

Contact: Diana Gonzalez

PROFESSIONAL DEVELOPMENT ASSIGNMENT REQUESTS FOR FY 2018

Action Requested: Consider approval of the requests by the Regent universities for professional development assignments for FY 2018.

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 §2.1-4R. For FY 2018, the universities request approval of 122 faculty professional development assignments; this is an increase of 22 proposed professional development assignment from the prior year (+22.0%). The FY 2018 request represents 2.4% of all faculty at the Regent universities. A brief description of each proposed assignment is available in Attachments A-C (pages 7-43). This report addresses the Board of Regents Strategic Plan priorities for “promoting and supporting innovation in teaching, research, and economic development and promoting effective use of resources to meet institutional missions.”

**NUMBER OF PDA RECIPIENTS AND PERCENT OF TOTAL FACULTY
FY 2014 – FY 2018**

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
SUI	65 (2.9%)	68 (3.0%)	56 (2.4%)	53 (2.3%)	65 (2.8%)
ISU	45 (2.6%)	37 (2.0%)	37 (2.0%)	31 (1.6%)	42 (2.1%)
UNI	15 (1.8%)	19 (2.4%)	17 (2.1%)	16 (2.0%)	15 (1.9%)
REGENT TOTAL	125 (2.6%)	124 (2.5%)	110 (2.2%)	100 (2.0%)	122 (2.4%)

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 (i.e., tenure or clinical-track) with nine-month appointments who have completed a minimum of 10 semesters of full-time academic service are eligible for an initial one-semester professional development assignment (PDA). Twelve-month faculty members are eligible for their first PDA of one semester after they have completed a minimum of four years of full-time academic service or the equivalent (i.e., prorated for part-time faculty). Twelve-month faculty members who have completed 8 or 11 years of full-time academic service or the equivalent (i.e., prorated for part-time faculty) are eligible for a PDA of two semesters or a full 12 months, respectively. To become eligible for a subsequent award following a PDA, faculty members with nine-month appointments must complete 10 semesters of full-time service; faculty members with 12-month appointments must complete four years of full-time service.
 - ☑ **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.** Policies and procedures relating to professional development assignments are defined in the United Faculty Master Agreement. 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 on the institution and the state.
- ◇ 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(14) 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.

- At SUI, costs will be reduced for the recommended professional development assignments, 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 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; no central funds are provided. 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 as necessary to be able to offer courses which students need to make academic progress in their program of study.

**BUDGETED REPLACEMENT COSTS
FY 2014 – FY 2018**

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
SUI	\$119,700	\$162,446	\$173,280	\$136,668	\$201,851
ISU	\$325,393 ¹	\$131,433 ²	\$144,120 ³	\$145,386 ⁴	\$191,815 ⁵
UNI	\$65,000	\$145,000	\$170,000	\$187,000	\$191,808
REGENT TOTAL	\$510,093	\$438,879	\$487,400	\$469,054	\$585,474

- ◇ Proposed professional development assignment recipients by gender.
 - There are 73 proposed professional development assignments for men; this represents 59.8% of the total proposed PDAs. Men represent 59.7% of the total number of eligible faculty.
 - There are 49 proposed professional development assignments for women; this represents 40.2% of the total proposed PDAs. Women represent 40.3% of the total number of eligible faculty.
- ◇ Proposed professional development assignment recipients by race/ethnicity.
 - There are 23 proposed professional development assignments for racial/ethnic minorities; this represents 18.9% of the total proposed PDAs. Racial/ethnic minorities represent 18.0% of the total number of eligible faculty.

¹ 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 is \$325,393.

² The expected replacement costs are \$403,563. However seven faculty requests are for a full academic year, which will generate \$272,130 in salary savings. Therefore, the net replacement cost is \$131,433.

³ The expected replacement costs are \$384,000. However, eight faculty requests are for a full academic year, which will generate \$239,880 in salary savings. Therefore, the net replacement cost is \$144,120.

⁴ The expected replacement costs are \$351,740. However, eight faculty requests are for a full academic year, which will generate \$206,354 in salary savings. Therefore, the net replacement cost is \$145,386.

⁵ The expected replacement costs are \$585,800. However, 13 faculty requests are for a full academic year, which will generate \$393,985 in salary savings. Therefore, the net replacement cost is \$191,815.

- There are 99 proposed professional development assignments for non-minorities; this represents 81.1% of the total proposed PDAs. Non-minorities represent 82.0% of the total number of eligible faculty.

**FY 2018 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	51	41	92	32	25	57	1	2	3	1	1	2
Am. Indian/Alaska Native	2	3	5	2	2	4	1	0	1	1	0	1
Asian-Am.	181	80	261	124	34	158	2	2	4	2	2	4
Black/African Am.	28	25	53	17	14	31	1	2	3	1	1	2
Native Hawaiian/Pacific Islander	0	0	0	0	0	0	0	0	0	0	0	0
Two/more races	8	7	15	5	5	10	0	0	0	0	0	0
Total Minority	270	156	426	180	80	260	5	6	11	5	4	9
White	1,097	680	1,777	868	424	1,292	37	26	63	33	23	56
Unknown R/E	36	23	59	22	10	32	0	0	0	0	0	0
Nonres. Alien/Intl.	59	22	81	2	1	3	0	0	0	0	0	0
TOTAL	1,462	881	2,343	1,072	515	1,587	42	32	74	38	27	65

**FY 2018 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	31	29	60	30	28	58	0	1	1	0	0	0
Am. Indian/Alaska Native	3	1	4	3	1	4	0	0	0	0	0	0
Asian-Am.	201	71	272	197	69	266	10	2	12	8	2	10
Black/African Am.	28	16	44	27	16	43	1	0	1	1	0	1
Native Hawaiian/Pacific Islander	1	0	1	1	0	1	0	0	0	0	0	0
Two/more races	6	6	12	5	6	11	0	0	0	0	0	0
Total Minority	270	123	393	263	120	383	11	3	14	9	2	11
White	875	611	1,486	831	564	1,395	23	13	36	19	12	31
Unknown R/E	0	0	0	0	0	0	0	0	0	0	0	0
Nonres. Alien/Intl.	55	40	95	54	40	94	0	0	0	0	0	0
TOTAL	1,200	774	1,974	1,148	724	1,872	34	16	50	28	14	42

FY 2018 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	12	10	22	7	4	11	2	0	2	1	0	1
Am. Indian/Alaska Native	0	1	1	0	1	1	0	0	0	0	0	0
Asian-Am.	26	25	51	20	13	33	3	1	4	1	1	2
Black/African Am.	11	10	21	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
Two/more races	1	3	4	1	0	1	0	0	0	0	0	0
Total Minority	51	49	100	37	22	59	5	1	6	2	1	3
White	340	357	697	196	154	350	8	9	17	5	7	12
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	391	406	797	233	176	409	13	10	23	7	8	15

FY 2018 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	94	80	174	69	57	126	3	3	6	2	1	3
Am. Indian/Alaska Native	5	5	10	5	4	9	1	0	1	1	0	1
Asian-Am.	408	176	584	341	116	457	15	5	20	11	5	16
Black/African Am.	67	51	118	52	34	86	2	2	4	2	1	3
Native Hawaiian/Pacific Islander	2	0	2	2	0	2	0	0	0	0	0	0
Two/more races	15	16	31	11	11	22	0	0	0	0	0	0
Total Minority	591	328	919	480	222	702	21	10	31	16	7	23
White	2,312	1,648	3,960	1,895	1,142	3,037	68	48	116	57	42	99
Unknown R/E	36	23	59	22	10	32	0	0	0	0	0	0
Nonres. Alien/Intl.	114	62	176	56	41	97	0	0	0	0	0	0
TOTAL	3,053	2,061	5,114	2,453	1,415	3,868	89	58	147	73	49	122

◇ Average length of service. The average length of service for the proposed professional development assignment recipients is 14.4 years at SUI; 14.8 years at ISU; and 12.1 years at UNI.

- ◇ Proposed professional development assignments by rank. There are 56 (45.9%) proposed professional development assignments for professors, 65 (53.2%) for associate professors, and one (0.8%) for an instructor (pending degree completion).
- ◇ Schedule of professional development assignments. Fifty-two (42.6%) of the proposed professional development assignments will be taken during the Fall semester; 50 (41.0%) will be taken during the Spring semester; 18 (14.8%) will be taken during both Fall and Spring semesters; and two (1.6%) will be taken in some other combination.
- ◇ Goals of professional development assignments. Each faculty member has identified specific goals which will guide the work of the assignment.

UNIVERSITY OF IOWA (*denotes received prior professional development assignment)

****ADAMS, CHARLOTTE, ASSOCIATE PROFESSOR, DANCE, 18 YEARS OF SERVICE, SPRING SEMESTER**

Title: Shelf Life: A Concert Tour of Women Dancing

Professor Adams will research and create a self-choreographed solo investigating the theme of female hysteria and its residual effects on women's healthcare today. This research will culminate in a concert with seven professional female dancers that will tour to multiple national venues: The University of Wisconsin-Milwaukee, The University of Illinois at Urbana-Champaign, The University of North Carolina-Greensboro, Pittsburg, Pennsylvania and New York, New York. She will also host the six performers at The University of Iowa. They will perform, along with Professor Adams, at Space Place for University and community members of Iowa City. They will also teach a week of classes in their areas of expertise to students in The Department of Dance and in other interested departments. The project will benefit dance students in the Choreography I and III courses and in studio rehearsals collaborating with Professor Adams in movement research. Professor Adams will seek funding for the project from the New England Foundation for the Arts National Dance Project Production Grants and internally from the Arts and Humanities Initiative.

AN, BRIAN P., ASSOCIATE PROFESSOR, EDUCATION POLICY AND LEADERSHIP STUDIES, 6 YEARS OF SERVICE, FALL SEMESTER

Title: STEM access and preparation in high school: Is dual enrollment the solution?

Using large-scale national data, Professor An will consider individual and school factors that influence participation in STEM dual enrollment - a program where high school students take college courses and oftentimes earn college credit. In particular, he will assess whether school resources, academic opportunities, and the location of the program alter the likelihood of minority participation in STEM dual enrollment within and across schools. He will further assess the impact of STEM dual enrollment on math achievement. This project will provide new material for Professor An's graduate courses in the sociology of education. The results will also inform policy makers interested in whether dual enrollment serves as a viable avenue to increase the pool of high school students with the preparation necessary for STEM coursework in college, especially among minority students. Finally, this project will be used as a springboard for a grant from the Spencer Foundation or the Association for Institutional Research.

****ARTHUR, LOYCE L., ASSOCIATE PROFESSOR, THEATRE ARTS, 18 YEARS OF SERVICE, SPRING SEMESTER**

Title: Research and Development of Carnival Arts Community Engagement Projects

With a PDA award, Professor Arthur's objective is to continue her investigations of Caribbean Carnival arts throughout the Caribbean Diaspora, with a specific emphasis on costuming. Her goals are to continue to integrate that scholarship into the classes that she teaches in the Theatre Arts Department as well as to share it with artists, educators, K-12 students and Iowa communities through special performance projects, the International Programs' Teaching Carnival website and the annual Iowa City Carnival Community Engagement Project and parade that celebrates the cultural diversity of Iowa. She will develop curriculum modules and workshops, and create rich culturally influenced representations for the annual parade that she coordinates. This work is part of a larger community arts initiative funded in part by a 2016-2018 NEA grant that she directs with partners in the City of Iowa City, the University of Iowa, and the Summer of the Arts Organization.

***BARRETT, TIMOTHY D., PROFESSOR, INTERDISCIPLINARY PROGRAMS, 4 YEARS OF SERVICE, FALL SEMESTER**

Title: Western Papermaking - Traditions, Tools and Techniques

During the last 40 years, many books have been written on the subject of hand papermaking, but most have been authored by individuals lacking long experience with the craft and many have an emphasis on decorative or artistic techniques. Prof. Barrett will write a new book to build on the standard reference: Dard Hunter's "Papermaking- History and Technique of an Ancient Craft" by offering the first comprehensive how-to text on Western hand papermaking. The new book, "Western Papermaking - Traditions, Tools and Techniques" will be a companion volume to Barrett's "Japanese Papermaking - Traditions, Tools and Techniques" which has gone through five editions and has become the standard reference on the Japanese craft. Professor Barrett has a contract from Legacy Press to publish the book. The manuscript and all related drawings and photographs are due December 31, 2017. Following publication, the book will be used in Professor Barrett's UI classes at the UI Center for the Book. Based on the success of "Japanese Papermaking," "Western Papermaking" will also be used in art programs in Iowa colleges and universities, and in a range of venues in North America and around the world.

****BOEHMKE, FREDERICK J., PROFESSOR, POLITICAL SCIENCE, 16 YEARS OF SERVICE, SPRING SEMESTER**

Title: Policy Pathways in the American States

Professor Boehmke will study the adoption and diffusion of public policies across the American states. Using a newly compiled data set describing the timing of adoption of over 400 policies by the fifty American states, Professor Boehmke will develop new measures of policy innovativeness, identify which states are policy leaders, and each state's peer group it uses to learn about new policies. He will help produce a public website for researchers and practitioners to host the data and reports and write research articles for academic journals. The website and its contents will help policymakers in all states, including Iowa, learn about policy differences across the states and help inform their inquiries about new potential policies. Professor Boehmke will also use the data produced under this PDA in his undergraduate course, Understanding Political Research, to illustrate data analysis and visualization.

BRIAN, AMBER E., ASSOCIATE PROFESSOR, SPANISH AND PORTUGUESE, 8 YEARS OF SERVICE, SPRING SEMESTER

Title: Networks of Imperialism and Sovereignty: Translating and Transmitting the Conquest of Mexico

Professor Brian will use her PDA to undertake research for her new book project, Networks of Imperialism and Sovereignty: Translating and Transmitting the Conquest of Mexico, which addresses the production and circulation of texts concerning the conquest of Mexico (1519-1521), looking specifically at letters and printed books by native and European authors in the sixteenth and seventeenth centuries. The quincentenary of the conquest of Mexico is approaching and it will be a topic of interest for scholars, students, and citizens alike. Professor Brian will directly incorporate the fruits of her research into courses she teaches on Mexican literature and culture and the impact of the conquest, and she will also share her work in other more public fora. During the semester of her PDA, Professor Brian will make significant progress on the research and writing of her book.

****BROCHU, CHRISTOPHER A., PROFESSOR, EARTH AND ENVIRONMENTAL SCIENCES, 15 YEARS OF SERVICE, SPRING SEMESTER**

Title: Revision of Late Cenozoic East African Crocodiles

Crocodiles were the largest predators our East African ancestors faced. Their abundant fossils preserve critical information about ancient environments in the region. Some had horns, and others were 27-foot monsters - and yet little is known about them. They were formerly viewed as a handful of slowly-evolving species directly ancestral to the modern Nile crocodile (*Crocodylus niloticus*), but work by Professor Brochu over the past decade reveals at least 14 new species in European and African museum collections, most of which are still unnamed. Their evolutionary history over the past 20 million years is complex, with diversity waxing and waning in response to climate change, and close relatives of *C. niloticus* arrived in the region comparatively recently. A PDA is requested to allow the complete revision and description of these fossils, which will be done in collaboration with African paleontologists and UI students. This is needed before crocodiles can contribute to the overall picture of environmental change in the Cradle of Humanity, and it will form the nucleus of an expanded program to reconstruct the evolutionary history of crocodiles worldwide.

BUATTI, JOHN M., PROFESSOR, RADIATION ONCOLOGY, 17 YEARS OF SERVICE, FULL YEAR

Title: Augmented Reality Simulation and Treatment Delivery for Radiation Therapy

Professor Buatti will pursue a one-year PDA devoted towards developing methods for application of augmented reality-based visualization for the radiation treatment planning (simulation) and treatment delivery of cancer patients. He will work closely with long-time collaborators in computer engineering, Milan Sonka, Ph.D. and Reinhard Beichel, Ph.D. to submit both a National Cancer Institute program project grant exploring these methods and will also submit a training grant for students exploring advanced imaging methods for target identification in therapy as well as response assessment. This award will benefit the State of Iowa by advancing the research portfolio of the medical and engineering colleges and will benefit students in both colleges by creating educational opportunities in new areas. It may improve cancer care quality as well as efficiency (and hence cost).

CAMPBELL, ANN M., PROFESSOR, MANAGEMENT SCIENCES, 16 YEARS OF SERVICE, FALL SEMESTER

Title: Improved Network Restoration after Disasters

With this PDA, Professor Campbell will be able to do joint research with Professor Duenas-Osorio at Rice University on network restoration after disasters. Their combined work can help cities and states rebuild their various infrastructure networks after a disaster in a way that better reflects real world limitations and minimizes the inconvenience of the citizens. Iowa's flood of 2008 would be an example of the kind of disaster where this kind of research would have been helpful. This joint research will also bridge the areas of transportation optimization and civil engineering. The work created during this award should yield several publications in high quality journals and will be presented in many different kinds of conferences. The research project will create interesting and relevant additions to three courses that Professor Campbell teaches at the University of Iowa.

****CANIN, ETHAN A., PROFESSOR, CREATIVE WRITING, 18 YEARS OF SERVICE, SPRING SEMESTER**

Title: Untitled Novel

Professor Canin will continue work on a novel that begins in 1944 during the Battle of the Bulge and continues to the present day. The novel, which will be Professor Canin's eighth published work of fiction, will deal with the difficulties of war, and then with the difficulties of peace, as two soldiers survive a bloody battle and then return to civilian life, from there to marry, raise children, and finally, in later years, to face the quieter problems of age and legacy. This novel will deal primarily with those problems of later life, in a country that has changed faster than they have. This PDA will particularly benefit The University of Iowa Writers' Workshop, where Professor Canin has taught fiction-writing for the past 18 years. The Writers' Workshop is the foremost writing program in the world, but it can only maintain its stature if faculty are afforded time to write the kind of significant books that attract talented students. The Workshop's stature has long been a boon to the people of Iowa, providing a particular point of pride for every citizen of the state, as well as attracting to the area not just writers themselves but an entire creative industry.

****CASAVANT, THOMAS L., PROFESSOR, ELECTRICAL-COMPUTER ENGINEER, 27 YEARS OF SERVICE, SPRING SEMESTER**

Title: Adapting Computational Methods from Biomedical Genomics to Environmental Remediation

Professor Casavant will visit the Center for Genome Regulation (CGR) at the University of Chile/Santiago - a leading international research center in environmental microbes. Over the past 22 years, he has applied advanced computing to biomedicine/basic life science. Sustainability and environmental remediation have become strategic foci at the University of Iowa; this PDA will enhance his knowledge/skills in gene regulation in micro-organisms capable of natural industrial processing, and microbially-based environmental remediation strategies. He will adapt methods developed for his research in human DNA sequence variation to metagenomics and the development of new computational/statistical methods. He will return to the UI prepared to better collaborate with colleagues in Environment Engineering, and to expand business opportunities at Bio::Neos. Inc., which he co-founded 12 years ago. It will also enable future collaborations in environmental sciences and engineering with colleagues at the University of Chile CGR. He will develop new algorithms and software tools at the CGR that will directly enhance his research and teaching, as well as commercial opportunities at Iowa upon his return.

***CHANTHANAKONE, PETER, ASSOCIATE PROFESSOR, ART AND ART HISTORY, 4 YEARS OF SERVICE, SPRING SEMESTER**

Title: Animation Production in Southeast Asia

Professor Peter Chanthanakone will develop and create two original animated short films in Southeast Asia. The first film will be a collaboration with RiFF Studio, an internationally acclaimed boutique animation studio in Bangkok, Thailand. The second will be the production of a Lao animated short film, through the assistance of the Vientiane Film Festival and the Lao Censorship of Media. Through working with these outlets, new animation techniques will be developed and will be important aspects in teaching animation students in Chanthanakone's production courses at the University of Iowa.

****CHRISTENSEN, GARY E, PROFESSOR, ELECTRICAL-COMPUTER ENGINEER, 19 YEARS OF SERVICE, FALL SEMESTER**

Title: Improving Lung Cancer Treatment Through Better Image Registration

The majority of lung cancer patients are treated with radiation therapy. An unfortunate side effect of this radiation therapy is that nearly 60,000 people in the U.S. annually experience some level of toxicity to healthy lung tissue. The long-term goal of the current application is to increase the effectiveness of radiation therapy in treating lung cancer, by reducing its toxicity, and achieving greater killing of tumors by allowing for higher radiation doses. The central hypothesis is that spatial distributions of radiation induced pulmonary changes can be modeled and utilized for image guided planning and therapy to improve pulmonary function preservation and hence improve the outcome of radiotherapy of lung cancer. This project will investigate how state-of-the-art image registration algorithms can be used to track lung motion to produce better radiation therapy lung cancer treatment that accounts for tumor motion. The research will also inform his teaching materials at the University of Iowa.

COLE, RENEE S., ASSOCIATE PROFESSOR, CHEMISTRY, 5 YEARS OF SERVICE, FALL SEMESTER

Title: Supporting adoption and effective implementation of student centered pedagogies in STEM classrooms

Professor Cole will conduct research related to supporting adoption and effective implementation of student-centered pedagogies in STEM classrooms. Project activities involve developing and delivering faculty development workshops to support adoption of active learning instructional practices. Data will be analyzed to identify the level of integrity of implementation and the resulting impact on student learning outcomes. This analysis will aid in identifying necessary supports for sustained adoption of materials and pedagogy. One outcome is concrete knowledge on the extent to which instructors who participate in faculty development workshops alter their teaching methods to include more active learning strategies and aligned assessments. A second outcome is information on how the adaptation of active learning strategies impact student learning outcomes. The knowledge gained from these studies will be used to develop more effective faculty development experiences for faculty at the University of Iowa, as well as at other institutions around the state. Improved instructional strategies will benefit all students who take undergraduate STEM courses at Iowa universities.

****COX, JEFFREY L., PROFESSOR, HISTORY, 39 YEARS OF SERVICE, FALL SEMESTER**

Title: The Age of Liberal Religion in Europe and America, 1970-2015

Three of the big stories of modern history are the dramatic decline of religion in the European heartland of Christianity (secularization), the very rapid expansion of Christianity in the non-western world, and the unexpected growth of the importance religion (fundamentalist Christianity and Islam) in the "secularized" West. Professor Cox has written three well-received books on the first two topics and now proposes to draft the final manuscript of a book, The Age of Liberal Religion, which will re-define the religious character of the modern age (1970-2015) in Europe and America. Professor Cox began the research for this book with a PDA in the spring of 2010, and has received external support in the form of residential scholarships from the highly prestigious Institute for Advanced Study in Upsalla, Sweden, and the Leibniz Institute for European History in Mainz, Germany, and for funded lectures at the Leibniz Institute and the Radcliffe Institute at Harvard University. He has conveyed the results of his research to his undergraduate courses.

****CUNNING, DAVID, ASSOCIATE PROFESSOR, PHILOSOPHY, 13 YEARS OF SERVICE, SPRING SEMESTER**

Title: Spinoza on Confusion Management

Professor Cunning will use his PDA to conduct new research on the philosopher Benedict Spinoza and the ways in which Spinoza is careful to tailor his arguments in common-sense language so that his reluctant audience might be more willing to give them a chance. The payoff of the research will be to highlight that once we reinterpret Spinoza's language into a more precise formulation, his positions and arguments become clearer and more plausible. For example, he argues that each of the entities in the universe has a causal impact on the beings that surround us and that if we want to be maximally authoritative, we need to know more about all the things that are impacting us - the how and the why. Spinoza uses language that tempers these conclusions, in part because he thinks that they conflict with orthodox views of the independence of the individual, but in the end his view is quite extreme. University of Iowa students find the study of Spinoza to be illuminating insofar as it exposes many causes that are present in a person's situation that the person might otherwise have not noticed.

****DAVIES, WILLIAM D., PROFESSOR, LINGUISTICS, 30 YEARS OF SERVICE, SPRING SEMESTER**

Title: The Syntax of Baduy Dalam

During his PDA, Professor Davies will compile and begin writing a grammar of the language of the Baduy Dalam, a small group of 1100 people living in an isolated area of the Indonesian forest, whose language and culture are endangered. Working in Iowa and Indonesia, Professor Davies will identify grammatical forms in video recorded narrations being collected as part of a project to document the language and will begin drafting the grammar. The unique Baduy Dalam culture has been compared to the Amish as both groups strive to maintain their traditional cultures in part by avoiding much modern technology and living in a relatively closed society. Professor Davies will use his findings in his teaching and make them available online to other faculty and students and the general public. Language and cultural information about this group will increase people's understanding of Indonesia, the 4th most populous country in the world and of increasing strategic importance to the US in the current global environment.

DICHARRY, BRADLEY C., ASSOCIATE PROFESSOR, ART AND ART HISTORY, 7 YEARS OF SERVICE, SPRING SEMESTER

Title: Contemporary Innovations in Typography

Typography and letterpress printing techniques and technology have been indelibly linked for over 500 years. In his PDA, Professor Dicharry will research ways that cutting-edge digital technologies are being and can be used to advance this historic form of visual communication. These methods will include laser cutting, 3D printing, and CNC routing of materials that can serve as contemporary equivalents of centuries-old metal and wood typographic forms. The anticipated product of this research is a series of broadsides combining traditional and experimental modes of typographic production. This approach builds upon rich literary and visual histories of Iowa, and provides a unique way to connect the two. It will also fit naturally within Iowa City's status as a UNESCO City of Literature. This research will enhance Professor Dicharry's teaching and overall student success by providing insights into a viable bridge between traditional and contemporary methods of typographic expression and visual communication. This perspective is valuable to students from the School of Art and Art History, Center for the Book, Computer Science, Writer's Workshop, and Journalism and Mass Communication and more.

****EHRSTINE, GLENN, ASSOCIATE PROFESSOR, GERMAN, 21 YEARS OF SERVICE, SPRING SEMESTER**

Title: Devotional Spectatorship in Late Medieval Germany

During his PDA, Professor Ehrstine will complete a draft of his current book manuscript on "Devotional Spectatorship in Late Medieval Germany." The study examines how medieval audiences engaged the scenes of Christ's passion in the era's religious plays. In contrast to recent theories that the vivid portrayal of the crucifixion stoked spectators' latent aggressions, Professor Ehrstine can directly link audience behavior to contemporary devotional practices, such as the adoption of "cross-form" prayer positions with outstretched arms. The study also breaks new ground in its discovery that the crosses used in certain processional plays were not just props, but truly sacred objects with relics of the crucifixion. The completed book will allow Professor Ehrstine to better address the religious interests of students in the classroom. It will also enhance the standings of the Department of German, the Department of Religious Studies, and the UI Medieval Studies Program. The project serves the residents of Iowa and society in general by demonstrating that new discoveries and historic reinterpretations are possible by taking the religious motivations of the laity seriously.

****FARRIN, LAUREL, ASSOCIATE PROFESSOR, ART AND ART HISTORY, 18 YEARS OF SERVICE, FALL SEMESTER**

Title: Comedic Abstraction

Professor Farrin will complete an exhibition of paintings, digital video, and sculpture exploring comedy in the visual arts. Comedy is, and has been, a social practice helping people cope, heal, and work together. It's also an instrument for change used by artists speaking truth to power. Twenty abstract paintings will visually explore the philosophy and structure of comedy and contribute innovative research to the field of contemporary painting by inventing new comedic forms that cultivate empathy through abstract visual situations, circumventing the language barriers of comedy. Professor Farrin will produce comedic digital videos that visually echo her paintings using physical humor and improvisation. Discarded shoe heels collected from communities in Iowa and around the country are transformed into abstract sculptural "props" for the videos. This site-specific work will be exhibited in Iowa, New York and California. Professor Farrin will also curate Vaudeville; a group show presenting the comedic in visual arts. The applicant will teach multidisciplinary and conceptual aspects of the project developed during her PDA to SAAH's undergraduate and graduate programs.

****FRANCISCUS, ROBERT, PROFESSOR, ANTHROPOLOGY, 18 YEARS OF SERVICE, SPRING SEMESTER**

Title: Humans as a "Self-domesticated" Species: Insights from Foxes, Wolves, and Dogs

Some scholars have described modern humans as a "self-domesticated" species in terms of social and behavioral evolution in which the dampening of aggression and the selection for cooperative behavior was critical. This theoretically important idea also extends to the evolution of skeletal size reduction, or gracilization, as a byproduct of this social shift, but has not been widely studied. Professor Franciscus has developed an international collaborative research program that will incorporate skeletons from the well-known Russian silver fox domestication experiments to an ongoing study comparing skeletal gracilization in modern humans from more primitive fossil ancestors, and similar skeletal gracilization in domesticated dogs from ancestral wolves. The goal is to significantly increase the initial pilot sample of Russian silver fox skeletons to levels appropriate for the biostatistical requirements of this large, international research effort. This project will result in journal articles, enhanced graduate student development, and external grant acquisitions.

FRITZSCH, BERND, PROFESSOR, BIOLOGY, 8 YEARS OF SERVICE, FALL SEMESTER

Title: Detailing Trk receptor expression using novel approaches

During the proposed PDA, Professor Fritzsich will work at Harvard University on recently developed next generation fluorescent protein expressing mice to evaluate the distribution of neurotrophin receptors in the developing and adult mouse inner ear. This work will expand and extend previous work of Professor Fritzsich and will provide important information relevant for ongoing research to maintain the neurosensory connections in aging ears of men and mice. Previous work demonstrated that loss of these receptors in mutant mice leads to variable loss of vestibular and cochlear neurons connecting the ear to the brain. Dr. Ginty (Harvard) recently generated mice that show expression of fluorescent proteins to reflect the expression of the neurotrophin receptors, TrkB and TrkC. Using these newly generated reporter mice, Dr. Fritzsich has already generated novel data showing that spiral ganglion neurons show a highly variable co-localization of both receptors that requires more work to be fully evaluated and related to the rather complex loss of neurons in compound neurotrophin receptor mutants. Professor Fritzsich will work in the laboratory of Dr. Ginty to complete data and write a paper.

****GIBSON, CRAIG A., PROFESSOR, CLASSICS, 17 YEARS OF SERVICE, SPRING SEMESTER**

Title: Religious Themes in Medieval Greek Education

In his PDA in Spring 2018, Professor Gibson will research and write an article for a scholarly journal on how Nikephoros Basilakes (a 12th century Greek teacher and author who lived in Constantinople) introduced Biblical characters and stories into what had traditionally been a pagan educational curriculum focused on Greek mythology. He will examine how, why, and to what effect Basilakes made this significant change, and he will show how Basilakes' exercises were influenced by ancient and medieval Greek novels, as well as by contemporary religious concerns. This research will benefit Professor Gibson's undergraduate and graduate students at the University of Iowa in courses on ancient law, the orators Demosthenes and Cicero, and Greek literature of the Roman Empire. It will benefit the state of Iowa by giving Professor Gibson the time to develop a new expertise in medieval Greek literature, a subject not currently taught at any state university in Iowa.

GRETEMAN, BLAINE, ASSOCIATE PROFESSOR, ENGLISH, 7 YEARS OF SERVICE, FALL SEMESTER

Title: Shakespeare's Social Network: Authorship, Influence, and the Early Modern Book Trade
Professor Greteman will complete work on a book, "Shakespeare's Social Network," which he began on a Stanford Humanities Center Fellowship. Professor Greteman shows how a networked approach to literature reshapes our understanding of authorship, influence, and reading by using new technologies to bring to light important connections that could not be seen by earlier scholarship. During the PDA, he will complete the book's final chapter and conclusion, make revisions to earlier chapters, and submit the book proposal and manuscript to a press. This project will invigorate Professor Greteman's teaching. Since a course in Shakespeare is required of all Iowa secondary English teachers, this will benefit schools and communities statewide by informing a vibrant curriculum based on innovative research. This will also be one of the first books in the field of English Literature to use network analysis to demonstrate the promise of digital humanities – an area of growing student interest at Iowa and globally.

GREYSER, NAOMI, ASSOCIATE PROFESSOR, RHETORIC, 8 YEARS OF SERVICE, FALL SEMESTER

*Title: *Writing Through Writer's Block**

The cursor blinks yet does not move; shoulders stiffen and attention glazes. There is a reason it is called writer's block: obstruction takes resolute shape across mind and body, social and institutional sites and technology. Professor Greyser proposes to spend a PDA completing a draft of her second book, *Writing Through Writer's Block*. She will submit the MS to Johns Hopkins University Press, which has requested it for consideration in their Critical University Studies Series. Her interviews with over 1,000 faculty and administrators offer textured accounts of what flow and block feel like: intensified awareness of space (described as self-negation or compression) and time (stalling or backtracking). Integrating literary studies and rhetoric with ethnography, institutional design, organizational behavior, cultural geography and affect studies, her analysis of knowledge cultures includes evidence-based practices she has designed as a writing coach and director of POROI, Iowa's Project on Rhetoric of Inquiry.

****HARTLEY, CAROLYN, ASSOCIATE PROFESSOR, SOCIAL WORK, 21 YEARS OF SERVICE, SPRING SEMESTER**

Title: The Impact of the University Sexual Misconduct Adjudication Process on Complainants and Respondents

Professor Hartley will examine the adjudication process of sexual misconduct on the University of Iowa (UI) campus with the goal of developing a conceptual framework and research design to assess the experience of complainants and respondents involved in the reporting process. Colleges and universities must follow specific federal guidelines to comply with Title IX requirements for responding to sexual misconduct on campus, but understanding the impact of the process on both complainants and respondents can help to improve this process and assure that all those involved are treated with care, concern, honor, and dignity. She will use the findings of this project to seek funding from the Office of Victims of Crime or the National Institute of Justice to conduct an evaluation of the sexual misconduct adjudication process. She will also use the findings of the project to inform a new course she is designing for social work students and parallel professions on Interventions for Interpersonal Violence.

****HEINEMAN, ELIZABETH, PROFESSOR, HISTORY, 17 YEARS OF SERVICE, SPRING SEMESTER**

Title: Children, Transported

Between December 1938 and August 1939, some ten thousand Jewish children from Germany, Austria, and Czechoslovakia boarded ships for the British Isles as part of "Kindertransport," or Children's Transport. Most of the children never saw their parents again. Two of those who did were the author's father and his brother. *Children, Transported* explores the interrelationship between intimate family relations and world-historical events through a multi-generational history of the family. The work combines oral history, archival research in three continents, writings for both scholarly and lay audiences, and materials that will be utilized in undergraduate and graduate courses.

HOOKS, ADAM G., ASSOCIATE PROFESSOR, ENGLISH, 7 YEARS OF SERVICE, SPRING SEMESTER

Title: "Faking Shakespeare"

Professor Hooks will continue work on his current book project, "Faking Shakespeare." This project will reassess the definition of evidence within literary studies by examining the fabrication and exploitation of Shakespeare's works. The category of "forgery" could only be created once

bibliographical and disciplinary standards were established—and those very standards were in turn produced and shaped by the category of forgery. The book will offer a new history of Shakespeare studies by providing a genealogy of critical narratives, discovering the origins of the idea of “faking” Shakespeare. Professor Hooks will complete the research and writing for one substantial section of the book, consisting of three chapters, and will continue working on two sections in progress. The work will result in presentations at major international conferences. The PDA will directly impact the Shakespeare and book history courses taught by Professor Hooks to both undergraduate and graduate students. The project will also build on the strengths of the UI as demonstrated by the Iowa’s 2016 Shakespeare exhibition curated by Professor Hooks, and will further enhance his public scholarship work.

****JUNG, ANITA, PROFESSOR, ART AND ART HISTORY, 10 YEARS OF SERVICE, SPRING SEMESTER**

Title: Local Crafts and Fine Art

During this PDA, Professor Jung will study with local crafts people in India and attend India Art Fair in Delhi. In particular, Jung will receive instruction in traditional block printing, using natural vegetable dye, and the creating of hand-painted playing cards through participating in two residencies; one a month long and another five weeks. Professor Jung will incorporate what is learned into her research agenda and creative works. She will also integrate surface design into her teaching. Prof. Jung intends to develop a course that is specifically dedicated to surface design, generating new opportunities for students. She often works with the community and will readily share the information gained through workshops and lectures. Professor Jung has created past projects that involved Iowans from Cedar Bluffs, Spencer, Algona, Storm Lake, Iowa City, Amana, Maquoketa, and Muscatine. She also designed a project for the UI Mobile Museum that traveled throughout the state and participated in the Iowa State Fair.

KAARET, PHILIP E., PROFESSOR, PHYSICS AND ASTRONOMY, 12 YEARS OF SERVICE, FALL SEMESTER

Title: Searching for missing matter

Astronomers have a problem with missing matter. Observations of the nearby universe show the presence of only half of the ‘normal’ matter - made up of atoms and called ‘baryons’ - expected from observations of the early universe. The missing baryons are likely in the form of hot gas at temperatures of millions of degrees Kelvin and may lie in large halos surrounding galaxies. Professor Kaaret has obtained funding from NASA to build a small satellite, called HaloSat, that will carry X-ray detectors to search for a hot halo of gas surrounding our Milky Way galaxy. This PDA will support Professor Kaaret during a critical phase, while the X-ray detectors built at the UI are integrated with the commercially-built small satellite and then tested at NASA facilities. The project will benefit students by bringing cutting-edge space research into the classroom and by training them as aerospace scientists and engineers. The project will extend UI’s heritage in building space-based instrumentation to the new domain of CubeSats, enhancing the competitiveness of future UI proposals in this new arena.

****KOCHANKA, GRAZYNA, PROFESSOR, PSYCHOLOGICAL AND BRAIN SCIENCES, 25 YEARS OF SERVICE, SPRING SEMESTER**

Title: The Legacy of Early Parent-Child Attachment: Toward the Next Generation of Research
Professor Kochanska’s research aims to explain why some children embark on positive, adaptive paths toward prosocial, rule-abiding conduct, and robust social competence, whereas others enter maladaptive paths toward callousness, disregard for conduct rules and others’ feelings, disruptive, antisocial behavior, and impoverished competence. This question, seen as critical in developmental psychology, and a federal funding priority, has profound implications for children,

families, and society. Having established, in consistently funded past research, the key role of early close, warm, and secure parent-child attachment for children's future development, Professor Kochanska plans to launch a new study of 200 Iowa families to test a comprehensive theory based on her past work. The study will elucidate the complex, indirect, yet powerful long-term legacy of early parent-child attachment and describe how its impact may vary depending on the child's biological characteristics. It will inform parenting intervention and prevention programs. The PDA will allow Professor Kochanska and her team of students to focus intensely on launching the new study and maintaining a high rate of publications.

****KUSIAK, ANDREW, PROFESSOR, MECHANICAL AND INDUSTRIAL ENGINEERING, 28 YEARS OF SERVICE, SPRING SEMESTER**

Title: Smart Systems

The concept of the Internet of Things has attracted attention of various applications, from manufacturing and transportation to energy and healthcare. It focuses on the integration of the physical assets with cyberspace to form cyber-physical systems. The newly developed solutions will be smarter, better connected, more efficient, and sustainable. The key differentiators of smart systems of tomorrow are predictive engineering and sustainability. Driven by big data, predictive engineering offers a new paradigm in constructing high-fidelity models (digital representations) of phenomena that sometimes are barely imaginable. Professor Kusiak will develop models and algorithms applicable to smart systems. These models will allow exploring spaces, some within the realm of the existing technology, and others that will be realized in the future. The research will lead to better engineered solutions needed by industries within the State of Iowa and beyond. New local and international collaborations and projects will be developed. The research outcomes will be disseminated in high-quality publications. A textbook on smart systems and a new class will be considered.

****LANDSMAN, MIRIAM J, ASSOCIATE PROFESSOR, SOCIAL WORK, 16 YEARS OF SERVICE, HALF TIME FOR ONE YEAR**

Title: Lessons from a supportive housing and child welfare demonstration

Professor Landsman will develop and disseminate research results and lessons learned from a five-year demonstration project on supportive housing and child welfare in Cedar Rapids, Iowa. This demonstration provided housing and supportive services to homeless families who also received child welfare services due to child neglect or abuse, with the goals of improving housing stability and keeping families together. For families involved with child welfare services, homelessness and unstable or unsafe housing are risk factors that can affect whether children stay with their families or whether they are returned home from foster care. Professor Landsman will write journal articles and prepare conference abstracts to inform researchers and practitioners about the effectiveness of supportive housing with different sub-groups. She will also incorporate study findings into the course Child Welfare Policy and Practice, providing students with research-based practice strategies for working with homeless, child welfare-involved families.

LLOPART, ANA, ASSOCIATE PROFESSOR, BIOLOGY, 8 YEARS OF SERVICE, FALL SEMESTER

Title: The conserved and unique determinants of recombination localization

Recombination is a key cellular process with fundamental evolutionary consequences. In humans, alterations in recombination are associated with sterility, miscarriages and birth defects. At an evolutionary scale, recombination enables species to adapt to changing environments by generating novel genetic combinations. Professor Llopart's research is focused on understanding the genetic basis of hybrid sterility and she proposes to characterize

recombination defects in hybrids of a genetically amenable model system. Her expectation is that results from the project will provide new insights into the genetic control of recombination and will prompt the development of new theoretical models of speciation. The main results will be published in high-impact, peer-reviewed scientific journals and constitute preliminary data for a grant proposal to be submitted to NIH. Students at the UI will also benefit from Professor Llopart's PDA, for the newly obtained knowledge will be incorporated into the undergraduate courses she teaches and will enhance the research of graduate students. This will contribute to build up the prestige of the UI and ultimately impact positively the state of Iowa.

****LUTGENDORF, SUSAN K., PROFESSOR, PSYCHOLOGICAL AND BRAIN SCIENCES, 21 YEARS OF SERVICE, SPRING SEMESTER**

Title: Psychobiology of Resilience in Ovarian Cancer Survivors

Dr. Lutgendorf's work over the course of her career has provided strong evidence that the behavioral stress response has multiple effects on the growth of tumors, particularly in ovarian cancer. Her work under the PDA will investigate psychological and biological aspects of resilience, or resistance to stress, in cancer survivors, including novel pathways involving cellular energy production. Collaborations during the award period will promote her research to develop a broader understanding of pathways by which resilience can influence cancer growth and ways of testing resilience in the laboratory. Graduate and undergraduate students are involved in all phases of this research, and research results are incorporated into undergraduate and graduate teaching in Clinical and Health Psychology. Professor Lutgendorf's research program also has potentially important health implications for the people of Iowa.

LYNN, FREDA B., ASSOCIATE PROFESSOR, SOCIOLOGY, 8 YEARS OF SERVICE, HALF TIME FOR ONE YEAR

Title: Unpacking the 'College Experience'

Professor Lynn will examine the course-taking trajectories of first- and continuing-generation college students. This study is the second phase of a multiyear study on how students navigate college. Although education specialists suspect that cognitive framing plays an important role in shaping college outcomes, the scholarly work on "wayfinding" in academic institutions is nascent. To address this gap, this study explores the dual phenomenon of: (1) how students explain their actions, and (2) the actions themselves. To study academic behavior, Professor Lynn is working with the Office of the Provost, the Registrar's Office, and the Office of Assessment at the UI to compile a restricted dataset of course-taking behavior and institutional survey responses from two cohorts of undergraduates followed over eight semesters. The project is expected to result in several journal articles, an external funding proposal, new material for Professor Lynn's undergraduate and graduate classes, as well as practical suggestions on how to promote college persistence among first-generation students.

****MACGILLIVRAY, LEONARD R., PROFESSOR, CHEMISTRY, 16 YEARS OF SERVICE, FALL SEMESTER**

Title: PDA: Mechanical Properties of Organic Crystals and Symposium on Materials for Sustainability

Professor MacGillivray will develop new collaborative research to study mechanical properties of organic crystals. Mechanical properties of crystals bear relevance to the diverse fields of pharmaceuticals, electronics, gas storage, biophysics, and explosives. Mechanical property characterization is essential, for example, to control tabletability (pharmaceuticals) and flexibility (electronics). While the MacGillivray group will perform syntheses and structural characterizations, collaborations with the Tivanski and Arnold groups using the powerful techniques of atomic force microscopy and terahertz spectroscopy will be critical in assessing

properties such as crystal stiffness and polarizability, respectively. The time provided by the PDA will allow the MacGillivray group to become familiar with the specialized characterization techniques, and enable the PI to prepare collaborative grants to federal agencies (e.g., NSF, DoD). The PDA will also support efforts of Professor MacGillivray to develop a symposium on sustainability - 'Iowa Materials for Sustainability Symposium' - that showcases materials sustainability research at universities in Iowa.

****MARRA, KIMBERLEY B, PROFESSOR, THEATRE ARTS, 26 YEARS OF SERVICE, FALL SEMESTER**

Title: Archiving Horse Power in New York City through Performance and Digital Media
Professor Marra plans to complete the penultimate chapter of her book-in-progress ("The Pull of Horses in Urban American Performance") and develop a parallel video for teaching and further public engagement. Her study focuses on peak decades of reliance on horse power in New York City, 1860-1920, which coincide with the rise of Broadway's golden age. Combining interdisciplinary methods of performance studies, American studies, and animal studies, she is analyzing several of the era's plays and performances involving horses to examine the ways cross-species interactions shaped modern senses of the body and related categories of race, class, gender, and sexuality. She will use this research to enrich her performance history classes in Theatre Arts and American Studies. Both the book and the video, which employs dynamic new media to show how urban humans had to develop greater corporeal awareness to work effectively with horses on stage and off, can prompt wider reflection - in the state and beyond - on what was lost in the transition to mechanical power that might benefit human and non-human species in our increasingly disembodied, denatured digital age.

****MATTES, TIMOTHY E., ASSOCIATE PROFESSOR, CIVIL-ENVIRONMENTAL ENGINEER, 12 YEARS OF SERVICE, SPRING SEMESTER**

Title: Investigating nitrogen cycling in marine oxygen minimum zones by sulfur-oxidizing bacteria
Professor Mattes will investigate the assimilation and recycling of nitrogen in ocean oxygen minimum zones (OMZs) by sulfur-oxidizing bacteria. This project has considerable environmental importance as global climate change could lead to altered global biogeochemical nutrient and carbon cycling. Professor Mattes will use an innovative approach to study the impact of low-level oxygen flux into an oxygen limited system containing sulfur-oxidizing microbes. He will also use sophisticated molecular biology techniques to investigate these microbes in seawater using samples taken on a research trip to an OMZ off the west coast of Mexico. This project will be conducted at the University of Washington, School of Oceanography. It is expected to yield at least one journal article and one grant application to the NSF. The exposure to new topics and lab techniques will benefit enhance collaborations both at Iowa and abroad, Professor Mattes' graduate students and students that take his courses in environmental microbiology, and environmental biotechnology and bioremediation.

****MCALLISTER, BRYANT F, ASSOCIATE PROFESSOR, BIOLOGY, 14 YEARS OF SERVICE, FALL SEMESTER**

Title: Genetics for Genealogy
This Professional Development Assignment will provide the opportunity for Professor McAllister to prepare a Genetics for Genealogy textbook. This book will address subjects relevant to the broad and growing public interest in the applications of genetic principles and technologies for exploration of personal ancestry and biological relationships. The Human Genome Project and subsequent emergence of the direct-to-consumer DNA testing market enabled these technologies, and the book will present these applications in that context. The book prepared by

Professor McAllister will serve as a reference for internal and external education activities focused on the genetic principles relevant to ancestry and genealogical analysis.

****MCGUIRE, STEVE, PROFESSOR, ART AND ART HISTORY, 26 YEARS OF SERVICE, SPRING SEMESTER**

Title: Blue Dot – Building a Bicycle

Professor McGuire will create the project, Blue Dot – Building a Bicycle. This project is centered on building a bicycle, creating a video documentary of the building and use the bike, and exhibiting the bicycle and presenting the video at Penn State University in April 2018. The goal is to create a visual research project for teaching and for exhibition audiences. In January 2018, Professor McGuire will build the titanium bicycle, Blue Dot, recording the process. On January 27, he will participate in the Arrowhead 135 race and record the event with satellite tracking and video. In February and March 2018, he will edit the video and prepare the bicycle for exhibition at the North American Handmade Bike Show and at Penn State University in April. He will use the video for instruction in the new course, TDSN 3250, Bicycle Design and History. Professor McGuire's proposal comes on the heels of expanding the School of Art and Art History's curricular relationship with the College of Engineering and his courses TDSN:4250, Fabrication & Design: Hand-Built Bicycle and MTLs:4960:0002 Hand-Built Bicycle II being incorporated into the COE curriculum.

MCLAREN, RACHEL M., ASSOCIATE PROFESSOR, COMMUNICATION STUDIES, 8 YEARS OF SERVICE, SPRING SEMESTER

Title: How Parents Can Communicate Helpful Feedback to their Children

Professor McLaren will conduct a study examining how parents communicate feedback to their adolescent children regarding issues such as grades, behavior, and performance. If handled well, feedback has the ability to be extremely beneficial, as it can be difficult for people to see their own faults and limitations. Without an outsider's perspective, people would miss many opportunities for growth and change. If feedback is handled poorly, it can harm individuals, their self-esteem, and their relationships. This project will determine the most effective ways for parents to communicate feedback so they can promote hope and growth in their children without causing unnecessary harm for their child or their relationship. The results of this project are expected to contribute to several journal articles, as well as contributing new material to Professor McLaren's undergraduate and graduate courses.

***NABHAN-WARREN, KRISTY, PROFESSOR, RELIGIOUS STUDIES, 4 YEARS OF SERVICE, FALL SEMESTER**

Title: Brown Religion in America: The Virgin of Guadalupe and Latinx History

Professor Nabhan-Warren will work toward the completion of a book about U.S. Latinxs' devotion to the Virgin of Guadalupe and the emergence of a distinctively brown, liberatory religion. Her book will become part of The University of Chicago Press' History of American Religions series. The Virgin is a deeply important ethnic and religious symbol and has provided hope and meaning for U.S. Latinxs. Prof. Nabhan-Warren's book will be a historical and cultural synthesis of the importance of the Virgin for U.S. Latinxs from the 19th century to the present. It will provide a historical sweep of the significance of this brown female symbol and incorporate interviews with Eastern Iowa Latinxs to emphasize the ongoing significance of the symbol for U.S. Latinxs today. Professor Nabhan-Warren will share her research findings with her students in her popular General Education course "Religion in America Today" and she will educate Iowans on the rich diversity of religion in the Hawkeye state with the publication of the book and related book tour events.

****NINO-MURCIA, M. M., PROFESSOR, SPANISH AND PORTUGUESE, 26 YEARS OF SERVICE, FALL SEMESTER**

Title: Language assessment of non-native speakers of English for forensic interaction
Professor Niño-Murcia's research focuses on the consequences of nationalist language ideologies for minority language speakers. During her PDA, she will focus on developing material that permit professionals in the legal field to carry out a linguistic evaluation of non-native English-speaking defendants. Specifically, she proposes that a defendant's linguistic profile, if a non-native speaker of English, be based on performance during face-to-face assessment by a professional who has been trained in language assessment not based on police interrogations. Such a method requires creating materials that allow categorization based on language performance that doesn't require high levels of literacy, for example, describing images to narrate a story. This work is an opportunity for engaged scholarship and outreach work in the community. It would also contribute to increase awareness regarding not only linguistic rights of immigrants but will also help legal personnel make practical adjustments to justice administration.

****ONEL, YASAR, PROFESSOR, PHYSICS AND ASTRONOMY, 29 YEARS OF SERVICE, SPRING SEMESTER**

Title: Research- at the Large Hadron Collider (LHC) with Compact Muon Solenoid (CMS) Detector and Phase I upgrades for the Hadronic and Hadronic Forward Calorimeters.
The current standard model of elementary particle physics holds that atoms are composed of light electrons that swirl around a massive nucleus made of protons and neutrons. The electrons are "elementary," while the protons and neutrons are each composed of three quarks. The quarks are held together by particles called gluons. Professor Onel is currently involved in one of the world's most exciting experiments to measure the properties of quarks and gluons, as well as to search for the origin of mass by detecting the Higgs boson which he discovered in 2012 working on the CMS (Compact Muon Solenoid) experiment at the Large Hadron Collider/ LHC /CERN In Geneva, Switzerland. Currently, the CMS detector and the LHC accelerator are undergoing an upgrade to perform at significantly higher energies and larger numbers of collisions per second, thus opening the door to even more discoveries. Professor Onel's group has proposed an upgrade possibilities and proposes to use the PDA to continue his vigorous involvement in this experiment.

***PACHECO, JULIANNA, ASSOCIATE PROFESSOR, POLITICAL SCIENCE, 4 YEARS OF SERVICE, FALL SEMESTER**

Title: A Healthy Democracy? Health Disparities, Political Behavior, and Representation
Equal political voice and democratically responsive government are cherished American values. Yet, these ideals are often unmet in practice. Instead, American politics is often characterized by political inequality across class, gender, and race and/or ethnicity. The PDA will be used to extend the research on political inequality into the realm of health disparities. By doing so, Professor Pacheco will build on her previous work looking at health and voter turnout (published in Political Research Quarterly) as well as health and policy responsiveness (working paper). Specifically, the PDA will be used to complete a book-length manuscript titled "A Healthy Democracy? Health Disparities, Political Behavior, and Representation." The book will include in-depth chapters on: (a) health and political participation, (b) health and public opinion including partisanship, ideology, and opinions on specific issues, and (c) the association between health, representation, and public policy. The book will end with thoughts on how to improve political equality both within the American states and nationally. These materials will also be incorporated into Prof. Pacheco's instructional curriculum.

****PEATE, DAVID W., PROFESSOR, EARTH AND ENVIRONMENTAL SCIENCES, 13 YEARS OF SERVICE, FALL SEMESTER**

Title: Formation of magma-poor rifted margins from new drilling in the South China Sea
Professor Peate will test models for the development of "magma-poor" rifted margins of continents through chemical analysis of samples he will collect on an international drilling expedition to the South China Sea in May 2017. Analysis of mineral compositions by electron microprobe allow parameters to be quantified, such as mantle temperature, that are required inputs for geodynamic models of "magma-poor" margin formation. The overall project is expected to result in several journal articles and a grant proposal to NSF. The UI will benefit from increased visibility through Professor Peate's participation in a major international scientific collaboration, and student teaching will benefit from his preparation of improved laboratory exercises for undergraduate classes. Potential societal benefits stem from the fact that these continental margins are frontier regions for oil exploration.

PENNY, H. G., PROFESSOR, HISTORY, 13 YEARS OF SERVICE, FALL SEMESTER

Title: German Schools and Global Networks in Latin America
Professor Penny will use this PDA to complete the research for his book on the interconnected nature of German communities in Latin America (1880s-1980s). Professor Penny uses German schools in Latin America to identify a form of global networking based on German communities' convictions that they were linked by culture, rather than states, economic entities, or non-governmental organizations. Illuminating the persistence of those networks exposes the ways in which global interconnections between Germans in Latin America and their host societies helped to channel and shape conceptions of Germany and Germanness in the modern era. Understanding that interaction fundamentally changes our estimation of modern Latin American encounters with foreign actors. It also implores us to bring European and Latin American scholarship into greater dialogue. Professor Penny will use this period to complete his research with original documents in Chile and Guatemala. He will be working with scholars in each of those countries. This project will result in a scholarly monograph, several journal articles and primary material for Professor Penny's classes on emigration to Latin America and the United States.

****PORTER, JEFFREY L., ASSOCIATE PROFESSOR, ENGLISH, 10 YEARS OF SERVICE, SPRING SEMESTER**

Title: The Anatomy of Digression
The Anatomy of Digression is a book project that examines the wandering-mind syndrome said to result from our obsession with digital devices. The more connected we are, critics charge, the more distracted we become. Professor Porter's project provides a context for current debates over the problem of distractedness by exploring the literary history of digression as a deliberate form of creative wandering. Rather than viewing the distractions of digital culture as a unique and troubling side effect of information technology, Professor Porter's book probes its connection to a literary tradition that reveals how distractedness has been historically inventive and productive. His book project promises to lay the groundwork for a large-section humanities class (From Distraction to Engagement) that would help students develop a more informed relationship with reliance on electronic devices by probing the history of literary and technological forms of distraction. By doing so, this project would also contribute to the University's goal of finding ways to make Iowa's students and citizens more aware about the impact essential technologies are having on their lives.

***PRIEST, RICHARD T., ASSOCIATE PROFESSOR, HISTORY, 4 YEARS OF SERVICE, HALF TIME FOR ONE YEAR**

Title: Deepwater Horizons: The Epic Struggle for Offshore Oil in the United States

Professor Priest will finish writing a book on the history of offshore oil and gas in the U.S. Written for both scholarly and popular audiences, it will be the first book to recount fully the epic legal, political and policy struggles over drilling for oil off the U.S. coast. It highlights the role of politics and policy in shaping oil markets, and it underscores the continuing importance of the United States as an oil producer, which, in histories of oil during the post-1945 period, is overshadowed by the emergence of the Middle East. Offshore oil policy has been completely absent from the literature on the history of U.S. environmental policy, energy policy, and federal lands policy, and Professor Priest makes the case that it should be central to all those fields. The completion of this book will enrich Priest's teaching of courses on the history and science of oil, American environmental history, and U.S. energy policy. The book will likely be read widely within the offshore oil industry and among federal and state energy policymakers, and as a text in college-level courses on energy policy. It should also enhance Professor Priest's reputation as an authority on the oil industry.

PUDERBAUGH, DAVID J., ASSOCIATE PROFESSOR, MUSIC, 10 YEARS OF SERVICE, SPRING SEMESTER

Title: A CD Recording of New Music by Emerging Estonian and American Choral Composers

Professor David Puderbaugh will travel to Estonia to lead the professional Estonian chamber choir Voces Musicales in the production of a commercial, globally distributed recording of new Estonian and American choral music, accompanied by live performances throughout the Estonian nation. Estonia's choral music, with its strong roots in national identity and political revolution, is an important part of the world's musical art, yet still relatively unknown in the West. In the past two decades, the U.S. has experienced an explosion of new choral composition, spurred by new technology. At present, its choral output rivals many older national choral traditions. This groundbreaking recording will feature emerging composers and new, important choral works from both countries, enhancing choral musicians' and scholars' knowledge of these two notable traditions, thus contributing significantly to the choral art. In addition to a professional CD recording, the project is expected to produce performances of other works from the included composers' output here in Iowa and the U.S. and will provide new material for Professor Puderbaugh's choral conducting and literature courses at Iowa.

****SOUAIAIA, AHMED E., ASSOCIATE PROFESSOR, RELIGIOUS STUDIES, 12 YEARS OF SERVICE, SPRING SEMESTER**

Title: Religion, the Media, and Social Change in Modern Islamic Societies

After publishing his last book, *Anatomy of Dissent*—which focused on the formative period of Islamic thought, Professor Souaiaia has embarked on a research project exploring the manifestation of dissent and rebellion in modern Islamic societies. Since the start of the protest movements popularly known as the Arab Spring, Professor Souaiaia has collected thousands of documents, conducted interviews, and undertaken field research in Tunisia, the birthplace of the Arab Spring. The main outcomes of this comprehensive, interdisciplinary research project consist of publishing a monograph and building a comprehensive database of primary sources. With the support of a PDA award, Professor Souaiaia will start the process of building the archive and developing algorithms to retrieve, analyze, and interpret data dealing with the functions of religion and the media in the post-Arab Spring era. Professor Souaiaia will also use the findings and archived materials in his new and established courses.

****STEWART, DAVID E., PROFESSOR, MATHEMATICS, 19 YEARS OF SERVICE, FALL SEMESTER**

Title: Modeling mucous flow in Cystic Fibrosis

Cystic fibrosis is a genetic disorder that causes a range of symptoms including difficulty breathing. The underlying reason for this condition is that the mucous that lines the trachea and lungs does not effectively transport foreign bodies out of the lungs and trachea. Professor Stewart will model the mucous computationally in order to simulate the flow of bodies and mucous out of the body. This will involve programming methods for solving partial differential equations. Knowing what affects mucous flow means that in vitro tests could help identify interventions to alleviate the worst symptoms of cystic fibrosis. Dr Welsh of the Pappajohn Biomedical Institute will provide dry lab space for carrying out these computations.

STONE, ELIZABETH, ASSOCIATE PROFESSOR, CHEMISTRY, 6 YEARS OF SERVICE, FALL SEMESTER

Title: Air quality impacts of renewable energy use through co-firing

Professor Stone will conduct research, prepare scientific articles, submit a federal grant application, and build collaborations to research the air quality impacts of using biomass as a renewable fuel. Biomass co-firing is the practice of adding biomass as a partial substitute for coal and has potential to benefit or degrade air quality, depending on its implementation. Her research will focus on how the variables of fuel type, chemical composition and moisture content, and combustion conditions impact emissions from co-firing. This work will provide guidance to optimize biomass use in boilers in order to maximize its air quality benefit. Through this project, she will mentor undergraduate and graduate researchers. In addition, aspects of co-firing research will be integrated into teaching and learning in an undergraduate chemistry laboratory course at the University of Iowa. This research will support the expansion of the use of biomass as a renewable fuel, particularly at the University of Iowa, where co-firing is an integral part of campus energy generation. More broadly, the expansion of biomass for energy production will add value to Iowa's agricultural enterprise.

****STROHMER, GERHARD O., PROFESSOR, MATHEMATICS, 30 YEARS OF SERVICE, FALL SEMESTER**

Title: Mathematical Models in Electrochemistry

Professor Strohmer intends to work on the application of mathematics to electrochemistry during the period of his professional development award. He intends to work with graduate students in the Department of Chemistry, also carrying out experiments to get a better feeling for the field. This should enhance his ability to devise mathematical models. The results of the research are to be published in peer reviewed journals. Professor Strohmer expects that as in the past, the work in electrochemistry will lead to his advising more doctoral students together with Professor Leddy from the Department of Chemistry of the University of Iowa. The results of this research may lead to the development of improved fuel cells with their obvious economic and environmental benefits.

****TOLBERT, CAROLINE J., PROFESSOR, POLITICAL SCIENCE, 10 YEARS OF SERVICE, FALL SEMESTER**

Title: The Problem with How America Votes: Ranked Choice Voting and Election Reform

American politics seems broken beyond repair. Despite a political system structured to require compromise, party polarization creates stalemate. Electoral campaigns are dominated by negative attack ads that exploit differences rather than promote common ground. In multi-candidate races, the winner is often the person with the most dedicated base, not the most widespread support. The situation exposes a problem with how Americans vote. Professor

Tolbert will use her PDA to study a new voting system used in some U.S. municipal elections designed to ensure that winning candidates receive majority (50% +1) support. Under ranked choice voting (RCV) voters rank their top 3 candidates in order of preference rather than cast a single choice. Benefits may include more civility in elections, less negative campaigning, and more participation. Professor Tolbert will analyze national surveys with millions of respondents designed to measure voter turnout, public attitudes, and campaign mobilization for places using plurality elections compared to RCV. The research contributes to Tolbert's teaching in American government and politics, campaigns and elections, and voting behavior.

****TURNER, RICHARD, PROFESSOR, RELIGIOUS STUDIES, 15 YEARS OF SERVICE, SPRING SEMESTER**

Title: The Golden Age of African-American Islam and Jazz

Professor Turner will explore the historical connections among jazz, African-American Islam, and black internationalism from the 1940s to the 1970s. Along with many other musicians who exemplify the link between African-American Islam and jazz, the book project analyzes the influence of the jazz saxophonist, John Coltrane and the Muslim leader, Malcolm X on music, civil rights, human rights, and transnational black religion. The book will fill an important gap in the scholarship on African-American religious history and African diaspora jazz studies. It will focus on the mutual influences of Islam and jazz and offer a wide lens on the autobiographies of jazz musicians, in the era of global black liberation from World War II to the beginning of the black power movement. The proposed activity is to complete the writing for book chapters and the expected outcome of the activity is a 300-page book. The PDA work will enrich the sections on civil rights, human rights, African-American religion and music in four courses at the University of Iowa. The project will help us understand the human rights legacy of the 1960s and religious and racial diversity in contemporary society.

****VANDERVELDE, LEA S., PROFESSOR, LAW, 35 YEARS OF SERVICE, HALF TIME FOR ONE YEAR**

Title: Research concerning Systemic Subordination Principles in American Law, both in the Modern Workplace and during U.S. National Expansion in the 19th century

Professor VanderVelde will work to complete two more books on subordination and freedom in American law. The first, "The Master Narrative of 19th Century American Law," is a comprehensive explanation of why U.S. employment law continues to regard employees as their employers' subordinates rather than as their equals. The explanation comes from unpacking the evolution of master-servant law in the 19th century. This complex, detailed analysis is critical to understanding the shortcomings of the current Restatement of Employment Law, which is open to adoption in every state of the union, including Iowa. The second, "Slaves in the Land of Lincoln," demonstrates that slavery existed on the Free Northern frontier because the frontier's settlement population was extremely dependent upon the labor of domestic servants for its survival. These pull factors, coupled with the push factors of settlers seeking increasingly cheaper lands, led to the introduction of domestic slaves into territories where it was legally banned to an extent that has never before been recognized.

VOYCE, STEPHEN C., ASSOCIATE PROFESSOR, ENGLISH, 5 YEARS OF SERVICE, FALL SEMESTER

Title: Unblinking Eyes: Counter Mapping the Cultural Present

Professor Voyce's proposed PDA includes three components of a book entitled Unblinking Eyes: Counter Mapping the Cultural Present: the completion of all preliminary research for the manuscript, a published article that will also serve as a chapter of the monograph, and a prospectus for submission to a prestigious press. Professor Voyce will write a cultural history of

three key technological innovations: GPS, GIS, and remote-sensing satellites, alongside those artists, writers, filmmakers, and videogame designers who use, or more aptly misuse, a triad of Cold-War inventions that, like the digital networks on which they rely, have since come to pervade every aspect of life in the twenty-first century. Professor Voyce's project contributes to the burgeoning fields of surveillance studies, media theory, and digital humanities by examining the ways in which literature and art reveal and explain the political and economic forces that organize human activity today. As a result, this project will bring an increased international reputation in these fields here to the University of Iowa.

WANG, JING, ASSOCIATE PROFESSOR, MARKETING, 11 YEARS OF SERVICE, SPRING SEMESTER

Title: Does Social Media Usage Alleviate or Exacerbate Loneliness?

Social isolation is a prevalent phenomenon. Most people have felt lonely at some point in their lives. Certain groups of people, such as college freshmen and residents in isolated rural areas, are more susceptible to loneliness than others. Hence, this research is crucial in improving the well-being of Iowa residents. Professor Wang will examine whether and how social media usage and engagement can alleviate loneliness. She will conduct surveys and interviews among various groups of people, examine the antecedents of loneliness and consequences of social media usage, and propose social media strategies that can alleviate loneliness. The last 10 years of her research focusing on media effectiveness and consumer loneliness gives her the expertise to conduct research connecting the two areas. Professor Wang will incorporate the findings of the research into her teaching materials for her Integrated Marketing Communications class and Marketing Management class at the University of Iowa. She will also share the findings and major takeaways with the local community - policy committees at the Tippie College of Business, the University of Iowa, and the State of Iowa.

***WANZER-SERRANO, DARREL, ASSOCIATE PROFESSOR, COMMUNICATION STUDIES, 4 YEARS OF SERVICE, FALL SEMESTER**

Title: Possession: Crafting Americanness in Congressional Debates over Puerto Rico's Status, 1898-1917

Scholars have done an exceptional job examining the effects of early congressional legislation (1898-1917) on Puerto Rico. Scholars have also engaged in significant analyses of Supreme Court decisions about the island. To date, however, scholars have not been attentive to legislation pertaining to Puerto Rico, or the congressional debates that precipitated the laws, and their meaning and implications in the US context. Based on archival and textual research on four key congressional policy debates between 1898 and 1917, Professor Wanzer-Serrano aims to elucidate the evolving contours of what he calls "Americanness," which is an ideology built on the joining together of racism, capitalism, colonialism, and civil religion. Although an important historical contribution, the project speaks also to the contemporary context of the Puerto Rican debt crisis, which has roots in these early 20th century congressional debates. The primary outcome for this research project will be a book. Research conducted for this project will be used in Professor Wanzer-Serrano's undergraduate and graduate classrooms.

WENTZELL, EMILY A., ASSOCIATE PROFESSOR, ANTHROPOLOGY, 6 YEARS OF SERVICE, FALL SEMESTER

Title: Writing "Research Citizens: Gender, Family and Social Change in a Mexican Medical Research Study"

Professor Wentzell will complete her book manuscript revealing the social consequences of medical research participation in Mexico. It will present data from four years of annual in-depth interviews she conducted with couples participating in a Cuernavaca, Mexico-based sexual

health study. Social scientists are beginning to understand that globalized medical research can have varied social, economic and political consequences. This book will make an original contribution to that knowledge by documenting how people's culturally-specific ideas about gender and marriage can lead the seemingly individual and biologically-focused experience of medical research participation to have major and unexpected social consequences for participants and their families. This work will help medical research designers and regulators better understand and mitigate such consequences in Iowa and worldwide. Professor Wentzell will also incorporate the case studies created for her book into her undergraduate courses "Medical Anthropology" and "Health in Mexico."

WESELY, PAMELA M., ASSOCIATE PROFESSOR, TEACHING AND LEARNING, 7 YEARS OF SERVICE, SPRING SEMESTER

Title: Innovation in K-12 Foreign Language Classrooms in Iowa

Professor Wesely will observe and interview foreign language (non-English) teachers working at the K-12 level throughout the state of Iowa. In recent years, school districts across the state have implemented innovations that directly affect K-12 foreign language classrooms. For instance, many districts now provide computing devices to every student in the school. Some districts require that foreign language teachers incorporate the Iowa World Language Competencies (introduced in 2016) in their curriculum and assessment procedures. Professor Wesely will conduct a qualitative study about how teachers in the natural laboratory of the classroom transform their practices to these changes and others. In 2018, Professor Wesely will be the President of the Iowa World Language Association (the state organization for world language teachers), so her findings will be shared with that organization, with her students training to be world language teachers or teacher educators at the University of Iowa, in conference presentations, and in article publications in major journals in the field.

****WINDSCHITL, PAUL D., PROFESSOR, PSYCHOLOGICAL AND BRAIN SCIENCES, 19 YEARS OF SERVICE, SPRING SEMESTER**

Title: Behavior Under Vulnerability Theory

Professor Windschitl will conduct studies to further develop and test his Behavior Under Vulnerability Theory. The theory focuses on processes that drive people to engage in behavioral choices that promote health (e.g., changing diet, scheduling a mammogram, quitting smoking). The theory and studies will provide guidance for other health-risk researchers regarding which measures of vulnerability-related processes are best to use for studying the impact of interventions and for predicting who is likely to engage in behavior change. Scholarly papers describing this research will be submitted to top professional journals. Graduate and undergraduate students will have unique training experiences in designing, testing, and implementing key elements of the research. The theory that this project advances could ultimately influence how health-behavior interventions are designed, which has relevance to the health and safety of Iowans and others.

WOODS-GROVES, SUZANNE, ASSOCIATE PROFESSOR, TEACHING AND LEARNING, 8 YEARS OF SERVICE, SPRING SEMESTER

Title: Motivating Middle School Learners in the Area of Written Expression

The 2011 National Assessment of Educational Progress results indicate that the majority of fourth- and twelfth-grade students assessed in the United States fell in the non-proficient range in the area of writing. Written expression is a core skill for competitive employment and for success in postsecondary education. It is essential to investigate the use of effective writing instruction within authentic school settings. Professor Woods-Groves will complete an experimental investigation of the efficacy of an expository writing strategy to improve the

motivation and academic writing performance of middle-school students with and without disabilities in a southeastern school district. This semester-long investigation will inform the identification and use of evidence-based practices in school settings, which will inform content included in teacher preparation classes at the University of Iowa and future professional development and outreach with public schools in Iowa and other states. Findings will inform instructional practices in expository essay writing in secondary classrooms for students with and without disabilities.

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

**Denotes received a prior PDA.

IOWA STATE UNIVERSITY (*denotes received one prior PDA)

AL-KAISI, MAHDI, PROFESSOR, AGRONOMY, 16 YEARS OF SERVICE, OCTOBER – MARCH (6 MONTHS)

Professor Al-Kaisi, an expert in soil science and crop productivity, will use his proposed assignment to complete a book on soil health, *Soil and Intensification of Agroecosystems*, and investigate and develop new research methodologies in the area of soil carbon dynamics. In addition to the book, Al-Kaisi's work will result in new research manuscripts on soil carbon, as well as the development of new ISU Extension and Outreach educational materials, and the preparation of proposals for external research funding.

***BAILEY, MICHAEL, PROFESSOR, HISTORY, 13 YEARS OF SERVICE, FULL ACADEMIC YEAR**

Professor Bailey's assignment will focus on a book project, *Religious Falsity in an Age of Faith: Authenticity and Discernment from the Gregorian Reform to the Reformation*. The book will be addressed to medieval and religious historians, among others, and offer new perspectives on contemporary debates about what constitutes authentic religious experience. Material from the project will also be incorporated into Bailey's teaching.

BEHNKEN, BRIAN, ASSOCIATE PROFESSOR, HISTORY, 7 YEARS OF SERVICE, FALL SEMESTER

Professor Behnken's assignment will produce a first-of-its-kind research monograph that examines Mexican American interactions with law enforcement. Behnken's comprehensive study of Mexican American communities in the southwestern U.S. from the 1830s to the present reveals that while Mexican Americans have often been the victims of police violence, they have also worked with law enforcement agencies to successfully resolve policing problems. The research will also be used to inform a new ISU course on Mexican Americans and the law.

BLOEBAUM, CHRISTINA, PROFESSOR, AEROSPACE ENGINEERING, 4 YEARS OF SERVICE, SPRING SEMESTER

Professor Bloebaum will use the proposed assignment to expand her expertise in unmanned aircraft systems (UAS). The implications of these systems for the state of Iowa are significant, given their application for agriculture, and to assess the health of infrastructure such as wind turbines. Bloebaum will also form an interdisciplinary workgroup on UAS within the College of Engineering to pursue large research proposals, and explore the creation of a new course in this area.

BOSSELMAN, ROBERT, PROFESSOR, APPAREL, EVENTS, AND HOSPITALITY MANAGEMENT, 9 YEARS OF SERVICE, SPRING SEMESTER

Hospitality operations are public places, and as such are potential targets for criminal activity. Professor Bosselman will analyze data on injuries, accidents, and deaths in U.S. hospitality businesses during his proposed assignment. This work will lead to the development of a safety system applicable to the industry that will be taught in Iowa State courses such as Lodging Management, Private Club Operations, and Quantity Food Production Management.

BRUSKI, PAUL RICHARD, ASSOCIATE PROFESSOR, GRAPHIC DESIGN, 11 YEARS OF SERVICE, FALL SEMESTER

Professor Bruski will use his proposed assignment to co-edit *The State of Beer Culture*, the first book to examine how the craft beer craze has changed the quality of beer, as well as its consumers, production, and image. In addition to co-editing the book, Bruski will also contribute an essay on how the concept of “place” is used in craft beer visuals, including local landmarks and area codes. Insights from the project will also be incorporated into Bruski’s undergraduate and graduate teaching.

CHAN, JASON CHUN KIT, ASSOCIATE PROFESSOR, PSYCHOLOGY, 9 YEARS OF SERVICE, FULL ACADEMIC YEAR

Professor Chan will utilize the proposed assignment to examine the efficacy of memory retrieval to both enhance STEM education, and improve the quality of eyewitness evidence. Research has shown that interspersing brief memory tests into lectures can enhance student learning. Chan will submit a grant proposal to the National Science Foundation to investigate this effect. He will also finish several publications, and conduct a literature review on eyewitness suggestibility, which will advance his scholarship and inform policymaking in education and criminal justice.

CHAPELLE, CAROL, DISTINGUISHED PROFESSOR, ENGLISH, 31 YEARS OF SERVICE, FULL ACADEMIC YEAR

Professor Chapelle will use her proposed assignment to initiate a book project, *Argument-Based Validity*, examining validation methods for tests of human capacities, which are commonly used in decisions about university admissions and certification for employment. The book will benefit test developers and researchers, including graduate students at Iowa State and elsewhere who are developing new computer-based testing methods.

CLOTTEY, TOYIN, ASSOCIATE PROFESSOR, SUPPLY CHAIN AND INFORMATION SYSTEMS, 6 YEARS OF SERVICE, FALL SEMESTER

Professor Clottey proposes an assignment to at The Ohio State University Fisher College of Business, where he will host a Ph.D. seminar and conduct research on using recycled content in automobile production. Clottey will leverage the experience to develop a PhD seminar on sustainable operations management for Iowa State doctoral students, and his research will form the basis for additional publications and presentations in this area.

COOK, K. L., ASSOCIATE PROFESSOR, ENGLISH, 3 YEARS OF SERVICE, FULL ACADEMIC YEAR

Professor Cook proposes an assignment to complete, revise, and seek publication for his new novel, *Shakespeare West*, set during an Arizona Shakespeare festival on the 400th anniversary of the playwright’s death. The novel is part of Cook’s ongoing scholarly/creative investigation of the American west – including its history, culture, mythology, and place – which is central to his work with students in Iowa State’s MFA program in Creative Writing and Environment.

COURTWRIGHT, JULIE, ASSOCIATE PROFESSOR, HISTORY, 7 YEARS OF SERVICE, SPRING SEMESTER

Professor Courtwright will use her assignment to finalize research, analyze material, and write an initial draft of her monograph, *Gale: The Windy Plains of the West*, which seeks to understand how Great Plains peoples have coped with relentless wind in a wide-open landscape. The

completed book will provide historical context for scientists and engineers working on wind energy in Iowa and across the nation, and educate Iowa State students on how wind connects Iowa's environment with both its future and past.

CROSBY, RICHARD BENJAMIN, ASSOCIATE PROFESSOR, ENGLISH AND SPEECH COMMUNICATION, 7 YEARS OF SERVICE, SPRING SEMESTER

Professor Crosby will use his proposed assignment to complete a draft of his manuscript, *American Kairos: Civil Religious Discourse and The Washington National Cathedral*, which uses humanistic methodologies to consider the viability of the Cathedral's "House of Prayer for All People" mission. Crosby will use case studies drawn from the Cathedral's long history, as well as recent advances in communication theory, to reimagine American civil religious discourse. The manuscript is also designed to meet the standards of global citizenship outlined in the College of Liberal Arts and Sciences' Signature Themes.

***CROSS, SUSAN, PROFESSOR, PSYCHOLOGY, 22 YEARS OF SERVICE, SPRING SEMESTER**

Professor Cross will use the proposed assignment to focus on grant-funded research that tests the hypothesis that concern over maintenance or protection of one's reputation among members of honor cultures (e.g., Middle Eastern and North African societies) can interfere with other goal-related behaviors. The project will lead to several journal manuscripts, additional research opportunities, and enhance the internationalization of curriculum and research at Iowa State.

***DALAL, VIKRAM, DISTINGUISHED PROFESSOR, ELECTRICAL AND COMPUTER ENGINEERING, 28 YEARS OF SERVICE, SPRING SEMESTER**

Professor Dalal proposes an assignment to create a traditional online course on energy systems, including the rapidly changing fields of energy generation and utilization technology, as well as a massively open online course (MOOC). These courses will help engineers and scientists worldwide to address the energy challenges facing their countries from a systems perspective. Dalal also plans to begin writing a textbook on the subject.

DOMINGUEZ, JULIA, ASSOCIATE PROFESSOR, WORLD LANGUAGES & CULTURES, 13 YEARS OF SERVICE, FULL ACADEMIC YEAR

Professor Dominguez will complete a book manuscript, *Storying Memories in Don Quixote: Cervantes and Memory in Early Modern Spain*, during her proposed assignment. The book examines the role of memory from the ancients to the great Renaissance thinkers to explore how theories and practice of memory make their way into Cervantes' Spain. The project also helps educate ISU students to become global citizens, and will impact students in Dominguez's classes and study abroad programs.

ELLINWOOD, NORMAN MATTHEW, ASSOCIATE PROFESSOR, ANIMAL SCIENCE, 12 YEARS OF SERVICE, FALL SEMESTER

Professor Ellinwood will study gene therapy/gene correction for inherited metabolic disorders during his proposed assignment at the University of Giessen in Germany. Current treatment for these disorders requires lifelong therapy and great expense; Ellinwood's research has the potential to lead to more effective, efficient, and economical treatments for human patients. The results of this work will be presented at research conferences, used in collaborative grant applications, and enhance teaching efforts in genetics and the biosciences.

***EULENSTEIN, OLIVER, PROFESSOR, COMPUTER SCIENCE, 16 YEARS OF SERVICE, FULL ACADEMIC YEAR**

Professor Eulenstein plans an assignment at Iowa State and the University of Warsaw in Poland to develop powerful algorithms for building large-scale evolutionary trees, evaluating, and then applying these algorithms as part of an ISU Presidential Initiative for Interdisciplinary Research project analyzing virus evolution. Student training opportunities will also be integrated into Eulenstein's project, as well as a new, hand-on course on synthesizing evolutionary trees.

***FIORE, ANN MARIE, UNIVERSITY PROFESSOR, APPAREL, EVENTS, AND HOSPITALITY MANAGEMENT, 27 YEARS OF SERVICE, SPRING SEMESTER**

Professor Fiore's proposed assignment is focused on an emerging marketing strategy within apparel retailing to integrate in-store foodservice operations as the initial "draw" for consumers. Fiore will also travel to India to lead a 16-member team of international scholars in the area of retailing practices. Projected outcomes include developing new content for Iowa State courses on aesthetics, consumer experience, and retail branding; and strengthening collaboration with India's National Institute of Fashion Technology.

***HERRNSTADT, STEVEN, UNIVERSITY PROFESSOR, INDUSTRIAL DESIGN, 36 YEARS OF SERVICE, FALL SEMESTER**

Professor Herrnstadt will travel the states of Maine and Washington during his proposed assignment to receive training in traditional methods of edge tool smithing and Damascus steel and heat treating. The experience will support Herrnstadt's research to advance the quality and manufacture of edge tools, enabling new designs and alloy combinations that are not presently possible, and using 3-D and other digital tools in the manufacturing process.

***KATZ, APRIL, PROFESSOR, ART AND VISUAL CULTURE, 17 YEARS OF SERVICE, FULL ACADEMIC YEAR**

Professor Katz proposes an assignment to Italy and Spain, where she will complete *Natural Geometries*, a series of mixed media prints that explore the relationship of geometric constructions to natural forms, structures, and patterns, as well as their symbolic meanings. The series will be exhibited nationally and internationally through juried art events, with a goal of attracting diverse audiences and promoting dialogue about common experiences. New printmaking processes developed during the assignment will also be shared with students.

KING, DAVID, ASSOCIATE PROFESSOR, MANAGEMENT, 3 YEARS OF SERVICE, SPRING SEMESTER

Professor King's proposed assignment will support a combined teaching and research Fulbright Grant to the MCI Management Center in Austria, where he will collaborate on multiple research projects related to mergers and acquisitions. The assignment is expected to lead to numerous publications, help Iowa State management students gain an international perspective on merger and acquisition activity, and increase understanding of the needs of international students studying in the U.S.

***KUPFER, JOSEPH, UNIVERSITY PROFESSOR, PHILOSOPHY AND RELIGIOUS STUDIES, 45 YEARS OF SERVICE, FALL SEMESTER**

Professor Kupfer proposes an assignment to work on his new book, *Aesthetic Violence and Women in Film: Kill Bill with Flying Daggers*, an interdisciplinary effort that speaks a pervasive form of popular culture, and addresses themes related to aesthetics, women's studies, ethics,

and film studies. The book is expected to engage students in a variety of Iowa State courses, as well as appeal to a general readership.

***LA WARE, MARGARET, ASSOCIATE PROFESSOR, ENGLISH AND SPEECH COMMUNICATION, 19 YEARS OF SERVICE, FALL SEMESTER**

Professor La Ware will use her assignment to work on a book monograph, *Speaking to America's College Women: An Analysis of Commencement Speeches at Women's Colleges from 1970-2000*. La Ware's work addresses the history and theory of commencement as a genre of speech, the history of women as speakers, and the characteristics of women's speech. The project will benefit her teaching in courses dealing with gender and communication, and women in leadership, and inform universities in how they can make their institutions more inclusive.

LEE, YOUNG-JIN, ASSOCIATE PROFESSOR, CHEMISTRY, 8 YEARS OF SERVICE, FALL SEMESTER

Professor Lee will use his proposed assignment to develop new scholarship that will expand his research and teaching. Lee will collaborate with two internationally recognized scientific groups in Korea to study mass spectrometry imaging for biomedical applications, as well as recruit Korean students to Iowa State, and develop new research collaborations and teaching approaches.

LUBBERSTEDT, THOMAS, PROFESSOR, AGRONOMY, 9 YEARS OF SERVICE, MID NOVEMBER – MID MAY (6 MONTHS)

Professor Lubberstedt is the founder of Iowa State's Doubled Haploid Facility, which specializes in maize breeding research. He proposes an assignment at La Trobe University in Australia, where he will establish a protocol for whole genome amplification and genotype data generation. The work will further enhance Lubberstedt's research in this area, resulting in several joint research publications, new collaborations, and incorporation of the material into Ph.D. coursework.

MENEFEE, CHARISSA, ASSOCIATE PROFESSOR, ENGLISH, 3 YEARS OF SERVICE, FULL ACADEMIC YEAR

Professor will use her assignment to research and write *The Forten Sisters*, a cycle of three stage plays about African American pioneers in the abolition and suffrage movements. The plays are part of Menefee's ongoing research that focuses on reading, teaching, and writing the lives of women whose stories are not often told; and are part of *365 Women: A Playwriting Project*, an international initiative to record and dramatize women's lives.

***MU, AILI, ASSOCIATE PROFESSOR, WORLD LANGUAGES & CULTURES, 15 YEARS OF SERVICE, FULL ACADEMIC YEAR**

Professor Mu will explore cultural literacy through Chinese short-short stories (about 1,500 characters) during her proposed assignment. Mu's monograph seeks to demonstrate the impact of short-short stories on the Chinese mindset, state policies, political/economic decision-making, and social and cultural behaviors, which in turn provide vital insights into how China functions today. The book will serve the needs of hundreds of ISU students in numerous courses each year, including translating Chinese texts, cultural traditions, and business culture.

NEWELL, JONATHAN JAY, ASSOCIATE PROFESSOR, GREENLEE SCHOOL OF JOURNALISM AND COMMUNICATION, 13 YEARS OF SERVICE, FALL SEMESTER

Professor Newell will use his proposed assignment to create a monograph-length publication that surveys the practice and teaching of digital advertising, and provides insight for educators and administrators on how to refine the advertising curriculum to meet the needs of the digital marketplace. The project is also expected to lead to proposals for new classes, and additional internship and employment opportunities for ISU advertising students.

NEWMAN, JENNIFER, ASSOCIATE PROFESSOR, MATHEMATICS, 27 YEARS OF SERVICE, FALL SEMESTER

Professor Newman will use her assignment to design and assemble a dataset of StegoDB images – an element of cybersecurity where messages are hidden inside images so that the message is not visible to the eye or otherwise detectable. Newman will also work with Center for Statistics and Applications in Forensic Evidence colleagues at Iowa State and Carnegie Mellon University on writing manuscripts and grant proposals for additional research funding; and helping PhD students complete their research and dissertation defenses in this area.

PADGETT WALSH, KATE, ASSOCIATE PROFESSOR, PHILOSOPHY AND RELIGIOUS STUDIES, 8 YEARS OF SERVICE, FALL SEMESTER

Professor Padgett Walsh will use her assignment to work on *The Ethics of Debt: Freedom and Bondage in the Time of Finance*, a monograph that explores philosophical resources for analyzing the ethical dimensions of debt. Padgett Walsh's project considers how the recent growth of finance challenges traditional approaches to understanding the ethics of borrowing and lending, and assesses how debt can contribute to, or diminish, freedom and self-determination. This material will be appropriate for students in numerous disciplines.

***POON, YIU TUNG, PROFESSOR, MATHEMATICS, 31 YEARS OF SERVICE, FULL ACADEMIC YEAR**

Professor Poon proposes an assignment to harness the power of quantum effects to solve complex problems unmanageable by traditional computers, and to create more secure cryptology systems. The outcomes of Poon's projects will be presented at conferences and in scholarly journals, and shared with ISU students and colleagues through classes and seminars.

***RAMASWAMI, SRIDHAR, PROFESSOR, MARKETING, 29 YEARS OF SERVICE, FALL SEMESTER**

Professor Ramaswami proposes an assignment to the Indian School of Business in Hyderabad, the top business school in India, where he will work with a former Iowa State Ph.D. student to complete several publications related to the role of management in fostering innovation, and using innovation to drive performance. Ramaswami will also use the opportunity to recruit new Ph.D. students to Iowa State, and explore new areas for research and collaboration.

ROSSMANITH, JAMES, ASSOCIATE PROFESSOR, MATHEMATICS, 4 YEARS OF SERVICE, FULL ACADEMIC YEAR

Professor Rossmannith will visit Brown University during his proposed assignment to develop a new class of high-order computational methods to solve problems in plasma physics. He will also use the outcomes of this work to produce open-source computer software that takes advantage of modern parallel computer architectures. This research will lead to new research topics for ISU Ph.D. students in mathematics, and opportunities for future external research grants.

***SCHWAB, ANDREAS, ASSOCIATE PROFESSOR, MANAGEMENT, 8 YEARS OF SERVICE, FULL ACADEMIC YEAR**

Professor Schwab will engage in a large-scale research project examining entrepreneurial ecosystems in the Indonesian textile industry, in collaboration with colleagues at the Institute of Technology Bandung. This research will support economic development by providing guidance to entrepreneurs and policy makers, and result in several publications in high-quality academic journals. Schwab has applied for support from the U.S. Fulbright program for this assignment.

SHIN, YEON-KYUN, PROFESSOR, BIOCHEMISTRY, BIOPHYSICS, AND MOLECULAR BIOLOGY, 16 YEARS OF SERVICE, FALL SEMESTER

Professor Shin will visit Padua University in Italy during his proposed assignment, investigating how botulinum toxin (Botox) disables the communication between neurons. This work will aid the upcoming renewal of Shin's National Institutes of Health grant and the preparation of additional external funding proposals, and create research opportunities for Iowa State graduate students.

SLATER, TAMMY JAYNE ANNE, ASSOCIATE PROFESSOR, ENGLISH, 7 YEARS OF SERVICE, FULL ACADEMIC YEAR

Professor Slater will use her proposed assignment to do sustained work on *Using the Knowledge Framework in Higher Education: Theory and Practice*, a book-length manuscript on language and content learning and teaching. The project will inform both researchers and educators interested in language patterns to teach disciplinary language in higher education, and result in conference presentations and journal submissions.

SONG, JIHYUN, ASSOCIATE PROFESSOR, INTERIOR DESIGN, 10 YEARS OF SERVICE, SPRING SEMESTER

Color research and practice play central roles in the study of interior design education. Professor Song proposes an assignment to the Ewha Women's University in Seoul, South Korea. Song will finalize a comprehensive textbook, *Seeing Place Through Watercolor Sketches*, which will enrich the design studio experience for Iowa State students. She will also collaborate with colleagues at the Ewha Color Design Research Institute to re-examine the color palette and its applications to commercial areas, residential areas, historic sites, and natural landscapes.

TANG, LIE, ASSOCIATE PROFESSOR, AGRICULTURAL AND BIOSYSTEMS ENGINEERING, 12 YEARS OF SERVICE, FALL SEMESTER

Professor Tang will use his proposed assignment to improve and enrich Iowa State's teaching curricula in two core classes: automation systems, and industrial and agricultural applications of electricity and electronics. Tang will participate in advanced training programs in industrial automation, develop robotic lab activities, and begin a book project on robotic phenotyping. The results of this work will be incorporated into student laboratory and lecture materials, and generate multiple research publications.

WANAMAKER JR., ALAN, ASSOCIATE PROFESSOR, GEOLOGICAL AND ATMOSPHERIC SCIENCES, 7 YEARS OF SERVICE, FALL SEMESTER

Professor Wanamaker proposes an assignment to visit several sights along the eastern U.S. seacoast to learn new computational methods to estimate and illustrate uncertainties in proxy climate archives. This work will potentially advance the field of quantitative paleoclimatology while also benefiting Iowa State students through teaching and mentoring efforts.

***WELLS, GARY, DISTINGUISHED PROFESSOR, PSYCHOLOGY, 28 YEARS OF SERVICE, SPRING SEMESTER**

Professor Wells will use his proposed assignment to visit Flinders University in Australia to work with colleagues on a new methodologies to construct criminal eyewitness lineups. This work has a significant impact on eyewitness practices and policies for both law enforcement and the courts. Findings will be published in refereed journals, with Iowa State graduate students as co-authors, and is likely to lead to additional external funding.

***WILSEY, BRIAN, PROFESSOR, ECOLOGY, EVOLUTION, AND ORGANISMAL BIOLOGY, 15 YEARS OF SERVICE, FALL SEMESTER**

Professor Wilsey proposes an assignment to work on several projects, including a book, *The Biology of Grasslands*; developing new external funding proposals; and writing several papers for publication. The book, in particular, will be of interest to advanced undergraduate and graduate students at Iowa State, as well as postdoctoral fellows, scientists, and others interested in the biology of habitats.

ZHANG, WENSHENG, ASSOCIATE PROFESSOR, COMPUTER SCIENCE, 11 YEARS OF SERVICE, FALL SEMESTER

Professor Zhang will use the proposed assignment to design data access pattern protection algorithms to secure cloud-based data, including the creation of a cloud server prototype that can be used as an experimental platform, and the development of additional long-term research projects. Zhang's research is expected to lead to several scientific papers, and contribute to a new cloud security course in Iowa State's Department of Computer Science.

UNIVERSITY OF NORTHERN IOWA

****ATKINSON, KENNETH, PROFESSOR, HISTORY, 17 YEARS OF SERVICE, FALL SEMESTER**

The Psalms of Solomon: A Commentary on the Greek Text in Light of Semitic Languages

This PDA will support the completion of a historical and linguistic commentary on the Greek text of the first century B.C.E. collection of Jewish poems known as the Psalms of Solomon. For scholars, this text is of immense value since it frequently quotes from lost portions of the Old Testament. This composition is also among the most important poetic texts from the Middle East because it contains the earliest and most detailed prophecy of the Davidic messiah. The text contains the only eyewitness account of the Roman general Pompey's 63 B.C.E. siege of Jerusalem and his conquest of the Middle East for the Roman Republic. This PDA project benefits the citizens of Iowa and the UNI community in three respects. First, it helps us to understand and uncover the lost text of the Old Testament, which remains one of the foundational documents of Western civilization and a sacred book for contemporary Jews, Christians, and Muslims. Second, this PDA uncovers the deeds of the Hasmonean family of Jewish rulers, who were the first in the Western tradition to advocate martyrdom to resist oppression. This PDA helps us to understand the historical origin of this form of terrorism. Third, this PDA shows the citizens of Iowa how historical research helps solve some contemporary problems through an exploration of how those in the past have dealt with many of the issues we face today. It also highlights the common roots of several of the world's major religions, which can help foster unity between them.

BAKER, KIMBERLY M., ASSOCIATE PROFESSOR, SOCIOLOGY, ANTHROPOLOGY, AND CRIMINOLOGY, 4 YEARS OF SERVICE, FALL SEMESTER

Family Friends and Stigma in Addiction-Themed Reality Television Shows

Addiction-themed reality shows like *Intervention* and *Celebrity Rehab with Dr. Drew* are popular series, often capturing audiences of well over a million viewers for a single episode. For many viewers, these shows may be the only opportunity they have to see what the experiences of addiction and treatment are like. With their focus on drama and confrontation, the question is whether these shows increase or decrease the stigma of addiction. Using the framework of the hidden curriculum, a content analysis of six addiction-themed reality series will be conducted to uncover the ways that families and friends are depicted in the series. This project will consider how families and friends discuss addiction, interact with a person believed to have addiction, and are instructed by professionals in how to behave. Preliminary analysis indicates family and friends generally accept the stigmatization of addiction and reinforce it in their interactions. Furthermore, family and friends are often instructed by treatment professionals to keep their distance and enact firm boundaries to protect themselves from the person with addiction. Sometimes individuals resist this instruction and try to support their loved one by giving money, residence, and moral support. As a result, those resistant people receive criticism and explicit admonishments for not acting properly. This analysis further demonstrates the pervasive stigmatization of substance use problems in addiction entertainment. Although these shows intend to be educational, their commitment to drama and confrontation leads to the reinforcement of the stigma of addiction. Local agencies in Iowa (YWCA and the Drug Task Force) have expressed interest in this research, and the researcher will work with them to present results to the larger Iowa community.

***BARNES, ALLISON, INSTRUCTOR, TEACHING, 6 YEARS OF SERVICE, SPRING SEMESTER (DEGREE COMPLETION)**

Early Childhood Explorers: An Analysis of their Journey of Inquiry

The purpose of this study is to explore the experiences of in-service teachers while they are participating in a professional development course supporting how to effectively teach science

using a Project Approach. The goal is to analyze their journey of implementing the project approach through inquiry while participating in a professional development course with active support from coaches in their classrooms. Sandholz and Ringstaff (2014) stated, "Professional development, when well-designed and fully implemented offers a means of shifting teachers' perceptions about the balance between requirements and their capability to teach science" (p. 734). Research supports the idea of the teacher's belief being the way to shift science teaching in our classrooms of today (Ajzen & Fishbein, 1980; Pajares, 1992; Battista, 1994; Beck et al., 2000; Crawley & Koballa, 1992). The University of Northern Iowa is well known for the development of effective teachers and being innovative in their preparation practices. This study will continue to extend the literature on Project Approach to provide further justification for its usefulness to integrate science into the classroom. It will also benefit how we work with our in-service teachers around the state of Iowa and what practices best meet their needs in regards to professional development. Not only do we want to prepare the best teachers, but we want to continue to support the best teachers. This study will help shed light on how we can support in-service teachers.

CHOI, GA-YOUNG, ASSOCIATE PROFESSOR, SOCIAL WORK, 6 YEARS OF SERVICE, FALL SEMESTER

How do Korean undergraduate students majoring in social work perceive cultural diversity and cultural competence? Implications to social work education in Korea

The purpose of this research is to examine the perceptions, understandings, and attitudes of undergraduate social work students in South Korea (Korea) that pertain to diversity, multi-cultural society, and cultural competence. Korea has recently grown as a multicultural society with a rapid increase in international and immigrant populations due to globalization and economic growth in the nation. As social work is a prominent helping profession that closely works with these populations in assisting their successful adjustments to Korea, educating future social workers to improve their practice abilities to effectively work with the growing ethnically diverse populations (i.e. cultural competence) is important. This study can provide new information with which to develop cultural competence curricula contents and methods in Korean social work programs and agencies. More importantly, the study can contribute to positive acculturation experiences for international and migrant communities in Korea by yielding implications for social work education and practice that will strengthen the cultural competence of social work students. The proposed study will benefit UNI by enhancing research productivity by its faculty and by furthering its reputation as an institution of higher learning in the U.S. and internationally. Moreover, the project will benefit the citizens of Iowa through teaching courses related to diversity and multicultural issues as most of UNI's students are natives of Iowa. Understanding and enhancing cultural competence of Korean social work students can also potentially benefit Iowans who visit or study in Korea as they become foreign residents, a cultural minority in Korea.

DEL CARLO, DAWN, ASSOCIATE PROFESSOR, CHEMISTRY & BIOCHEMISTRY, 12 YEARS OF SERVICE, FALL SEMESTER

Synthesis and publication of science education research at the University of Northern Iowa

The University of Northern Iowa holds a long and rich history of science education research and professional development. Project topics vary widely and include the development and national dissemination of innovative science curriculum, research in the preparation of pre-service K-12 science teachers, research in and dissemination of professional development for K-12 science teachers, and research in post-secondary science teaching and learning. Three recent projects that contribute to this body of research will be prepared for publication through this PDA: Life Experiences of Men and Women in the Sciences, Use of the Science Writing Heuristic (SWH) in College-Level Chemistry Courses, and Support Networks Established by Science Faculty with Education Specialties (SFES). While it appears that these projects are unrelated, SFES teach

science content to pre-service teachers and therefore greatly influence those future teachers' perceptions and understanding of science. Additionally, as SFES they may also influence their science colleagues' approach to teaching and improve post-secondary science education for pre-service secondary teachers as well as future scientists. Recognition of this work through national, peer-reviewed publications, reinforces and provides further evidence of UNI as a national leader in science education scholarship. In turn, this attracts more prospective science and science-teaching students to UNI. Considering the vast majority (81%) of UNI alumni remain in the state of Iowa after graduation (from: <http://www.uni.edu/careerservices/trends>), how we prepare them as scientists and science educators, greatly impacts the citizens of Iowa.

****DEVLIN, MICHELE, PROFESSOR, HEALTH PROMOTION AND EDUCATION, 21 YEARS OF SERVICE, SPRING SEMESTER**

Human Migration and Environmental Refugees: Maternal and Child Public Health and Human Service Needs Among the Rapidly Growing Population of Pacific Islanders in Iowa

Pacific Islanders are among the most rapidly growing populations in Iowa and the Midwest, but are poorly understood. Many state agencies are challenged on a daily basis with providing culturally appropriate services to this population and other immigrants, but they face significant language, cultural, financial, and related barriers to care. Most of these Pacific Island migrants come from former U.S. territories, and by treaty they may live and work in the United States legally. The Marshall Islands and other Pacific nations are submerging under rapidly rising sea levels due to climate change. The loss of habitat, homes, and jobs will force citizens of these islands to seek new lives elsewhere. With legal access to the U.S., Iowa and other Midwestern states are now receiving growing numbers of these "environmental refugees." Many are being recruited to work in meatpacking and other jobs in Iowa. The purpose of this PDA, therefore, is to research the maternal, child, and family health concerns among these newcomers, and the implications for the human service agencies charged with meeting their needs. This PDA will provide urgently needed applied planning, assessment, and programming information for the Iowa Department of Public Health, Iowa Department of Human Services, and related family providers about the medical and mental health needs of the environmental refugees here from the Pacific. Findings will also contribute to the growing academic literature on how health and human service providers can provide culturally appropriate programs to meet the needs of vulnerable migrant, minority populations.

****FABOS, BETTINA, ASSOCIATE PROFESSOR, COMMUNICATION STUDIES, 13 YEARS OF SERVICE, FALL SEMESTER**

Adapting FORTEPAN IOWA for K-12 Education

Fortepan Iowa (fortepan.us) is an online interactive digital photo chronology of Iowa history based on the amateur photographs and stories of everyday Iowans between 1860 and 2000. Co-founded by four UNI faculty members (including the researcher), and formally launched in 2015, the project is designed as an ever-growing public website that will provide opportunities for deep reflection on who we are as Iowans. Photographs appear in slideshow view along a timeline, with an easy-to-navigate horizontal scrollbar to immediately indicate date, place, and geo-location data, and the photographs (currently about 3,000) are curated for their aesthetic historical value. The site will soon enable social media components so the public can offer their own historical commentary and interpretation. Fortepan Iowa is an intense and beautiful illustration of Iowa's change over time. This project is to research tangible ways to bring the open source archive into Iowa schools for the purpose of teaching Iowa history more deeply and thoughtfully. In September 2016, the Iowa History Advisory Council released a report articulating the importance of Iowa History in our schools and colleges. One key recommendation is to "Create a variety of Iowa history curriculum materials that support new Iowa history standards and promote best practices in the teaching and learning of state and local history." Fortepan Iowa is an exciting and novel

curriculum resource - beyond its unique interface, all images are digitized at high resolution and freely downloadable. This project involves networking with Iowa historians and teachers across the state to identify a clear path for incorporating Fortepan Iowa into Iowa's schools and universities.

****GREY, MARK, PROFESSOR, SOCIOLOGY, ANTHROPOLOGY, AND CRIMINOLOGY, 21 YEARS OF SERVICE, FALL SEMESTER**

Public Safety, Emergency Response, and Security Concerns among Climate Change Refugees: The Case of Pacific Islanders in Iowa

Pacific Islanders are arriving in Iowa and the American Midwest in growing numbers. Most come from former U.S. territories and by treaty they may live and work in the United States. Many of these newcomers were recruited to work in meatpacking and other jobs in Iowa. However, more are now arriving due to climate change. The Marshall Islands and other island nations are submerging under rapidly rising sea levels. The loss of habitat, homes and jobs will force citizens of these islands to seek new lives elsewhere. With legal access to the U.S., Iowa and other states have and will continue to receive growing numbers of these "environmental refugees." The purpose of this PDA is to research the public safety, emergency response and security concerns among these newcomers in light of their unique status in the U.S. as persons displaced by climate change but neither official "refugees" nor immigrants in the classic sense with expectations for permanent residency. This research will inform public safety, emergency management and other practitioners about the unique issues associated with influxes of Pacific environmental refugees. It will also contribute to a growing literature on how law enforcement and emergency medical services must adjust their approaches to working with immigrant, refugee and other underserved and vulnerable populations.

****NIE, HONG, ASSOCIATE PROFESSOR, TECHNOLOGY, 11 YEARS OF SERVICE, SPRING SEMESTER**

A Novel Low Complexity High Reliable Technology to Measure Time-of-Arrival of Impulse Radio Ultra-Wide Band Wireless Signals for Indoor Positioning and Tracking Systems

"Industry 4.0" refers to the "fourth industrial revolution". It describes efficient automation and data exchange in manufacturing technologies such as cyber-physical systems and cloud computing. Utilizing these applications can lead to the creation of a "smart factory" for accurately tracking multiple robots or intelligent movable machines in indoor environments for industrial applications. Currently, no existing indoor positioning and tracking systems can fulfill the stringent accuracy requirements for the "Industry 4.0" applications with acceptable system complexity and reliability. In this research project, the researcher will employ nonlinear signal processing technologies in non-coherent detectors to mitigate the destructive effects of narrow-band interferences, and accurately measure time-of-arrival of impulse radio ultra-wide band signals. This novel research will enable the implementation of low complexity but highly accurate and reliable indoor positioning and tracking systems that fulfill a core prerequisite to realize the "Industry 4.0" requirements. According Iowa Economic Development Authority, "Manufacturing is Iowa's largest industry sector. Home to some 6,100 manufacturers, operating more than 6,400 factories and employing 200,000 workers." The outcome of this cutting-edge research will help Iowa industries occupy a leading position in the "Industry 4.0" trend, reduce the production and maintenance cost of their products, and increase competitive advantages over their rival entities. The proposed research will also benefit UNI by building a nationally recognized research team and providing research training to not only graduate students, but also undergraduate students in the electrical engineering technology program. The success stories of those students will encourage more young Iowans pursuing engineering and technology based undergraduate and graduate programs.

OBERLE, ALEX, ASSOCIATE PROFESSOR, GEOGRAPHY, 11 YEARS OF SERVICE, SPRING SEMESTER

Using Visual Literacy and Spatial Thinking to Advance Secondary Students' Literacy Abilities and Geography Content Knowledge

This project integrates visual literacy and spatial thinking to advance students' overall literacy skills while improving their content knowledge in geography. Concurrent with a National Geographic Society National Initiative and in collaboration with National Geographic Education, the researcher will lead the development of a data visualization toolkit, online modules, and a professional development toolkit that support state standards, including those in Iowa, that now employ secondary (grades 6-12) social studies teachers to enhance students' abilities in reading, writing, speaking, and conducting research by means of the social science curriculum. The research design includes both qualitative assessments and a controlled quasi-experimental technique to evaluate how the curricular materials enhance students' understanding of geography standards, promote their spatial thinking skills, and advance their literacy abilities. This Professional Development Assignment elevates UNI by raising its visibility through peer-reviewed research publications, demonstrating a high potential to bring in additional external funding, providing clear opportunities for undergraduate research, and linking UNI with a highly visible National Geographic Society nationwide initiative. Among Iowa teachers and school districts, there is strong, unmet demand for exemplary social science curricular materials that advance literacy and this project provides a concrete means for addressing this by disseminating model materials and supporting professional development through the Geographic Alliance of Iowa and its partner organizations such as the Iowa Department of Education Statewide Social Studies Leadership Team.

****PROPHET, MICHAEL, PROFESSOR, MATHEMATICS, 16 YEARS OF SERVICE, SPRING SEMESTER**

Infinitely-defined shapes and shape-preserving projections

The use of mathematical functions to approximate data is one of the most important applications of mathematics in science. In many situations, the data will have an inherent "shape" (for example, it may be numerically increasing), so it is natural to ask when such data can be approximated by a function with the same shape. In general, it is difficult to determine if a given technique will yield approximations with the same shape as the data. The purpose of this project is demonstrate how such approximation can be accomplished for data sets that stretch over infinite lengths. That is, rather than restrict data to a finite range, we propose allowing the data to extend without bound, along a positive axis for example. There are computational hurdles that arise in this setting. However, we have identified a family of functions that overcome these barriers and allow for the preservation of many common shapes. UNI will benefit from this project by the exposure to an international audience through the publication and presentation. These results will also yield small, specific-case questions that will be suitable topics for senior-level (or Masters-level) student papers. Moreover, the citizens of Iowa will benefit from the applicable nature of this project. The researcher has been successful in translating particular elements of his research into computer software. Some of this software has been subsequently used by companies in Iowa (and throughout the Midwest) to assist in solving complicated problems arising in logistics and scheduling.

RHINEBERGER-DUNN, GAYLE, ASSOCIATE PROFESSOR, SOCIOLOGY, ANTHROPOLOGY, AND CRIMINOLOGY, 11 YEARS OF SERVICE, SPRING SEMESTER

Work Experiences of Juvenile Detention Center Staff in the Midwest

A substantial body of literature exists on the work experiences of correctional staff who work with adults. However, minimal research exists on the work experiences of staff who work in the

juvenile justice system, particularly those who work in juvenile detention centers. The purpose of this project is to extend the occupational literature on criminal justice professionals by writing and submitting articles for peer-review on the work experiences of juvenile detention center staff in the Midwest. This research will extend this body of literature by producing four distinct papers that analyze the following: predictors of burnout, predictors of job stress, predictors of work-family and family-work stress, and predictors of attitudes toward rehabilitation. Further, this research will directly benefit the juvenile detention centers that participated in this study including those centers in Iowa that agreed to participate in the study. Several of these agencies were excited to participate and receive useful feedback. This research will help these agencies determine which policies are working well and what needs to change in order to reduce burnout, job stress, and work-family and family-work conflict among staff, as well as assess if educational or job training is needed to strengthen commitment to a rehabilitation ideology in the agency. These positive outcomes help not only individual staff, but also help state agencies reduce costs associated with employee stress and turnover.

****ROBERTS, BRIAN, ASSOCIATE PROFESSOR, HISTORY, 16 YEARS OF SERVICE,
SPRING SEMESTER**

Killing Bambi: Sport Hunting and American Culture, 1880-1950

This project focuses on the topic of sport hunting in Britain, the United States, and Africa between 1880 and 1950. Though it is transnational in scope, much of the focus is on the same hunters in different world contexts, a cohort, that is, of American hunters who took their cues on the sport from British sources and took their guns to Africa during the golden age of the safari. This book project will include four chapters: the first on the elite American hunting association, the Boone and Crockett Club; the second on the African Safari between 1880-1920; the third on the discovery of limits on “game” animals and the commodification of sport hunting; and the fourth on the cresting into visibility of an anti-hunting movement characterized by the efforts of naturalist writers – such as Felix Salten’s *Bambi* – to imbue animals with subjectivity. One of the goals of the project is to challenge the currently dominant interpretation of hunting, that it is good for the environment and animals. Another is to enter into the field of post-species-centric history, currently one of the most vibrant areas of the field. The topics of sport hunting and the environment are important in the state of Iowa, and the dissemination of the findings locally, regionally and nationally will draw attention to the relationships between those two topics. In addition, my students in history classes will benefit from my presenting these findings in appropriate courses.

**ROD-WELCH, LEILA, ASSOCIATE PROFESSOR, ROD LIBRARY, 5 YEARS OF SERVICE,
FALL SEMESTER**

Improving Library Services in Support of English as a Second Language (ESL) Learners

Not being able to communicate in English well is a huge hurdle that many international students and second language learners face when attending college in the United States. In addition, lack of familiarity with library services is another challenge that these student learners face during their study in the U.S. When international students come from countries in which libraries have very limited services and resources, going to academic libraries in the United States and learning about their services can feel overwhelming. As the Outreach Services Librarian and someone who has firsthand experience regarding the challenges that ESL learners and international students face, the researcher has created significant library programming by library staff for this particular group of students in order to help them feel more comfortable and to succeed both at UNI and elsewhere. There is a demand for educating and providing best practices for librarians who work with ESL learners and international students. However, it has been more than five years since a book has been published on this topic. Additionally, previous books on this topic did not sufficiently address best practices and how to accomplish them. To better serve this increasing

underserved population, the researcher will co-author a book with contributed chapters from other educators. The co-author is Kendra Skellen, MLIS, MBA, from the Emory University Library. The book will highlight ways that libraries can better accommodate international students through outreach initiatives, library instruction, dedicated library liaisons, and library programming. These initiatives will help international students succeed by putting them at ease and showing them the valuable role that libraries can play in their academic success.

****SURDAM, DAVID, PROFESSOR, ECONOMICS, 11 YEARS OF SERVICE, FALL SEMESTER**
Business Ethics Through the Ages book project

The PDA will be used to write three chapters of a book, *Business Ethics through the Ages*. Business ethics receives considerable press, but this is not a new phenomenon; people have long been interested in business practices. This book will examine business ethics from prehistoric times to ancient Greece and Rome and up to the present. Although the emphasis will be upon England and the United States, the book will also include information on business ethics from around the world. A considerable amount of reading and writing on various aspects of business ethics has been completed, and the plan is to concentrate on three aspects of the book during the Fall 2017 semester: business ethics of product safety, commercialized leisure, and products for children. The hope is that this research will garner considerable attention in both academic circles and in the press. Such publicity and understanding of business ethics in the past will bring attention to UNI and benefit, at least indirectly, the citizens of Iowa.

*denotes terminal degree completion

**denotes prior PDA