

Contact: Diana Gonzalez

PROFESSIONAL DEVELOPMENT ASSIGNMENT REQUESTS FOR FY 2014

Action Requested: Consider approval of the requests by the Regent universities for professional development assignments for FY 2014.

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. For the 2013-2014 professional development assignments, the Board of Regents directed the public universities to limit the number of professional development assignments proposed to not more than three percent of the faculty staff members employed at each of the institutions. This requirement was met by the three universities – SUI (1.2%); ISU (2.5%); and UNI (1.9%).

For FY 2014, the universities request approval of 125 faculty professional development assignments; this is an increase of 14 proposed professional development assignments from the prior year. The FY 2014 request represents 1.6% of all faculty at the Regent universities. A brief description of each proposed assignment is available in Attachments A-C (pages 6-40). This report addresses the Board of Regents Strategic Plan priority for “educational excellence and impact” and “economic development and vitality.”

**NUMBER OF PDA RECIPIENTS AND PERCENT OF TOTAL FACULTY
FY 2010 – FY 2014**

	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
SUI	82 (3.9%)	52 (2.4%)	58 (2.6%)	64 (1.3%)	65 (1.2%)
ISU	41 (3.1%)	37 (2.2%)	22 (1.4%)	29 (1.7%)	45 (2.5%)
UNI	20 (3.7%)	18 (3.4%)	15 (3.7%)	18 (2.2%)	15 (1.9%)
REGENT TOTAL	143 (3.2%)	107 (2.4%)	95 (2.2%)	111 (1.5%)	125 (1.6%)

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 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. The three universities report 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 five years, an average of 116 professional development assignments (PDAs) per year has been requested.
- ◇ Value of professional development assignments. The professional development assignments provide increased visibility and prominence of faculty and departments in research and scholarship; they also provide direct application of expanded knowledge to students, Iowans, the nation, and the world. Furthermore, professional development assignments allow recipients to compete successfully for external grants which benefit not only the professors and their programs but also the universities and the state.

- ◇ Faculty replacement costs. Estimates of the replacement costs for faculty members who are on professional development assignment are provided on the table below. The Faculty Scholars program at the University of Iowa, which also provides support for research expenses, is budgeted at \$5,500 for FY 2014 for one continuing Faculty Scholar. There are no new 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.
 - ☑ At UNI, replacement costs are the responsibility of the college/department of the PDA recipient. In some cases, departments expect to increase class size or to decrease course offerings to cover the faculty members' reduced course load while on PDA. Some departments expect to hire adjunct faculty to offer courses which students need to make academic progress on their program of study.

**BUDGETED REPLACEMENT COSTS
FY 2010 – FY 2014**

	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
SUI	\$201,800	\$148,700	\$130,800	\$174,532	\$119,700
ISU	\$68,569	\$107,747	\$125,000	\$247,100 ¹	\$325,393 ²
UNI	\$120,994	NA	\$166,483	\$87,000	\$65,000
REGENT TOTAL	\$391,363	NA	\$422,283	\$508,632	\$510,093

- ◇ Proposed professional development assignment recipients by gender.
 - ☑ There are 78 proposed professional development assignments for men; this represents 62.4% of the total proposed PDAs. Men represent 65.0% of the total number of eligible faculty.
 - ☑ There are 47 proposed professional development assignments for women; this represents 37.6% of the total proposed PDAs. Women represent 35.0% of the total number of eligible faculty.
- ◇ Proposed professional development assignment recipients by race/ethnicity.
 - ☑ There are 33 proposed professional development assignments for racial/ethnic minorities; this represents 26.4% of the total proposed PDAs. Racial/ethnic minorities represent 16.0% 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.

² The expected replacement costs are \$551,750. However, five faculty requests are for a full academic year which will generate \$226,357 in salary savings. Therefore, the net replacement cost will be \$325,393.

- There are 92 proposed professional development assignments for non-minorities; this represents 73.6% of the total proposed PDAs. Non-minorities represent 81.3% of the total number of eligible faculty.

**FY 2014 PROPOSED PDAs BY GENDER AND RACE/ETHNICITY
UNIVERSITY OF IOWA**

Race/Ethnicity	Total Number of Faculty			Total Number of Eligible Faculty			Number of Faculty Who Submitted an Application			Number of Faculty Proposed for Assignment		
	M	F	Total	M	F	Total	M	F	Total	M	F	Total
Hispanic	67	43	110	24	18	42	5	2	7	5	3	8
Am. Indian/Alaska Native	9	13	22	2	3	5	0	2	2	0	2	2
Asian-Am.	212	87	299	108	24	132	3	0	3	2	0	2
Black/African Am.	43	47	90	16	15	31	0	2	2	0	2	2
Native Hawaiian/Pacific Islander	0	0	0	0	0	0	0	0	0	0	0	0
White	2,146	1,615	3,761	905	418	1,323	28	28	56	26	24	50
Two/more races	11	12	23	5	5	10	0	0	0	0	1	1
Unknown R/E	399	315	714	20	3	23	0	0	0	0	0	0
Nonres. Alien/Intl.	146	69	215	4	2	6	0	0	0	0	0	0
TOTAL	3,033	2,201	5,234	1,084	488	1,572	36	34	70	33	32	65

**FY 2014 PROPOSED PDAs BY GENDER AND RACE/ETHNICITY
IOWA STATE UNIVERSITY**

Race/Ethnicity	Total Number of Faculty			Total Number of Eligible Faculty			Number of Faculty Who Submitted an Application			Number of Faculty Proposed for Assignment		
	M	F	Total	M	F	Total	M	F	Total	M	F	Total
Hispanic	23	25	48	23	25	48	0	0	0	0	0	0
Am. Indian/Alaska Native	5	2	7	5	2	7	1	0	1	1	0	1
Asian-Am.	174	53	227	173	51	224	9	2	11	9	2	11
Black/African Am.	22	16	38	20	16	36	1	1	2	1	0	1
Native Hawaiian/Pacific Islander	1	0	1	1	0	1	0	0	0	0	0	0
White	863	567	1,430	829	529	1,358	23	12	35	22	10	32
Two/more races	2	2	4	2	2	4	0	0	0	0	0	0
Unknown R/E	0	0	0	0	0	0	0	0	0	0	0	0
Nonres. Alien/Intl.	43	29	72	42	29	71	0	0	0	0	0	0
TOTAL	1,133	694	1,827	1,094	657	1,749	34	15	49	33	12	45

FY 2014 PROPOSED PDAs BY GENDER AND RACE/ETHNICITY
UNIVERSITY OF NORTHERN IOWA

Race/Ethnicity	Total Number of Faculty			Total Number of Eligible Faculty			Number of Faculty Who Submitted an Application			Number of Faculty Proposed for Assignment		
	M	F	Total	M	F	Total	M	F	Total	M	F	Total
Hispanic	9	10	19	5	3	8	1	0	1	1	0	1
Am. Indian/Alaska Native	0	1	1	0	0	0	0	0	0	0	0	0
Asian-Am.	29	22	51	23	9	32	4	1	5	3	1	4
Black/African Am.	10	8	18	8	4	12	0	0	0	0	0	0
Native Hawaiian/Pacific Islander	1	0	1	1	0	1	0	0	0	0	0	0
White	360	330	690	216	148	364	11	4	15	8	2	10
Two/more races	4	4	8	3	1	4	0	0	0	0	0	0
Unknown R/E	0	0	0	0	0	0	0	0	0	0	0	0
Nonres. Alien/Intl.	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	413	375	788	256	165	421	16	5	21	12	3	15

FY 2014 PROPOSED PDAs BY GENDER AND RACE/ETHNICITY
REGENT TOTAL

Race/Ethnicity	Total Number of Faculty			Total Number of Eligible Faculty			Number of Faculty Who Submitted an Application			Number of Faculty Proposed for Assignment		
	M	F	Total	M	F	Total	M	F	Total	M	F	Total
Hispanic	99	78	177	52	46	98	6	2	8	6	3	9
Am. Indian/Alaska Native	14	16	30	7	8	15	1	2	3	1	2	3
Asian-Am.	415	162	577	304	84	388	16	3	19	14	3	17
Black/African Am.	75	71	146	44	35	79	1	3	4	1	2	3
Native Hawaiian/Pacific Islander	2	0	2	2	0	2	0	0	0	0	0	0
White	3,369	2,512	5,881	1,950	1,095	3,045	62	44	106	56	36	92
Two/more races	17	18	35	10	8	18	0	0	0	0	1	1
Unknown R/E	399	315	714	20	3	23	0	0	0	0	0	0
Nonres. Alien/Intl.	189	98	287	46	31	77	0	0	0	0	0	0
TOTAL	4,579	3,270	7,849	2,435	1,310	3,745	86	54	140	78	47	125

- ◇ Average length of service. The average length of service for the proposed professional development assignment recipients is 14.8 years at SUI; 12.9 years at ISU; and 14.4 years at UNI.
- ◇ Proposed professional development assignments by rank. There are 60 (48.0%) proposed professional development assignments for professors; 64 (51.2%) for associate professors; and one (0.8%) for an assistant professor.

UNIVERSITY OF IOWA (*denotes Faculty Scholar)

AYATI, BRUCE, ASSOCIATE PROFESSOR, MATHEMATICS, 5 YEARS OF SERVICE, FALL SEMESTER

During the period of the Professional Development Assignment, the investigator will conduct research in the modeling and simulation of systems in orthopaedics, particularly articular cartilage lesion abatement and bone remodeling, in collaboration with the Martin Lab, and in the bone/blood cancer multiple myeloma, in collaboration with the Holstein and Martin Labs at UIHC. The extra time for research made available by a PDA will result in greater contact between collaborators in the hospital and the investigator in the College of Liberal Arts and Sciences, and will also provide the time necessary for extensive and time consuming software development not possible with a normal teaching schedule. The expected outcomes are computer simulations that accurately represent the biomedical systems, perhaps to the level that allows for predictions suitable for patient-specific medicine.

(Dr. Ayati is an investigator on a National Institutes of Health Centers of Research Translation grant with the Orthopaedic and Rehabilitation Department which began on September 1, 2012 and runs for five years. He is the principal investigator on a National Science Foundation grant which will begin on September 30, 2013.)

BAXTER, LESLIE, PROFESSOR, COMMUNICATION STUDIES, 18 YEARS OF SERVICE, SPRING SEMESTER

Dr. Baxter will complete and submit the final manuscript for her edited book, *Remaking "Family" Communicatively*, which is contracted as the inaugural volume in Peter Lang Publishing Group's new book series on family communication. The traditional nuclear family now describes only one-fourth of households in the U.S., outnumbered by a variety of alternative family forms including step-, adoptive, single-parent, long-distance, grandparent-grandchild, childless, gay/lesbian, and "fictive kin" households. These alternative family forms gain legitimacy as "real families" largely through their communicative practices. The volume is the first to synthesize the communication research on this topic. It will contribute to the professor's undergraduate and graduate courses in Family Communication. The volume will be useful to family policy makers and those who work with families as they seek to understand the challenges faced by members of nontraditional families.

BERRY, STEPHEN J., ASSOCIATE PROFESSOR, JOURNALISM & MASS COMMUNICATION, 9 YEARS OF SERVICE, FALL SEMESTER

This project will produce the first biography of the late Harry Scott Ashmore, author, reporter, and Pulitzer Prize-winning editor of the *Arkansas Gazette* during the civil rights years, and thus fill a gap in journalism and civil rights history. It will trace his life and define his role among a small, influential group of white newspaper journalists labeled "Southern liberal editors." Biographies cover most of these editors, but none exist on Ashmore. Filling the void is important because it will: (1) Examine three sets of unpublished and un-cited Ashmore papers and use interviews and other primary sources; (2) Provide the only study of a man who played a significant role in civil rights history; and (3) Refine the meaning of Southern liberalism and contribute to the knowledge needed for understanding its role and impact. It will enhance Dr. Berry's teaching in skills and conceptual courses on the practice, role, and impact of journalism in the past and present.

BOLTON, LINDA, ASSOCIATE PROFESSOR, ENGLISH, 18 YEARS OF SERVICE, SPRING SEMESTER

Professor Bolton requests the PDA to make significant progress on her second book manuscript, *Art, Ethics and Justice*, which explores the potential of art, literary and visual, as a catalytic experience that invites its audience toward a greater humanity. Professor Bolton will utilize the assignment to complete the final two chapters of the book, which she expects to submit to LSU Press in Fall 2014. Completion of the book will enhance her national recognition as a scholar in literature and ethics. Bolton's research will directly enhance her course offerings on the undergraduate level, as well as her graduate seminar. *Art, Ethics and Justice* is a testament to the inter-relation between Bolton's research and her work in the classroom, as well as her role as a mentor to graduate students in English, Art and American Studies.

BRANCH, LORI A., ASSOCIATE PROFESSOR, ENGLISH, 12 YEARS OF SERVICE, SPRING SEMESTER

In "Return to the Person, Or How We Might Become Post-Posthuman," the central chapter in a book titled *Postsecular Reason*, Professor Branch will bring together important new work on the concept of the person from many disciplines— sociology, philosophy, theology, and literature to argue for a postsecular understanding of the self. In her account, calculating reason and biological determinism are moderated and supplemented by belief, hope, interpretation and the making of meaning as equally human traits. This project will answer the call of thinkers, including Jürgen Habermas, for a postsecular understanding of society that would be the ground for religious and secular voices engaging in dialogue and cooperating peacefully in democracies. It will also be the basis for new courses that help Iowa students connect emerging theories of the person and the postsecular to the acts of interpretation and valuation that can foster meaningful lives and communities in our global and technological age.

BUDD, ANN F., PROFESSOR, GEOSCIENCE, 29 YEARS OF SERVICE, FALL SEMESTER

Coral reefs are the most diverse marine ecosystems and are increasingly threatened by climate change, ocean acidification, and anthropogenic disturbance. They are constructed by 18 families and >800 species of scleractinian coral. Molecular analyses show that 13 families are not valid groups, and that gaps exist in knowledge of their evolution. Dr. Budd will analyze museum specimens to trace the evolution of two families of Caribbean corals beginning ~55 million years ago. She will reconstruct evolutionary trees using standard software in systematic biology. She will use the results to trace the evolutionary history of Caribbean reefs, and assess the effects of past climate change on present-day biodiversity. She will publish the results in a taxonomic monograph and disseminate them via an online biodiversity database. She will train students in systematics and biodiversity informatics and develop activities for two UI courses.

(Dr. Budd is the lead principal investigator on a National Sciences Foundation grant for \$270,503. The proposed PDA will cover her salary and the NSF grant will cover other expenses associated with the PDA, such as preparation of microscopic slides and use of a scanning electron microscope.)

CAMERON, JOHN, PROFESSOR, THEATRE ARTS, 15 YEARS OF SERVICE, SPRING SEMESTER

Professor Cameron will write four new TV pilot scripts with his partner, Claire Cowperthwaite, Script Supervisor/Director for *30 Rock* and *Political Animals*, and in conjunction with Executive Producer Tucker Gates, Director of *Lost*. Two scripts, *The Big House* and *1460 Days*, highly imaginative examinations of race and class in America, are already in progress and represented

by the Gersch Agency in New York. The other screenplays will be written in 2013, with the goal of shooting a pilot that fall. During the PDA, Dr. Cameron will begin writing a 16 episode season. He will also expand his work as a playwright completing *Old Lace* and *Arsenic*, a prequel to the classic stage comedy. His PDA experience will influence his teaching of undergraduates and graduates in Acting for the Camera and Career Preparation. It will also provide practical information to playwriting students wishing to pursue writing for media, and expand the University's film and television contacts.

CARRICA, PABLO, ASSOCIATE PROFESSOR, MECHANICAL ENGINEERING, 5 YEARS OF SERVICE, FALL SEMESTER

A Professional Development Assignment will advance Professor Carrica's research program by developing new simulation capabilities for ship hydrodynamics. The project focuses on adding dynamic immersed boundary overset to Professor Carrica's ship hydrodynamics code. This capability, a first in the world, allows simulation of flows in which surfaces come in contact, like the root and the rudder of a ship, and greatly simplifies the taxing gridding process necessary for flow simulations. Professor Carrica will work with Dr. Ralph Noack, from the Pennsylvania State University, the world's leading expert in overset technology. To guarantee advancement of research commitments, Professor Carrica will spend about half of the semester at Penn State College working with Dr. Noack. This technology will boost Professor Carrica's research program and is expected to lead to new sources of external funding, mostly through the Office of Naval Research, while also contributing valuable material to his courses.

CORREIA, MONICA C. D. G., ASSOCIATE PROFESSOR, ART & ART HISTORY, 10 YEARS OF SERVICE, FALL SEMESTER

Ms. Correia will dedicate time to produce and exhibit her designs in major cities in the U.S. and abroad. Using digital technologies and sustainable materials, she designs objects, jewelry and furniture. She will display her work in design galleries and stores and participate in design competitions that require that products are in production. It will increase the number of opportunities to show her work and her ability to interact with the public. She will attend Design Shows to meet design manufactures and learn about the commercialization process in the U. S. The knowledge gained with this experience will allow her to create course material to help undergraduate and graduate students understand how to successfully market their work outside Iowa. Furthermore, through gallery talks and presentations in Iowa, she will share this knowledge with new generations of designers and the public.

CREEKMUR, COREY, ASSOCIATE PROFESSOR, ENGLISH, 15 YEARS OF SERVICE, SPRING SEMESTER

Corey K. Creekmur will complete a book entitled *Experiments with Truth: The Indian Colonial Historical Film*, the first full-length study of the representation of the British Raj (1858-1947) in popular Indian cinema, the world's largest film industry. The study analyzes the complex and controversial issues involved in a nation's representation of its own recent history in a popular narrative form. This project will enhance his professional status as a specialist in South Asian cinema and culture, an expertise that serves the University of Iowa's internationalization efforts as well as graduate students and undergraduates interested in the rapidly growing scholarly field of South Asian film and popular culture.

CURTIUS, ANNY D., ASSOCIATE PROFESSOR, FRENCH & ITALIAN, 9 YEARS OF SERVICE, SPRING SEMESTER

Professor Curtius' project analyzes the unacknowledged yet seminal work of late Martinican writer Suzanne Césaire, wife of the world-acclaimed poet and politician, Aimé Césaire. The project examines how she has been silenced and also excavates her ecopoetics, a concept that defines her nature-centered discourse where the Caribbean landscape and weatherscape are interrelated with issues of historical trauma and struggle for political agency in the Caribbean. This study expands the field of ecocriticism and women's studies, and contends that Césaire's pan-Caribbean ecological thought lays down the markers of a Black Atlantic ecocriticism. This project is a key aspect of Curtius' current graduate seminar on Francophone women theorists and she will incorporate her findings into other undergraduate and graduate courses. It will contribute to her teaching and the university's international mission and educate the Iowa community about the relational dynamic between the Caribbean and the US.

CURTU, RODICA, ASSOCIATE PROFESSOR, MATHEMATICS, 5 YEARS OF SERVICE, FALL SEMESTER

Spontaneous alternations between two mutually exclusive conscious interpretations of ambiguous sensory stimuli are generally termed perceptual rivalry. The investigator proposes a theoretical framework to probe the neural bases of perceptual rivalry induced by acoustic stimuli. The approach will integrate numerical computations with auditory cortical recordings human data, and it will lay the ground for studying the neural mechanisms of sensory awareness and consciousness. The project will advance interdisciplinary collaborations at the University of Iowa by direct interactions of the investigator (an applied mathematician) with the Human Brain Research Laboratory. It will lead to publications and to applications for external funding, and it will contribute to the development of graduate school curricula through courses in computational/mathematical neuroscience.

DUARTE, ARMANDO S., PROFESSOR, DANCE, 19 YEARS OF SERVICE, FALL SEMESTER

Professor Duarte will use his PDA to write a book on the choreographic aspects of the renowned and culturally important samba processions in Brazil. Research for this project began as an examination of the African-Brazilian Diaspora and the history of samba processions, and was recently extended to include a comprehensive investigation of the core elements of samba dance, such as the Passistas, Mestres-Salas, and Porta-Bandeiras, among others. The central purpose of the book will be to present, describe, and organize these elements. Once complete, the book will provide an inclusive review of this popular and culturally significant dance expression. Information from the book will greatly enhance Professor Duarte's undergraduate and graduate courses.

EBERL, DANIEL F., PROFESSOR, BIOLOGY, 14 YEARS OF SERVICE, SPRING SEMESTER

Major progress in the understanding of how hearing works in the fruitfly *Drosophila* has come about by the research of Dr. Eberl and others, through the application of genetic manipulation, combined with electrophysiological and optical measurement techniques. These approaches demonstrated that Johnston's organ in the fly antenna functions as the hearing sensory organ, as well as a gravity/wind detector. These functions can be mapped to separate sensory units within Johnston's organ. Dr. Eberl will design genetic manipulations to identify gene expression differences and ultrastructural differences that underlie these distinct functions. The results will provide preliminary data for a new external grant application. This work parallels, and may

inform the analogous difference between sensory hair cells in the mammalian cochlea and vestibular system that underlie hearing and balance functions, respectively.

FAGAN, SARAH, PROFESSOR, GERMAN, 18 YEARS OF SERVICE, SPRING SEMESTER

Professor Fagan's project addresses the need for materials to support explicit instruction in the pronunciation of German. It seeks to develop an analysis of the sounds and sound system of German and accompanying materials that help students of German apply this knowledge to make their speech more comprehensible and more native-like. It also aims for thorough coverage of aspects of speech that go beyond individual sounds (word stress, sentence stress, intonation). Current national and international measurements of proficiency in a foreign language include pronunciation as a measurement of proficiency in speaking. Thus the development of proficiency in German must take into account pronunciation. The project will result in the publication of a textbook, *German Phonetics and Phonology: Theory and Practice*, which will serve as the main text for a new course, The Sounds of German.

FANG, HAO, ASSOCIATE PROFESSOR, MATHEMATICS, 7 YEARS OF SERVICE, SPRING SEMESTER

The applicant plans to visit Princeton University during the winter semester 2014 to focus on his research in geometric analysis. The applicant proposes to study analytic torsion and its application in differential and algebraic geometry. Based on his previous research, the applicant will study analytical properties of torsion invariants that are related to the extremal metric problems. This project should help to better understand some central problems in geometric analysis. Interaction with fellow researchers will be necessary for the success of this project. Princeton is a center for geometry and physics and an ideal location for the applicant to conduct his proposed study. The applicant is actively engaged in undergraduate and graduate level education. The proposed research will result in new material for the applicant's classes.

FINAMORE, JOHN F., PROFESSOR, CLASSICS, 29 YEARS OF SERVICE, HALF TIME FOR ONE YEAR

Professor Finamore will be the principal investigator creating an edition and translation with notes of the Greek text of the 5th Century A.D. philosopher Hermias of Alexandria's commentary to Plato's Phaedrus. Hermias's commentary is an essential link in the evolution of Platonic philosophy between the beginnings of religious Neoplatonism under Iamblichus and the later version under Proclus. The commentary has never been translated into English before, and this will also be the first commentary on the commentary in any language. Professor Finamore is especially interested in Hermias' doctrine of the soul, as the philosopher interprets it from Plato's Phaedrus, and how it differs from earlier Platonic doctrine. Professor Finamore expects to publish the edition as a book with Brill Publishers. His research centers on the soul in Platonic philosophy, and he regularly teaches courses on the subject, which this project will enhance.

FOSTER, PATRICIA A., PROFESSOR, ENGLISH, 18 YEARS OF SERVICE, FALL SEMESTER

Professor Foster's book-project will examine how illness creates a new map of connection and intimacy within marriage and partnership. Her collection of essays will incorporate the narratives of couples whose relationships have been affected by cancer. This project will expand the field of illness/disability studies as well as the genre of the personal memoir, and will contribute to knowledge about how disease affects relationships. Professor Foster's project will result in publication of a book of essays, two invited readings, and material for an undergraduate nonfiction writing course.

GALVIN, JAMES A., PROFESSOR, CREATIVE WRITING, 29 YEARS OF SERVICE, FALL SEMESTER

Professor Galvin intends to use his Professional Development Assignment to finish his eighth book of poems. "Write about what you know," is a phrase often uttered by teachers of Creative Writing. But writing about what you know is a kind of instruction manual. Art is not, for the most part, instruction. It is a foray into the ineffable. Some poets have written out of a sense of knowing: Dante, Blake, Milton; but most poets write out of the anxiety of not knowing. Professor Galvin counts himself among that company. Shakespeare had a lot of ideas, but no philosophy. The most frequently asked question in Shakespeare's plays is, "Who's there?" Professor Galvin wants to write an art of ideas and emotions with no philosophical anchor. He aspires to complete a book which will enrich American Letters, and perpetuate the tradition of great books written by the faculty of the Writers' Workshop.

GFELLER, KATE E., PROFESSOR, MUSIC, 27 YEARS OF SERVICE, SPRING SEMESTER

Music is a pervasive, expressive, and culturally significant phenomenon that helps regulate mood and foster social cohesiveness. Americans spend more money yearly on music (concerts, iPods, etc.) than on prescription drugs. Unfortunately, hearing loss, which affects 1 out of 10 Americans, impairs music involvement. This has a negative impact on social integration and quality of life. However, clinical and educational interventions that help persons with hearing loss to make optimal use of their residual (remaining, usable) hearing can help establish/restore more satisfactory music involvement, and can improve speech perception. The purpose of this proposal is to write a best practices textbook on music therapy/education for persons with hearing losses. Methods will be based upon research regarding perception and (re)habilitation. The book is intended for collegiate instruction and clinical use by music therapists, teachers of the deaf, audiologists, and persons with hearing losses.

GLASGOW, ROBERT O., PROFESSOR, ART & ART HISTORY, 27 YEARS OF SERVICE, FALL SEMESTER

Professor Glasgow will expand a new series of works entitled Aerials, involving mixed media printmaking, drawing and painting processes. The Aerials Series resides in the realm of cultural fiction and continues Glasgow's interest in interpreting complex concepts using abstract visual images and symbols. In the context of his work, 'aerials' refers to the spatial ambiguities of viewing panoramic expanses from above the earth's surface, as well as, the objective distancing of one's critical viewpoint from normal cultural, geo-political and historical bases. From such a perspective, traces of sociopolitical and culturally based conflicts and commonalities may be discovered. The creative process involved in such discovery brings experience to the process of guiding graduate and undergraduate student research. Through teaching and local, regional and national exhibitions, Glasgow's works will also invite consideration of globalism, ethnic dislocations and other culturally sensitive themes.

GORDON, JEAN K., ASSOCIATE PROFESSOR, COMMUNICATION SCIENCES & DISORDERS, 11 YEARS OF SERVICE, SPRING SEMESTER

In our rapidly aging society, age-related declines in cognitive functioning which reduce independence are a concern for both quality of life and for our over-burdened health care system. One decline commonly experienced by normally aging adults is the ability to retrieve words quickly and easily for communication. This skill is also susceptible to breakdown in individuals with stroke-related communication impairments. Jean Gordon has proposed a cognitive intervention study which aims to improve cognitive and communicative functioning in both healthy elders and in individuals with communication impairments arising from stroke. The

purpose of the requested Professional Development Assignment is to provide Dr. Gordon with a sustained block of time during which to analyze and disseminate the results of the intervention study, and use these as pilot data to support proposals for two follow-up grant proposals.

GORÉE, JOHN A., PROFESSOR, PHYSICS & ASTRONOMY, 27 YEARS OF SERVICE, FALL SEMESTER

Plasma physics research will be carried out in this assignment. Plasma is an ionized gas; it is at a higher temperature than other states of matter such as solids, liquids and gases. Laboratory experiments will be performed by students under the faculty member's supervision. Computer simulations of plasmas will also be performed; these simulations will be done in collaboration with scientists in other countries. Experiments will be prepared for future missions to the International Space Station. Results of this assignment will be scientific papers that will be published in refereed scientific journals. This assignment will promote the faculty member's ability to compete for federal research grants, which will directly support student participation in research. The assignment will also refresh the faculty member's expertise in the subject matter he teaches in undergraduate and graduate courses.

GRASSIAN, VICKI H, PROFESSOR, CHEMISTRY, 23 YEARS OF SERVICE, SPRING SEMESTER

Professor Grassian will conduct detailed molecular based, laboratory studies to better understand the role of small particles in the environment and human health. Small particles, defined as particles from 1 nanometer to 10 micrometers in size, are often difficult to characterize. Yet without understanding the composition and properties of small particles in various milieu (air, water, soil and in vivo), there will be limited understanding of their applications as well as impacts. This research will focus on several different fundamental aspects of small particles that will answer questions related to their impacts. Professor Grassian will conduct this research in her laboratory in collaboration with both undergraduate and graduate student researchers. Understanding small particles and their impacts on the environment and human health has implications for the people of the state of Iowa and society as a whole.

GREEN, STEVEN H., PROFESSOR, BIOLOGY, 25 YEARS OF SERVICE, FALL SEMESTER

One of the great strengths of the University of Iowa is auditory neuroscience. A goal of Professor Green's project is to increase collaborative efforts among auditory scientists at Iowa to increase our strength, prominence and ability to convert basic research to clinical practice. The Iowa Center for Molecular Auditory Neuroscience that Professor Green directs provides facilities to support this goal. Iowa is a leading center for advancing cochlear implant (CI) technology. CIs restore hearing by directly stimulating auditory neurons in deaf individuals. The Green lab investigates these auditory neurons to understand why they degenerate after deafening. Such degeneration limits the effectiveness of CIs. The PDA research goal is application of new genomics and genetic techniques to investigating why inner ear auditory neurons degenerate. It will benefit basic auditory research and our collaborative efforts at UI to improve CI technology.

HEIMER, KAREN, PROFESSOR, SOCIOLOGY, 21 YEARS OF SERVICE, FALL SEMESTER

Heimer currently is using a large national survey of victimization, pooling data from 1973-2010, to statistically examine how violence risks for subgroups of women (e.g. young, single, poor minority) compare to other groups' risks and the change over time. During a PDA, Heimer will interview a sample of high-risk women in Linn County to study the contexts of violence and the roles of families and neighborhoods that is not assessed in national surveys. She also will work

on a book that combines the national data with the in-depth interviews with lowan women at risk to produce a better understanding of violence against women than is possible with either type of data alone. The results will be incorporated into her teaching of two large undergraduate criminology courses as well as two undergraduate courses on women and violence. The project benefits the state by providing detailed information on the contexts of women's victimization in Iowa, and comparing the local with national findings.

HERR, CHERYL T., PROFESSOR, ENGLISH, 27 YEARS OF SERVICE, HALF TIME FOR ONE YEAR

Professor Herr will write a book on Irish author James Joyce (1882-1941) and German philosopher Martin Heidegger (1889-1976) showing that their work shares previously overlooked premises and conclusions. This symmetry grows from the writers' Roman Catholic education and the grounding in the history of philosophy, especially the teachings of Aristotle and Aquinas, characteristic of that education. Joyce and Heidegger both write about everyday practices, make rhetorical use of fables, and meditate on river ecology to define the nature of human being and of Being itself. Studying Joyce and Heidegger together – writing a story that has not yet been told --contributes a new and unanticipated chapter to European intellectual history. Work on this project will inform Professor Herr's teaching of courses on Joyce at all levels and will encourage graduate students from outside English to enroll in those courses.

HOENICKE-MOORE, MICHAELA, ASSOCIATE PROFESSOR, HISTORY, 5 YEARS OF SERVICE, FALL SEMESTER

This project examines the varieties of American patriotism after 1941 by tracing domestic debates over this country's international role. The study investigates patriotism as a sense of national belonging underlying the formulation, legitimization and contestation of U.S. foreign policy. While much of the literature on nationalism emphasizes coherence and continuity, this study aims to bring out the disparate and changing visions of America's role in the world. The research is central to several core courses which the author teaches in the History Department and as part of the new International Relations major. It yields new material that helps students analyze and appreciate foreign policy debates. The final product will be a monograph adding to our general understanding of the domestic context in which foreign policy is made.

HOURLCADE, JUAN PABLO, ASSOCIATE PROFESSOR, COMPUTER SCIENCE, 7 YEARS OF SERVICE, SPRING SEMESTER

The purpose of the PDA will be to write a first draft of a book on the topic of designing interactive technologies for children. This is a growing field that has developed a strong and dedicated research community during the past decade. It is also an interdisciplinary field, where computer science, developmental psychology, pedagogy, and new media interact. In spite of the growth and increasing maturity of the field, there are currently no up-to-date books that cover it comprehensively. Professor Hourcade will use the book to teach a new course on designing interactive technologies for children. Moreover, the book will make the latest research more accessible to professionals developing technologies with the goal of promoting children's learning and cognitive development.

KINSEY, JONI L., PROFESSOR, ART & ART HISTORY, 21 YEARS OF SERVICE, FALL SEMESTER

Professor Kinsey will study related landscape paintings and prints by J.M.W. Turner (British) and Thomas Moran (American), exploring their responses to the expansionist agendas of their respective countries in the 19th century and the impact of those developments on the land and its inhabitants. The PDA will be used to gather images, identify sites they depicted, read

relevant literature, and prepare for Spring 2014 field research in England under a Fulbright Fellowship (applied Aug. 2012; decision TBA spring 2013). This project is expected to result in a book and an article and will add to Kinsey's courses on landscape and 19th century art history. Studying Turner and Moran's work geographically, historically, and aesthetically as representations of "deep landscapes" provides insights into the profound relationship of art, place, and identity, an issue that Kinsey will also utilize in her ongoing research and frequent public lectures on landscape art in Iowa and the Midwest.

KOMISARUK, CATHERINE, ASSOCIATE PROFESSOR, HISTORY, 6 YEARS OF SERVICE, SPRING SEMESTER

Catherine Komisaruk is writing a book about gender and native uprisings in colonial Mexico and Guatemala. She will carry out research in Mexico's national archives, working with records in Spanish and Nahuatl. (Nahuatl is the language of the Aztecs. It is still spoken by some 2.5 million people.) The project shows how the migration of workers between native communities and the colonial Hispanic economy altered gender ratios in households and entire native towns, and how these changes undergirded the rebellions that would topple colonial rule. The research helps reconstruct the history of Mexican and Central American workers' labor, migrations, family structures, cultural adaptations, and activism. It will thus expand our understandings of the long-term migration patterns currently reshaping demographics in Iowa and the U.S. as a whole. Komisaruk will incorporate her findings into several of her courses: History of Mexico; Colonial Latin America; and the Colloquium for History Majors.

LEDDY, JOHNA, ASSOCIATE PROFESSOR, CHEMISTRY, 21 YEARS OF SERVICE, FALL SEMESTER

Low cost, environmentally benign, distributed, and renewable energy systems are the focus of contemporary scientific and technological research. Electrochemical energy systems such as batteries, fuel cells, and solar photoelectrochemical cells provide better generation and storage efficiencies than the more common combustion processes. Leddy introduces the idea that sound energy increases rates of reactions at electrode surfaces. Increased rates equal increased efficiencies. Piezoelectric oscillators generate the sound energy at minimal energy tax, analogously to a watch battery. Transformative, platform technologies that include alcohol fuel cells can evolve from this research that will evaluate sonoelectrochemistry and develop guidelines for optimizing sound based catalysis. Outcomes include intellectual property to support the University in its missions and more effective teaching in the chemistry curriculum across the undergraduate and graduate populations.

LILLIOS, KATINA, ASSOCIATE PROFESSOR, ANTHROPOLOGY, 9 YEARS OF SERVICE, SPRING SEMESTER

With a Professional Development Assignment, Professor Katina Lillios will complete the final publication and digital catalogue of the archaeological excavations at Bolores before the materials are returned to Portugal in the summer of 2014. Bolores served as the burial site for a population that lived in the Late Neolithic and Early Bronze Age (3000-1500 BC), a time characterized by sociopolitical centralization followed by sociopolitical collapse. Bioarchaeological analyses of the Bolores population and geoarchaeological studies of the site's sediments provide a unique benchmark for understanding the demographic and ecological changes that accompanied this dynamic period. In addition to their scholarly contributions, the final publication and catalogue will contribute toward increasing the international profile of the University of Iowa and enhance the classes that Professor Lillios teaches, including Archaeology of the Iberian Peninsula, Archaeology of Social Change, and Anthropology of Death.

(Dr. Lillios received a three-year NSF grant for \$235,000 which supported the 2012 season of work in Bolores and will fund the analyses for the monograph.)

LINDERMAN, MARC A., ASSOCIATE PROFESSOR, GEOGRAPHY, 7 YEARS OF SERVICE, SPRING SEMESTER

Professor Marc Linderman will develop a state-wide program to integrate plot-level bioenergy research with remote sensing analyses through newly available airborne imaging capabilities. These efforts will directly contribute to educational opportunities and will foster collaboration and inter-disciplinary ecosystem and watershed level analyses of fundamental ecological, agricultural and hydrological systems vital to the sustainability and prosperity of the State of Iowa. These capabilities will significantly extend our ability to discern vegetation communities, empirically measure crop characteristics, and improve models of state-wide soil and vegetation conditions. The data, research, and collaborations developed during this period will provide direct educational opportunities for secondary to graduate students and benefit the State of Iowa by providing tangible outreach projects related to agriculture and natural resources.

MCMURRAY, BOB, ASSOCIATE PROFESSOR, PSYCHOLOGY, 8 YEARS OF SERVICE, SPRING SEMESTER

McMurray proposes to enhance his work on language learning and processing. His NIH funded work is translating laboratory findings to individuals with various language disorders. He proposes to extend this to children with reading disorders to understand the unique challenges of this population, but also to develop a model of individual differences in language more broadly. While his work is behavioral, McMurray also seeks grounding in neuroscience through collaboration with UIHC. Finally, both lines of work apply psychological models to very different domains, and he proposes to develop new theoretical accounts based on simple behavioral principles to help bridge these domains. Given the prevalence of language and reading disorders this work could greatly benefit children in Iowa; and integrating three strengths at the University (Psychology, Neuroscience, Communication Disorders) will help develop McMurray's own research and teaching and build the greater scholarly community.

(Two NIH grants will be funded through his proposed PDA period. The first for \$200,000/year will cover two full-time research assistants and 3-4 graduate students as well as PDA related expenses.)

MESSERLE, LOUIS, ASSOCIATE PROFESSOR, CHEMISTRY, 28 YEARS OF SERVICE, SPRING SEMESTER

The author will undertake hands-on research in energy materials chemistry at the NSF-sponsored California Institute of Technology's Powering the Planet Solar Fuels Institute. The objective is to learn from and work with leaders in this field in order to develop new catalysts for solar-powered splitting of water to hydrogen and oxygen, to establish collaborations between Caltech and UI, and to bring solar energy concepts and experimental approaches back to Iowa and UI. Known catalysts for hydrogen production contain rare, expensive platinum, so new earth-abundant metal catalysts are needed for widespread solar energy conversion. The proposed PDA will lead to new UI energy research directions and funding from the Department of Energy, cutting-edge undergraduate education, and outreach to Iowa K-12 educators and students. Hydrogen is the most attractive, clean, renewable solar fuel to meet the world's skyrocketing energy demand and store Iowa's abundant wind- and solar-derived energy.

MOORE, CATHLEEN M., PROFESSOR, PSYCHOLOGY, 5 YEARS OF SERVICE, FALL SEMESTER

Dr. Moore will co-author a book on visual attention. Approaches to this topic range from neurophysiology, functional neuroimaging, quantitative modeling, and behavioral testing. Communication across these domains is critical and yet it is hampered by differing theoretical traditions and assumptions. This book will identify common ground and convergence of conclusions where it can be found and specify where it cannot. The project will provide fresh material for Dr. Moore's graduate and undergraduate courses, and the book will serve as a handbook for both undergraduate and graduate students in her lab. Finally, the book will serve as a source for consultation with members of society regarding how basic mechanisms of visual attention can provide insight and guide preventative measures regarding fundamental failures that occur in everyday life, including traffic accidents, pilot failures, and failures in surveillance situations (e.g., lifeguarding, security screening).

*****MOORE, MICHAEL E., ASSOCIATE PROFESSOR, HISTORY, 4 YEARS OF SERVICE, FALL SEMESTER**

Professor Moore's research explores the gruesome posthumous trial of Pope Formosus in 897. The body of Formosus was unearthed, propped up on the papal throne, put on trial and deposed. Afterward his body was thrown into the Tiber River. Study of the trial illuminates conflicts about law, political power, and the papacy, during a period of crisis in European history. The mentality of the time was affected by the collapse of the Carolingian Empire, giving rise to political fragmentation and unleashing fanatical hatreds. Moore is writing a book on this topic, to be completed with the help of a PDA. The study of medieval history is popular with Iowa students, who recognize the value of history for honing the mind and gaining a better understanding of our world. Moore's research on Pope Formosus will enter directly into his lectures on the history of the Middle Ages. The topic is a "lively" way to help students understand the medieval world.

***ONWUACHI WILLIG, ANGELA, PROFESSOR, LAW, 6 YEARS OF SERVICE, FALL SEMESTER (CONTINUING FACULTY SCHOLAR)**

This book project explores the past and present social and legal meanings of *Rhineland v. Rhineland*, an annulment case which was filed on the grounds of racial fraud, and their contemporary lessons about today's multiracial families. The project exposes how law and social norms continue to function together to frame the normative ideal of family as monoracial. This project will sharpen the professor's teaching in Family Law, which increasingly must address multiracial identity and family topics, and will enhance two course segments in Critical Race Theory. The book will result in significant press for the University and the state. In developing promotional materials, Yale University Press, which will publish the book in 2013, refers to the project—the first comprehensive analysis of “the law of the multiracial family—as a “landmark book.” The book already is the focus of issues for two separate law journals. The professor has already accepted invitations to present on the book.

OSBORN, TRACY, ASSOCIATE PROFESSOR, POLITICAL SCIENCE, 5 YEARS OF SERVICE, SPRING SEMESTER

This project examines the ways in which women legislators create public policies that affect women constituents as American political parties change their issue positions over time. It will result in a book manuscript that compares women legislators' feelings about and actions regarding women's policies in the Louisiana, Washington, and Wisconsin state legislatures from 1960-2010. This book will address a new and relevant political problem; many worry that Democratic and Republican party polarization has negative effects on the development of public

policy. The project will also benefit undergraduate and graduate students at Iowa by providing research opportunities and enriching course material.

PESANTUBBEE, MICHELENE, ASSOCIATE PROFESSOR, RELIGIOUS STUDIES, 9 YEARS OF SERVICE, SPRING SEMESTER

Professor Pesantubbee's project examines the Lakota ghost dance movement which ended on December 29, 1890, when United States soldiers massacred nearly 300 unarmed Lakota dancers. Although many observers and scholars described the ghost dance as a war dance, she will posit that the dance was a peaceful, religious ceremony intended to bring about a renewed world. She will analyze the ghost dance movement by taking the innovative approach of studying the dance itself including movement, spatial location of women compared to men in the dance, and painted symbols especially those worn by women. This project will further our understanding of why certain groups may take violent actions towards new religious movements and how and why new religious movements develop in order to prevent future violence outcomes. This project is expected to result in a book chapter and the new material will be incorporated into Professor Pesantubbee's undergraduate and graduate courses.

QUINN, DANIEL M., PROFESSOR, CHEMISTRY, 30 YEARS OF SERVICE, SPRING SEMESTER

Organophosphorus (OP) chemical warfare agents are acutely toxic compounds that inhibit the enzyme acetylcholinesterase (AChE) in the central and peripheral nervous systems. The use of OP agents by terrorists is a significant national security concern. Inhibition occurs by phosphorylation of the active site serine nucleophile that is involved in catalysis. Administration of oxime antidotes leads to dephosphorylation of the phosphyl-AChE adduct. However, the initial adduct undergoes a dealkylation reaction that leads to an aged adduct, for which there is no known antidote. This application proposes to address this perplexing problem by synthesis and evaluation of compounds that bind to and reactivate aged-AChE. Benefits of the project are: 1) involvement of undergraduate and graduate research students; 2) results will be communicated in the undergraduate organic chemistry course that the applicant teaches; 3) the implications for the security of Iowa and the nation are manifest.

RACEVSKIS, ROLAND, PROFESSOR, FRENCH & ITALIAN, 14 YEARS OF SERVICE, FALL SEMESTER

Professor Racevskis will prepare a book manuscript on a largely unexplored topic, the significance of material environments for the human experience in works of seventeenth-century French literature. The focus throughout the book is on the urgent question of humanity's relationship to the nonhuman world, and on how that relationship has changed over historical time. A central argument holds that we have much to learn from re-examining works from earlier periods in environmental context. This research project directly contributes to Professor Racevskis's teaching of courses on environmental literature, both at the undergraduate and graduate levels. Outside the classroom, the research continues to contribute to his involvement in interdisciplinary discussions of sustainability across the campus community and via local media such as International Programs WorldCanvass.

RAHMATALLA, SALAM F., ASSOCIATE PROFESSOR, CIVIL-ENVIRONMENTAL ENGINEERING, 5 YEARS OF SERVICE, SPRING SEMESTER

Ground and aerial transportation are essential means for transporting critical patients from rural areas to big hospitals during emergencies in war zones and farming states such as Iowa. The existence of a human-like manikin that complies with and reproduces field-testing will allow investigators and designers to conduct unlimited testing on supine-human response to minimize

motions that cause harm to patients. Professor Rahmatalla will investigate the development of a human-like manikin by working closely with researchers and facilities at the US Army Research Lab (USARL) in Georgia. It is expected that the knowledge gained from this project will be an important component of a high-level course in structural dynamics for students in civil, mechanical, and biomedical engineering. It is also expected that this project will result in the publication of at least one journal or conference paper, a patent, and three grant applications to the military in collaboration with USARL.

RAND, JACKI T., ASSOCIATE PROFESSOR, HISTORY, 14 YEARS OF SERVICE, FALL SEMESTER

Professor Rand will conduct a historical analysis of violence against Mississippi Choctaw women—violence conceived in colonialism, Indian removal, and settler land expropriation, and nurtured in sharecropping relations and reinforced through white supremacy. The study uses federal, tribal, and state court records, over 40 oral histories, federal government documents, and manuscript collections from the Mississippi State Archives. Approved by the tribal council of the Mississippi Band of Choctaw Indians (MBCI), the study explores the rising trajectory of violence in Choctaw reservation communities, despite the tribal government's dedication to economic development and the creation of a model criminal justice system in the late twentieth century. The study will result in an article, a book, and new material for Professor Rand's undergraduate courses and a new graduate course on indigeneity and gender. Professor Rand will share the results of her study with the government of the MBCI.

RAPSON, JOHN, PROFESSOR, MUSIC, 19 YEARS OF SERVICE, SPRING SEMESTER

Professor Rapson requests a PDA to compose and produce music for an original theatre production. The work will be presented as part of the University of Iowa Hancher 2014-15 series and subsequently toured internationally. The performance will combine the ancient tradition of mask making with contemporary jazz to challenge norms in socio economic contexts. It will be collaboratively conceived and produced by University of Iowa professors in concert with professional Italian artists. Rapson's role will include the creation and production of a sound score that blends written composition with improvisation, a premise of his undergraduate and graduate programs in Jazz Studies. The professional, artistic realization of the process will provide hands-on opportunities for his students to both observe and participate. The collaborative and innovative skills of artists will create a thought-provoking theatrical experience for regional and international audiences.

RATNER, ALBERT, ASSOCIATE PROFESSOR, MECHANICAL ENGINEERING, 9 YEARS OF SERVICE, FALL SEMESTER

The goal of this project is to advance the concept of bio-char use on agricultural lands. For this effort, the approach is to build a close collaboration with partners at Iowa State University and other stakeholders throughout the state of Iowa to perform research, testing, and eventually field trials. Professor Ratner is the only person at the University of Iowa examining biomass gasification and bio-char production and the primary mechanism for this effort would be the NSF Iowa EPSCoR grant on which Professor Ratner is an investigator. Bio-char is believed to be a key factor in boosting soil productivity and has even been proposed as a way of reducing green-house gases. Expected outcomes include both increased research funding and a concrete plan of using University of Iowa made bio-char in ISU greenhouse and field plant studies.

(Dr. Ratner received an NSF EPSCoR grant for \$18,000 which support expenses related to the research involved in the proposed PDA.)

RICE, KEVIN G., PROFESSOR, PHARMACY, 11 YEARS OF SERVICE, SPRING SEMESTER

Gene Delivery is the science of delivering DNA to cells in animals to produce therapeutic proteins. During the proposed development assignment, Professor Rice will collaborate with leading edge French scientists to develop gene delivery systems that target the nucleus of cells. By combining talents, this team hopes to produce superior gene delivery systems that will result in break-through medicines for the future. This professional development assignment will result in new knowledge and technology. This new technology will be brought into the classroom to share with Pharmacy students and into the laboratory to share with Graduate students. The ideas inspired by this development assignment will enrich research in the lab, increase our competitive edge, and lead to more collaborations within the University.

ROCHA, RENE R., ASSOCIATE PROFESSOR, POLITICAL SCIENCE, 6 YEARS OF SERVICE, SPRING SEMESTER

In this project, Professor Rocha examines the political and social effects of modern day immigration policy. Specifically, it focuses on how enforcement efforts, such as the Secure Communities program, alter the migratory behavior of immigrants, civic interactions between immigrants and citizens, and attitudes towards government among immigrants and Latinos generally. It will also help explain recent developments in state immigration policy in places such as Arizona, Georgia, and South Carolina. The insights generated from this project will help education policymakers considering changes to state immigration laws in Iowa and across the country. The project will also offer students the opportunity become involved in research.

SAHA, PUNAM K., ASSOCIATE PROFESSOR, ELECTRICAL-COMPUTER ENGINEERING, 6 YEARS OF SERVICE, FALL SEMESTER

Medical image segmentation has remained a salient challenge in most applications, in particular, those related to quantitative imaging or development of new image-based phenotypes based on shape, geometry, topology, and micro-architectural features of an anatomic region. Recently, Dr. Saha and his collaborators at the Uppsala University have introduced a novel distance metric referred to as the minimum barrier distance (MBD) and preliminary results of its application in image segmentation are encouraging. An efficient region growing method to compute an approximation of the MBD was presented and it was also shown that MBD is very robust to noise, blur and seed point position. During the Professional Development Assignment a comprehensive method will be developed to incorporate feature space-information in MBD-based region growing segmentation algorithm for medical imaging including CT and MR data from bone, cartilage, pulmonary research.

SANDERS, SARA, ASSOCIATE PROFESSOR, SOCIAL WORK, 10 YEARS OF SERVICE, SPRING SEMESTER

During this Professional Development Assignment, Professor Sanders will study how Medical Examiner offices in the Midwest investigate deaths of older adults that may involve aspects of abuse or neglect. Most research about death investigation has been medically and forensically based, focusing on pediatric populations or "higher profile" manners of death, such as accidents, suicides, and homicides; less attention has been given to the investigation of older adult deaths. In addition to several publications and conference presentations, the results will also be shared with the Iowa Association of County Medical Examiners to improve the operation of county ME offices throughout the state. Professor Sanders will also incorporate the results of

this study into her courses on death and dying, as well as in courses on macro level social work practice and improving the social service delivery system.

SAUDER, MICHAEL E., ASSOCIATE PROFESSOR, SOCIOLOGY, 7 YEARS OF SERVICE, FALL SEMESTER

Professor Sauder proposes to study the effects of educational rankings both in the U.S. and internationally. This research will provide a history of rankings and a catalogue of their modern manifestations, discuss the various methods rankers use to assess schools and how these choices of methods help determine the outcomes published by these rankings, and document the effects, both intended and unintended, that have been attributed to rankings in published analyses. This expected outcome for this work is a book manuscript for the American Society of Higher Education's monograph series. Professor Sauder will include one graduate student as a secondary author on this project and will incorporate this research into his undergraduate and graduate courses in organizational sociology. More generally, this research will inform policy debates about the rise of accountability measures and quantified assessments in higher education.

*****SCHIFF, ROBYN, ASSOCIATE PROFESSOR, ENGLISH, 4 YEARS OF SERVICE, FULL YEAR**

Robyn Schiff will complete her third poetry collection, comprised of poems in the Gothic tradition that explore haunting, illusion, the presence of the past, and shadowy ambiguity to express familial bonds in an age of global fear and paranoia, with an emphasis on the use of these Gothic metaphors to explore motherhood and post-partum depression. Schiff's project will result in the publication of a book, and she will publish the individual poems in literary journals. By reckoning with difficult emotional material, Schiff's work offers artistic engagement with complicated issues, using the poetic tradition to address intense human experience, and thus adding to our ability to understand one another and ourselves through artistic means. Work on this project will contribute to Schiff's literature and creative writing courses in the English Department, including Creative Writing Track: Advanced Topics; Lyric Structures; and Topics in Poetry and Poetics.

SESSIONS, JENNIFER E., ASSOCIATE PROFESSOR, HISTORY, 7 YEARS OF SERVICE, SPRING SEMESTER

Professor Sessions will conduct primary research in French archives for a book about the "Margueritte Affair," a minor uprising against French rule in Algeria in 1901 and the ensuing trial of the accused rebels in Montpellier, France, in 1903. This study asks what this relatively ordinary event and the extraordinary trial it sparked can tell us about colonial Algerian society and Algeria's place in the broader world of nineteenth-century settler colonialism. Professor Sessions' findings will be incorporated into her undergraduate courses on modern France, European imperialism, and Algeria, while advancing our understandings of the parallels between the French colonization of North Africa and the processes of European migration and settlement that created modern Iowa.

SEVERINO, CAROL J., PROFESSOR, RHETORIC, 22 YEARS OF SERVICE, SPRING SEMESTER

Professor Severino will pursue second language (L2) writing research, analysis of her L2 learning, and travel writing. First, by combining methods of two of her previous studies, she will identify and classify word choice errors and their sources in drafts submitted by Chinese students whom she will also interview. Second, following from two previous language self-studies, she will identify and classify word choice errors in her own Spanish writing. Third,

she will write a follow up travel essay to two previous pieces about her encounters with Quichua people and language in Ecuador, focusing on communication failure from word choice error. These studies, resulting in papers for writing conferences and in three published essays, will provide insights and advice for internationalization and for UI international and bilingual students and the many professionals who help them achieve success.

SIMMONS, TOM, ASSOCIATE PROFESSOR, ENGLISH, 20 YEARS OF SERVICE, FALL SEMESTER

Professor Simmons will explore how John Locke's 1690 decimation of "the innate self" coincided with the period of the British empire's greatest expansion. Professor Simmons will explore how a loss of individuated self is consistent with, and even necessary for, the rise of colonialism. Professor Simmons will also explore how this loss of self is consistent with the emergent diagnosis and criminalization of "madness" in the 18th century. The primary outcome of Professor Simmons' work will be a scholarly book, in which Professor Simmons will examine the relationship between diagnoses of madness and imperial rise and decline in Britain between Christopher Smart's release from an asylum in 1763 and W. B. Yeats' publication of "Sailing to Byzantium" in 1928. Professor Simmons' research will greatly benefit his teaching of British literature to his students, and will be of larger interest to lowans on the subject of creativity, mental illness, and citizenship in an age of neo-imperialism.

SINGER, JANE B., ASSOCIATE PROFESSOR, JOURNALISM & MASS COMMUNICATION, 13 YEARS OF SERVICE, SPRING SEMESTER

The primary activity to be undertaken during the PDA semester will be general editorship of a three-volume encyclopedia. The International Encyclopedia of Journalism Studies will be published by Wiley-Blackwell, in association with the International Communication Association, and the applicant has accepted the publisher's invitation to oversee this project. The volumes will provide a unique reference guide and resource for the large and growing number of scholars who study journalism as a distinct field, as well as others seeking to enrich their understanding of this rapidly evolving subject. Encyclopedia topics are directly related to the content of the applicant's graduate and undergraduate classes in the School of Journalism and Mass Communication. As general editor, she will be responsible for overall organization of the work, commissioning and supervision of associate editors, and final editing of all submissions. The latter task will coincide with the PDA semester, if awarded.

SLUSARSKI, DIANE C., PROFESSOR, DEPT OF BIOLOGY, 14 YEARS OF SERVICE, FALL SEMESTER

Heart disease is the leading cause of death in the U.S. and the ability of humans to repair damaged tissue is limited. In contrast, zebrafish can regenerate lost heart muscle. Signaling between cells is critical for embryogenesis and misregulation of signaling molecules in adult zebrafish often leads to disease. Wnt signaling proteins are essential for heart development and altered Wnt activity in adults has been implicated in heart failure. Preliminary data from the Dr. Slusarski's lab finds Wnt5 expression in the regenerating zebrafish heart tissue. This project will generate necessary data for external funding and enhance the teaching mission by contributing new tools and approaches. Elucidating the mechanisms of regeneration will ultimately lead to better approaches in treating injured cardiac tissue.

SNITZER, JAMES G., PROFESSOR, ART & ART HISTORY, 36 YEARS OF SERVICE, SPRING SEMESTER

Professor Snitzer will produce several suites of images using a variety of contemporary and historic photographic, graphic and digital processes. Influenced by the themes of exploration-

and its aftermath-as embodied by the 19th Century landscape and travel photographers, his studio-constructed tableaux of model landscapes, presented as large scale photographs, will continue to investigate the culture's often conflicting views of the landscape as it is portrayed in the media and exists in the popular imagination. Professor Snitzer will also utilize timed-based digital media to create virtual cinematic sequences of simulated landscape images. This work, some of which will employ the help of graduate students, will provide new material for Professor Snitzer's graduate and undergraduate courses. These projects will result in new work that Professor Snitzer will exhibit locally, regionally and nationally.

STANIER, CHARLES O., ASSOCIATE PROFESSOR, CHEMICAL & BIOCHEMICAL ENGINEERING, 8 YEARS OF SERVICE, FALL SEMESTER

There is a widely acknowledged need for optimization of nitrogen releases to air and water to minimize negative environmental, health and ecosystem impacts. A U.S. National Academy selected Nitrogen Management as one of 14 Grand Challenges for the 21st Century. The proposed developmental activity is to use a semester of release to focus on new research and associated collaborations on these topics. The outcomes are to develop (a) a highly innovative white paper and (b) a multi-institution funding proposal for nitrogen management modeling. The benefit to the University will be through research opportunities for graduate students and faculty. The State of Iowa benefits through the creation of tools to implement flexible, market-based, multi-media nitrogen management practices that can achieve performance targets at low cost. Market-based approaches are a key focus since they avoid excessive prescriptive regulation and maximize flexibility for the regulated community.

STERN, DAVID, PROFESSOR, PHILOSOPHY, 24 YEARS OF SERVICE, FULL YEAR

Professor Stern will work on two book projects. The first book is titled "Wittgenstein's lectures, Cambridge 1930-1933, From the Notes of G. E. Moore." It will make available the text of verbatim notes taken by a distinguished philosopher who attended Wittgenstein's lectures during a period in which his views were rapidly changing. During the assignment period, he will complete work on an editorial introduction and apparatus for a print edition, to be published by Cambridge University Press, and a digital facsimile edition of the source manuscript, to be published online. He will also write a book titled "Wittgenstein in the 1930s." This book is a study of the development of Wittgenstein's philosophy that will draw on the extensive research he has done in this area. These projects will inform and enrich his courses on twentieth century philosophy, philosophy of language, and Wittgenstein.

TACHAU, KATHERINE H., PROFESSOR, HISTORY, 27 YEARS OF SERVICE, SPRING SEMESTER

Professor Tachau will use her PDA to complete the research and writing of a book concerning the interaction of painters and academics in thirteenth- and fourteenth-century Paris, the first period of that city's and its university's artistic and intellectual brilliance. Modern-day optics, so crucial to the technologies of our time, builds upon discoveries made at that time and place, and the purpose of this book is to reveal to a scholarly audience how the theories of scholars and practice of artisans led to technological and scientific innovation, and with what consequences. Professor Tachau will use her findings to revise lectures in her undergraduate and graduate courses. She hopes to inspire students' life-long appreciation of the deep, influential connections between two of humanity's most impressive and defining realms of creativity. By being better able to recognize, understand, and support artistic and scientific ingenuity, they can in turn assist innovation to flourish.

VALERIO-JIMENEZ, OMAR S., ASSOCIATE PROFESSOR, HISTORY, 6 YEARS OF SERVICE, SPRING SEMESTER

A PDA will allow Professor Valerio-Jiménez to complete the research for his next book, and to begin publishing his findings. His book will expand understandings of U.S. civil rights struggles by exploring the ways that Mexican Americans' memories of the U.S.-Mexican War (1846-1848) have shaped their writing, oral discourse, public rituals, and explicitly politicized activism. The book will contribute to the history of memory, the U.S., and Mexico. By exploring the war's significance for Mexican Americans, it will illustrate the experience of an incorporated population who created an alternative to national histories of the war. It will also add to the history of Iowa by exploring the state's links to the U.S.-Mexican War. The dissemination of its findings through conference presentations and publications will also enhance the university's research profile. Valerio-Jiménez will also use his research findings in his teaching and in designing a new course on history and memory.

WILLIAMS, RACHEL M., ASSOCIATE PROFESSOR, ART & ART HISTORY, 13 YEARS OF SERVICE, SPRING SEMESTER

Professor Williams will continue work on her book manuscript, Run home if you don't want to be killed: The Detroit Riot of 1943, which is a graphic history based on a series of events that led to the worst race riot in 1943. This book will use stories, history, archival materials, and over 400 images to challenge people's assumptions about race, gender, culture, and violence in the United States during World War II. The proposed activities of Professor Williams during her Professional Development Assignment include collecting more data from various archives in Michigan including the University of Michigan, Wayne State University, the Detroit Free Press, the Detroit Public Library, and the Detroit Historical Society, and finishing at least two more chapters in order to move closer to the completion this book. This project will enhance the pedagogical approach and knowledge of Professor Williams who teaches classes in sequential art, Gender, Women's and Sexuality Studies, and intermedia.

ZIMMERMAN, DALE, PROFESSOR, STATISTICS & ACTUARIAL SCIENCE, 26 YEARS OF SERVICE, FALL SEMESTER

Professor Zimmerman will develop antedependence models for non-normal longitudinal data, in particular for data that are skewed or discrete. He will determine conditions under which several multivariate distributions for skewed or discrete longitudinal data can exhibit antedependence. For models satisfying those conditions, and other antedependence models, he will develop likelihood-based methods to obtain estimators and perform hypothesis tests on model parameters. He will write several papers based on this research, and he will incorporate his findings into graduate-level courses on multivariate analysis.

***Will have met the 10 semester requirement prior to taking the assignment approved per SUI Policy.

IOWA STATE UNIVERSITY

ADELEKE, TUNDE, PROFESSOR, HISTORY, 6 YEARS OF SERVICE, FALL SEMESTER

Professor Adeleke, director of Iowa State's program in African American studies, would travel to Montana during his assignment to study the establishment of the University of Montana's black studies program, the first of its kind in the U.S. Adeleke will use the research to write a book, *Blackening Big Sky Country: Origins, Development and Impacts of Black Studies in Montana*, that will be incorporated in Iowa State's African American studies/history courses, and result in increased visibility for the program.

BEGHIN, JOHN, PROFESSOR, ECONOMICS, 14 YEARS OF SERVICE, SPRING SEMESTER

Professor Beghin proposes an assignment in Paris, France, working with colleagues at INRA-AgroParisTech to examine economic and cultural factors related to obesity. These factors include prices and taxes, income, education, food habits, and portion sizes. Beghin's work will continue a line of research on the efficacy of food taxes targeting obesity that he and colleagues began at Iowa State, which has attracted a considerable amount of industry and media attention. The research will also be relevant for Iowa policy makers, and will be incorporated into two courses Beghin teaches at Iowa State.

BRADBURY, SUSAN, PROFESSOR, COMMUNITY AND REGIONAL PLANNING, 11 YEARS OF SERVICE, SPRING SEMESTER

Professor Bradbury proposes to spend her assignment producing *Guidelines for Implementing a Comprehensive Plan*, a textbook to fill gaps that currently exist within the community planning literature. The book will detail the various methods available to implement a comprehensive plan, and provide examples from communities that illustrate how these methods can be used to achieve planning goals. In conjunction with the book, Bradbury will develop a new course for Iowa State students that further supports her department's mission of educating competent professional planners.

CALL, ANSON, ASSOCIATE PROFESSOR, GRAPHIC DESIGN, 9 YEARS OF SERVICE, FALL SEMESTER

Professor Call's 2007 textbook, *The Cinema 4D R10 Handbook*, is the curriculum text for students in several 3D modeling and animation courses in the College of Design. Advances in 3D technology and software, however, have made the text outdated. Call proposes to spend the 2013 fall semester writing a new text and associated curriculum, which will provide Iowa State students with the most up-to-date instruction in this fast-paced field.

CLIFFORD, ANNE, PROFESSOR, PHILOSOPHY AND RELIGIOUS STUDIES, 4 YEARS OF SERVICE, FALL SEMESTER

Professor Clifford will use her proposed assignment to complete the research and writing of a book, *Creation and the Natural Sciences*, intended for upper-level undergraduate and master's-level graduate students. The book will show how religion, especially Christianity, and the natural sciences have been historically intertwined, and how they can be related in ways that benefit society. Clifford's work will also provide students with tools for developing an argument for the best way to conceive of the relationship between the two.

CORREIA, ANA-PAULA, ASSOCIATE PROFESSOR, SCHOOL OF EDUCATION, 7 YEARS OF SERVICE, FALL SEMESTER

Professor Correia proposes to spend her assignment at the Portuguese Open University in Lisbon, examining online learning in collectivist cultures through the Community of Inquiry framework. This assignment will help Correia and her colleagues create successful online learning experiences by developing alternative facilitation models; strengthen ties between Iowa State and Portuguese Open University; and expand opportunities for research partnerships.

DELATE, KATHLEEN, PROFESSOR, HORTICULTURE AND AGRONOMY, 15 YEARS OF SERVICE, SPRING SEMESTER

Professor Delate proposes an assignment to study organic agroecosystems in multiple regions of Italy. She will collaborate with a colleague from the National Agriculture Research Council in Rome, who completed a similar assignment in Delate's lab in 2010. The assignment will strengthen her research capabilities and knowledge of novel equipment; advanced techniques for analysis of organic grain, fruit, and vegetable cropping systems; and bring additional recognition to Iowa State as an international leader in the field.

DIXON, PHILIP M., UNIVERSITY PROFESSOR, STATISTICS, 14 YEARS OF SERVICE, SPRING SEMESTER

Professor Dixon proposes an assignment at the University of St. Andrews in Scotland, where he will work to improve his understanding of two types of statistical models that are creating a revolution in ecological and spatial statistics. Dixon will use this knowledge to refine models for population trends in mourning doves and spore development in strawberries, and analyze a collection of data sets on locations of duck nests. The work will be used to update three statistics courses, result in publications on all three projects, and contribute to better management of birds and strawberries in Iowa and the U.S.

GOULD, CINDY, ASSOCIATE PROFESSOR, INTEGRATED STUDIO ARTS, 13 YEARS OF SERVICE, FALL SEMESTER

Professor Gould proposes an assignment in India, where she will serve as a visiting faculty member at Amity University in Jaipur; conduct research on age-old Indian textile techniques; and finalize a comprehensive schedule for Iowa State's 2014 Summer Study Abroad in India program. Gould's assignment will expand her teaching skills, generate research articles for publication and conference presentations, and allow her to exhibit newly created artworks utilizing traditional Indian textile processes.

GREWELL, DAVID, ASSOCIATE PROFESSOR, AGRICULTURAL AND BIOSYSTEMS ENGINEERING, 7 YEARS OF SERVICE, FULL ACADEMIC YEAR

Professor Grewell's proposed assignment, to be spent in Germany, will focus on additive manufacturing technologies with the potential to create jobs in rural America. Grewell will support industry adoption of this technology with journal articles and conference presentations related to additive manufacturing, and pursuing external funds to develop a fully functioning system at Iowa State. The technology also has the potential for multiple patent applications and long-term financial return.

HAAS, BARBARA, ASSOCIATE PROFESSOR, ENGLISH, 26 YEARS OF SERVICE, FALL SEMESTER

Professor Haas proposes an assignment in St. Petersburg, Russia, where she will study the financial, material, and environmental factors affecting the Neva River delta. Her results will be presented in three essays that examine the social and cultural implications of these factors, presenting readers with a comprehensive way to learn about 21st century ecological issues. Haas' experience will also provide a model for Iowa State students in developing complex, multi-faceted international writing projects.

HOPKINS, CHRISTOPHER A., ASSOCIATE PROFESSOR, MUSIC & THEATRE, 8 YEARS OF SERVICE, SPRING SEMESTER

Professor Hopkins will use his proposed assignment to complete two major monographs – a large-scale musically creative work in the genre of string quartet, and a collection of essays on music composition. The works are expected to be a significant contribution to the artistic cultural productivity of Iowa. The outcomes of the projects will be published and performed both within the state and for audiences nationally and internationally.

KAMAL, AHMED, PROFESSOR, ELECTRICAL AND COMPUTER ENGINEERING, 13 YEARS OF SERVICE, FALL SEMESTER

Professor Kamal proposes an assignment at two universities in France, where he will develop resource allocation strategies for operating optical networks, known as photonic clouds. The emphasis will be on supporting group communications in the photonic cloud, where data can be exchanged among multiple users, while protecting against equipment failures and minimizing delays. These strategies could be used in the future by network operators, data center operators, and cloud computing operators.

KANG, SUNGHYUN, ASSOCIATE PROFESSOR, GRAPHIC DESIGN, 14 YEARS OF SERVICE, SPRING SEMESTER

Professor Kang will study cultural influences in website design in Korea during her proposed assignment. Kang will use an audience analysis methodology developed at Iowa State to evaluate users' activities, emotions, motivations and cognition. The results of her work, being done in collaboration with Yonsei University, will be submitted as a series of journal articles, and incorporated into her teaching at Iowa State.

KARPOVA, ELENA, ASSOCIATE PROFESSOR, APPAREL, EVENTS, AND HOSPITALITY MANAGEMENT, 7 YEARS OF SERVICE, FALL SEMESTER

Professor Karpova's proposed assignment would take her to the Royal Melbourne Institute of Technology in Australia (RMIT), where she will lead a group of educators to develop and test a virtual collaboration project for students at Iowa State, RMIT, and other international institutions. This project, developed in partnership with textile and apparel businesses, will provide students with the knowledge they need to compete in the global industry. Karpova's assignment will also enable her to expand her research on creativity, leading to external funding proposals.

KESSLER, MICHAEL, ASSOCIATE PROFESSOR, MATERIALS SCIENCE AND ENGINEERING, 7 YEARS OF SERVICE, SPRING SEMESTER

Professor Kessler will spend his proposed assignment in Ames and the University of York, United Kingdom, conducting research related to renewable polymer and composite materials. Kessler's work will benefit Iowa by creating a greater understanding of viable resources from

future biomass refineries, processing routes for next-generation biopolymers, and enhancing collaboration with faculty and students between the two universities.

KIM, JAE-KWNAG, PROFESSOR, STATISTICS, 4 YEARS OF SERVICE, FALL SEMESTER

Professor Kim proposes an assignment in South Korea, to study innovative methods for addressing data fusion – problems associated with combining data from different sources with few or no overlapping records. His findings are expected to have broad impact in applications where observational studies are popular, such as marketing and epidemiology. Kim's work will also result in new research programs, leading to multiple grant proposals, publications and conference presentations, and thesis topics for Ph.D. students.

KIM, STEPHEN, PROFESSOR, MARKETING, 6 YEARS OF SERVICE, FALL SEMESTER

Professor Kim proposes to travel to Korea, where he will investigate the differences in automobile marketing between Korea and the U.S. This effort, which aligns with Kim's interests in marketing channels and international business, has the potential to change auto marketing in the U.S., increase sales of American autos in Korea, and be of substantial benefit to Iowa State students. Kim's research will also be of significant interest to manufacturers in both countries, result in submissions to premiere journals, and bring increased visibility to Iowa State.

KUPFER, JOSEPH H., UNIVERSITY PROFESSOR, PHILOSOPHY AND RELIGIOUS STUDIES, 41 YEARS OF SERVICE, FALL SEMESTER

Professor Kupfer's proposed assignment will allow him to complete a philosophical book that analyzes movies about stories and storytelling. His work will contribute to the knowledge of both narrative and film, and deepen our understanding of the power of narrative in everyday life. The project will also benefit Iowa State students, both those enrolled in Kupfer's courses, as well as in any course where film is used in teaching.

LAPAN, HARVEY, UNIVERSITY PROFESSOR, ECONOMICS, 40 YEARS OF SERVICE, SPRING SEMESTER

Professor Lapan proposes an assignment to study the interaction between environmental policy and international trade. His work will result in three papers that examine the potential benefits from international coordination of biofuel policy; how economic competition between companies affects environmental policies; and how international trade agreements can be used to support international coordination of environmental policy. Lapan will also incorporate the research results into his Iowa State classes.

LARSON, SIDNER, ASSOCIATE PROFESSOR, ENGLISH, 12 YEARS OF SERVICE, SPRING SEMESTER

Professor Larson, director of the American Indian Studies program at Iowa State, proposes an assignment at Carroll College in Helena, Montana, where he will share his pedagogy for American Indian studies, and acquire material for a book in progress on contemporary American Indian studies. The assignment will benefit both the book project and his national service, as well as result in new knowledge that will be shared with Iowa State students.

MALLAPRAGADA, SURYA, PROFESSOR AND CHAIR, CHEMICAL AND BIOLOGICAL ENGINEERING, 16 YEARS OF SERVICE, FULL ACADEMIC YEAR

Professor Mallapragada proposes an assignment to the Indian Institute of Technology and National University of Singapore, where she will expand her research in polymeric biomaterials, and develop new collaborative areas for her research group. Establishing connections with

scientists in India and Singapore will be vital for pursuing large-scale grants, including National Science Foundation Engineering Research Centers and major Foundations, which require strong international partnerships.

MARCKETTI, SARA, ASSOCIATE PROFESSOR, APPAREL, EVENTS, AND HOSPITALITY MANAGEMENT, 5 YEARS OF SERVICE, SPRING SEMESTER

Professor Marcketti's proposal will help further her research in dress history, design, and the fashion industry. She will use her assignment to author peer-reviewed publications and presentations, lay the groundwork for a book on dress history, and bring new knowledge to her students. Marcketti's assignment will also include the preparation of external grant funding proposals to support Iowa State's Textiles and Clothing Museum, of which she is the curator.

MONROE, JOHN W., ASSOCIATE PROFESSOR, HISTORY, 10 YEARS OF SERVICE, FALL SEMESTER

Professor Monroe will spend his proposed assignment completing a substantial portion of his history of the early 20th century reception of African sculpture in France. The book, *African Sculpture and the French Invention of Primitive Art, 1905-1939*, will provide students and historians with a new understanding of the complex, enduring ways in which European colonialism has shaped Western culture.

MOSCHINI, GIANCARLO, PROFESSOR, ECONOMICS, 25 YEARS OF SERVICE, SPRING SEMESTER

Professor Moschini proposes an assignment at the University of California-Berkeley, focusing on the economic impacts of intellectual property rights (IPR), a key element in creating incentives for researchers, universities and governments to invest in research and development activities. Moschini's research will pay particular attention to biotechnology innovations in agriculture, a field that has benefited considerably from IPR protection, as well as the effectiveness of research and development in the bioenergy sector.

NAEGELE, DANIEL, ASSOCIATE PROFESSOR, ARCHITECTURE, 11 YEARS OF SERVICE, SPRING SEMESTER

Professor Naegele's proposed assignment will support continued research and scholarship on a book to be titled, *The Letters of Colin Rowe*. Rowe, renowned for his essays in architecture and urban theory, revolutionized architectural education in the U.S. and England. Naegele's work will benefit Iowa State students and faculty by preserving Rowe's writings, providing insight into 20th century architecture, and contributing to the history of architecture education.

NARASIMHAN, BALAJI, PROFESSOR, CHEMICAL AND BIOLOGICAL ENGINEERING, 12 YEARS OF SERVICE, FULL ACADEMIC YEAR

Professor Narasimhan proposes an assignment in India to enhance his research on nanoparticle-based platforms for vaccine delivery in the treatment of cancer, malaria, tuberculosis, and other diseases. Collaborating with researchers in highly populated countries is critical for winning vaccine-related grants from funders like the Gates Foundation, World Health Organization, and National Institutes of Health. Building these relationships will benefit Iowa State through new research collaborations and exchanges, external funding, and the recruitment of top graduate students and postdoctoral fellows.

**PASSE, ULRIKE, ASSISTANT PROFESSOR, ARCHITECTURE, 6 YEARS OF SERVICE,
FALL SEMESTER**

Professor Passe proposes an assignment to complete his book, *Designing Spaces for Natural Ventilation, an Architect's Guide*. The work will be a significant contribution to the study of building energy efficiency, engaging issues of design and humanities jointly with science and technology. Passe's assignment supports Iowa's goal to be a leader in renewable energy research, and further establishes Iowa State and the state of Iowa as a strong location for sustainable design.

**PETERS, REUBEN, PROFESSOR, BIOCHEMISTRY, BIOPHYSICS & MOLECULAR
BIOLOGY, 10 YEARS OF SERVICE, FALL SEMESTER**

Professor Peters proposes an assignment at the Max Planck Institute for Chemical Ecology in Germany, where he will conduct research into the role of natural plant products in the defense mechanism by which cereal crop plants fight off pathogenic microbes. Peters' work may have implications for the development of disease resistant plant lines, benefiting Iowa State students, the Iowa economy, and the larger agricultural community. The work is also expected to lead to increased research funding and prestige for Iowa State.

**PETERSON, DAVID A. M., PROFESSOR, POLITICAL SCIENCE, 3 YEARS OF SERVICE,
SPRING SEMESTER**

Professor Peterson will spend his assignment in Minneapolis, working with a collaborator to study the role of personality on judicial behavior. Specifically, Peterson will examine media coverage of, and elite rhetoric about, the last 40 U.S. Supreme Court nominations. The articles and book that results from this research will provide a deeper understanding of the Supreme Court, and advance Iowa State's research mission through the creation of a better-educated electorate.

**RAJAN, HRIDESH, ASSOCIATE PROFESSOR, COMPUTER SCIENCE, 7 YEARS OF
SERVICE, FALL SEMESTER**

Professor Rajan will spend his proposed assignment visiting several institutions, developing and refining computer programming languages to improve software quality and programmer productivity. Rajan's work will help software engineers keep pace with current hardware technologies by writing concurrent programs; as a result, information technology companies in Iowa and elsewhere will benefit from increased productivity, and a decrease in software-related errors.

**RUSSELL, DAVID, PROFESSOR, ENGLISH, 24 YEARS OF SERVICE, FULL ACADEMIC
YEAR**

Professor Russell will work at Stanford University and Ames during his proposed assignment, where he will analyze student writing data to describe how students develop their writing skills in college and early professional careers. Russell's results will be incorporated into a book, and also used to benefit Iowa State undergraduate students by providing evidence-based guidance on how to develop their writing and become more successful communicators and learners.

**SARKAR, PARTHA, PROFESSOR, AEROSPACE ENGINEERING, 12 YEARS OF SERVICE,
FALL SEMESTER**

Professor Sarkar will use the proposed assignment to expand his existing wind energy research and wind tunnel testing capabilities, develop a graduate course on wind energy, and create a design guide to help low-rise buildings to resist extreme wind events such as tornadoes and

downbursts. The project will enhance wind generation in Iowa, improve students' education in wind turbine system design, and benefit society by reducing damage to buildings and farms from extreme winds.

SCHAEFER, VERNON, PROFESSOR, CIVIL, CONSTRUCTION AND ENVIRONMENTAL ENGINEERING, 10 YEARS OF SERVICE, SPRING SEMESTER

Professor Schaefer would spend his proposed assignment at the Federal Highway Administration in Washington, D.C., assisting the agency's National Geotechnical Team in developing performance management standards for geotechnical features such as retaining walls, embankments and slopes, and bridge abutments. As leader of this effort, Schaefer's work will both benefit Iowa State's students, as well as enhance the university's reputation in transportation infrastructure.

SCHWAB, ANDREAS, ASSOCIATE PROFESSOR, MANAGEMENT, 4 YEARS OF SERVICE, FULL ACADEMIC YEAR

Professor Schwab would use his proposed assignment to collaborate with Australian colleagues on several projects related to project management research and organizational learning. He will develop and participate in several workshops dealing with new management research methods, further positioning himself as a world leader in the field. The anticipated journal publications, university presentations and external research grants will enhance Iowa State's international reputation, as well as benefit current and future students.

SIMONSON, DONALD R., PROFESSOR, MUSIC, 34 YEARS OF SERVICE, FALL SEMESTER

Professor Simonson will work in several locations during his assignment, including Denmark and Norway, where he will research, write, and compile the Norwegian section of the book, *Scandinavian Song: A Guide to Diction and Repertoire*. The book will be the first authoritative resource to access and understand this relatively unknown portion of western classical vocal music tradition, and provide a toolbox for students and teachers to understand and perform this body of art-song literature.

SIVILS, MATTHEW, ASSOCIATE PROFESSOR, ENGLISH, 4 YEARS OF SERVICE, FALL SEMESTER

Professor Sivils proposes an assignment in Philadelphia, New York, and Ames to work on a book project, *The Rise of American Environmental Literature, 1782-1847*. Sivils' work will examine how American ecological literary consciousness emerged decades before its traditionally accepted starting point of the mid-1800s. His work, in addition to enriching the teaching of American and environmental literature courses at Iowa State, will reach a much larger audience, enhancing the reputation of the university and English department.

SMITH, ARTHUR A., PROFESSOR, PHILOSOPHY & RELIGIOUS STUDIES, 32 YEARS OF SERVICE, SPRING SEMESTER

Professor Smith will spend the proposed assignment completing his book, *Beyond Liberal Egalitarianism: Marxism and Political Philosophy in the Twenty-First Century*. The project will benefit Iowans and others by providing an opportunity for readers to reflect on their social values, and contemplate the social and ethical dimensions of technological change. Smith's work will also benefit Iowa State students in several courses that include modules on liberal egalitarian theory.

SONG, JIMING, ASSOCIATE PROFESSOR, ELECTRICAL AND COMPUTER ENGINEERING, 10 YEARS OF SERVICE, SPRING SEMESTER

Professor Song's proposed assignment would establish collaborations with Southeast University in China, and Temasek Laboratories at the National University of Singapore. Song plans to disseminate his research on antenna applications, test algorithms for computational electromagnetics developed at Iowa State, incorporate new knowledge into his courses, and recruit students to both the university and his research group.

SRITHARAN, SIVALINGAM, PROFESSOR, CIVIL, CONSTRUCTION AND ENVIRONMENTAL ENGINEERING, 13 YEARS OF SERVICE, FALL SEMESTER

Professor Sritharan proposes an assignment to study the seismic design of concrete walls, and to advance Iowa State's wind energy program. Sritharan will work with colleagues at the Federal Polytechnical University in Switzerland to understand the causes of failure in concrete walls during earthquakes, leading to the development of complementary funding proposals to the American and European science foundations. Sritharan will also identify European partners to establish research collaborations that result in greater knowledge in how to reduce wind energy costs.

VAN LEEUWEN, JOHANNES, PROFESSOR, CIVIL, CONSTRUCTION AND ENVIRONMENTAL ENGINEERING, 13 YEARS OF SERVICE, FALL SEMESTER

The successful cultivation of fungi on crop processing wastes as a means of water recovery and production of high-protein animal feed has led Professor van Leeuwen to explore producing fungal protein for human consumption – a concept which could save millions of lives. He will use his proposed assignment to travel to South Africa, where he will create research teams at three universities to further develop his concept, and establish exchange agreements with the universities to enable future collaborations.

VIATORI, MAXIMILIAN, ASSOCIATE PROFESSOR, ANTHROPOLOGY, 7 YEARS OF SERVICE, FALL SEMESTER

Professor Viatori's assignment would take him to Ecuador and Germany, where he will analyze public discourses of national unification that emerged during Ecuador's border disputes with Peru between 1941 and 1998. Viatori's research will be incorporated into his Iowa State courses, as well as result in a series of articles examining how Ecuadorian elites have used the insecurity of the country's southern border to justify the exclusion of indigenous peoples from full citizenship.

WANG, XINWEI, PROFESSOR, MECHANICAL ENGINEERING, 5 YEARS OF SERVICE, SPRING SEMESTER

Professor Wang proposes an assignment at Qingdao Technological University in China, to initiate a new research direction, develop international collaborations, and improve his Engineering Measurements (ME370) course. Establishing a new research direction will help Wang secure more external funding, while improving ME370 will include the development of easy to use course materials, and better integrate class teaching with students' laboratory work. Wang also plans to establish broader international collaborations during his assignment.

WARE, WENDY, PROFESSOR, VETERINARY CLINICAL SCIENCES, 26 YEARS OF SERVICE, FEBRUARY – JULY (6 MONTHS)

Many veterinarians, in Iowa and beyond, find cardiology to be an intimidating subject. Insufficient knowledge in diagnosing and managing cardiac disease can worsen patient outcomes, and recent advances in the field are substantial. Professor Ware proposes to use

her six-month assignment to develop the second edition of her veterinary cardiology textbook, Cardiovascular Disease in Small Animal Medicine. The updated edition will be both scholarly and clinically useful, extensively illustrated, and feature a new section of multimedia supplementary materials. It will be written in collaboration with John Bonagura, professor of veterinary cardiology at The Ohio State University.

WIE, BONG, PROFESSOR, AEROSPACE ENGINEERING, 5 YEARS OF SERVICE, SPRING SEMESTER

Professor Wie, director of the Asteroid Deflection Research Center, will use the proposed assignment to develop a proposal to establish NASA's Center for Excellence in Planetary Defense Technology at Iowa State. The center will be charged with preparing a \$500 million flight mission within the next 10 years to verify and validate various planetary defense technologies. Wie's assignment will include visits to NASA facilities, attendance and several technical conferences, organizing a symposium on planetary defense, and preparing the Center of Excellence proposal to NASA.

UNIVERSITY OF NORTHERN IOWA

ALAM, IMAM, ASSOCIATE PROFESSOR, ECONOMICS, 16 YEARS OF SERVICE, FALL SEMESTER

Gender Differences in Pay of Working Children in Bangladesh: An Empirical Study

Child labor is a pervasive problem throughout the world affecting both consumers and producers of goods and services. Using data from the 2002-03 National Child Labour Survey of Bangladesh, Professor Alam will measure and analyze the gender earnings gap between working boys and girls in Bangladesh. He will present descriptive statistics and estimate earnings equations for a pooled sample using regression analysis for children who perform market work. He will investigate if there is any evidence of a gender earnings gap in the child labor market in Bangladesh, and whether a child's own characteristics as well as industrial segregation play an important role in explaining the gap. He will also use a standard decomposition technique to examine the existence of labor market discrimination against girls. Finally, the robustness of the results will be tested using a variety of alternative specifications. Professor Alam expects to present the results of this project at the American Economic Association Meeting in 2014, and ultimately to publish these results in a peer-reviewed journal in economics. Students at UNI and Iowans in general are increasingly becoming more mindful of child labor around the world. Professor Alam's goal as a researcher/teacher is to contribute to this very important area in order to increase public awareness and to provide useful results to policy makers from carefully done research.

ATKINSON, KENNETH, ASSOCIATE PROFESSOR, HISTORY, 13 YEARS OF SERVICE, FALL SEMESTER

Completion of a Book Manuscript: Galla Placidia: Roman Queen of the Visigoths

Professor Atkinson will write the first complete study of the life and times of the Roman Empress Galla Placidia (388-450 C.E.). Although Galla Placidia was one of the most famous women alive during the tumultuous decline and fall of the Roman Empire, she is virtually unknown today. She was esteemed for her ability to bring a measure of political and economic stability to the Roman Empire during its final days. Her campaign for the rights of non-citizens throughout her realm also makes her a largely unrecognized pioneer of a sort of multiculturalism in the late Empire. Professor Atkinson's book will include discoveries from ancient documents written in Hebrew, Aramaic, Greek, Latin, Syriac, and Coptic, supported by a vast bibliography of scholarly works in English, French, German, and Italian. In addition to his literary research, Professor Atkinson has already travelled to the major sites associated with Galla Placidia's life in Italy, Turkey, Greece, and Israel. The book published as a result of his PDA work will be accessible to the public and scholars alike. He will also publish journal articles and present papers at academic conferences on this project.

This work will enhance Professor Atkinson's teaching of his classes in history and humanities. His book, written to be accessible to the layman, will also appeal to a popular audience interested in the history of Christianity since it documents the religious debates in the Roman Empire during the waning days of paganism, and the development of the papacy. Professor Atkinson does much public speaking, and plans to present his findings to popular audiences throughout the state to show how the ancients dealt with many of the same challenges our society faces today, particularly immigration and multiculturalism. By exploring the ways those in the past tried to solve these problems, he hopes to show the public how the study of history can inform the lives of the citizenry of Iowa.

BUMPUS, JOHN, PROFESSOR, CHEMISTRY & BIOCHEMISTRY, 18 YEARS OF SERVICE, FALL SEMESTER

Molecular Modeling of High Energy Density Materials

High energy density materials (HEDMs) are used for explosives and high-test fuels. The study of these materials is inherently dangerous, particularly the attempt to synthesize new compounds in quantity. Professor Bumpus will use computational molecular modeling and characterization to study high energy density materials, focusing on those that have not yet been synthesized. Computational investigation is both safer and less expensive than chemical synthesis, so it is increasingly used as a screening method to select promising compounds to synthesize. During the PDA, Professor Bumpus will 1) Computationally characterize selected theoretical nitramines in order to predict the likelihood that they will have the properties of effective HEDMs. 2) Assess the efficacy of using newly-developed basis sets (mathematical parameters for the atoms in the compounds) in computations designed to calculate enthalpy of formation, one of the most important thermochemical parameters used to characterize HEDMs. Professor Bumpus expects to publish the results of this project in a peer-reviewed journal in physical organic chemistry or related field, and to present his results at a national meeting of the American Chemical Society. This project will benefit UNI students as it will enable Professor Bumpus to better mentor undergraduate student research in molecular modeling and computational chemistry. There are very few investigators at UNI who pursue chemical research from a theoretical perspective. Professor Bumpus also has a history of developing online courses, and this project will prepare him to develop an introductory online course in molecular modeling and computational chemistry, for example.

ESCANDELL, XAVIER, ASSOCIATE PROFESSOR, SOCIOLOGY, ANTHROPOLOGY, & CRIMINOLOGY, 7 YEARS OF SERVICE, ACADEMIC YEAR

Ethnic Diversity and Support for the Welfare State in Europe

Professor Escandell will examine the relationship between ethnic diversity and support for social welfare programs. A growing body of literature argues that ethnic diversity negatively affects support for these programs. However, empirical research finds contradictory results and rather weak correlations. In this project, Professor Escandell will use a cross-national comparative perspective, the European Social Survey, and statistical techniques to discover the relationship between ethnic heterogeneity and support for welfare provisions. Iowa is experiencing an increase of ethnic heterogeneity very similar to many European Union countries. This project is particularly pertinent to the citizens of Iowa because many new immigrants will encounter different forms of social and governmental policies at the state and federal levels. The goal of Professor Escandell's research is to understand how this increasing ethnic diversity affects the changing attitudes of native populations towards such policies. Using the European Social Survey data, he will employ a two-step disaggregated approach by first focusing on specific domains of social policy, for example, the protection for the unemployed, distinct from other policy domains such as pensions, health or education. He will then examine attitudes toward each policy domain across different social groups defined by their attitudes toward immigration and their status in the labor market. For example, he will assess whether people holding negative views concerning immigrants' net contribution to the overall economy are less likely to support different social policies when immigrants are perceived as the main beneficiaries. He will also analyze the relationship between the countries' ethnic composition and support for welfare protection by unskilled workers at low risk of losing their jobs (*insiders*). In particular, he will examine whether a high ratio of foreign to native unemployment decreases these unskilled workers' "class solidarity" with workers in more disadvantaged positions (*outsiders*). The results will deepen our understanding of the complexities of the interrelation between ethnic diversity and the support for policies. Professor Escandell has secured preliminary funding through the

Spanish *Fundación Ramón Areces* for disseminating his results at international conferences and seminars, as well as in journal articles.

FLEMING, WILLIAM M., ASSOCIATE PROFESSOR, SCHOOL OF APPLIED HUMAN SCIENCES, 13 YEARS OF SERVICE, SPRING SEMESTER

A Multi-Site Evaluation of the Mentors in Violence Prevention (MVP) Program in High School Settings

Adolescence is a period where many youth experience aggressive behaviors from their peers. These behaviors can range from name calling, harassment, pushing and shoving to more severe forms of aggression, including dating violence, bullying, and sexual assault. National studies indicate that sexual and gender based harassment flourish in American schools with one national study finding 83% of females and 79% of males experience sexual harassment in schools¹⁻². It is estimated that nearly 10 percent of high school students report being hit, slapped, or physically hurt on purpose by their boyfriend or girlfriend in any 12 month period. About 1 in 5 women and nearly 1 in 7 men who ever experienced rape, physical violence, and/or stalking by an intimate partner, first experienced some form of partner violence between 11 and 17 years of age³. Pro-social bystander approaches have emerged as an important programmatic effort to address this violence. Such approaches are becoming more common on college campuses, but implementation at secondary schools has been limited. The Mentors in Violence Prevention program (MVP) is one of the first bystander-focused programs in the domestic violence and sexual assault fields. Limited evaluation of the MVP program overall, and within high school populations specifically, has occurred however. Professor Fleming's project will assess the impact of the MVP program within high school settings through a multi-system, multi-method evaluation of the program and its impact on school climate and attitudinal and behavioral changes within high school student populations. The goals of Professor Fleming's project are: (1) assess the effectiveness of the MVP in changing student attitudes and behaviors associated with youth aggression; (2) understand contextual challenges in implementing and sustaining the MVP program in secondary schools; (3) understand perceptual and contextual barriers to adolescent prosocial bystander intervention; (4) create bystander measures and instruments that are developmentally and contextually appropriate; and (5) develop pilot data that can serve as a basis for seeking external funding through the Centers for Disease Control and/or the National Institutes of Health.

There are several benefits of this project to UNI, the citizens of Iowa, and to the general field of violence prevention. UNI has taken a leadership role in the dissemination of the MVP program within the Regents system and Iowa, through the establishment of the MVP Leadership Institute within the Center for Violence Prevention. While the MVP model is widely disseminated across the country, few empirical studies have been undertaken of the model in general and specifically within high school settings. Professor Fleming will produce a multi-site evaluation of the MVP program that can provide critical information for Iowa communities and schools considering implementing the program. This project is timely in several ways. UNI has received a Verizon grant to offer high schools the training opportunity to implement the MVP program. Iowa recently was awarded a Safe and Supportive Schools grant from the Department of Education to work with schools across the state to develop programs to make their respective schools safer from bullying, and other forms of youth violence, and there is increased state legislative/gubernatorial attention to school violence. Results from this project can provide critical evaluation data regarding the MVP program for schools to consider when looking at program options.

FLOYD, ANGELEITA, PROFESSOR, MUSIC, 26 YEARS OF SERVICE, FALL SEMESTER

Geoffrey Gilbert (1914-1989), World Class Musician, Transformational Teacher: An Exploration of His Life as an Orchestral Principal and Pedagogical Genius

The eminent British flutist, Geoffrey Gilbert (1914-1989), led an extraordinary life as a talented flutist, musician, conductor and teacher on two continents, Europe and America. Professor Floyd's project focuses on documenting and recording Gilbert's life in music, his achievements as an orchestral player and gifted pedagogue. His influence on the British school of flute playing transformed generations of flutists throughout the world, his most celebrated students being William Bennett, Trevor Wye and Sir James Galway. Gilbert's life as a principal orchestral player in the major British orchestras in London from the 1930s through 1960s provides a historical perspective on a period of musical history that has little personal documentation and reflection. Even more important was Gilbert's own metamorphosis from wooden flute to silver flute that took place in the late 1930s and early 1940s. Gilbert has been credited as the catalyst for the entire British school of flute playing adopting the silver flute and the French school of flute playing. Writing the complete story of Geoffrey Gilbert's life flows as a natural extension of the scholarly work that Professor Floyd has done on Gilbert's teaching methods (*The Gilbert Legacy: Methods, Exercises and Techniques for the Flutist*, Winzer Press, 1990). In collaboration with British flutist and writer, Mr. Brett, Professor Floyd will edit, document, and revise the work that Brett has begun on Gilbert's life in England and she will write the second part covering Gilbert's American years from 1969 until his death in 1989. Completion of a full biographical account of Geoffrey Gilbert's life will add a sorely missing perspective, along with factual documentation, to the body of literature on orchestral players and orchestras during this period. This project will enhance the reputation of the UNI School of Music for musical scholarship in the performing arts.

GREGERSEN, TAMMY, ASSOCIATE PROFESSOR, LANGUAGES & LITERATURES, 9 YEARS OF SERVICE, SPRING SEMESTER

Watch What I'm Saying: Activities to Enhance Foreign Language Communication through Nonverbals

Professor Gregersen's project is writing a book that seeks to close the gap between theory and classroom applications concerning the significance of nonverbal communication in second language learning. Teachers armed with the knowledge of the existing literature and theoretical underpinnings of each of the most prominent linguistic competencies (grammatical, discourse, strategic, and sociolinguistic) as well as the role that nonverbal behavior plays in human communication, will be better equipped to facilitate learners' communicative competence through incorporating classroom language activities that include nonverbal components. Research suggests that nonverbal behavior plays an important role in the overall communicative process, yet little attention has been given to practical foreign language classroom activities that teachers can use to promote beyond-the-words communicative competence skills.

The book will be divided into three sections: 1) Introduction, definitions and concepts; 2) Practical activities; and 3) Future challenges. The first part will highlight that knowing how and what to say to whom is a cornerstone of communicative competence. Foreign language teachers will be encouraged through the research presented in this section to challenge learners to go beyond the grammaticality of being able to put the subject, verb, and object in the correct syntactic order, and to achieve discourse, strategic, and sociolinguistic competencies as well. These communicative abilities often demand that learners see past the linguistic context and heed the nonverbal cues of the speaker. The second section will build upon this theoretical

framework by providing language learning activities to promote learners' use of the nonverbal channel. Each activity will have a competency aim, a description of preparatory measures, and the actual pedagogical procedures. The third section will reveal that the pivotal role teachers play in the classroom communication process and their potential to influence student behavior demands that they, too, examine their nonverbal behavior and its impact on learner responses. This section will guide teachers through awareness training in nonverbal immediacy--communication which enhances closeness to learners and reflects a positive attitude on the part of the sender toward the receiver. As a premier teacher education university, UNI benefits from this project as it seeks to improve teachers' understanding and application of theory and activities in the nonverbal domain of learning and teaching.

HETTLE, WALLACE, PROFESSOR, HISTORY, 18 YEARS OF SERVICE, SPRING SEMESTER

Partners: The Lives of William Herndon and Abraham Lincoln

Professor Hettle will write a biography of William Herndon, Abraham Lincoln's law partner, an abolitionist, and Lincoln's most important and controversial biographer. The sole existing biography of Herndon, published in 1948, badly needs a replacement from a fresh perspective. Herndon was a political radical, far ahead of the pragmatic Lincoln on the slavery issue. Herndon worked with abolitionists while building the Republican Party, and influenced his politically prominent partner. Herndon provides a window into the practice of law in the 19th century. Lincoln and Herndon's practice at first looks dull, given its focus on bankruptcy and land title cases. Yet lawyers were critical to establishing the rules of commerce. Historians have ignored Herndon's cases, and this neglect will be remedied. After Lincoln's assassination, Herndon conducted hundreds of interviews for his biography of Lincoln. Without Herndon, we would know almost nothing about Lincoln's early life, but some historians have disputed his findings. Professor Hettle's research and book will influence this debate. As with his previous books, he will give papers and publish some chapters as articles, while working on the book. He will aim the book at both scholars and general readers and, by focusing on the Midwest, benefit Iowa citizens by providing a new glimpse of the Civil War era.

IQBAL, MOHAMMAD, PROFESSOR, EARTH SCIENCE, 17 YEARS OF SERVICE, FALL SEMESTER

Hydrologic assessment of the Cedar River watershed to predict future flood intensities and their impacts on the aquatic ecosystem

There is no natural resource more important than water to the economy and quality of life in Iowa. Frequent flood events, and associated damage to the aquatic ecosystem and human properties, have brought water issues to the center stage. Most rivers, lakes, and groundwater in the Midwest are being degraded from excessive influx of agricultural fertilizers, herbicides, insecticides, pathogens, and erodible soils from land areas during large storm events or high floods. In this project, Professor Iqbal will perform (1) geo-hydrologic mapping of the Cedar River watershed to identify the probable "hot spots" of pollution during excessive rain and/or flood events. Spatial and temporal variations in water quality parameters will be used to rate the streams as most vulnerable to least vulnerable to flood hazards; (2) comprehensive flood analysis over a tributary of the Cedar River, namely the Dry Run Creek. This will include development of flood prediction models based on terrain characteristics and the regional rainfall pattern. Professor Iqbal will make his results publicly available on a website funded by a previous National Science Foundation grant, which also paid for field equipment that will be used in this project. He will present his results at professional conferences and publish them in hydrology journals, as he has already successfully done. It is expected that the project will generate adequate information and field data to bring in external grant money for long term research on flood disasters. In addition to the civic value of the project, Professor Iqbal's

research will help educate UNI students about flood hazards and the research methods used in evaluating them.

LIU, BIN, ASSOCIATE PROFESSOR, SOCIOLOGY, MATHEMATICS, 5 YEARS OF SERVICE, SPRING SEMESTER

Tail Behavior of Probability Distributions in Queuing Process

Queuing theory has been widely used for computer and communication network system performance evaluation, pertaining to traffic congestion analysis and scheduling of various servicing and logistic systems. Professor Liu applied mathematics project will study the tail probability of some performance measures of queuing processes. For instance, in a communication system, let W be the delay time before a data packet is transmitted. The tail probability $P(W>t)$ is the probability that the delay time is longer than t . Professor Liu will examine how fast (or slow) $P(W>t)$ decays to zero as t goes to infinity, i.e. how many packets have a very long delay time. Examining such behavior is important in assessing how well a system is capable of preventing a huge delay time which greatly degrades the quality of service (QoS) in networks. Professor Liu expects to publish at least two journal articles from this work and present his results at professional conferences.

The project is related to topics Professor Liu's teaches in courses in UNI's Professional Science Master program in Industrial Mathematics. Some of his research work can be developed as topics for students' research projects in those courses. The research will also be beneficial to companies looking to improve the efficiency of their networks.

MYERS, MARK, ASSOCIATE PROFESSOR, BIOLOGY, 6 YEARS OF SERVICE, FALL SEMESTER

Assessing the Wildlife Habitat Value of Diverse Biomass Energy Prairie Plantings in an Agricultural Landscape

In 2008, the University of Northern Iowa's Tallgrass Prairie Center received a \$612,222 grant from the Iowa Power Fund to investigate the feasibility of using biomass harvested from diverse plantings of native prairie vegetation as a sustainable biofuel. One major objective of this research is to determine optimal methods for managing and harvesting prairie vegetation while maintaining high quality habitat for native wildlife. In May 2009, 48 research plots at a farmland site in southeastern Black Hawk County were seeded with one of four treatments of native prairie vegetation: 1) a switchgrass monoculture, 2) a five-species warm-season grass mix, 3) a 16-species biomass mix, or 4) a 32-species prairie mix. From 2009 to 2012, Professor Myers and his students have annually monitored vegetation characteristics and bird and butterfly community dynamics at the site to explore the prediction that more diverse biofuel crops will support a greater abundance and diversity of wildlife species over time. The 2013 growing season will mark his fifth year monitoring the site and will also conclude a full cycle of site management, from initial seeding (2009) and establishment (2010), through a prescribed burn (2011) and biomass harvest (2012), and concluding with a year of no active management (2013). Thus, upon completion of my 2013 field season, Professor Myers will have a complete, 5-year data set awaiting analysis that will provide a complete picture of the wildlife habitat value of biomass energy prairie plantings over a full management cycle. A PDA in Fall 2013 would allow him to devote 100% of his time and effort to the analysis and publication of these data. His specific objectives during the PDA are: 1) to learn and implement new data analysis techniques, such as distance-based linear modeling, aimed at relating temporal variation in bird and butterfly communities to measured differences in habitat variables over time, and 2) to prepare and submit at least two manuscripts for publication in peer-reviewed ecological research journals.

UNI will benefit from the educational opportunities provided to students, an enhanced profile in biofuels research, and greater potential to secure external funding to continue this project, particularly through the Iowa EPSCoR (*Harnessing Energy in the Biosphere to Building Sustainable Energy Systems*) program. The results of Professor Myers' study have potential practical applications for Iowa landowners and those interested in conserving biodiversity in Iowa's agricultural landscape. His results can be applied to develop management guidelines aimed at producing sustainable biofuel feedstock from diverse mixes of native vegetation on marginal lands in a manner that also provides improved habitat conditions for Iowa's declining grassland wildlife species.

O'BRIEN, TYLER, ASSOCIATE PROFESSOR, SOCIOLOGY, ANTHROPOLOGY, & CRIMINOLOGY, 9 YEARS OF SERVICE, FALL SEMESTER

Artificial Cranial Deformation: the Anthropology of Head Modification in the South Central Andes
Professor O'Brien will continue to explore the anthropological subject of an ancient cultural practice called artificial cranial deformation (ACD). In previous years he has questioned the 'how' and 'why' this practice is performed, as well as in recent years considering the actual quantification of various types of ACD. He is currently preparing an article manuscript for publication in a neurological journal on how ACD affects brain function. His work in the past has been conducted at the archaeological museums in Argentina that curate these very valuable cranial specimens. He will return to Argentina for this PDA. After almost a decade of studying, research and publishing on this subject, Professor O'Brien will compile his personal and professional research experiences into a manuscript suitable for publication as a book. The scholarly literature on this subject matter lacks an appropriate single resource from which to explain, analyze and investigate ACD from a holistic, comparative and integrated anthropological perspective. In fact, the last and most often cited resource in this field comes from 1931. Professor O'Brien's book will both update and enhance research and supply valuable information for fields of study from such disciplines as: physical and cultural anthropology, archaeology, paleopathology, bioarchaeology, history, biology, neurology, cranial growth and development, and potentially many others. Professor O'Brien aims to write the seminal book on artificial cranial deformation, and is seeking external funding for this project from such sources as the National Science Foundation and the National Geographic Society.

WALTER, MICHAEL, ASSOCIATE PROFESSOR, BIOLOGY, 15 YEARS OF SERVICE, FALL SEMESTER

DNA sequence-mapping, structural protein determination and analysis of two Bacillus anthracis spore-adhering bacteriophages

Professor Walter will complete the genomic analysis of 2 bacteriophages (phages are viruses of bacteria), useful in detection and control of spores of *Bacillus anthracis*, the causal agent of anthrax disease. Phages SBP8a and QCM8a adhere to spores and kill anthrax bacteria. QCM8a is used to signal the presence of air-borne spores in an electronic detector. Complete genomic DNA sequence 'drafts' of both of these phages will be edited before final submission to Genbank and publication in refereed microbiology journals. Professor Walter will determine the gene sequences of all phage particle structural proteins, including those responsible for the above-described characteristics. He will use 'wet lab' and bioinformatics tools to accomplish editing towards the final drafts of these two sequences.

This project will be a benefit to students, continuing his practice of generating phage-based microbiology projects in the Departments of Biology and Computer Science at UNI. Students will gain from hands-on experience on projects including bioinformatics, genetics, phage selection, etc. In addition Professor Walter will continue previously established collaborations in

creating novel bioinformatics-in-the-classroom materials that greatly enhance the undergraduate biology educational experience.

YATES, JACK, PROFESSOR, PSYCHOLOGY, 37 YEARS OF SERVICE, FALL SEMESTER

Using Social Science Strategies to Reduce Residential Energy Use

Professor Yates' research for the last ten years has been to investigate ways of changing the energy consumption behaviors of Americans in order to help slow the progression of climate change. His project has three objectives:

- Analyze the data currently being collected for the Get Energized Iowa project, currently underway and finishing in the winter of 2012-13, and write an article for publication.
- Analyze the data currently being collected for the Green Community Campaign EPSCoR project, currently underway with data collection finishing August, 2013, and write an article for publication.
- Investigate next steps for his research program of reducing energy use and slowing climate change. It is anticipated that the projects currently underway will lead to further research that suggests new and better ways of encouraging Americans to reduce their carbon footprint. If so, he will pursue funding to do the research.

The project will benefit UNI by increasing the institution's reputation and visibility in an area of applied research aimed at solving important social and behavioral problems. His results will contribute to slowing climate change and thereby benefit the citizens of the state of Iowa and the nation.

ZHU, JIN, ASSOCIATE PROFESSOR, TECHNOLOGY, 7 YEARS OF SERVICE SPRING SEMESTER

System Modeling and Optimization of an Ambient Energy Harvesting Wireless Sensor Network

Traditionally, monitoring of structures such as buildings, bridges, overpasses, and highways is performed through periodic visual inspections. Remote wireless monitoring of structures has gained a lot of interest in recent years. However, one major drawback of a remote monitoring system is battery-powered wireless sensor nodes. Because of the remote, even inaccessible, placement of these devices, getting to the sensors simply to replace the batteries can become an expensive and tedious, if not impossible, task. Energy harvesting technologies provide an alternative cost-effective solution to the power requirement for wireless sensor networks. The sensing system will rely on harvesting solar, vibration, or thermal energy from the local environment to power the sensors and sending units. Thus, a wireless network system can be deployed in the field without the need for battery replacement. Professor Zhu's project will study and develop a realistic system model using empirical data collected in previous and current projects. The model will be used to guide and optimize the design of an ambient energy powered wireless sensor network.

The research results will be very useful in the design of self-sustainable wireless sensor networks that can be found in many applications, such as infrastructure monitoring and medical condition monitoring of patients, that will benefit the citizens of Iowa. In addition to publishing the results of her work in professional journals, Professor Zhu will also seek external grants from federal or state funding agencies (such as National Science Foundation, Federal Highway Administration, Iowa Department of Transportation) to support further research and continue her collaboration with researchers from other universities. Professor Zhu also involves undergraduates and graduate students in her research.