CONFERENCE PROCEEDINGS

Listed below are abstracts of student-faculty collaborative work presented at regional, national, and international conferences.

Gregory Adkins, Elizabeth Carter, Amanda Micai, and Sarah M. Pulimood
(Sarah M. Pulimood, Faculty Sponsor)
Extensions to, and Optimization of, a Mobile Computational System for Internet Programming.
Presented at the Association for Computing Machinery (ACM) Southeast Regional Conference, Melbourne, FL,
March 10-12, 2006
Mobile computations are powerful tools that can enable efficient, reliable, and secure use of idle resources on large networks such as the Internet. Native support for strongly mobile computations is an essential prerequisite for a user-friendly Internet programming language. In this presentation, we discuss further extensions and optimizations of our prototype Mobile Computational Model that will take us a step further toward a full-fledged working system. Each of the tasks undertaken is non-trivial since it is complicated by considerations of strong mobility, heterogeneous architectures, and networks within the constraints of the need for increased security and reliability.

Rachel Tomcik
(Jean Graham, Faculty Sponsor)
"Men leave behind them that which their sin showes": Phallic Intrusion in John Donne's "Sapho to Philaenis"
Presented at the Stony Brook University Annual Graduate Conference, Stony Brook, NY, February 24-25, 2006
Presented at the Cornell University Annual Graduate Conference: "Taking Exception," Ithaca, NY,
March 3-4, 2006
John Donne's "Sapho to Philaenis" has elicited criticism that ranges widely from Donne as a misogynist who colonizes the lesbian voice to Donne as a feminist who creates a lesbian utopia. Paula Blank suggests that lesbian desire is *not* the central issue of the poem and offers one of the most balanced accounts of the poem's failure to blur fully the distinctions between the one who loves and the one who is loved. She shifts our focus from categorizing Donne to understanding better the complexity of his goal: to surmount the differences between self and other. While this paper acknowledges the achievement of Blank's scholarship, it also argues that Blank does not follow her own line of investigation far enough. She proposes that the key failure of Donne's poetics is his "masculine persuasive force," but Blank, like other scholars, characterizes this force as solely poetic, never asking *why* the "force" that infuses Donne's words with power ultimately fails in "Sapho to Philaenis." This paper provides a previously unsuggested alternative to the traditional view of Donne's use of the female poet's voice as an aggressive act of colonization. The paper then addresses the moments in which Sapho cannot dissolve the gendered boundaries that exist in her seemingly idyllic world of love predicated on sameness. The "masculine persuasive force," a force that exceeds poetics alone, by its phallic nature destroys all opportunity of blurring distinctions and of creating the perfect circle that Donne so desperately tries to articulate into existence.

Mitchell Kleiman, Orlando J. Hernández
(Orlando J. Hernández, Faculty Sponsor)
Face Recognition Using Multispectral Random Field Texture Models, Color Content, and Biometric Features
Presented at the Applied Imagery Pattern Recognition (AIPR) Conference,
Washington DC,

October 19-21, 2005
Most of the available research on face recognition has been performed using gray-scale imagery. This presents a novel two-pass face recognition system that uses a Multispectral Random Field Texture Model, specifically the Multispectral Simultaneous Auto Regressive (MSAR) model, and illumination invariant color features. During the first pass, the system detects and segments a face from the background of a color image and
confirms the detection based on a statistically modeled skin pixel map and the elliptical nature of human faces. In the second pass, the face regions are located using the same image segmentation approach on a subspace of the original image, biometric information, and spatial relationships. The determined facial features are then assigned biometric values based on anthropometrics, and a set of vectors is created to determine similarity
in the facial feature space.

Jackie Kotler, Marisa Leston, Jean Walker, Kristen LePage, Laura Munice, Beth Cohen, Erin Cusmano, Christina McLee, Laura Muldowney, JenniLee Groegler and Stacey Van Metre
(Blythe Hinitz, Faculty Sponsor)
Native American Arts and Literature in Historical Context: Their Role in Early Childhood Curriculum Development
Presented at the Annual Conference of the New Jersey Association for the Education of Young Children, Atlantic City, NJ,
October 22, 2005
The presentation informed teachers of young children of the importance of teaching about Native Americans, to prohibit the use of common stereotypes, and to incorporate history into curricula. Short stories, such as "The Woman Who Married a Frog," were introduced as well as related creative arts and historical projects. Crafts included a rain stick, a corn husk doll, and a storytelling hand. In addition, conference attendees were taught the use of a talking stick and directions for creating a rain dance. Presenters strove to help teachers recognize stereotypes of Native American cultures and how to avoid using them.

Brittany A. Kohlberger
(Chu Kim-Prieto, Faculty Sponsor)
Religion as a Source of Cultural Variability in Beliefs about American Culture
Presented at the Annual Conference of the Eastern Psychological Association,
Baltimore, MD,
March 18, 2006
This study investigated the relation between religious and cultural identity of Asian-Americans and white Americans. Individuals may differentiate American cultural values and beliefs based on their distinctive Christian beliefs and values. The sample included white Christians, Asian Christians, and Asian Buddhists (n=83). Results indicate that Asian-American Christians were more similar to white American Christians than Asian-American Buddhists. Findings have repercussions for psychological understanding of culture and religion.

P. C. Parikh, K. J. Tierney, N. L. Gerber, and D. L. Lovett,
(Donald L. Lovett, Faculty Sponsor)
Na^+,K^+-ATPase Activity in Gills of the Green Crab Carcinus maenas may be Modulated by Membrane Trafficking During Salinity Change
Presented at the Annual Meeting of the Society for Integrative and Comparative Biology,
Orlando, FL,
January 4–8, 2006
Estuarine crabs hyperregulate soon after transfer to low-salinity seawater, but typically no change in Na^+,K^+-ATPase (ATPase) activity in gill homogenates is detected during this period. We hypothesize that the amount of ATPase enzyme within the plasma membrane is increased in

crabs in low-salinity seawater by fusing vesicles (which had been sequestered within the cytoplasm while the crab was in higher salinity water) with the plasma membrane. We tested whether membrane trafficking was occurring by perfusing contralateral gills of green crabs *Carcinus maenas* acclimated to 10 ppt salinity with either 10 or 32 ppt saline while the gills were immersed in seawater of the corresponding salinity. After 1 hour, gills were perfused with saline to which biotin had been added, and then gills were flushed with saline alone to remove any unbound biotin. In theory, biotin would have bound to portions of the plasma membrane exposed to the hemolymph, but it would not have bound to any membrane that had been sequestered within the cytoplasm. Biotinylated membrane was removed from homogenates of each gill with paramagnetic beads coated with streptavidin. Preliminary tests have demonstrated that the streptavidin beads removed a greater proportion of the ATPase activity from homogenates of low-salinity gills than from high-salinity gills. Since only membrane that had been exposed to the hemolymph would have been removed by the beads, these data suggest that a greater proportion of the ATPase enzyme was sequestered from the plasma membrane in high-salinity gills than in low-salinity gills. Therefore, basolateral membrane (containing ATPase) appears to have been trafficked into the cytoplasm during exposure to high salinity. Na^+,K^+-ATPase activity in gills of the green crab *Carcinus maenas* may be modulated by membrane trafficking during salinity change.

P. A. Y. Maas and J. T. Wieme,
(P. A. Y. Maas, Faculty Sponsor)
Longitudinal Comparison between Students Entering a Highly Selective Public Four Year Institution as Undeclared versus Declared Majors
Presented at the annual North East Association for Institutional Research (NEAIR) Conference, Philadelphia, PA,
November 7, 2006
This paper compares admission statistics and the academic success of the approximately 20% of students choosing to enter TCNJ as undecided versus those entering as declared majors. Variables examined include graduating GPA, time to declaration of majors, etc. Plans for further study are included. The 2001 and 2004 cohorts show no significant difference in pre-college history (SAT scores and high school rank); however, the SAT scores of the 1998 cohort are lower. This seems to follow the overall increased competition for admission to TCNJ. Furthermore, there is no difference between the graduating GPA in the 1998 and 2001 cohort (2004 graduation data will be available in 2008). Beginning in 2001, open-options students were grouped into a school of interest as a way better to advise students towards their desired major. Data show that 60% of open-options students chose a graduation major within their initial school. Only students graduating in four years are included here.

Lori Adriance, Lauren Muñoz, and Erin Sigwart *(The College of New Jersey)*; Kathleen Logothetis (*Franklin and Marshall College*
(John Allison, Faculty Sponsor)
Low Copy Number DNA: The Potential for Full STR Profiles
Presented at the Annual Conference of the Northeastern Association of Forensic Scientists (NEAFS), Rye, NY,
November 3, 2006
With the advent of television shows such as *CSI*, more law enforcement agencies have been submitting touch DNA evidence to be tested. "Touch" DNA, or low copy number (LCN) DNA is any genetic material that can be obtained from a surface after physical contact. It can be of particular evidentiary value to law enforcement when it is used for cases in which little to no other evidence exists. The question is how efficiently can DNA be obtained from such samples? This study sought to address the common assumption that obtaining a genetic profile of statistical significance was so rare that it would be imprudent to process every touch DNA

sample submitted for analysis. Swabs taken from steering wheels of cars driven by one individual, two individuals, and a "burglarized" car, defined in this case as a car driven for 10 minutes by another person to simulate a burglary, were analyzed. The processing of the evidence from extraction to data analysis followed the New Jersey State Police Standard Operating Procedures. The results of this study found that DNA can be obtained from these low copy number DNA samples and in some cases, full DNA profiles of the 13 CODIS STRs used for forensic evaluations were obtained.

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Listed below are citations of published student-faculty collaborative scholarship. The authors whose names are underlined are students.

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