

**ACADEMIC PROGRAM AND
FACULTY DEVELOPMENT FUND REPORT
TO THE BINGHAMTON UNIVERSITY FOUNDATION**



Executive Summary

In 2009, the Binghamton University Foundation Board of Directors designated \$2 million from a large anonymous gift to advance the University's academic mission. In consultation with the Foundation Board, the provost created the Academic Program and Faculty Development Fund to support projects initiated by faculty and deans. Between 2009 and 2012, the provost invited proposals to support research projects and program development initiatives. A panel of faculty members and administrators reviewed the proposals and made recommendations to the provost, who made final funding decisions. During this period, 33 projects, totaling \$696,795, were funded.

In 2013, as Binghamton University initiated a new approach to research by identifying and investing in five Transdisciplinary Areas of Excellence (TAEs), the provost asked the Foundation Board of Directors for its support for a different approach to allocating funds from the Academic Program and Faculty Development Fund. Rather than issuing a general call for proposals, he recommended that \$25,000 be allocated annually to each of the TAEs, and that the faculty steering committee that guides each TAE use the funds to support research and programming. By doing so, the Fund would support a University initiative that guides faculty recruitment and seeks to enhance Binghamton University's strength and stature as a research university. With the support of the Foundation Board, this strategy was implemented in the 2013-14 academic year.

A total of \$125,000 was allocated to the five TAEs for use in 2013-14. Because this was the inaugural year for the TAEs, the steering committees spent considerable time defining the foci of their areas, developing plans to invest resources at their disposal, and participating in 30 faculty searches in five schools. As a result, the steering committees allocated a total of only \$65,308 to support research and programming. However, the initiatives supported played a critical role in getting the TAEs off to a strong start and building support across campus for this new approach to research and hiring.

Updates on funded projects

Transdisciplinary Areas of Excellence Projects Supported in 2013-14

Citizenship, Rights and Cultural Belonging

Steering Committee Chair: Bat Ami Bar-On, professor of philosophy, Judaic studies, and director of IASH

During the 2013-14 academic year, the Citizenship, Rights and Cultural Belonging TAE focused its attention on defining three areas of research focus: Citizenship and Belonging; Human Rights; and Movement, Place and Conflict, as well as involvement in six faculty searches. The steering committee used \$960 of the funds allocated to sponsor an event—titled “Quick Conversations”—which brought together faculty from across campus who share an interest in the TAE's theme to discuss their research interests with colleagues. The committee plans to use the remaining funds in 2014-15 to support a competition for collaborative research grants and scholarly conferences.

Health Sciences

Steering Committee Chair: Terrence Deak, professor of psychology

The Health Sciences TAE utilized the generous funding provided by the Binghamton University Foundation to support several major endeavors. Specifically, \$13,000 was dedicated to seed grant projects for faculty collaborations that are expected to develop into extramural grant submissions. The second major category of spending was to support interactive scientific meetings in a variety of areas,

including a new emergent group of faculty with common interests in Environmental Genetics; a scientific symposium that brought distinguished scientists from around the world to the new Center of Excellence to present papers on learning, memory and alcohol exposure that will be published in a special issue of the scholarly journal, *Physiology and Behavior*; support for Harpur's Ferry EMS conference; and travel expenditures for speakers at the Global Health Research conference held on campus this past spring. The remaining budget is being held in reserve for anticipated growth of requests for funds in the upcoming fiscal year. All expenditures were reviewed and approved by the Health Sciences TAE.

Material and Visual Worlds

Steering Committee Chair: Tom McDonough, associate professor of art history

During the 2013-14 academic year, the Material and Visual Worlds TAE focused its energies on developing an engaged consortium of faculty and graduate students across campus, and its use of funds reflects this priority. During the Spring 2014 semester the steering committee invited to Binghamton five internationally renowned scholars and artists whose work has significantly shaped current thinking on issues of materiality and visuality: Daphne A. Brooks (Professor, English and African-American Studies, Princeton University), Timothy Ingold (Professor, Anthropology, University of Aberdeen, Scotland, UK), W. J. T. Mitchell (Gaylord Donnelly Distinguished Service Professor, English, Art History, and Visual Arts, University of Chicago), Walid Raad (Associate Professor, Art, The Cooper Union), and Michael Shanks (Professor, Classics, Stanford University). Each speaker delivered a public lecture and led a closed seminar with a faculty-graduate student working group. Funds from the Foundation supported honoraria and travel expenses, as well as allowing us to cater the lunchtime seminars. Total cost was \$15,381.

Smart Energy

Steering Committee Chair: Wayne Jones, professor of chemistry

The Smart Energy TAE advanced the University's strength in energy research by focusing its attention on three areas: energy generation; energy storage; and energy efficiency. The steering committee used \$14,619 in funding from the Foundation to support research and programming related to these areas of focus. The steering committee issued a request for collaborative research proposals that generated a strong response from faculty. Ultimately, six proposals were selected for funding. Funds from the Foundation supplemented support from the Road Map to allow the steering committee to fund six proposals. The steering committee also supported an interdisciplinary speakers' series that brought 10 nationally prominent researchers to campus and sponsored a symposium on energy storage in April 2014.

Sustainable Communities

Steering Committee Chair: Pamela Mischen, associate professor of public administration

The Sustainable Communities Transdisciplinary Area of Excellence has an active Steering Committee comprised of 12 members from all six Schools and Colleges at Binghamton University. Additionally, there are 20 affiliated faculty and staff who have presented at conferences hosted by the TAE or received grants from the TAE, and five new faculty who will be joining the University in the fall of 2014 who will be affiliated with the TAE. In its first year, the TAE identified five goals and created working groups around four important topics related to sustainable communities: the local impacts of hydraulic fracturing; sustainable communities in the Southern Tier; aging communities; and health equity. The TAE hosted

four events over the past year—a fall conference open to Binghamton University faculty, staff and community members with more than 75 participants; a two-day conference on the local impacts of hydraulic fracturing (funded by SUNY Conversations in the Discipline) that was attended by researchers from across the nation and Canada; a day-long health equity symposium; and an evening with Roseanne Haggerty, president and CEO of Community Solutions, an organization dedicated to strengthening communities and ending homelessness. The steering committee allocated \$8,441 in funding from the Foundation to support these projects.

Projects Funded, 2009-2013

Understanding Health Service Needs and Availability for Foreign-born Individuals in the Southern Tier Area

Principal Investigator: Youjung Lee, Assistant professor of social work

This study consists of two phases. In Phase I (Quantitative Phase), the Area Resource File was obtained and linked with the 2007-2009 Public Use Microdata Sample (PUMS) of the American Community Survey. The findings of the analyses were prepared and sent to conference proposals and manuscripts for publications. Based on the finding of the quantitative research, in the Phase II, the research questions were refined and focused on older adults raising grandchildren in Southern Tier Area. Qualitative interviews with 23 grandparents were conducted and the findings from the interviews were submitted for conference proposals (i.e., Gerontological Society of America) and manuscripts. To specify their needs and ways to help the families further, we expect to conduct qualitative interviews with teachers and school administrators who work with the grandparents-headed families in Southern Tier Area.

Inter-institutional Partnership to Offer Joint PhD Seminars

Principal Investigator: Upinder Dhillon, dean of the School of Management

The School of Management continued its inter-institutional partnership with Syracuse University enabling students at the two institutions to participate in PhD seminars offered at Syracuse or Binghamton. Three accounting PhD students, Qiaoqiao Jiang, Jung Yeun Kim, and Julie Hunt attended Professor Charles Wasley's PhD seminar in Empirical Financial Accounting at Syracuse between September and November 2013. As part of the seminar, the students presented research proposals to Professor Wasley and work on at least one proposal will be continued as a joint collaboration between the SOM student, her adviser (Professor Nan Zhou) and Professor Wasley. Professor Charles Wasley is the Joseph and Janice Willett Distinguished Scholar at the University of Rochester.

Binghamton University Biospecimen Archive

Principal Investigator: Ralph Garruto, professor and director of the Binghamton University Biospecimen Archive Facility

During 2013-2014 we finished the archiving of all documents and most of the field slides related to each of the Biospecimen collections in the Archive. This entailed scanning the remainder of the files and using an existing 35mm slide scanner to electronically digitize the field slides that were related to each of the specimen collections. The funding provided through the Binghamton Foundation has been critical to the success of this unique project. Today(7-22-14) I received word that we were awarded a \$100,000 grant from the National Geographic Society (Genographic Project) to conduct research on some of the Melanesian Collection in the Archive. Our success was in no small part related to the fact that we have electronically archived files and field notes relating to each of the specimen collections we will be using for the grant. That allows the BU Library to maintain the electronic file and the archive to maintain the

specimens for use by BU Faculty and Students as well as scientists globally. **The project is now complete.**

Building Critical Research Practice Skills in Our Students

Principal Investigator: Angelique Jenks-Brown, associate librarian

Much progress has been made since the previous report to the Board dated March 15, 2012. The suite of 8 online Library Tutorials, that each takes between 15 to 45 minutes to complete, was launched fall 2012. The tutorials are available through Blackboard and are intended to be assigned to students by their instructors. At the end of each tutorial students have an opportunity to take a quiz and receive a personalized certificate of completion that s/he can present to the course instructor. Assessment of the tutorials was done during Spring 2013, which included the numbers of students taking the tutorials each semester, a student survey, one question in a faculty/TA survey, and informal conversations with faculty about the tutorials, all conducted by Task Force members. Edits to the tutorials were done based on the assessment. During summer 2013, two librarians from the Task Force presented on the tutorials at the SUNY Librarians Association Annual Conference in Buffalo, NY. In spring 2014, two different Task Force librarians attended the Distance Library Services conference in Denver, CO to give a poster presentation about the tutorials. Both of these presentations were met with great interest and enthusiasm about the tutorials and Binghamton University. During fall 2013 and spring 2014 a Task Force of Science Librarians created content for three new tutorials to support the University's Research Streams: Biofilms, Physics for Smart Energy, and Neuroscience. A Computer Science graduate student was hired for the summer 2014 to put the content into a web interface, and the librarians are currently receiving feedback from the course instructors. These new tutorials will be launched fall 2014. Assessment of the new tutorials will follow, as well as assessment of the quiz questions in Blackboard with the help of the Campus Instructional Designer.

Academic Success Program for International Students - Second Year

Principal Investigator: Jennifer Brondell, director of ESL

This program supports matriculated freshmen international students by providing intensive language, culture and socialization five weeks before the start of their first fall semester. Students earn 6 credits toward their degree and are provided with a variety of experiential activities geared at holistically orienting them to life on campus. Besides the high-intermediate level ESL language course and a course called "American College Culture," the program includes guest lectures, sessions with various other support services and resources on campus, off-campus excursions and a large amount of debriefing and self reflection. ASP students are monitored for academic intervention needs through midterm evaluations and ESL tutoring. Follow-up has revealed that ASP students have had higher average GPAs at the end of their first year than previously seen before the program existed (for students with comparable entrant TOEFL scores), with 50 % of ASP 2013 students maintaining 3.0 or above and 1/3 maintaining above 3.4 GPAs.

Research Center for the Interdisciplinary Study of Sexuality

Principal Investigator: Sean Massey, associate professor of women, gender and sexuality studies

The overarching goal of this project has been to formalize, expand and promote an existing sexuality research group - supporting student mentorship and scholarship, engaging faculty and students in interdisciplinary discussions related to sexuality and gender, pursuing an active and ongoing interdisciplinary program of research, and seeking funding for sustainability. Over the past year, the group has had several significant accomplishments that support these goals. We continued our sexualities lab, involving faculty and students in the conceptualization and production of several interdisciplinary research projects. Two of these projects resulted in presentations at Binghamton

University's Student Research Days. The first explored the role of parody in confronting sexualize images in popular music videos and the second explored the relationship between gender, sexual assertiveness, and pleasure during hookup encounters among emerging adults. Another project resulted in a paper presentation at the American Psychological Association. This project used queer theory to explore the relationship between sexual identity, sexual attitudes and sexual pleasure. A group of IRGSS faculty recently submitted a R21 proposal exploring minority stress among same-sex headed families with children to the National Institute of Health. Finally, IRGSS also co-sponsored a talk and performance by activist, critic and poet Staceyann Chin.

The Binghamton Innovation Program (BIP)

Principal Investigator: Bahgat Sammakia, distinguished professor of mechanical engineering and vice president of research

The Binghamton Innovation Program seeks to enhance the status and visibility of Binghamton University's culture of innovation. Activities for 2013-14 include sponsorship of the annual Innovation Day, *Big Data: Making Sense of the World*. The April 24, 2014 event, which drew 150 participants from industry and academia, focused on Big Data and how it relates to fields ranging from healthcare to finance. The program, organized by the Office of Entrepreneurship and Innovation Partnerships in conjunction with Binghamton's Center of Excellence, featured plenary lectures and panels as well as tours of the Innovative Technologies Complex and a research poster session. Prominent speakers included: Katharine Frase, Vice President and Chief Technology Officer IBM Public Sector; Scott Zeger, Vice-Provost for Research Johns Hopkins University; and Hao Wang, Vice President Information Services and Chief Information Officer for the Research Foundation for SUNY. Additional activities included the development of a new Innovation Website, Innovation @ Binghamton, which will create excitement about Innovation activities at Binghamton as well as extensive information about entrepreneurship and entrepreneurial resources, and will also include an Industry Portal.

New Interdisciplinary Graduate Concentration/Certificate Programs in Complex Systems Science and Engineering

Principal Investigator: Hiroki Sayama, associate professor of bioengineering and systems science and industrial engineering

The Advanced Graduate Certificate Program in Complex Systems Science and Engineering was proposed to the New York State Department of Education and was officially started as SUNY's first academic program on complex systems in spring 2013. The program's dedicated website has been created directly under the "binghamton.edu" domain (<http://binghamton.edu/cx/>), indicating the truly interdisciplinary nature of the program. An official flyer was also produced for promotional purposes (<http://binghamton.edu/cx/CXflyer.pdf>).

A total of 12 students have been enrolled in this certificate program so far (7 from Systems Science, 3 from Industrial Systems Engineering, 2 from Biomedical Engineering), and 9 of them have already completed the program. The core coursework of the program includes:

- BME-524 Graduate Seminar for Complex Systems Science (offered every semester)
- SSIE-523 Collective Dynamics of Complex Systems (offered in Spring 2013)
- ECON-696H Agent-Based Policy Modeling (to be offered in Fall 2014)
- At least one elective with greater emphasis on theoretical foundations
- At least one elective with greater emphasis on applications

In spring 2013, SSIE-523 was offered simultaneously for distance learning via EngiNet as well. Part of the support from the APFDF fund has been utilized to run the seminar course (BME-524) by hiring a TA (Jeffrey Schmidt) in spring 2014 while the PI was on sabbatical and covering seminar refreshments.

In the year 2014-2015, we will work on the following action items:

- Conduct an exit survey with those who completed the program
- Increase the enrollment from non-Watson School students (especially from Economics and Management)
- Receive external evaluation of the program
- Write an open-access textbook on the foundations of complex systems (<http://opensuny.org/omp/index.php/SUNYOpenTextbooks/catalog/book/134>)
- Develop a concentration in Complex Systems Science and Engineering as part of the Systems Science Graduate Program

Participation in Outside Activities as a Mediator of Adolescent Behavior Outcomes

Principal Investigator: Susan Seibold-Simpson, assistant professor of nursing

The purpose of the study is to determine the extent to which organized activities mediate the effect of protective and risk factors at the individual, family, peer, school and community levels on adolescent risk behaviors, specifically alcohol and drug use through an analysis of a youth survey conducted in Broome County schools. Our long-term goal is to outline best practices for schools and communities seeking to develop a system of organized activities for adolescents based on the risk factors prevalent in their communities.

This year the focus has been on two separate projects. First, working with two separate students, we developed a report of protective and risk factors for each school that we collected data from in 2010. The analyses are descriptive and correlational. We explored how to conduct and present analyses in a meaningful way for each school.

Second, working with a senior undergraduate student, a research question was identified and answered based on secondary data analysis. The student presented her findings at Binghamton University's Research Days and at a national conference.

Finally, preliminary steps have been taken to move forward on data collection at Binghamton High School. I plan to continue this process this year as well as continue to conduct secondary data analyses of the data with students from the School of Nursing.

Binghamton Urban Ecosystem Initiative

Principal Investigator: David Sloan Wilson, distinguished professor of biological sciences, Mark Blumler, associate professor of geography, Anne B. Clark, associate professor of biological sciences, Richard Shaker, assistant professor of Geography, Julian Shepherd, associate professor of biological sciences, and Weixing Zhu, associate professor of biological sciences

The Binghamton Urban Ecosystems Initiative (BUEI) was created to foster study of ecological and evolutionary aspects of urbanization, and comparison with suburban and rural areas in Broome County. One component of this initiative is the documentation and study of patterns of biodiversity in the region. Several BUEI faculty and their students have gathered data on Broome County biodiversity. These data need to be collated in a database, to enable mapping and understanding of locations of rare species, invading species, and patterns and causes of biodiversity, and the threats to it. In 2014, BUEI hired a Geography graduate student to set up the database and enter the data, under the supervision of Rich Shaker (since departed for another university) and Mark Blumler. The database is now up and running. The largest and most significant data set, collected by Julian Shepherd from more than 200 locations around the county, is entered in the database. Additional datasets are currently being entered into the database; subsequently, additional features will be added to allow interactive data entry, and mapping in association with human and environmental parameters.

GERD Risk in College Students

Principal Investigator: Lina Begdache, adjunct lecturer of biological sciences

The purpose of this research project is to test the effects of low glycemic diet on GERD symptoms and stress in Binghamton University students. Dietary treatment of GERD and stress without resorting to pharmacological means may have great impact on quality of life. Funds were used as gift cards compensation for subjects who completed the 3-week course study. Results from this study generated two posters that were displayed at Research Days conference and at Binghamton Biomedical Research Conference. The project involves a Gastroenterologist Dr. Amine Hila from Binghamton Gastroenterology Associates and a total of 6 undergraduate BU students.

Advancing Collaboration, Pedagogy, Adaptive Infrastructure and the Sciences through the Interdisciplinary Tobacco Research Program (ITURP)

Principal Investigators: Geraldine Britton, assistant professor of nursing, Gary D James, professor of anthropology and director of IPPHC, Steven Lynn, distinguished professor of psychology

The Interdisciplinary Tobacco Use Research Program (ITURP) is a collaboration of researchers across several schools and departments of Binghamton University, as well as health care providers across the Twin Tiers of New York and Pennsylvania. The overall goal of ITURP is to create an adaptive infrastructure that promotes academic excellence and innovation by conducting research to address tobacco use and behavioral change issues. We have studied the effectiveness of a nurse-managed cessation program, conducted focus groups to explore the experiences of pregnant smokers and their providers, developed and pilot-tested a perinatal smoking status survey, produced two interventional videos for use in the clinical arena, assessed tobacco use on campus, and supported student involvement in research. In addition, during the 2013-2014 academic year, this research program has conducted the following activities to meet our stated objectives to obtain support from the Academic Program and Faculty Development Fund.

Objective 1. Sustain and expand collaboration among the current network of healthcare providers throughout the Twin Tiers:

- Analyzed data collected on 100 pregnant women at 3 different clinical sites testing the accuracy of a smoking status survey (that we had developed) using urinary cotinine as a referent.
- Presented preliminary results at a Decker School of Nursing Research forum.
- Designed a study to test effectiveness of two prenatal videos that we produced; received IRB approval from Binghamton University and Lourdes Hospital; conducted preliminary in-services to DeMarillac staff on the research protocol; began collection of data.
- Collaborated with the Broome County Public Health Department, United Health Services, The American Cancer Society, as well as various departments at the university to create a “Healthy Campus” campaign with tobacco use as one focus.
- Conducted two studies to explore the attitudes, beliefs and knowledge regarding the concept of a “healthy campus”, tobacco use and a tobacco free campus. Subjects included 393 students and 140 parents at University Fest and Family Weekend during the fall semester. Slogan selected by study participants for a “healthy campus” was *B-Healthy* which has been adopted for general use by Binghamton University. Additional studies regarding campus behavioral issues are described below.
- Attended Albany meeting on SUNY Tobacco Free campuses and presented summary report to President Stenger and to the SOG+ meeting.

Objective 2. Support the pedagogical infrastructure of student participation. This will occur on the undergraduate and graduate levels and include students from various disciplines.

- Mentored 17 undergraduate, 2 masters and 5 doctoral level students.
- Designed and offered the first course (NURS499) in the DSON for undergraduate nursing students to actively participate in ongoing clinical research. In the fall semester 8 students were registered and in the spring, 11 students. The DSON Faculty Council officially approved the course in April.
- Guided students in the conduct of all the aforementioned studies as well as 3 additional activities. For the Great American Smoke Out students surveyed their peers (125 subjects) regarding their tobacco use and attitudes re a tobacco-free campus and monitored their CO levels. At another event in the Union during the spring semester, ITURP students joined REACH volunteers in tabling education on hookah and e-cigarettes, as well as continuing collection of survey and CO level data.
- Assisted 3 doctoral students to attend and present posters at the Society of Nicotine and Tobacco Research meeting in Seattle (2/14), and 5 undergraduate and 2 doctoral students to attend and present posters at the Eastern Nurses Research Society meeting in Philadelphia (4/14). Also, in April 2014, four students presented at Binghamton University's Biomedical Conference. All 22 students from all levels participated in at least one aspect of the data collection, analysis, design and scripting of the posters.
- Supported one PhD student who presented a paper to our local chapter of Sigma Theta Tau on women and tobacco and preliminary results on the effectiveness of the prenatal tobacco fetal effects video.
- Advised another PhD student who defended her dissertation on the effectiveness of educating perinatal nurses on smoking relapse prevention.
- Assisted undergraduate students in presenting research findings on the Healthy Campus initiative including the slogan *B-Healthy* to the campus-wide Healthy Campus committee. They also presented a PowerPoint summary of all their research activities at ITURP's end-of-the-year meeting.

Pathways Project: Building Connections in Families Living with Dementia

Principal Investigator: Paul Gould, visiting assistant professor of social work

The Pathways Project is on-going. Initial funding provided a strong foundation for the purchase of materials to be used with older adults and families living with dementia. Two interns (Fellows in the Hartford Partnership Program for Aging Education) were funded during the first year of the project to develop groups, recruit families to participate, and to provide direct services through the program. The interns were also responsible for data collection. Several groups have been hosted in Broome County. The Institute for Intergenerational Studies' Southern Tier Center on Aging is dedicating a doctoral student for the 2014-2015 academic year to continue the work previously conducted by the interns. The university's IRB has approved this study. Recruitment has been gradual. As anticipated, many families living with dementia experience chronic stress paired with feelings of "no time" and fatigue. This is exacerbated by family members' frustration with motivating and transporting their loved ones. Furthermore, while a number of families have expressed interest in the group activities, they have opted not to participate in the research; under the terms of the IRB approval, we must allow these families to participate in the groups while not participating in the research protocol. We are receiving consistent support in our recruitment efforts from the *Broome County Office for Aging and Alzheimer's Association*. I am in the process of having the Pathways Project listed as a clinical trial under the Alzheimer's Association. Furthermore, the project will consider additional host sites for Pathways groups.

Second Annual Binghamton University German Studies Colloquium

Principal Investigator: Neil Christian Pages, associate professor of German and Russian studies

Funding supported the fifth annual Binghamton University German Studies Colloquium (BUGSC) held on the Binghamton University campus in April 2014. Organized by the Department of German and Russian Studies, BUGSC brings together scholars, teachers, artists, writers, filmmakers, translators and others interested in German Studies for two days of presentations, workshops and intellectual colloquy. The two-day event promotes the work of Binghamton's German Studies Program to an international audience and brings renowned scholars to campus both as speakers and as participants in the Colloquium. The fifth BUGSC highlighted the German Studies Program's best practices in scholarship, teaching, curriculum development, outreach, and internationalization and focused in particular on the role visual worlds and the study of visual culture play in German Studies. The 2014 BUGSC theme, "What Visual Culture Does for German Studies," attracted a diverse range of practitioners in the field and in related interdisciplinary areas to campus for panels, roundtable discussions, a keynote lecture and a praxis-oriented workshop. The BUGSC workshop, as in past years, was informed by the scholarship of an expert in the field. Randall Halle, Karl W. Jonas Professor of German Culture and Film Studies at the University of Pittsburgh, served as keynote speaker and workshop leader. Halle worked with BUGSC participants as they engaged with questions about the place of German and European visual culture in the scholarship and pedagogical concerns of the field.

A Ubiquitous Sensing-Based Study on the Social Networks in Academic Environment

Principal Investigator: Ting Zhu, assistant professor of computer science

Supported by this research grant, the PI has published three papers [1, 2, 3] in conferences that are among the best conferences in the PI's research area. For example, SenSys is widely regarded by researchers as one of the two (along with IPSN) most prestigious conferences focusing on sensor network research [4]. The PI also leveraged the smart phones purchased in this project for the students' course projects and a project for an REU student. Students have developed localization techniques and social network applications. Supported by this grant, multiple students have attended premier conferences.

Based on the research results from this project, the PI has collaborated with an external collaborator (Dingcheng Li) and submitted a proposal to NSF [5]. Currently, the PI is in the stage to wrap-up the whole project.

[1] Social-Loc: Improving Indoor Localization with Social Sensing, In the 11th ACM Conference on Embedded Networked Sensor System (SenSys), Rome, Italy, November, 2013.

[2] DEOS: Dynamic Energy-Oriented Scheduling for Sustainable Wireless Sensor Networks, In Proceedings of the 30th IEEE Conference on Computer Communications, Orlando, FL, April 2012.

[3] Collaboration in Social Network-based Information Dissemination," In Proceedings of the IEEE International Conference on Communications (IEEE ICC '12), Ottawa, Canada, June 2012.

[4] About SenSys, Wikipedia, available

at: http://en.wikipedia.org/wiki/Conference_on_Embedded_Networked_Sensor_Systems

[5] PI: Ting Zhu, Co-PI: Dingcheng Li, SCH: INT: Collaborative Research: Connecting Body Sensor Monitoring Techniques with Big Medical Data for Highly Scalable Comorbidity Identification and Prevention, submitted to NSF.