

Contact: Diana Gonzalez

PROFESSIONAL DEVELOPMENT ASSIGNMENT REPORTS FOR FY 2012

Actions Requested: Receive the professional development assignment reports submitted by the Regent universities for FY 2012.

Executive Summary: Each year, the Board of Regents is asked to approve faculty professional development assignments as specified in the Board Policy Manual §4.09. In December 2010 (Agenda Item #5), the Board approved 95 professional development assignments for FY 2012. Board Policy §4.09E directs the institutions to submit a yearly report of the completed professional development assignments. HF 45 specifies that “the board shall annually prepare a report comparing each assignment proposal to the results received.”

A brief description of each professional development assignment completed in 2011-2012 is available in Attachments A-C (pages 3-33); this report provides information about the value added to the students, university, and state from the assignments, including more than \$9.3 million of funds obtained during or after the faculty member's professional development assignment; there are a number of grant proposals that have the potential for funding but they are still pending. This report addresses the Board of Regents Strategic Plan priority for “educational excellence and impact” as well as “economic development and vitality.”

Background:

- ◇ Review process. 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 to the university, students, and the state.
- ◇ Proposed activities. Faculty members engaged in a variety of productive activities during their professional development assignments. For example, faculty members had 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.

PDA's 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. An additional significant benefit obtained by the faculty member are the collaborations that occur during the professional development assignment; they frequently lead to continued mutual efforts and in some cases open doors for external grant funding.

- ◇ Length of assignments. Professional development assignments were either one or two semesters in length. For professional development assignments that were two semesters in length, compensation was limited to the amount of compensation a faculty member would receive during a semester-long assignment.

- ◇ 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.
- ◇ Number of professional development assignments. There were 95 professional development assignments approved by the Board of Regents for FY 2012; 89 reports are included in the Attachments.
 - ☑ University of Iowa. There were 58 professional development assignments approved for FY 2012; however, three faculty members deferred their PDAs to a later time, three faculty members did not take a PDA, and two faculty members who had deferred their assignment from previous years undertook their PDAs during 2011-2012. The total number of reports included for SUI is 54.
 - ☑ Iowa State University. There were 22 professional development assignments approved for FY 2011.
 - ☑ University of Northern Iowa. There were 15 professional development assignments approved for FY 2011. One PDA was interrupted and will be completed during a future academic year; another PDA was declined. The total number of reports included for UNI is 13.
- ◇ Faculty replacement costs. Costs are minimized to the greatest extent possible by using a variety of strategies, including having colleagues cover courses, deferring non-required courses to a later time, and adjusting schedules of existing faculty members. Faculty members who are on professional development assignment for a full year receive only half their salary; the balance is used to offset replacement costs.
- ◇ Average length of service. The average length of service for the proposed professional development assignment recipients was 17.5 years at SUI; 17.1 years at ISU; and 13.9 years at UNI.
- ◇ External funding obtained while on professional development assignment. A number of faculty members received external grant funding while on professional development assignment or subsequent to the PDA. In addition, many PDA recipients submitted grant proposals which are still pending.
 - ☑ At the University of Iowa, 13 faculty members received external funding either during their assignment or following the assignment. The total amount received was approximately \$6.9 million.
 - ☑ At Iowa State University, seven faculty members received external funding either during their assignment or following the assignment. The total amount received was approximately \$1.4 million.
 - ☑ At the University of Northern, Iowa, two faculty members received external funding either during their assignment or following the assignment. The total amount received was \$958,327.

UNIVERSITY OF IOWA (*denotes Faculty Scholar)

ABBAS, PAUL J., PROFESSOR, COMMUNICATION SCIENCES & DISORDERS, FALL SEMESTER

Paul Abbas used this Professional Development Assignment semester to expand the scope of his research program in cochlear implants. Cochlear implants are a prosthetic device that can restore hearing in deaf individuals. While they have been very successful, an important limitation is the variation in performance among individuals. Professor Abbas's research has focused on attempting to understand the underlying causes of that variability. The developmental assignment semester was used to develop new methods for analyzing physiological data recorded through the implant and to apply those techniques to measurements made on both children and adults who have been implanted at UIHC. These results will potentially provide clinicians with new information to better adapt the device to individual needs. The work will also have a direct impact on seminars in cochlear implants that he teaches as well as research teaching with graduate students in audiology who work with cochlear implants.

Is work accomplished on PDA consistent with original PDA? Yes.

Funds awarded as a result of PDA. Professor Abbas helped to prepare and submit a research proposal to NIH. The project for which he is co-investigator was funded for three years beginning in July 2012 at \$212,500 per year. The Iowa Cochlear Implant Project was also funded by NIH. The electrophysiology portion has a budget of \$226,000 per year.

ABDEL-MALEK, KARIM, PROFESSOR, BIOMEDICAL ENGINEERING, FALL SEMESTER

Professor Abdel-Malek conducted research in the field of human modeling and simulation and advanced the writing of a book entitled "Human Modeling and Simulation." Impact of a rigorous book on this field is significant, strengthening Iowa as the premiere institution for conducting leading research in this area. With over 40 researchers in Abdel-Malek's research group, called the Virtual Soldier Research program, Iowa has become the largest and strongest research program in the field. In addition to its scholarly impact, the book will aid teaching in kinesiology, digital human modeling, computational biomechanics, and other disciplines.

Is work accomplished on PDA consistent with original PDA? Yes.

Funds applied for as a result of PDA. Professor Abdel-Malek applied for a \$1 million grant from the U.S. Marines Office of Naval Research to create modeling and simulation tools for female marine physiological parameters.

ADAMS, CHARLOTTE, ASSOCIATE PROFESSOR, DANCE, SPRING SEMESTER

In Spring 2012, Professor Adams took an advanced level yoga teaching certification course in Tucson, AZ. She conducted choreographic research with professional dancers in Tucson for two dance works with Ballet Tucson. She was also afforded the opportunity to do in-depth research on a new piece combining her area of expertise in anatomy/dance kinesiology with the yogic principles of the transcendent self. This research has led to the development of new choreography for UI dance students in Dance Gala 2012. Advantages for UI students are the development of a course that will examine the effects of yoga on dancers and performing artists in Spring 2013 and a somatic certification program for dancers in collaboration with Professor Jennifer Kayle. A 200 hour yoga teacher certification program for Iowa students will be

developed in 2014. This certification program with the employment opportunities for teaching is expected to add a unique recruiting tool for the Iowa Department of Dance.

Is work accomplished on PDA consistent with original PDA? Yes.

BARBUZZA, ISABEL, ASSOCIATE PROFESSOR, ART & ART HISTORY, FALL SEMESTER

Professor Barbuza investigated the sustainability of lithium extraction in the Atacama Desert in Chile and its impact on the landscape, particularly the environment and the people who work mining it. She visited the salt flat of Chilena de Litio, Maria Elena a caliche mine, and the ghost towns of Humberstone and Santa Laura, both former mining towns. As part of her research she took digital images documenting the mines, visited museums, interviewed people from the area and made videos. Professor Barbuza had an exhibit of her art work and submitted a proposal on the topic for future exhibit. She also presented her research in a public lecture. Investigating salt as a material is part of her new research and she plans to use salt for an installation in addition to the digital documentation. Result from this research will be incorporated in a class she teaches on environmental concerns.

Is work accomplished on PDA consistent with original PDA? Yes.

BAYNTON, DOUGLAS C., ASSOCIATE PROFESSOR, HISTORY, FALL SEMESTER

Professor Baynton was invited by the Siena School for the Liberal Arts to study Italian Sign Language and the comparative histories, cultures, and languages of the American and Italian deaf communities; to participate in discussions on sign language pedagogy; and to establish a relationship between the University of Iowa ASL Program and the Siena School for the Liberal Arts to develop study abroad opportunities. He attended and participated in discussions and workshops at a joint conference of the Ente Nazionale Sordi and the Mason Perkins Deafness Fund of Siena and Rome. In addition, he began a new phase in his research on the history of disability and American immigration policy, to trace Italian immigrants who were refused entry on the basis of disability and returned to Italy, between 1882 and 1924, to determine the consequences of American policy decisions for immigrants, individuals and families.

Is work accomplished on PDA consistent with original PDA? Professor Baynton was not able to audit a class in Italian sign language at the Siena School for the Liberal Arts due to a canceled class. Therefore, he hired a private tutor from the Ente Nazionale Sordi in Florence and frequented events and meetings there. He was able to immerse himself in the Florence deaf community, make contacts for future use, and learn about the association's history and relationship to deaf communities in Italy.

BENNETT, DAVID A., PROFESSOR, GEOGRAPHY, SPRING SEMESTER

The sustainable management of natural resources often requires decision-makers to strike a balance between the resources extracted to meet societal needs and the health of the natural systems that produce these resources. The objective of this Professional Development Assignment was to better understand how decisions about resource use are made and to ascertain which management strategies lead to sustainability. This work builds on existing NSF funded research on ranching in the western US and the production of biofuels in Iowa. These projects are designed to help us understand the potential tradeoffs among competing objectives. During this award a new NSF-funded, Iowa-based research project was also launched, preliminary investigations completed, and the groundwork for an NSF research

coordination grant established. Associated work provided UI undergraduate and graduate students' research experience focused on the sustainability of Iowa's natural resources.

Is work accomplished on PDA consistent with original PDA? Yes. Furthermore, Professor Bennett received notification of a new \$1 million NSF grant. Work as a principal investigator on the coupled Natural and Human System grant began in January 2012 during the same time as his PDA.

BERMAN, CONSTANCE A., PROFESSOR, HISTORY, SPRING SEMESTER

Professor Berman completed The White Nuns: Cistercian Abbeys for Women and their Property in Medieval Europe to be submitted for publication September in 2012. She drafted The Account Book of Blanche of Castile, Queen of France. She wrote two handbook articles, updated a third and did proofs for: "Cistercian Economies" for Cambridge Cistercian Handbook; "Cistercian Agriculture in Female Houses of Northern France," "The Cistercian manuscript, Trent 1711," and "Southern French Cistercian Water Mills," for the Journal of the International Molinological Society. She also wrote six book reviews for publication. And finally, she submitted a proposal for an undergraduate textbook, Medieval Religious Women: 500 - 1500, to Cambridge University Press.

Is work accomplished on PDA consistent with original PDA? Yes. Professor Berman completed the Latin text of the edition of the account book of Blanche of Castile. However, the translation into French was put on hold as a result of the illness of her French teacher. Professor Berman completed enough of the account book to use its contents for a paper on forest management in the 13th century and to complete a chapter in a forthcoming book.

BEZANSON, RANDALL P., PROFESSOR, LAW, FALL SEMESTER

Over the past 10 years the United States Supreme Court has greatly expanded the meaning of "speech" protected by the First Amendment. This development has large consequences that need to be evaluated with a wider lens than legal scholarship ordinarily permits. On his PDA, Professor Bezanson completed the book "Too Much Free Speech" that will be published by the University of Illinois Press. The book will examine many issues raised by this wider definition of free speech. It will be used by law students and graduate students in a wide range of disciplines in American and Foreign Universities. Also during his PDA, Professor Bezanson wrote "Is there Such a Thing as Too Much Free Speech" that will be published soon in the Oregon Law Review. Finally, he published with two law student RAs an article, "Mapping the Forms of Expressive Association" that is completed and very soon to be published in Vol. 1 of the Pepperdine Law Review.

Is work accomplished on PDA consistent with original PDA? Yes.

BLUM, CINZIA, PROFESSOR, FRENCH & ITALIAN, FALL SEMESTER

Professor Blum worked on Modern Italian Literature in the Light of the Fantastic: From the "Embattled" to the "Wireless" Imagination, a book on the fantastic narrative mode in Italian literature during the period between the founding of the Italian nation in 1861 and the rise of fascism in 1922. She conducted an extensive review and analysis of literary, cultural, and political debates in the periodical press; she wrote a chapter on fantasies related to modernity's destabilizing effects on the boundaries of individual and national identity in post-unification Italy; she revised and expanded her theoretical framework to include an ecocritical perspective; and she submitted a prospectus to the University of Toronto Press. She also revised an essay for publication in the collection Modernism and Masculinity. Results from this research will be

incorporated into existing courses on Italian literature and culture, and into a new course on the fantastic.

Is work accomplished on PDA consistent with original PDA? Yes.

***BOEHMKE, FREDERICK J., ASSOCIATE PROFESSOR, POLITICAL SCIENCE, FALL SEMESTER**

Professor Boehmke studied how organized interests influence bureaucratic policy outputs. He wrote a software program to download geo-coordinates for almost all of the 16,000 nursing homes in the U.S., ran that program over the course of a few weeks to download the information, and compiled updated data on nursing home characteristics through calendar year 2011. Results are being incorporated into a quantitative methods class module on spatial econometrics.

Is work accomplished on PDA consistent with original PDA? Yes.

CAMPBELL, MARY E., ASSOCIATE PROFESSOR, SOCIOLOGY, FALL SEMESTER

As immigration has increased and interracial relationships have become more common, ethnic inequality has become more complex in the U.S., and research has begun to focus on inequality within, as well as between, ethnic and racial groups. Using data collected by the New Immigrant Survey, Mary Campbell examined the effect of skin tone on ethnic inequality for new immigrants to the U.S. In addition, Professor Campbell submitted a grant proposal to the National Science Foundation, and is currently using the resulting NSF funding to collect new data on the effect of skin tone on the treatment that individuals receive during a medical examination. This data collection project involves a graduate student. The results of her work while on PDA have been incorporated into Professor Campbell's undergraduate courses.

Is work accomplished on PDA consistent with original PDA? Yes.

Funds awarded as a result of the PDA. Professor Campbell received an NSF grant (Health Care Providers and Patient Interactions) for \$174,134.

CASAVANT, THOMAS L., PROFESSOR, ELECTRICAL-COMPUTER ENGINEERING, SPRING SEMESTER

Professor Casavant visited the ARC Centre for Excellence in Plant Energy Biology (PEB) at the University of Western Australia in Perth. During the past 15 years, his research has applied high-performance computing methods (which were the focus of his early career) to problems in biomedicine and basic bioscience. During this assignment he developed knowledge/skills in plant genomics and strategies for molecular engineering of plants best suited as biomass. Professor Casavant also worked to adapt methods from his previous research for DNA sequence mutation detection in mammals (in the field of medicine) to plant systems of interest to bio-energy. The PEB is a leading international research center in plant energy biology. Dr. Casavant worked to develop new algorithms and software tools for genome analysis at the PEB that will directly enhance his research and teaching at the UI in subsequent years.

Is work accomplished on PDA consistent with original PDA? Yes.

Funds applied for as a result of PDA. Professor Casavant submitted a proposal to the NIH for \$2.5 million for translational science in DNA sequence analysis.

CATES, DIANA F., PROFESSOR, RELIGIOUS STUDIES, FALL SEMESTER

Professor Cates wrote the first two chapters of *The Ethics of Love and Hatred*. This book will be a conceptual and ethical analysis of hatred, developed in relation to a parallel philosophical analysis of love. The two chapters produced by Professor Cates reveal that hatred, like love, is a highly complex mental state. Persons who hope to moderate hatred and its expressions must grasp its several dimensions and its internal logic. Professor Cates also wrote a journal article, a book review, and a web forum contribution, all of which have informed her understanding of the relationship between love and hatred. Her research will enhance her undergraduate teaching, which prepares students for active and responsible citizenship within diverse communities, many of which are characterized by incivility and violence born of hatred. Her research will also strengthen her training of graduate students, many of whom who are analyzing virtues or vices that are tied to love or hatred.

Is work accomplished on PDA consistent with original PDA? Yes although the sequence of activities changed somewhat. Professor Cates was invited to write the lead article for a volume of the *Journal of Moral Theology* on the topic of love. Due to the high visibility of the journal, Professor Cates agreed to write the article first with the understanding that it would serve as the first chapter of the book. She wrote a draft of chapter two and a substantive book review that she had not planning on writing, but which was important to her research on love and hatred. Professor Cates also wrote an entry for the Religion and Culture Web Forum of the Martin Marty Center of the University of Chicago.

CHRISTENSEN, GARY E., PROFESSOR, ELECTRICAL-COMPUTER ENGINEERING, FALL SEMESTER

Professor Christensen worked on six research projects, helped organize the 2012 International Workshop on Biomedical Image Registration, and mentored four Ph.D. students one of which successfully defended her dissertation in January 2012. His research benefits society by developing methods that improve radiation treatment of lung, prostate, and cervical cancer, developing novel imaging methods for detecting bipolar disorder, and noninvasively studying mechanical properties of the lung. He had three journal papers accepted for publication one of which was written during his assignment. In addition, he helped write four journal papers, four conference papers, five conference abstracts, two grants, developed new curriculum material for 59:006 Engineering Problem Solving II, and took an advanced mathematics course. As the chair of the ECE scholarship committee, he oversaw the marketing and solicitation of scholarship applications from high school students interested in Electrical and Computer Engineering.

Is work accomplished on PDA consistent with original PDA? Yes.

Funds applied for as a result of PDA. Professor Christensen has applied for three grants. The requested amount for the first on which he would serve as co-principal investigator is for \$2.5 million over five years; the grant is pending with a 7 percentile score. The amount requested for the second grant on which he would serve as a subcontract principal investigator is \$626,492; the grant is pending with a 12 percentile score. The amount requested for the third grant on which he would serve as a subcontract principal investigator is \$630,216 over five years.

***CLUBB, DARE, ASSOCIATE PROFESSOR, THEATRE ARTS, SPRING SEMESTER**

Professor Clubb traveled to the Amazon to give a talk about world drama on a panel sponsored by the University of Virginia's Semester at Sea program in Manaus, Brazil, and researched Brazilian ritual theater forms in Cachoeira and Rio de Janeiro. He traveled to Japan to study

Noh, Kabuki, and Bunraku theater, and to Burma to study dance theater performances in Yangon. Back in the United States, he continued his exploration of theatrical image and verse structures and wrote a new full-length play growing out of his research abroad. Work conducted during the grant period will enrich 10 courses Professor Clubb teaches at the University of Iowa.

Is work accomplished on PDA consistent with original PDA? Yes.

DARCY, ISABEL K., ASSOCIATE PROFESSOR, MATHEMATICS, HALF TIME FOR ONE YEAR

As scientists collect vast amounts of data, the field of information science is vital for understanding and interpreting this data. In order to learn more about this research area, Dr. Darcy participated in the Institute of Mathematics and its Applications Thematic Year on Mathematics of Information at the University of Minnesota. She learned new mathematical and software tools which she will apply to her current research area of DNA topology as well as to expand her research to include more general data analysis. She published one paper and worked on several others. The background she gained at the IMA is invaluable. She will be able to discuss applications in far more depth in both undergraduate and graduate courses. She also created a website for educators to submit calculus teaching modules related to the life sciences. In addition, she developed ideas for a training grant to mentor students.

Is work accomplished on PDA consistent with original PDA? Yes.

Funds applied for as a result of PDA. Professor Darcy submitted an application to the NSF for \$761,976.

DIFFLEY, KATHLEEN, ASSOCIATE PROFESSOR, ENGLISH, SPRING SEMESTER

Professor Diffley researched and drafted 1.5 chapters and a substantive introduction for her book-in-progress, *The Fateful Lightning: Civil War Stories and the Literary Marketplace, 1861-1876*. From that project, she presented an invited conference paper and a longer invited address, and she turned her introduction into an invited book prospectus. She also contributed to and edited a requested cluster of conference talks on Civil War research and the role of the humanities in public venues, after completing a commissioned book review that has already appeared in print. She organized a mini-conference for November 2012 on Civil War literatures and their continuing liens 150 years later, plus a separate and related conference session in May 2012. She has planned a new undergraduate CLAS course on "Inventing an American Past," a course committed to primary research in 19th-century periodicals.

Is work accomplished on PDA consistent with original PDA? Yes.

***DURHAM, MEENAKSHI G., ASSOCIATE PROFESSOR, JOURNALISM & MASS COMMUNICATION, FALL SEMESTER**

In Fall 2011, Associate Professor Durham signed a book contract with The University of Michigan Press. The manuscript is due at the end of 2012. Three chapters are completed, and there should be no difficulty meeting the publication deadline. She finished revisions to her co-edited book "Media and Cultural Studies: KeyWorks," and the second edition was published in December 2011. She also had two scholarly articles accepted in peer-reviewed journals; had an essay accepted in a refereed literary journal; wrote chapters for two edited collections; and had two refereed papers accepted at scholarly conferences. Her essay "Grieving" was published in "Best American Essays 2011."

Is work accomplished on PDA consistent with original PDA? Yes.

FARRIN, LAUREL, ASSOCIATE PROFESSOR, ART & ART HISTORY, SPRING SEMESTER
Professor Farrin produced a body of over 50 paintings for exhibition while a fellow at Yaddo, Saratoga Springs, NY and as an artist in residence, St. Michael's College, Burlington, Vt. Experimentation with materials produced a lower carbon footprint for the paintings, making the production and transportation of the work more environmentally friendly. The investigation resulted in three new projects of paintings, Antenna, Apparatus, and Felt. A selection is being exhibited at venues in Columbus, GA and the San Francisco Bay area. Other venues are being pursued. Farrin is submitting applications for a Guggenheim Fellowship and other grants. Professor Farrin also traveled to London, UK as a visiting critic for Goldsmith's College, U. of London. Farrin will be sharing research on reducing the carbon footprint for artists in her painting classes.

Is work accomplished on PDA consistent with original PDA? Yes.

Funds applied for as a result of PDA. Professor Farrin submitted an application for a Guggenheim Foundation Grant of \$39,000-\$45,000 and for a George Washington University Artist in Residence Fellowship of \$30,000.

FRANCISCUS, ROBERT, ASSOCIATE PROFESSOR, ANTHROPOLOGY, SPRING SEMESTER

Professor Franciscus carried out data collection trips to acquire and analyze a unique set of associated cranial and postcranial skeletal data sets on wolves, domesticated dogs, and foxes in order to compare to homologous data on archaic fossil humans and modern Homo sapiens. These analyses are testing the idea of growth and development shifts via "self-domestication" as an explanatory model for modern human skeletal size/strength reduction, especially in the facial skeleton – a model that predicts parallel skeletal shifts in domesticated dogs and foxes from their ancestral forms. These activities have expanded his research program in Late Pleistocene human evolution, facilitated new international collaborations, and significantly augmented and broadened the teaching materials and scope of several of his courses.

Is work accomplished on PDA consistent with original PDA? Yes.

GHOSH, SUKUMAR, PROFESSOR, COMPUTER SCIENCE, SPRING SEMESTER

Professor Ghosh studied the opportunities and challenges in the efficient routing of messages across mobile social networks. He also investigated the design of self-stabilizing overlay networks that can spontaneously recover from failures and perturbations leading to automatic service restoration. Professor Ghosh worked on the second edition of his textbook, which will be completed in 2013. The textbook will consolidate the teaching of his courses on (1) distributed systems and (2) peer-to-peer networks. He had one paper accepted in a journal, another is in preparation, and he will submit a grant proposal by the end of 2012.

Is work accomplished on PDA consistent with original PDA? Yes.

***GIBSON, CRAIG A., ASSOCIATE PROFESSOR, CLASSICS, SPRING SEMESTER**

Professor Gibson revised three articles and a book chapter for publication, delivered two papers at conferences, continued work on his translation of a Byzantine collection of rhetorical

exercises, and conducted research that will lead to two articles, one on historical fiction and character-building in ancient education, and one on the portrayal of artists and their public responsibilities in ancient education. These projects will help Professor Gibson in his teaching of undergraduate and graduate courses on mythology, gender, rhetoric, and later Greek literature.

Is work accomplished on PDA consistent with original PDA? Yes with modifications. Professor Gibson originally proposed to complete two articles, one on the death of Demosthenes and the other on the portrayal of art and artists in ancient Greek rhetorical education. Instead, he revised three articles and a book chapter for publication, delivered two papers at conferences, continued work on his translation of a Byzantine collection of rhetorical exercises (under contract with Harvard University Press) and conducted research that will lead to the two articles originally proposed.

GILLAN, EDWARD G., ASSOCIATE PROFESSOR, CHEMISTRY, SPRING SEMESTER

Professor Gillan worked closely with graduate and undergraduate students in his materials chemistry research group to develop new synthetic strategies to produce inorganic materials for use in energy related technologies. Additional efforts introduced new analytical tools to characterize these materials and to examine their photocatalytic activity. Some catalytic strategies resulted in hydrogen gas production from water using ultraviolet and visible light. The research projects advanced or completed during this PDA period resulted in a research publication and formed critical experimental foundations for several additional near term publications and federal research grant applications. Professor Gillan will incorporate this alternate energy related materials research into the next iteration of his First Year Seminar Course entitled Making Stuff: Stronger, Smaller, Cleaner, Smarter that introduces freshman students to important modern materials advances.

Is work accomplished on PDA consistent with original PDA? Yes. Professor Gillen worked with three graduate students to design new laboratory methods to measure hydrogen evolution from a UV light activated catalyst system. They setup experimental system involving both gas phase IR and mass spectrometry analysis to determine catalytic activity. Several solid materials synthesized in the lab were examined for photocatalytic activity. Promising ones were used as examples in an NSF grant application. One important work product arising from the PDA was successful completion of work for a major full paper in the new research area of botanically template inorganic materials which was recently accepted for publication.

Funds applied for as a result of PDA. An NSF grant was submitted in September 2012 for \$432,242.

GITTLER, JOSEPHINE, PROFESSOR, LAW, FALL SEMESTER

The American population is aging rapidly and the prevalence of Alzheimer's and other dementias among older individuals is rising dramatically. The Professional Development Assignment enabled Professor Gittler to carry out research on important legal and public policy issues related to the care and protections of such individuals. The research she conducted was reflected in the Elder Law Colloquium, the Aging Population, Alzheimer's and Other Dementias: Law and Public Policy, which she coordinated and taught at the College of Law in the Spring 2012 semester. It likewise will be reflected in other courses she teaches in the areas of elder law and policy and health law and policy. Her research also resulted in an article accepted for publication, and another article based on her research is in progress. In addition her research resulted on a successful externally funded grant application.

Is work accomplished on PDA consistent with original PDA? Yes.

Funds awarded as a result of PDA. Professor Gittler received a grant for \$16,500.

GORDON, COLIN, PROFESSOR, HISTORY, FALL SEMESTER

Professor Gordon completed the bulk of a manuscript on the history of urban development in the St. Louis suburbs—focusing specifically on the development, redevelopment, and ultimate displacement of older African-American enclaves. The PDA also enabled him to make substantial progress on a series of digital mapping projects, including a new web platform for his St. Louis research (part of Harvard’s “WorldMap” project at <http://worldmap.harvard.edu/maps/866>), further development of a project mapping land use and census data in Johnson County (funded in part by a summer 2010 Provost’s award), and submission of a major digital humanities proposal (for an Historical Atlas of Iowa) to the National Endowment of Humanities.

Is work accomplished on PDA consistent with original PDA? Yes.

JORGE, RICARDO E., ASSOCIATE PROFESSOR, PSYCHIATRY, OTHER

Professor Jorge completed a Professional Development Assignment in Spanish academic institutions between July 1st 2011 and September 15th 2011. During this time, he participated in two collaborative projects. The purpose of the first one was to apply new neuroimaging techniques to the study of white matter abnormalities among OIF/OEF veterans exposed to blasts. The purpose of the second project was to assess cognitive deficits and brain changes in diabetic patients early in the course of their disease. Research activities resulted in two novel scientific articles (one currently in press and another one under review in prestigious journals). These findings will support future applications for funding from the National Institute of Health and the Veterans Administration.

Is work accomplished on PDA consistent with original PDA? Yes.

Funds applied for as a result of PDA. A proposal is under review by the Office of the Veterans Administration and updates have been submitted. This is a five year grant for a total of \$1,099,454.

KADERA, KELLY M., ASSOCIATE PROFESSOR, POLITICAL SCIENCE, SPRING SEMESTER

Are alliances and coalitions good responses to security challenges? In a series of papers, Professor Kadera examined three applications of this general question: 1) Do global trends help states decide when alliances are good investments? 2) When are military burdens shared more equitably between large states and their smaller allies? and 3) When do states intervening in civil wars prefer multilateral responses to unilateral ones? Empirical analyses of these questions inform scholarship on the value of institutional commitments, military efficacy, international norms and human rights; the foreign policy of the U.S.; and U.N. strategies for alleviating suffering from civil violence. Iowans benefit from findings concerning conditions under which agreements, whether they are alliances or business contracts, are effective, durable, and fair. Students, who increasingly explore world affairs, gain from Kadera’s expanded expertise on the mechanisms underlying global conflict.

Is work accomplished on PDA consistent with original PDA? Yes.

KOCHANSKA, GRAZYNA, PROFESSOR, PSYCHOLOGY, SPRING SEMESTER

Professor Kochanska studies why some children become prosocial, rule-abiding, and conscientious, whereas others become disruptive, antisocial, and callous -- a key question with immense implications for individuals, families, and society. She has completed two large projects: a study of children from infancy to school age, and an experimental study of a parenting intervention. In both, extensive behavioral, reported, genetic, and physiological data on children, parents, and families have been collected. Professor Kochanska has (a) obtained a very large-5-year grant from the National Institutes of Health that will allow her to continue both studies, (b) published and submitted 11 articles in premier scholarly journals, (c) involved students in multiple projects, (d) designed a new graduate course on social and personality development, and (e) designed and evaluated a theoretically informed parenting intervention for Iowa's low-income, diverse, high-risk mothers of toddlers.

Is work accomplished on PDA consistent with original PDA? Yes.

KOLEN, MICHAEL J., PROFESSOR, PSYCHOLOGICAL & QUANTITATIVE FOUNDATIONS, FALL SEMESTER

Professor Kolen developed a draft of most of the new third edition of the book "Test Equating, Scaling, and Linking: Methods and Practices" during his Fall 2011 semester Professional Development Assignment. Test equating, scaling, and linking methods are statistical methods that are widely used with scores on many standardized tests in education and psychology. The third edition incorporates changes to the field based on new conceptualizations, research on methodology, new practical guidelines, incorporation of technology in testing, and recent changes in educational policy. This book will be used as a text in a graduate course at the University, as a textbook for workshops, as a reference for professionals working in the field, and to motivate dissertation research and funded research at the University.

Is work accomplished on PDA consistent with original PDA? Yes.

LEWIN, ELLEN, PROFESSOR, GENDER WOMEN'S STUDIES AND ANTHROPOLOGY, SPRING SEMESTER

Research on lesbian, gay, and transgender (LGBT) life in the U.S. has paid scant attention to religiosity in the African-American LGBT community. Professor Lewin used her PDA to broaden knowledge of relevant theoretical materials on African American religion and other related areas and to analyze ethnographic materials from her study of the Fellowship of Affirming Ministries (TFAM), a coalition of Pentecostal churches serving primarily Black LGBT populations. She traveled to several congregations and Fellowship meetings around the U.S. to observe worship services, study key writings of the denomination, and interview pastors, leaders, and members with diverse identity and social positions. The research will benefit the University by enhancing Professor Lewin's curricular breadth, enabling her to develop new courses relevant to American cultures, and to design courses that could be offered jointly with African American, American, and Religious Studies.

Is work accomplished on PDA consistent with original PDA? Yes.

Funds applied for as a result of PDA. A proposal was submitted for a two-year NSF grant of \$121,047 and a Guggenheim Foundation grant of \$40,000.

***MACGILLIVRAY, LEONARD R, ASSOCIATE PROFESSOR, CHEMISTRY, SPRING SEMESTER**

Professor MacGillivray synthesized materials that address major problems in synthetic chemistry and materials science. The research is expected to lead to new understandings in organic synthesis, nanotechnology, pharmaceuticals, enzymology, with potential applications in medicine, biology, and flexible electronic media. The results have been incorporated into successful proposals and research contracts to the National Science Foundation and Abbott Laboratories, Chicago. Collaborations within the University of Iowa and industry have been developed. The work has involved training of undergraduate and graduate students, as well as visiting faculty from undergraduate institutions.

Is work accomplished on PDA consistent with original PDA? The PDA led to unexpected research directions which led to additional output in the form of publications and presentations including work performed in the areas of pharmaceutical co-crystals and organic nano-crystals.

Funds applied for as a result of PDA. A proposal was submitted to Abbott Laboratories on pharmaceutical co-crystals for \$64,000.

MARRA, KIMBERLEY B., PROFESSOR, THEATRE ARTS, FALL SEMESTER

Professor Marra drafted a chapter of her book "Fashioning the Thoroughbred Ideal: Show Women and Show Horses on New York Stages, 1865-1930," a study of how human interactions with horses both empowered women and enduringly shaped dominant race, class, gender, and sexual ideologies when women entered the sport of riding in large numbers for the first time in the United States, and horses were still abundant in city and country as creatures of practical necessity and show. The chapter, which analyzes performance dynamics of female fashion and athleticism at the National Horse Show at Madison Square Garden, has also been solicited for a critical anthology on "showing." Marra also began three other essays on horses and performance that have been solicited for other anthologies, one on theatre and war, one on equestrian dance, and one on autobiographical performance as a research methodology. She is incorporating this material into her Theatre Arts and American Studies classes.

Is work accomplished on PDA consistent with original PDA? Yes.

MATTES, TIMOTHY E., ASSOCIATE PROFESSOR, CIVIL-ENVIRONMENTAL ENGINEERING, SPRING SEMESTER

Professor Mattes investigated the assimilation of dissolved inorganic carbon by marine bacteria at a hydrothermal vent in the North Pacific Ocean using molecular biology and protein identification techniques. This project was conducted at the University of Washington School of Oceanography. It has so far yielded one journal manuscript. In addition, two NSF proposals submitted during the PDA were funded. The exposure to new topics and lab techniques will benefit Professor Mattes' graduate students and students that take his courses. Based on this experience, Professor Mattes is developing a case study in his Environmental Microbiology course that synthesizes concepts in marine microbial ecology, biogeochemical cycling and hydrothermal vents. This project has environmental importance as marine microbes greatly influence global biogeochemical nutrient and carbon cycles. Studying these global cycles will benefit society by improving understanding of the impacts of global climate change.

Is work accomplished on PDA consistent with original PDA? Yes.

Funds awarded as a result of PDA. Two NSF proposals were funded and begun in September 2012 for \$212,266 (principal investigator) and \$344,581 (co-principal investigator).

Funds applied for as a result of PDA. One proposal for \$854,750 is still pending. A decision should be provided this fall.

MCALLISTER, BRYANT F., ASSOCIATE PROFESSOR, DEPT OF BIOLOGY, HALF TIME FOR ONE YEAR

Professor Bryant McAllister worked as a Fulbright Scholar at the Institute of Population Genetics of the Vetmed University in Vienna, Austria. In collaboration with colleagues in Vienna, he applied next-generation sequencing technologies to obtain whole-genome sequences. He presented lectures on his research for students in the Vienna Graduate School of Population Genetics and during visits with colleagues in Finland and Spain. He implemented a bioinformatic pipeline to analyze these sequence data at the University of Iowa using the Helium High Performance Computing cluster. These activities enhance the scope of his studies and collaborations investigating the causes and consequences of chromosomal variation. His experience gained with these modern sequencing technologies, the computational analysis of whole-genome data, and the training of Austrian students will strengthen student training and renew curriculum at Iowa.

Is work accomplished on PDA consistent with original PDA? Yes.

Funds awarded as a result of PDA. Professor McAllister received a Fulbright Fellowship for \$18,000 to work on this project. While in Vienna, he received two intercountry travel grants to meet colleagues and present research seminars in Finland and Spain.

MOUNT, MICHAEL K., PROFESSOR, MANAGEMENT & ORGANIZATION, SPRING SEMESTER

In this project, Professor Mount developed a new theory of work motivation called the Theory of Purposeful Work Behavior. The theory provides a more comprehensive understanding of work motivation by integrating three sets of factors that influence work motivation: personality traits, engagement goals, and job characteristics. The theory provides researchers with a set of testable propositions that can guide future research on work motivation. It also provides practicing managers with a set of guidelines they can use to improve the fit between the employees' qualifications and the characteristics of their jobs. An article describing the theory has been accepted for publication in a leading management journal, Academy of Management Review. The major propositions outlined in the theory will provide the foundation of Professor Mount's research program for the next five years. In addition, Professor Mount has revised his courses to incorporate key principles and findings from the theory.

Is work accomplished on PDA consistent with original PDA? Yes.

NELSON, JOHN S, PROFESSOR, POLITICAL SCIENCE, SPRING SEMESTER

Professor Nelson advanced four related studies of popular politics in the ads, news, and entertainments that ordinary people experience in everyday life. He compared politics in westerns, vampire movies, and neo-noir films. Through quantitative and qualitative analysis of hundreds of films plus thousands of television ads, commercial and presidential, he made this initial sense of politics in popular culture into a foundation for understanding the recent surge in populist politics from Tea Party and Occupy movements to presidential campaigns. This is enabling him to create three new courses and submit a like number of books next year.

Is work accomplished on PDA consistent with original PDA? Yes.

OESMANN, ASTRID, ASSOCIATE PROFESSOR, CINEMA & COMPARATIVE LITERATURE, SPRING SEMESTER

The PDA funded one semester in which Astrid Oesmann completed her book manuscript "Facing Trauma: Masks, Politics, and the European Avant-garde." The project ranges from theatre aesthetics to philosophy, and from history to art history to literary theory. It interrogates both what it means to don a mask, either a physical mask or a conscious facial expression that serves as a mask, and how different European artists and thinkers engaged with that question in response to the traumas of German History in the Twentieth Century. The book that is now drafted and undergoing revision is engaged with German literature, but reaches out to other literatures and disciplines, effectively broadening her interdisciplinary and transnational approach to research, teaching, and service. In addition, Oesmann completed an article, "Sebald's Melancholic Method: Writing as Ethical Memory in Austerlitz," that is now under review at the The German Quarterly.

Is work accomplished on PDA consistent with original PDA? Yes.

O'HARA, MICHAEL W, PROFESSOR, PSYCHOLOGY, FALL SEMESTER

Clinical depression experienced by women during pregnancy and after childbirth is a serious mental health problem that is common and has long term negative consequences for mothers and children. Professor O'Hara has devoted the past 30 years to studying this problem and developing interventions to effectively treat depressed mothers. This work has been conducted all over the State and has had a broad impact on public health policy. Professor O'Hara used the semester afforded by the Professional Development Assignment to complete a grant application to fund a new project aimed at preventing postpartum depression in high risk women. This new online intervention targets vulnerable women late in pregnancy and will extend through two years postpartum. This work will have a significant impact on his undergraduate and graduate teaching, supervision of graduate students, and will make an important scientific and public health contribution in this critical area of women's health.

Is work accomplished on PDA consistent with original PDA? Yes with modifications. Professor O'Hara had proposed to write a book; however, he joined a colleague to edit a major handbook for Oxford University Press, titled "The Oxford Handbook of Depression and Comorbidity." He also submitted three grant applications which were not in the original PDA proposal.

Funds awarded as a result of PDA. Professor O'Hara received an award from NIH for \$401,825 as a co-investigator.

PEATE, DAVID W., ASSOCIATE PROFESSOR, GEOSCIENCE, FALL SEMESTER

Professor Peate set up methods for analysis of inorganic elements at trace levels (parts per million or less) in various types of environmental materials using a new ICP-MS instrument. He applied these methods to projects on the origins of volcanic rocks and reconstructing records of environmental change from sedimentary rocks that resulted in several journal articles and grant proposals to NSF (either submitted or close to submission). He revised the content of two existing undergraduate classes to be suitable for the new TILE classrooms that encourage active student engagement, interaction, and collaboration during lectures, and he developed laboratory exercises that use the ICP-MS facility. He also spent time establishing the ICP-MS lab as a facility for other University researchers, and helped students from Environmental

Engineering, Chemistry, Medicine, and Toxicology, to obtain high-quality trace metal data for their research.

Is work accomplished on PDA consistent with original PDA? Yes.

Funds applied for as a result of PDA. Professor Peate submitted a proposal on the Effects of Pennsylvanian Climate Oscillations on the Phylogenetic Community Structure of Euramerican Forests as a co-principal investigator for \$159,739.

PETERS, JOHN D., PROFESSOR, COMMUNICATION STUDIES, HALF TIME FOR ONE YEAR

Professor Peters completed the draft of a book on the historical context and philosophical implications of digital media. He also completed several chapters and articles on media theory, co-edited a special issue of a journal in media studies, translated an article from German, and wrote chapters for three handbooks. He gave invited lectures in California, Canada, China, England, Germany, Norway, Taiwan, and Utah. Research done during the PDA has been incorporated into a redesigned undergraduate course, Communication Technologies in History (Communication Studies B.A.).

Is work accomplished on PDA consistent with original PDA? Yes.

Funds awarded as a result of PDA. Professor Peters received a fellowship at the Collegium for Advanced Studies at the University of Helsinki for \$95,000.

PORTER, JEFFREY L., ASSOCIATE PROFESSOR, ENGLISH, SPRING SEMESTER

Professor Porter carried out work on a book-project that examines the influence of literature on broadcast radio, from the 1930s to the present. Specifically, he conducted research on one key moment in that history, the career of Edward R. Murrow, a war-time radio correspondent whose work was fundamental to the development of the radio essay. Drawing on that research, he wrote the final chapter for his book-project, demonstrating Murrow's importance for radio history. These activities will promote his on-going research into the intersection of media and literary history and will expand his teaching expertise in the area of new media writing.

Is work accomplished on PDA consistent with original PDA? Yes.

SCHUH, KATHY L., ASSOCIATE PROFESSOR, PSYCHOLOGICAL & QUANTITATIVE FOUNDATIONS, SPRING SEMESTER

Professor Schuh worked on a book that is a synthesis of a 15-year research strand in which she has studied a specific learning process—student knowledge linking—of upper-elementary students. Her research, including qualitative data from eight classrooms as well as a survey study of 20 classrooms, has focused on how fifth- and sixth-grade students integrate what they are learning in their classrooms with what they already know, thus linking in- and out-of-school learning. She completed drafts of five sections of her book, made progress on the remaining four sections, submitted two related research articles for publication, and used background knowledge gained through the assignment period to submit a grant application in July 2012. The content of her book, as well as the methods that she used in producing the findings, will enhance the content taught in her educational psychology and qualitative research methods courses.

Is work accomplished on PDA consistent with original PDA? Yes.

Funds applied for as a result of PDA. Professor Schuh submitted a proposal to the NSF for \$283,402; the proposal is under review.

SLABAKOVA, ROUMYANA, PROFESSOR, LINGUISTICS, HALF TIME FOR ONE YEAR

Professor Slabakova has written a thirty-page book proposal and two sample chapters, currently under review at Oxford University Press. The book "Core Second Language Acquisition" is based on her theoretical model of the acquisition process called The Bottleneck Hypothesis. The practical aim of the monograph is to show language teachers that there are parts of the grammar (meaning) that are relatively easier to acquire and others (sounds, word endings) that would benefit from explicit explanation and practice in language classrooms. Professor Slabakova also published 10 new articles and received a visiting professor grant from the Basque Government. She studied the acquisition of English by Basque native speakers who learned Spanish as adults or as children. The effects of their second language Spanish on the acquisition of English as a third language were examined. These multilingual participants were tested in the Basque region of Spain.

Is work accomplished on PDA consistent with original PDA? Yes.

Funds awarded as a result of PDA. Professor Slabakova received a grant from the Ikerbasque Foundation for \$49,000.

SOUAIAIA, AHMED, ASSOCIATE PROFESSOR, RELIGIOUS STUDIES, SPRING SEMESTER

Professor Souaiaia examined the topic of religion and politics in the Islamic world. The project focused primarily on the research essential for his book-length study of religion, rebellion, and legitimacy in Islamic discourse. Professor Souaiaia conducted field work in Tunisia where he observed the historical elections held there. Subsequently, he published more than twenty articles explaining the causes of the Arab Spring and its impact on world affairs. Professor Souaiaia continued his work as the Managing Editor of the scholarly publication that he founded, Journal of Islamic and Judaic Multidisciplinary Studies. In the area of teaching, Professor Souaiaia developed a new upper level course dealing with the politics of the Middle East & the Arab Spring. The course is offered during the fall of 2012. He also developed a new survey course, Religion in Public Sphere, which will be taught in spring semester (2013).

Is work accomplished on PDA consistent with original PDA? Yes.

Funds applied for as a result of PDA. Professor Souaiaia submitted a proposal for \$39,750.

***SPENCER, JOHN P., ASSOCIATE PROFESSOR, PSYCHOLOGY, SPRING SEMESTER**

During the past 15 years, a new theoretical framework for thinking about brain-behavior relations has emerged—the Dynamic Field Theory. This neural network approach was initially applied to issues in spatial cognition but has now been extended to a host of issues in visuo-spatial cognition, motor control, autonomous robotics, word learning, and executive function. The goal of the current project is to complete a two-volume book that summarizes the theoretical approach (volume 1) and provides a hands-on tutorial with computer software to learn how to develop neural network models within this framework (volume 2). The proposed books will solidify this theoretical perspective in a way that cannot be achieved within individual journal articles and book chapters, offering a core text from which to learn about Dynamic Field Theory. The books will be used in a graduate course on Dynamical Systems Theory at UI (31:216) and in a Dynamic Field Theory Summer School hosted at UI each summer.

Is work accomplished on PDA consistent with original PDA? Yes with modifications. In the PDA application, Professor Spencer and his colleague proposed to complete two books on Dynamic Field Theory. They have a complete version of the first book; the revision is due to Oxford University Press in the spring. They have a detailed outline for the second book. They are on track to complete both books, but were not able to complete both within the three year window.

Funds awarded as a result of PDA. Professor Spencer received a grant as a principal investigator for \$69,974.

STERN, FREDERICK, PROFESSOR, MECHANICAL ENGINEERING, FALL SEMESTER

Professor Stern conducted focused/accelerated research made possible by the Professional Development Assignment on next-generation computational fluid dynamics tools, experimental methods for local flow measurements in the IIHR Wave Basin, and stochastic uncertainty quantification, all of which were essential for Iowa maintenance of its internationally recognized leadership in ship hydrodynamics and continued Office of Naval Research funding. The products and outcomes include: six proposals (\$1,150,185 funded and \$3,450,373 pending); one supercomputer proposal (pending); three chapters in books, 18 rigorous review journal articles (12 published and six in review), 29 conference proceeding papers, and three reports; one Ph.D. and one M.S. graduation, one Ph.D. comprehensive, one postdoctoral student, and several visiting graduate students and faculty; participation in national and international committees; and two invited papers. These accomplishments insure Iowa continued success in ship hydrodynamics research.

Is work accomplished on PDA consistent with original PDA? Yes.

Funds awarded as a result of PDA. Professor Stern received several grants for \$1,150,185.

Funds applied for as a result of PDA. Professor Stern submitted an application to the Office of Naval Research for a \$420,000 grant.

STROYAN, KEITH, PROFESSOR, MATHEMATICS, FALL SEMESTER

Professor Stroyan conducted research on visual depth perception and prepared presentations for meetings at the European Conference on Visual Perception and the Wolfram Technology Conference in Illinois. Part of the fall was spent at North Dakota State University collaborating with Professor Nawrot and his lab. During the visit, Stroyan and Nawrot applied their theoretical work of last summer to analyze new experiments on integration time for depth perception and to write software that will aid other experimenters working on this problem.

Is work accomplished on PDA consistent with original PDA? Yes.

Funds applied for as a result of PDA. Professor Stroyan submitted an application for an NIH grant of \$150,000.

SULS, JERRY M., PROFESSOR, PSYCHOLOGY, FALL SEMESTER

Professor Suls carried out research on the role of depression and anxiety in reporting and recollection of physical symptoms. He wrote a review of this literature, including his own research, which is in press. He also collaborated with researchers elsewhere on a review on the role of comparisons with other patients in the psychological adaptation to chronic illness and

submitted an analysis of the effects of chemotherapy on cognitive impairment. Results of these projects are being incorporated into lectures in Health Psychology and Advanced Social-Personality Psychology in the College of Liberal Arts Department of Psychology.

Is work accomplished on PDA consistent with original PDA? Yes.

TOLBERT, CAROLINE J., PROFESSOR, POLITICAL SCIENCE, SPRING SEMESTER

Professor Tolbert completed a book (Nov 2012) with Oxford University Press, Digital Cities: The Internet and the Geography of Opportunity. She conducted grant funded research mapping Internet access and use for political, health and economic activities across Chicago neighborhoods. She submitted a grant proposal to measure broadband access in Cuyahoga County, Ohio. She wrote a textbook on American politics for W.W. Norton entitled We the People, 9th Ed. She completed a paper under review on the effect of state population size (large vs. small states) on citizens' trust in state versus the federal government. She completed five other scholarly papers. She coauthored a paper on emotions and racial resentment to predict evaluations of presidential candidates and policy issues. The research introduces a new theory and empirical approach for measuring racial attitudes called "emotive racism." Results from this research have been incorporated in her teaching of American government.

Is work accomplished on PDA consistent with original PDA? Yes.

Funds applied for as a result of PDA. Professor Tolbert submitted an application to OneCommunity to do research on broadband mapping for Cleveland and the inner ring suburbs for \$85,000. She also submitted an application to Ready Wireless to conduct a study of mobile access among low-income subscribers for \$15,000.

UDAYKUMAR, H. S., PROFESSOR, MECHANICAL ENGINEERING, SPRING SEMESTER

Professor Udaykumar developed computer code to solve multiscale problems. He obtained funding from the Air Force and NIH to support the development of the computer code. The code development effort involved four Ph.D. students. Several publications have already resulted from the work and more papers are in final stages of preparation. The novel computer code is expected to lead to new directions in research and to new funding opportunities. He also wrote several technical papers and developed a proposal for establishing a Center for Multiscale Modeling of the Human Cardiovascular System. The proposal was submitted to NIH and resulted in a site visit from NIH reviewers to assess the proposed project. Based on this review the Center proposal team has been asked to resubmit a revised proposal for consideration for funding in January 2013.

Is work accomplished on PDA consistent with original PDA? Yes.

Funds applied for as a result of PDA. Professor Udaykumar submitted an application to NIH to establish a Center for Multiscale Modeling in the Human Cardiovascular System for \$12 million for five years.

VALENTINO, RUSSELL, PROFESSOR, CINEMA & COMPARATIVE LITERATURE, SPRING SEMESTER

During his spring 2012 PDA, Valentino completed From Virtue to Virtual: Property, Commerce, and the Quest for Masculine Character from Dostoevsky to DeLillo. This book explores representations of virtue in Russia and the U.S. from the 18th to the 20th centuries, exploring how heroic notions of virtue were transformed by the rise of commercial culture, in other words,

what happened to courage when prudence became the dominant mode of masculine public behavior. It asks why Russian thinkers resisted the idea that prudent actors such as businessmen might be considered heroic, especially by contrast to the American view of commerce as a drive belt for progress. Valentino also continued to work as editor of The Iowa Review and began two new books: Crossing: A Braided Memoir, which explores travel, translation, and transgression; and an academic novel, Obscene U, which centers on the sexual harassment scandals and flood of 2008.

Is work accomplished on PDA consistent with original PDA? Yes.

***WHITE, SUSAN C., ASSOCIATE PROFESSOR, ART & ART HISTORY, FALL SEMESTER**

Professor White continued exploring a broad range of materials and techniques with slow drying acrylics on canvas and plexiglas, which she exhibited in numerous gallery and museum venues. John Davis Gallery and Kenise Barnes Gallery in New York had solo and group shows, Olson-Larsen Gallery and the Historical Museum (ARTSTOP) in Des Moines exhibited her work. She curated an exhibition of work by her students at the Peter Luce Gallery at Cornell College, and was invited to have a solo show at Hudson River Gallery in Iowa City and Olson-Larsen Gallery in the fall. She also made contacts for exhibitions in Mexico City for herself and her students and a new contact for herself in New York City. Her research in slow drying acrylics allows her to teach these materials and methods in both undergraduate and graduate painting.

Is work accomplished on PDA consistent with original PDA? Yes.

Funds awarded as a result of PDA. Professor White received a commission for Physicians Clinic of Iowa for \$60,000; a commission for the new Cellular Center in Cedar Rapids for \$15,000; and a private commission for \$5,000.

Funds applied for as a result of PDA. Professor White submitted an application for a Guggenheim Fellowship for \$50,000

WINN, BRYON S., ASSOCIATE PROFESSOR, THEATRE ARTS, SPRING SEMESTER

Professor Winn spent the spring semester building the requisite materials and applicable professional experiences to create a new course in Entertainment and Projection Design. He was successful in fulfilling his objective to expand his expertise beyond traditional theatre models and investigate the many facets of contemporary Entertainment Design. He was able to continue his exploration of convergence technologies, serve as designer on a number of corporate events, augment his proficiency as a projection designer, work with one of the leading lighting designers in live concert lighting design, and continue his strong relationship with new play development at a major regional theatre. This experience will directly benefit students through increased exposure to contemporary technologies, and by expanding their potential career opportunities.

Is work accomplished on PDA consistent with original PDA? Yes.

Funds awarded as a result of PDA. Professor Winn received design fees for \$10,300 from a number of theatre companies.

YOUNG, MARK A., ASSOCIATE PROFESSOR, CHEMISTRY, FALL SEMESTER

Professor Young utilized the advantages afforded by the PDA to further progress on the construction of a new instrument to characterize particulate matter in the atmosphere. The work is being supported by a major grant from the National Science Foundation. The assignment allowed Professor Young to work on completion of the design details of the custom built instrument, identify and acquire the necessary component parts, and initiate assembly and testing of the experiment. In addition, potential collaborators and applications of the instrument were identified. The studies to be facilitated by access to the unique instrumentation at the University of Iowa include public health, global climate change and nanomaterial engineering. Professor Young also added new computational capabilities for an NSF funded project related to the optical properties of mineral dust particles. In addition, he worked on the preparation of three scientific manuscripts.

Is work accomplished on PDA consistent with original PDA? Yes.

Funds applied for as a result of PDA. Professor Young submitted an application for a grant from the U.S. Department of Health and Human Services to study the Impacts of Aerosol Generation and Nanoparticle Properties on Nanotoxicity Significant for \$1,707,214.

IOWA STATE UNIVERSITY

BRUNA, KATHERINE RICHARDSON, ASSOCIATE PROFESSOR, SCHOOL OF EDUCATION, 9 YEARS OF SERVICE, SPRING SEMESTER

Professor Richardson Bruna built research connections with colleagues at Iowa State and Oregon State University during her six-month assignment. She is using these connections to study educational issues affecting Latino populations in demographically transitioning communities. Richardson Bruna's work has led to the preparation of four articles, five presentations, an Iowa State Innovative Extension Grant, a pilot program to study transitioning communities in Iowa, \$40,000 in seed funding from a private donor to enhance teacher preparation in the School of Education, and a \$290,000 grant proposal.

CANFIELD, PAUL, DISTINGUISHED PROFESSOR, PHYSICS AND ASTRONOMY, 16 YEARS OF SERVICE, FALL SEMESTER

Professor Canfield used his six-month assignment to develop a "portable" course on the discovery, growth, and characterization of new materials. He then taught the course at universities in England, Germany, and Spain. The project allowed Canfield to improve and refine the course, establish international growth efforts in materials development, and improve his teaching at Iowa State.

CERVATO, CINZIA, PROFESSOR, GEOLOGICAL AND ATMOSPHERIC SCIENCES, 11 YEARS OF SERVICE, SPRING SEMESTER

Professor Cervato spent the spring semester of 2012 at the University of Genova, Italy, where she worked to improve the training of science teachers in secondary schools. Her assignment was partially funded by a Fulbright Specialist Award that included teaching courses in science education, education in the U.S., and preparing for academic careers. Cervato's work resulted in the preparation of three manuscripts, the presentation of numerous seminars and presentations, and submission of an NSF Cyberlearning grant proposal.

CURRAN, PAULA, ASSOCIATE PROFESSOR, GRAPHIC DESIGN, 19 YEARS OF SERVICE, FALL SEMESTER

Professor Curran spent the fall semester of 2011 studying letterpress printing and bookbinding at universities in Wisconsin, Illinois, and Minnesota. These new skills have been incorporated into her classes, benefiting Iowa State's graphic design students. Curran also published 120 handmade books during her leave; two miniature books were selected for the Special Collections Department of the University of Wisconsin-Madison's Kohler Art Gallery.

FRANKEL, DAVID, ASSOCIATE PROFESSOR, ECONOMICS, 9 YEARS OF SERVICE, FALL SEMESTER

[The FPDA was changed from a full academic year to a one semester FPDA]

Professor Frankel spent the 2011 fall semester working with a colleague at Tel Aviv University in Israel, laying the groundwork for publishable research in the future. Frankel's assignment also included the delivery of 13 research seminars, the writing and/or revision of four research papers, and exposure to new ideas that will benefit his teaching. His efforts during the assignment also helped to build the reputation of Iowa State and its economics department.

GENTILE, DOUG, ASSOCIATE PROFESSOR, PSYCHOLOGY, 9 YEARS OF SERVICE, SPRING SEMESTER

Professor Gentile's assignment took him to Singapore in the spring semester of 2012, where he continued his research on cyber wellness and children. He also traveled to Australia, Italy and Luxembourg, developing new collaborations to ensure his research and teaching reflect the global scale of the issue. Gentile's assignment also resulted in the preparation of four manuscripts, three external grant applications worth more than \$2.3 million, and the receipt of a \$50,000 grant from the Aegon Transamerica Foundation to develop a media literacy pilot program for middle school students in Cedar Rapids.

GREDER, KIMBERLY, ASSOCIATE PROFESSOR AND EXTENSION SPECIALIST, HUMAN DEVELOPMENT AND FAMILY STUDIES, 11 YEARS OF SERVICE, SPRING SEMESTER

Professor Greder spent her assignment traveling to Oregon and Washington states, collecting and analyzing data from the *Rural Families Speak* program, and developing new strategies for engaging Latino families in Extension and Outreach education. Her assignment resulted in four manuscripts, seven national peer-reviewed presentations, two grant submissions worth a combined \$400,000, and a pilot program to study Latino families in Iowa.

KAWALER, STEVEN, PROFESSOR, PHYSICS AND ASTRONOMY, 23 YEARS OF SERVICE, FALL SEMESTER

Professor Kawaler spent the 2011 fall semester leading an international team of astrophysicists in studying data produced by NASA's Kepler mission. The 12-week program, sponsored by the Kavli Institute for Theoretical Physics, broadened scientists' understanding of how stars evolve, as well as their internal workings. As organizer of the workshop, Kawaler generated significant visibility for Iowa State in this rapidly growing area of study, leading to major research proposals to NASA, the NSF, and others.

LUTZ, JACK, PROFESSOR, COMPUTER SCIENCE, 25 YEARS OF SERVICE, SPRING SEMESTER

Professor Lutz spent the spring semester of 2012 at the California Institute of Technology, where he worked with colleagues to extend his research on molecular programming and nanoscale self-assembly; and at the University of Cambridge in England, where he conducted research on computing theory. Lutz's assignment resulted in the writing of 10 papers, the delivery of four invited lectures, and the awarding of a \$925,000 NSF grant to support further molecular programming research (*with Robyn Lutz, see below*).

LUTZ, ROBYN, PROFESSOR, COMPUTER SCIENCE, 21 YEARS OF SERVICE, SPRING SEMESTER

Professor Lutz spent the spring semester of 2012 at the California Institute of Technology, and The Open University in the United Kingdom, where she worked with colleagues in the areas of software safety and molecular programming for software systems. Her assignment resulted in six manuscripts, five invited research presentations, and visits to four additional universities. Lutz, together with collaborators, was also awarded a \$925,000 NSF grant in the new, cross-disciplinary field of software engineering for molecular programming (*with Jack Lutz, see above*); a second grant proposal worth \$400,000 is pending.

MUNKVOLD, GARY, PROFESSOR, PLANT PATHOLOGY AND MICROBIOLOGY, SEED SCIENCE CENTER, 6 YEARS OF SERVICE, FALL INTO SPRING SEMESTER (6 MO)

Professor Munkvold conducted mycotoxicology and seed pathology research with two Italian institutions during his six-month assignment. His work, which resulted in multiple peer-reviewed papers and research presentations, strengthens Iowa State's leadership position in an important area of maize research. Munkvold also used his assignment to make substantial progress on a book project, *Compendium of Corn Diseases, 4th Edition* (Munkvold is lead editor), as well as a handbook on the identification and diagnosis of disease caused by mycotoxin-producing fungi in multiple crops.

NORDMAN, DANIEL, ASSOCIATE PROFESSOR, STATISTICS, 7 YEARS OF SERVICE, SPRING SEMESTER

Professor Nordman spent the 2012 spring semester at Sandia National Laboratories in Albuquerque, and Texas A&M University, where he completed research on statistical methods, network analysis, and resampling methods. The results of his work include nine submitted manuscripts; invited presentations in Cyprus, Greece and the U.S., and progress on a textbook. His work at Sandia also led to a \$138,000 research grant, and full support for an Iowa State graduate student in statistics. Nordman's work on resampling has been incorporated in the development of a new statistics course at Iowa State, and is the focus of several new funding applications.

NUSSER, SARAH, PROFESSOR, STATISTICS, 20 YEARS OF SERVICE, FALL SEMESTER

[The FPDA was changed from a full academic year to a one semester FPDA]

Professor Nusser worked in the USDA's National Agricultural Statistics Service (NASS) during the fall 2011 semester, working with the agency to modernize its sampling and data collection processes. Nusser and her collaborators developed plans for new data collection tools that will be refined by Iowa State's Center for Survey Statistics and Methodology. The assignment also included the writing and submission of seven papers, and reports for two National Academies panels, and will result in future collaborations with both NASS and the U.S. Census Bureau.

PETERSON, THOMAS, PROFESSOR, GENETICS, DEVELOPMENT AND CELL BIOLOGY, AGRONOMY, 19 YEARS OF SERVICE, FALL INTO SPRING SEMESTER (6 MO)

Professor Peterson attended major scientific conferences in England, Germany, and the Netherlands during his six-month assignment. He identified new collaborators and projects for future funding, published three peer-reviewed manuscripts, one book chapter, and nearly completed a new book on plant transposable elements. These activities enhance the reputation of Iowa State, and the standing of Peterson's research group, which will strengthen future grant proposals.

REILLY, PETER, ANSON MARSTON DISTINGUISHED PROFESSOR, CHEMICAL AND BIOLOGICAL ENGINEERING, 38 YEARS OF SERVICE, FALL SEMESTER

Professor Reilly spent the majority of his six-month assignment at the University of Queensland in Brisbane, Australia. The results of his work include three published manuscripts; an article published in the journal, *Protein Science*; and a book chapter that has been accepted. Three of these works were sponsored by the NSF Center for Biorenewable Chemicals (CiBRC) at Iowa State, which recently received a \$12 million extension. The other two works were funded by a previous grant from the USDA.

SACKS, PAUL, PROFESSOR, MATHEMATICS, 31 YEARS OF SERVICE, FULL ACADEMIC YEAR

Professor Sacks delivered presentations and performed research with collaborators at six universities during his 10-month assignment, including institutions in Germany, Italy, Turkey, Scotland, England, and the University of Texas-Arlington. Five papers were prepared during his assignment, and substantial progress was made on the writing of a graduate level textbook on applied mathematics. The assignment helped provide ideas for future research projects, and raised the visibility of mathematics research at Iowa State.

SPRY, PAUL, PROFESSOR, GEOLOGICAL AND ATMOSPHERIC SCIENCES, 29 YEARS OF SERVICE, SPRING SEMESTER

Professor Spry spent his assignment with colleagues in Greece, Italy, and Sweden, conducting ongoing research and developing new projects to help mining companies explore for and find metallic mineral deposits. Spry's work resulted in the preparation of nine manuscripts, the delivery of 13 invited lectures and one course presentation, and the writing of three grant proposals worth a combined \$451,000; two have already been funded for \$113,000.

STROHBEHN, CATHERINE, ADJUNCT PROFESSOR AND EXTENSION SPECIALIST, APPAREL, EVENTS, AND HOSPITALITY MANAGEMENT, 26 YEARS OF SERVICE, PARTIAL SPRING SEMESTER (3 MO)

Professor Strohbehn completed an Extension and Outreach publication, *A Guide to Sustainable Procurement for Retail Foodservices*, during her three-month assignment. This publication will be used across the state to help food merchants procure and maintain safe food supplies. Strohbehn also completed three manuscripts, five grant proposals totaling \$3.4 million, three national conference presentation proposals, and traveled to the University of Costa Rica to present a workshop on SafeFood[®] and sustainability.

TAN, XIAOLI, ASSOCIATE PROFESSOR, MATERIALS SCIENCE AND ENGINEERING, 10 YEARS OF SERVICE, SPRING SEMESTER

Professor Tan traveled to research universities in China and German during his six-month assignment, where he delivered two presentations, 10 lectures, and prepared and submitted two manuscripts (one has already been accepted). Tan explored a wide range of areas for collaboration between Iowa State and his hosts, and has already incorporated knowledge gained from the experience into his undergraduate teaching. The collaboration also furthered his research goal of removing lead from piezoelectric devices, and is expected to lead to joint grant proposals in the future.

WALTON, BARBARA, ASSOCIATE PROFESSOR, INTEGRATED STUDIO ARTS, 19 YEARS OF SERVICE, SPRING SEMESTER

Professor Walton spent the 2012 spring semester in her Ames studio, expanding her investigation of using soy-based encaustic wax as an alternative art material. Her assignment resulted in numerous paintings, exhibits in Ames and Okoboji, and a \$9,000 grant from the Iowa Arts Council. Walton also collaborated with colleagues from Iowa State's College of Human Sciences to secure a \$70,000 grant from the United Soybean Board (*see Wang, Tong, below*); and co-authored an article on the subject for the American Oil Chemist Society.

WANG, TONG, PROFESSOR, FOOD SCIENCE AND HUMAN NUTRITION, 12 YEARS OF SERVICE, FALL INTO SPRING SEMESTER (6 MO)

Professor Wang used his six-month assignment to visit agricultural institutions throughout China, serving as a visiting professor, initiating new research projects, and exploring collaborative arrangements with Iowa State. His work resulted in two funded grants, including a \$70,000 award from the United Soybean Board; an unfunded research program with Iowa State collaborators that led to a disclosure of intellectual property to the ISU Research Foundation; two patent applications; and multiple manuscripts written for publication.

ZARECOR, KIMBERLY ELMAN, ASSOCIATE PROFESSOR, ARCHITECTURE, 7 YEARS OF SERVICE, FALL SEMESTER

Professor Zarecor spent her five-month assignment in Ostrava, Czech Republic, conducting research for a new book on the history of architecture and urbanism in Ostrava after 1955. Her work was also funded by a Fulbright Faculty Research Fellowship. Zarecor's assignment resulted in one peer-reviewed journal article, two book chapters, seven conference proceedings and presentations, and 12 invited research talks. She is also working with colleagues in Iowa State's colleges of design, engineering, human sciences, and liberal arts and sciences to develop research and student exchange programs with the Technical University of Ostrava.

UNIVERSITY OF NORTHERN IOWA

CHIN, MARTIN, PROFESSOR, CHEMISTRY & BIOCHEMISTRY, 13 YEARS OF SERVICE, FALL 2011

Synthesis and Testing of a New Diruthenium Complex for the C-H bond cleavage of n-octane
Professor Chin was able to successfully synthesize a new diruthenium complex and test its activity as a catalyst for breaking a C-H bond in n-octane. The complex was not found to be an effective catalyst for octane C-H bond cleavage, but the synthesis was new and was published in the journal *Organometallics*, with three UNI undergraduates, one French exchange student, and a Waterloo East High School teacher as coauthors. Two proposals to the National Science Foundation were also submitted as a direct result of this PDA work. One proposal was not funded and the other proposal, for \$71k, is currently being reviewed. If funded, the grant will fund research opportunities for UNI undergraduates, high school teachers and high school students. The goals outlined in the original request were met and exceeded.

COOLEY, JENNIFER, ASSOCIATE PROFESSOR, LANGUAGES & LITERATURES, 13 YEARS OF SERVICE, SPRING 2012

Nuevo amanecer: Weaving a New Beginning

Professor Cooley researched and wrote about the sociological aspects of the creation of the *Nuevo Amanecer* (New Dawn) weavers' cooperative, a group of Guatemalan women from Postville, Iowa, who sought creative means to integrate traditional practices (weaving, cooking, sewing, storytelling) from their Mayan past into their daily lives in Iowa, as a means of economic and personal survival after the immigration raid on Agriprocessors in May, 2008. From this work, Professor Cooley has one article accepted to the peer-reviewed *Journal of Latino and Latin American Studies* and one essay accepted for publication as a chapter in a book titled *In Between the Shadows of Citizenship*. She is currently writing the introduction for the script of the play *Carne viva in Postville: Stories of Madres and Monarchs* and reworking the text for submission as a publication. Her research forms the foundation of a performance/presentation at the annual *Nuestras Voces* (Our Voices) National Bilingual Sexual Assault Conference, to be held in Des Moines in April, 2013. Professor Cooley originally proposed to write a book-length manuscript, but has found that shorter essays on distinct topics came naturally out of the ethnographic research she conducted, and also provided faster dissemination of the work than a book in today's publishing environment. Professor Cooley's research will benefit UNI as it serves as a regional hub for the analysis of issues related to immigration. She is also redesigning a combined graduate/undergraduate Spanish course on immigration for the Spring 2013 semester.

FABOS, BETTINA, ASSOCIATE PROFESSOR, COMMUNICATION STUDIES, 11 YEARS OF SERVICE, FALL 2011

An Interactive History of 20th-Century Hungary

Professor Fabos' project involved four phases. In Phase I, Professor Fabos collected, documented, and obtained permission to use about a thousand photos, films, interviews (which she translated), and other archival material to illustrate the key periods in Hungarian history in the 20th century. In Phase II, she organized hundreds of these into 15 "content boxes" in a timeline, telling the history in an interactive visual manner. In Phase III working with a corporate sponsor, Visual Logic, she developed the graphic design and interface for the timeline. Phase IV is to build the project to completion, which is in progress. Visual Logic has agreed to commit additional resources to this project to bring it to the highest level of design and usability. The work in progress was presented at the prestigious Kern Conference in Visual Communication, where it was enthusiastically received as an innovative new genre of visual communication,

combining photomontage, graphic novel, and history. Professor Fabos also applied for and was awarded a Fulbright Fellowship to work in Budapest in the spring 2013 semester. The creative digital skills that Professor Fabos has acquired will be shared with her UNI students in both undergraduate and graduate classes in interactive digital visualization and communication. In public presentations, she hopes to inspire others to tell history using archival photographs.

FEATHERSTONE, RICHARD, ASSOCIATE PROFESSOR, SOCIOLOGY, ANTHROPOLOGY, & CRIMINOLOGY, 10 YEARS OF SERVICE

Professor Featherstone's PDA was originally deferred to a later term, and has now been declined, as he has accepted administrative positions within the university.

HAWBAKER, BECKY, INSTRUCTOR*, TEACHING, 14 YEARS OF SERVICE, SPRING 2012**

**Terminal Degree Completion*

**Professor Hawbaker's original PDA goals were to complete the required coursework for her Ph.D. at the University of Iowa, pass comprehensive exams, prepare the dissertation proposal, obtain Institutional Review Board approval (required for any research involving human subjects) for the research, and begin writing the dissertation. Professor Hawbaker's PDA was cut short by the closure of the Malcolm Price Laboratory School. As UNI Coordinator of Field Experience, Professor Hawbaker was recalled from PDA to chair the Field Experiences transition team and to serve on the transition steering committee. As a result of her efforts, a new model of field experiences was developed, including a process for recruiting and supporting quality area mentor teachers to absorb 600-1100 additional field experience students previously hosted by MPLS, developing a summer workshop to prepare mentor teachers for the experience, proposing and approving a compensation plan for mentor teachers, defining the roles and responsibilities for UNI field experience coordinators and assisting with the search process for coordinators, restructuring the course associated with the Level 2 field experience, and ensuring ongoing stakeholder engagement and communication. Before the MPLS closure, Professor Hawbaker was able to complete the coursework and pass comprehensive exams. Professor Hawbaker will be given the lost PDA time in a future term, possibly Fall 2013.

HITLAN, ROBERT, ASSOCIATE PROFESSOR, PSYCHOLOGY, 10 YEARS OF SERVICE, FALL 2011

Toward a Better Understanding of the Psychobiological Responses to Social Exclusion across Caucasians and Hispanics

Professor Hitlan analyzed data acquired in the Psycho-neuro-endocrinology laboratory at UNI, which allows for the collection, storage, and quantification of various biomarkers typically found in saliva (such as hormones, stress and inflammation markers, and DNA damage from oxidative stress) through a process of enzyme-linked immunoassay. Professor Hitlan had proposed the following for his project: a) write two manuscripts based on existing data sets that examined some of the biological and psychological responses linked to being ostracized and/or excluded by others, and b) connect with potential research collaborators at a predominately Hispanic institution, the University of Texas at El Paso, to train them on the proper saliva collection and handling techniques and design a series of studies that would allow for the examination of several biomarkers thought to relate to being the target of social exclusion. For part a, previously collected saliva samples were analyzed, and based on this analysis, one manuscript was submitted to the peer-reviewed journal *Hormones and Behavior* and is currently being revised for resubmission based on reviewer comments. After allocating considerable time to analyzing the data from the second study on social exclusion, Professor Hitlan found that the results were not as strong as anticipated and this study, by itself, was not a good candidate for

publication. Professor Hitlan will run an additional study during the 2012-2013 academic year in order to follow-up on this research and write-up a manuscript which includes the results of both studies. Part b of the project proceeded as planned and Professor Hitlan and his collaborators are ready to begin data collection. Because of the additional data collection needed to complete part a, Professor Hitlan prepared an additional manuscript based on a grant he received in 2011 from the Safeminds foundation for the secondary data analyses of a CDC dataset on vaccine safety (this manuscript was not part of the original PDA proposal). The article is "in press" and is due to appear in a special issue of the *Journal of Pediatric Biochemistry: Metabolic and Nutritional Disorders Associated with Neurodevelopmental Disorders*. Professor Hitlan's work benefits the university in establishing collaborations with traditionally minority institutions, and his research results will be integrated into his UNI courses in applied psychology.

JOHNSON, MARY FRISBEE, PROFESSOR, ART, 13 YEARS OF SERVICE, FALL 2011

Developing Patinas for Copper-based Metals to be used in Fabricating a New Series of Brooches

Professor Johnson met and exceeded the goals for her PDA. She researched and tested a wide variety of patinas (color and texture through chemical treatment) for copper and brass and fabricated a set of brooches featuring these surface treatments. Her aim was to obtain the widest possible color spectrum using safe, relatively inexpensive chemicals and without sophisticated laboratory equipment. She obtained sixteen different patina colors for brass and nineteen colors for copper, in the entire spectrum of color as well as black, gray, and a variety of browns and earthtones. The brooches she created are exhibited in two national exhibitions, one regional exhibition, and are on permanent display at Artisan's Gallery in New York. Professor Johnson organized her research into a seven-part written and photographic report on CD, containing information on all the necessary chemicals, equipment, procedures and recipes for producing the patinas. She has provided this free of charge to any student who wants it. She will also incorporate this material into her metalsmithing classes at UNI.

LI, JIAN, ASSOCIATE PROFESSOR, SOCIOLOGY, ANTHROPOLOGY & CRIMINOLOGY, 11 YEARS OF SERVICE, SPRING 2012

Rural-to-Urban Migration and Its Major Socioeconomic Impacts: An Ethnographic Case Study in a Mountain Village in Rural Southwest China

Since 1990, more than 260 million Chinese peasants have left their home villages for wage jobs in cities across China. Such a massive rural-to-urban migration has had profound impacts on China's agricultural production, rural community, and rural people's livelihood. During seven month's residence in China, Professor Li investigated the major impacts of such a migration upon a rural village in Southwest China by examining five vital aspects of the village: demography, economy, political organization, health, and quality of life. Participant observation and interviews with villagers and migrant laborers were utilized to collect data on how such an emigration affects this rural village and how the villagers view and adapt to the rapidly-changing sociocultural and socioeconomic conditions in their community. Professor Li accomplished all the data collection goals of his project. He will present the results of his research to UNI students in Spring 2013, to the annual meeting of the Society for Applied Anthropology in March, 2013, and to the American Anthropological Association annual meeting in November 2014. In addition, he will submit his results for publication in leading applied anthropology journals. Professor Li teaches several courses in UNI's Liberal Arts core, including China and Culture, Nature & Society. His PDA research will enhance his teaching of these courses, and he is developing a new course for Spring 2013, Environmental Anthropology.

NOH, JIHWAN, ASSOCIATE PROFESSOR, MATHEMATICS, 8 YEARS OF SERVICE, FALL 2011

Where do Prospective Secondary Mathematics Teachers gain the Mathematical Knowledge Needed for Teaching?: An International Collaboration

Professor Noh conducted a pilot of a larger study looking at pre-service teachers' pedagogical content knowledge and its relationship with learning opportunities during their mathematics teacher preparation program in Korea and the US. During the PDA period, Professor Noh studied Korean teachers and their teacher preparation programs, and the next semester conducted the same study of U.S. teachers and their teacher preparation. A total of 227 pre-service teachers from four institutions participated in the study: 99 U.S. pre-service teachers and 128 Korean pre-service teachers from different phases of their teacher education programs. Professor Noh developed and administered an assessment instrument—a survey consisting of mathematics problems. She interviewed select mathematics methods instructors about the general philosophy of the course as well as specific learning opportunities such as assignments and field experiences that may have helped understanding in the specific items of the mathematics survey. She also conducted institutional surveys on the mathematics curriculum and the curriculum of the mathematics teacher education program. The goals of the PDA were met. Data analysis is still underway. Preliminary findings suggest that a profound understanding of school mathematics and also mathematical maturity may be the prerequisites for the acquisition of pedagogical content knowledge. The process and preliminary findings of the project were presented at the Annual Meeting of the Mathematics Educator Group, which was held in Ajou University, Suwon, South Korea (December, 2011) and published in the January 2012 issue of the *Journal for School Mathematics*. Professor Noh is preparing a manuscript to be submitted to *Educational Researcher* and an application for National Science Foundation funding to conduct an extended, larger scale international study with a similar focus. Professor Noh will put the results of her study to practical use as she teaches courses such as methods and courses focusing on content for teaching. And as UNI is reforming its teacher preparation program, a study of context, organization and outcomes of mathematics teacher preparation programs in another country furthers UNI's effort into studying and improving the effectiveness of its teacher education program, impacting the learning of K-12 students of Iowa.

O'LOUGHLIN, JAMES, ASSOCIATE PROFESSOR, LANGUAGES & LITERATURES, 9 YEARS OF SERVICE, SPRING 2012

The Cord: A Speculative Fiction Short Story Cycle

The Cord is a work-in-progress that brings together a series of approaches in literary fiction and science fiction. Though the setting for the work is of a type traditionally found in "hard" science fiction (a space station tethered to the earth by a cable, so that people and freight can ascend to space easily), Professor O'Loughlin's approach to the book has been to create a more character-driven, literary narrative that happens to be set in a possible future. Over the course of the PDA, Professor O'Loughlin has written 225 pages of a projected 300-page manuscript, and is on track to submit the entire manuscript of nine interrelated stories for publication by early 2013. The goals of the PDA project were met. Because the book is a short story cycle, Professor O'Loughlin has been able to turn parts of three chapters into standalone short stories, one story, "Dead Zoned," has been published in the science fiction magazine, *Neo-Opis* and two others have currently been submitted to science fiction magazines, *Interzone* and *Asimov's Science Fiction*. Additionally, Professor O'Loughlin created a blog related to the project and he read a section of the manuscript at a work-in-progress reading sponsored by the UNI English Club. Professor O'Loughlin's experience of developing a new area of expertise in writing during this PDA is a benefit to UNI students in Professor O'Loughlin's creative writing and literature classes, as he models best practices in their own writing and reading.

POLEKSIC, ALEKSANDAR, ASSOCIATE PROFESSOR, COMPUTER SCIENCE, 7 YEARS OF SERVICE, FALL 2011

Novel Algorithms for Protein Structure Similarity Detection

The ability to accurately compare three dimensional structures of two given proteins is of key importance in biomedical research, because a structural homology of two proteins implies their functional similarity. Numerous fully automated computational methods have been developed for addressing this problem in a limited way. Recently, new algorithms capable of finding an optimal structural match in the strict sense have also been proposed, but the algorithms are computationally too expensive for large scale protein structure analysis. As part of this project, Professor Poleksic has designed and developed several improved-run-time computational procedures for optimal solution to the protein structure alignment problem, with respect to some of the most frequently used protein structure similarity metrics. The goals of the PDA project were met. Professor Poleksic has submitted these results for publication in *IEEE/ACM Transactions on Computational Biology and Bioinformatics*. He has also developed a software package StructAlignViewer which allows the user to visualize a single protein or a pair of superimposed proteins using a pre-computed structural match as input. The distinguishing feature of the new software is its ability to display, in real time, the pairwise structural superpositions and alignments, both local and global, generated by Professor Poleksic's new methods. This summer, he gave a presentation on the current state of the project at the 16th International Conference on Information Visualization in Montpellier, France. The corresponding peer-reviewed article has been published in the conference proceedings. Professor Poleksic's work helps establish UNI as a center for interdisciplinary research in bioinformatics and computational biology.

SCHNABEL, JOANN, PROFESSOR, ART, 22 YEARS OF SERVICE, SPRING 2012

Creation of Art for Public Installation

Professor Schnabel's recent work has taken her into the arena of public art projects, creating ceramic works of art that are on permanent public display, such as a wall mural at Watershed Center for the Ceramic Arts in Maine, and a multi-component wall piece in a passageway for the UNI Begeman Hall renovation. These large-scale projects are a culmination of years developing clay forms that are both responsive to the environment, a personal evolution of techniques and a challenging endeavor. During the PDA period, Professor Schnabel researched available public art projects, prepared application portfolios and extensive project proposals for seven public art projects, in locations such as Jacksonville, Florida; Philadelphia; Lincoln, Nebraska; Parkside, Wisconsin; Des Moines, and Cedar Rapids. The projects in Jacksonville and Cedar Rapids are currently pending review. Professor Schnabel also continued to work in her studio creating smaller works of art between research, concept development and applying for larger Public Art Projects. Recently these artworks were exhibited at the Damariscotta Arts Center in Damariscotta, Maine, and Professor Schnabel is pursuing other exhibition opportunities. The goals of the PDA project were met. Her expertise broadens and deepens the scope of her teaching in her UNI courses, particularly in the process for obtaining public art commissions, and the technical details of a public installation in ceramics.

WALDRON, JENNIFER, ASSOCIATE PROFESSOR, HEALTH, PHYSICAL EDUCATION & LEISURE SERVICES, 9 YEARS OF SERVICE, FALL 2011

Predictors of Hazing, Negative Initiation, and Positive Initiation Rituals in Sports

Hazing is any humiliating, degrading, or abusive behavior required of someone joining a group. According to a psychosocial model, hazing helps athletes solidify their athletic identity and gain the respect and acceptance of teammates. Professor Waldron's study, framed within this

psychosocial model, examined the influence of sex, sport type, level of competition (high school or college), athletic identity, and social approval/norm on the extent of and type of hazing, negative initiations, and positive initiations experienced by athletes. High school (n = 126) and college athletes (n = 161) from a variety of sports completed an online survey assessing the variables of interest. Approximately 42% of the participants reported participating in at least one severe hazing behavior, 33% reported participating in at least one mild hazing behavior, and 85% reported in at least one positive initiation ritual for their sport. Three logistic regression analyses were conducted. Overall, results showed that team norms for the respective hazing or positive ritual and sport level predicted severe hazing, mild hazing, and positive initiation rituals. College students are more likely to experience both hazing and positive initiation rituals than high school students, and athletes in non-contact sports are more likely to experience hazing than athletes in contact sports. Men were more likely to engage in positive initiation rituals than women. The goals of the PDA project were met. Professor Waldron's results indicate that coaches, administrators, and consultants need to proactively work to change team norms from the degrading behaviors of hazing to more positive, celebratory norms emphasizing loyalty, respect, and unity. Professor Waldron has published some of these results in the *Journal of Sport Psychology in Action* and presented them at the Association for Applied Sport Psychology meeting in October, 2012. She has been invited to write a book chapter on hazing for a book on critical issues in sport psychology, has been invited to speak at other colleges, and has been contacted as an expert by various news outlets in Iowa in the wake of recent hazing incidents. She also integrates her research findings into the classes she teaches at UNI, such as Gender and Sport, and Psychosocial Aspects of Competitive Sport.

WALTERS, JAMES C., PROFESSOR, EARTH SCIENCE, 37 YEARS OF SERVICE, FALL 2011

Sorted Patterned Ground Phenomena of South Central Alaska

Sorted patterned ground forms (stony circular rings) are common features of the periglacial environment on the south side of the central Alaska Range, along the Denali Highway in the Tangle Lakes Archaeological District. Beginning in 1982 and continuing through 1992 with brief visits in 1993, 1996-2003, and 2008, Professor Walters has been monitoring the degree of activity of sorted circles at eight different sites. Although these studies have increased knowledge of the processes and rates of formation of patterned ground, there still was no generally accepted model that attempts to explain how these processes act together over time to produce the observed features, and that was the goal of the PDA project. The eight sites were located and assessed for rates of clast (loose stone) movement in the patterns. Transect lines were run to detail morphometry of slopes, depth to permafrost, soil moisture, pattern characteristics, and vegetational associations. Approximately 1000 digital photos were taken to allow comparison of clast positions with previous years. Trenches were excavated across several of the patterns and sediment samples were collected at various depths. A model of sorted patterned ground formation was developed: Given optimum conditions of soil texture and moisture, such as is found at these study sites, processes such as differential frost heave will produce well-developed sorted circles. As circles evolve, the coarser sediment moves progressively upward and outward, away from the circle center. Fine sediments move up and into the circle center where they dominate. At the surface, the fine sediment is slowly removed by deflation, rainwash, sheetwash, etc and the circle center becomes stonier as more coarse material continues to move upward. Eventually the fine sediments become separated from their source below and the circle progresses to an end point—a circle consisting of smaller stones within a circular pattern of larger stones. The goals of the PDA project were met.

In the course of his time in Alaska, Professor Walters consulted with and shared his preliminary findings with scientists from the Bureau of Land Management, the U.S. Army Corps of Engineers' Cold Regions Research and Engineering Laboratory, and the University of Alaska at Fairbanks. The Bureau of Land Management asked Professor Walters for information to be used for new signage regarding the permafrost features in the area of the Denali Highway. Professor Walters presented his results, including an extended abstract, at the 10th International Conference on Permafrost, held in Russia in Summer 2012. This conference is only held every four years, so to have his work accepted to this conference is a mark of the importance and prestige of the work.

ZAN, BETTY, ASSOCIATE PROFESSOR, CURRICULUM & INSTRUCTION, 18 YEARS OF SERVICE SPRING 2012

Web-Based Resources for Early Science and Engineering Education

The purpose of Professor Zan's project was to identify, gather, and make available on the web video exemplars of high-quality early childhood practices in the fields of science and engineering that will be used in outreach and professional development efforts. During the PDA period, Professor Zan visited 14 early childhood classrooms in five locations across the country, supported by a \$31k grant from Rockwell Collins, video recording science and engineering experiences for young children, ages 1 year to 2nd grade, and talking to teachers about their approaches to science and engineering. Video data from these classrooms will provide resources that will support preservice teacher education and inservice teacher professional development for years to come. All objectives of the PDA were accomplished, except the final editing of the video and posting on the web, due to budget constraints at UNI that resulted in loss of audio-video expert personnel. In addition to Professor Zan's data collection efforts, she was also able to engage in outreach and dissemination efforts during her visits, conducting professional development workshops for early childhood teachers in the Baltimore, MD, Schools and at a Pasadena, CA, STEM conference, and meeting with graduate students in Johnson City, TN. She presented her results at the annual conference of the Association for Constructivist Teaching in October, 2012, and will prepare a manuscript, with embedded video, for submission to the peer-reviewed open-access journal *Early Education Research and Practice*. The videos she recorded will be placed on the Regents Center for Early Developmental Education's Center for Early Education in Science, Technology, Engineering, and Mathematics website, and Professor Zan and colleagues have also obtained web space on the National Association for the Education of Young Children website, which will provide additional exposure for the project videos. Professor Zan has also written proposals to Tufts and to the National Science Foundation, but these were not funded. Professor Zan's work benefits her UNI pre-service teaching students in classes such as Early Childhood Curriculum Development and Organization, and Infant and Toddler Curriculum and Guidance, and also will be of benefit to in-service teachers in Iowa and across the nation. Professor Zan's work enhances the reputation of UNI as a leader in PK-12 education.