



***5th Annual
Graduate Research Symposium
And
American Cultures Conference***

*March 24 — 25, 2006
College of William & Mary
University Center
Williamsburg, VA*

**2006
PROGRAM**

**2006
GRADUATE RESEARCH
SYMPOSIUM
AND
AMERICAN CULTURES
STEERING COMMITTEE**

Pjerin Luli, Co-Chair (Sciences)
Physics

Margaret Freeman, Co-Chair (Humanities)
American Studies

Ellen Adams
History

Joshua Beatty
History

Joanna Conder
Public Policy

Maya Johnson
American Studies

Gwen Kennedy
Public Policy

John Miller
American Studies

Grace Turner
Anthropology

**SCHEDULE
AT A GLANCE**

Friday, March 24

8:15 am – 9:15 am Registration

9:15 am – 9:30 am Welcome

9:40 am – 11:50 am Concurrent Sessions

Noon – 1:20 pm Lunch

1:30 pm – 2:30 pm Poster Session

2:30 pm – 4:50 pm Concurrent Sessions

5:00 pm – 6:00 pm Keynote Speaker, Jorge Cham

6:00 pm – 7:00 pm Book Signing by Jorge Cham

6:00 pm – 7:30 pm Reception

Saturday, March 25

9:00 am – 9:30 am Registration

9:40 am – 12:00 pm Concurrent Sessions

12:15 pm – 12:45 pm General Lecture

1:00 pm – 2:00 pm Lunch and Award Ceremony

W&M Arts and Sciences Awards

Awards will be presented for the best paper(s) in the Humanities and Sciences for students who entered papers for award consideration.

American Cultures Conference Visiting Scholars' Awards

Awards will be presented for the best paper(s) submitted by Visiting Scholars to the American Cultures Conference.



Welcome to Williamsburg, Virginia and the 5th Annual Graduate Research Symposium and American Cultures Conference. The Symposium and Conference Planning Committees have organized a memorable event for us all and we look forward to sharing it with you.

We hope that you will attend several of the more than 60 engaging presentations and poster sessions that will both challenge and broaden your knowledge. A unique event, the combined Symposium and Conference encourages interdisciplinary exchange, bringing together graduate students from the sciences and the humanities. This is an exciting opportunity to share experiences common to students in all graduate school communities.

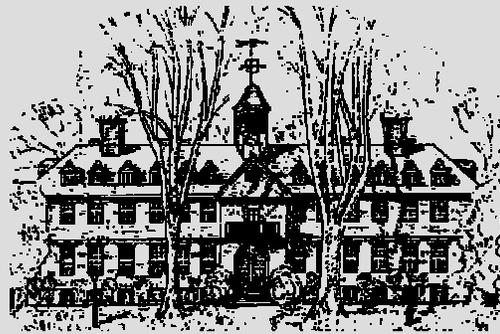
This year, for the first time, the American Cultures Conference is delighted to share their conference with colleagues from throughout the United States. We welcome to our campus fifteen visiting presenters, including representatives from institutions in California, Maryland, New York, North Carolina, Ohio, Tennessee, Texas, and Washington, D.C.

The keynote speaker for this year's event is Jorge Cham, the creator of the popular comic strip *Piled Higher & Deeper* which sheds humor on the often onerous world of graduate school.

As always, we want to make this event the best that it can possibly be. Thus, we appreciate your feedback on our planning and execution of this two-day gathering. At your leisure, please take a moment to fill out the survey provided. We look forward to meeting all of you during the Symposium and Conference and hope that you enjoy the festivities.

Pjerin Luli

Margaret L. Freeman



The College of William and Mary

The College of William and Mary is the nation's second oldest university and noted as the best small public university in the nation. Founded in 1693 by Royal Charter from King William III and Queen Mary II of Great Britain, the College is rooted in history and tradition. The Sir Christopher Wren Building is the oldest academic building in continuous use in the United States, constructed between 1695 and 1699. Phi Beta Kappa, the nation's oldest premier academic honor society and the student honor code were founded at William and Mary. The College also maintains the historic post of Chancellor--currently held by former Supreme Court Associate Justice, the Honorable Sandra Day O'Connor. Although traditions are strong on the historic campus, William & Mary is a center for innovation and research. As our President, Gene R. Nichol, has remarked, "It is no exaggeration to say that the future is being shaped and formed in William & Mary's laboratories, classrooms, libraries and, often in places, well beyond." The "future" can be seen now at the Graduate Research Symposium and American Cultures Conference.

Historic Williamsburg

Come see where America began — Virginia's Historic Triangle: Williamsburg, Jamestown and Yorktown. Visit Jamestown, established in 1607, and site of the first permanent English settlement in the "New World." 2007 will mark the 400th anniversary of our nation's birthplace and an 18-month long slate of events beginning in fall 2006 and continuing through the spring of 2008 will commemorate this milestone in our nation's history. For more information on attractions, events, accommodations, and things to do while in our area go to, <http://www.visitwilliamsburg.com/visit.htm>.

Concurrent Panel Sessions

Friday, March 24

**SCIENCES SECTION
9:40 AM—10:40 AM**

The Influence of Predation on the Nesting Ecology of the Diamondback Terrapin (*Melaclemys Terrapin*) in the Lower Chesapeake Bay

Presenter: Victoria A. Ruzicka, *College of William and Mary, Williamsburg, VA, Biology*

Time: 9:40 am

Location: Tidewater A

Session Chair: S. Laurie Sanderson

Female diamondback terrapins (*Malaclemys terrapin*) emerge from the water during the summer to nest in open soils beyond the reach of the tide. During this time terrapin eggs are susceptible to predation by mammals. I completed field studies in the lower Chesapeake Bay of Virginia to compare nesting success on two adjacent islands with different levels of raccoon activity. Raccoon foraging intensity on each island was estimated by monitoring the number of raccoon tracks crossing 11.6m² open soil plots that were raked daily. From six plots on each island, the average number of raccoon tracks prior to the nesting season (May 2005) was significantly higher on the western island (3.1 ± 2.3 versus 0.5 ± 1.1 tracks d⁻¹; ANOVA, $p < 0.01$). Raccoon activity increased on both islands during the nesting season in June and July and was still significantly higher on the western island (7.5 ± 3.9 versus 3.2 ± 3.6 tracks d⁻¹; ANOVA, $p < 0.01$). Concomitant with greater raccoon activity, 302 of 315 terrapin nests were predated on the western island (95.8%), whereas 810 of 1047 terrapin nests were predated on the eastern island (77.4%). This information is being used to develop a population viability model for these terrapins in the Chesapeake Bay.

The Effect of Mercury Contamination on the Avian Community

Presenter: Ariel White, *College of William and Mary, Williamsburg, VA, Biology*

Time: 9:40 am

Location: Tidewater A

Session Chair: S. Laurie Sanderson

Mercury contamination is becoming a worldwide problem. Health effects associated with contamination include weakness, loss of weight, and even death. Fish in the South River, a tributary of the Shenandoah River, are contaminated with mercury. The effect of this contamination on the avian community has yet to be studied. In this study, mercury contamination was determined by taking

feather and blood samples from three target species: the belted kingfisher, the eastern screech-owl, and the tree swallow. Other non-target species were sampled to determine relative levels of mercury in the terrestrial environment. Mercury levels in blood suggest that predatory adult birds have potentially harmful levels; however, further research is needed to determine the effect mercury may have on reproductive systems. This study shows that birds living on the South River within 23 miles of the source have higher levels of mercury in their blood than birds further downstream.

Effects of Mercury Contamination on the Avian Community Along the South River, Virginia Using the Tree Swallow (*Tachycineta bicolor*) as a Bioindicator

Presenter: Rebecka Brasso, *College of William and Mary, Williamsburg, VA, Biology*

Time: 9:40 am

Location: Tidewater A

Session Chair: S. Laurie Sanderson

Mercury released from an industrial source into the South River between 1929 and 1950 has contaminated this tributary of the Shenandoah River. We assessed the effects of this mercury on avian reproductive success. We chose Tree Swallows (*Tachycineta bicolor*) as bioindicators because they forage on flying insects with aquatic larval stages and readily use nest boxes. In February 2005, 200 nest boxes were placed along the South, Middle, North, and South Fork Shenandoah Rivers. Half of the nest boxes were along contaminated portions of the watershed, while the other half were on uncontaminated reference tributaries or upstream from the source. Samples of blood and feathers were taken from breeding adults and nestlings to determine mercury levels. All nests were assessed for basic reproductive parameters. There was a significant difference in mercury levels between the adults nesting in the contaminated and reference areas. However, we detected few differences in reproductive success between the two groups. It is possible that reproductive effects occur after fledging, in which case we would not have detected them. Future study will reveal whether mercury toxicity may have cumulative, rather than immediate, effects on reproductive success due to breeding along a mercury gradient for multiple seasons.

HUMANITIES SECTION ***9:40 AM—10:40 AM***

"Were they only ignorant of our religion": Anglican Missionaries, Indian Missions, and Faltering Networks of British Cultural Dissemination in Colonial New England

Presenter: Jonathan Reid, *Baylor College, Waco, TX, History*

Time: 9:40 am

Location: Tidewater B

Session Chair: Andrew Fisher

Never numerically as strong as New England's Congregationalists and arguably less politically influential due to their limited involvement in the region's colonial governments, Anglican missionaries under the auspices of the Society for the Propagation of the Gospel and Church of England devotees desired to establish themselves as a contending religious force in colonial society. Under intense social and political pressure, New England Anglicans managed to build up a strong constituency and eventually brought a number of dissenters into their fold. Anglican conversion efforts, however, were not nearly as successful among New England's native inhabitants. Having learned about the Christian religion through direct contact with Europeans and other indirect means, many Indians distanced themselves from white society and its religious institutions. The failure of Anglican missionaries to convince the region's Indians of the worth of the Christian gospel had repercussions for the empire, demonstrating on a higher level growing disaffection to some aspects of British culture among both colonials and Indians. This paper will demonstrate that the S.P.G.'s missionary activity was viewed by non-Anglican whites and Indians alike to be of secondary importance to its functioning as an imperial presence in colonial North America. Additionally, the Anglican missionary strategy was inherently flawed, further opening the door to dissenters' missionary efforts among the Indians and squelching the hope of extending networks of British culture.

"you shall be separated far:" Mapping the Distance in Samson Occom and Eleazar Wheelock's Missionary Network

Presenter: Angela Calcaterra, *University of Virginia, Charlottesville, VA, English*

Time: 9:40 am

Location: Tidewater B

Session Chair: Andrew Fisher

In 1759 at East Hampton, Presbyterian minister Samuel Buell delivered the ordination sermon for Mohegan minister and missionary Samson Occom. Interestingly, during the sermon Buell remarked that another "reverend person" should have delivered it in his place. Why did

Eleazar Wheelock, the minister with whom Occom spent four years at study and who would later send Occom to England to promote his Indian Charity School, fail to deliver this sermon? Questions like this resound in an eighteenth century religious network composed of both Anglo-American and Indian missionaries. Such missionaries worked together under what the Anglo-Americans set forth rhetorically as an intact and promising project to convert the American 'heathen.' Many critics have discussed Occom's *A Short Narrative of my Life* (1768) as a way to understand his complex 'Christian Indian' identity. However, published documents like ordination sermons, sermons Occom delivered in England, and letters and narratives published to justify the missionary project allow us to investigate this fascinating network and better understand Occom's role within and refiguring of it. This paper examines distances, gaps, and silences in several missionary texts in order to map individual movement within this tenuous, early American, biracial network.

Native Usurpers: Political Networks in New Netherland and Southern New England During the 1640s

Presenter: Nick Klaiber, *College of William and Mary, Williamsburg, VA, History*

Time: 9:40 am

Location: Tidewater B

Session Chair: Andrew Fisher

As the Pequot War and Kieft's War both ended, the sociopolitical landscape of the region ringing the Long Island Sound (modern-day southern New England and southern New York) had to be almost completely rebuilt. As social groups that had only dealt with one another in the realm of trade suddenly found political alliances and tributary networks essential to survival, cultural intermediaries within each group rapidly gained newfound importance, credibility and power. This paper focuses on Native American cultural intermediaries in the region (Wyandanch, Uncas, and Miantonomo to name a few) and their attempts to use these new sociopolitical networks with the Dutch, English, and/or other native groups to increase their power and prestige both within their own tribes and within the larger, "covalent society" created in the wake of widespread conflict. Of special interest will be how the exploitation of these new connections and networks actually brought about a more balanced hybrid society where all groups maintained a level of sociopolitical agency.

The End of Identity Poetics: Immigrant Poetry and the Lyric

Presenter: Peter Henry, *University of Virginia, Charlottesville, VA, English*

Time: 9:40 am

Location: James Room

Session Chair: Merit Kaschig

American poetry during the 1980s was marked by the emergence of two camps of poetry, backed by their respective critical proponents: on the one end of the spectrum, a self-consciously experimental avant-garde, the Language movement of Ron Silliman, Charles Bernstein, Lyn Hejinian et al., championed by Hank Lazer, Marjorie Perloff, and Jerome McGann, among others; at the other end of the spectrum was the poetry, advocated by figures like Helen Vendler and Robert von Hallberg, that thrived via university-sponsored creative writing programs and the few major commercial presses still publishing poetry. Characteristic of this latter group was the omnipresence of identity—be it ethnic (Rita Dove, Cathy Song), sexual (Sharon Olds, Mark Doty), or class (Philip Levine). Nevertheless, a cautious reconciliation has begun to occur. Stephen Burt, in a now-infamous 1999 essay, argues that the early-to-mid 1990s witnessed the arrival of an “elliptical poetry” that draws from the avant-garde experimentation of the Language movement “while meeting traditional lyric goals” (46-7), pointing to such poets as Mark Levine, C.D. Wright, and Lucie Brock-Broido.

In this paper, I wish to extend and revise Burt’s arguments through the lens of recent American poetry written by immigrants.

Works Cited: Burt, Stephen. “The Elliptical Poets.” *American Letters and Commentary* 11 (1999) 45-55.

Networks of Affiliation and Dematerialization in Recent Korean American Poetry

Presenter: Jim Cocola, *University of Virginia, Charlottesville, VA, English*

Time: 9:40 am

Location: James Room

Session Chair: Merit Kaschig

Tracing a line from Theresa Hak Kyung Cha’s *Dictee* (1982) through Myung Mi Kim’s *Under Flag* (1991) and *Dura* (1998) to Walter K. Lew’s *Treadwinds* (2002), this paper posits recent Korean American poetry as a bordered, networked phenomenon relying upon complex affiliations of culture and place. Examining their respective aspirations toward emplacement, I argue that as Cha, Kim and Lew turn to the archive, deploying a collage aesthetic predicated upon linguistic and textual juxtaposition, their poetics of rupture and return are informed by the political ruptures of the Korean American conflict, wherein the dematerializations of culture and place beget the dematerialization of genre.

**SCIENCES SECTION
10:40 AM—11:50 AM**

Magneto-Optical Kerr Effect (MOKE)

Presenter: Yanoar Sarwono, *College of William and Mary, Williamsburg, VA, Physics*

Time: 10:40 am

Location: James Room

Session Chair: Joshua Erlich

Magneto-optical Kerr effect (MOKE) arises from an interaction between light and magnetic materials. MOKE is presently described by a classical model and a quantum description for ferromagnetic materials. In classical model, the Lorentz force of the external magnetic field generates the antisymmetric part of the dielectric tensor generating magneto-optical effect. In the quantum description, the magneto-optical effect is due to the spin-orbit interaction that couples the electron spin to its motion. The coercivity being the amount of the external magnetic field when the magnetization is zero depends on the direction of the magnetization with respect to either the easy or the hard axes.

Top Pair Production in Randall-Sundrum Models

Presenter: Erin De Pree, *College of William and Mary, Williamsburg, VA, Physics*

Time: 10:40 am

Location: James Room

Session Chair: Joshua Erlich

The standard model in physics does not explain the gauge hierarchy we see, one promising extension to the standard model are the Randall-Sundrum models. In these models, we expect to see heavy partners of particles, known as Kaluza-Klein particles. However, if the masses of these Kaluza-Klein particles are in the 10-100 TeV range, then direct production of these particles at the Large Hadron Collider (LHC) or the International Linear Collider (ILC) will not be possible. We address the possibility that high-precision measurements of top quark pair production at the ILC may provide the first evidence of these states. We calculate corrections to top pair production in various Randall-Sundrum models.

Inspirational Safety Factor in PreBötC Neurons

Presenter: Ryland Pace, *College of William and Mary, Williamsburg, VA, Applied Science*

Time: 10:40 am

Location: James Room

Session Chair: Joshua Erlich

The neurons of the Pre-Böttinger complex (PreBötC) located in the ventro-lateral medulla are essential for breathing in mammals. The *in vitro* slice preparation isolates the PreBötC, which spontaneously generates the inspiratory rhythm, and allows experimental manipulation and recordings at both the cellular and system levels.

PreBötC neurons display large amplitude, long duration voltage depolarizations coincident with fictive inspiration. We found that these depolarizations could be reduced by more than 50% before network frequency was adversely affected, suggesting the presence of a 'safety factor', which operates at the cellular level to protect the network against small perturbations. We are interested in how excitatory synaptic inputs operate cooperatively with intrinsic membrane conductances to form these robust depolarizations that ensure network resilience. We found this process to be strongly dependent on an intracellular biochemical cascade coupled to intracellular calcium release, which in turn activates a large inward current resulting in a robust depolarization. Thus, we propose that this amplification process at the cellular and synaptic levels enable small networks to reliably generate robust rhythms.

A Modeling and Experimental Study of Respiratory Rhythm Generation in Mice

Presenter: John Hayes, *College of William and Mary, Williamsburg, VA, Applied Science*

Time: 10:40 am

Location: James Room

Session Chair: Joshua Erlich

We developed a model of the respiratory network contained in the preBöttinger complex (preBötC) to investigate neural mechanisms of rhythmogenesis. The model was tested and refined via patch-clamping experiments performed *in vitro* using slice preparations from neonatal mice. Model preBötC cells were equipped with Hodgkin-Huxley style intrinsic ion-channel currents including persistent sodium current (I_{NaP}), high-threshold calcium currents (I_{Ca}), calcium-activated nonspecific cation current (I_{CAN}), calcium-activated potassium currents, and Na^+/K^+ pumps. A sparse network of preBötC neurons was assembled using excitatory synaptic transmission mediated by AMPA and NMDA receptors as well as electrical coupling mediated through gap junctions. The network model incorporates two general phenotypes of inspiratory neurons, which are typically observed *in vitro*: type I/II neurons discharge earliest in the respiratory cycle. Type III neurons discharge latest in the respiratory cycle and represent pre-motoneurons found within the preBötC and are considered the motor output in this framework. Our model reproduces respiratory-like activity observed *in vitro* such as normal breathing continuing with the blockade of intrinsically bursting pacemaker neurons, and the model also reproduces the transient periods of apnea observed *in vivo* upon the elimination of a large sub-population of the network and suggests means for recovering normal breathing under these conditions.

SCIENCES SECTION

10:50 AM—11:50 AM

Congener Specific Determination of Polybrominated Diphenyl Ether (PBDE) of the Penta- and Octa-Technical Flame-Retardant Mixtures

Presenter: Mark J. La Guardia, *College of William and Mary, Williamsburg, VA, Chemistry*

Time: 10:50 am

Location: Tidewater A

Session Chair: Qun Li

Polybrominated diphenyl ether (PBDE) mixtures have been widely used to flame-retard a range of products common in homes and work environments. They have subsequently become widely dispersed in the environment. Toxicological potencies of commercially produced PBDE mixtures are a function of their composition. More complete information on this topic is needed to further evaluate the potential for environmental degradation of these materials. Utilizing recent technical enhancements and newly available commercial standards we developed a method capable of analyzing a larger suite of mono-through deca-BDEs. We then characterized the congener composition of four common technical flame-retardant mixtures. PBDEs were analyzed by gas chromatography/mass spectrometry (GC/MS). Structural conformations based on fragmentation patterns and molecular ions were established by electron-capture negative ionization (ECNI) and electron ionization (EI). A total of 39 PBDEs were identified, 29 at concentrations $> 0.02\%$ by weight. To our knowledge, this is the first time 12 of these congeners have been identified and confirmed by MS as components of a commercial mixture. Five other congeners (four $< 0.02\%$ by weight) were tentatively identified based on their molecular ion and unique ECNI fragmentation (cleaving at the PBDE ether bond) in the absence of corresponding analytical standards.

Practical and Efficient Point Insertion Scheduling Method for Parallel Guaranteed Quality Delaunay Refinement

Presenter: Andrey Chernikov, *College of William and Mary, Williamsburg, VA, Computer Science*

Time: 10:50 am

Location: Tidewater A

Session Chair: Qun Li

The discretizations of models describing physical objects into simple elements like triangles or tetrahedra are called meshes. They are widely used in physics for solving partial differential equations for the modeling of objects' behavior, in health care, in computer graphics, and other areas. Many applications require mesh elements to satisfy certain quality constraints on maximal area and minimal angle. Delaunay refinement is a powerful method for

HUMANITIES SECTION

10:50 AM—11:50 AM

the generation of guaranteed quality meshes. Quite often, however, a single computer does not offer sufficient computing power or memory capacity, in which case we have to use multiple computers simultaneously (in parallel) to create a single mesh.

We developed a new parallel guaranteed quality Delaunay refinement method which, in contrast to the existing methods, offers all of the following benefits: (1) the elimination of the need to solve the difficult domain decomposition problem; (2) structured tolerable communication; (3) no centralized conflict resolution which can create bottlenecks; (4) the ability to reuse the existing sequential codes; (5) the elimination of the necessity to maintain an expensive conflict graph. Our experimental results show excellent scalability. On a cluster of more than 100 workstations we can generate about 900 million elements in less than 300 seconds.

Reverse Engineering Software Plans Using Formal Concept Analysis

Presenter: Meghan Revelle, *College of William and Mary, Williamsburg, VA, Computer Science*

Time: 10:50 am

Location: Tidewater A

Session Chair: Qun Li

The task of a programmer charged with understanding how a feature is implemented in an unfamiliar system is complicated by the fact that features are often scattered throughout different places of the source code. Identifying the code relevant to a feature and determining how that feature interacts with others can be a difficult and time-consuming task. In our work, we are developing an approach that semi-automatically creates software plans, views of the source code that present the code relevant to a feature along with supporting context. Our approach is based on formal concept analysis (a type of data analysis based on lattice theory) of execution traces of use case scenarios that exercise the different features of the system. Unlike previous, similar approaches, we work not at the method level but at the level of lines of code. We evaluated this technique by completing three case studies: two preliminary ones involving small Java programs and a larger one involving JHotDraw, a large graphical user interface framework. Our approach can give programmers a fine-grained look at where features are implemented and how they interact while also being easy to apply and largely language-independent.

Hollywood Alumni and the Geography of Spanish-Language Filmmaking: The Case of *Allá en el rancho grande*

Presenter: Lisa Jarvinen, *Syracuse University, Syracuse, NY, English*

Time: 10:50 am

Location: Tidewater B

Session Chair: Timothy Barnard

During the transition from silent to sound cinema, Hollywood studios produced numerous films directly in the Spanish language. Hollywood-made Spanish films were ultimately less successful among Spanish-speaking audiences made in Mexico, Argentina and Spain. Nevertheless, the years when Hollywood studios made Spanish films created networks of personal connections and knowledge about the tastes of Spanish-speaking audiences. To exploit the Spanish-language market that this paper considers, studios had to devise new business relationships with foreign producers that constituted early experiments with the decentralization and denationalization of modes of film production. This paper uses United Artists distribution of the blockbuster 1936 Mexican film, *Allá en el rancho grande*, to illustrate the importance of preexisting relationships between Mexican producers, stars and directors with Hollywood in this new business model.

Communism and Punk: The Networking of Revolutionary Communities in Christina Garcia's *Dreaming in Cuban*

Presenter: Neeley Gossett, *University of North Carolina-Wilmington, NC, English*

Time: 10:50 am

Location: Tidewater B

Session Chair: Timothy Barnard

In Christina Garcia's novel, *Dreaming in Cuban*, two insurgent cultural networks converge, changing the dynamics between Pilar, a Cuban American teenager, and her Cuban grandmother, Celia. Pilar's participation in the New York City punk community allows her an acute appreciation of Celia's position as an active supporter of Castro's regime. Through the use of new historicism, I will demonstrate that Pilar's involvement with punk culture is directly related to her grandmother's participation in the Cuban Revolution. I plan to analyze both social groups and the similarities of the actual communities, as well as the impact of the networks on the women's familial alliance.

A Forgotten Massacre Rediscovered: Recent Interpretations of the Plan de San Diego and the Inadequacy of National History

Presenter: John Weber, *College of William and Mary, Williamsburg, VA, History*

Time: 10:50 am

Location: Tidewater B

Session Chair: Timothy Barnard

This paper examines a brief irredentist rebellion in South Texas in 1915, in which Mexicans and Mexican Americans attempted to seize control from the growing Anglo population. The US-Mexico border underwent massive changes in the first two decades of the twentieth century that disrupted old social networks as the economy on the United States side evolved from ranching to farming at the same time that Mexico entered a decade-long revolution that ended a thirty-four year dictatorship. These changes on both sides of the border created fertile ground for the Plan de San Diego rebellion, though it was quickly crushed by the Texas Rangers, local law enforcement, and white vigilantes. The reign of terror that followed allowed for the creation of a rigid racial caste system that shaped much of the later history of South Texas.

SCIENCES SECTION
2:30 PM—3:40 PM

Piezoelectricity and its Applications

Presenter: Daniel L. Pechkis, *College of William and Mary, Williamsburg, VA, Physics*

Time: 2:30 pm

Location: Tidewater A

Session Chair: Barbara Monteith

Piezoelectric materials have the ability to transform mechanical to electrical energy (and vice versa). This property has made them ideal to be used in everything from automobiles to medical technologies. Even though you can find them in all walks of life, there are still some unanswered questions to the origins of their electro-mechanical coupling. One such question is: How does local atomic structure relate to piezoelectric properties? I plan to discuss the origins of the piezoelectric phenomenon and how it is applied to different sensor and actuator devices. I will also touch on my own investigation into the local atomic structure of these materials.

Biomarker Discovery for Early Disease Detection

Presenter: Peter Harris, *College of William and Mary, Williamsburg, VA, Physics*

Time: 2:30 pm

Location: Tidewater A

Session Chair: Barbara Monteith

Proteomics, the study of the proteins in your body, promises great advances in disease detection and health diagnostics, all from a simple blood test. Our work focuses on the advancement of mass spectrometry techniques, as mass spectrometry is the primary means used to detect those important proteins in a sample. The accurate detection of proteins is often hindered by fragmentation that occurs during ionization processes associated with mass spectrometry. The major thrust of our work is the development of a new acoustic shockwave mass spectrometry source, which promises to reduce protein fragmentation and thereby generate much more precise and sensitive data.

3D Computer Simulations with Applications in Non-destructive Evaluation

Presenter: Kevin Rudd, *College of William and Mary, Williamsburg, VA, Applied Science*

Time: 2:30 pm

Location: Tidewater A

Session Chair: Barbara Monteith

This presentation will briefly outline several new 3D computer simulation methods. The first method simulates 3D acoustic wave interactions with material layers and objects. This simulation method is being employed to study how sound waves scatter from hidden weapons and explosives to assist in the development of an acoustic concealed weapons detector. The second method simulates elastic wave propagation in solids. It is currently being used to model ultrasound waves in complex pipe geometries. These new simulation methods take advantage of William and Mary's High Performance Computational Cluster (The SciClone). Simulation results and movies will be presented.

Ultrasonic Guided Wave Nondestructive Evaluation

Presenter: Jill Bingham, *College of William and Mary, Williamsburg, VA, Applied Science*

Time: 2:30 pm

Location: Tidewater A

Session Chair: Barbara Monteith

We live in a world where we count on the structural integrity of the equipment around us, if it fails or breaks it could cost us a lot, in some cases even our lives. Nondestructive Evaluation (NDE) is the quantitative characterization of materials, tissues and structures by noninvasive means. Our study of ultrasonic guided wave methods allows us to examine the interaction of multiphysics signals within key structural components. Since they propagate relatively long distances within plate- and pipe-like

structures, guided waves allow inspection of greater areas with fewer sensors. In order to interpret the signals that we receive from transducers we look not only at the wave mechanics but also the signal processing, tomographic reconstruction and image processing to deliver the information in a form that does not require extensive knowledge of the guided wave physics. This research combines experimental efforts with finite integration technique (FIT) simulations to develop an understanding of guided wave propagation and scattering in piping systems including structural elements such as bends and welds. By understanding the local scattering behaviors of the Lamb waves around flaws as well as structural elements, we can design a system to automatically identify abnormalities of interest.

HUMANITIES SECTION

2:40 PM—3:40 PM

Pay for Labor: Work Contracts with Freed People in 1870 Virginia

Presenter: Shannon Mahoney, *College of William and Mary, Williamsburg, VA, Anthropology*

Time: 2:40 pm

Location: Tidewater B

Session Chair: Erin Krutko

Historical anthropologists and archaeologists concerned with the lives of African Americans in the South after the Civil War must confront both the hopes for and the realities of Reconstruction and the profound effects both had on the lives of former slaves. The Bureau of Refugees, Freedmen and Abandoned Lands, commonly known as The Freedman's Bureau, encouraged freed people to sign work contracts that often served as social and behavioral contracts. In Virginia, on January 1, 1870, two work contracts were written by European American landholders in northern and southern Virginia and signed by freed people living on the land. Using these two contracts as a case study, I will discuss the range of experiences for freed people by region and work class within the oppressive agricultural system of the southern United States. An anthropological approach facilitates a detailed examination of overt as well as subtle distinctions in word choices, categorizations, and tone in these two documents which sought to regulate the behavior of wage laborers and sharecroppers through written agreements. Expanding these observations to broader social and political issues we can see the beginning of the decline of Reconstruction and the impetus for the Great Migration.

The Migration of the Peacock Family: An Examination of Myths of the American West

Presenter: Marisa Peacock, *Georgetown University, Washington, D.C., American Studies*

Time: 2:40 pm

Location: Tidewater B

Session Chair: Erin Krutko

The promised land of the west has been well documented in American culture. Literature, film and television have shared various adventures of cowboys, Indians and ranchers whose independence and perpetual search for freedom transformed them into the "pathfinders of overland expansion." These celebrated stories of the American west perpetuated myths of individuality, discovery and frontier, as well as the American hero. Yet, many American families traveled east to west, as early as the 1700s as a result of religious and familial decisions.

In the early 1800s, Abraham Peacock and his second wife, Anna Joy had made their way from North Carolina to Indiana. They and their nine children of Quaker faith left North Carolina because of their strong opposition to slavery and the lure of new lands with the promise of "plentiful game where they could raise their families." As the children married and started families of their own, the migration West continued. These migrations, as compiled by James Peacock and Janet (Peacock) Mumma were examined, as well as the myths of the American west, as represented in contemporary literature and culture and as interpreted by history and iconic symbols.

Through a qualitative process, themes of the American West were examined, namely the opposing concepts of the frontier. With an extensive review of values, attitudes and behaviors, the paths of the Peacock family were outlined, compared and contrasted with how their migration west reflected the values and behaviors displayed in the frontiers described. Using historical records of the Peacock family, as well as the views of leading theorists, the myths of the West as described in literature and film and those myths that have been supported by the Peacocks were summarized.

The foundations of community might have been more essential than once thought. Though people are constantly moving, their sense of identity became even more important, as did their roots within a community rather than ideals of individualism contributed significantly to values and identity of the American West.

Mudhole to Mudhole: Roads, Canals, and the Rise and Decline of Economic Centers in Northwestern Ohio, 1808-1860

Presenter: Matthew Bloom, *Bowling Green State University, Bowling Green, OH, History*

Time: 2:40 pm

Location: Tidewater B

Session Chair: Erin Krutko

Roads and canals displayed early attempts by federal and state policymakers to create compact and stable communities in northwestern Ohio. The consequences of these strategies were the ways the economy developed in the region. This paper argues that while legislators asserted that internal improvements would aid in the economic expansion of the United States by connecting distant markets, a larger amount of local economic development and the creation of local connections were the results of the projects. Although the Maumee and Western Reserve Road and the Wabash and Erie Canal united people living near them with those in other regions, these internal improvements provided a greater impetus for local advancement. Transportation routes were central to the creation of a system of sub regional hubs and hinterlands that was the backbone of the region's economy. Growth rates of towns depended upon proximity to transportation routes and the size and productivity of their hinterlands.

Networking and Gift Giving: Volunteer Work and Generous Giving Among the Virginia Indians

Presenter: Angela Daniel, *College of William and Mary, Williamsburg, VA, Anthropology*

Time: 2:40 pm

Location: James Room

Session Chair: Manuela Berti-Kuffel

In this paper, I will explore some of the social dynamics of volunteer work and generous giving. Anthropological theory on reciprocation and exchange will be employed on my fieldwork among Virginia Indians. A gift, formulated as volunteer work and/or generous giving, is often perceived as a sole act of the giver, not requiring reciprocation in return. I will discuss the social networking involved in both the acts of giving and receiving. I will also delve into the returns for the giver, contrasting the reasons for volunteer work and generous giving with the advantages the giver receives as a result. One such return of giving is directly linked to social networking, itself. Consequently, networking provides a means for giving and receiving to transpire, as well as being the vehicle of a positive return for the giver.

Defining Change Within Plantation Landscapes

Presenter: David Brown, *College of William and Mary, Williamsburg, VA, History*

Time: 2:40 pm

Location: James Room

Session Chair: Manuela Berti-Kuffel

Common perspectives of plantation landscapes are often framed by colonial revival evocations, stand-alone house museums, or inscrutable plowed fields. Landscape archaeology, including excavations into plowed contexts, can provide a deeper understanding of the networks of buildings, activity areas, and open space that comprised the dynamic historic landscape. Archaeological data from surveys, intensive testing, or full-scale excavation, can provide vital information about landscape change at both the individual building level and plantation wide context. This paper draws on archaeological evidence from sites in Gloucester County to display the social and economic evolution of southeastern Virginia plantations from 1650 to 1900.

Dark Visions from the Ocean: Lucayan Perspective on a Spanish Vessel

Presenter: Grace Turner (Keith Tinker, Co-Author), *College of William and Mary, Williamsburg, VA, Anthropology*

Time: 2:40 pm

Location: James Room

Session Chair: Manuela Berti-Kuffel

Columbus' first landfall in the Americas was on Guanahani/San Salvador one of the Lucayos islands, now called the Bahamas. Within 30 years of this momentous voyage the people who greeted this crew were gone; enslaved and relocated elsewhere. Having no written language, archaeology is a major source of information about these early Bahamians. Examination of archaeological material such as the graffito of a European ship can potentially add insight on the Lucayan perspective of this encounter. For Lucayans, it seems, the most enduring symbol representing Europeans was an approaching vessel; mute testimony of the nature of their cultural contact.

SCIENCES SECTION

3:50 PM—4:50 PM

A Computational Investigation of the Effects of Allosteric Coupling Between Ryanodine Receptors on Ca²⁺ Spark Statistics

Presenter: Jeffrey Groff, *College of William and Mary, Williamsburg, VA, Applied Science*

Time: 3:50 pm

Location: Tidewater A

Session Chair: Christopher Del Negro

The coupling of electrical excitation to contraction in cardiac myocytes requires calcium (Ca²⁺) entering the cell to trigger the release of a much larger amount of Ca²⁺ from the sarcoplasmic reticulum (SR). When the cell is depolarized, Ca²⁺ flows into the cell through voltage gated L-type Ca²⁺ channels and enters a restricted space between the sarcolemmal and SR membrane. In this 'diadic subspace' Ca²⁺ ions activate ryanodine receptors (RyRs) located in clusters on the SR membrane triggering release of Ca²⁺ from the SR stores. This process of Ca²⁺ induced Ca²⁺ release (CICR) in cardiac myocytes is characterized by a collection of discrete Ca²⁺ release events called Ca²⁺ sparks. Even though CICR is auto-catalytic in nature it exhibits global stability in that Ca²⁺ release events terminate. It is believed that the stability of CICR is due to the fact that Ca²⁺ spark initiation and termination is under local control. Although the mechanisms of local control are still undetermined, it is postulated that allosteric interactions between RyRs may contribute to local control. Here we investigate the effects allosteric interactions have on the statistics of Ca²⁺ sparks using a minimal computational model of a cluster of allosterically coupled RyRs. We show that spark-like excitability can be enhanced by introducing cooperative coupling between neighboring channels in the cluster. Additionally, we find that cooperative coupling can reduce the sensitivity of sparks to the strength of the Ca²⁺ coupling between channels. Finally, we show that sparks persist even if allosteric coupling in the RyR cluster is sparse.

Saving the Environment (and Money!), One Super-Computer at a Time

Presenter: Matthew Curtis-Maury, *College of William and Mary, Williamsburg, VA, Computer Science*

Time: 3:50 pm

Location: Tidewater A

Session Chair: Christopher Del Negro

Providing power to large governmental computing centers can cost millions of dollars annually, not to mention the ecological burden of consuming such large quantities of energy. No doubt the gains achieved through such centers justify the costs; however, improved techniques are required to reduce the energy consumption while main-

taining current levels of performance. One way to improve the performance of an application is to execute it in parallel on many processors. Unfortunately, additional overhead is generally encountered the further parallelized an application becomes and in many cases the overhead may even outweigh the benefits of using more processors. Additional processors also consume more total power.

In our research, we attempt to locate situations where deactivating some of the processors will result in little or no performance loss or even a performance gain. By deactivating these processors, substantial energy savings can be seen because they will consume considerably less power. We have implemented a library to determine how many processors should be used for a given application. Our results show that over a range of scientific applications, our approach on average achieves an 8% reduction in execution time and a 17% reduction in energy consumption, compared to using all available processors.

Thwarting Proxybased Email Spamming: Analytical and Experimental Studies

Presenter: Mengjun Xie, *College of William and Mary, Williamsburg, VA, Computer Science*

Time: 3:50 pm

Location: Tidewater A

Session Chair: Christopher Del Negro

The fast increasing volume of email spam is largely attributed to the wide use of spam proxies. Exploiting numerous spam proxies, spammers can pour spam without paying a penny and disclosing their identities. The severity of the proxy-based spamming has been realized by the whole anti-spam community. However, facilities that can detect spam proxies and spam sources have not yet been developed, even though they would be in great demand. In this paper, we present a simple and efficient technique, DTSpam, to detect and throttle proxy-based spamming activities inside a customer network in a timely manner with high accuracy. Although our detected spam source may be still a few hops away from a real spammer, DTSpam indeed pushes the defense line towards spammers. Based on the protocol semantics and timing causality of proxy-based spamming, we reveal two detection principles—connection correlation and packet symmetry. By leveraging these simple principles, we can identify the spam proxies inside a network, trace the corresponding spam sources behind them, and throttle the spam traffic. We implement a prototype of DTSpam based on libpcap, and validate its efficacy through both theoretical analyses and trace-based experiments.

The Effects of Human Disturbance on the Breeding Success of Eastern Bluebirds

Presenter: Caitlin Kight, *College of William and Mary, Williamsburg, VA, Applied Science*

Time: 3:50 pm

Location: James Room

Session Chair: Eric Jensen

Human disturbance is defined as an anthropogenic event having long- or short-term effects on wildlife. Previous studies have illustrated that disturbance can influence avian abundance and diversity, behavioral patterns, and breeding success. Some birds may alter behaviors in response to disturbance yet display no reduction in breeding success, and vice versa. This suggests that breeding in disturbed environments may result in sub-lethal changes in fitness which can only be uncovered through longer-term research synthesizing measurements of chick health, adult behavior, and human disturbance regimes. To date, there have been no comprehensive descriptive studies integrating quantifications of these three factors. To fill this gap, we have examined Eastern bluebirds (*Sialia sialis*) breeding in nest boxes across a disturbance gradient. We have quantified disturbance regimes and parental time budgets at 52 boxes and have taken measurements of both chick and adult fitness. We found that particular aspects of disturbance regimes had significant effects on both behavior and fitness, and that a trade-off exists between parents' self-maintenance behaviors and the fitness and survivorship of their young. These results have both evolutionary and management implications; notably, human disturbance is capable of altering both the life histories and viability of wildlife populations.

Role and Implementation of Mesh Generation for Image-Guided Clinical Procedures

Presenter: Andriy Fedorov, *College of William and Mary, Williamsburg, VA, Computer Science*

Time: 3:50 pm

Location: James Room

Session Chair: Eric Jensen

Minimally invasive surgical procedures are becoming a common practice with the recent advances in high quality and resolution medical image acquisition. Moreover, new technological achievements allow to collect Magnetic Resonance (MR) image data intra-operatively. Nevertheless, information available within pre-operative image data cannot be derived from intra-operative scans. Non-rigid registration is a technique which allows to fuse the pre-operative and intra-operative images to help surgeons make informed decisions during the course of the intervention.

In my presentation I will talk about mesh generation for Finite Element (FE) based non-rigid registration of brain MR data. Mesh generation is an intrinsic component of any application which uses FE method (FEM). Applications of FEM differ in their description of the input model,

requirements to the mesh quality and the computation time allowed for mesh generation, to name a few.

This presentation will give a general overview of image-guided neurosurgery procedure, which is being developed at Brigham and Women's Hospital (BWH) in Boston, and then concentrate on application specific aspects and implementation of mesh generation for this application. The open source mesh generation implementation we have developed is routinely used for image registration during image-guided craniotomy and liver thermal ablation procedures at BWH.

Security and Privacy Infrastructure for Pervasive Computing

Presenter: Haodong Wang, *College of William and Mary, Williamsburg, VA, Computer Science*

Time: 3:50 pm

Location: James Room

Session Chair: Eric Jensen

Pervasive computing captures the vision that computing and communication will be embedded almost everywhere surrounding us, from clothing to tools to appliances to cars to homes to the human body to your coffee mug. An important building block for pervasive computing system is wireless network, which connects the embedded devices together. While we believe the future computing systems will be pervasive and wireless, it is very challenging to build a secure infrastructure. For example, how can we guarantee that only I have the control to tune the temperature of my bedroom and only my friends can use my microwave? How can my privacy be preserved when I use a public printer and use RFID technology to search a book in a library. The security and privacy problems are hard especially for the small devices that will be everywhere because those devices are computationally weak and battery operated. The security and privacy infrastructure has to be carefully designed.

**HUMANITIES SECTION
3:50 PM—4:50 PM**

Sang. Travail: The Pedigree of Work in Louisiana

Presenter: Sue Ann Marasco, *Vanderbilt University, Nashville, TN, History*

Time: 3:50 pm

Location: Tidewater B

Session Chair: Hiroshi Kitamura

Scholars generally argue that Louisiana was a forgotten settlement of Louis XIV. If not forgotten, then surely it was an abused and neglected colonial enterprise left largely to fend for itself with little government support. Instead, Louis XIV and his brother ruled Louisiana more surely and effectively through a complex web of personal rela-

tionships and networks of patronage with their colonists in New Orleans. Understanding the strength and efficacy of these networks reveals a better understanding for why Louisiana was founded and how it developed as a colony. At the very heart of these actions was the colonists' belief that their identities--their worthiness as clients of the crown--were in constant jeopardy. They had to constantly verify and bolster their status in very public and dramatic ways to prove to the crown and reassure themselves that their loyalty, creditability, and birthrights were intact despite the distance from Versailles.

The Power of a Legend: Negotiations and Representations of Marie Laveau in Ishmael Reed's *The Last Days of Louisiana Red* and Jewell Parker Rhodes' *Voodoo Dreams*

Presenter: Elizabeth Neidenbach, *College of William and Mary, Williamsburg, VA, American Studies*

Time: 3:50 pm

Location: Tidewater B

Session Chair: Hiroshi Kitamura

Marie Laveau was a free woman of color in nineteenth-century New Orleans who is best known as the Voodoo Queen. Her life has become legend beginning while she was still alive. In the literary world, from nineteenth century newspaper and journal articles to twentieth century novels, poetry, song, and even comic books, Laveau and the power she had as Voodoo Queen has been a popular subject for writers to explore.

This paper will compare two fictional representations of Laveau: Ishmael Reed's *The Last Days of Louisiana Red* (1974) and *Voodoo Dreams* (1993) by Jewell Parker Rhodes. Focusing on the authors' characterization of Laveau's power will show how issues of race, gender, and sexuality infuse these representations of Laveau, as each author uses this historical figure for his or her own political purposes. Both African American writers base their stories on a relationship between Marie Laveau and her contemporary, a Voodoo priest known as Doctor John. Reed uses this relationship to critique black feminists of the 1970s, whom he feared were allied with white men to keep black men disempowered. Writing twenty years later, Jewell Parker Rhodes attempts to continue the legacy of black feminist authors from the 1970s with *Voodoo Dreams*. Yet she creates a pathetic, powerless, Marie Laveau who is abused and controlled by John in her "feminist" text set against a sensational and often perverted Voodoo backdrop.

Ishmael Reed would agree with Jewell Parker Rhodes' assessment of history as "very much fictional." Clearly, Reed uses Marie Laveau to satirize black feminism, but he also recognizes the importance of the legends and oral history that surround her name. In contrast to Rhodes, he does not deny Laveau's power even while placing her in a subordinate position to Dr. John. Reed aims to present an alternative historical narrative to the dominant white narrative of American history. The most important component

to this alternative narrative is the creativity and strength of people of African descent, and the significant mark they have made on American history and culture. Both Dr. John and Marie Laveau are important figures in Reed's enterprise.

Rhodes, on the other hand, ignores most of the history known about Laveau in order to tell about her own discovery of power as a woman. Rhodes makes Marie Laveau a symbol of African American feminism; yet, Rhodes' view of black feminism is predicated on complete and utter victimization. Jewell Parker Rhodes exploits Marie Laveau for her own purposes and in many ways perverts these purposes by not giving Marie Laveau the multiple levels of power that she had.

Aftermath, Improvised: Rebuilding the Spirit of New Orleans On-Air and Online

Presenter: Roberto Armengol, (SherrilLynn Colby-Bottel, Co-Author), *University of Virginia, Charlottesville, VA, Anthropology*

Time: 3:50 pm

Location: Tidewater B

Session Chair: Hiroshi Kitamura

What will become of the "spirit of New Orleans" and the cultural tourism that relies on it? Hurricane Katrina forced entire communities of culture-workers – musicians, entertainers and other artists – to flee the city. But in the storm's aftermath many of them have found each other over radio waves and on Internet sites, where lively discussions about the rebuilding (and transformation) of their communities are taking place. Like the city's famed roots music, this discourse is improvised and resilient. Our paper samples some of that talk and explores how it objectifies, reproduces and transforms the culture of which it speaks at a moment charged with the potential for change, a time of real and imagined reconstruction. We consider what effect this diasporic discourse might have on the reconstitution of "cultural identity" in New Orleans and its attendant tourism economy.

Poster Session

Friday, March 24

The poster session will be held from 1:30 – 2:30 pm in Chesapeake C. Poster viewing will be available from 1:30 pm until 7:30 pm.

Biogeographic and Community Structural Differences Between Pacific Hydrothermal Vent Mussel Beds

Presenter: Elizabeth A. Blake, *College of William and Mary, Williamsburg, VA, Biology*

richness, diversity) in hydrothermal vent mussel beds were made between paired sites in the eastern and western Pacific Ocean to address the degree of biogeographical isolation of vent sites. Vent communities on the same ridge segment include many shared species. As, the linear distance between vent communities along a ridge axis increases differences in species composition become evident because gene flow between vents decreases as successful dispersal over long distances decreases. Deep-ocean current systems and geo-morphological features (such as microplates and transform faults) can also be dispersal barriers. In the eastern Pacific [two sites, 32° S on the East Pacific Rise (EPR) and 38° S on the Pacific Antarctic Ridge (PAR)] are separated by 650 km on the ridge axis and the Juan Fernandez microplate. In the western Pacific the two back arc basin vent sites, Lau and North Fiji basins, are separated by 1100 km of ocean, with presumably limited dispersal between basins. The two eastern Pacific sites share 62.5% of their species and the western Pacific sites only share 56.5% of their species. Only two morphospecies are found at all four vent sites (*Amphisamya galapagensis* and *Archinome rosacea*). Species richness (S_{5000}) is highest for Lau (37) and lowest for N. Fiji (23). Both eastern Pacific sites have roughly the same species richness (32° S: 25; 38° S: 26). The most prominent characteristic of the western Pacific vents is the dominance by a species, *Lepetodrilus schrolli*, which comprises 70-95% of the individuals found in the mussel beds. Dominant species at each of the east Pacific sites only comprises ~60% of the total number of individuals. The dominance by a single species may mask the true community similarity between the two western Pacific sites.

Inspiration and Mood: A Longitudinal Investigation of the Direction of Influence

Presenter: Scott E. Cassidy, *College of William and Mary, Williamsburg, VA, Psychology*

Previous research has demonstrated that inspiration relates positively to positive affect (PA) and is unrelated to negative affect (NA) (Thrash & Elliot, 2003). However, the direction of the relationship between inspiration and PA is unclear. The primary aim of this investigation was to establish the direction of the relationship between these variables. Two identical questionnaires measuring inspiration, PA, and NA were administered 14 days apart to 142 undergraduate participants. At both Time 1 and Time 2, inspiration was found to correlate with PA but not NA, replicating the findings of Thrash and Elliot (2003). Lagged regression analyses revealed that Time 1 inspiration predicted Time 2 PA while controlling Time 1 PA. In contrast, Time 1 PA failed to predict Time 2 inspiration while controlling Time 1 inspiration. These results are consistent with a causal model in which inspiration facilitates PA, failing to provide any evidence of an effect in the opposite direction. The longitudinal effect of inspiration on PA may be mediated by goal attainment or an increased activation of the approach system, although additional research is

needed to examine these possibilities. This research has important implications regarding motivation and subjective-well being, especially within the clinical and organizational settings.

The Effects of Public Service Announcements on Trust in Sexual Relationships

Presenter: Trey Causey, *College of William and Mary, Williamsburg, VA, Psychology*

Public service announcements (PSAs) have been used to educate the public about sexually transmitted infections (STIs) and encourage the use of condoms. One largely unstudied effect, however, may be that these PSAs are having negative impacts on trust in romantic relationships. A growing number of PSAs feature the message the one's partner may be cheating on him or her and may be infected with an STI. In Experiment 1, 100 participants were shown either no video, an information-based PSA, or a PSA with a strong "don't trust your partner" (DTYP) message in a private lab suite. Individuals in the DTYP condition were expected to trust their partners less after watching the PSAs than participants in other conditions. Participants in Experiment 2 (N = 100) viewed the videos online in the setting of their choosing. Results of Experiment 1 were expected to be replicated. Additionally, in accordance with attitude-formation and -change models such as the Elaboration Likelihood Model, participants in the lab condition were expected to exhibit greater changes in trust than participants in the non-lab condition, due to fewer cognitive resources available to deliberate upon the message contained in the PSA. Applications for mass media campaigns are discussed.

A Framework for Active Firewalls

Presenter: James Deverick, *College of William and Mary, Williamsburg, VA, Computer Science*

The ubiquity of computer networks has prompted active research and development in several fields of computer science. Most notably, the need to protect data and other resources has resulted in a fast-paced evolution of network security models. One such model is the packet filtering firewall. Typically located at the network perimeter, the firewall serves as the only entrance point to a collection of protected resources. As packets travel in or out of the protected domain, they are examined at the firewall, which decides whether or not to allow them through.

Traditional firewalls have limited information upon which to make these decisions. In the basic case, only addressing information contained in individual packets is used to filter traffic. We argue that traffic can be filtered more effectively in all resource management contexts, including security, if the firewall is given the ability to gain more relevant information regarding the nature of packets traveling through it.

Effect of Emotional Context on Recall of Affectively Valenced Pictures

Presenter: Allison Eden, *College of William and Mary, Williamsburg, VA, Psychology*

Advertising research suggests that emotional material embedded in congruent, or similarly valenced contexts (i.e., a sad commercial appearing in a sad program) is more accurately recalled in retrieval tasks than material in incongruent contexts (Thorson, Reeves, Schleuder, Lang and Rothschild, 1985; Thorson and Friestad, 1985). This research is of limited applicability as it includes confounding variables (e.g., content, music, character) in addition to the emotional valence of the test stimuli. Psychological research in this area, controlling for the above variables, suggests that the emotional valence (positive, negative, or neutral) of the stimuli has the strongest effect on recall accuracy, without investigating context as an independent variable (Bradley, Cuthbert, and Lang, 1992; Hamann, 2001). In the current project we examine the effect of congruent, incongruent, and neutral emotional context on the recall of affectively valenced pictures, using the standardized International Affective Picture System (IAPS) as target and context stimuli. Preliminary analysis reveals a significant difference in the accuracy of recall between congruent, incongruent, and neutral context conditions, with the greatest difference found between congruent and neutral contexts. There is no significant difference between positive and negative picture recall accuracy, independent of context. Future research will investigate these results further in hopes of drawing some inferences about the nature of emotional media processing.

Osprey Foraging Behavior and Reproductive Success

Presenter: Andy Glass, *College of William and Mary, Williamsburg, VA, Biology*

The Chesapeake Bay osprey population has exhibited significant spatial variation in growth following the banning of DDT in 1972. The slowest growth rates have occurred around polyhaline waters in the stem of the Bay, where the greatest number of ospreys are found, while the fastest growth rates have occurred around tidal fresh and upper oligohaline waters. This may indicate that the polyhaline areas are nearing carrying capacity. Determining the ecological implications of this variable growth rate will provide valuable insight into the potential future trends of the Bay osprey population and, in general, the factors that influence osprey population dynamics. Food availability can be a strong limiting factor for wildlife populations, and recent instances of reduced osprey reproductive success in polyhaline areas suggests that this may largely be driving the differential growth. We hypothesize that the spatial variation in the osprey population growth rate reflects differences in reproductive success mediated through foraging efficiency. We predict that foraging becomes less optimal and reproductive success subsequently decreases in the Bay as salinity in corresponding habitats increases.

To test this, we propose to spatially evaluate osprey reproductive success and foraging efficiency along the salinity gradient in the lower Bay.

Analysis of Thyroid Hormone Receptor Domain Activity, Shuttling Kinetics, and Intranuclear Mobility

Presenter: Matt Grespin, *College of William and Mary, Williamsburg, VA, Biology*

My work is focusing on transcription factor called thyroid hormone receptor (TR). TR is a member of a family of proteins collectively referred to as nuclear receptors. Nuclear receptors regulate transcription of particular target genes in response to specific hormones. An important characteristic of this class of proteins is their ability to shuttle between the nucleus and cytoplasm of a cell, thereby creating a type of spatial transcriptional regulation.

I will be examining the shuttling properties of several functional domains of TR by constructing fusion proteins expressing "green fluorescent protein" and other color variant tags. Cells expressing these constructs will be viewed using fluorescence/confocal microscopy and the localization of each construct will be studied. The purpose of these studies is to identify novel nuclear localization and nuclear export signals within specific regions of TR.

Nuclear receptors are often associated with serious diseases. Mutants of TR, for example, have been shown to promote cancer by sequestering other transcription factors to the cytoplasm, thereby preventing them from interacting with target genes in the nucleus. Gaining further insight into the shuttling activity and structural characteristics of TR will undoubtedly be important to future attempts at treating TR associated diseases in the future.

Is Avian Preen Oil a Selective Antibiotic?

Presenter: Alex Gunderson, *College of William and Mary, Williamsburg, VA, Biology*

There has been recent interest in feather degrading bacteria that occur upon the plumage of birds. Feather degrading bacteria (FDB) are known to occur on many bird species, however their effects are unknown. If bacteria can degrade feathers *in vivo*, they could reduce avian fitness by reducing thermoregulatory or flight efficiency. Avian preen oil can inhibit the growth of FDB *in vitro*. I will perform the first test of whether preen oil functions to alter the effects of FDB *in vivo*. I will obstruct the uropygial gland of birds in the field to restrict access to preen oil, and compare overall bacterial community structure, relative abundance of FDB, feather degradation, and feather color between birds that have access to preen oil and those that do not. This study has the potential to demonstrate that bacteria can affect the feathers of birds in the field, a necessary first step in addressing the possible influence of FDB on avian evolution.

Repeatability of Primary Mate Choice and Mate Choice Copying in Female Zebra Finches

Amanda Houck, *College of William and Mary, Williamsburg, VA, Biology*

I am investigating whether female zebra finches', *Taeniopygia guttata*, mate preferences are repeatable within and variable among females. Repeatability in female mate choice is an underlying assumption of sexual selection models and demonstrating repeatability is important because it indicates that a female preference is a definable property of an individual that can evolve and is not simply a plastic response to environmental cues. If female preferences are repeatable then it is more likely that a preference trait can evolve, a crucial assumption of all sexual selection models. I am examining patterns of repeatability through female preference trials for males wearing colored leg bands (red versus green preferences). In addition, I am exploring the role of non-genetic processes in the inheritance of female preferences. In some species, females can copy the mate choice exhibited by others in the population, creating a mechanism of social inheritance of mate preferences through which an individual can use public information to select a mate. Demonstrating this mechanism is important because social inheritance of preferences may cause more intense sexual selection on male display traits. I am further exploring mate-choice copying in zebra finches and examining whether pre-existing mate preferences can be altered by public information.

The Role of the Posterior Parietal Cortex in Sustained Attention: Validation of the Top-Down

Presenter: William M. Howe, *College of William and Mary, Williamsburg, VA, Psychology*

Sustained attention has been hypothesized to represent a top-down process, wherein the prefrontal cortex recruits other cortical regions to augment attentional processing, an action that may rely largely upon cortical cholinergic integrity, and important for filtering out distracting stimuli (Sarter et al., 2001; 2005). One hypothesized target of prefrontal recruitment is posterior parietal cortex (PPC). Research has supported this claim by demonstrating the ability of the prefrontal cortex to modulate cholinergic activity in the PPC (Nelson et al., 2005), and further that removal of cholinergic inputs with infusions of the selective immunotoxin 192 IgG-saporin into the PPC yields impairments in the ability of rats to increase attentional processing of conditioned stimuli (Bucci et al., 1999). In an effort to clarify the role of the PPC in sustained attention, the present experiment compares the effects of large-scale lesions of the PPC made with the excitotoxin NMDA to more discrete lesions made with 192 IgG-saporin, on performance in a two-lever sustained attention task. Initial results indicate 192 IgG-saporin lesion animals exhibit a general increase in response time in the standard task, as well as a decrease in accuracy in versions of the task that

include distracting stimuli, when compared to sham and excitotoxic lesion animals, thus supporting the top-down model of sustained attention, and the importance of cortical cholinergic integrity.

Vascular Flora of Totuskey Creek Watershed, Richmond County, Virginia

Presenter: Christopher Johnstone, *College of William and Mary, Williamsburg, VA, Biology*

Exploration in Virginia and documentation of its native plants and animals has a history dating back to colonial times. Surprisingly, some areas of the state lack these important biological records. One such area is the Northern Neck Peninsula, the northernmost peninsula on the Coastal Plain. Recent botanical research on the Northern Neck has revealed the tremendous diversity of plants found there, including many rare species. The area surrounding the Totuskey Creek, in Richmond County, has been carefully chosen as a site for an additional survey of the plants species. This study of the Totuskey Creek watershed will be the first to thoroughly document the floristic composition within this county on the Northern Neck. The floristic inventory will provide a permanent record of all the vascular plant species in the area including a complete set of voucher specimens and provide vital information for future research, conservation, land management, and education.

Training a Solitary Macropod to be Social

Presenter: Becky McKeel, *College of William and Mary, Williamsburg, VA, Biology*

At Busch Gardens Williamsburg, our animal care and training teams are working together to train our first macropod, a 1.0 Common Wallaroo (*Macropus robustus*). He was a challenging addition to our collection and a training plan was not drawn out prior to obtaining him. There was latency in pulling the joey from the pouch, which added more complications and created a more time intensive socialization process. Our goals included socialization, enrichment, and a hands-on educational program for our guests. The staff encountered numerous challenges while learning to train the wallaroo. We applied operant conditioning to leash train the wallaroo for enrichment and educational programs. The team's progress thus far has been slower than anticipated; however, successful. In the 2005 season, he progressed to make appearances in numerous shows both in park and on the road. After each step is successful, we continue to reach for more challenges and triumphs with our young macropod.

Application of Dimensional Models to Personality Disorders

Presenter: Erik Petterson, *College of William and Mary, Williamsburg, VA, Psychology*

This study investigated how well two dimensional models

of personality (Dimensional Assessment of Personality Pathology, DAPP, and the Five Factor Model, FFM) described four Axis II diagnoses (Borderline personality, Schizotypal personality, Anti-social personality, and Dependent personality). Raters were presented with two prototypic case descriptions of each disorder and one case of Adjustment disorder. All references to comorbid diagnoses and gender were deleted from the case descriptions. Diagnoses of the cases were not provided. Participants read each case and completed ratings of DSM-IV-TR criteria for personality disorders, adjectival descriptors of the FFM facets, and adjectival of the lower-order factors of the DAPP. While both inventories performed well, the DAPP ($R^2 = .74-.86$) accounted for slightly more of the variance in diagnostic ratings than the FFM ($R^2 = .72-.78$), perhaps because the DAPP was developed specifically to describe problems associated with personality disorders. In contrast, the FFM was developed as a dimensional inventory for normal populations. It is suggested that ratings using the FFM, the DAPP, or both dimensional systems provide more clinically useful information about individuals than current DSM-IV Axis II categories of personality disorders.

Strangeness in the Proton? The G0 Forward-Angle Measurement at Jefferson Lab

Presenter: Sarah K. Phillips, *College of William and Mary, Williamsburg, VA, Physics*

Protons are found in the heart of all matter, in the nuclei of atoms. In the simple picture, protons are comprised of three quarks: two up and one down. However, we know this picture is incomplete, and that those three primary quarks are surrounded by a sea of quarks, anti-quarks, and the gluons that bind them together. These quarks and anti-quarks only exist for a fraction of a second, but they do influence the proton's properties. Strange quarks are the next-lightest quarks after the up and down quarks, so they should be a significant part of the sea. The goal of the G_{zero} experiment in Hall C at Thomas Jefferson National Accelerator Facility is to determine the contribution of the strange quarks in the sea to the proton's properties. The measurements were made using a toroidal spectrometer that detected protons recoiling from the collision of a polarized electron beam and a liquid hydrogen target. By comparing the pieces of the measurement from the weak and electromagnetic interactions, the contributions of the up, down, and strange quarks were disentangled. The results suggest that strange quarks do contribute to the proton's properties, giving researchers a better understanding of the proton's structure.

Mode Conversion in Plasmas

Presenter: Steve Richardson, *College of William and Mary, Williamsburg, VA, Physics*

We are studying the theory of mode conversion in plasmas, where two types of waves interact with each other.

This important phenomenon is used in fusion energy devices, and also appears in the natural world in solar and ionospheric physics. While fairly common in plasma physics, there are many types of mode conversion that are not well understood. We hope to be able to use new mathematical techniques to better understand mode conversion.

Low-Synchronization Dynamic Multi-Threaded Memory Allocation

Presenter: Scott Schneider, *College of William and Mary, Williamsburg, VA, Computer Science*

During execution, most programs must make many requests for memory. In some cases, these memory requests can dominate the execution time of the program. When this happens, the memory allocator becomes the performance bottleneck, and its must be made faster in order to decrease the total execution time of the program. In programs with a single thread of execution (non-parallel programs), improving memory allocator performance has been well studied. Multithreaded execution (parallel programs) introduces several new obstacles related to thread interaction. Correctness can be violated if there are no mechanisms to prevent different threads of execution from interfering with each other. However, if these synchronization mechanisms are not used well, they can cause severe performance degradation and limit the ability of the program to benefit from executing in parallel. Our work is the design, implementation and experimental evaluation of a dynamic memory allocator for multithreaded programs which limits the use of synchronization mechanisms in order to increase overall program performance. Our design results from avoiding synchronization when it is not needed, and using the minimal amount of synchronization when it is needed. The end result is a memory allocator which can scale with the demands of a multithreaded program.

Modeling Calcium Signaling Dynamics of Diffusely Distributed IP3R Channels, A Probability Density Approach to a Whole Cell Model

Presenter: Blair Williams, *College of William and Mary, Williamsburg, VA, Applied Science*

Much of cellular biology encompasses discrete molecular events that are intrinsically stochastic in nature. Examples include the gating of ion channels, binding and unbinding of ligands, and the collective behavior of calcium (Ca) channels creating "Ca sparks". Traditional deterministic ordinary differential equation models are capable of reproducing only simple Ca dynamics and oscillations while more complex stochastic Monte-Carlo simulations suffer from computational disadvantages. Here we present an alternative method, a Probability Density Approach, to direct Monte-Carlo simulations of calcium release. Rather than forcing the IP3R Ca channels to all experience the same elevated [Ca] when open or even

just the bulk cytosolic [Ca] regardless of state, we evolve the "likelihood" of a channel feeling a particular calcium concentration. Utilizing Fokker-Planck style probability density functions (PDFs) this approach endeavors to retain information about the influence of localized [Ca] elevations on channel gating without imposing the assumption that all channels be globally coupled via a single calcium concentration. We assume the model "cell" contains a large number of diffusely distributed stochastically gating IP3R calcium channels and each channel has its own domain [Ca]. By incorporating individual Ca domains, we can study the affect that [Ca] domains and the properties of those domains (source amplitude, diffusion rates, buffers, etc) have on the overall calcium signaling dynamics. This deterministic method will retain the stochastic nature of slower Monte-Carlo simulations, thus allowing robust Ca signaling dynamics to be efficiently incorporated into whole cell models.

Concurrent Panel Sessions

Saturday, March 25

HUMANITIES SECTION

9:40 AM—10:40 AM

The Origins of Colonial Sociability: A Social Network Analysis of Proprietary South Carolina

Presenter: Paul Musselwhite, *College of William and Mary, Williamsburg, VA, History*

Time: 9:40 am

Location: Tidewater B

Session Chair: Charles McGovern

The task of building a colony involved not only creating a political framework but also developing social institutions and social networks. Yet in the history of South Carolina, arguably the first British-American colony to have a truly heterogeneous peopling, we have neglected to understand how these men and women actually got to know each other. In this paper I will turn attention to the social networking that was a central part of the creation of the colonial community that became South Carolina. Borrowing techniques from the field of quantitative sociology, the paper will seek to place all identifiable relationships between early South Carolinians within an adjacency matrix and plot from this data an image of the social network of the colony. This analysis may help us to understand the social process of building a new community and establishing a friendship network. More generally, however, the aim of the paper is to demonstrate the utility of social network analysis and debate its strengths and shortcomings in historical research.

Hungering for Connectedness: Contemporary Farmers' Markets as Real and Imagined Communities

Presenter: Kirsten Lee Crase, *University of Maryland, College Park, MD, American Studies*

Time: 9:40 am

Location: Tidewater B

Session Chair: Charles McGovern

It is a paradox of our contemporary world that as global networks create ever densening webs of connection, people themselves often experience a hollowing out of their psychic and social worlds, feeling emptier and less connected to people and places. In this paper I explore contemporary American farmers' markets, which have boomed in popularity over the past decade, as a site in which people actively confront their perceived sense of disconnection and work to create new forms of community, both real and imagined. I use as a case study an urban farmers' market located in suburban Washington, DC, and I examine this farmers' market site through ethnography and cultural landscape study methods. I argue that viewing farmers' markets as sites of community construction can help us to explore and problematize notions of community and connectedness in contemporary America, thus broadening our understandings of these complex and very significant concepts.

Black Humor, White Trash: Connections Between Labor and Leisure in Folk Tales of the Old South

Presenter: John Miller, *College of William and Mary, Williamsburg, VA, American Studies*

Time: 9:40 am

Location: Tidewater B

Session Chair: Charles McGovern

One of the hallmarks of black folklore dating back to the antebellum era is its theme of dissimulation. This verbal mask, constructed through indirect characterization or analogy, was designed to prevent, as Zora Neale Hurston explained, "the white man" always trying to know into someone's business." With respect to the topic of labor, this screen was particularly important: Humorous stories of tricksters such as Brer Rabbit or Jack or John, who via their cunning often had their labor done for them by dupes or outright evaded responsibility for it, discreetly celebrated incidents when slaves resisted their servitude by refusing to work.

The consensus regarding the sloth of the slaves' white literary contemporaries, however, is significantly different. Almost uniformly, characters such as Simon Suggs and Sut Lovingood are labeled white trash, a category whose historical legacy includes a notable lack of industry. But the contempt of the white tricksters for labor within the humorous sketches of the Old Southwest, when mentioned at all, is typically interpreted to be laziness for its own sake; in other words, caricatures of a type and lacking subversive meaning.

My paper will challenge this characterization. By comparing the John tales with the stories of Johnson Jones Hooper in particular, I'll highlight not only the connections that black and white folk humor of the Old South share with regard to plot and character, but theme as well. Specifically, I'll suggest that Sugg's willingness to be 'shifty' rather than industrious is also characteristic of a rejection by poor whites of the capitalism and patriarchy inherent to the plantation economic model (a point Johanna Nicol Shields suggests based on other criteria). Not that poor whites suffered equally with blacks, but I believe the similarities between black and white folk humor point to a critique – albeit gentler – by some white authors as well of the vested ideological interest behind plantation and slave owners' emphasis on industry.

"I looked to the east..." The Negotiation of Space in Early African American Healing and Protective Contexts

Presenter: J. Jason Boroughs, *College of William and Mary, Williamsburg, VA, Anthropology*

Time: 9:40 am

Location: James Room

Session Chair: Matt Young

Over the past two decades, historical archaeologists have recovered artifacts from the living and work spaces of African Americans that could be described as the material implements of spiritual and religious practices. In order to make sense of these finds, we must turn our attention to the unique historical, socio-cultural, and religious contexts through which material objects and the constructed landscape were endowed with meaning and significance. Early twentieth-century conversion narratives of formerly enslaved African Americans provide us with a unique opportunity to observe the ways in which traditional West and Central African religious and symbolic elements were mobilized, endowed with additional and alternate meaning, and rearticulated through metaphysical and material media in America. This paper draws parallels between the ways in which African Americans have addressed and managed cardinal oriented spiritual energies in metaphysical experience and material space for protection and to affect corporeal and spiritual healing.

Trans-Atlantic Witchcraft: Evolving Concepts of Gender, Race, and Belief

Presenter: Angela Feres, *Claremont College, San Diego, CA, History*

Time: 9:40 am

Location: James Room

Session Chair: Matt Young

An analysis of the objects represented and used for magic and counter magic provides a useful lens by which to view relationships in the early modern trans-Atlantic world. In this paper I will analyze objects associated with witchcraft in the early modern Anglo-Atlantic community. The care-

ful analysis of the artifacts portrayed in broadsides, pamphlets, and theological tracts allows for insight into the intense concern shared by many Anglo colonists with preserving patriarchal social structures, religious conformity, and purity within the Atlantic world setting. Objects express complex cultural meanings and can be assembled and analyzed in manners similar to those used for archival written data. In the process of properly situating the objects with which I am concerned, I have attempted to apply the methods of related disciplines such as archeology, folklore, anthropology, history, religion, and gender studies. A multidisciplinary approach that embraces material culture provides an enriched understanding of the early modern use of art works to construct and define the demonic, highly sexualized "otherness" of women. By focusing on the Anglo-Atlantic world, which I define for the purposes of this paper as encompassing England, the Caribbean, small sections of South America, and those areas initially settled by the British in North America, I hope to show that over time the artistic representations of witches articulated and solidified gender and racial ideologies.

Century of Contested Narratives: Nationalism, Imperialism, and Memorialization at San Juan Hill, Cuba

Presenter: Carl Carlson-Drexler, *College of William and Mary, Williamsburg, VA, Anthropology*

Time: 9:40 am

Location: James Room

Session Chair: Matt Young

In the century since the Battle of San Juan Hill witnessed the end of fighting in Cuba during the Spanish Cuban American War, both American and Cuban governments have sought to inscribe their understanding of the past on the crest of that famous hill.

In brief, American authorities attempted to minimize Cuban participation in what was their revolutionary war during the period of American political hegemony on the island. The monuments erected in furtherance of that attempt have been embraced by the Cuban government as evidence of American neocolonialism. This has then been used to bolster support for the communist regime by maintaining an antagonistic stance towards the United States. This provides an outlet for tension created by Cuban domestic issues.

This paper examines the ways in which nationalist and imperialist narratives are constructed and contested through the monuments now dedicated to that site of conflict.

HUMANITIES SECTION **10:50 AM—11:50 AM**

The Poetics of Parties, or Why Cocktail Chatter Matters

Presenter: Roxane Pickens, *College of William and Mary, Williamsburg, VA, American Studies*

Time: 10:50 am

Location: Tidewater B

Session Chair: Sean Harvey

The use of parties in literary representations gives a unique setting for the playing out of individual identities and communal interactions.

Indeed, parties in novels, short stories, poetry, and drama can serve as markers of communicative potential, opportunities for human engagement that highlight the positive potential – and yet, the clear anxieties – that can arise in negotiations between the individual and the community. This paper will consider the possibilities and limitations that exist in using social parties and festive occasions as literary or culturally metaphoric devices, and will offer a blueprint for analyzing depictions of parties in one of the most festive moments in U.S. literary history, the “Jazz Age” of the 1920s and 30s. I hope to demonstrate some of the ways that interracial and interethnic connections were forged and negotiated through the social arena, both in formal and informal settings.

Professional Discourse: Improving Pedagogies for Writing in the Business World

Presenter: Adam Lloyd, *Georgetown University, Washington, D.C., English*

Time: 10:50 am

Location: Tidewater B

Session Chair: Sean Harvey

Writing is a socially constructed medium; the normative practices of a discourse community greatly determine the ultimate composition of a text. This paper uses an ethnographic methodology to examine the cultural, community-based nature of writing, and the networked relationship between two, very different, discourse communities bound together by circumstance and necessity.

More specifically, this paper explores how problems with substandard professional writing are due to a clash of cultures between the U.S. business world and academia. Despite being unable to agree about such fundamental issues as what comprises “good” professional writing, what a business writing curriculum should cover, and who is best suited to teach professional writing, the business community still must rely upon the academy to educate its future employees, and academics are mandated with teaching a form of writing that is culturally foreign—and often in opposition—to that of the institutional norm that dominates their own workplace. This paper offers an

analysis of each discourse communities’ values, procedures, and expectations; it relates the debate over formalist and rhetoric based curricula; and it provides an evaluation of whether business writing should be overseen by departments of English, rhetoric, communications, business, or handled outside of academia through mentoring or professional workshops.

The ultimate goal of this inquiry is to identify the cultural contexts that inform and shape professional workplace writing, and those that define the role of academia and its responsibility to the world outside its doors, in the hopes of finding a productive way to bridge the gap between their cultural divide. Following the analysis presented in this paper, several definitive recommendations are made regarding how to improve professional writing pedagogy, how the curricular dilemma should be resolved, and which teaching entity is most appropriate to house business writing as part of its discipline.

Stein in Nets: Reading the Network in *Tender Buttons*

Presenter: Eric Rettberg, *University of Virginia, Charlottesville, VA, English*

Time: 10:50 am

Location: Tidewater B

Session Chair: Sean Harvey

By presenting itself in an alien language that breaks all rules of syntax, punctuation, and grammar, Gertrude Stein’s *Tender Buttons* constantly undercuts its readers’ expectations of obvious signification and narrative sense. In this paper, I argue that Stein’s literary still life replaces a linear teleology of signification with a network of reference and trace. I describe two specific formulations of the network in Stein. First, using a sentence from “A Little Called Pauline,” I demonstrate that the features of Stein’s style present a proto-hyper textual “Garden of Forking Paths” of multiple reading options for the reader to navigate. Next, using the first section of *Tender Buttons*, “A Carafe, That Is a Blind Glass,” I demonstrate how Stein’s style can be geographically mapped as a network of repeating themes and tropes at the same time as it defies a normative reading methodology. My paper finishes by demonstrating ways that the text’s famous self-referentiality reinforces my notions of *Tender Buttons* as a network.

The Selling of the CIA: David Atlee Phillips and the Formation of ARIO

Presenter: David McCarthy, *College of William and Mary, Williamsburg, VA, History*

Time: 10:50 am

Location: James Room

Session Chair: Hilary Marcus

In the mid-1970s, the Central Intelligence Agency (CIA) was under attack on several fronts. On December 22, 1974, a shocking story by Seymour Hersh appeared on

the front page of the *New York Times* that contributed to three major investigations of the intelligence community: President Ford's Rockefeller Commission, the Church Committee in the Senate, and the Pike Committee in the House of Representatives. The so-called "Year of Intelligence" in 1975 was not limited to these official investigations. Former CIA officers such as Patrick J. McGarvey, Victor Marchetti, and Philip Agee published blistering critiques of the Agency, and Hollywood movies like *Three Days of the Condor* (1975) and *The Killer Elite* (1975) presented less than favorable depictions of the espionage business.

In response to this widespread criticism, David Phillips, a twenty-five year veteran of the CIA, resigned in May 1975 in order to establish the Association of Retired Intelligence Officers (ARIO). Phillips had served in several Latin American countries, including Chile, Guatemala, Cuba, and Brazil. At the time of his retirement, he was in charge of the Western Hemisphere division of the Directorate of Operations (Clandestine Services). Phillips assembled a network of former intelligence officers such as Ray Cline and Harry Rositzke with the objective of ensuring the CIA's survival. Members of ARIO debated critics of the CIA, made appearances on college campuses, and even wrote lengthy memoirs. Phillips, for instance, published *The Night Watch* in 1977, which assured readers that intelligence operatives were honorable public servants: "They have been in dark alleys working hard—with some mistakes and some success—to protect [American] values."

ARIO, renamed the Association of Former Intelligence Officers (AFIO) in 1977, continues to operate in the present, and it has thousands of active members. This paper will examine the origins of ARIO and explore how this network of retired intelligence officers has attempted to influence public perceptions of the intelligence establishment.

Children and Dogs Not Allowed: Public Libraries and Young Consumers in the Early Twentieth Century

Presenter: Wendy Korwin, *College of William and Mary, Williamsburg, VA, American Studies*

Time: 10:50 am

Location: James Room

Session Chair: Hilary Marcus

In 1904, Theresa Elmendorf wrote of "those dark ages" of public library work where "in a certain library in a certain city a legend, writ large, ran thus: 'Children and dogs not allowed.'" In fact, the "dark ages" that Elmendorf described were barely past; throughout the nineteenth century, the vast majority of public libraries in America denied access to anyone under the age of twelve. By the early 1900s, however, children had become a, if not *the*, primary target for library work. This same period saw public librarians increasingly casting themselves as suppliers rather than guardians of literature. In this paper, I argue that we must turn to the figure of the child reader – once

forbidden, later idealized – to understand how and why librarians came to view their jobs as non-commercial distributors of books in the early twentieth century.

Intimacy, Erasure, and the "Other": Frank Hamilton Cushing's Disappearing Body

Presenter: Caroline Nichols, *College of William and Mary, Williamsburg, VA, American Studies*

Time: 10:50 am

Location: James Room

Session Chair: Hilary Marcus

Living among the Zuni as a Zuni, anthropologist Frank Hamilton Cushing straddled the line between white and native, savage and civilized, scandal and sensation. Keenly aware of his perilous position, Cushing struggled to frame his unprecedented participant-observer method as a serious scholarly endeavor rather than an elaborate indulgence in "playing Indian." "My Adventures in Zuni," Cushing's most comprehensive account of his Zuni experience, demonstrates the difficulties inherent in that task. Although Cushing's developing relationship with the Zuni unifies the three-part series, which originally appeared in *The Century*, his depiction of that relationship is anything but consistent. As his adoption of Zuni habits progresses, Cushing abruptly alternates between three distinct narrative personae, each more disembodied than the last. From a brash imperialist adventurer to a passive child and, finally, a detached ethnographic observer, Cushing's physical presence diminishes with his escalating participation in Zuni ritual life. Jeopardizing the self-other binary that anthropology—and American culture more broadly—sought to institutionalize, Cushing's evolution from respectable Smithsonian protégé to Tenatsali, First War Chief of the Zuni, renders a cohesive performance of self all but impossible. Collapsing the fundamental distinctions of Victorian identity, Cushing's spectacular body becomes unnarratable, and so disappears.

General Lecture

12:15 PM—12:45 PM

Serendipity, Sweat, and Science: The Tale of Jack Dumbacher

Presenter: Carina Young, *College of William and Mary, Williamsburg, VA, Biology*

Time: 12:15 pm

Location: Tidewater B

Session Chair: S. Laurie Sanderson

Scientific research is most often presented in the impersonal prose of peer-reviewed journals. These articles submit the necessary facts and findings of research, but often leave out much of the *real* story behind the work: the remarkable coincidence and Eureka! moments that stimulate the researcher's appetite for uncovering the fascinating unknowns of our planet and beyond. Jack Dumbacher's is a story in which the tale behind the science is even more intriguing than the remarkable findings. This presentation is an account of Dumbacher's singular experience. A graduate student at the University of Chicago, he studied the ecology of birds of paradise in the 1990s. Thanks to the inherited knowledge of New Guinea natives, a serendipitous encounter with just the right chemist, an encouraging advisor, and his own drive to find answers, Dumbacher made the first documented discovery of poisonous birds—a finding that landed his first paper in the prestigious journal *Science*.

Notes



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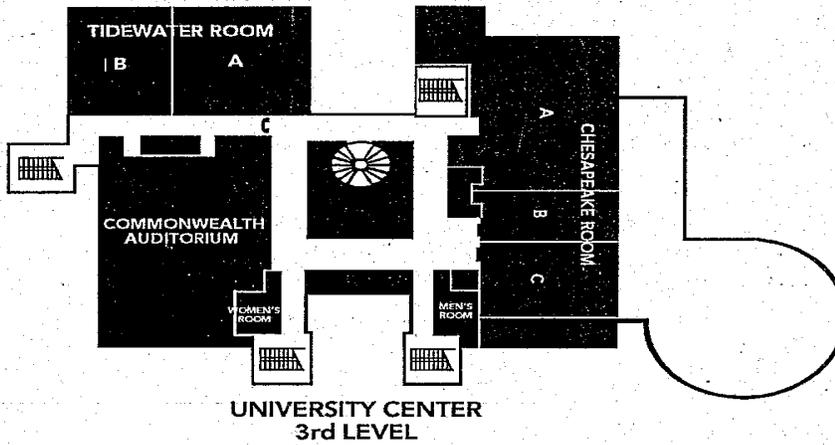
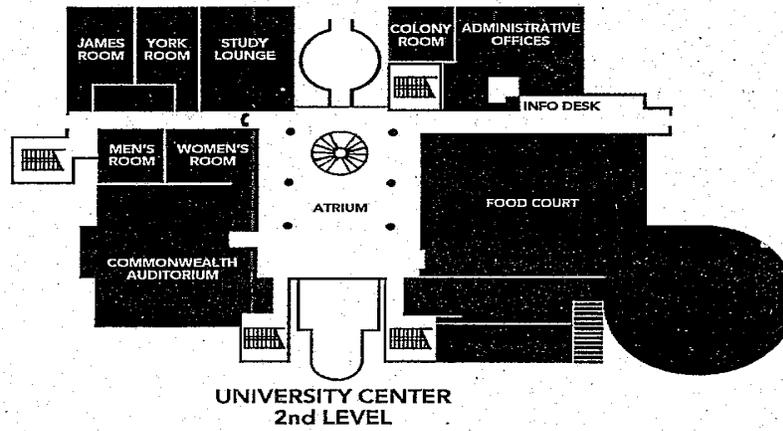
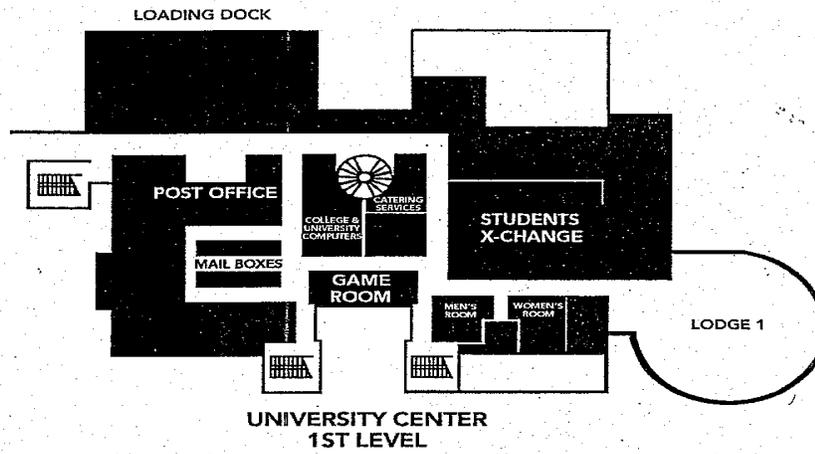
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