institution for the study of foreign language and literature. The life of Isabel Brown Crook, a recent nominee for the Nobel Peace Prize, offers a model of cross-cultural understanding that bears directly on ISU's 2010-2015 strategic goal of addressing the challenges of the 21st century. Unquestionably one of these is China's growing importance on the world stage for which this project provides a microcosm of a global partnership to improve the human condition, a major commitment embraced by Iowa State in its five year plan.

PRITCHARD, JAMES, ADJUNCT ASSISTANT PROFESSOR, NATURAL RESOURCE ECOLOGY AND MANAGEMENT, AND LANDSCAPE ARCHITECTURE, 10 YEARS OF SERVICE, FALL SEMESTER

Professor Pritchard proposes a PDA to devote time to writing articles intended for publication, and to begin a book project. Dr. Pritchard is an environmental historian whose research and writing focus on the history of wildlife science in the national parks and the role of the science of ecology in agricultural reform movements. This work is significant because understanding how scientists contribute to conservation in parks reveals fundamental shifts in policy direction and public understanding of the meaning of conservation in North America. His research has yielded a wealth of archival material that requires a significant investment in writing time to transform these findings into article format, and to initiate a book project. This PDA will positively impact scholarly contributions in both departments where he has affiliations (Natural Resource Ecology and Management, and Landscape Architecture).

PROKOS, ANASTASIA, ASSOCIATE PROFESSOR, SOCIOLOGY, 4 YEARS OF SERVICE, FULL YEAR

Three-generation families, including those headed by grandparents, are increasing in number and proportion in the U.S., partly in response to the shifting economy. This application for a PDA proposes a one-year assignment to allow Professor Prokos to further investigate the uniqueness of these familial arrangements and the consequences for family members. During this year, Dr. Prokos will construct appropriate datasets from existing data sources, write two grant proposals, present three papers at professional meetings, and submit one paper for publication. The research conducted during the PDA speaks to pressing issues in Iowa and the U.S., and the expertise Dr. Prokos will gain through the experience will benefit ISU students interested in issues relating to aging populations, family forms, and inequalities.

REDDY, MANJU, ASSOCIATE PROFESSOR, FOOD SCIENCE AND HUMAN NUTRITION, 16 YEARS OF SERVICE, FALL SEMESTER

Parkinson's disease (PD) is a progressive disorder of the nervous system that affects motor movement, causing symptoms that include tremors, rigid muscles, and slowed motion. Since the cause of PD is unknown, viable strategies to prevent the disease remain unclear. The more we understand the brain cell damage caused by different factors, the easier it will be to develop therapeutic agents to treat the disease. Although there is no cure for PD, medications can help control some of the symptoms, but they produce many side effects. Although research is limited, nutrition may play a major role in preventing and slowing down the progression of the disease. There is some evidence from cell culture and animal studies that polyphenols in green tea may reduce the risk of developing PD. Epigallocatechin gallate (EGCG) is one of these polyphenols. To do research in this area in humans as well as in animals, we need a team of experts who can understand the disease, nutritional strategies, and chemistry of the food components that need to be tested. Professor Reddy's interaction with faculty members Dr. Kanthasamy and Dr. Yang during this PDA will tremendously help her to learn new techniques. Broadening her area of expertise, she will be well positioned to compete for funding to conduct research with cutting-edge technology. This type of research will have a great impact on improving the quality of life of PD patients in Iowa and throughout the world.

SMITH, JONATHAN D. H., PROFESSOR, MATHEMATICS, 27 YEARS OF SERVICE, FULL YEAR

Advanced algebra is the central discipline of mathematics, playing a fundamental organizing role within mathematics that is comparable to the role played by mathematics itself within the sciences. As science broadens and becomes more diversified, students and researchers are becoming increasingly reliant on the language and methods of algebra for their understanding of an ever-more complex and interconnected world. Thus the education component of the project proposed by Professor Smith aims to ensure that advanced algebra instruction at ISU prepares students to master the rapidly expanding range of algebraic techniques that they will encounter. The research component is designed to develop specific algebraic tools for the analysis of issues, most notably approximate symmetry and complexity that arise when tackling problems such as biodiversity and sustainability.

STURM, JONATHAN, ASSOCIATE PROFESSOR, MUSIC, 12 YEARS OF SERVICE, FALL SEMESTER

Professor Sturm will research and write a multimedia orchestral concert production introducing the history, ideas, and philosophy that Charles Ives – one of America’s most important early 20th century composers – brought to his inimitable music. The production will blend a script for live actors portraying Ives’ life, with visual images of Ives and his contemporaries and live orchestral performances drawing from three of his most well known pieces: *Three Places in New England*, *The Unanswered Question*, and *Central Park in the Dark*. Currently no production on this topic exists; however, Sturm will model his project upon the highly successful Chicago Symphony portfolio of *Beyond the Score* productions, which have a history of engaging audiences in a composer’s music and life. Ives’ often dissonant, yet deeply patriotic and faithful music lends itself perfectly to a “discovery” production of this type, and has a real chance to awaken in American audiences a deeper interest in Ives’ difficult, yet purely American compositions.

TIAN, JIN, ASSOCIATE PROFESSOR, COMPUTER SCIENCE, 9 YEARS OF SERVICE, SPRING SEMESTER

Professor Tian will spend the spring semester of 2013 at the University of California, Los Angeles to work with Professor Judea Pearl who is considered one of the giants in the field of structural equation models. Dr. Tian will conduct research on causal inference in structural equation models that have applications in diverse fields such as social sciences, economics, statistics, and artificial intelligence. The goal of the project is to make basic research advances and to develop new methodologies that overcome the weakness of the existing methods. The expected outcomes are publications at major conferences or journals that will bring research visibility for the Computer Science department and ISU. New research findings will be used as course materials in a graduate course. As a result of the assignment, Professor Tian will develop collaborations with prominent researchers in the field, enhance his research skills, and develop new research topics potentially suitable for sponsored funding.

VAN LEEUWEN, JOHANNES, PROFESSOR, CIVIL, CONSTRUCTION AND ENVIRONMENTAL ENGINEERING, 11 YEARS OF SERVICE, FALL SEMESTER

The successful cultivation of filamentous fungi on crop-processing wastes as a means of water recovery and production of high-protein animal feed has led Professor van Leeuwen to the concept of producing fungal protein for human consumption. This would be valuable to developing African countries where millions die of malnutrition, particularly small children. Developing better human nutrition technology is guiding him to South Africa, the leading industrial country in Africa, with ties with the rest of Africa. Dr. van Leeuwen will set up research

teams with colleagues at three universities to develop this concept further, and with local industry for applications to adapt the fungal process to locally available substrates. This could be a means to save millions of lives. The opportunity includes setting up exchange agreements with universities, which could be quite rewarding for Iowans and, in addition, result in impressive research achievements and enhance the ISU reputation.

WOHLSDORF-ARENDR, SUSAN, ASSOCIATE PROFESSOR, APPAREL, EDUCATIONAL STUDIES AND HOSPITALITY MANAGEMENT, 6 YEARS OF SERVICE, FULL YEAR

Food safety is of major concern; estimates of over \$1 trillion annually have been attached to the societal costs of a food-borne illness (Roberts, 2007). Recognizing that a greater percentage of Americans are not preparing meals, foodservice food safety is an important focal area. Researchers have studied employee food safety in foodservice operations, but most have used self-reports. Therefore, the intent of this project is to hone research skills and utilize these in conducting food safety research. The specific objectives are to: 1) attend a course/workshop; 2) complete training on software used to analyze data; 3) author a peer-reviewed paper; and 4) prepare a grant proposal. The assignment will be of benefit to the state of Iowa, society in general, and the university and department because qualitative research methods (as compared to quantitative research methods) can provide a greater depth of understanding in certain topic areas, such as food safety.

ZHU, ZHENGYUAN, ASSOCIATE PROFESSOR, STATISTICS, 2 YEARS OF SERVICE, FALL SEMESTER

Due to the advancements in information technology in the past few decades, it has become easier to collect large amount of data in many scientific fields. Massive datasets have been collected through remote sensing, wireless sensor network, large synoptic survey in astronomy, medical imaging, etc. Many statistical methods developed for small or moderate-sized datasets cannot translate to modern massive datasets. Professor Zhu will use his PDA to visit several leading research institutions and work with scientists to connect theoretical spatial statistics with the application of analyzing massive spatial data, with the objective of developing innovative methods and algorithms for efficient data collection and rigorous statistical inference under high data acquisition rates. New findings from these research programs are expected to have a broad impact in applications such as crop yield forecast, national resource inventory survey, large scale environmental monitoring, and long term weather forecast.

UNIVERSITY OF NORTHERN IOWA

**BERENDZEN, PETER, ASSOCIATE PROFESSOR, BIOLOGY, 6 YEARS OF SERVICE,
SPRING SEMESTER**

Establishing conservation units of two species of native fishes in northeast Iowa

In spring 2011, Professor Berendzen was awarded a State Wildlife Grant (SWG) from the Iowa Department of Natural Resources (IDNR). The title of this three-year study that begins January 1, 2012 is "Establishing demographic parameters and conservation units of fishes of greatest conservation need distributed in northeast Iowa." The total funding of the grant is \$107,614 over a three-year period. The funding supports materials, services and travel for the project, tuition and stipends for graduate students, hourly wages for undergraduate students, but no stipend for the Principal Investigator (Professor Berendzen). The objective of this PDA project is to use a multidisciplinary approach to provide the necessary information for better conservation of two species of native fishes in northeast Iowa. The study combines genetic and habitat data with ecological niche modeling to establish a framework for conservation efforts for *Moxosotoma duquesnei* (black redhorse) and *Rhinichthys cataractae* (longnose dace). Spring 2013 will be the beginning of year two of the grant and is a critical period in the study. At this point a full year of genetic and field data will be collected, which will provide important information for the success of the 2013 field season and the final report to the IDNR. This study will benefit UNI by training undergraduate and graduate students in the fields of conservation genetics and ecology of freshwater fishes and will help identify UNI as an institution that contributes valuable research to protect and conserve Iowa's native flora and fauna. This study will directly benefit the citizens of Iowa by determining where the emphasis of conservation and management efforts should be placed to help maintain the species composition and genetic diversity of Iowa's native fauna.

**CUTTER, BARBARA, ASSOCIATE PROFESSOR, HISTORY, 11 YEARS OF SERVICE,
SPRING SEMESTER**

The Alps of America: American Mountains, Identity and Empire in a Transnational Context: 1850-1920

Nineteenth-century Americans believed their country had the world's largest mountains and a boundless frontier of free land. They also believed that the greatness of their land made the American people and nation the greatest in the world. When, in the late 19th century, they were confronted with the fact that their beliefs were incorrect – their mountains were quite small by global standards, and the frontier had officially disappeared – it precipitated an identity crisis. Professor Cutter's PDA book-length project will explore that crisis using a transnational approach: examining the movement of ideas and people across national borders. Specifically, it will examine the experiences of Americans who wrote about, painted, photographed, and traveled in the mountains, in the United States and in the rest of the world, in the late 19th and early 20th centuries. It will also draw heavily on environmental history, exploring the relationship between American identities and the American landscape. Much of the significance of this project is in its timeliness, as environmental history and transnational history have both recently become two of the fastest growing and most dynamic areas in historical scholarship. Because of this innovative approach, the project is likely to compete very well for external grants. Both the NEH and American Council of Learned Societies offer fellowships for which this project would be eligible, and either of these prestigious grants would be of great benefit to the university. In addition, Professor Cutter will use this project as a model to develop a transnational approach in all her U.S. history courses. An increasing number of Iowa's citizens – especially its younger citizens - are immigrants or children of immigrants. Transnational

history's focus on the movement of ideas and people across borders will have strong appeal for this group of Iowans. Thus, courses with a transnational approach can be used in the future to recruit and retain students in Iowa's fastest growing population.

DEFRANCISCO, VICTORIA, PROFESSOR, COMMUNICATION STUDIES, 22 YEARS OF SERVICE, FALL SEMESTER

Gender in communication: A critical introduction

Professor DeFrancisco's PDA project is to complete the second edition of a critically acclaimed, co-authored textbook, *Gender in communication: A critical approach*. Professor DeFrancisco and her co-author received the contract from Sage Publishers in July to write the second edition, with the parameters that it be substantially rewritten for an introductory level college course (it was originally targeted for an upper level course), and that the revisions from blind reviewers received no earlier than August, 2012 be completed in the Fall of 2012. The final copy is due January 1, 2013. Due to her co-author's teaching and journal editor responsibilities, Professor DeFrancisco will take primary responsibility for the rewriting and editing of all 12 chapters in the Fall of 2012, along with other tasks (search for and obtain copyrights for 20 visuals, begin to revise the instructor's resource materials). This PDA will make this possible, and will open this area of communication study to students at an earlier stage in their college careers.

GOLDMAN, JOANNE, ASSOCIATE PROFESSOR, HISTORY, 19 YEARS OF SERVICE, SPRING SEMESTER

Atomic Energy Education, 1947-1957

The dropping of the atomic bomb on Japan ended World War II but also marked a critical point in the U.S. approach to atomic science. What had been a classified scientific research program was now a matter of public record and this demanded the "proper" education of the American public. Whereas the bombs visibly demonstrated the capability for unprecedented devastation, the potential for peacetime applications held infinite promise but had yet to be explored. To date, much of the literature on the culture of the Cold War has focused on how the venues of popular culture shaped public opinion. Professor Goldman's PDA research project will examine how agencies of the United States government promoted their visions for atomic science by developing programs to educate the American public. This project considers how their visions of atomic energy education were implemented by local school boards in public schools. What were their respective perspectives on, and agendas for, the education of U.S. students? What role did concerns for national security play in influencing their agendas? What topics and issues were included by the respective local and national committees and, equally important, what was not included and why? To what extent did state and local initiatives adopt the perspectives and priorities promoted by the federal government, or reject them? The results of this research will be disseminated widely, in both published articles and in papers delivered at conferences. Its conclusions will be of value to audiences in numerous disciplines including American historians, historians of science, historians of education, and policymakers. In addition this research will generate material for a new course, "Historical Perspectives on the Impact of Transformational Technologies."

JEPSEN, LISA K., ASSOCIATE PROFESSOR, ECONOMICS, 11 YEARS OF SERVICE, FALL SEMESTER

An Inquiry into the Effects of Athletic Participation and Team Success on Alumni Donations

From 1995-2001, athletic spending at the Division I-A level increased at twice the rate of overall university budgets (Frank 2004). Given the shrinking state support for university budgets, the question arises as to how rising spending on athletics can be justified. An honest answer to the question requires a cost-benefit analysis. Unfortunately, the costs to a university of offering NCAA athletics are more easily quantified than the benefits. There are many potential benefits to offering NCAA athletics at UNI, ranging from the team-building and time-management skills learned by student-athletes to the increase in admissions and name-recognition the University experienced after the men's basketball team beat Kansas on March 20, 2010 in the NCAA tournament. Professor Jepsen's proposed study will evaluate the benefits of UNI's athletic programs in two general ways. First, she will analyze whether former student-athletes are more likely to donate and/or donate at higher levels than other alums. Second, she will analyze the effect of athletic teams' success on alumni donations. Professor Jepsen will use data provided by UNI's Alumni Association and UNI Foundation that contains an anonymous random sample of the monetary donation information of alums for the period 1971-2009. She will control for a variety of factors, including participation as a student athlete while at UNI, gender, current residence, graduation year, estimated household income, marital status, and athletic team success. Professor Jepsen's research will contribute to the literature in the field by expanding the limited number of existing studies. The study will be only the second to consider the effects of a highly-competitive women's sport; previous studies have focused on men's sports. The study will also be only the second to consider the effects of a highly-competitive FCS (formerly Division I-AA) football program, as previous studies have focused on FBS (formerly Division I-A) football. The results will be of interest to many groups at UNI, including the athletic department, UNI Foundation, UNI Alumni Association, administration, faculty, staff, and students. Because private donations relieve some of the pressures to provide public funding at UNI, others across the State of Iowa, including the Board of Regents and Iowa taxpayers, would benefit from knowing if athletic expenditures influence private donations.

KIDD, TIMOTHY, ASSOCIATE PROFESSOR, PHYSICS, 6 YEARS OF SERVICE, SPRING SEMESTER

Development of Novel Nanostructured Materials

Professor Kidd's project involves the development and characterization of new nanostructured materials. The essence of nanoscience research is to harness new properties which emerge when dimensions are reduced to nanometer length scales. Nanotechnology can often accomplish a given task utilizing far less materials and energy than traditional devices. More exotic applications involve transformational systems such as creating gold nanoparticles with properties suitable for cancer treatments. Professor Kidd's research is focused on layered systems such as the dichalcogenides. These materials are structurally akin to graphite and, like graphite, they can be induced to form nanostructures like nanotubes, buckeyballs, or single molecular layers like graphene, which is currently the most studied material on the planet. The dichalcogenides were chosen because they have a wider range of properties than graphite, giving them potential for applications including industrial lubricants, photovoltaics, and even rechargeable batteries. This work will directly benefit Iowa and UNI in a variety of ways. The research addresses important topics of high interest to the scientific community. Undergraduate education is an important component as well, with at least three undergraduates directly

involved. Previous undergraduate researchers have had a high success rate in getting hired or accepted to graduate school after graduation from UNI. Thus, this project will benefit UNI and the state by performing valuable nanoscience related research and workforce development.

LEE, MIN HO, PROFESSOR, MATHEMATICS, 25 YEARS OF SERVICE, SPRING SEMESTER

Automorphic Properties of Pseudodifferential Operators

The objective of Professor Lee's project is to investigate connections between pseudodifferential operators and certain types of functions widely used in number theory by studying their respective automorphic properties. Pseudodifferential operators play an essential role in the theory of solitons, and the outcome of this project will provide an important contribution to the study of connections between soliton theory (applied mathematics) and number theory (pure mathematics). Professor Lee will include some results of this research in a research monograph he is currently writing with internationally well-known mathematician Youngju Choie. This project benefits UNI, its students and the state of Iowa in several ways. Dr. Lee is a prolific researcher in theoretical mathematics and has published 98 papers, with three more currently in press. As a result he has an international reputation and is invited to provide workshops at universities throughout the United States and the world. Most recently he was invited to lecture at Blaise Pascal University in Paris. This raises the reputation of UNI for excellence in Mathematics, which helps the university attract talented students and new, young faculty who are looking for research mentors. A focus on mathematics research is also aligned with the state's initiative on emphasizing STEM education. During the PDA Dr. Lee will visit Pohang University of Science and Technology to work with a colleague on a research monograph. Pohang University is one of the top research universities in Korea. Completion of the project enriches Dr. Lee's teaching of advanced undergraduate and graduate students.

LUO, SHANGZHEN, ASSOCIATE PROFESSOR, MATHEMATICS, 6 YEARS OF SERVICE, SPRING SEMESTER

Game Theory in Insurance Business

Game theory has been a powerful tool applied in various fields to model, analyze, and understand interactive situations. The increasing degree of connectivity and interdependency between different parties in business or any other social environment has given enormous recognition and importance to game theory. Professor Luo will use some general methods and concepts offered by game theory to study optimal decision making and strategic management in the insurance and reinsurance business. Given that each insurance firm is part of the vast web of interactions, any business decision and action taken by the firm would impact multiple entities that interact with or within that firm, and vice versa. Modern actuarial research and practice must incorporate the idea of mutuality. Professor Luo's research aims to formulate and solve some exemplary cooperative and non-cooperative games in the insurance-reinsurance industry, which are able to model the overarching themes of business interactions - cooperation and competition. The research falls in the field of stochastic differential games. Revolutionary tools in game theory and other mathematics, such as Nash equilibrium, stochastic control, dynamic programming, differential equations, etc, will be used to find the optimal solutions of the games. In particular, optimal strategies of the games involving reinsurance purchase or sale, new insurance business, and investment in bond and stock markets will be found. Value functions that define the optimal results of the games will be determined as well. In view of the general framework and methodology in the proposed project, it is expected that Professor Luo's research will be useful beyond the literature of actuarial science. The state of Iowa is home to a great number of leading financial and insurance firms (Principal Financial, Transamerica, Nationwide, EMC, Prudential, Allied, ING, Wellmark etc). This research will give insights on

understanding strategic behavior and planning in the insurance-reinsurance industry. Analytical tools will be developed to help the firms to improve competitiveness and sustainability in a complex business environment. The research will help the university to enrich its role of academic consulting and advising. This research will also benefit the UNI actuarial science program in its coursework and introduce student research opportunities in related subjects. External funding for the research is possible from sources such as Society of Actuaries, Casualty Actuarial Society, and the American Risk and Insurance Association.

MILAMBILING, JOYCE, ASSOCIATE PROFESSOR, LANGUAGES AND LITERATURE, 14 YEARS OF SERVICE, SPRING SEMESTER

Bilingual Education in Practice: Implications of the Welsh Experience for the U.S. Context

A country's language policy is most often carried out through its educational system. Professor Milambiling's project involves conducting research in classrooms in Wales, a place where there is a long tradition of bilingual and Welsh-medium education. During the PDA period, Professor Milambiling will also collaborate with researchers at the Bilingual Research Centre at Bangor University in northwest Wales. One goal is to analyze the different practices utilized in Welsh classrooms that contain learners with varying language proficiencies, a situation which is becoming increasingly common in U.S. schools. A related goal is to document how changes in allocation of languages and delivery of instruction have affected teachers, learners, and the curriculum. Implications will then be drawn for language policy and educational practice in the United States. As Iowa becomes more diverse, linguistic and cultural differences are no longer distant from the lives of UNI students and other citizens throughout the state. It is especially vital that teachers in Iowa have the appropriate education and competencies for working with language minority students and that schools be ready to face not only the challenges but also to utilize the resources that multilingual students bring with them. Given the centrality of teacher education on the UNI campus and the wide dispersal of immigrant children in the public schools, research conducted by UNI faculty that leads to a better understanding of serving diverse learners in Iowa demonstrates a tangible commitment to those children and to our students at the university, while at the same time advancing UNI's role in K-12 education.

NIE, HONG (JEFFREY), ASSOCIATE PROFESSOR, INDUSTRIAL TECHNOLOGY, 5 YEARS OF SERVICE, FALL SEMESTER

Multi-band Differential Code-Shifted Reference Technology for Ultra Wide Band Radio Applied to Intra-Vehicle Wireless Control and Communications Systems

Modern automobiles increasingly rely on electronics and computing technologies to achieve enhanced vehicle control and intra-vehicle communications capabilities, resulting in large amounts of wiring and placing a considerable engineering burden on the designers of automobiles. Ultra Wide Band radio is a promising technology for intra-vehicle wireless control and communications applications since it is capable of achieving high-speed and robust transmissions within a short distance. However, in-vehicle Ultra Wide band is subject to interference from the radio waves taking multiple paths in the vehicle, and are sensitive to the movement of drivers and passengers. Hence existing Ultra Wide Band technologies need to be redesigned when applied to an in-vehicle environment. Professor Nie's research project first addresses the differential code shifted reference technology to capture more signal energy, leading to enhanced bit-error rate performance in a low complexity. Second, cognitive Ultra Wide Band radio will be used to proactively eliminate various in-band narrowband interferences. Finally, intra-vehicle control and communications systems necessitate an innovative research strategy and design methodology in order to meet the requirement on the coexistence of reliable real-time control message delivery and high-speed data communications. Professor Nie's research project will improve the electrical engineering technology program at UNI by involving

undergraduate and graduate students in the research. Moreover, the research will not only help American automotive companies become the worldwide leaders in intra-vehicle wireless control and communications applications and save costs up to billions of dollars per year, but also provide a novel approach for companies such as John Deere and Rockwell Collins to implement control and communications inside a tractor or an airplane, which can lead to reduced production and maintenance cost for their products.

PECEN, REYAYI (REG), PROFESSOR, INDUSTRIAL TECHNOLOGY, 13 YEARS OF SERVICE, FALL SEMESTER

Wind and Solar Hybrid Energy Development in Iowa for economic development, cleaner air, and energy independency.

Wind and solar energy systems have become one of the fastest growing energy technologies in the world, and they constitute one of the most efficient and cost effective green power technologies. Grid integration of distributed small-scale and utility-scale wind and solar generation has been studied for several years and is expanding within the United States. Iowa is a pilot state for wind energy development, ranked second in installed wind generation output after Texas. The overall objective of Professor Pecen's research is to help reduce problems with wind and solar energy systems when they are connected to the grid, and enhance overall hybrid system operation that will help Iowa's clean energy, energy independency, energy conservation, and efficiency efforts. Professor Pecen will be investigating the challenges of the grid-interaction of distributed wind and solar generation systems using an existing 12 kW wind-solar hybrid power system on the UNI campus. He will also be designing and implementing a new 60 kW wind-solar power system that includes installation of a 50 kW Endurance wind turbine on a 100 foot tower, and a 10 kW solar Photovoltaic (PV) power system as part of his involvement in a recently awarded NSF EPSCoR grant that includes research collaborators from ISU, SUI, and UNI. In addition, he will collaborate with engineering colleagues at Gediz University, Turkey to mentor the design and implementation of a small-scale 10 kW wind-solar power system on their new campus. Professor Pecen will also be working with UNI students to design and build a new generation of solar boat hull for the 2013 World Championship of Intercollegiate Solar Electric Boating competition that will be held in Iowa in June 2013. Professor Pecen's research to enhance reliability and improve grid-integration issues in both community and utility sized wind projects will benefit the university and its students, and will improve energy production in the state.

PROPHET, MICHAEL, PROFESSOR, MATHEMATICS, 12 YEARS OF SERVICE, SPRING SEMESTER

Low-dimensional Shape-Preserving Approximation

The use of mathematical functions to approximate data is one of the most important applications of mathematics in science. In many situations, the data will have an inherent "shape" (for example, it may be numerically increasing), so it is natural to ask when such data can be approximated by a function with the same shape. Surprisingly, this turns out to be a delicate question - in general it is quite difficult to determine if a given technique will yield approximations with the same shape as the data. Professor Prophet's research project will build on prior work involving the preservation of a specific family of shapes (a family that is considered to be low-dimensional). Specifically, he will determine best methods of approximation that can preserve low-dimensional shapes with an overall error of approximation that is as small as possible. Shape-preserving approximation is an active area of mathematical research; indeed, a survey of the literature shows an international interest in addressing the variety of questions that arise in this realm. Consequently, UNI will benefit from this project by the exposure to an international audience through the publication and presentation of the project results. These results will also

yield small, specific-case questions that will be suitable topics for senior-level or masters-level student papers. Moreover, the citizens of Iowa will benefit from the applied nature of this project, as some companies have benefitted from Professor Prophet's past work that he has translated into computer software to solve complicated problems in logistics and scheduling.

SOANS, FRANCESCA, ASSOCIATE PROFESSOR, COMMUNICATION STUDIES, 6 YEARS OF SERVICE, FULL YEAR

Waterloo: A History of Place, Episode 3: The Black Triangle

Professor Soans will produce *The Black Triangle* (working title), a 30-minute video documentary on the history and meanings of the "Triangle" neighborhood, an area located in the north of Waterloo, Iowa, within the larger histories of African Americans in Waterloo and of the history of Iowa. It is the third episode in a documentary series *Waterloo: A History of Place* that offers a unique perspective on Waterloo's diverse histories. Focusing on different public spaces, ranging from department stores to neighborhoods, the series explores the memories of Waterloo's many communities, thus tracing a history of Waterloo from the Meskwaki settlements to the present time. The goal of Professor Soans' project is to engage diverse communities in the act of understanding and interpreting history and to offer an exploration of the intersections between history, memory, and identities. The project fits within the University's interest in promoting diversity and in community outreach. As a community history project, it contributes to the knowledge and understanding of local histories and communities, in particular the African-American community. It fosters professional mentorship opportunities as students will participate in the technical production of the project. It will further serve as an important education resource regarding the history of African Americans in Iowa.

STALP, MARYBETH C., ASSOCIATE PROFESSOR, SOCIOLOGY, ANTHROPOLOGY AND CRIMINOLOGY, 8 YEARS OF SERVICE, SPRING SEMESTER

Gendered Cultural Production: The Sociology of Caring for the Self and Others through Creative Handcrafts

Professor Stalp will conduct ethnographic research on women's quilting and knitting efforts in southern Ireland. Quilting becomes an important means of autonomy and identity development for midlife women, even as they practice an age-old process of cultural production traditionally defined (often pejoratively) as "women's work." With this study Professor Stalp will continue her examination of women's creative work. Understanding how and why women choose to engage in quilting and knitting in these modern times is a central aspect of this study. In this research Professor Stalp focuses on the meaning-making processes in women's cultural production efforts, examining finished work from the perspective of the maker, as well as exploring a more complex definition from within a sociological perspective of what constitutes art. This study will make a contribution to the body of scholarship on women's cultural production from a comparative and international perspective by documenting the non-economic and subjective careers of women cultural producers, expanding the sociology of gender by examining women as creative actors and cultural producers and by addressing a gap in qualitative research methods. This work will benefit both the state of Iowa and UNI students. First, Iowa citizens, and specifically quilters and knitters, can learn about similarities and differences with Irish women, as Professor Stalp will continue sharing her work with creative women and interested others across the state. Since 2006 she has given eleven guest quilting lectures to lay audiences. Second, UNI students benefit from her international research in their everyday lives as Professor Stalp integrates her expanded knowledge in the classroom, and in individual research opportunities. Specifically, she will infuse her Sociology of Gender and Sociology of Culture classes with this newfound international comparative research, and her Qualitative Methods course will improve with the additional research experiences of this project.

STAPLES, AMY, ASSOCIATE PROFESSOR, SPECIAL EDUCATION, 9 YEARS OF SERVICE, FULL YEAR

The Literate Development of Children with Significant Developmental Disabilities

Opportunities for students with significant developmental disabilities (SDD) to develop literacy skills are few, due less perhaps to capacity than to opportunity (Kliewer, 2008; Koppenhaver & Erickson, 2003). Teacher preparation programs lend little attention to literacy development in this population and inservice professional development is often absent or fragmented. So despite 20 years of research suggesting children with SDD can benefit from literacy instruction, opportunities for children to develop rich skills during the course of their academic career remain scarce. The discrepancy between research and practice may be due to the lack of understanding related to the degree of knowledge and ongoing support needed by teachers to implement a comprehensive literacy program in their classrooms, given the complexity of their students' needs. Professor Staples will undertake a year-long qualitative study to take place in two elementary classrooms that serve children with SDD over the course of the 2012-2013 academic year. Extensive observations, interviews with school staff, and collection of instructional materials (e.g., lesson plans, schedules) and student artifacts will provide rich data for analysis. An outgrowth of this study, and recent research, will be the submission of several manuscripts for publication. Teachers and children directly involved in the research will benefit from the advice shared with teaching professionals that impacts instructional practice and student learning. Additional teachers and their students may benefit through reading publications and implementing recommended practices. The UNI community benefits from this work because Professor Staples' increased knowledge and understanding of literacy development is passed on to preservice teachers and other colleagues in coursework, field experiences, and professional interactions.

SURDAM, DAVID G., ASSOCIATE PROFESSOR, ECONOMICS, 6 YEARS OF SERVICE, SPRING SEMESTER

Century of the Leisured Masses: The Rise of Leisure in Twentieth-Century America

Professor Surdam will complete two chapters of his book, *Century of the Leisured Masses: The Rise of Leisure in Twentieth-Century America*. Economist Thorstein Veblen coined the phrase, "conspicuous consumption," to describe the leisure activities of the wealthiest Americans a century ago. Over the course of the 20th-century, Americans of all income levels enjoyed increased amounts of leisure and a vastly wider set of leisure opportunities. Professor Surdam's book will detail how growing worker productivity led to higher pay and how workers chose to spend part of their increased productivity in obtaining better working conditions and shorter hours. The burgeoning demand for leisure was a major factor in the transformation of America's economy from an agricultural and manufacturing-based one to a service economy. Professor Surdam will complete chapters on the increasing amount of leisure and on the economics of choosing between devoting time to work and to leisure. In addition to the book chapters, Professor Surdam will present his work at conferences. His previous manuscripts on professional team sports have produced a significant amount of community outreach in the form of presentations on radio, book reviews in national papers, and public presentations, and it is likely that this topic will garner similar attention.

VAN WORMER, KATHERINE, PROFESSOR, SOCIAL WORK, 21 YEARS OF SERVICE, FALL SEMESTER

Social Welfare Policy for a Sustainable Future: The U.S. in Global Context

Sustainability and globalization are two important contemporary concepts that will come together in Professor van Wormer's social welfare policy book, *Social Welfare Policy for a Sustainable Future: The U.S. in Global Context*. She has agreed to sign a contract with SAGE

publishing company for the book which will consist of 11 chapters. The cross-cultural perspective of the book is consistent with the social work profession's and the university's stress on cultural diversity. The major purpose of Professor van Wormer's book is to describe and explain the social welfare system of the United States within an international context and also from a critical analysis perspective to explore the sustainability of the major social welfare policies of the United States, including farming, health care, social services for older adults, and correctional policies. Professor van Wormer's book will benefit UNI and other universities by providing a textbook that is shaped for use in a liberal arts course with an international focus. An initiative at UNI is to infuse sustainability content into courses that form a part of the UNI curriculum. Students today have a deep interest in sustainability so this approach will help excite their interest in social welfare policies. Sustainability principles are highly relevant to life in the state of Iowa. At the national level, the publication of a major textbook to be used in a discipline such as social work elevates the status of the university within that discipline. Much of the material in the book is drawn from Iowa researchers, for example, the book will contain references to Postville, Iowa, the prairie and farming community, and research on older African American women from Waterloo who arrived as a part of the Great Migration.

**WAGGONER, MICHAEL, PROFESSOR, EDUCATIONAL LEADERSHIP AND
POSTSECONDARY EDUCATION, 23 YEARS OF SERVICE, FALL SEMESTER**

Religion and Education: A Primer

Professor Waggoner will complete a book on Religion and Education; specifically, it is to be a volume for the Primer series by Peter Lang Publishers. This primer would aim to provide the basic historical context of issues around religion and education from an academic and non-sectarian perspective, as well as a glossary of important terms and ideas, approaching the topic from the interdisciplinary fields of religious studies and education. Professor Waggoner's book will fill a gap in the scholarly literature thereby contributing to the larger body of knowledge in the interdisciplinary fields of religion and education. Its publication by Peter Lang Publishers will bring favorable scholarly attention to the University of Northern Iowa. These Primers are peer-reviewed by scholars in the field, but are written for the intelligent lay reader and as such can become a widely accessible resource to education decision makers in Iowa: legislators; government staff in education; school district teachers, administrators and central office staff; higher education faculty and staff in fields related to, as well as outside of, education and religion; students at all levels; and the general citizenry—anyone interested in developing knowledge and perspective on the issues in this area.