

**PDAC Book of Abstracts
Fall 2012**

- 1. Working through Fanny Fern and Louisa May Alcott: A Pedagogical Approach to Women and Work**, Nina Bannett, English Department, *Pacific and Ancient Modern Language Association Conference*, Seattle Washington

Students in my women writer course are usually full-time workers, parents, and full-time students, three workers in one. They explore the theme of work by reading Fanny Fern's "The Working Girls of New York" (1868) and Louisa May Alcott's "How I Went Out to Service" (1874), and writing *either* an analytic paper or a short story in which Fern, Alcott, and the students themselves meet and discuss women and work in the 21st century. Students engage in dialogue, either via conventional textual analysis or their imaginations, incorporating their own experiences or those of a contemporary woman they know well as they examine similarities and differences between nineteenth-century and twenty-first century concepts of work. The results demonstrate a leap in students' understanding of their own status as workers *and* of Fern and Alcott as professional writers.

- 2. The Rhetoric of Resiliency: Complicating the Core Values of the United States Army Comprehensive Soldier Fitness Program**, Jill Belli, English Department, *Society for Utopian Studies Conference 2012*, Toronto, Canada

This year's paper grows out of the work I have presented at SUS the past two years: positive psychology and happiness studies in dialogue with the utopian impulse (2010) and the emerging field of positive education, or curricula for teaching well-being (2011). This year I continue these conversations by examining the rhetorical and pedagogical functions of the United States Army Comprehensive Soldier Fitness (CSF) program. CSF is a mandatory positive psychology curriculum for soldiers aimed at decreasing Post-traumatic Stress Disorder (PTSD), anxiety, depression, and suicide, and increasing resiliency, psychological fitness, and strength in four areas: emotional, social, family, and spiritual. I will demonstrate CSF's rhetoric and pedagogy straddle (often unsuccessfully and unconsciously) self-help and positive psychology discourses. In doing so, they showcase the competing tensions of individual improvement and social justice, apolitical progress and politically engaged action, and descriptive reporting and prescriptive advice. CSF shares in self-help and positive psychology's mission of increasing flourishing by equipping our nation's soldiers with decontextualized tools and strategies for coping with war without appropriately considering their relevance to the realities of life in (or post) combat. What makes CSF a particularly important site of inquiry is that it is "a hugely consequential national issue" (Quick 645).¹ The program affects individual soldiers, their families, and DA civilians as well as the international community impacted (directly or indirectly) by United States military actions. Additionally, CSF leaders, developers, and advocates have repeatedly announced a clear intention to roll out the program to other military branches² and to model future civilian programs on CSF, so both the stakes and the stakeholders go far beyond the soldiers for whom CSF is currently mandatory.

- 3. Superfluidity of dipole excitons in two layers of gapped grapheme**, Oleg Berman, Physics Department, *The 31st International Conference on the Physics of Semiconductors 2012 (ICPS 2012, Zurich, Switzerland*

We propose to observe superfluidity of quasi-two-dimensional dipole excitons in double-layer graphene in the presence of band gaps [1]. It is assumed that the electron is in one layer and the hole is in the other layer, including band gaps in each graphene sheet. Firstly, we study the formation of an exciton due to Coulomb interaction in two layers of graphene, which are separated by a dielectric, as a pair of a Dirac

¹ Quick, James Campbell. "Missing: Critical and Skeptical Perspectives on Comprehensive Soldier Fitness." Comment to *Comprehensive Soldier Fitness*. Oct. 2011 Spec. issue. *Psychologist* 66.7 (2011): 645.

² As of this writing (Summer 2012), the military has already rolled out a Global Assessment Test (GAT) for Airmen (Air Force) as well as a Sailor Tracker, Airman Tracker, and Marine Tracker (versions for the Navy, Air Force, and Marines of the Army Soldier Fitness Tracker).

hole and a Dirac electron. Secondly, we propose to observe Bose-Einstein condensation (BEC) and superfluidity for a quasi-two-dimensional gas of such dipole excitons in double-layer graphene. The energy spectrum of the collective excitations, the sound spectrum, and the effective exciton mass are functions of the energy gaps, the density and the interlayer separation. We show that the effective exciton mass increases when the total energy gap and interlayer separation increase. The dependence of the exciton mass on the electron-hole Coulomb attraction and interlayer distance comes from the Dirac-like spectrum of electrons and holes. The superfluid density and temperature of the Kosterlitz-Thouless phase transition are decreasing functions of the energy gaps as well as the interlayer separation, and therefore, could be controlled by these parameters

The advantage of observing the exciton superfluidity and BEC in graphene in comparison with these in CQW's is based on the fact that the exciton superfluidity and BEC in graphene can be controlled by the gaps which depend on doping. Note that we considered the superfluidity in two cases: i) an equilibrium system of electrons and holes created by the gates; ii) the electrons and holes created by the laser pumping such that the excitons are in the quasi-equilibrium thermodynamical state.

References [1] O. L. Berman, R. Ya. Kezerashvili, and K. Ziegler, Phys. Rev. B **85**, 035418 (2012).

Renata Budny, Department of Restorative Dentistry. Participated In the following Conferences: National Association of Dental Laboratories/ National Board For Certification/Foundation for Dental Laboratory Technology Joint Strategic Planning Meeting – August 16-18, 2012

This year's NADL/NBC/FDLT was the first meeting of its kind that I have attended. This is also the first year for me to serve as a Trustee on the Board of Trustees for the Foundation for Dental Laboratory. During the 3-day joint strategies planning session I was able to participate in discussions related to the profession of dental laboratory technology at the national level. We discussed new federal excise tax threatening to eat away the profits from dental professionals fabricating medical devices, new state and federal regulations as related to our profession, other legal and organizational issues as well as revisiting present and approving future initiatives that the National Association of Dental Laboratories, the National Board for Certification and the Foundation for Dental Laboratory Technology have or will undertake.

Supporting a Diverse community of Undergraduate Researchers in Satellite and Ground-Based Remote Sensing: Reginald Blake & Janet Liou-Mark, *American Geophysical Union 2012 Conference*

The U.S. remains in grave danger of losing its global competitive edge in STEM. To find solutions to this problem, the Obama Administration proposed two new national initiatives: the *Educate to Innovate Initiative* and the \$100 million government/private industry initiative to train 100,000 STEM teachers and graduate 1 million additional STEM students over the next decade.

To assist in ameliorating the national STEM plight, the New York City College of Technology has designed its NSF Research Experience for Undergraduate (REU) program in satellite and ground-based remote sensing to target underrepresented minority students. Since the inception of the program in 2008, a total of 45 undergraduate students of which 38 (84%) are considered underrepresented minorities in STEM have finished or are continuing with their research or are pursuing their STEM endeavors. The program is comprised of the three primary components that are highlighted in figure 1.

The first component, *Structured Learning Environments: Preparation and Mentorship*, provides the REU Scholars with the skill sets necessary for proficiency in satellite and ground-based remote sensing research. The students are offered mini-courses in Geographic Information Systems, MATLAB, and Remote Sensing. They also participate in workshops on the Ethics of Research. Each REU student is a member of a team that consists of faculty mentors, post doctorate/graduate students, and high school students.

The second component, *Student Support and Safety Nets*, provides undergraduates a learning environment that supports them in becoming successful researchers. Special networking and Brown Bag sessions, and an annual picnic with research scientists are organized so that REU Scholars are provided with opportunities to expand their professional community. Graduate school support is provided by offering free Graduate Record Examination preparation courses and workshops on the graduate school application process. Additionally, students are supported by college counselors. Many of the students are first generation college students who often face issues that can impede their academic progress.

The last component, *Vision and Impetus for Advancement*, allows REU Scholars to see themselves as STEM scientists and workforce professionals. Exposure trips provide students with an opportunity to meet scientists working in industry. Additionally, the students also present their research and participate at local, regional, and national conferences. Furthermore, since many of the students were never given the chance to visit STEM-focused industries and conferences. The program, therefore, helps to broaden their STEM experience.

Of the 38 REU Scholars, 16%(6) of them are in graduate school in the STEM disciplines, 21%(8) of them have graduated and are in the STEM workforce, and 63%(24) of them continue to pursue their STEM degrees. Three of the students have won first place recognition for their research, and two of the students will be co-authors for two peer-review publications and one book chapter. Additionally, survey results show that 84% of the student participants now indicate interest in pursuing Master’s degrees in STEM and 75% indicate interest in pursuing doctoral degrees in STEM. This program is supported by NSF REU grant #1062934.

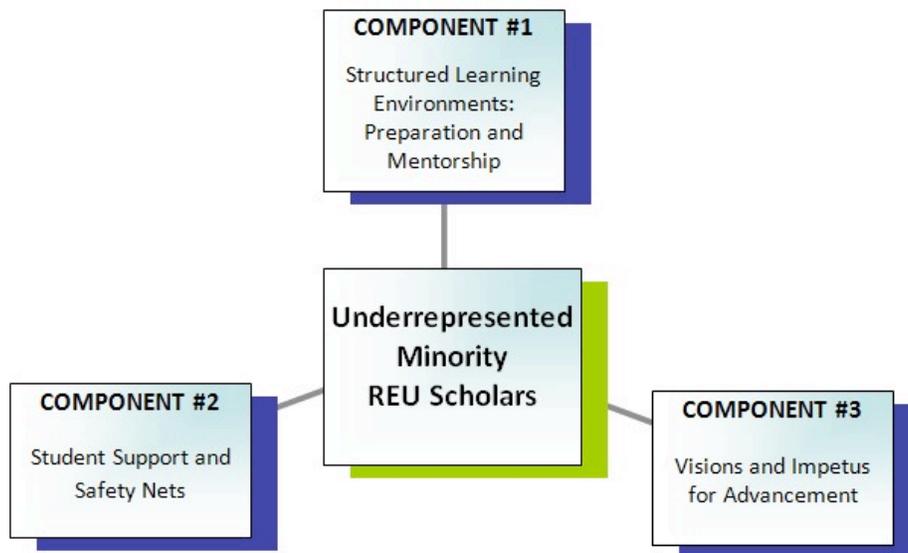


Figure 1. Primary Components of the Undergraduate Research Program

**American Geophysical Union 2012 Conference San
Francisco, California** December 7, 2012

ED028 – Preparing Undergraduate Students for Geoscience Careers and Degrees
Session

**Broadening Awareness and Participation in the Geosciences Among Underrepresented
Minorities in STEM**

Reginald Blake, Janet Liou-
Mark New York City College of
Technology

An acute STEM crisis exists nationally, and the problem is even more dire among the geosciences. Since about the middle of the last century, fewer undergraduate and graduate degrees have been granted in the geosciences than in any other STEM fields. To help in ameliorating this geoscience plight, particularly from among members of racial and ethnic groups that are underrepresented in STEM fields, the New York City College of Technology (City Tech) launched a vibrant geoscience program and convened a community of STEM students who are interested in learning about the geosciences. This program creates and introduces geoscience knowledge and opportunities to a diverse undergraduate student population that was never before exposed to geoscience courses at City Tech.

This geosciences project is funded by the NSF OEDG program, and it brings awareness, knowledge, and geosciences opportunities to City Tech's students in a variety of ways. Firstly, two new geosciences courses have been created and introduced. One course is on Environmental Remote Sensing, and the other course is an Introduction to the Physics of Natural Disasters. The Remote Sensing course highlights the physical and mathematical principles underlying remote sensing techniques. It covers the radiative transfer equation, atmospheric sounding techniques, interferometric and lidar systems, and an introduction to image processing. Guest lecturers are invited to present their expertise on various geosciences topics. These sessions are open to all City Tech students, not just to those students who enroll in the course. The Introduction to the Physics of Natural Disasters course is expected to be offered in spring 2013. This highly relevant, fundamental course will be open to all students, especially to non-science majors. The course focuses on natural disasters, the processes that control them, and their devastating impacts to human life and structures. Students will be introduced to the nature, causes, risks, effects, and prediction of natural disasters including earthquakes, volcanoes, tsunamis, landslides, subsidence, global climate change, severe weather, coastal erosion, floods, mass extinctions, wildfires, and meteoroid impacts.

In addition to the brand new geoscience course offerings, City Tech students participate in geoscience - seminars, guest lectures, lecture series, and geoscience internship and fellowship workshops. The students also participate in geoscience exposure trips to NASA/GISS Columbia University, NOAA-CREST, and the Brookhaven National Laboratory. Moreover, the undergrads are provided opportunities for paid research internships via two NSF grants – NSF REU and NSF STEP. Geoscience projects are also integrated into course work, and students make geoscience group project presentations in class. Students also participate in geoscience career and graduate school workshops. The program also creates geoscience articulation agreements with the City College of New York so that students at City Tech may pursue Bachelor's and advanced degrees in the geosciences.

This program is supported by NSF OEDG grant
#1108281.

4. Oral and Maxillofacial Pathology Dental Hygiene: Gwen Cohen Brown DDS, FAAOMP
Associate Professor , *American Dental Association Annual Session October 18 – 20, 2012*

This past October I was selected to be one of ten judges for the 53rd Annual International Association of Student Clinicians / American Dental Association (SCADA) Annual Basic Science Research Competition. The judges must have significant research experience as well as a history of collaboration with national funding agencies and were selected through a peer review process. The Student Clinician Research Program (SCADA) began during the centennial of the ADA in New York City in 1959, as a joint venture between DENTSPLY and the American Dental Association (ADA). The ADA is also the official host of the SCADA program at each annual session.

The awards program took place in San Francisco, California, during the 2012 ADA Annual Session. Approximately 70 student clinicians participated in this year's program representing research conducted across 36 countries. Over 5,000 students participate in this program annually, including students from 36 countries. During the competition students present their research to the judges, their peers and conference attendees including Dentists, Hygienists and researchers, clinicians and dental educators. The science is rigorous, nationally funded, and collaborative with faculty mentoring and reflects the emerging needs of a changing population.

The judging occurred over the course of two days and culminated in an awards presentation Saturday October 20th. The competition was intense and required immediate knowledge of the topic, accuracy of information and fluency in communication. I am honored to have been asked to participate as a judge in the 2013 ADA Annual Session to be held in New Orleans in October.

5. The Gaylord National Resort and Convention Center; Patricia A. Cholewka, EdD, MPA, MA, RN-BC,
Associate Professor, *Conference attendance at: mHealth Summit: Technology, Business, Research, Policy, Washington, DC Area; December 3-5, 2012* <http://www.mhealthsummit.org/about-summit/overview>

The December 3-5, 2012 mHealth Summit highlighted emerging best practices from mHealth implementations as well as the latest business, finance, policy and technical perspectives, fostering in-depth dialogue to identify and accelerate cross-cutting value chains and sustainable mHealth business model adoption around the globe. The summit also provided a dedicated focus on mHealth research, facilitating the development and commercialization of empirically-supported solutions for specific disease states.

Conference sessions explored, examined, and debated the ways mobile technology is transforming health care delivery, research, business and policy for the 21st century both in the U.S. and internationally, including developed and developing nations.

In addition, the 2012 mHealth Summit:

- Provided networking opportunities with leading-edge and c-level industry decision makers, healthcare professionals, researchers and other critical end-users;
- Highlighted critical progress, research, constraints, use cases, success stories and lessons learned across the mHealth landscape;
- Delivered more than 4,500 leaders from nearly 50 countries;
- Hosted more than 400 exhibitors showcasing innovative devices, services, applications, tools and related solutions; and

- Attracted more than 350 domestic and international media.

In partnership with the Foundation for National Institutes of Health, the mHealth Alliance and the National Institutes of Health, mHIMSS offered an all-star lineup of visionary keynote speakers, conference tracks, venture fair as well as an expanded exhibit hall.

6. Patricia A. Cholewka, NYCCT, CUNY, Department of Nursing

As an invited visiting professor at the Faculty of Nursing, Lithuanian University of Health Sciences (LUHS) from Sept 24-Oct 5, 2012, presentations, i.e., interactive lectures, were given to nursing masters students and medical students studying at the LUHS and nurse managers visiting and taking a nursing certification course at the LUHS from Kazakhstan’s National Medical Holding Company Hospital in Astana, Kazakhstan (est. 2008). As New York City College of Technology, Department of Nursing, has an established international faculty exchange agreement, this invitation was readily, and eagerly, accepted. This teaching visit was organized and framed within the Program for Visiting Teachers established by the Ministry of Education and Science (MOES) of the Republic of Lithuania, European Union.

TEACHING PROGRAMME			
FOR ASSOC. PROF. Patricia Cholewka			
2012 09 24 – 2012 10 05			
		Presenter	Responsible person
2012 09 24 16.00 – 17.30	Lecture for LUHS nursing Master students – second year	Assoc. Prof.P. Cholewka, USA	Assoc. Prof.A.Blazeviciene
2012 09 25 9.00 – 10.30	Lecture for International LUHS Medical students - first year	Assoc. Prof. P. Cholewka, USA	Dr.Lina Spirgiene
11.30 – 13.00	Lunch		Dr.Lina Spirgiene
13.00 14.30	Lecture for nurse managers from Astana, Kazakhstan	Assoc. Prof.A.Blazeviciene	
14.30. 15.30	Meeting with LUHS hospital Nursing Director,		

7. Industrial Design

	Dr. Daiva Zagurskiene		
2012 09 26	Free time for research discussion		
2012 09 27 18.00....	Evening at Philharmonic	
2012 09 28 11.00 – 13.00	Discussion about research project	Prof.J.Macijauskiene Assoc.Prof.P.Cholewka, USA Assoc. Prof.A.Blazeviciene,	
13.00 18.00	Celebration Diploma for Kazakhstan nurses at restaurant, Sadute		Prof.J.Macijauskiene Assoc. Prof.A.Blazeviciene,
2012 10 01 15.16.30	Lecture II and III for LUHS nursing Master students – second year	Assoc.Prof.P.Cholewka, USA	Assoc. Prof.A.Blazeviciene
2012 10 05	Gala diner		

sign Tecnology: The 24th Annual HENAAC Conference, Gaffar Gailani Assistant Professor, Mechanical Engineering Dept. of Mechanical Engineering

11/10/2012 - 11/13/2012

Great Minds in STEM™ (GMiS) was established as HENAAC in 1989 as a career conference on identifying, honoring, and documenting the contributions of outstanding Hispanics in science and engineering. The HENAAC Conference is the place where thousands of great minds in STEM convene. It is the nation's most prestigious stage for honoring excellence, building and reinforcing networks, and strengthening company, and agency pride. The Conference encompasses the finest technical minds from top executives and cutting-edge professionals, to the brightest STEM students and representatives from multiple STEM organizations. It continues to be the premier venue for top corporate, military, and academic leaders to come together with students to discuss and improve the mission of inspiring and motivating more underserved students to achieve careers in STEM.

I was invited by Great Minds in STEM (GMiS) to represent New York City College of Technology. GMiS honored me by covering my registration fee and paying for the round trip flight. This was the first time for me to attend the HENAAC conference. In the conference I was able to meet and network with representatives from different organizations and companies such as GM, Northrop Grumman, Raytheon, NSF, ASEE, ...etc. The companies detailed their plans for the coming century and the quality of students they looking for. I was proud representing City Tech alongside all these great universities and have people

know about our college. The experience I came back with was great and I started spreading it to my students. Next year, we should have students participating in this event.

- 8. Hilbert Coefficients of Parameter Ideals Relative to a Module:** *American Mathematical Society 2012 Southeastern Fall Meeting; October 13-14, 2012 Combinatorial Commutative Algebra*, Laura Ghezzi, Ph.D. Associate Professor Commutative Algebra Mathematics

ABSTRACT

Commutative Algebra is the branch of pure mathematics that studies commutative rings. The term “ring” was introduced by Hilbert. Hilbert functions are one of Hilbert's numerous contributions to Commutative Algebra.

In 2008 Vasconcelos proposed interesting conjectures on the coefficients of the Hilbert polynomials of parameter ideals in Noetherian local rings. In this talk we explore how the set of the first Hilbert coefficients codes for significant information about the structure of the ring itself. We discuss noteworthy properties such as that of Cohen-Macaulayness, Buchsbaumness, and of having finitely generated local cohomology. In particular we solve affirmatively Vasconcelos' Vanishing Conjecture.

The presentation is based on joint work with S. Goto, J. Hong, K. Ozeki, T.T. Phuong, and W.V. Vasconcelos, published in the Journal of the London Mathematical Society (2010) and in the Journal of Pure and Applied Algebra (2012).

- 9. Media Places 2012: Infrastructure | Space | Media:** Umeå, Sweden, December 5-7, 2012
University of Umeå <http://mediaplaces2012.humlab.umu.se/index.html>

The Peter Wallenberg Foundation and the Universities of Umeå, Lund and Stanford have the honour to welcome a select number of guests to a symposium entitled "Media Places: Infrastructure | Space | Media" in Umeå, Sweden, December 5-7, 2012. This symposium is one in a series of three. The other two will be held in Helsinki, Finland, 2013 and in Lund, Sweden, 2014, addressing the themes of digital media and learning, and culture and brain.

The Umeå symposium in 2012 brings together some of the very best researchers and practitioners at the intersection of media, place and technology, as well as in the digital humanities. An array of world-class work will be presented, discussed and enacted in a carefully curated event located in a range of media places available at Umeå University including the new Umeå Arts Campus.

The symposium will be organized around two main questions:

1. How is knowledge production shaped by infrastructure (and notions of infrastructure) and vice versa?
2. How does digital materiality change notions of space and architectural theory, as well as built space itself?

10. **American Studies Association Conference, “What Can the Digital Humanities Bring to American Studies, and Vice Versa?”**: Matthew K. Gold, San Juan, Puerto Rico, Friday, November 16, 8 am, Rm. 202A
http://www.theasa.net/caucus_digital_humanities/page/american_studies_and_digital_humanities_2012_roundtable

Session Participants:

Panelist: Matthew K. Gold (NYC College of Technology/Graduate Center, City University of New York (NY))

Panelist: Kathleen Fitzpatrick (Modern Language Association (NY))

Panelist: Lauren Klein (Georgia Institute of Technology (GA))

Panelist: Miriam Posner (University of California, Los Angeles (CA))

Chair: Susan Garfinkel (Library of Congress (DC))

Panelist: Natalia Cecire (Yale University (CT))

Panelist: Alex Gil (University of Virginia (VA))

Abstract:

The digital humanities—as a term, and as an associated constellation of tools and practices—has recently surfaced as a site of convergence for interdisciplinary scholarship in the United States and beyond. Propelled by the ever increasing power of computing and grounded in the ongoing development of a networked new media, digital humanities scholarship has coalesced around a shared set of values: that theory can be engaged through practice; that scholarship should be open and accessible to all; and that, as Bethany Nowviskie has argued, “the best new work is the work of many hands.” At the same time, American studies scholars have renewed the important work of investigating cultural and political formations, excavating power relations, and expanding scholarly inquiry to encompass the everyday as much as the exceptional.

Yet despite apparent similarities, conversations linking American studies’ tradition of interdisciplinary richness to the emerging field of the digital humanities are still in early stages. Essays by Tara McPherson, Lisa Nakamura, and Wendy HK Chun, among others, have begun to show how these two sets of critical stances do not stand opposed, but are in fact very much intertwined—and might more productively inform each other if not for the rigid institutional boundaries and departmental structures that presently circumscribe scholarly work. With this roundtable, we seek to open a new phase of the discussion, by overtly exploring the potential for connections between American studies and the digital humanities in the context of an ASA annual conference.

This roundtable thus brings together a group of scholars whose collocated work in American studies and digital humanities bridges theory and practice, spans disciplines and institutions, and in each case incorporates aspects of social, political, and cultural critique—including the critique of current academic practice. Participants include cultural and public historians, film scholars, and literary critics; their research interests range from eighteenth-century culinary practices to twentieth-century Caribbean publishing networks to the future of scholarly communication; they are employed in a range of positions within and beyond the academy that more or less comfortably accommodate their inter- and extra-disciplinary work.

Taking up the call of the 2012 “Meeting Theme” to think deeply—across disciplines and institutions, time periods and territories—about the “conceptual and methodological demands of a truly transnational American Studies,” our panelists will explore the ways in which the digital humanities and American studies can mutually enhance one another’s core objectives. What might the conceptual schemas,

methodologies, and goals associated with the digital humanities do to enrich American studies scholarship? What, in turn, might the critical frameworks, scholarly approaches, and foci of attention arising from American studies bring to the digital humanities? Short statements by each panelist will be followed by open discussion, and supplemented by written remarks posted for comment on the Digital Humanities Caucus section of the ASA's Web site. With this session we hope to address—and to extend—the question posed by McPherson at last year's ASA: "Why are the digital humanities so white? But also why isn't American Studies more digital?"

11. Educators seek to develop effective teaching methodology: Sandie Han & Grazyna Niezgoda

Sandie Han
Associate Professor
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Sandie Han is an Associate Professor of mathematics at the New York City College of Technology. She has been the computer science program coordinator since 2010 and was involved in the program restructuring since 2008. She worked with the faculty and graduate students of CASE (Center for Advanced Study in Education) of the CUNY Graduate Center on the SRL project and curriculum development. Dr. Han's research interests include topics in additive number theory.

Grazyna Niezgoda
Instructor
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Grazyna Niezgoda is a Lecturer in Mathematics Department at New York City College of Technology. She received her MA in Mathematics from Wroclaw University in Poland. She served on various college committees. She has been involved in curriculum development implementing Self-Regulated Learning strategies in the teaching of beginning and intermediate algebra since 2001. She also coached math instructors involved in the SRL program at Manhattan College. Her interests include pedagogy and methodologies in teaching mathematics.

Presentation preference: 50-min presentation.

Equipment needed: Projector for Power Point presentation

ABSTRACT

Educators seek to develop effective teaching methodology. The psychologists seek to understand the learning behavior. The emergence of research on metacognition offered a new perspective on learning. According to research on the cognitive science, students' failure to learn can be attributed to lack of metacognitive awareness in learning. Without self-awareness, one is unable to identify one's learning deficiencies and thus unmotivated to change one's learning behavior; learning becomes a mechanical process leading to ineffective outcome and causing increased frustrations. Self-regulated learning is a proactive learning which heightens self-awareness and enhances motivation.

The model of self-regulated learning (SRL) consists of three cyclical phases: the planning phase, the monitoring phase, and the self-reflecting phase. Upon self-reflection and adaptation to new strategies, this process results in another cycle of planning, monitoring and self-reflecting. It is believed that self-regulatory processes can be learned. The presenters work with Barry Zimmerman, John Hudesman, and Bert Flugman of the CUNY Graduate Center CASE (Center for Advanced Study in Education) and their graduate students in a project which designs and implements SRL activities in developmental math courses.

SRL activities help build specific self-regulatory skills. Goal setting and learning strategies are great activities to start off the beginning of the SRL cycle. They are also fundamental to successful learning. An activity on self-efficacy judgments provides insights to one's belief of his/her capabilities. This belief can be a determining factor whether a student succeeds or fails at math. In self-reflection, students are asked to evaluate their progress and take corrective actions through the quiz revision process. These corrective actions, which may include setting a different goal or incorporating different strategies, are essential in the SRL process. They allow one to learn and improve upon mistakes, and thus bringing the SRL process back to the beginning of the cycle.

The presentation focuses on the practice of SRL in the teaching of developmental math courses. The presenters will share with the audience the instructional materials which have shown to be effective SRL tools.

Anthony F. DeVito
Radiologic Technology &
Medical Imaging

I have recently returned from the New York State Society of Radiological Sciences (NYSSRS) annual conference. The conference was held in Corning, New York from November 1 to November 3, 2012. The conference was fortified with informative lectures, dynamic speakers and the opportunity to achieve 12 CE credits. These credits are a mandatory requirement set forth by the American Registry of Radiologic Technologists (ARRT).

Some of the topics presented at the conference included "Digital Image Quality", "The Professional Practice Standards" and "The Uses of Cardiac MRI With Interesting Cases". I found the variety of these topics were extremely beneficial in regard to the development of my educational skills.

At the conference I completed my terms on two committees, nominations and legislation. I have once again been appointed to the nominations committee for the next two years. Additionally, I have held many elected board positions in this society including Nominations Chair, First Vice President, Second Vice President and Director. Additionally, over the past few years I have been involved in preparatory work with radiography students regarding their ARRT Registry Examination.

I thank the college for the opportunity to attend this conference allowing me to continue to develop my educational skills.

- 12. "Use of Mobile Devices in Mechatronics Design Projects":** Iem Heng Rank Assistant Professor
Discipline Computer Engineering Department CET (Computer Engineering Technology)
Conference Title and Date AACC: 2012 National Principle Investigators Conference (October 24-26, 2012) Conference Theme Teaching Tomorrow's Technicians Today: Preparing America's Future Workforce

ABSTRACT

Mobile devices such as smart phones and tablets are being used by people in their daily life to communicate with others and to retrieve information from the Internet. This roundtable session will discuss how to use mobile devices to communicate with custom-made mechatronics devices, monitor the performance of mechatronics devices, and display the information collected on the screen of mobile devices.

This research collaborative work in concurrent engineering among the faculty members in the Mechanical Engineering Technology and Computer Engineering Technology departments is funded by the National Science Foundation Advanced Technology Education Division (Award No. DUE-1003712) awarded to New York City College of Technology.

13. ABSTRACT: John Huntington, Full Professor Entertainment Technology**Conference Abstract:**

The North American Theatre Engineering and Architecture Conference (NATEAC) is held only once every four years in the US (and in the UK every other four years). It is now widely regarded as the most important conference in the industry, and it's attended by many important industry leaders.

While my proposal for a session was not accepted, the conference exceeded every expectation I had, so I'm really glad I went. I was able to confirm the entertainment technology state of the art, and also do a lot of networking and promotion of the school. I made the last comment in the closing plenary session, and a representative of a well-known theatre consulting firm wrote me to commend me for the comment, so even though I wasn't presenting, I was able to make an impact.

Even though it's an expensive conference, I'm definitely planning to attend the next NATEAC, in 2016.

14. Presentation: New York State Society of Radiologic Sciences Annual Conference

Corning, NY: Jennett M. Ingrassia, MSRS, RT (R) Assistant Professor, Radiologic Technology and Medical Imaging, *The Radiographer and the Obese Patient*

The was a presentation to radiologic technologists attending the New York State Society of Radiologic Sciences Annual Conference in Corning, NY. The main objectives of this presentation were for participants to possess a general understanding of the obese and morbidly obese patients. The problem of obesity in the United States was addressed and the goal was to identify several aspects of the obese and morbidly obese individual as a patient in the radiology department and describe methods that would allow for an understanding of how to best serve this population. The changes in equipment used in both the hospital environment, in general, were discussed in addition to equipment changes specific to the radiology

department. These changes were not only reviewed, but illustrated. The stigma of obesity was also related to the participants, to include a discussion on what being a morbidly obese individual entailed, on a day to day basis. Various bariatric surgery methods were discussed, as well. The presentation concluded with a dedication to a friend and colleague of the presenter, who passed away from complications due to weight loss surgery, to include an explanation of why morbidly obese individuals chose to participate in weight loss surgery and the importance of selecting a surgeon with a low morbidity rate.

15. Fibroblast Growth Factor 8 organizes the neocortical area map and regulates sensory map topography: Tina Kao

Location: Hall F-J

Presentation time: Monday, Oct 15, 2012, 9:00 AM -10:00 AM

Authors: *E. A. GROVE¹, S. ASSIMACOPOULOS¹, T. KAO¹, N. P. ISSA²;
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Abstract: The concept of an “organizer” is basic to embryology. An organizer is a portion of the embryo producing signals that lead to the creation of a patterned mature structure from an embryonic primordium. Fibroblast Growth Factor (FGF) 8 is a morphogen that disperses from a rostromedial source in the neocortical primordium (NP), forms a rostral to caudal (R/C) gradient, and regulates embryonic and neonatal R/C patterns of gene expression in neocortex. Whether FGF8 also has organizer activity that generates the postnatal neocortical area map is uncertain. To test this possibility, new sources of FGF8 were introduced into the mouse NP with in utero microelectroporation at embryonic day (E)10.5, close to the estimated peak of area patterning. Results differed depending on the position of ectopic FGF8. Ectopic FGF8 in the caudalmost NP could duplicate somatosensory cortex (S1) and primary visual cortex (V1). FGF8 delivered to the mid-lateral NP generated a sulcus separating rostral and caudal portions of the NP, in effect creating duplicate NPs. In the caudal NP, ectopic FGF8 induced a second, inclusive area map, containing frontal cortex, S1, V1 and primary auditory (A1) areas. Moreover, duplicate S1 showed plasticity to sensory deprivation, and duplicate V1 responded to visual stimuli. Our findings implicate FGF8 as an organizer signal, and its source in the rostromedial telencephalon as an organizer of the neocortical area map.

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Keyword(s):
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CORTEX

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16. Teaching RC and RL circuit using computer- supported experiment: Roman Ya. Kezerashvili

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SA The Graduate School and University Center, The City University of New York, NY, 10016, USA*

Abstract

We suggest the study of the barging and discharging processes in the capacitor in an *RC circuit* and the rise and decay of current processes in an *RL circuit* using computer-interfaced experiments. This approach enables students to understand functions of *RC* and *RL circuit* through the visualization of the processes, understand the use of computer interface for data collection and speed up the data collection and their analyses. Using Excel for data analysis enables the verification of Kirchoff's loop rule for the *RC* and *RL circuits* for each instant of time and the determination of time constants for the circuits through the graphical analyses.

17. Formation of Excitons in Graphene as a Two-Body Problem: O. L. Bermana, R. Ya. Kezerashvilia, and K. Zieglera,

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We study of the formation of an exciton in graphene by two Dirac particles. First we analyze the two-body problem of a single Dirac electron and a hole interacting via Coulomb potential in a gapped graphene sheet. Then we turn to the problem of two Dirac particles confined in a double-layer of gapped graphene sheets separated by a dielectric when they interact via a Coulomb potential. The advantage of considering an exciton formed by an electron and a hole from two different graphene layers, separated by an insulating slab, is that the dielectric slab creates the barrier for the electron-hole recombination which increases the life-time of the exciton compared to the exciton formed by an electron and a hole in a single graphene layer. We assume that the exciton in this system is formed by the electrons located in the one graphene sheet and, correspondingly, the hole located in the other. Since the motion of the electron is restricted in one graphene sheet and the motion of the hole is restricted in the other graphene sheet, we reduced the restricted threedimensional two-body problem to the two-dimensional two-body problem on the graphene plane. Finally, we consider two Dirac particles confined in two-layer graphene and separated by a dielectric in a strong magnetic field, where the electron and hole are bound via a Coulomb force. Even in the presence of a central potential

the two-body problem cannot be mapped onto that of a single particle, due to the complex coupling between the center-of-mass and the relative coordinates. We introduce a transformation to decouple the center-of-mass motion from the relative motion and focus on the case of low total momentum. The wave functions and energy spectrum of the electron and hole that are bound via the Coulomb potential are found by solving the two-body problem in a gapped graphene layer, in gapped double-layer graphene separated by dielectric and in double-layer graphene in a high magnetic field. The energy spectrum of dipolar excitons is used to obtain the collective excitation spectrum in a weakly interacting dilute gas of such excitons which is superfluid at low temperatures. We have obtained the superfluid density and Kosterlitz-Thouless transition temperature, corresponding to the appearance of superfluidity of the system of such excitons [1]. Moreover, we use the energy spectrum and wave functions of excitons in a single graphene layer to obtain the spectrum of collective excitations in the system of exciton polaritons formed in an optical micro-cavity with the embedded graphene layer. Such polaritons are superfluid at low temperatures.

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18. Biexciton and Triexciton States in Quantum Dots: R. Ya. Kezerashvilia and Sh.M.Tsiklaurib

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The photoinduced exciton states formed from correlated electron–hole pairs have been studied extensively and electron–hole pairs become correlated because of the spatial confinement and exist as excitons. The efficient formations of more than one photoinduced electron–hole pair upon the absorption of a single photon is a process of great current scientific interest and have been the subject of intensive theoretical and experimental research. We study a biexciton, a system of two electrons and two holes, and a triexciton, a system of three electrons and three holes confined in the magnetic field as a two-dimensional (2D) few-particle systems. The problem of finding the wave functions and eigenenergies of the biexciton and triexciton formed by four and six particles is the four- and six-body problem, correspondingly. Such confined 2D quantum systems have been studied by several different well-established methods: exact diagonalization techniques, stochastic variational method, Hartree–Fock approximations, and quantum Monte Carlo techniques, while for description of triexciton states was used semi-empirical pseudopotential many-body calculations [1]. We extend these studies of the biexciton and triexcitons in magnetic field in 2D space using the hyperspherical functions (HF) method follow Ref. 2. We assume that the electrons and holes are interacted via mutual Coulomb interactions among charge carriers and their masses are equal. The system of four particles consisting from two electrons and holes confined by a parabolic well in a 2D quantum dot and interacting via Coulomb potential in a magnetic field are treated in the framework of the HF method by expanding the wave function in terms of the four-body HF and the hyperradial functions of noninteracting trapped four particles. In the case of the triexciton we using six-body HF and the hyperradial functions of noninteracting parabolically trapped six particles. The solutions of the corresponding hyperradial equations we examine for two regimes: the oscillator length much greater, and much less than the two-body Coulomb interaction scattering length. For the case of large oscillator length, we find analytical expressions for the energy and wave function for the trapped states. The binding energies and pair correlation function are calculated. We have studied the

dependence of the binding energy of the biexciton and triexciton on the strength of the magnetic field and the presented results show the evolution of the ground state $L = 0, S = 0$.

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- 19. Investigation on Raman pump wavelength allocation in a GPON reach extender : Lufeng Leng,** Assistant Professor, Fiber optics and optical communication, Physics Department, *The 17th OptoElectronics and Communications Conference (OECC), July 2-6, 2012 Advancements in research, development and application of photonics and optical communication systems.*

ABSTRACT

Recently distributed Raman amplification has been proposed as a candidate technology to improve the loss budget and extend the reach in gigabit passive optical networks (GPON). Employing such technology a GPON extension of 60-km reach and 1:64 split ratio has been demonstrated. In that experiment, the 1310- and 1490-nm signals were amplified by a counter-propagating 1239-nm pump and a 1427-nm co-propagating pump, respectively. A 1397-nm pump would provide the peak Raman gain for the 1490-nm signal; however, the strong interaction between it and the 1310-nm signal would lead to severe signal degradation. By shifting the pump wavelength to 1427 nm, the signal-pump interaction was reduced, and so was the pumping efficiency. Therefore, it is necessary to optimize the tradeoff between the Raman pumping efficiency and the system performance for GPON reach extenders.

In this paper, we investigate numerically the effects of Raman pump wavelength allocation on the system performance and pump power requirement employing experimentally measured fiber characteristics. Results show that with the optimal 1414-nm pump wavelength, the pump powers for the 1310- and 1490-nm signals can be reduced by 19% and 22%, respectively.

- 20. Discipline: Rhetoric and Composition Department of English: PDAC Abstract**
Robert Leston, Ph.D., Rank: Assistant Professor, *Conference: 2013 Conference on College Composition and Communications Annual Convention*

Presentation Title: Video Methodologies: Researching on the Tube

Dates: March 13-16, 2013

Conference Theme: The Public Work of Composition

ABSTRACT

The members of this panel have been invited to put forth recommendations for using video as a medium for delivery and research that aims to explore a networked, interdisciplinary historiography of rhetoric and composition. The purpose of this project is to establish a networked and dynamic video

archive of both scholars and their programs at a national level, as well as to invite them to engage the inventive possibilities of video archives more locally.

This proposal seeks to share these challenges with the CCCC community in the hopes of further understanding the specific problems video historiographers face when conducting archival research that has the potential to become foundational for the digital humanities.

At a macro-level, the project will involve the field in practicing “participatory composition” by eventually assembling a disciplinary database that tracks scholars and their research interests across a variety of colleges and local communities. This effort will harness the inventive possibilities of participatory sites already in existence in order to add a level of dynamism to existing works.

At a micro-level, the design and implementation of the database faces a number of theoretical and practical difficulties, and this project documents these challenges in the hopes that future academic video archivists will learn from these efforts. We explain the context surrounding the archive, the particular theoretical and practical challenges faced by the panelists, and two different possible approaches towards implementation.

21. Social Science Tail Dependence between Stock Index Returns and Foreign Exchange Rate Returns – a Copula Approach: Fangxia Lin, PhD Substitute Assistant Professor Economics
Social Science, *New York State Economics Association Annual Conference 2012*

ABSTRACT

The premise of investing in international assets is typically driven by the potential benefits that the diversification offers to a global investor. Does international investment really offer diversification to a global investor? While this seems to be generally accepted in investment theory, a more in-depth investigation in the dependence structure provides some compelling evidence that this is not always the case, especially during times of dramatic downturns in the global financial markets when diversification is most needed.

The aim of this study is to estimate the tail dependence between stock index returns and foreign exchange rate returns for four East Asian economies (Indonesia, South Korea, Singapore, and Taiwan). We apply the concept of copula to model the dependence structure, especially in the tail area, between the two returns series for each country under examination. We first filter the raw returns using AR(k)-GARCH(p,q)-type models to make sure the probability integral transforms are i.i.d. Uniform(0,1), and then we fit the resulting series to the copula models. Our major findings are, for the more advanced country (Singapore), there exists neither lower nor upper tail dependence between stock index returns and exchange rate returns for the sample period. For the three emerging markets, Indonesia and South

Korea have much stronger lower tail dependency than right tail, indicating that the higher probability of double losses than double gains. Taiwan has symmetric tail dependence with similar upper and lower tail coefficients. Our findings have important implications for international diversification and market risk management.

22. Permutation Binomials over Finite Fields, XXII Brazilian Algebra Meeting, 2012: Ariane Masuda, PhD, *Assistant Professor Mathematics*

ABSTRACT: A polynomial over a finite field is called a *permutation polynomial* if it permutes the elements of the field. These polynomials first arose in the work of Betti, Mathieu and Hermite as a tool for representing and studying permutations. In this talk, we will discuss some results regarding the characterization and enumeration of permutation binomials.

23. The Economic Dimensions of the Foreclosure Crisis: Presented at the Annual Conference of the New York State Economics Association October 6, 2012: Sean P. MacDonald, PhD³ Eric Doviak, PhD⁴

Abstract

This paper discusses the findings of our analysis of the factors contributing to mortgage default and foreclosure across the metropolitan areas of New York State in the years immediately preceding the collapse of the housing bubble. Our approach to this study involved matching the full set of 2010 New York State pre-foreclosure filings to home loans originated from 2004 through 2008. We consider the impact of a broad range of borrower variables, including income, loan amount, interest rate, and loan type, as well as larger macroeconomic variables such as the strength of job creation, unemployment rates and home price indices. We also investigate the role of discriminatory lending practices that may have meant that Black and Latino borrowers were more likely to have received ‘high cost’ (subprime) loans. In a separate paper (Doviak and MacDonald, 2011), we do find strong evidence of discriminatory lending practices, which confirms the findings of other studies. This same earlier investigation found that Blacks and Latinos received a disproportionately high share of pre-foreclosure filing notices, which appeared to confirm the presence of disparities in lending practices. To further examine the correlation between discriminatory lending patterns and higher default rates, the current paper seeks to expand upon the previous studies by including variables that examine the significance of loan/value ratios using FHFA home price indices, home price index averages, and the number of commercial banks at the census tract level, as well as an identification of lenders by type (conventional or subprime).

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⁴ Brooklyn College, Department of Economics

24. Does Design Contribute to Ease of Use: An Exploratory Study of Web Facets in the Result Pages of Two Search Engines: Elizabeth Milonas Lecturer Knowledge Organization Computer Systems Department, *American Society for Information Science and Technology (ASIS&T) Conference, SIG/CR Workshop*

Classification Research Past, Prospect and Pinnacles, October 26, 2012.

ABSTRACT

An exploratory study was conducted to examine the design aspects of Web facets found in the search result pages of two search engines: Exalead and Excite. The goal of the study was to determine if Web facet design could contribute to perceived ease of use. This study builds upon findings from an earlier study (Milonas, 2010) in which the results indicated that users perceived the Web facets evident in the search result pages of the Exalead search engine easier to use than those found in Excite. The researcher surmised that the design of these Web facets might have contributed to the difference in perceived ease of use. The relationship between design and user perception in determining the ease of use of Web facets within these two search engines is explored. In the first component of the study, an expert inspection of the various design aspects of the search result pages of Exalead and Excite was conducted. The aspects examined were: perceptual, learning, organizational and social. In the second part of the study, five participants conducted an experiment using the Web facets found in the search result pages of the two search engines. Findings of both the expert inspection and the usability evaluation showed that there does not seem to be a significant difference in the design of Web facets within the two search engines. The findings seem to indicate that design of Web facets is not a contributory factor in terms of Web facet ease of use.

Work Cited

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25. Marie Montes- Matias: Summary/ Project Abstract:

Participation of the SENCER summer Institute provide educators with the opportunity to gather and consider how to engage students in the sciences, and the civic issues in which they play an integral role. As a professional with no former training in the education field, participation of this institute will help in my professional development as an educator at City Tech. I plan on collaborating with other faculty members from the school of professional studies to move the concepts and principles taught in the STEM curriculum from being classroom content alone to knowledge that is applied in the care of patients.

Students will become more engaged in general education and the basic science prerequisite and co-requisite classes if 'real-world' issues became the core, the centerpiece, of this curriculum. Together we anticipate providing service-learning- driven health assessment, education, and screening during the academic year by faculty and students in Dental Hygiene, Chemistry and Biology (Nutrition). This experience should increase and reinforce currently implemented pedagogical best practices, through exposure to new and creative practices, with a focus on the development and implementation of robust formative assessment strategies.

Dental Hygiene students enrolled in Nutrition, Anatomy and Physiology and Chemistry will learn to connect this knowledge gained with practical application outside the natural sciences, which in turn will make these courses more interesting and relevant. Oral and Maxillofacial Pathology integrates basic-science curriculum and applies this unified foundation knowledge to the clinical evaluation of disease, thereby closing the gap between didactic and applied material. Ultimately this knowledge base will be directly applied to patient care, easing the transition between lecture and clinic.

- 26. A blended land emissivity product from the Inter-Comparison of different Land Surface Emissivity Estimates:** Hamidreza Norouzi, PhD, PE Assistant Professor Construction Management and Civil Engineering Technology, *American Geophysical Union (AGU) Fall 2012 Meeting*

Advances in Hydrometeorological Predictions and Applications

ABSTRACT

Passive microwave observations are routinely used to estimate rain rate, cloud liquid water, and total precipitable water. In order to have accurate estimations from microwave, the contribution of the surface should be accounted for. Over land, due to the complex interaction between the microwave signal and the soil surface, retrieval of land surface emissivity and other surface and subsurface parameters is not straightforward. Several microwave emissivity products from various microwave sensors have been proposed. However, lack of ground truth measurements makes the validation of these products difficult. This study aims to inter-compare several available emissivity products over land and ultimately proposes a unique blended product that overcomes the flaws of each individual product. The selected products are based on observations from the Advanced Microwave Scanning Radiometer for EOS (AMSR-E), the Special Sensor Microwave Imager (SSM/I), the Advanced Microwave Sounding unit (AMSU), and the Special Sensor Microwave Imager/Sounder (SSMIS). In retrieval of emissivities from these sensors different methods and ancillary data have been used. Some inherent discrepancies between the selected products can be introduced by as the difference in geometry in terms of incident angle, spectral response, and the foot print size which can affect the estimations. Moreover, ancillary data especially skin temperature and cloud mask cover can cause significant discrepancies between various estimations. The time series and correlation between emissivity maps are explored to assess the consistency of emissivity variations with geophysical variable such as snow, precipitation and drought. Preliminary results reveal that inconsistency between products varies based on land cover type due to penetration depth effect and ancillary data. Six years of estimations are employed in this research study,

and a global blended emissivity estimations based on all product with minimal discrepancies is proposed.

- 27. Hungarian Border Crossings: Embodying Intersections of Time, Space, and Identities in a Post socialist Society:** Lisa Pope Fischer, PhD Assistant Professor Anthropology Social Science Department New York City College of Technology (CUNY), *American Anthropological Associations Annual Conference held in San Francisco, November 14-18, 2012 Borders and Crossings*

ABSTRACT

I had been thinking of 1989 as a borderline dividing the socialist past and the post socialist present. However it may be more like a border crossing as the intersection between the two time periods has been blurred by the way some aspects of the socialist past have become a part of the post socialist condition. In addition, new types of border crossings have emerged. This paper explores migration and identity within this context as people cross borders. After 1989, Hungarian refugees during the Communist era could now return. EU allows Hungarians to work more freely in other EU countries. Yet there are also immigrants who come to Hungary, such as the Chinese immigrants who come to sell merchandise from storage containers, or African immigrants who sell goods on the street. As people journey, the intersection between the lines dividing time and space becomes blurred. Moving bodies come to represent an embodiment of a globalized world that make disconnected places into an organized tangible whole, that come to personify cultural links and fragmentations.

- 28. EXPLORING RELATIONSHIPS BETWEEN WRITTEN AND SPOKEN COMMUNICATION IN COMPOSITION PEDAGOGY:** *WPA 2012 Conference Proposal April 30, 2012*, Dr. Johannah Rodgers Assistant Professor, English New York City College of Technology

WRITING IS A CONVERSATION:

EXPLORING RELATIONSHIPS BETWEEN WRITTEN AND SPOKEN COMMUNICATION IN COMPOSITION PEDAGOGY

ABSTRACT

Taking into account past and current research by scholars in composition studies, linguistics, literacy studies, and psychology, this presentation explores the rationale for and possible means of using students' strengths, knowledge, and comfort in oral communication in teaching college writing.

PROPOSAL

What relationships exist between oral and written communication in composition studies? This question has been explored from several different perspectives: rhetorical, educational, psychological, linguistic, socio-cultural. In light of current communications technologies, the fact that we are living in what many consider an age of what Walter Ong has termed “secondary orality,” and recent research in linguistics suggesting that what was formerly termed a “divide” between written and oral communication may be better described as a spectrum differentiated more by genre than medium, is it time to revisit the question of what relationships exist between oral and written communication? Taking into account both past and current research by scholars in composition studies, linguistics, literacy studies, and psychology, this presentation, which is highly interactive and includes a discussion section, explores the rationale for and possible means of using students’ strengths, knowledge, and comfort in oral communication in teaching college writing.

29. Conference Title: ABO-NCLE 2012 National Education Conference, November 1-4, 2012, Marriot Crystal Gateway Hotel, Washington, D.C.: Robert J. Russo Professor Contact Lenses Vision Care Technology, *At the annual education convention, there were three objectives for attending the conference.*

1. Attend National Federation of Opticianry Schools meeting – this meeting is setup for ophthalmic educators to attend seminars in order to be updated with the latest technological trends that are being implemented into the profession
2. Chairman of the National College Bowl – The National College Bowl is an event where the brightest opticianry college students match their knowledge against the clock and each other in answering optical and ophthalmic questions in a Jeopardy game show format. In the last five years, City Tech has won three of these national competitions.
3. I was also a primary speaker at the conference where I presented four topics at the conference. These topics included:
 - Lecture – “Soft Lens Fit and Evaluation”
 - “Topography and Keratometry in Contact Lens Fitting”
 - “Dispensing and Follow-Up of Daily Wear Lenses”
 - “Presbyopia Contact Lens Correction”

30. Gave a Graduate Seminar on Tennessee Williams and the Theatre of Excess: Annette J. Saddik

PDAC abstract 2012

I was invited to work with the annual Tennessee Williams Provincetown Festival to hold a 2-hour seminar for graduate faculty and doctoral students from the Texas Tech University Theatre Program in Lubbock, Texas, as well as attend performances and seminars, and be generally available for discussions during my residency. Texas Tech, in conjunction with the Festival, had arranged for the students to acquire grants to come to study with me for this intensive program on Williams. They had to read

extensively, attend performances, and write a final essay. The students earned 3 graduate credits for their participation in this program. During the six days that I was there, I held a seminar on Williams' late work, exploring his post-1961 plays in the context of the subversive politics of what I call a "theater of excess," which seeks liberation through exaggeration, chaos, and laughter, and discussed my new book manuscript, *"The Strange, The Crazy, The Queer": Tennessee Williams' Late Plays and the Theatre of Excess*. My book looks at Williams' late oeuvre through the theoretical lenses of Antonin Artaud, Jean Genet, Bertolt Brecht, German Expressionism, feminist and queer theory, and Mikhail Bakhtin's notions of the carnivalesque and the grotesque, in order to contextualize them in terms of a subversive politics of excess and laughter. My participation in the Provincetown Tennessee Williams Festival has led to several other projects, both national and international. I recently wrote the program notes for a Williams production in Cape Town, South Africa, and am currently participating with the development of two new productions, based on Williams' work, for 2013. During their development, these productions will be presented throughout the Northeast before coming to Provincetown, and, later, New York City.

31. Smooth classification problems in algebraic geometry: Hans Schoutens Associate Professor
Model-theory Logic Seminar Department of Mathematics, Givat Ram, Hebrew University,
Jerusalem, Israel, September 23, 2012

Abstract

Descriptive set-theorists like to show that certain classification problems in mathematics are hard, and they are even more elated if they can show that it is harder than such-and-such problem. As a part-time algebraic geometer, I feel the complete opposite need of showing that some problems are indeed feasible. Why otherwise would algebraic geometry be so successful in constructing classifying spaces (moduli spaces)? Thus, in the parlance of descriptive set-theory, I ask: are the classification problems in geometry (birational equivalence, isomorphism, ...) smooth? I will answer this in the affirmative for some of these isomorphism problems: for instance, over the complexes, classifying germs up to analytic

isomorphism is 'feasible'. The latter means that there exists a Polish space, a complete metric space with a countable dense subset, encoding the isomorphism classes, so that up to a Borel bijection, we can associate to any analytic germ a unique real number (we could call it its 'slope'). The main technical tool is that of a cataproduct of Noetherian local rings, given as the Hausdorffification of the corresponding ultraproduct. Unlike the latter, the cataproduct is again Noetherian, and gives the limit with respect to the jet metric.

32. Works in Progress: My Dictionary Book: Rebecca Shapiro

I was lucky enough to have this project fall in my lap when Jack Lynch proposed it about a year and a half ago. His idea, which I quickly thought was the most brilliant way for me to get tenure, was to look at the history and development of English and American dictionaries through their front matter. I'd take the front matter and determine what the editorial principles were and discuss them in their social, literary, and historical contexts. Because the dictionaries, for the most part, are over two hundred years old, there would not be a concern about violating copyright. But as they are owned by libraries and to reproduce the front matter would cost quite a bit so the idea is instead to transcribe them. I wish we could have facsimiles but it's just impossible. Jack had already compiled a proposal and list of the dictionaries so the process was made infinitely easier. I just had to start work.

Because I have a helpful husband who found and did the drudgery of printing the front matter for me, I could focus on understanding who these early lexicographers were and what motivated them to write their books—who they hoped to reach and what they wanted to do with the language they organized. So, the way the project has begun to develop is to first think about how I/we consider the dictionary's editorial principles, which is to say, generally, not much at all. I've been using dictionaries longer than I can remember and while I have distinct memories of reading the front matter of encyclopedias I do not remember ever looking at dictionaries in that way. We probably all imagine using a dictionary to be so obvious and straight-forward that it's impossible to think that there was a time when we didn't have them or didn't know how to use them. For that matter, when spelling wasn't something that was right or wrong. I think that most of us who don't spell like my mother just use a dictionary—or a thesaurus—in an alphabetical manner: we have a word in mind and then we look up the definition of it by its approximate spelling. Perhaps it might be useful to think of our current use of dictionaries as being inductive; that is, we have a word, an idea, and we confirm it by locating its definition in the dictionary or understanding the words like it in a thesaurus. The assumption of our own literacy is so high that we don't imagine not knowing or having access to words and their meaning; dictionaries have "always" been there, right?

Well, no, in fact they have not always been around. It's true that there has been some attempt to rein in and "fix" the language for centuries but those texts bear little resemblance to what we use today. Some of the earliest books devoted to understanding English—it's spelling and the words that were not used in everyday life—were often lists of words. What is largely considered to be the first dictionary is *The Table Alphabeticall* by Robert Cawdrey. That text was largely a list of what early lexicographers called "hard" words, those that were typically loans from Latin and Greek or French. The title itself was something new, as Cawdrey meant to organize words differently from the few reference books on spelling or hard words that had come before. A "table," according to the OED, is "a schematic arrangement of information" that is organized in a "systematic arrangement of numbers, words, symbols, in a definite and compact form." Cawdrey was a schoolmaster and his text is appropriately

pedagogic. The words defined are indeed uncommon, scientific, or “hard” words. The definitions were terse, short, somewhat idiosyncratic—as were the words chosen. Just on the first page are “abash”—blush; “abba”—father; “abbesse”—comforters of others; “abecedarie”—the order of the letters. The first dictionaries—and this is true until and including Johnson—used previous texts as their base and built upon them for their particular projects.

Regarding some later dictionaries, I began to understand that teaching about the language and asserting authority was up for grabs. At that time, philology, grammar, and teaching were rather disorganized; publishing dictionaries or grammar books was increasingly common and authors who were schoolmasters and ministers felt that they were capable of writing dictionaries—merely because they could, not necessarily because they knew how to. And because there was no such thing as copyright on the language, lexicographers began to use each other’s word lists and definitions, taking advantage of a wide-open industry and great need for answers. A famous example is Edward Phillips’s *New World of Words* (1658) who essentially ripped off Edmund Blount’s *Glossographia* (1627). Blount retaliated by writing another book called *A World of Errors*. The later example is Johnson, who used as his source text Nathaniel Bailey’s *Universal Etymological Dictionary*. Whereas Phillips called Blount’s text his own and copied it with only a few minor word changes, Johnson instead used Bailey as a starting point and his text became so different and of such greater magnitude that they can hardly be the same. But I have come to understand that during that period “borrowing” and adapting were considered normal and acceptable, as long as those activities were within reason, the newer texts did something additional, or the previous authors were mentioned.

Probably my favorite earlier dictionary was clearly written as a labor of love by an actual scientist, John Ray’s 1674 *A Collection of English Words Not Generally Used*. Known primarily as a naturalist and botanist, Ray also became fascinated by cataloging English words, words that were considered provincial. He wrote one of the first studies of English dialectology, *Collection of English Proverbs* (1670; rev. 1678)—incidentally, the proverb “the early bird catcheth the worm” is first found in this book. The front matter to the first edition of the dictionary does not say much about Ray’s methodology or purpose, other than to mention that he noticed variations in English while in his travels and that he compiled what today would be considered regionalisms, and he believed his book would be useful to people traveling to far-flung parts of England. Ray discusses what he included and why—he did not wish for the book to be a regular glossary, as he acknowledges that there were already several; but that he wished for the text to be a compilation of words and terms peculiar to counties outside London. Moreover, he explicitly excludes words from London because he asserted that they would make their way to the outer lands soon enough. What makes Ray’s book of proverbs and his dictionary important to the history of lexicography is not so much that he wanted to write a definitive work of “hard” words or to “fix” definitions, but that he studied the language and culture of the people of England much as he did its plant life. These books, thus, are likewise important in terms of sociolinguistics and dialectology; Ray took a naturalist’s view of language, lovingly creating a work that identified and marked terms and uses of indigenous language.

As the seventeenth century moved into the eighteenth, dictionaries reflected even more so the new interest in the sciences and categorizing new discoveries. New fields of study were emerging and dictionaries likewise added hundreds of scientific words and these texts became more and more specialized. By the first third of the eighteenth century, dictionaries of hard words became more and more specific and there was an imperative to include just about every hard word from every obscure field or place, it seemed. For example, John Kersey’s 1708 *Dictionarium Anglo-Britannicum* title pages claimed to include: “all sorts of difficult words, that derive their original from other ancient and modern languages; as also, of all terms relating to arts and sciences, both liberal and mechanical, viz divinity,

law, philosophy, physick, surgery, anatomy, chymistry, pharmacy, botanicks, mathematics, grammar, rhetoric, logic, music, heraldry, maritime affairs, military discipline, traffic, husbandry, gardening, handicrafts, confectionary, cookery, horsemanship, hunting, hawking, fowling, fishing, and etc. To which is added A large collection of words and phrases, as well as Latin as English, made use of in our ancient statutes, old records, charters, writs, and processes at Law, never before published in so small a volume." And it goes on and on and on. Kersey is quite concerned with clarity and brevity in definitions. In his definitions and categories, Kersey presents a list of abbreviations of languages as well as some professions and geographic locations, though he is not always consistent in their usage. For example, the military term "face to the left" or "face to the right" seems more like a phrase and "justify the lines" is only indicated as being from "printing" and not as a phrase. Other words are not marked: "falconry" is only "the Art of managing Hawks and other Birds of Prey" instead of being indicated as a "Hunting-Term" or "Keel-raking" is defined as "a Punishment us'd at Sea, when a Malefactor is bound with Ropes and drawn underneath the Ship's Keel" and could have been marked "Sea-Term." The dictionary also uses some tools for abridgement, such as when he asks readers to refer to other like terms: instead of being redundant and defining first "Astronomical Quadrant" and then "Quadrant Astronomical" he writes, "see Astronomical Quadrant." Clearly, however, the texts were becoming so specialized as to be almost ridiculous. Something was going to have to give, it seems.

The dictionary before Johnson's which seemed to address this over-reliance on hard and rarified words and terminology was by Thomas Dyche and William Pardon in 1737. Their dictionary seems to almost thumb its metaphorical nose and hard words and an educated readership. he dispenses with etymology, because of its "Uselessness to those persons that the Sort of Books are most helpful to." Dyche and Pardon explicitly target less educated people, both women and men: he places accent marks on words to help those "as have but an imperfect Idea, of the English Orthography"; moreover, he aims to prevent his readers from acquiring a "vicious pronunciation."—a now very obscure usage, "vicious" in this context as it specifically refers to language use and writing: "Impaired or spoiled by some fault, flaw, blemish, or defect; faulty, defective, imperfect, bad; corrupt, impure, debased." Later, he writes that "The Whole is intended for the Information of the Unlearned, and particularly recommended to those Boarding Schools, where English only is taught, as is the Case commonly among the Ladies." It does not appear that his readers are of such mean status as those of his *Spelling Dictionary*, but they are obviously young and untutored—and female, who were becoming a rarely-mentioned audience. In fact, early dictionaries, from the seventeenth century, were just as likely to desire a female readership as one composed of clerks or tradesmen. These texts targeted women as their primary audience. Robert Cawdrey's *Table Alphabeticall* (1604), Dunton's *The Ladies Dictionary* (1694) and Cockeram's *Dictionary*, Blount's *Glossographia*, assert in the front matter that not only were they writing for a female audience but their approach to understanding the subtleties of English was claimed to be of a kind that mothers would understand and pass on to their children in the nursery and ordinary speakers would use. Thus, these texts were not only important in the history of lexicography but they were important resources in applying theories of second language acquisition, pedagogy, and a certain kind of empowerment for women in the burgeoning field of linguistics and lexicography. Disappointingly, though, dictionaries soon dropped women as one of their targeted readers and during most of the seventeenth century, women are mentioned rarely if ever. James Murray, in a speech about the development of English lexicography, says, "I suppose it is a truism, that the higher position now taken by English studies, is intimately interwoven with the advances which have been made during the last quarter of a century in the higher education of women. . . . it is a noteworthy fact, that the preparation of these early seventeenth century English dictionaries was also largely due to a consideration of the educational wants of women" but that "all these references to the needs of women disappear from later editions and are wanting in later

dictionaries after 1660. . ." Murray, if you don't know, relied heavily on his daughter and other women who assisted him in cataloguing and archiving the word slips that later became the OED.

So, I'm at the point where I'm studying Johnson's Plan of a Dictionary (1747) comparing his Plan with not only the front matter of previous dictionaries but also am getting ready to look at how his Plan evolved when he came to actually write the thing almost ten years later. I've often a great deal of pleasure when comparing Johnson's two documents and I say to myself, "Well, X didn't make it, or obviously Y is not going to happen." Johnson started out like other lexicographers, wanting to fix the language and then found, as Bailey did early in the eighteenth century, that language has a mind of its own. Bailey reminds readers that speech, and to a lesser extent, writing is what differentiates humans from animals--but language only enables people to communicate when it contracts into accurate and corresponding words that have fixed meaning. He writes, "Words are those chanel[s] by which the Knowledge of Things is convey'd to our Understandings: and therefore upon a right Apprehension of them depends the Rectitude of our Notions." Bailey does not distinguish between spoken or written speech in this context, but to him the more "civilized"—though he really means in this case, literate people—peoples benefit from setting down words to clarify and understand language in dictionaries. He also writes that "all Polite nations" should "make the Study of Letters the first Business of Life" and links the work of these nations—the education of its people—to the successful creation of dictionaries.

This continues to be a fascinating experience, understanding how the English language and its study really are linked with the rise of the middle class (everybody says that, but in this case it's really true), how dictionaries were just one kind of conduct book, and while it seems as though sun of lexicography rose and set with Johnson, his book was just one of many and is actually indebted to dozens of others that came before him.

- 33. OA is the Way! Why You Should Publish Open Access:** Maura A. Smale, Ph.D. *Associate Professor Library, New York Library Association Annual Conference, November 8-10, 2102*

Writing Our Next Chapter

Presented in the invited session *Get Published Now!* Co-panelists included Beth Evans, Brooklyn College; Kathleen Collins, John Jay College, and Steve Ovadia, LaGuardia Community College.

ABSTRACT

Open Access articles published in scholarly journals are accessible and available to all at no cost to read and share. There are many benefits to publishing in open access venues, including benefits for libraries, readers, and authors. After reviewing the reasons for and parameters of open access scholarly

publishing, this presentation will suggest practical strategies for publishing your own research and scholarship in open access venues. The presenter will offer examples from her own publication history to illustrate the benefits of open access publishing.

- 34. Motion, distinguishing number and orbit equivalence in infinite groups:** Simon Smith, DPhil
Assistant Professor Group theory and combinatorics Mathematics, *Conference on Group Theory, Combinatorics, and Computing (GTCC), 2012*

Group Theory, Combinatorics and Computing

Symmetry breaking is rather fun: take your favourite permutation group G which acts on a set X and a palette of your favourite colours, then colour the elements of X so that every nontrivial permutation in G destroys your colouring. One typically performs this on graphs, where X is the vertex set and G is the automorphism group of a graph. Obviously one never needs a palette of more than $|X|$ colours, but finding the minimum number of colours needed (called the *distinguishing number of G*) is often very difficult. If $H < G$, we say that G and H are *strongly orbit equivalent* if they have exactly the same orbits on the power set $P(X)$. It is not hard to see that if G has distinguishing number 2, then G is not strongly orbit equivalent to any of its proper subgroups.

Although this sounds nothing more than an entertaining puzzle, it has a deep connection to other areas of group theory. For example, it is known that all finite primitive permutation groups of order at least 33 either contain the alternating group or have distinguishing number 2, but the only known proof relies on the Classification of the Finite Simple Groups. There is still no easy way of explaining this connection. A similar relationship appears to exist for infinite permutation groups, but at present our knowledge is patchy.

In this talk I'm going to give an overview of this growing area of interest. I'll talk about some of the conjectures that are motivating much of the research, as well as some recent results.

- 35. Greenpeace as Intermediated Theatre:** Dr. Sarah Ann Standing Assistant Professor Theatre and Speech Humanities

Earth Matters on Stage
Carnegie-Mellon University

ABSTRACT

In this paper, I investigate Greenpeace's *Save the Whales* campaigns as intermediated performance. I believe these eco-activist performances—though played out on the high seas—nonetheless have direct relevance to examining current new media in theatrical performances. In particular, I consider immediacy and hypermediation, copy and original, as well as the (new) media

implications of the subversion of the cultural hegemony in this context. Utilizing Bolter and Grusin's ideas about "immediacy" as contrasted with "hypermediation,"⁵ where the transparency of immediacy is privileged over hypermediation, I question whether, especially in the context of eco-activism, the "realism" of immediate content is *still* (today) privileged over the self-referential reflexivity of hypermediation. I argue that we are not passive observers wanting only to "see" reality transparently reproduced—even in news-reel clips—but that hypermediation calls particular attention to itself in its heightening of the possibility for direct engagement's efficacy. The previous, assumed, dominance of the live original over the copy no longer exists. As technology gives rise to more and more creativity in, for example: drawing from the audience, communicating with the players, communicating with the audience, and responding to the audience, the paradigm of the uni-directional communication (from actor to audience) is broken down. We move to a more—improvisation-like—constant stream of information that flows in a multi-directional manner. Each participant, in his or her own self-reflexive participation, at once upholds the idea of community in their liminal on-line space, but also deliberately and consciously tries to change the fabric of the larger society and influence the cultural hegemony.

36. *Center for Sustainable Urban Neighborhoods:* Dr. Sarah Ann Standing Assistant Professor Theatre and Speech Humanities, *R. Murray Schafer and the Re-Enchantment of Theatre Hawaii International Conference on Art and the Humanities Island Wisdom, Global Knowledge University of Louisville* –

ABSTRACT

Born in Sarnia, Ontario, Canada in 1933, Raymond Murray Schafer is a composer, librettist, educator, author, and "Soundscape" theorist. I consider his twelve-part opera *Patria* as a form of "eco-theatre." This mammoth work, written over a 35 year period, reifies themes of Canadian identity, the idea of the North, site-specificity, and in particular eco-theology. Suzi Gablik, who profiles R. Murray Schafer in *The Reenchantment of Art*, calls for a return to a more "enchanted" way of life and art, rather than the current patriarchal isolation emblematic of the Modern, or the ironic and parodic distance of the Post-Modern. Gablik writes about ecstasy: "Ecstasy is an archetypal need of our being, and if we

⁵ Jay David Bolter and Richard Grusin, *Remediation: Understanding New Media*, MA: MIT Press, 2000.

don't get it in a legitimate way, . . . we will get it in an illegitimate way—which accounts for much of the chaos of our culture. Boredom, cynicism and chronic materialism are all symptoms of our higher need for an ecstatic dimension in our life.”⁶

R. Murray Schafer himself believes our problems with the natural world began the moment we stopped seeing it as a spiritual place, and started seeing it as separate from the human world and in terms of the “resources” available to us for the harvesting. Schafer describes the purpose of art as: “First, exaltation. To be hurled beyond our limits into the cosmos of magnificent forces, to fly into the beams of these forces and if we blink, to have our eyes and ears and senses tripped open against the mind’s will to the sensational and the miraculous.”⁷ Schafer believes that it is difficult if not impossible to indiscriminately take from nature if you see it as miraculous. You can cut down a tree, but you must give something back, and this makes it harder to randomly cut down a whole forest. In this paper, I examine Schafer’s *Patria* in terms of the interwoven themes of Canadian identity, the idea of the North, site-specificity, and in particular eco-theology.

37. The Miraculous Unveiled: Technology and Wonder in Thirteenth Century Iberia: Christopher Swift, Ph.D. Assistant Professor Theatre and Speech Department of Humanities, *American Society for Theatre Research*, 2012.

ABSTRACT

This paper focuses on intersections of technology and devotion in the Middle Ages. I am interested in discovering phenomenological relationships, performative interactions, and ritual alliances between the affective lives of worshippers and moveable, prop-like saints. As I have argued elsewhere, medieval automatons were primarily *techno-mythological* ideas, the distillation of mechanical processes and holiness, and by extension, tools for devotion. Perhaps because of the dominance of Christianity in medieval Europe, the primary interpretive lens employed by cultural historians for studying liturgical automatons has been religious, while analyses of moveable objects as instruments of labor, functionality, and play have been lacking. While I agree that medieval ritual objects effuse differences that are incommensurable with modern performance objects, I believe that there is value in engaging contemporary theories of cognition, affect, and performance in order to produce a fuller understanding of the relationships between medieval sacred puppets and their witnesses.

⁶ Gablik, *Reenchantment of Art*: 85.

⁷ Schafer, *Patria*: 87.

Here I argue that an experiential gap between liturgical puppets and automatons did exist for medieval Christians, however, it is clear that the vast majority of moveable objects were not meant to deceive audiences. Rather, the affective response to the spectacle of theatrical technology enhanced the sense of sacred presence without ever becoming subsumed by doctrinal narrative. By taking a “thingcentric” perspective, sacred props are demystified. My performative analysis presents articulating objects as multi-dimensional—aesthetic, functional, theatrical, and ludic. Medieval devotees could appreciate moveable statues for their technological brilliance: objects that demonstrated the wonder and genius of God in the works of men.

38. Libraries and Mobile Development: Successes and Failures: Consortium of College and University Media Centers 2012 Tech Oasis, Junior Tidal, Assistant Professor Library Science Library

Abstract

Mobile access is growing at an accelerated pace. According to Pew Internet Research, almost half of American adults are smart phone owners (Smith, 2012). Tablet ownership has almost doubled during the holiday season, calling to reach visitors using these devices. This presentation examines the delivery of content to mobile users, considerations for administrators in developing these sites, and the planning and development of an effective mobile website. Using the mobile website of the Ursula C. Schwrin Library of the New York City College of Technology of the City University of New York as a model, the demonstration will examine the successes and failures in constructing this site.

Developing a mobile website is not as simple as reiterating a desktop device optimized for mobile visitors. Implementing a mobile presence takes thoughtful consideration that an institution must make, including its users, selecting which services to provide, and existing technical concerns. For example, is there a user demand for a mobile website? Should my institution be represented by a mobile application or a mobile website? How should we regard different devices’ interfaces? Are the resources that the library provides available for mobile consumption? These questions and more are addressed throughout the presentation.

The intended audience of this presentation includes administrators, developers, stakeholders, and anyone considering the use of a mobile website. Participants will leave the presentation with a broad overview of how mobile websites can represent their libraries or institutions, with user-centered design and analytics based decisions being heavily emphasized. Mobile integration with existing technology, such as content management systems, will be touched upon. Previous experience in mobile or web development is not necessary to understand this presentation.

Smith, A. (2012) 46% of American adults are smartphone owners. Retrieved April 22,

2012 from <http://pewinternet.org/Reports/2012/Smartphone-Update-2012.aspx>.

39. **Successful Implementation of Peer Led Team Learning for Statics and Strength of Materials:**
Melanie L. Villatoro, P.E. *Assistant Professor Civil Engineering Construction Management and Civil Engineering Technology*

New York State Engineering Technology Association, October 25 & 26, 2012
Engineering Technology

Abstract

Peer Led Team Learning (PLTL) involves students working in small groups under the guidance of a Peer leader. Peer Leaders are current students who have successfully completed the course. The goal of PLTL is to enable students to gain confidence and critical problem solving skills that will help them master the course content thereby improving their ability to succeed in successive design courses. Civil Engineering Technology (Civil) and Construction Management (CM) students are required to complete Statics and Strength of Materials as a prerequisite to Steel and Concrete Design courses. Performance in Statics is indicative of performance in the design course sequence and Statics is particularly challenging for students entering the program at a remedial level of math. A large number of students transfer out of the Civil and CM majors after the first semester. PLTL has been implemented in Statics in an effort to improve student performance in the course and throughout completion of the degree. PLTL is currently in its second semester of implementation and data indicates that the students in the PLTL inclusive Statics classes are performing better than those in sections without PLTL.

40. **Mobile ground-moving and wall-climbing (MGMWc) Robot:** Andy S. Zhang Associate Professor
Engineering Technology Mechanical Engineering Technology

Presentation Title: Mobile ground-moving and wall-climbing (MGMWc) Robot

Conference title: *CLAWAR 2012: 15th International conference on Climbing and walking Robots and the Support Technologies for Mobile Machines*

Location: John Hopkins University
Baltimore, Maryland, July 23-26, 2012

Theme: Robotic Technology

Abstract:

The mobile ground-moving and wall-climbing robot is a unique robot that is capable of moving on a leveled ground or climbing on vertical walls. The MGMWC robot can climb vertical flat surface by using suction cups through an innovative pneumatic system. The current prototype pneumatic system consists of two air compressors, one piston, two solenoid valves and four 7-inch diameter suction cups. This MGMWC robot is much larger than those typically found on the commercial market because a larger scale device can carry larger loads, and therefore provide more useful applications. Applications

include the climbing of architectural exterior surfaces, civil engineering structures, the outer hulls of ships, and aircraft tails (while on the ground). Obvious uses include cleaning of windows or vertical surfaces, delivery of safety ropes or harness to humans, inspection of window joint seals, and inspection of the surface of dams or ships or aircraft surfaces for cracks and leaks. Further, on discovery of faults, this device has sufficient load capacity to perform repairs on a defected surface, whether temporary or permanent. In a real sense, the MGMWC robot could provide the necessary “finger in the dike” that averts disaster. And, as a robotic device, it will keep on its post indefinitely. It is controlled wirelessly, using ZigBee (XBee shield), through tele-operated mode with a programmable Arduino microcontroller.

- 41. ACQUIRING “WORKING” SKILLS AND EXPERIENCE THROUGH HANDS-ON MULTIDISCIPLINARY DESIGN PROJECTS:** Andy S. Zhang Associate Professor Mechanical Engineering Technology, Iem Heng Assistant Professor, Farrukh Zia Assistant Professor Computer Engineering Technology, *Proceedings of the ASME 2012 International Mechanical Engineering Congress & Exposition*

November 9-15, 2012, Houston, Texas, USA

Abstract

One of the problems that many engineering graduates are facing when looking for their first job is: do you have experience? Employers prefer graduates with relevant experience to those who do not. Why is experience so important to employers? Can students accumulate “working” experience while studying in college? This paper discusses the use of design projects inside and outside of classrooms to help students gain “working” experience and skills through hands-on design activities that simulate the actual design activities that occur in the industry. Faculty members from the Mechanical Engineering Technology and Computer Engineering Technology departments were involved in creating multidisciplinary design projects. The design projects give students new insights into what they learn in their coursework and provide students the valuable experiences in analytical skills, concurrent engineering approach, people skills, and management skills needed for the students when looking for employment.

- 42. Using Hands-on Robotic Projects to Engage and Strengthen High School Students Participation in STEM Education:** Andy S. Zhang Associate Professor, Sidi Berri Professor Mechanical Engineering Technology, Iem Heng Assistant Professor, Farrukh Zia Assistant Professor Computer Engineering Technology, *2012 ASQ Advancing the STEM Agenda in Education, Workplace and Society*

Abstract

This paper discusses the work that the Mechatronics Technology Center (MTC) in the School of Technology and Design of New York City College of Technology (City Tech) has done in the past two years to actively engage high school students in STEM education through hands-on robotic projects. Project-based hands-on robotic design activities are introduced at various levels. MTC offered these hands-on robotic design activities through after-school program, weekend workshops, and summer programs to maximize participation.