

Contact: Diana Gonzalez

**PROFESSIONAL DEVELOPMENT ASSIGNMENT REQUESTS FOR FY 2016**

**Action Requested:** Consider approval of the requests by the Regent universities for professional development assignments for FY 2016.

**Executive Summary:** Each year, the Board of Regents is asked to approve faculty professional development assignments as specified in Iowa Code §262.9(14) and Board Policy §4.09. For the 2015-2016 professional development assignments, the Board of Regents directed the public universities to limit the number of professional development assignments proposed to not more than three percent of the faculty staff members employed at each of the institutions. This requirement was met by the three universities – SUI (1.0%); ISU (2.1%); and UNI (2.0%).

For FY 2016, the universities request approval of 110 faculty professional development assignments; this is a decrease of 14 proposed professional development assignment from the prior year (-11.3%). The FY 2016 request represents 1.4% of all faculty at the Regent universities. A brief description of each proposed assignment is available in Attachments A-C (pages 7-38). This report addresses the Board of Regents Strategic Plan priority for “educational excellence and impact” and “economic development and vitality.”

**NUMBER OF PDA RECIPIENTS AND PERCENT OF TOTAL FACULTY  
FY 2012 – FY 2016**

	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
SUI	58 (2.6%)	64 (1.3%)	65 (1.2%)	68 (1.3%)	56 (1.0%)
ISU	22 (1.4%)	29 (1.7%)	45 (2.5%)	37 (2.0%)	37 (2.0%)
UNI	15 (3.7%)	18 (2.2%)	15 (1.9%)	19 (2.4%)	17 (2.0%)
<b>REGENT TOTAL</b>	<b>95 (2.2%)</b>	<b>111 (1.5%)</b>	<b>125 (1.6%)</b>	<b>124 (1.6%)</b>	<b>110 (1.4%)</b>

**Background:**

- ◆ Institutional policies. Each university has academic policies that describe the process and requirements for professional development assignments and which guide the selection of faculty proposed for professional development assignments.
- ☑ **University of Iowa.** Full-time faculty members with 9-month appointments who completed a minimum of 10 semesters of full-time academic service are eligible for an initial one-semester professional development assignment. Flexible load assignments may be included in the 10 required semesters at the discretion of the college. Part-time faculty members with 9-month appointments become eligible for a professional development assignment at the level of their appointment upon completion of a minimum of 10 semesters of part-time service. Part-time faculty members are eligible for a ‘regular’ professional development assignment when their portions of service equal the minimum requirement of full-time service.

Twelve month faculty members who completed a minimum of four years of full-time academic service or the equivalent are eligible for the first professional development assignment of one semester; those who completed eight or 11 years of full-time academic service or the equivalent are eligible for a professional development assignment of up to two semesters or 12 months. To become eligible for a subsequent professional development assignment, faculty members with 9-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; probationary faculty are also eligible after a successful third-year review but preference is given to tenured faculty. A recipient of a professional development assignment is ineligible for a subsequent assignment during the three years following the assignment.
- ◇ Review process. The three universities report that a rigorous review process was conducted for each proposed professional development assignment. Faculty recipients were selected on the basis of peer review and recommendation at the department and college levels at each university and final approval by the provost. One of the criteria considered is the impact of the proposed professional development assignment.
- ◇ Proposed activities. Faculty members engage in a variety of productive activities during their professional development assignments. For example, faculty members have the opportunity to engage in intensive research, write scholarly books and articles, create new works of art and composition, present papers, work in industry, develop modeling systems, and develop grant proposals, software, course materials, and multimedia resources for their disciplines. Professional development assignments enrich the educational environment of the universities and are considered essential to the academic vitality of the universities. Educational excellence results from a vital faculty which actively pursues new developments in knowledge and teaching.
- ◇ Length of assignments. Professional development assignments are usually for one semester, although they may be granted for up to a year. For professional development assignments that are two semesters in length, compensation is limited to the amount of compensation a faculty member would receive during a semester-long assignment. Salary savings generated from faculty members on assignment for a full year are used to offset the replacement costs for other faculty members.

- ◇ Obligation to institution. Iowa Code §262.9(13) requires that a faculty member return to the institution for twice the length of time of their professional development assignment or to repay the costs associated with the professional development assignment if the faculty member does not return to the institution. Following their professional development assignments, faculty members are responsible for reporting the results of their assignments as specified by Board Policy §4.09E and their institutional guidelines.
- ◇ Average number requested. During the last five years, an average of 113 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. There are no research-related expenses for ISU faculty on professional development assignments.
  - ☑ 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 to be able to offer courses which students need to make academic progress in their program of study or to make course substitutions for degree requirements as necessary.
- ◇ Proposed professional development assignment recipients by gender.
  - ☑ There are 57 proposed professional development assignments for men; this represents 51.8% of the total proposed PDAs. Men represent 64.1% of the total number of eligible faculty.
  - ☑ There are 53 proposed professional development assignments for women; this represents 48.2% of the total proposed PDAs. Women represent 35.9% of the total number of eligible faculty.

**BUDGETED REPLACEMENT COSTS  
FY 2012 – FY 2016**

	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
SUI	\$130,800	\$174,532	\$119,700	\$162,446	\$173,280
ISU	\$125,000	\$247,100 <sup>1</sup>	\$325,393 <sup>2</sup>	\$131,433 <sup>3</sup>	\$144,120 <sup>4</sup>
UNI	\$166,483	\$87,000	\$65,000	\$145,000	\$170,000
<b>REGENT TOTAL</b>	<b>\$422,283</b>	<b>\$508,632</b>	<b>\$510,093</b>	<b>\$438,879</b>	<b>\$487,400</b>

◆ Proposed professional development assignment recipients by race/ethnicity.

- There are 33 proposed professional development assignments for racial/ethnic minorities; this represents 30.0% of the total proposed PDAs. Racial/ethnic minorities represent 18.7% of the total number of eligible faculty.
- There are 77 proposed professional development assignments for non-minorities; this represents 70.0% of the total proposed PDAs. Non-minorities represent 81.3% of the total number of eligible faculty.

**FY 2016 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	72	55	<b>127</b>	30	21	<b>51</b>	1	5	<b>6</b>	0	4	<b>4</b>
Am. Indian/Alaska Native	10	11	<b>21</b>	2	3	<b>5</b>	0	0	<b>0</b>	0	0	<b>0</b>
Asian-Am.	244	93	<b>337</b>	120	29	<b>149</b>	6	5	<b>11</b>	6	3	<b>9</b>
Black/African Am.	47	42	<b>89</b>	19	15	<b>34</b>	1	1	<b>2</b>	1	0	<b>1</b>
Native Hawaiian/Pacific Islander	0	0	<b>0</b>	0	0	<b>0</b>	0	0	<b>0</b>	0	0	<b>0</b>
Two/more races	8	10	<b>18</b>	6	6	<b>12</b>	0	0	<b>0</b>	0	0	<b>0</b>
<b>Total Minority</b>	<b>381</b>	<b>211</b>	<b>592</b>	<b>177</b>	<b>74</b>	<b>251</b>	<b>8</b>	<b>11</b>	<b>19</b>	<b>7</b>	<b>7</b>	<b>14</b>
White	2,191	1,635	<b>3,826</b>	898	434	<b>1,332</b>	31	17	<b>48</b>	25	17	<b>42</b>
Unknown R/E	391	305	<b>696</b>	21	5	<b>26</b>	0	0	<b>0</b>	0	0	<b>0</b>
Nonres. Alien/Intl.	174	95	<b>269</b>	3	3	<b>6</b>	0	0	<b>0</b>	0	0	<b>0</b>
<b>TOTAL</b>	<b>3,137</b>	<b>2,246</b>	<b>5,383</b>	<b>1,099</b>	<b>516</b>	<b>1,615</b>	<b>39</b>	<b>28</b>	<b>67</b>	<b>32</b>	<b>24</b>	<b>56</b>

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

<sup>2</sup> 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.

<sup>3</sup> 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.

<sup>4</sup> 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.

FY 2016 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	24	23	47	24	22	46	1	2	3	1	2	3
Am. Indian/Alaska Native	5	1	6	5	1	6	0	0	0	0	0	0
Asian-Am.	183	53	236	182	51	233	10	6	16	7	4	11
Black/African Am.	22	16	38	19	16	35	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	3	4	0	0	0	0	0	0
Total Minority	236	96	332	232	93	325	11	8	19	8	6	14
White	875	584	1,459	812	535	1,347	11	14	25	9	14	23
Unknown R/E	0	0	0	0	0	0	0	0	0	0	0	0
Nonres. Alien/Intl.	41	37	78	41	35	76	0	0	0	0	0	0
<b>TOTAL</b>	1,152	717	1,869	1,085	663	1,748	22	22	44	17	20	37

FY 2016 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	6	13	0	0	0	0	0	0
Am. Indian/Alaska Native	0	1	1	0	1	1	0	0	0	0	0	0
Asian-Am.	29	29	58	24	15	39	3	3	6	2	2	4
Black/African Am.	9	15	24	7	4	11	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	3	4	7	1	0	1	0	0	0	0	0	0
Total Minority	54	59	113	40	26	66	4	3	7	3	2	5
White	351	394	745	215	163	378	6	9	15	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
<b>TOTAL</b>	405	453	858	255	189	444	10	12	22	8	9	17

FY 2016 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	108	88	<b>196</b>	61	49	<b>110</b>	2	7	<b>9</b>	1	6	<b>7</b>
Am. Indian/Alaska Native	15	13	<b>28</b>	7	5	<b>12</b>	0	0	<b>0</b>	0	0	<b>0</b>
Asian-Am.	456	175	<b>631</b>	326	95	<b>421</b>	19	14	<b>33</b>	15	9	<b>24</b>
Black/African Am.	78	73	<b>151</b>	45	35	<b>80</b>	2	1	<b>3</b>	2	0	<b>2</b>
Native Hawaiian/Pacific Islander	2	0	<b>2</b>	2	0	<b>2</b>	0	0	<b>0</b>	0	0	<b>0</b>
Two/more races	12	17	<b>29</b>	8	9	<b>17</b>	0	0	<b>0</b>	0	0	<b>0</b>
Total Minority	671	366	<b>1,037</b>	449	193	<b>642</b>	23	22	<b>45</b>	18	15	<b>33</b>
White	3,417	2,613	<b>6,030</b>	1,925	1,132	<b>3,057</b>	48	40	<b>88</b>	39	38	<b>77</b>
Unknown R/E	391	305	<b>696</b>	21	5	<b>26</b>	0	0	<b>0</b>	0	0	<b>0</b>
Nonres. Alien/Intl.	215	132	<b>347</b>	44	38	<b>82</b>	0	0	<b>0</b>	0	0	<b>0</b>
<b>TOTAL</b>	<b>4,694</b>	<b>3,416</b>	<b>8,110</b>	<b>2,439</b>	<b>1,368</b>	<b>3,807</b>	<b>71</b>	<b>62</b>	<b>133</b>	<b>57</b>	<b>53</b>	<b>110</b>

- ❖ Average length of service. The average length of service for the proposed professional development assignment recipients is 16.8 years at SUI; 13.1 years at ISU; and 14.2 years at UNI.
- ❖ Proposed professional development assignments by rank. There are 58 (52.7%) proposed professional development assignments for professors and 52 (47.3%) for associate professors.

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

**AGRELL, JEFFREY, ASSOCIATE PROFESSOR, MUSIC, 12 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Research, Experimentation, and Synthesis in Approaches to Rhythmic Training and Pedagogy

Traditional pedagogical methods for the French horn are rooted in bygone centuries, not the music world of today. Much broader skills are needed to survive and thrive today, but traditional methods leave the French horn student deficient in rhythm skills. More comprehensive and experiential training in the rhythms of the modern musical world is critical to the success of the music student of the 21st century. During his PDA, French horn professor Jeffrey Agrell will pursue research and experimentation to develop new pedagogical methods and materials. Time will be spent researching the literature of rhythm and rhythm pedagogy (including non-Western music and jazz), experimentation with percussion, working with rhythm training software, and traveling to study with experts in the field. Outcomes include new material and methods for Professor Agrell's instrumental pedagogy, as well as for his undergraduate and graduate music courses. In addition, the project will furnish material for books, articles, compositions, presentations, workshops, public performances, and recording projects.

**\*BARBOSA, MARIA JOSE, PROFESSOR, SPANISH AND PORTUGUESE, 16 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Brazilian Women in/at Play: Gender, Race, and Popular Culture

During her PDA, Professor Barbosa will complete an interdisciplinary book manuscript on the role culture has as an economic and political asset in a globalized world. This research will connect four segments of Brazilian popular culture (street festivals, religions of African origin, a local martial art, and soccer) to tender historical perspectives and to analyze social interactions. It will offer a unique contribution to the scholarship in the field, and contribute both to advance her knowledge in those areas of study and her teaching. It builds on a decade of research, a component of her service to the community-at-large (organizing cultural events, conferences, symposia, and giving talks), and her sustained teaching record on gender, race, and class at the University of Iowa and other institutions of higher learning. This project is aligned with the University's strategic planning, which favors cross-disciplinary scholarship, connections between teaching and research, and a local and global reach.

**\*BETTIS, ELMER A. III, ASSOCIATE PROFESSOR, EARTH AND ENVIRONMENTAL SCIENCES, 14 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Exploring the Application of Fly Ash as a Marker of Anthropocene Legacy Sediment

Human activities have had large impacts on Earth's physical, biological, and climate systems to the point where geologists have proposed that we have entered into a new period in earth history – the Anthropocene. A proposed marker for the beginning of this period is the dramatic rise in atmospheric CO<sub>2</sub> concentration that accompanied the onset of coal combustion during the Industrial Revolution. High-temperature coal combustion has also left a record in soil and sediment records in the form of fly ash—(i.e., small wind-transported spherical particles that can be easily identified using low-cost laboratory methods). Preliminary studies indicate that the first occurrence of fly ash in a soil or sediment column accurately identifies the pre-settlement surfaced in sites in Iowa and Illinois. Dr. Bettis will extend the use of this method to several other localities in the eastern and western United States and to a locality in Germany. The technique will provide a wide range of earth scientists with a rapid, inexpensive and accurate method for identifying the horizon in soils and sediments that corresponds to the onset human activities during the Industrial Revolution.

**\*BLEHER, FRAUKE, PROFESSOR, MATHEMATICS, 14 YEARS OF SERVICE, FALL SEMESTER**

*Title:* A New Approach to Growth Rates in Number Theory

During the PDA, Professor Bleher will conduct research in Iwasawa theory related to National Science Foundation Grant DMS-1360621. Iwasawa theory is an active area of research in algebraic number theory, and has to do with questions about the rates of growth of arithmetic invariants. Questions of this kind enter into applications of number theory to cryptography and error correcting codes. In this way, results of this project may benefit society. The above NSF grant was awarded to Professor Bleher as part of a research team that includes six other members at six other universities in the U.S. and England. Professor Bleher's goal is to work with her collaborators on a new approach to Iwasawa theory, which will help unify previous work and also provide a direction for future developments in this area. The PDA will enable Professor Bleher to work directly with her six collaborators, which is essential for the success of this project and its continuation in the future. This project is also expected to result in several research articles, in addition to new material for Professor Bleher's graduate courses and her supervision of Ph.D. students.

**\*BLOOM, STEPHEN G., PROFESSOR, JOURNALISM AND MASS COMMUNICATION, 21 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Stop the Presses! My Year Inside the Dot.Com Blast

Magazines are undergoing a seismic shift, the greatest since Benjamin Franklin founded The General Magazine and Historical Chronicle in 1741. No longer are trees felled, transformed into paper in environmentally unfriendly mills, transported in multi-ton rolls to printing presses nationwide, converted into magazines, distributed via snail mail. This process is no longer feasible with the advent of the Internet, where with a series of keystrokes, a magazine can be created and instantly distributed with better graphics, more timely news, stories, analysis, and information. Prof. Bloom has taught Magazine Writing for 21 years. An international leader in narrative writing, he is the 12-state Midwest editor of Narratively, named by Time Magazine in 2013 one of the top 50 Internet sites; he also is editor/publisher of Faction Magazine, a paperless magazine founded in 2014. Bloom will work as an editor and observer in Narratively's Brooklyn, NY, offices to research, write, and publish his fifth book, Stop the Presses! My Year Inside the Dot.Com Blast. A PDA will allow Prof. Bloom to convey cutting-edge knowledge to students, as well as to assess a publishing revolution from ground zero.

**\*BLUMBERG, MARK S, PROFESSOR, PSYCHOLOGY, 22 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Research and preparation for a new book on the development and functions of brain maps

Professor Blumberg has published three books of general science that have benefited his scholarly research and the research of his students, garnered recognition for him and the University of Iowa, and enhanced his undergraduate and graduate teaching. He now proposes for this PDA to develop the foundation for a new book exploring the importance of brain maps and how these maps develop. Professor Blumberg will bring his own unique perspective to this topic, which is informed by his many years of research on the development and functions of sleep. During the period of the PDA, Professor Blumberg will collect and read resource material, develop the scope of the book, meet with and interview pioneers and other scientists in the field, complete a book proposal for submission to publishers, and start writing the book.

**\*BROWN, CAROLYN J. (CB), PROFESSOR, COMMUNICATION SCIENCES & DISORDERS, 17 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Neural Responses Recorded from an Electrode inside the Cochlea of Hybrid Cochlear Implant Users: Understanding Post-Operative Changes in Hearing Sensitivity

Hybrid cochlear implants (CIs) are designed for individuals with good, low frequency hearing but substantial high frequency hearing loss. Individuals with this type of loss often struggle with hearing aids. The Hybrid CI user hears low frequency sound naturally but high frequency sounds are transmitted electrically. Preliminary outcomes look promising. However, studies show that up to 30% of Hybrid CI users will lose their residual acoustic hearing. The timing of that hearing loss suggests it is stimulation induced, not the result of direct surgical trauma but the exact pathophysiology is unknown. Dr. Brown and colleagues have developed a method to use an intracochlear electrode in the Hybrid CI to record neural responses to acoustic stimulation. Pilot data suggest separation of responses from the cochlear hair cells and the auditory nerve is possible. Such information is key to understanding the cause of the hearing loss these Hybrid CI users experience and ultimately to finding a way to prevent or treat this hearing loss when it occurs. Dr. Brown will use this PDA to expand that line of research and apply for external funding to help support this line of research.

**\*CARLSON, JONATHAN C., PROFESSOR, LAW, 31 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Global Environmental Law Practice: Exercises and Problems for Skills Development

Professor Carlson will develop a set of practical exercises and problems that involve the application of international environmental law to real-world situations that might confront a private lawyer advising business clients or a government lawyer involved in environmental law enforcement and regulatory compliance. Professor Carlson will develop practice problems relating to international agricultural trade, international project finance (e.g., U.S. firms funding and participating in development projects in other countries), and international sales of goods, among other areas. He will develop problems and exercises that replicate the tasks that practicing lawyers must perform to assist their clients in engaging in such transactions without running afoul of applicable environmental regulations. The outcome will be a collection of teaching materials for use at classes at Iowa that will improve student preparation for the effective practice of law. Professor Carlson will also seek to have the materials published for use at other institutions.

**CHEN, YONG, ASSOCIATE PROFESSOR, MECHANICAL AND INDUSTRIAL ENGINEERING, 11 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Enhancing Curricular and Research Opportunities in Industrial Engineering

In this project, Professor Yong Chen will conduct the following three activities: 1) Improve the preparation process in the Industrial Engineering (IE) program for ABET accreditation; 2) Redesign the content of the IE undergraduate required course Operations Research (IE:3700) and IE graduate course Statistical Pattern Recognition (IE-6760); and 3) Develop a research plan on data-driven methods for remote prognosis systems. The project will improve the educational evaluation and assessment process of the IE program, provide students with hands-on experience and improve the depth and width of education in the Big Data area, as well as generate research results and publications in the promising area of remote prognosis systems. The project will directly benefit the students in the courses IE:3700 and IE:6760. In addition, the improved education process will benefit all IE undergraduate students and beyond. The research activities in remote prognosis systems will have applications such as the smart health monitoring and prognosis systems, which will benefit the well-being of the society by improving quality of life.

**\*COMERON, JOSEP M., ASSOCIATE PROFESSOR, BIOLOGY, 12 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Molecular Causes of Variation in Recombination Rates

Recombination is a fundamental cellular and evolutionary process, but little is known about why recombination rates vary under diverse environmental conditions or among individuals of the same species. Associate Professor Comeron investigates the molecular causes of variation in recombination rates with a multidisciplinary approach that includes state-of-the-art genomics, bioinformatics and molecular genetics. Building on Dr. Comeron's earlier studies, the proposed project will provide a new paradigm by investigating a mechanistic link between increased recombination rates and stressful conditions, the very same circumstances where recombination may be most favorable. The results of this project will be published in peer-reviewed journals and be a crucial component of a grant proposal to be submitted to NIH. The new knowledge developed during this project will be incorporated into the courses that Dr. Comeron currently teaches at the University of Iowa as well as the new course 'Human Population Genetics and Variation'. These courses, together with training of undergraduate students and public lectures, will provide a direct benefit to the citizens of State of Iowa.

**\*+CONSTANTINESCU, SERBAN G, ASSOCIATE PROFESSOR, CIVIL-ENVIRONMENTAL ENGINEERING, 11 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Numerical Study of Transport and Mixing in Rivers and Stratified Lakes and their Ecological Implications

Lakes and river networks are important resources for drinking water, transport, energy, use of biological resources and recreation. The challenges for their sustainable use and maintaining biodiversity include pollution and eutrophication from industries and domestic wastewater discharges, as well as impact of global warming. Prof. Constantinescu will collaborate with experimentalists and lake ecologists to develop, validate and apply state-of-the-art numerical models to study convection in stratified lakes and its implication for ecosystem development as well as mixing and transport (sediments, nutrients) processes at river confluences which are critical elements of drainage networks. The project is expected to result in journal articles, training of graduate students in experimental and numerical techniques, and a proposal to the NSF focusing on the linkage between bottom vegetation and vertical transport in stratified lakes. Research results will be used to update the curriculum of a graduate course on environmental dispersion processes taught regularly by Prof. Constantinescu and to educate undergraduate students about the importance of lakes and river networks to society.

**\*ESTIN, ANN L, PROFESSOR, LAW, 16 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Global Childhood

As a consequence of globalization, families and children face challenges that have pushed the traditional boundaries of international law, family law, and immigration and citizenship law. Professor Estin will research the legal and public policy framework shaping children's lives in a variety of transnational situations, ranging from child labor and prostitution to intercountry adoption and cross-border parenting disputes. This Professional Development Assignment will provide a basis for writing several articles and a book, and for developing new course offerings at the University of Iowa. More broadly, it will help inform the wider public debate over children's rights and how children and families might be better protected from the adverse effects of globalization.

**\*+FLATTÉ, MICHAEL E., PROFESSOR, PHYSICS AND ASTRONOMY, 19 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Voltage Control of Magnetic Properties of Ferrites for Optical and Microwave Devices  
Prof. Flatté will develop new theories of the dependence of ferrite properties on applied voltages. Ferrites are transparent magnetic materials that are used for many commercial optical and microwave devices. These include “optical isolators” that allow light to pass through in only one direction. If the properties of ferrites could be changed sufficiently with an applied voltage then one-way optical windows could change from passing light in one direction to passing light in the other. Such windows have been proposed as “smart windows” to reduce the energy cost of heating or cooling a building. Prof. Flatté recently co-authored a paper that provided the first experimental report of voltage control of the magnetic properties of a ferrite (yttrium iron garnet); the goal of this PDA is to extend his theories to other types of ferrite that are more technologically relevant. The effect emerges from quantum mechanics, which is taught to all physics students who proceed beyond the first year. Understanding and applying this new effect will help in the teaching of quantum mechanics, expand interactions between departments on campus and generate intellectual property.

**\*FUMERTON, RICHARD, PROFESSOR, PHILOSOPHY, 40 YEARS OF SERVICE, FALL SEMESTER**

*Title:* A Consequentialist Defense of Libertarianism  
In the period covered by this Professional Development Award, Prof. Fumerton will write the first draft of a book in which he explores a defense of what he takes to be the most plausible version of libertarian political theory. He will reject the most well-known “rights-based” defenses of libertarianism (found in both the history of philosophy, contemporary philosophy, and current public political debate) and offer in its place a more pragmatic argument for many (though not all) of the libertarian’s conclusions. The research will find its way into both undergraduate and graduate courses on political philosophy. Because the book will be written in a manner that is both philosophically sophisticated but also accessible. Prof. Fumerton hopes it will help shape in important ways on-going political debate, not only in Iowa but across the country.

**\*GLANVILLE, JENNIFER, ASSOCIATE PROFESSOR, SOCIOLOGY, 13 YEARS OF SERVICE, HALF TIME FOR ONE YEAR (SPRING 16 AND FALL 16)**

*Title:* Does the Social Welfare State Promote Happiness?  
Professor Glanville will conduct research on the consequences of social welfare policies for happiness. By some accounts, social welfare policy can promote greater happiness among citizens, whereas others suggest that social welfare programs undermine happiness. Her project will make several contributions to existing knowledge in this area by measuring more specific aspects of social welfare policies than previous research and untangling why different types of policies have their effects on happiness. The project will result in two articles in peer-reviewed journals. This research will aid in the preparation of a new first-year seminar on the social sources of happiness. It will also enrich other courses Prof. Glanville currently teaches, including her courses on social problems (150 undergraduate students) and research methods (40 undergraduate students). The broader societal impact of this work is that it will help policymakers in designing more effective social welfare policy. Governments across the globe are increasingly measuring happiness in their assessments of national well-being, and thus, there is a great deal of interest in how to create policies that promote happiness.

**\*GLOER, JAMES B., PROFESSOR, CHEMISTRY, 30 YEARS OF SERVICE, FALL SEMESTER**

*Title:* New Directions in Natural Products Research

Professor Gloer's research program involves studies of targeted types of fungi as sources of new natural products that may benefit society by leading to the development of new pharmaceuticals or agrochemicals. This research is highly interdisciplinary, and involves collaboration with biologists that have rare, specific types of expertise. A new collaborative project with a distinguished mycologist at another institution has been initiated. This project will focus on investigation of the chemistry of coprophilous fungi—an underexplored group of organisms with considerable potential as sources of new biologically active natural products. The proposed PDA will facilitate ongoing efforts to build this new program, to explore associated new research directions and emerging technologies, and to continue generation of relevant publications and grant applications. Success in these endeavors will benefit both undergraduate and graduate students, as well as the University of Iowa.

**\*GOMPPER, DAVID K., PROFESSOR, MUSIC, 23 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Clarinet Concerto

Professor Gompper will compose a concerto for clarinet and chamber orchestra for Michael Norsworthy, Professor of Clarinet at the Boston Conservatory and BMOP (The Boston Modern Orchestra Project), and Gil Rose, conductor, for their 2016-2017 concert season. The composition will be workshopped and performed by the Center for New Music beforehand, in partial celebration of the opening of the new School of Music building at the University of Iowa. The Concerto will also be recorded by the Royal Philharmonic Orchestra (London); as part of a new CD of three concerti by Gompper: a Clarinet Concerto, a Cello Concerto and a Double Concerto for violin and cello. Composition students will benefit when the activities of their instructors serve as role models for the profession. And while the audience will not only take note of a performance of a new composition, they will also bear witness to the collaborative effort between composer and musician in the on-going creation of music. The Center for New Music within the School of Music has been nationally recognized for its support of contemporary music since 1966, and is considered a leader in this field.

**HILL, MATTHEW E. JR, ASSOCIATE PROFESSOR, ANTHROPOLOGY, 7 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Colonization and Culture Change in the Great Plains of North America

European colonization of North America starting in the 16th century had long-lasting impacts on the lives, economies, and lifestyle of Native peoples. Europeans (and later Euro-Americans) changed the lives not only of people living near centers of exploration and colonization but also those much further away. During his Professional Development Assignment, Professor Hill will collect data addressing how indigenous subsistence, movements, and lifestyles of Native Americans in Kansas and Nebraska were changed as a result of Spanish colonizers in the U.S. Southwest. These data will be generated by artifact analyses at five Native American archaeological sites dating to approximately A.D. 1700. This project will result in several journal articles, a grant proposal to the National Science Foundation, and new material for Professor Hill's courses, public outreach efforts, and undergraduate student research projects.

**\*HUANG, JIAN, PROFESSOR, STATISTICS & ACTUARIAL SCIENCE, 20 YEARS OF SERVICE, FALL SEMESTER**

*Title:* High Dimensional Statistical Inference

Professor Huang plans to work on developing statistical methods and computational algorithms for analyzing high-throughput data that arise from many fields of scientific research. Specifically, he will develop a systematic framework for making statistical inference in high-dimensional statistical models, including construction of confidence intervals, hypothesis testing and evaluation of feature selection error based on false discovery rate. He will apply this framework to the areas of high-dimensional survival analysis and individualized treatment effect estimation, which have important applications in biomedical research. He will develop computational algorithms and software to facilitate the applications of the proposed research. He will also work on writing a book on penalized regression for high-dimensional data analysis.

**\*JOHNSON, DOROTHY, PROFESSOR, ART AND ART HISTORY, 27 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* "Elective Affinities: Intersections of the Visual Arts and Natural Sciences in France, 1750-1840"

Prof. Johnson will advance the research and writing of her book-in-progress, "Elective Affinities: Intersections of the Visual Arts and the Natural Sciences in France, 1750-1840," which contributes to a newly developing field of research. Her chapters include the intersections of art with anatomy, botany, geology, physiology, and psychology. Some of the greatest French artists of the period embraced the natural sciences as foundational to their art during this period and will be the major figures studied in this book. Prof. Johnson has been presenting aspects of her research in national and international venues and has written two articles. The result of the PDA will be additional articles and a book. She will incorporate her new research into her general education courses, upper-division undergraduate courses and a graduate seminar. She expects to lecture on her research nationally and internationally as well as in Iowa at museums, colleges and universities. She also plans an exhibition on this topic that can travel to medical and science museums in Iowa as well as art museums in the state.

**KANOUSE, SARAH, ASSOCIATE PROFESSOR, ART AND ART HISTORY, 6 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* The National Cold War Monuments and Environmental Heritage Trail

Prof. Kanouse will complete a new iteration of the interdisciplinary art-research project, the National Cold War Monuments and Environmental Heritage Trail. A collaboration with geographer Shiloh Krupar (Georgetown University), the project intervenes in Cold War commemoration through a series of design charrettes that propose alternative, speculative monuments to the nuclear legacy. The charrette is a planning method that assembles stakeholders to gather information, identify needs, and brainstorm design solutions. By seeking voices often excluded from Cold War commemoration, the project embodies a more democratic public memory practice made urgent by the toxic legacies of the nuclear state. In March 2016, Prof. Kanouse will conduct a charrette and mount an exhibition of its results in the InterDisciplinary Experimental Arts (IDEA) Space at Colorado College. Additionally, she will conduct research and organize in California for a fall 2016 charrette. The project enriches Prof. Kanouse's current course in art and ecology and allows the development of new courses and/or units in social practice and artistic research, both areas of increasing student interest at the University of Iowa.

**KAY, ALAN R., PROFESSOR, BIOLOGY, 24 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Identifying Genes Involved in Cell Volume Regulation

Most cells in living organisms are small, typically less than one-tenth of a millimeter, yet little is known about how cells control their size. Cells need to be small because the distribution of molecules in cells by random diffusion becomes very slow when dimensions exceed 1 millimeter. Prof. Kay has developed mathematical models to assess the physical and chemical processes that determine cell size and his analysis has led him to conclude that cells are able to sense their size. During his PDA, Prof. Kay will work with Dr. Ardem Patapoutian at the Scripps Research Institute (San Diego, CA) to identify the mechanisms whereby cells are able to actively sense and control their size. Prof. Kay has a well defined experimental strategy that should be capable of identifying genes involved in cell size regulation during the course of his PDA. Prof. Kay teaches in the introductory course for all Biology majors, Foundations of Biology, and the question being addressed during his PDA is indeed a foundational one in biology. The mechanisms used in cell size regulation could be disrupted in cancerous cells; hence, this work could be of immense importance to society in general.

**\*KOHEN, AMNON, PROFESSOR, CHEMISTRY, 15 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* From Bench to Bedside: Extending Basic Research via Translational Medical Applications  
Prof. Kohen will use this PDA to build on his research group's strengths in basic science to develop new medical applications: (1) early diagnosis of cancer (new or recurring); and (2) new chemotherapeutic and antibacterial drug targets. He will use procedures developed in his group's mechanistic studies of the enzyme thymidylate synthase (TSase), which is essential to cell replication. The first project involves development of radiotracers to be used in positron emission tomography (PET). These are radio-labeled substrates or pre-substrates of TSase, some of which he has found to accumulate preferentially in cancerous cells. The second component focuses on studies of human vs. bacterial and cancerous TSases. Human TSase is the target for common, non-selective chemotherapeutic drugs like 5-fluorouracil and Tomudex, which are highly toxic to both people and bacteria. Methods developed in Prof. Kohen's lab can expose hidden details of those enzymes' catalytic cycles and identify differences between them. These differences can be exploited in the development of selective inhibitors as leads for non-toxic chemotherapy and antibacterial drugs.

**\*LANDINI, GREGORY, PROFESSOR, PHILOSOPHY, 24 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* The Impredicative Foundations of Mind and Logic

Prof. Landini's book project, "The Impredicative Foundation of Mind and Logic," endeavors to answer the question What is Logic?, placing under one comprehensive structuralist roof all of the many distinct formal systems in the field today (classical, relevant, paraconsistent, intuitionistic and modal systems in general). The book will focus on the argument that impredicative concept formation is the only viable avenue that a naturalistic theory of mind has to explain knowledge of logic. Impredicative concepts were discovered by the logicians (Frege and Russell) to be the foundation of Cantor's revolution in mathematics. They are looped concepts using "all" unrestrictedly so that they capture themselves, and they are found (e.g., in the concept 'least upper bound,') in Cantor's proof of the uncountability of the Reals, and the notion of 'number' itself. It will be shown that they are involved in Bayesian reasoning and the parallel distributed representations. This project will benefit UI students in every field that uses quantitative and formal methods of logic.

**\*LANDON, BROOKS, PROFESSOR, ENGLISH, 36 YEARS OF SERVICE, FALL SEMESTER**

*Title: "More Than A Box: The Hevelin Collection"*

In a contribution to the growing field of digital humanities, Prof. Landon proposes to make accessible to new audiences the Hevelin Collection (MsC 936) held by UI Libraries. This is a remarkable collection of science fiction (SF) materials, unique to Special Collections at the University of Iowa. In conjunction with the Special Collections' Hevelin Fanzine Digitization Project, Prof. Landon will devote his PDA to publishing discoveries from this material on the internet in a TUMBLR blog and in a series of multimedia lectures. Prof. Landon will apply his expertise in technoculture studies and the history and theory of science fiction to evaluating and publicizing the contents of boxes from the Hevelin Collection both on his blog "More Than A Box: The Hevelin Collection" and in lectures for his General Education futurism class and for Humanities Iowa. His work will make this material accessible to the many SF fans, historians, scholars, and the interested general public, both in Iowa and throughout the nation.

**\*LAVEZZO, KATHRYN, ASSOCIATE PROFESSOR, ENGLISH, 15 YEARS OF SERVICE, FALL SEMESTER**

*Title: A Cultural Geography of Antisemitism: Jews and the Making of English Space, 731-1671*

Prof. Lavezzo will use her PDA to complete her book project, "A Cultural Geography of Antisemitism: Jews and the Making of English Space, 731-1671." The first study of its kind, "A Cultural Geography of Antisemitism," examines how English antisemitic literature used negative images of Jews in urban settings to respond to an emerging commercial economy. By shedding light on our understanding of the workings of prejudice, the emergence of capitalism, and the rise of the city, Prof. Lavezzo's study benefits both Iowa and society at large. The project directly impacts her teaching, in undergraduate and graduate courses on the representation of Jews and other non-Christians in medieval literature, including Chaucer.

**\*LEE, HOSIN, PROFESSOR, CIVIL-ENVIRONMENTAL ENGINEERING, 15 YEARS OF SERVICE, SPRING SEMESTER**

*Title: Frontier Research in Developing New Energy Efficient Construction Materials with Innovative Designs*

Prof. Lee will perform research in developing new energy efficient construction materials with innovative designs. New technologies for more efficient energy harvesting are being continuously developed, and it is anticipated that various energy harvesting technologies will be deployed in highway pavements for building the most energy efficient highway system in the US. However, before the energy harvesting technologies are widely deployed in highway pavements, it is necessary to evaluate its feasibility to endure the heavy traffic loading in the field. The project will develop a test bed to evaluate state-of-the-art energy harvesting technologies for implementation in highway pavements, thus adding to our understanding of the fundamental mechanism and efficiency of various energy harvesting technologies. In this way, the project may help us identify the most efficient energy harvesting technologies that can be applied in highway pavements, thus creating an environmentally friendly transportation system. Information gained from this project will be translated into both the undergraduate and graduate curriculum.

**\*LI, TONG, PROFESSOR, MATHEMATICS, 21 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Mathematical Theory of Traffic Flow, Blood Flow and Chemotaxis

Prof. Tong Li proposes to study the mathematical modeling of problems arising from engineering, physical and biological sciences. She will solve fundamental problems in the nonlinear partial differential equations(PDE) models of traffic flows, blood flow and chemotaxis: the well-posedness, finite time blow-up, front propagation, pattern formation and asymptotic behavior. The proposed research will result in publications in high-quality mathematics journals and invited presentations at national and international conferences which will increase the visibility of UI and the state of Iowa. The PDA will enable and result in more collaborations between Prof. Li and colleagues all over the world. The PDA will also benefit Prof. Li's teaching, training of undergraduate, graduate students, and postdocs, and in developing interdisciplinary courses.

**LIM, TAE-HONG, PROFESSOR, BIOMEDICAL ENGINEERING, 11 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Collaborative Training and Research on Nanotechnology for Local Drug Delivery

Prof. Lim teaches and performs research in interdisciplinary fields of biomedical engineering. For PDA efforts, he proposes to broaden and strengthen his scientific background in biomaterials and drug delivery technology, leverage existing research, and develop new international collaborations for enhancing his teaching and research. Specifically, he proposes to visit and spend six months in Korea to gain knowledge and hands-on lab experience from a Korean collaborator, Prof. Yuk in College of Pharmacy of Korea University Sejong and for exploring new collaborations on bioengineering research topics. He will learn the biomaterial based drug delivery technology through performing a pilot study to develop a method for chemotherapy of prostate cancer. Furthermore, he will explore the opportunities for new international collaborations on other interdisciplinary research topics. Prof. Lim anticipates that these efforts will leverage his on-going research and new funding opportunities, result in the development of scientific manuscripts, and enhance his teaching.

**\*MALLIK, USHA, PROFESSOR, PHYSICS AND ASTRONOMY, 27 YEARS OF SERVICE, HALF TIME FOR ONE YEAR**

*Title:* Solving the Mystery of Higgs and Beyond

The proposal by Prof. Usha Mallik is to continue her cutting-edge work to explore the Higgs boson properties and find whether it fits the paradigm of the Standard Model (SM). The Large Hadron Collider at CERN will start operation at nearly double its energy (14 TeV) after a two-year hiatus, opening up exploration of an uncharted energy frontier. Professor Mallik and her group are looking for breakthroughs in understanding the Higgs particle's properties to know what lies beyond, which are keys to uncovering Dark Matter, Dark Energy, and matter-antimatter asymmetry, to name a few. These all lie beyond the scope of the SM, and took place in the earliest fraction of time immediately after the Big Bang. Mallik incorporates firsthand research experience in her classes to benefit the students, including their participation in her research. She is often invited to share her expertise to various groups in the community. A PDA of one year (at half time) will be extremely cost effective in its professional, scientific, and educational return.

**\*MCLEOD, KEMBREW, PROFESSOR, COMMUNICATION STUDIES, 14 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* The Pop Underground

Prof. McLeod's PDA request will (1) support the completion of one book that is under contract with Bloomsbury Academic's prestigious 33 1/3 series and (2) allow him to develop a second book that builds on the first one. Similar to the British Film Institute's Film Classics series, the 33 1/3 series places iconic records within social, cultural, and aesthetic contexts. The first book focuses on punk, disco, and late-1970s popular culture by examining Blondie's 1978 Parallel Lines album. The second book—The Pop Underground: Downtown New York's Converging Art, Music, Film, Theater, Fashion, and Literary Scenes, 1965-1980—will explore the links between a variety of downtown Manhattan's alternative arts communities from the mid 1960s through the 1970s. Scholars have produced several histories of these individual scenes, but there has been no holistic treatment of how each overlapped with and influenced each other. These projects will benefit Iowa students because it will allow Prof. McLeod to augment and improve his large lecture Media, Music & Culture class, and it will benefit society because most of his books are available for free under a Creative Commons license.

**MERINO, ANA, ASSOCIATE PROFESSOR, SPANISH AND PORTUGUESE, 5 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* The Redemption: A Play

Prof. Merino's project is the completion of a manuscript of a play entitled "The Redemption," which involves a critical reflection on the decay of the planet and on environmental concerns. The play combines the poetic perception of each of its five characters with an awareness of a precarious reality in which the past was much better than the present and the future. The characters survive on a planet in total degradation while trying to adapt and make sense of their lives. The play articulates a future reality where commitment, responsibility and environmental concerns are necessary parts of a new critical discourse. The example provided by the play will help undergraduate and graduate creative writing students pose their own reflections about the future of the planet and better understand the way in which creativity allows us to examine important social issues. The play is being planned to be published and produced on stage.

**\*MOONEY, BARBARA B., ASSOCIATE PROFESSOR, ART AND ART HISTORY, 12 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Ordinary Holiness: George P. Stauduhar and Prairie Church Architecture

Prof. Mooney's PDA will be used to complete the writing of her book entitled "Ordinary Holiness: George P. Stauduhar and Prairie Church Architecture." While Frank Lloyd Wright and Chicago skyscrapers have dominated the scholarship of Midwestern architecture, Prof. Mooney's book expands our understanding of this region by investigating the significance of one of the most dominant visual features of the built environment of prairie towns, namely churches. Because many of these churches are currently imperiled, it is critical that their role in the history of the Midwest, especially in Illinois and Iowa, be documented. Prof. Mooney's book project is based on the extensive fieldwork and archival research she accomplished during her fall 2010 PDA. In the intervening years, she has established her reputation as a scholar of Midwestern vernacular architecture by presenting her research at international and national conferences. Her scholarship on vernacular subjects has been accepted for publication by national and international publishers. Prof. Mooney's project demonstrates how research in the humanities can inform Iowans about the value of their regional history.

**\*MUHLY, PAUL S., PROFESSOR, MATHEMATICS, 45 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Matrix-Valued Functions of Matrix Variables

Prof. Muhly will continue his study of algebras of matrix-valued functions of matrix variables begun during his previous PDA. The functions are organized into families called algebras. His goal is to calculate natural parameters that enable one to distinguish easily between two algebras. He will explore connections between his algebras and quantum channels - key constructs in quantum computing. His goal is to refine parameters he found for quantum channels 12 years ago. His project will advance his research program; it will provide thesis problems for graduate students, whose employment depends upon being able to conduct cutting-edge research; and it will provide research opportunities for undergraduates designed to enhance their competitiveness for admission to prestigious graduate programs.

**\*MUNOZ, KRISTINE L., PROFESSOR, COMMUNICATION STUDIES, 19 YEARS OF SERVICE, HALF TIME FOR ONE YEAR**

*Title:* From Relational Codes to National Identity: Cultural Communication in Global Perspective

Prof. Munoz will complete revisions to a theory of personal relationships in a cultural context and extend that work into a theoretical framework to explain national identity formation as a communication phenomenon. Nationhood and national identity have been challenged by events of the 21st century, throwing previous meanings of national boundaries and human connections (and disconnections) into question. Fieldwork in Colombia, the UK and Spain will be the empirical basis for new understandings of national identity communication. This research will produce a second book in a series examining culture and relationships. Prof. Munoz's work will also be the basis for new courses in Communication Studies and in Spanish and Portuguese, offering Iowa students opportunities for studying abroad and for understanding the global nature of communication processes in today's workplace. This work will benefit the state of Iowa by offering models for public engagement in settings of intercultural contact, as those increasingly characterize our educational and social worlds.

**MURRY, JOHN P. JR, ASSOCIATE PROFESSOR, MARKETING, 14 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* The Influence of Market Characteristics on Observed Effects of Pharmaceutical Marketing in Public Policy Research

Prof. Murry will examine the effects of pharmaceutical marketing on physician prescribing behavior, patient welfare and overall pharmaceutical costs. Prescription drugs account for more than 10% of total US healthcare expenditures, and their marketing practices are highly regulated and controversial. Although pharmaceutical marketing is the focus of hundreds of articles and research studies, few conclusions have been reached regarding its economic benefits (e.g., patient education) and social costs (e.g., over-medicating). Prof. Murry has substantial experience within this industry. He will use his expertise to organize, analyze and write a substantial and multidisciplinary literature review that prioritizes public policy issues and distinguishes between topics that are sufficiently understood and those requiring additional research. Prof. Murry's research will be primarily conducted locally, but he will also meet with FDA regulators and pharmaceutical executives. His results will provide guidance for current and future pharmaceutical regulatory policy that affects healthcare providers and patients, and his findings will be translated to classroom settings at Iowa.

**+NEIMAN, MAURINE, ASSOCIATE PROFESSOR, BIOLOGY, 6 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Genetic and Genomic Mechanisms Underlying Transitions to Asexuality

During her PDA, Prof. Neiman will take critical steps towards determining the genomic factors underlying transitions from sexual to asexual reproduction in her snail system, one of the most powerful available for studying sexual reproduction. Prof. Neiman will collaborate with Prof. Tim Sharbel (IPK-Gatersleben, Germany), the world's expert in the techniques that she will use to identify these factors. This research will generate candidate genes that are likely to play a role in the expression of sexual vs. asexual reproductive activity, providing novel data that will be published in high-profile journals and critical preliminary results for grant proposals. This award will benefit undergraduate and graduate students involved in the proposed research and will benefit the University of Iowa in generating grant funds and publications. This award will benefit society by providing new insights into one of the most important unanswered questions in biology, why sexual reproduction is so common relative to asexual reproduction, and by generating information farmers and scientists need to reliably reproduce valuable animal types.

**\*OGREN, CHRISTINE A., ASSOCIATE PROFESSOR, EDUCATION POLICY & LEADERSHIP STUDIES, 15 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Summers Off: A History of American Teachers' Other Three Months

With this PDA, Prof. Ogren will complete research, an article, and the first part of a book on the history of American teachers' activities during the summertime. She will travel to archives, synthesize her findings, write a presidential address for the History of Education Society and an article articulating her main arguments, develop a detailed book proposal for publishers, and write the manuscript's introduction and first two chapters. Prof. Ogren will finish the book manuscript in 2017. This project will enhance four of the graduate seminars she teaches regularly. In scrutiny of American teachers, the phrase "summers off" conveys the idea that teaching is a cushy job without acknowledging how teachers actually spend their summers. Prof. Ogren's research reveals that summer break has had a complex relationship with teachers' careers: they have used the time to improve themselves and their skills through study and travel, and to rest or earn extra money. This project will bring this overlooked quarter of the year into scholarship in the history of teaching and discussions of teacher professionalism in Iowa and nationally.

**\*+PRINEAS, JOHN P., PROFESSOR, PHYSICS AND ASTRONOMY, 13 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Innovation and Experimentation on Epitaxially Grown Infrared Emitter Materials Making Use of the Newly Expanded Microfabrication Facility

Prof. Prineas' research concerns radiative processes in semiconductors such as absorption and emission of light. These processes determine, for example, the power output of light emitting diodes. In recent years, Prof. Prineas' has been part of a very successful materials research effort to develop arrays of high power light emitting diodes for thermal scene generation, a technology on the DoD roadmap for replacing thermal resistor arrays. During the PDA, Prof. Prineas will work with students and collaborators to: fabricate infrared photonic crystals for controlling emitter properties; fabricate nanohole arrays using the electron beam lithography system for bottom-up photonic crystals from nanowires; and fabricate nanohole arrays using the nanoimprint system. The work on high-power light emitting diodes has brought in millions of dollars in recent years, providing funding for graduate and undergraduate students, and funding for important facilities at the University of Iowa, and will continue to do so for years to come only through innovation and experimentation on light emitters making use of the newly expanded Microfabrication Facility.

**\*RABINOVITZ, LAUREN, PROFESSOR, AMERICAN STUDIES, 28 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Thrill Ride Cinema

Prof. Rabinovitz will write three-to-four chapters of a book manuscript, 'Thrill Ride Cinema,' that argues the amusement park novelty of motion simulation rides is an important multi-faceted mode of cinema. Throughout the history of American movies, motion simulation rides featuring exotic travel to worldly or fantasy spaces have promoted sensory knowledge and delight grounded in the physical body while training the spectator in modern and postmodern forms of nationalistic tourism. "Thrill ride cinema"-- most often found at amusement parks, world's fairs, and other non-theatrical sites -- tends to be travelogues, of short duration, and offering novel points of view, especially focusing on motion effects of a moving or traveling vehicle. 'Thrill Ride Cinema' thus provides a media archaeology that denies cinema history scholarship is vision-centric and instead redefines cinematic experience through its continuous involvement and evolution within multi-media spectacle. A book on this phenomenon deepens Prof. Rabinovitz's teaching on film history and on amusement parks and world's fairs as object lessons for American citizenship and national identity.

**\*RIGAL, LAURA, ASSOCIATE PROFESSOR, ENGLISH, 17 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Streaming Ralston Creek: Hydraulic Media and the Politics of Scale in the Landscape of Capital, 1832-1983

A PDA will enable Prof. Rigal to complete the final two chapters of "Streaming Ralston Creek," an environmental history of industrial-era communications media by means of which a small Iowa creek has been channeled through time. The study explains how the cultural communication of flowing water ("hydraulic media") in American arts and techno-sciences shaped the direction and pace of U.S. capitalist expansion over the course of 150 years. Research and writing provides new material for Prof. Rigal's regular teaching in American literature, history, and culture, in the UI Sustainability Studies certificate curriculum, and American Indian/Native Studies Program. Her research has been presented to Iowa High School teachers at the UI School of Education Interdisciplinary Flood Institute ("Teach the Creek"), to the public at Meskwaki Settlement (Tama), and the Iowa State Historical Society. The environmental history of watersheds is deeply relevant to pressing debates about water use in Iowa and around the world. Her book moves small creeks -- and there are many in Iowa -- closer to center of such debates, by offering a truly comprehensive account of their historical devaluation.

**\*+RODGERS, VINCENT G., PROFESSOR, PHYSICS AND ASTRONOMY, 25 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Gauge/Gravity Duals, Black Hole Sources and R4

During this PDA, theoretical studies in gravitational physics and string theory will be conducted. The work will be conducted at the University of Maryland where Prof. Rodgers has been invited by the director of the Center for String and Particle Theory, Prof. S. J. Gates, to serve as the interim director of the Center for String and Particle Physics during the Spring of 2016. The work proposed will develop mathematical physics in three areas. These areas are first the so-called "gauge/gravity duality" in string theory, the second is identifying sources for black holes in general relativity that can be related to elementary matter, and the third is finding tractable and physically meaningful physics that can be related to the exotic structures of R4. All of these studies are designed to be mathematical probes into theoretical physics where the mathematical consistency is used to extract information concerning physical principles in

regions that are inaccessible in present day phenomenology. This work may lead to advanced understanding in gravity, cosmology and nuclear physics

**RODRIGUEZ, ANA M., ASSOCIATE PROFESSOR, SPANISH AND PORTUGUESE,  
6 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* The Philippines in the Early Modern Spanish Empire

Prof. Rodríguez-Rodríguez will complete research for her next book, which deals with the Spanish presence in the Philippines during the first centuries of colonial rule in the archipelago. She will focus especially on the encounter with Islam in the southern islands of Mindanao and Sulu, exposing how this multicultural contact affected the construction of the Philippines, and of Asia, for consumption in the Iberian Peninsula, and in Europe in general. This single-authored academic book will be published by a major University Press, giving the University of Iowa national and international visibility. It will also result in an undergraduate course on the Spanish Empire in Asia, and in an undergraduate research project consisting of transcribing, editing and translating materials from Spain's archives. Given the important historical relationships between the US and the Philippines (including the presence of numerous Iowans in the islands during the Spanish-American War and the Second World War), this study will also contribute to a better understanding of the origins of the American presence in the archipelago.

**SAUNDERS, JEANNE A., ASSOCIATE PROFESSOR, SOCIAL WORK, 12 YEARS OF  
SERVICE, FALL SEMESTER**

*Title:* Development of Social Work in China

During this PDA, Prof. Saunders will take part in a faculty exchange with the Department of Social Work at Sun Yat-sen University in Guangzhou, People's Republic of China. In addition to providing a series of lectures, she will conduct a qualitative study of the development of social work in China to identify strategies for stronger collaboration between faculty, students and professionals in China and the U.S. The results of this study will help to identify culturally competent strategies that will assist China in their work to strengthen social work education and practice. The results of this study are also applicable to the culture of The University of Iowa, which has seen an increase in the number of international students from China over the last several years. It is anticipated that this study will be presented at national and international conferences and will produce at least one manuscript for publication. Prof. Saunders will incorporate the conduct and results of the study into her teaching and mentoring of students and her scholarship on cultural competence.

**+SEIBERT, SCOTT E., PROFESSOR, MANAGEMENT & ORGANIZATIONS, 6 YEARS OF  
SERVICE, FALL SEMESTER**

*Title:* Professional Challenges and Academic Career Identity

Prof. Seibert will use his PDA to complete a three-year research project that examines the career challenges faced by academics in the field of Management. The project is supported by the Academy of Management (AOM) and surveys are currently being distributed to all 13,000 members. Prof. Seibert will travel to Melbourne, Australia for six weeks to work with co-investigator Professor Leisa Sargent (U of Melbourne) to analyze survey data, outline potential papers, and draft a report to the AOM Board of Governors. The expected outcomes of the PDA are: (1) a report to the AOM Board regarding the challenges facing academics, key facilitators of academic success, and the general state of academic careers; (2) Professional Development Workshops involving Department Heads, which will be used to deliver results and generate action plans; (3) An academic paper that will be submitted for the 2016 AOM Annual Meetings; (4) Benefit to University of Iowa students by strengthening graduate education, one of the strategic goals of the Tippie COB strategic plan.

**\*SMALL, GARY W., PROFESSOR, CHEMISTRY, 10 YEARS OF SERVICE, FALL SEMESTER**

*Title: Adaptive Calibration Algorithm for Noninvasive Glucose Sensing*

Diabetes is a chronic disease that affects approximately 350 million people worldwide. While there is no cure, patients manage the disease by self-monitoring their glucose levels and working to keep these levels under tight control. Currently, this self-testing is invasive, requiring a drop of capillary blood each time a reading is made. Making this testing less invasive is thus a compelling way to facilitate both the ease and frequency of glucose monitoring. Together with his collaborators at the University of Iowa, Professor Small has worked for more than 20 years toward the development of a truly noninvasive glucose sensor based on the use of near-infrared light to probe the dermis tissue on the back of the hand. While much progress has been made, a key impediment to the practical use of this approach is the need for frequent recalibration of the sensor. In this PDA, Professor Small will work toward the design of an adaptive algorithm by which the sensor updates its calibration as measurements are made. By making each measurement part of the calibration procedure for future measurements, a significant enhancement in the overall sensor performance will be sought.

**\*SRINIVASAN, PADMINI, PROFESSOR, COMPUTER SCIENCE, 25 YEARS OF SERVICE, FALL SEMESTER**

*Title: Biomedical Text Mining from Publications and Social Media.*

This PDA will be to conduct research on text mining, where the goal is to automatically extract interesting and new information from texts. Two projects are proposed that will make state-of-the-art contributions to text mining methods, especially in the area of biomedical text mining. The first project is on developing methods for finding relevant sentences involving genes from the close to 20 million biomedical publications available through the MEDLINE literature database (developed and maintained by the National Institutes of Health). The second project focuses on finding interesting and novel positive and negative effects of pharmaceutical drugs from; a) social media and b) letters to the editor in leading medical journals. These findings will potentially offer new ideas to drug discovery research. The methods and systems resulting from the planned research will enhance scientific discovery processes including those in Iowa-based research labs.

**STAUSS, HARALD M., ASSOCIATE PROFESSOR, HEALTH AND HUMAN PHYSIOLOGY, 12 YEARS OF SERVICE, FALL SEMESTER**

*Title: Vagal Nerve Stimulation as a Novel Treatment Strategy for Weight Loss*

Iowa has the 12th highest prevalence of obesity of any state in the US, with over 30% of its population being classified as obese. Obesity increases the risk of several serious diseases, and weight reduction through behavioral changes is neither simple nor sustained. Thus, the quest for novel treatment strategies for obesity is ongoing. One such potential strategy is derived from the observation that vagal nerve stimulation in patients with depression or epilepsy causes weight loss. Animal studies confirmed these clinical observations. However, the underlying mechanisms are largely unknown. Once these mechanisms are discovered, there is the promise that novel pharmacological or behavioral approaches will be identified that promote sustained weight loss and reduce the disease burden of obesity. Prof. Stauss will employ a unique nerve stimulator for chronic use in mice to study the contribution of calorie burning to the weight-reducing effects of chronic vagal nerve stimulation. This PDA will provide numerous opportunities for undergraduate and graduate students to obtain hands-on research experiences in the laboratory of Prof. Stauss at the UI.

**\*STECOPOULOS, HARILAOS, ASSOCIATE PROFESSOR, ENGLISH, 12 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Telling America's Story to the World: U.S. Writers and Cultural Diplomacy, 1940-1990  
Prof. Stecopoulos will use the PDA to finish his book project "Telling America's Story to the World: U.S. Writers and Cultural Diplomacy, 1940-1990." The first study of its kind, "Telling America's Story" examines how the U.S. government sought to redefine American literature as world literature for propaganda purposes. The project contributes to such academic fields as English, U.S. History, and Political Science. More broadly, Prof. Stecopoulos's monograph offers Iowans and Americans a new understanding of the relationship between U.S. culture and U.S. foreign policy. His research will enable him to provide University of Iowa undergraduate and graduate students with new courses on literature, diplomacy, and the state.

**TOMOVA, MAGGY, ASSOCIATE PROFESSOR, MATHEMATICS, 6 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Topological Methods and Large Data Set Analysis  
This position, a subarea of Topology and Prof. Tomova's main research focus, is on the cusp of a major change—moving from a mostly pure math technique to a new tool in the exciting and very relevant field of large data set analysis. Prof. Tomova will spend part of her PDA shifting her research to align with this new trend and building on recent work of one of her collaborators to develop a new type of clustering algorithm. The University of Iowa has already made significant investments in this area with the Informatics Initiative. There is also a group in the Math Department involved in a Big Data curriculum grant from the NSF. Thus Prof. Tomova will be able to collaborate with others on this project. In addition to this new direction, Prof. Tomova will finish three manuscripts that are currently under preparation. All of these are with co-authors from other institutions and it is crucial that she can travel to complete these papers. Finally, Prof. Tomova will develop a class that teaches critical thinking and problem solving through logic puzzles and games analysis. This class will first be taught as a Freshman seminar and eventually will transition into the regular Math curriculum.

**\*TRACHSEL, MARY C., ASSOCIATE PROFESSOR, RHETORIC, 25 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* The Role of Animal Studies in Environmental Education  
Prof. Trachsel will complete a book-in-progress: 'Reviving Biophilia: Ecological Consciousness-Raising in the Anthropocene.' Currently existing in the form of four published articles and two unpublished conference presentations, the book explores the emergence of Animal Studies as an academic innovation with potential to overturn human exceptionalism, a pervasive and dangerous belief that humans are exempt from the laws of nature. In place of human exceptionalism, Animal Studies, by combining interdisciplinary academic expertise with the rustic authority of animal handlers, trackers, etc., cultivates a sense of human connectedness with other life forms. In keeping with Prof. Trachsel's linguistic and rhetorical training, the book emphasizes interspecies communication, first examining ape language research and its reception in and out of the academy, then expanding in scope to explore communicative relationships between humans and other species. Finally, the book positions interspecies "recognition" in an ecological framework and argues that Animal Studies is a powerful model for the environmental consciousness-raising demanded of education in the Anthropocene.

**\*TREAT, TERESA A., ASSOCIATE PROFESSOR, PSYCHOLOGY, 4 YEARS OF SERVICE, SPRING SEMESTER \*\***

*Title:* Men's Perceptions of Women's Sexual Interest: Implications for Acquaintance-Initiated Sexual Aggression

Prof. Treat proposes to advance her NIH-funded work on male-initiated sexual aggression toward female acquaintances, a major problem on college campuses. Her research focuses on the role of men's misperception of women's sexual interest in sexual aggression. She has made numerous contributions to this area in the last five years, including the preliminary development of an innovative approach to enhancing men's accuracy when reading women's sexual-interest cues. She will write a review paper on men's perceptions of women's sexual interest, with implications for sexual aggression, as well as conduct an eye-tracking study to examine the role of eye-gaze behavior in men's perceptions of sexual interest. Her efforts during the PDA subsequently will be incorporated into two undergraduate courses. Thus, the PDA is minimally expected to result in a theoretical paper, an empirical paper, and two subsequent course revisions. The proposed activities will contribute to Prof. Treat's ongoing efforts to benefit the University of Iowa and society more generally by developing and evaluating novel approaches to the prevention of sexual aggression on college campuses.

**\*WANG, LIHE, PROFESSOR, MATHEMATICS, 21 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Homogenizations of Partial Differential Equations and their Application to Biology

Prof. Wang will develop a model for the intracellular and intercellular calcium dynamics based on properties of ion channels on myocyte. The main part of this project is to derive the calcium dynamics using the process of homogenization. Homogenization deals with questions about the material properties in the macro-scale from the information in the micro-scale. The project is in collaboration with a faculty member in the Department of Internal Medicine at UI. Data related to spatio-temporal localized calcium signals, in normal cells and in cells with diseases, have been collected, and the regulatory mechanisms of calcium can be observed from the data. Prof. Wang's plan is to develop a theoretical foundation of these findings and to design a theoretical model in which the onset of heart attacks is directly linked to the statistical distributions of the opening and duration of the ion channels. Prof. Wang expects vast applications of this model since most of the drugs act directly on the functionality of ion channels. A graduate student is working on this project and a course will be developed from these topics.

**WEST, ISAAC, ASSOCIATE PROFESSOR, COMMUNICATION STUDIES, 6 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* We, the Persons

With this PDA, Professor West will complete two chapters of his next book, 'We, the Persons.' This rhetorical history of the American conception of personhood traces the evolution of this legal category inside and outside of the courtroom. This work is timely and necessary given the public debates about personhood, such as the scope of and rights associated with corporate personhood or state referendums known as Personhood Amendments designed to limit access to certain forms of birth control. Despite its reach and power in our lives, the general public's understanding of legal personhood is often limited, and this book aims to clarify the history and stakes of defining personhood. Beyond this benefit to Iowans outside of the university, the students at the University of Iowa will gain from this PDA as materials from Prof. West's research are incorporated into his teaching including courses such as The Art of Persuading Others, Legal Communication and Culture, American Law and Popular Culture.

**WOOD, SUSANNAH M., ASSOCIATE PROFESSOR, REHABILITATION & COUNSELOR  
EDUCATION, 8 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Preparing School Counselors to Work with Gifted and Talented Students

Due to a lack of relevant research and training, practicing school counselors may feel challenged to enact their responsibilities pertaining to gifted students as suggested by the American School Counseling Association. Little information about this population has made its way into the school counseling profession's literature. In order to be a vital part of the talent development of future of American society, school counselors must be prepared to work with these exceptional individuals. Prof. Wood intends to use this professional development assignment in order to provide school counselors with the necessary knowledge and skills that will facilitate effective interventions for K-12 gifted and talented students resulting in two specific products: (a) the development of a co-edited text book specifically targeted to counselor education faculty who work with pre-service school; (b) the development of a pilot of online training for school counselors in the state of Iowa. Prof. Wood will work with the Iowa school counseling and gifted organizations to offer school counselors in the state of Iowa online training modules for continuing education credits.

**\*+YE, YANGBO, PROFESSOR, MATHEMATICS, 24 YEARS OF SERVICE, FALL  
SEMESTER**

*Title:* Analytic Number Theory and Medical Imaging

Prof. Yangbo Ye will conduct research in: (i) analytic number theory, a central field in mathematics studying integers using analysis methods, and (ii) medical imaging, the mathematics used inside all hospital CT machines. For analytic number theory, he will focus on resonance of waveforms and the number of ways to express a large even integer as the sum of two primes. For medical imaging, he will find a new algorithm so that hospital CTs of the next generation are faster, more accurate, and have less x-ray dosage. Expected results will significantly contribute to our knowledge on integers and help provide advanced medical diagnostic techniques to address urgent needs to diagnose and treat cardiovascular disease. A PDA, if approved, would greatly enhance his research by providing a crucial opportunity for him to collaborate with leading experts on number theory and medical imaging in the world, and to use a state-of-art CT testing platform in China. This in turn will directly improve graduate education in mathematics at the UI and contribute to better health for people in Iowa and the world.

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

+ Has received external funding.

**IOWA STATE UNIVERSITY (\*denotes received one prior PDA)**

**\*ADAMS, DEAN, PROFESSOR, ECOLOGY, EVOLUTION, AND ORGANISMAL BIOLOGY,  
13 YEARS OF SERVICE, FULL ACADEMIC YEAR**

Professor Adams will spend his proposed assignment in France, to conduct research supported by existing NSF funding. His work will use a big data approach to address the question of whether morphological evolution rates between species are associated with diversification rates among species. Results will be incorporated into Adams' courses, leading to numerous peer-reviewed publications, and extending his research in new directions.

**BABCOCK, BRUCE A., PROFESSOR, ECONOMICS, 24 YEARS OF SERVICE, AUGUST –  
FEBRUARY (6 MONTHS)**

Professor Babcock will use his proposed assignment to study the economic and environmental impacts of renewable transportation fuels at the Institute of the Environment and Sustainability at UCLA. This opportunity will increase Babcock's ability to model and estimate the impacts of alternative renewable fuels, providing long-term and strategic benefits to both Iowa State, by enhancing student education, and to the State of Iowa as a leading producer of renewable fuels.

**BAIN, CARMEN, ASSOCIATE PROFESSOR, SOCIOLOGY, 7 YEARS OF SERVICE, FALL  
SEMESTER**

Professor Bain's assignment will examine societal acceptance issues related to genetically modified crops and foods, a pressing issue for Iowa and national farmers, consumers, policymakers, and food and agricultural businesses. Bain will analyze her original research on the subject, write several journal articles, and use the knowledge to inform Iowa State students in issues related to social movements, social acceptance of biotechnology, and changes in U.S. agriculture.

**BEAVIS, WILLIAM, PROFESSOR, AGRONOMY, 7 YEARS OF SERVICE, FULL ACADEMIC  
YEAR**

Professor Beavis will work with colleagues across the nation to transform plant breeding into an engineering discipline during his proposed assignment. Beavis will use operations research, game theory, and evolutionary dynamics to help identify optimal plant breeding strategies, which will establish Iowa State as a leader and "brand owner" in this emerging area. Results from his research will be published in appropriate journals, and used in large-scale competitive funding proposals.

**\*BIX, AMY SUE, ASSOCIATE PROFESSOR, HISTORY, 21 YEARS OF SERVICE, FULL  
ACADEMIC YEAR**

Professor Bix will spend her proposed assignment conducting research in Detroit, Pittsburgh, and Massachusetts. Her work explores issues surrounding gender, socialization, and assumptions of technical mastery. This work is highly valuable not only to historians, but to engineers, physical and social scientists, and education specialists, and will also enhance Bix's history of technology courses at Iowa State.

**BLAKELY, BARBARA, ASSOCIATE PROFESSOR, ENGLISH, 31 YEARS OF SERVICE,  
FALL SEMESTER**

Professor Blakely will visit multiple universities that use electronic portfolios for programmatic assessment during her proposed assignment, learning about the process, developing similar assessments for Iowa State ISUComm Foundation Courses, and evaluating their effectiveness. This work will also lead to publications related to the scholarship of teaching and learning (SoTL), for both Blakely and graduate students in Rhetoric and Professional Communication.

**BUTLER, ANNEMARIE, ASSOCIATE PROFESSOR, PHILOSOPHY AND RELIGIOUS  
STUDIES, 9 YEARS OF SERVICE, SPRING SEMESTER**

Professor Butler's assignment will focus on an analysis of David Hume's *A Treatise of Human Nature*. The title of her first proposed paper is *The 'Weakness' of the Inference from Coherence*, which will challenge longstanding views on the subject. Hume's discussions of belief in object continuity and causal inference are central topics in Butler's Iowa State course on 18<sup>th</sup> century philosophy, as well as her seminar on agency and free will.

**\*CARPENTER, SUSAN LONG, PROFESSOR, ANIMAL SCIENCE, 5 YEARS OF SERVICE,  
AUGUST – NOVEMBER (3 MONTHS)**

Professor Carpenter will spend her proposed assignment at the Pasteur Institute in Paris, studying the mechanisms of arboviruses, such as West Nile and Dengue Fever, which are important agents of human and livestock disease around the world. The results of Carpenter's research will be shared in scientific conferences and peer-reviewed publications, used in future grant applications, and enhance her teaching efforts in virology.

**\*DAVIS, RADFORD, ASSOCIATE PROFESSOR, VETERINARY MICROBIOLOGY AND  
PREVENTIVE MEDICINE, 16 YEARS OF SERVICE, SEPTEMBER – February (6 MONTHS)**

Professor Davis will work to enhance global veterinary public health education in the United Kingdom during his proposed assignment. He will work to expand the public health curriculum at the University of Bristol, measure the outcomes of newly developed courses and teaching methods, identify joint research and student exchange opportunities, and incorporate UK/European Union meat and fish safety standards into the Iowa State veterinary curriculum.

**EKKEKAKIS, PANTELEIMON, ASSOCIATE PROFESSOR, KINESIOLOGY, 14 YEARS OF  
SERVICE, FALL SEMESTER**

Professor Ekkekakis will use a proposed assignment to extend his research on exertional fatigue and its neural basis, giving him the opportunity to develop a theory of fatigue and how it is generated and regulated in the brain. He will also take a course in transcranial direct current stimulation at Beth Israel Deaconess Medical Center in Boston, and visit neurology laboratories at the University of Minnesota.

**\*FERNANDEZ-BACA, DAVID, PROFESSOR, COMPUTER SCIENCE, 28 YEARS OF  
SERVICE, FALL SEMESTER**

Professor Baca will visit biology colleagues at the University of Florida during his proposed assignment, exploring computational challenges that arise from data scarcity and conflict in phylogenetics. Baca will write a monograph on the subject, analyzing the research he and others have done in this field over the last two decades, several additional publications in leading journals, and conference presentations.

**GEORGE, JOEY, PROFESSOR, SUPPLY CHAIN AND INFORMATION SYSTEMS, 3 YEARS OF SERVICE, SPRING SEMESTER**

Professor George will travel to Australia during his proposed assignment to build on his earlier research studying how well people can detect deception when communicating electronically (videoconferencing and email) with others from different cultures. Results of this work will include academic presentations and publications, and the creation of experimental materials that can be used by colleagues at Iowa State and other institutions.

**GODBEY, EMILY, ASSOCIATE PROFESSOR, INTEGRATED STUDIO ARTS, 9 YEARS OF SERVICE, SPRING SEMESTER**

Professor Godbey proposes an assignment to complete a book on the history of the postcard in American culture, while also serving as a visiting professor at the University of Pennsylvania. In addition to the book, the results of this work will be used to educate Iowa State students on the impact of early technology, how Iowans conducted their social and business lives through postcards, and their connection to current technologies such as Facebook, Twitter, and flickr.

**\*GOODWIN, JEAN, PROFESSOR, ENGLISH, 12 YEARS OF SERVICE, FULL ACADEMIC YEAR**

Professor Goodwin will spend her proposed assignment writing a book that applies humanistic methodologies to gain a deeper understanding of the responsibilities scientists undertake when performing key communicative tasks in public debates. The book is aimed at scientists and science communication professionals, as well as communication scholars, and will enhance Iowa State's reputation as a center of excellence in the study of science communication. Goodwin's research will also result in a new undergraduate course.

**HAYWOOD FERREIRA, RACHEL, ASSOCIATE PROFESSOR, WORLD LANGUAGES AND CULTURES, 11 YEARS OF SERVICE, FALL SEMESTER**

Professor Haywood Ferreira will spend time in Ames, San Juan, Puerto Rico, and the University of California-Riverside during her proposed assignment. She will work on her second book, *Latin American Science Fiction in the Era of the Global Space Age*; complete and deliver two invited papers; conduct research in a major archive; and incorporate her work into several courses in Iowa State's Spanish curriculum.

**HOFMANN, HEIKE, PROFESSOR, STATISTICS, 12 YEARS OF SERVICE, FULL ACADEMIC YEAR**

Professor Hofmann proposes an assignment to travel to Monash University in Melbourne, Australia, where she will work with collaborators on a monograph, *Case Studies in Visualization using Modern Data Technologies*. Hofmann will use the visit to strengthen international relationships, enhance courses in visual communication of quantitative information and modern data technologies, and develop a new course on visualization.

**HU, HUI, PROFESSOR, AEROSPACE ENGINEERING, 10 YEARS OF SERVICE, FALL SEMESTER**

Professor Hu proposes an assignment to develop an integrated research and education program on aircraft icing and de-/anti-icing technology. Hu's ultimate goal is to establish a world-class engineering research center at Iowa State. He will also develop new aircraft icing demonstration experiments to stimulate Iowa State students' interest in thermal/fluid sciences, prepare journal articles, and submit funding proposals in this area.

**KOHUT, MARIAN, PROFESSOR, KINESIOLOGY, 16 YEARS OF SERVICE, SPRING SEMESTER**

Professor Kohut's assignment will lay the groundwork for the publication of multiple manuscripts generated from her NIH-funded research on respiratory host defense and vaccination. Kohut will also visit labs run by investigators conducting complementary research, to develop collaborations that will strengthen her future research and grant activity. Iowa State students will benefit by learning how research findings are translated into practice, and participating in cutting-edge lab experiences.

**\*KOSTELNICK, CHARLES, PROFESSOR, ENGLISH, 32 YEARS OF SERVICE, FALL SEMESTER**

Professor Kostelnick will spend his assignment analyzing the role that human forms play in visualizing practical information – such as how to accomplish a task, or how something works – and making that information understandable, accessible, inviting, and meaningful to readers. This multidisciplinary effort will benefit his Iowa State courses in technical communication and data visualization, and result in a book-length manuscript, journal articles, or book chapters.

**\*KUMAR, RATNESH, PROFESSOR, ELECTRICAL AND COMPUTER ENGINEERING, 12 YEARS OF SERVICE, FALL SEMESTER**

Professor Kumar will collaborate with Honeywell R&D during his proposed assignment, developing model-based testing of cyber physical systems such as avionics, power systems, nuclear reactors, and medical devices. This work will lead to additional long-term collaborative research, proposals to external funders such as DARPA, and internships/employment for Iowa State graduate students.

**LEE, YOUNG-A, ASSOCIATE PROFESSOR, APPAREL, EVENTS, AND HOSPITALITY MANAGEMENT, 6 YEARS OF SERVICE, FALL SEMESTER**

Professor Lee proposes an assignment at Seoul National University in Korea, where she will receive advanced training in design technology to enhance her research on 3-D body scanning technology and its impact on individuals' health and fitness decisions. The experience will also be shared with Iowa State students and faculty, and used in funding proposals.

**LOHMAN, BRENDA, ASSOCIATE PROFESSOR, HUMAN DEVELOPMENT AND FAMILY STUDIES, 11 YEARS OF SERVICE, SPRING SEMESTER**

Professor Lohman will use an assignment to advance current research on the effects of stress and food insecurity on childhood obesity, and an adolescent's probability of becoming obese over time. Lohman will study biological markers associated with stress and obesity, and obtain specialized training on the biology of stress measurement. The results of her work will be used to prepare a major NIH grant, submit manuscripts to top journals, and enhance her teaching and mentoring of students.

**O'CONNOR, ANNETTE, PROFESSOR, VETERINARY DIAGNOSTIC AND PRODUCTION ANIMAL MEDICINE, 14 YEARS OF SERVICE, JANUARY – JUNE (6 MONTHS)**

Professor O'Connor proposes an assignment across campus, in Iowa State's Department of Statistics, where she will learn emerging statistical theories and increase her ability to analyze and combine data from interventions studies. The knowledge gained from her studies will be used to enhance her current research programs benefiting Iowa's livestock producers.

**\*PASCHKE, TERESA, PROFESSOR, INTEGRATED STUDIO ARTS, 14 YEARS OF SERVICE, FALL SEMESTER**

Professor Paschke will use her proposed assignment to study early American needlework and embroidery in the upper Mississippi Valley; create new artwork while participating in an international residency program at the Anderson Center in Minnesota; and develop a manuscript on the Hastings Needle Work for publication in the *Surface Design Journal*. These efforts will also provide Iowa State students with a deeper educational experience in fields related to textiles, women's studies, and entrepreneurial studies.

**RAJAGOPAL, LAKSHMAN, ASSOCIATE PROFESSOR, APPAREL, EVENTS, AND HOSPITALITY MANAGEMENT, 6 YEARS OF SERVICE, SPRING SEMESTER**

Professor Rajagopal will investigate teaching and research needs with regard to food safety and safe food handling practices during his proposed assignment. Rajagopal will also prepare and submit at least three peer-reviewed articles for publication, prepare proposals for external funding, and incorporate his findings into Iowa State courses.

**RIZO, ELISA, ASSOCIATE PROFESSOR, WORLD LANGUAGES AND CULTURES, 7 YEARS OF SERVICE, SPRING SEMESTER**

Professor Rizo proposes an assignment to work on a book, *From Africa to Latin America and Spain: Models of Global Citizenship in Contemporary Afro-Hispanic Theatre*. Progress made on the book will facilitate the writing of a competitive proposal or a major fellowship that will support completion of the book, be presented at conferences, inspire lectures at Iowa State, and be incorporated into Global Studies in Spanish curriculum.

**RUAN, LU, ASSOCIATE PROFESSOR, COMPUTER SCIENCE, 13 YEARS OF SERVICE, SPRING SEMESTER**

Professor Ruan will use her proposed assignment to study the Internet peering ecosystem and build predictive models for autonomous systems in provider-to-customer and peer-to-peer relationships. Findings from the project will be used as course materials in graduate-level networking courses at Iowa State, and improve Internet architecture for users worldwide.

**SIVASANKAR, SANJEEVI, ASSOCIATE PROFESSOR, PHYSICS AND ASTRONOMY, 6 YEARS OF SERVICE, FALL SEMESTER**

Professor Sivasankar, an expert in the physics of cell adhesion proteins, will visit Georgia Tech and Emory University during his proposed assignment, developing new technologies and techniques to study cell adhesion, and providing key insights into therapeutic approaches for tissue engineering. Results will be widely disseminated to students and colleagues at Iowa State, and used to obtain large-scale grants.

**\*SOUKOULIS, COSTAS, DISTINGUISHED PROFESSOR, PHYSICS AND ASTRONOMY, 30 YEARS OF SERVICE, FALL SEMESTER**

Professor Soukoulis will visit Greece, Germany, and the Netherlands during his proposed assignment, conducting theoretical research on materials, and working with colleagues who are performing experiments based on his calculations and applications. This research will lead to patent applications benefiting Iowa State. Soukoulis will also recruit graduate students to Iowa State during his assignment.

**\*SUBRAMANIAM, SHANKAR, PROFESSOR, MECHANICAL ENGINEERING, 12 YEARS OF SERVICE, SPRING SEMESTER**

Professor Subramaniam proposes an assignment to develop a new thrust for his research team in the area of multiphase flows for energy and healthcare applications. The assignment will include visits to laboratories in the U.S., Canada, and Germany, and result in two large-scale funding proposals, the submission of journal papers, and improvements to Subramaniam's undergraduate and graduate courses in fluid flow and heat transfer.

**TAYLOR, GARY DEAN, ASSOCIATE PROFESSOR, COMMUNITY AND REGIONAL PLANNING, 10 YEARS OF SERVICE, JULY – DECEMBER (6 MONTHS)**

Professor Taylor, who is also an extension specialist with ISU Extension and Outreach, proposes an assignment to study land use law in the Midwest. This research will generate an in-depth publication on land use laws in Iowa and neighboring states for planning practitioners, local planning officials, and attorneys. The publication, and subsequent extension programming, will build the capacity of Iowa officials to make informed decisions that benefit their citizens and communities. Taylor's research will also be used in a current course on land use programming, and expanded course offerings in natural resources law and related fields.

**THOMPSON, JANETTE, PROFESSOR, NATURAL RESOURCE ECOLOGY AND MANAGEMENT, 18 YEARS OF SERVICE, FALL SEMESTER**

Professor Thompson will work with the U.S. Forest Service in Chicago during her proposed assignment to develop theoretical and practical approaches to conservation of biodiversity in urban areas. Her work will produce two publications, one each on theory and practice; support development of a new graduate-level course, and enrich undergraduate courses at Iowa State; and support conservation of biodiversity in communities throughout Iowa.

**\*VALENZUELA, NICOLE, ASSOCIATE PROFESSOR, ECOLOGY, EVOLUTION, AND ORGANISMAL BIOLOGY, 11 YEARS OF SERVICE, FULL ACADEMIC YEAR**

Professor Valenzuela will travel to France during her proposed assignment, working to develop turtles as a model for human health by combining her genomic work and chromosome evolution with colleagues' expertise on human development disorders. Results will enable high-impact publications, future NIH funding, and also be incorporated into Valenzuela's teaching program.

**WANG, LIZHI, ASSOCIATE PROFESSOR, INDUSTRIAL AND MANUFACTURING SYSTEMS ENGINEERING, 7 YEARS OF SERVICE, FULL ACADEMIC YEAR**

Professor Wang will work with colleagues at Syngenta to identify opportunities for trans-disciplinary research and education in the areas of operations research and plant breeding. The assignment will also include learning more about plant biology and genetics; working with students to develop new optimization algorithms for plant breeding; submitting research proposals; incorporating new knowledge into Iowa State graduate courses; and publishing work in journals outside the engineering discipline.

**WANG, ZHENGDAO, ASSOCIATE PROFESSOR, ELECTRICAL AND COMPUTER ENGINEERING, 12 YEARS OF SERVICE, SPRING SEMESTER**

Professor Wang proposes an assignment to strengthen existing research collaborations in wireless communications and big data analytics with colleagues at Stanford University and the University of Science and Technology of China. Benefits to Iowa State include increased international visibility and collaborative relationships, and enhanced research productivity.

**YAN, JUE, ASSOCIATE PROFESSOR, MATHEMATICS, 8 YEARS OF SERVICE, FULL ACADEMIC YEAR**

Professor Yan has been invited to visit the MBI institute at The Ohio State University, and the IMA institute at the University of Minnesota, to participate in workshops on control problems and establish new collaborations. Yan's research will focus on modeling issues and computational aspects in the study of biological phenomena, including the development of disease. This work will lead to numerous publications and conference presentations, as well as a new undergraduate course on biomath modeling at Iowa State.

**YU, CINDY, ASSOCIATE PROFESSOR, STATISTICS, 9 YEARS OF SERVICE, FALL SEMESTER**

Professor Yu will spend her proposed assignment in Beijing and Hong Kong, China, visiting leading researchers to develop dynamic stochastic general equilibrium (DSGE) models that allow statisticians to better identify causal relationships among government policies, macroeconomic variables and asset prices, leading to more careful policy analysis. Results from this work will lead to publications, presentations, and thesis topics for graduate students, and be incorporated into special topics courses at Iowa State.

**UNIVERSITY OF NORTHERN IOWA**

**BERGHAMMER, GRETTA, PROFESSOR, THEATRE, 25 YEARS OF SERVICE, FALL SEMESTER**

*A Spectrum of Collaboration: A Visionary Approach to University and Professional Youth Theatres Working Together to Create, Implement and Sustain Theatre for Youth with Autism*

The purpose of Professor Berghammer's project is to establish a model for collaboration between a university-based drama/theatre program and a professional youth theatre, in order to create and implement a sustainable process for establishing educational drama programming and theatre productions specifically for youth on the autism spectrum. She will be collaborating with the Rose Children's Theatre of Omaha, Nebraska to: (a) create an original theatre piece that will meet the needs of an audience and performers with Autism Spectrum Disorder; (b) establish a comprehensive after-school and weekend drama program and teaching curriculum specifically for youth on the autism spectrum; (c) sustain the work outlined above through training videos, teacher manuals, model lessons and other resources so that it can be replicated by other theatre companies; and (d) generate a model for best practices for collaborating and sharing signature programs developed at UNI for use by professional non-profit theatre companies seeking to meet the needs of spectrum audiences in their communities. This project will further solidify UNI's reputation and role as a leader in theatre education and production, and will highlight ways in which UNI can contribute to the youth theatre profession. It is anticipated that many Iowans will benefit from both the educational outreach and production program that Professor Berghammer's project will bring to and sustain within the greater Omaha/Western Iowa area for years to come.

**BROD, HARRY, PROFESSOR, SOCIOLOGY, ANTHROPOLOGY, AND CRIMINOLOGY, 15 YEARS OF SERVICE, FALL SEMESTER**

*Diversity and Safety: "How to Be an Effective Ally" and "Teaching Affirmative Sexual Consent"*

Professor Brod's project is to produce two full-length journal articles based on his long-standing research and speaking career on two topics: social justice and sexual assault prevention. In the "How to Be an Effective Ally" article, he will develop a guiding theory and practical strategies for those in a privileged position to work for social justice, no matter the specific context (feminism, anti-racism, etc.) The "Teaching Affirmative Sexual Consent" article will further develop ideas and arguments that currently appear in Professor Brod's DVD "Asking For It: The Ethics and Erotics of Sexual Consent." He is regularly invited to college campuses to deliver this lecture and then conduct follow-up workshops with student affairs staff, campus security, legal counsel, administrators, etc. The article will be geared toward campus professionals who develop and implement student sexual conduct policies and programs. Professor Brod's project will contribute to the teaching of ethics and civic values, and promote safety and diversity.

**CURRAN, CHRISTINA, ASSOCIATE PROFESSOR, SPECIAL EDUCATION, 6 YEARS OF SERVICE, FALL SEMESTER**

*Integrating Universally Designed Learning and Accessible, Assistive Mobile Technologies in Teacher Education*

The majority of students with disabilities receive most of their education within general education classrooms, with special education services provided to support individualized needs. Iowa Assessment data from 2010-2012 show that the proficiency rate of students with disabilities in Reading, Mathematics and Science is generally about half the proficiency rate of students without disabilities. Universally designed learning (UDL) is an approach to designing educational environments and curriculum that can be used by the widest range of students without adaptation to promote improved achievement, including support for multiple means of

student expression of content and understanding. Accessible, assistive technology (AT) tools, such as screen readers, text-to-speech, etc., are a required consideration in special education services and accommodations within the general education curriculum. The combination of UDL and AT is the focus of a Carver grant-funded project that Professor Curran directs, which has impacted over 1200 UNI students, faculty/staff and other professionals in its first two years of a three-year grant. Professor Curran will conduct and apply research related to the effective use of accessible mobile assistive technologies for K-12 students with and without disabilities. The aim of the research is to improve the knowledge base, self-efficacy, application and integration of accessible technology within courses and field experiences of UNI preservice teachers, in order to enhance participation and success within the common core curriculum for K-12 students with disabilities.

**DOWNS, WILLIAM R, PROFESSOR, SOCIAL WORK, 22 YEARS OF SERVICE, FALL SEMESTER**

*Partnership Between the UNI Integrative Services Project and the National Center on Domestic Violence, Trauma and Mental Health*

Professor Downs has directed the U.S. Department of Justice-funded Integrative Services Project (ISP) since 2001. The ISP develops and enhances collaboration between substance abuse treatment and victim service agencies to improve the safety and sobriety of women receiving services. By March, 2018, the ISP will have brought over \$4M to the state of Iowa, covering 81 of Iowa's 99 counties. Professor Downs will partner with the National Center on Domestic Violence, Trauma and Mental Health in Chicago to: 1) collaborate with Center staff to apply for a major grant from the National Institutes of Health to conduct an outcomes evaluation of ISP, 2) co-author a book with Ms. Patti Bland, Director of Substance Abuse Training and Technical Assistance at the Center, which will detail the history and importance of ISP, and 3) explore additional grant opportunities for UNI to partner with the Center in this area, most likely a Technical Assistance grant from the U.S. Department of Justice. This grant would enable UNI to extend ISP to the remaining counties of Iowa and nationally, partnering again with the National Center on Domestic Violence, Trauma and Mental Health.

**FREEDMAN, SUZANNE, PROFESSOR, EDUCATIONAL PSYCHOLOGY AND FOUNDATIONS, 20 YEARS OF SERVICE, FALL SEMESTER**

*Introduction of Forgiveness Education: Evaluation of Forgiveness Education with 5<sup>th</sup> Grade Students*

Professor Freedman will investigate the impact of a forgiveness education curriculum with 5<sup>th</sup> grade students in two low-income elementary schools in Waterloo. The goal of her research is to determine if forgiveness education has an impact on (a) the amount of anger students have, (b) students' ability to forgive someone who has hurt them deeply and unfairly, (c) students' understanding and knowledge of what forgiveness is and is not and how to forgive, (d) on cooperative behavior with peers, and (e) overall classroom behavior in the angriest students in each classroom as identified by classroom teachers. Professor Freedman's research will allow the 5th grade teachers and school counselors at both schools to learn more about forgiveness education and possible ways to incorporate it into their curriculum. As forgiveness promotes the value of acceptance, empathy, compassion, and understanding, it can also be considered an important part of character education. Professor Freedman will publish and present the results of her study, as well as conducting teacher workshops and in-services.

**HOSTETLER, SOO C., ASSOCIATE PROFESSOR, ART, 9 YEARS OF SERVICE, SPRING SEMESTER**

*East Meets West: Exploring and Sharing Culture, Spirit and Tradition*

Professor Hostetler has been influenced by a genre of Korean traditional folk paintings called “Minhwa”, which was developed during the Joseon Dynasty (1392-1910) and which was done on rice paper or silk with bamboo brushes. In modern times, Minhwa still profoundly expresses the life and spirit of Koreans with great wit and wisdom. During her PDA, Professor Hostetler will create modern expressions in the Minhwa style by interpreting the traditional symbolism of the characters through an illustrated narrative form of storytelling using digital technology and graphic design. She will produce eight “Minhwa” series, divided according to subjects (flowers and birds, dragons, the ten symbols of long life, etc.), with each subject interpreting the meaning of an abstract concept, such as longevity, education, one’s life dream, etc. Professor Hostetler will exhibit her works and present at conferences, and plans to create a children’s interactive e-book based on her “Minhwa” designs and stories. She will also share what she learns as she creates these works with her students in UNI graphic design classes.

**MATVIENKO, OKSANA, ASSOCIATE PROFESSOR, HEALTH, PHYSICAL EDUCATION & LEISURE SERVICES, 10 YEARS OF SERVICE, FALL SEMESTER**

*Nutrition-Related Messages in Children’s Books*

Children’s storybooks are uniquely positioned to educate children about food and food-related behaviors because they can be read slowly, multiple times, and at a parent’s convenience. Research shows that exposure to a single book makes a significant short-term impact on a child’s food intake. Thus, an assortment of age-appropriate, clever and creative books with positive food messages may have long-lasting influence on a child’s food preferences. Before this influence can be measured, it is necessary to determine the nature of food messages that are being conveyed to children through storybooks. Professor Matvienko will survey and code a sample of recent children’s storybooks and characterize types of food messages and food related behaviors these books promote. After the coding process is complete and validated, analysis of the data will generate a list of books with positive messages of healthy eating. Findings of this study have the potential to make nutrition education easy, effective and convenient for Iowa parents and educators. Professor Matvieko plans to prepare journal articles and conference presentations on this work, as well as share the results with the public through local schools and libraries.

**MITRA, ATUL, PROFESSOR, MANAGEMENT, 14 YEARS OF SERVICE, SPRING SEMESTER**

*The “Investigating Merit Pay Across Cultures and Territories” (IMPACT) Project*

Merit pay plans have become ubiquitous in the US and are growing in popularity around the world. However, the empirical research on merit pay plans is largely US-centric. Professor Mitra’s collaborator, Professor Jason D. Shaw, received a large grant for Investigating Merit Pay Across Cultures and Territories (The IMPACT project). The IMPACT project research team includes scholars from about 40 countries and plans to collect/analyze large scale data, based on a longitudinal design, from more than 120 corporations. Professor Mitra is responsible for collecting data in the US and India and working on the overall analysis, as a part of this unique and one-of-a-kind global study on merit pay plans. He will be based at the Hong Kong Polytechnic University during the PDA semester to play a pivotal role in the IMPACT project data collection and analysis. The project will produce articles in research and applied journals, as well as book chapters, and will enhance Professor Mitra’s teaching, which includes courses on compensation systems.

**NOH, JIHWAN, ASSOCIATE PROFESSOR, MATHEMATICS, 10 YEARS OF SERVICE,  
SPRING SEMESTER**

*Teacher Fidelity Decisions and Their Impact on Lesson Enactment*

Professor Noh's collaborative project will examine fidelity decisions—teachers' decisions on whether to use, modify, or omit each of the resources provided in the mathematics curriculum, or to add a new element to enact lessons—and the impact of these decisions on meeting the mathematical goals of the lessons and promoting high cognitive demand. A minimum of 10 teachers in grades 3-5 using five different curriculum programs, two teachers per curriculum, will be observed and interviewed. The participant teachers will have at least three years of teaching experience and at least two years of using the same curriculum program. The findings of Professor Noh's project will benefit UNI in providing teacher preparation and professional development regarding productive curriculum use, and may benefit mathematics curriculum designers as well.

**OGBONDAH, CHRIS W., PROFESSOR, COMMUNICATION STUDIES, 25 YEARS OF  
SERVICE, FALL SEMESTER**

*A Critical Analysis of Media Coverage of Terrorism in Africa*

Professor Ogbondah will make a critical analysis of global media coverage of terrorism in Africa. The scope will be limited to global media coverage of the most notorious terror groups in Africa: Boko Haram and Ansaru (in Nigeria), Al-Shabaab (in Somalia, Kenya, Uganda and Ethiopia), Ansar al-Dine (in Mali), and Ansar al-Sharia in (in Libya). Through historical research methodologies and visits to archives in London and Nigeria, as well as interviews of editors of national newspapers, Professor Ogbondah will look at differences in media coverage of terrorism in Africa in various countries, as well as examine the historical facts of the terrorist acts themselves. His will be the first critical study of media coverage of terrorist actions in Africa. He will write a book and scholarly articles, and will present his research at conferences and at universities in the U.S. and Africa. The work on this project will be used as examples for his UNI classes in journalism and mass communication.

**PETROV, ANDREY N., ASSOCIATE PROFESSOR, GEOGRAPHY, 6 YEARS OF SERVICE,  
SPRING SEMESTER**

*Remote Sustainability: Improving Understandings and Applications of Sustainable Development in the Arctic and Other Remote Regions*

Professor Petrov is the director of the NSF-funded Arctic-FROST project, a research coordination network in sustainability. During the PDA, Professor Petrov will edit and contribute to a multi-authored book with overarching themes such as (a) what sustainable development in the Arctic means locally, regionally and globally, (b) how it is attainable through resilience thinking in a changing Arctic, and (c) the best ways of measuring achievements toward adaptation, thriving and sustainable development in the Arctic. This research and book will be pioneering in the emerging field of Arctic sustainability science and deliver valuable insights into practical implementation of sustainable development strategies in the Circumpolar North. It will also be an important contribution to our general understanding of sustainable development in remote, rural and resource-dependent regions. In particular, the project will enable Iowa to have better benchmarks in conducting its own efforts in building sustainable future for rural communities and will assist in developing statewide strategies to improve socioeconomic well-being and environmental quality in the state.

**POLEKSIC, ALEKSANDAR, ASSOCIATE PROFESSOR, COMPUTER SCIENCE, 9 YEARS OF SERVICE, FALL SEMESTER**

*Applications of Digital Signal Processing in Drug Discovery*

“Drug repurposing” is a relatively new approach to drug design that aims at finding new therapeutic indications for existing, FDA approved drugs. The underlying idea behind drug repurposing is that similar chemical compounds (drugs) bind to similar protein binding sites (targets). Professor Poleksic’s project will focus on developing new computational procedures for predicting which amino acids from a given protein belong to a binding site and whether any two given binding sites from two given proteins are similar. In contrast to existing methods for binding site similarity detection, which are based on geometric complementarity and physical and chemical properties of the binding sites, Professor Poleksic’s approach builds upon recent developments in the engineering field of digital signal processing, combining two computational techniques that have not been used in this context before. He will publish the results of his research and create a website to make the algorithms he develops available for use by the academic research community.

**SALIM, M.D., PROFESSOR, TECHNOLOGY, 22 YEARS OF SERVICE, SPRING SEMESTER**

*A Web-Based Decision Support System for Optimizing Snow Removal Assets in Varying Temperatures*

Many cities and counties use computer applications for managing snow removal assets in order to keep the roads cleared and the transportation network functioning. The computer applications currently in use are primarily stand-alone, and not capable of integrating real-time weather data and an asset inventory control module to take into consideration extreme temperatures or changing temperatures during a winter storm. Professor Salim will design a web-based system for snow removal asset management in varying temperatures that can improve information accessibility by including real-time weather data and inventory of assets, thus enhancing and sharpening decision making, decreasing overall costs. Once the proposed software is shown to be effective, Professor Salim will seek external grants from federal and state funding agencies to support further research.

**SCHOLL, KATHLEEN G., ASSOCIATE PROFESSOR, HEALTH, PHYSICAL EDUCATION & LEISURE SERVICES, 13 YEARS OF SERVICE, SPRING SEMESTER**

*College Campus Landscapes as a Mechanism for Student Learning and Creativity*

The American population experiences significantly lower levels of daily contact with nature as compared to previous generations. This phenomenon opens a number of critical questions about the implications of nature experiences (or lack of) on human cognitive function and psychological well-being. Professor Scholl’s project explores the role of the college campus landscape as a mechanism in the lives of ‘emerging adults’ to support student learning and creativity. Using an interdisciplinary, qualitative approach, she will analyze reflective journal responses of hundreds of UNI students, who completed these journals as class assignments, in order to investigate patterns of their use of UNI’s campus outdoor spaces. The project assists with her involvement in a USDA-sanctioned interdisciplinary, multi-institutional effort on the role of and mechanisms by which parks and other green environments support human and community benefits. Professor Scholl’s PDA project will also be foundational in seeking external funding from organization such as the National Park Service.

**SCHRAFFENBERGER, JEREMY, ASSOCIATE PROFESSOR, LANGUAGES AND LITERATURES, 6 YEARS OF SERVICE, SPRING SEMESTER**

*What Passes: Poems and Lyric Essays of Memory and the Body*

Professor Schraffenberger is a professor of creating writing. *What Passes* will be a book-length collection of poems and lyric essays that dwell on the various shades of meanings of the word "pass." *What Passes* will evoke and explore what dies, what suffices, what we forget, what happens, what we miss, what transcends. Thematically, the collection focuses on memory and the body, rendering personal remembered experiences as concrete images and scenes while acknowledging the inadequacy of both memory and language to capture these experiences fully. These hybrid pieces challenge familiar notions of genre by combining elements of both poetry and prose, using metaphor and intimate reflection to guide the writing, using the lyric mode to determine the cadences and rhythms of its sentences, and using fragmentation and poetic association to organize the book as a cohesive whole. He will also publish individual pieces from the collection in literary magazines. Professor Schraffenberger will incorporate his broadened understanding of genre in his UNI creative writing classes.

**SPRADLING, THERESA A., PROFESSOR, BIOLOGY, 14 YEARS OF SERVICE, SPRING SEMESTER**

*Testing Geographic Range-Expansion Models: Population Genetics of a Colonizing Parasite*

Professor Spradling and colleagues have recently received National Science Foundation funding for a study of the population genetics of a chewing louse that has been, for several decades now, in the process of expanding its geographic range into new territory as it colonizes new host individuals in areas previously colonized by another species of louse. Professor Spradling's PDA work will center on the laboratory phase of the project, with DNA sequencing and DNA fingerprinting, occurring throughout the PDA period, as she supervises greater numbers of grant-funded research students in the laboratory than is possible while teaching and performs laboratory work herself. This focused time will allow her to accomplish approximately 70% of the genetic measurements needed during the 3-year NSF grant. Professor Spradling's PDA will provide an excellent research opportunity for UNI students and accomplish the majority of the work on the NSF grant, improving her chances of future NSF funding. The results of her study will be incorporated in her sophomore genetics class.

**WILDNER, SIEGRUN, PROFESSOR, LANGUAGES AND LITERATURES, 16 YEARS OF SERVICE, SPRING SEMESTER**

*Holocaust Survivor Testimony and Narrative Representation: The Mauthausen Experience*

Professor Wildner will conduct a comprehensive interdisciplinary study of survivor memoirs as testimonial texts about the Nazi concentration camp in Mauthausen, Austria. A systematic discourse analysis of these first eyewitness narratives, written in German between 1945 and 1955, will provide a more nuanced understanding of Holocaust survivors' perspectives during their camp experiences and immediately after their liberation by the 11th Armored Division of the U.S. Third Army in May, 1945. It will offer valuable insights into the constructed nature of written survivor testimonies, contributing to the larger field of survivor testimonies in Holocaust and Genocide Studies. The PDA will also lay the groundwork for an electronic "Mauthausen Memoir Digest" with detailed summaries of the survivor memoirs. This digest would facilitate access to these narratives by Holocaust scholars and the public around the world. The work will also inform Professor Wildner's UNI classes on the Holocaust in literature and in film.