

Proceedings of
PAIDEIA 2003

April 25 & 26, Christopher Newport University,
Newport News, Virginia



This second annual conference on student research was organized and sponsored by Christopher Newport University's Undergraduate and Graduate Research Council (UGRC), which is composed as follows:

Tarek Abdel-Fattah
Robert Atkinson
Clyde Brockett
Kelly Cartwright, co-chair
Robert Colvin
Jean Filetti
Peter Knipp, co-chair
Lori Underwood
George Zestos

Our mission is to promote a learning community in which faculty and students in various disciplines come together to share in research and scholarship activities. We are committed to continuing student-faculty interaction and learning beyond the classroom, and we believe that students actively collaborating with faculty in the quest for new knowledge represents the most powerful teaching our university can offer. To this end, the UGRC is committed to enhancing and promoting student research, highlighting successful student-faculty research and scholarship, and making information about these successes available to the university and the larger community.

We thank Dorothy Doolittle, Associate Provost for Research and Graduate Studies, and Douglas Gordon, Dean of the College of Liberal Arts and Sciences, for their encouragement and support of Paideia, and Lynn Lambert for help with webpage development.

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All rooms were in Ratcliffe Hall.

OVERVIEW of sessions:

- I Friday 2 - 3 PM, one session (Lori Underwood, UGRC contact)
- II Friday 3 - 4:30 PM, two sessions (Lori Underwood, UGRC contact)
- III Friday 4:45 - 6 PM, two sessions (Kelly Cartwright, UGRC contact)
- IV Saturday 9:15 - 1030 AM, three sessions (Bob Colvin, UGRC contact)
- V Saturday 10:45 AM - noon, three sessions (George Zestos, UGRC contact)
- VI Saturday 1:15 - 2:30 PM, four sessions (Tarek Abdel-Fattah, UGRC contact)
- VII Saturday 2:45 - 4:25 PM, three sessions (Kelly Cartwright, UGRC contact)

DETAILED SCHEDULE:

Registration in Room 123, starting at 1:30 PM on Friday

I. Friday 2 - 3 PM

A. Room 116, Scott Pollard presiding

1. 2:00 A picture is worth a thousand funny words

Jeromie Heath, Scott Pollard, *CNU*

Pictures and words are not the same. The illustrations in picture books contain different elements than words in chapter books contain. In illustrations, unequal proportions, brilliant line and color, surrealist elements in a realistic medium, and an access of detail are all comical and entertaining to children. In chapter books, comedy is presented within numerous words that produce imagery, irony, description, personality, and depth through the use of various comedic elements, mentioned earlier, to a comedic situation. Both E. B. White's *Charlotte's Web* and Trinka Hakes Noble's *The Day Jimmy's Boa Ate the Wash* contain comedic parallels like farm setting, misbehavior and chaos, and re-ordering; however, each genre contains additional and special ways that they present comedy. Picture books, like *The Day Jimmy's Boa Ate the Wash*, are just as detailed, refined, and structured as children's chapter books, like *Charlotte's Web*; however, both types of juvenile literature follow the same comedic patterns to achieve the same archetypal comedy. Whereas chapter books are packed with such comedic elements as irony (situational and dramatic), blocking characters, facilitating characters, chaos, disruption and re-establishment of order, etc., picture books use heightened visual elements to make up for the compressed verbal components.

2. 2:15 The bible as a comic model for western literature: a biblical *Tom Jones* and *Scarlet Letter*

Adam Carrier, Scott Pollard, CNU

Mythic literature, naturally a portrait of humanity, tends to desire a heroic cause. It wants to move from tragedy to comedy, with the two being the total reality of life. The human experience reflected in myths is influenced by the normal order of the universe. Creation is comedic, inspired by progress: the filling of nothingness with an existence. More simply, comedy moves from one society to another. Nonexistence is the first society; one in which being is formed and comes to rule. The Bible honors that origin strategy. Since it moves from chaos to creation, its myth obeys the comic form. Genesis charts an evolution where designed order is inherent to the human experience. Man forms societies because of his initial authority over the earth. The entire Bible can be abstracted from religious contexts to frame a narrative in the comic mode. Northrop Frye describes the mythos of comedy using archetypal categories frequent in comedies. The Bible models Frye's comedic principles and characters. Perfecting the division between the *pistis*, "habit, ritual bondage, arbitrary law and the older characters," and the *gnosis*, "controlled by youth and pragmatic freedom," the Bible defines both social orders. The old order, aptly named 'Old Testament,' and the new order, named 'New Testament,' work together to narrate a problem instituted with a legalist civil order. The comedic urgency for heroic rebellion is stirred by the hero, Jesus Christ. The Christian myth, as Frye understands it, shows "its divine son appeasing the wrath of a father and redeeming that is at once a society and a bride." The Bible features a set of categorical forms also present in other literary works. The Western narrative tradition offers Fielding's *Tom Jones* and Hawthorne's *The Scarlet Letter*. Both stories imagine a comic victory over an oppressive moral order.

3. 2:30 Unmasking interior qualities: the use of physical description in 18th and 19th century British literature

Michelle Luna, Scott Pollard, CNU

In comedy, characterization is vital to the resolution and reordering that must close a true comic text. In order for the reader to determine whether or not a character is deserving of the new order, an author must present the virtues or vices of the characters. The ability to see the interior qualities of a character allows the reader to value the character's worthiness. Since comedy begins in adversity, authors often offer characters that function as obstacles to the resolution, but these characters can not always be identified immediately. Authors hide the interior qualities of the blocking characters as well as their heroes and heroines using physical appearances to reveal or skew the interior qualities. In comedy, masks are a physical barrier between the reader and the true character. A masquerade's purpose is to hide the

identity of the masqueraders. The ability of authors to mask the nature of their comic characters deepens the action of the often simple comic plot and at the same times confuses the reader as to what characters are in fact deserving of the new order established at the close of the texts. In Eighteenth and Nineteenth British literature, physical description, rather than a concrete mask, functions as a mask allowing the authors to develop characters while revealing or hiding the interior qualities of those characters. Fielding, Austen and Dickens use the mask of beauty as a type of characterization. While all three authors use the mask of beauty what interior quality beauty or its lack represents has changed over time.

4. 2:45 Form and function: comedy, the *Pícaro* and reform

Danielle Taylor, Scott Pollard, CNU

Comedy often serves its audience on several levels with varied degrees of physicality and humor. As a form, however, many have sought to reveal social and/or political dissatisfactions of their time by basing criticism in the palatable structure of comedy. The adaptability of comedy to operate on these varied planes reflects the ability of its best creators to manipulate the elements of the comic form to aptly suit their purposes. Comedy, based in ancient Greek theatre and the plays of Aristophanes, has maintained many specific traits as a form; however, the cultures and time periods in which particular comic works were produced have created very definitive, culturally and temporally influenced, elements. Specifically, much literature from Spanish-based cultures maintains a traditional comic structure, though the agents the author employs to promote social consciousness is a direct result of the environment in which he finds himself. This accountability among Spanish and Hispanic cultures begins with the inception of the *pícaro*, Lazarillo de Tormes, born during the Golden Age. The power of Lazarillo de Tormes to reveal social inequalities, perceived as unjust by the author and many others of his time, manages to transcend time and space, influencing the creation of contemporary Hispanic novels built on the comic form and founded on culturally specific elements. Both *The Secret Holy War of Santiago de Chile*, by Marco Antonio de la Parra, and *Bless Me, Ultima*, by Rudolfo Anaya, utilize the picaresque anti-hero as a means of exposing and attempting to correct the cultural crises of 1970s Chile and modern New Mexico.

II.

A. Friday 3 - 4:30 PM, Room 117, Tracey Schwarze presiding

1. 3:00 Dissonance as necessity in colonial literature

Elizabeth Henkel, Tracey Schwarze, CNU

As pieces of post-colonial literature, both Rudyard Kipling's *The White Man's*

Burden (1903) and E. M. Forster's *A Passage to India* (1924) intend to examine the effects of empire on their chosen peoples; Kipling attempts to justify empire as he writes from a colonizer's perspective while Forster, writing as for the colonized peoples, challenges imperialism and criticizes British rule over India. As is common in colonial writing, however, both works are heavily saturated with self-contradictions—a dissonance exists between self-justification and self-indignation for each author's cause. This paper will examine each author's subversion by reading his work along with the criticisms of colonial literary theorists Asselin Charles, Gertrude White, and Edward Said. Both Kipling and Forster subvert their own ideologies while, on the surface, they appear to be supporting them. Kipling's poem implores readers to "take up the white man's burden" as a means of understanding the difficulties he faces while trying to make the world a better, more civilized place. However, while Kipling's overt intent is to inspire his people to embrace the practice of colonization, he undermines his own objective by subtly implying that the English actually do more harm than good in creating an empire. Likewise, Forster's *A Passage to India* (*Passage*) continually subverts its objective of criticizing empire. More specifically, *Passage* simultaneously interrogates empirical ideologies in an attempt to dismantle them while it also perpetuates and participates in the very ideologies that enable empire (i.e. the indigenous peoples' acceptance of subordination and segregation). Neither author is able to completely represent the "other" culture as being independent from his own, making it impossible for him to entirely disregard or condone the actions of either side. Therefore, each work, however successful in demonstrating its support for its position, can be used as an argument for its antithesis.

2. 3:25 Power play: the struggle against society's power structures in David Mamet's *Oleanna*

Ashley Rich, Tracey Schwarze, CNU

David Mamet's play *Oleanna* focuses on Carol, a college student, and her professor, John. On the surface, they seem to fit the typical roles of student and teacher—he instructs a class, and she seeks him out to help her understand the material. Their positions change, however, when she files a sexual harassment complaint against him and twists a seemingly innocent meeting into something destructive by exposing the hidden and obvious power structures in society. Three different power structures are revealed in *Oleanna*. The first is the social-economic class distinction. As part of the middle-to-upper class, John's dreams have always been fairly easy to obtain. Carol, on the other hand, has had to face obstacles and prejudices in order to achieve her dreams. The second structure is the teacher/student relationship. If Carol cannot perform in her studies the way John asks and requires, she may lose all she's managed to accomplish. The third power structure is the

employer/employee relationship. John seeks tenure to better provide for his family, but he must impress the Tenure Committee if he wishes to reach his goals. Mamet exposes these power structures for three specific reasons: to unsettle his audience, to reveal how both hidden and obvious ideologies and power structures can affect someone's life, and to show how the consequences of struggling against these structures can be devastating. In showcasing instances when the characters struggle against society's basic assumptions, he shows there is no true victor. While one of the characters may win in a situation, it is only temporary triumph. There is no real winner and no permanent escape. There is only destruction.

3. 3:50 David Auburn's *Proof*, Act II, Scene II

Stephanie Smith, Casey Denton, Katie Laibstain, Steven Breese, CNU

Proof, David Auburn's Pulitzer Prize winning play (2001), addresses the issues of science, madness and emerging genius in a gendered context. This scene dramatized these issues as it confronts the potential instability of a young woman who has seemingly accomplished the impossible: to excel in a man's world of mathematics.

4. 4:05 Female identity: primp or proof

Elizabeth Heath, Tracey Schwarze, CNU

David Auburn's play *Proof* addresses the issues associated with female identity in a male-dominated sphere. Auburn exposes the biases and restrictions of gender discourses through his character Catherine, whose identity is uncomfortably perched on the fence between the traditional discourses of femininity and masculinity. Catherine strongly rejects the traditional feminine discourse because of the lack of motherly and sisterly influence in her life. Instead, she has an isolated reliance on her father, who molds her gender and identity formation. Aspiring to follow in her father's footsteps as a mathematician, Catherine dons what would traditionally be the role of a son and makes it her own as a daughter. This move forces her into an undefined space between masculinity and femininity, where she fulfills her need for feminine beauty in the masculine art of mathematics. Lost in the void between discourses, Catherine fails to see herself clearly until realizing that the male-dominated math world by which she is surrounded views her as a passive, selfless angel who is incapable of rising to their same level of genius. Her realization that the majority of her identity is solely a male-construct spurs her to significant action (the writing of an ingenious mathematical proof), which is considered to be "monstrous" in comparison to her passivity. However, by allowing Catherine to create a proof beyond the intellect of her male counterparts, Auburn exposes how Catherine has to look past the men's views of herself and realize that, while she reflects parts of them, she does have the power to possess her own identity. Her creation of a mathematical

proof frees her from being a cipher and overthrows her passive female image. *Proof's* illustration of the effects of gender-related identity crises exposes the power in traditional discourses that we fail to admit still exist in today's society.

B.Friday 3:15 - 4:30 PM, Room 116, Kelly Cartwright presiding

1. 3:15 A comparison of third-party observers' perceptions of punishments and rewards in the workplace

Andrea N. Dunn, Erika F. Bergstrom, Brandi M. Henry, Tristan Johnson, Jeffrey A. Gibbons, *CNU*

The goal of this study was to examine whether contrasting information would affect perceptions of fairness, consequences, and commitment when reprimands and rewards were or were not deserved. In both experiments, participants played the role of a third-party observer. Participants in Experiment 1 witnessed a fellow employee being reprimanded for an ordering error for which they were or were not responsible. Similarly, participants in Experiment 2 witnessed a fellow employee being rewarded for a marketing idea that they did or did not create. Questionnaires were given to participants to assess perceptions of fairness, consequences, and commitment. Participants were then told that the initial responsibility of the employee was wrong. After participants received contrasting information concerning employee responsibility, they completed identical questionnaires to the ones prior to the contrasting information. In both experiments contrasting information polarized participants' responses and created extreme differences at the later time for both the punishment and reward studies. Specifically, fairness, consequences, and commitment were more extreme after contrasting information. These results may be explained by the cognitive dissonance theory, where participants try to make up for previous ratings with extreme ratings after contrasting information. These findings suggest that supervisors should gather all possible information before reprimanding or rewarding an employee.

2. 3:40 An analysis of parental factors contributing to reading development in children

Laurie Liston, Kelly Cartwright, *CNU*

The emergence of literacy in children has been attributed to a variety of factors. One of the most prominent factors is parental influence. The current study examines previous research in the field of literacy development in order to highlight the roles parents play in their child's reading development, including: family structure, attachment theory, amount of time spent with the child in the first years of life, amount of time spent reading with the child, and quality of the interactions with the child. Examining the child's family structure includes noting if the child comes from

a one or two parent household, if there is another adult or role model consistently present, and if the child has other siblings. Investigating attachment will also give an insight as to how a child's comfort level with the primary caregiver and the environment may influence the emergence of literacy. Other issues include the amount of time and the quality of time for parent(s) and child interaction, especially time spent reading. Children who show evidence of secure attachment and who come from two parent households where at least one parent spends significant time with the child, especially in "fun" reading time, will exhibit more motivation for reading and greater reading abilities. An intervention will be proposed which can be used by parents and educators that will encourage reading in children through suitable at-home, parent-child interactions.

3. 4:05 Evaluating recognition, response latency, and the fading-affect bias for existential and everyday life events

Amy Cumberland, Nicolette Jones, Jeff Gibbons, *CNU*

A sample of 50 undergraduate students described and made ratings of 10 existential moments and 10 regular moments that they experienced. Participants also generated 10 contrived events that they had not experienced. Participants' events were combined with 10 foil existential moments and 10 foil regular events created by the experimenter. After 2 days, participants recognized an event as experienced or not experienced for all 50 events. The fading affect bias was found for existential moments, but not for regular events. Participants also showed faster and more accurate recognition for the existential moments when compared to the regular events. The participants recognized the real foil events more slowly and with less accuracy.

Break (4:30 - 4:45 PM) with refreshments in Room 123

III Friday 4:45 - 6 PM

A.Room 117, Lori Underwood presiding

1. 4:45 Decline of historical knowledge in the U. S.

Christopher Chappell, Quentin Kidd, *CNU*

I will be presenting research that presents whether adults have more historical knowledge than the average high school student. I will be presenting reasons why historical knowledge is lower amongst younger people and suggest ways to reverse this difference. I will have conducted a survey before the conference which tests the knowledge of persons 18 and older. I will also be sharing my results from this survey.

2. 5:10 Capital punishment: a utilitarian necessity

Christopher May, Jade' N. James, Lori Underwood, CNU

In an argument before Parliament on April 21, 1868, John Stuart Mill, one of the largest contributors to Utilitarian thought, argued in favor of capital punishment. In much the same manner at the University of Chicago forum in January 2002, Supreme Court Justice Antonin Scalia stated that the "only choice for the judge who believes the death penalty is immoral is resignation." Though many people in the United States argue against the need for capital punishment declaring it to be unconstitutional in nature, in our opinion it is quite the opposite. Rather than end what many consider to be a violation of the 8th Amendment to the Constitution, we feel that the death penalty should be upheld. It plays an integral part in society by deterring would be criminals, and it was an accepted act by many of our founding fathers. For the majority of the paper we will argue on behalf of Utilitarianism to show the folly in the primary arguments presented by the opposition. This is not a paper defending all nations' methods of trial and execution, especially when one considers that the American system of capital punishment is not flawless. The Utilitarian ideology suggests that criminals should receive the punishments that they deserve, even if death is included in this scope. For a utilitarian, punishments, like everything else, should be devised in order to maximize happiness and minimize pain for all parties involved.

B.Room 116, Gary Whiting presiding

1. 4:45 The effect of different types of video games on spatial performance

Andrea Velissarios, Stacy L Rilea, CNU

The current study examined the effect that various types of video games have on spatial ability for males and females. Participants were undergraduate psychology students from Christopher Newport University who received extra credit in a Psychology course. Participants completed 4 tasks: a questionnaire on video game experience, the Paper Folding test, the Water Level task, and the Card Rotations test. The video game experience questionnaire asked individuals questions related to their duration and level of skill on different types of video games. The Paper Folding test was a standardized measure of spatial visualization. In these tasks, participants observed a piece of paper being folded one to three times. The final display of the folded piece of paper had a hole punched through it. Participants were asked to identify what the piece of paper would look like when it was unfolded. The Water Level task was a standardized measure of spatial perception that asked participants to draw a line indicating how the surface of the water would be sitting in a bottle that had been tilted. Finally, the Card Rotations test was a standardized measure of

mental rotation that asked participants to identify if the cards presented were the same as or a mirror image of the prototype card presented. The current findings suggested that the type of video game and the amount of video game experience were related to spatial performance. These findings may partially account for the male advantage that is frequently observed in spatial ability, considering males generally devote more time to playing video games.

2. 5:10 Something fishy is happening in Wingfield Hall

Chelsea Weeks, Dominic Arjona, Kristin Munch, Melanie Ewing, Andrew Velkey, CNU

Over the past year, students and professors in Psychology have converted the former shop area in Wingfield hall into an operational laboratory for studying the behavior of freshwater fish. Currently, these researchers are examining the role learning plays in the territorial and aggressive behaviors of a common aquarium species, the Siamese Fighting Fish (*Betta splendens*). In the Spring of 2002, researchers laid the foundation for the lab and began extending research on the reinforcing properties of aggressive encounters in *Betta* using an instrumental conditioning paradigm. This particular line of research has already generated a poster presentation at a regional undergraduate conference as well as a manuscript submission to a major journal. In the Spring of 2003, the student researchers opened another line of research on the role Pavlovian conditioning plays in territorial defense and aggression in *Betta*. This talk will provide an overview of the initial development of the laboratory as well as describe the work currently taking place in the lab. Some of the directions being explored for future research will also be discussed.

3. 5:35 Do discriminative stimuli affect instrumental-choice behavior in *Betta splendens*?

Michael L. Suis, Andrea Velissarios, Alicia Burns, Andrew J. Velkey II, CNU

The effect of a discriminative stimulus on choice behavior in Siamese Fighting Fish (*Betta splendens*) was investigated. Four healthy, male *Betta* were individually housed in submerged T-mazes. Subjects were allowed to swim from the start box to the terminal during each trial and choose between an encounter with a conspecific (a live male) or no conspecific. The compartment containing the conspecific was randomly placed on one side of the T-maze during the course of the experiment. The door and sides of the compartment leading to the conspecific were covered in a blue checkerboard pattern. *Bettas* were expected to associate the pattern with the presence of the conspecific. The pattern was expected to function as a positive discriminative stimulus (S^+), resulting in *Bettas* choosing more encounters with the conspecific than the nonconspecific. Reinforcement was expected to result in reduced start box

latencies and faster swimming speeds. One subject clearly chose more encounters with the conspecific; the pattern acted as an S^+ . A second subject chose more encounters with the nonconspecific; the unmarked door functioned as an S^+ . A third subject responded as if the encounters were punishing by exhibiting increased start box latencies and slower swimming speeds. The final subject did not demonstrate decreased swim times or a stable choice pattern. The inconsistency in these results suggests that additional variables may affect choice behavior in *Betta splendens*. Dominance may play a role in choice behavior and resultant territorial defense. Dominant fish may use environmental cues to predict when conspecific encounters will occur, resulting in increased preparedness. However, submissive fish may use the same cues to avoid such encounters, which they may lose. Future research could directly examine the effects of dominance on territorial defense through establishing dominance hierarchies, either naturally or through classical conditioning (e.g. Hollis *et al.*, 1995).

Registration in atrium, starting at 8:30 AM on Saturday

9 AM in atrium:

Welcome by Douglas Gordon, Dean of CNU's College of Liberal Arts and Sciences

IVSaturday 9:15 - 10:30 AM

A.Room 117, Clyde Brockett presiding

1. 9:15 Donald E. Allured: composer, conductor and teacher
Annette A. Kenyon, Clyde Brockett, CNU

Donald E. Allured has been called the "father" of handbell ringing in America. He is a composer, conductor and clinician. Allured's many contributions include developing techniques that accentuate the artistry of the handbell choir. As a composer Donald Allured has written some of the most exquisite music for handbells. Although Allured is well known in the handbell choir realm, his teachings outside this milieu are relatively unknown. This paper will highlight several of his compositions and show how the ringing techniques he developed have brought musicality to today's handbell choir. This paper will also explore Allured's conducting methods and his dedication to music education. Sources referenced will include articles written by Donald Allured on handbell ringing and conducting techniques. Another source for this study will be his handbell methods book, *Mastering Musicianship in Handbells*. Testimonials by friends and colleagues will

show how his contemporaries regard Allured, and interviews with Allured himself will provide information regarding his methods and philosophy of music. This paper will introduce a master musician whose contributions have not only benefited the English handbell choir but has been an inspiration to the music world.

2. 9:40 On the life Panzaic: defining Sancho

Jack Lassiter, Scott Pollard, CNU

On his way home from knight erranting Don Quixote coins some new adjectives. For example, as Quixote plans a career switch to shepherding, he declares that he will be known as the "Quixotic Shepherd" and Sancho will be known as the "Panzaic Shepherd." Although "Quixotic" has now entered the dictionary and is relatively easy to define, "Panzaic" is not. Webster's Encyclopedic Dictionary does not mention it, nor does spell check recognize it as a word. Defining "Panzaic," however, is possible through an examination of the life of Sancho Panza. Several possible definitions that will be examined include the following: (1) One wiser than first appears, (2) one who sees loyalty as having rational limits, (3) an unpretentious social climber, (4) a wise, Solomon-like judge in the guise of a fool, and (5) one who spouts proverbs profusely. All "Panzaic" needs is a precise definition to give it linguistic recognition.

3. 10:05 Madness in society: expressed through Don Quijote

Shellie Wilkins, Scott Pollard, CNU

Don Quijote's proposed insanity is a method that allows him to escape the expectations enforced on him by society. He is able to manipulate the laws of the society he creates because it exists only in his mind. When harsh realities, such as broken teeth, invade the illusions created by Don Quijote, he employs several defense mechanisms to mask the inconsistencies between his true and fictitious worlds. The motivation, which encourages Don Quijote to continue his adventures, is the aspiration to gain patronage by a member of aristocracy. The acknowledgment of royalty would allow Don Quijote to present himself to Dulcinea and gain her dedication. During his adventurous stay with the Duke and Duchess, Don Quijote is treated to the privileged position of a courtly knight. He becomes bored with the subdued lifestyle found within the confines of the palace wall. He is disillusioned by the reality of his goal, once achieved. Don Quijote first attempts to escape the stresses of daily life by absorbing himself in chivalrous romances, evident by his massive library. When the adventures within the pages of the books are no longer fulfilling, he shelves the books in exchange for enacting the life of a knight errant. Living the lifestyle, versus reading about it, also leads to a disillusioned Don Quijote. Following his brief term as a courtly knight, Don Quijote's will to perpetuate his illusion begins to wane, evidenced in such behaviors as sitting in the middle of the

road awaiting Sancho following the bull rush. The expectation of the society in which he exists does not wane though. On the contrary, society is fueled by the legendary and chronicled lunacy and misadventures of Don Quijote. The paradox Miguel de Cervantes creates for Don Quijote is to have the hopeful knight-errant attempt to escape his role in society with a self-imposed lunacy, but society then redefines its expectations of Don Quijote to focus on his lunacies. Thus, my paper will focus on the methods used by Don Quijote in part one to defend his illusionary life, compared to the methods employed in part two by members of society to continue Don Quijote's legacy of lunacy.

B. Room 116, Kelly Cartwright presiding

1. 9:15 The effect of aerobic exercise on word recall in older men and women

Rachael Pierce, Jeffrey Gibbons, *CNU*

This experiment will assess the effects of exercise on word recall for men and women. The sample will consist of 80 participants, 40 men and 40 women, who will be 50-70 years old, non-smokers, sedentary, and in a healthy condition based on a doctor's notification. The participants will be divided into 4 groups: 20 men in the exercise group, 20 women in the exercise group, 20 men in the non-exercise group, and 20 women in the non-exercise group. The exercise group will walk for 2 miles or 30 minutes, while the non-exercise group watches a movie. Immediately after the 30 minutes in the exercise or sedentary condition, both groups will be shown a word list for 1 minute and will then be asked to recall the words from the list. Women are expected to recall more words than men, the exercise group is expected to recall more words than the non-exercise group, and this effect is expected to be greater in men than in women.

2. 9:40 Do newspaper and tabloid headlines change in believability and recognition over time?

Cameron Lee Smith, Jessica Root, Peter Kuhr, Jeffrey A. Gibbons, *CNU*

Participants in the experiment rated the believability of 20 headlines (10 tabloids and 10 newspapers). Five of the tabloid headlines and 5 of the newspaper headlines were followed by a story synopsis. After 48 hours, participants rated 40 headlines (the 20 original headlines as well as 10 new tabloid headlines and 10 new newspaper headlines) while simultaneously circling the headlines that they recognized from the first assessment. No story synopses followed the headlines in the second assessment. The overall differences between the believability ratings for the newspaper headlines and for the tabloid headlines was statistically significant. Moreover, this effect was found to be more dramatic for the headlines that were followed by a story synopsis in the original assessment. Finally, tabloid headlines were recognized better than

newspaper headlines, but this effect was not enhanced by the presence of story synopses following the headlines.

3. 10:05 How do people view first impressions based on skin tone

Cristen Long, Jessica Rogers, Richard Walker, *Winston-Salem State U.*

Forty-eight African-American students from Winston-Salem State University participated in the experiment. Participants were asked to evaluate either brief resumes for a job opening or personality profiles for a dating service that were accompanied by pictures of light-skinned African-Americans, dark-skinned African-Americans, or no pictures. Participants were then asked to rate the qualifications of the individual (either for hiring or willingness to date). Judgments were affected by the skin tone of the individual in the picture. A computer generated power point presentation was used to display the resumes and photographs. A questionnaire was presented at the end of the power point presentation. The questionnaire included questions rated on a scale of one to five, with higher ratings indicating better evaluations (e.g., more likely to hire). Participants were given an informed consent form. Then they were placed in an isolated room for 5-10 minutes that contained a computer. Participants were exposed to three conditions, in a between-subjects design. The three conditions were light skin photographs, dark skin photographs, and no photographs. After, the power point presentation a questionnaire was given, for the participants to rate the individuals described in the resume on a scale of one to five. Preliminary results suggest that participants favored light skinned African-Americans, particularly when they were asked to rate these individuals in the context of a personality profile. Results are discussed in terms of intraracism.

C. Room 112, Tarek Abdel-Fattah presiding

1. 9:15 Arsenic adsorption by novel organo-silicate nanocomposites

Stephanie D. Harris, Tarek Abdel-Fattah, *CNU*

The impact of natural and anthropogenic inputs of arsenic (As) species in the environment, mainly in soils and waters, is considered one of the major problems in pollution abatement. According to the World Health Organization drinking water poses the greatest threat to public health from As. Recently the Environmental Protection Agency lowered the acceptable limit of As in drinking water from 50 parts per billion (ppb) to 10 ppb and mandated that systems must be in place by 2006 to reduce levels to less than 10 ppb. Most current water filtration systems utilize activated carbon or reverse osmosis to remove contaminants, including As. Recent studies have focused on more economical adsorbent materials like zeolites and other molecular sieves. The latest research is focused on silica based molecular sieves obtained through templating mechanisms that can be customized for adsorption of

many contaminants. In this study mesoporous organo-silicate nanocomposite materials (MCM-41, MCM-48, MCM-50, HMS, and Fe-treated-HMS) were synthesized and evaluated to determine their usefulness in water filtration, particularly for removing As from drinking water. All materials removed between 15% and 35% when used as synthesized. HMS treated with 1%, 2%, and 10% iron removed 33%, 40%, and 84% As respectively. There is a clear association between increased iron content in the adsorbent material and the amount of As removed. Further studies will be conducted to focus on characterizing and increasing the adsorptive properties of these materials.

2. 9:40 Teaching statistics: predictors for student success

Melanie S. Tyler, Bobbie Hoffman Bartels, *CNU*

A correlational study found no significant evidence of an association between the Preliminary SAT/National Merit Scholarship Qualifying Test (PSAT/NMSQT) verbal, mathematics, and writing scores and students' end-of-course grade average in Advanced Placement (AP) Statistics. Additionally, no significant evidence of an association was observed between the number of previous mathematics high school courses and students' end-of-course grade average in AP Statistics. Students entering AP Statistics with an Algebra II background performed as well, on average, as students who had previously completed AP Calculus BC. Data were collected on thirty-eight students (One student did not have an end-of-course AP Statistics grade.) from two high schools in Southeastern Virginia who were enrolled in AP Statistics during the 2001-2002 school year. This study suggests that guidance counselors should not be overly concerned with recommending students for AP Statistics who are not on an advanced mathematics track (i.e., finishing Calculus in high school).

3. 10:05 Methane and carbon dioxide production potential from bog peatlands in the discontinuous permafrost zone of northern Alberta, Canada

Travis R. Comer, Michael Harrison, Gary J. Whiting, *CNU*

Field extruded peat cores were collected from a permafrost plateau and a recently melted collapse scar in a boreal bog of northern Alberta, Canada. The cores sections were selected from 5 depths and incubated under anoxic conditions with the addition of N_2 to measure CH_4 and CO_2 production over a 5-day incubation period. Head-space around the samples was analyzed using a gas chromatograph containing a methanizer and a flame ionization detector (FID). Methane production ranged from an average of $0 \mu\text{mol g}^{-1}\text{hr}^{-1}$ for permafrost plateau peat to a maximum of $0.307 \mu\text{mol g}^{-1}\text{hr}^{-1}$ in the collapse scar. Carbon dioxide production ranged from an average of $0.101 \mu\text{mol g}^{-1}\text{hr}^{-1}$ from permafrost peat to a maximum of $2.50 \mu\text{mol g}^{-1}\text{hr}^{-1}$ from the collapse scar. The data collected from core samplings

throughout the growing season were used to analyze the effect soil depth has on CH_4 and CO_2 production. A model of CO_2 and CH_4 spatial and seasonal production was assembled for the site using the incubation data, along with soil pH, water table depth and origin of the parent material. Results indicated that the edges of the collapse scar regions have the highest CH_4 production and the central, older portions of these landforms have the greatest CO_2 production.

Break (10:30 - 10:45) with refreshments in atrium

V. Saturday 10:45 AM - noon

A. Room 117, Bob Colvin presiding

1. 10:45 Should Virginia increase the cigarette excise tax to 60 cents?

Catherine M. Flanagan, Bob Colvin, *CNU*

Virginia's budget shortfall is seriously impacting state services. It is important to consider all sources of revenue. Even though tobacco tax increases have broad public support, Virginia's tobacco excise tax has been unchanged since 1966, and is the lowest in the nation. Taking into consideration that Virginia is the second largest tobacco manufacturing state in the nation, the focus of this paper was to answer whether it is good economic and public policy sense for Virginia to raise its excise tax to the national average of 60 cents per pack. The social and political aspects of the issue were addressed through a review of other states' experiences and a consideration of the equity and efficiency of a tobacco excise tax, and tax avoidance sales. To determine whether a significant per-pack increase in price would result in a net increase in revenue for Virginia, the elasticity of demand for tobacco was reviewed and a ratio was selected based on the national data collected for this study and a review of the literature. The data were collected from the IRS, the Center for Disease Control, and the US Census to track the consumption of tobacco, the retail and wholesale price of a pack of cigarettes, and the revenue generated from taxes over the last ten years for both Virginia and the nation. Trends were charted and projected using linear-regression analysis. The results showed that raising the tax to 60 cents per pack represents good public policy by significantly reducing teen smoking, minimizing tax differentials between states, and generating more than \$350 million in revenue for the state.

2. 11:10 Autos by Choice, LLC: consultation report

Josh Adams, Stephanie Huneycutt, *CNU*

This project was a business analysis conducted for Autos by Choice, LLC. The research report includes: (1) introduction of the business, methods for research, and identification of the problems; (2) research and data results; (3) suggestions and recommendations; and (4) conclusion showing the impact of implementation of suggestions. The first section identifies the background and history of the company, as well as other important information used in this consultation. The second section summarizes the research results and findings. This includes a survey administered to a sample of persons visiting the business. The research shows that Autos by Choice, LLC has room for improvement, and that present performance is poor when compared to that of the past. Recommendations and suggestions were made that allow for increases in sales and revenues. The majority of recommendations deal with the sales and marketing strategies to be implemented at Autos by Choice. These include creating a mission and vision statement to improve corporate goal setting, using low-cost advertising techniques to improve marketing strategies, and creating an inventory strategy to improve sales and inventory turnover. Finally, this report discusses the advantages and disadvantages of implementation versus non-implementation of the following recommendations. This creates a picture of the company's future potential.

3. 11:35 Monetary policy and causality in the United States

Jeannie S. Chung, George Zestos, *CNU*

Interest rates are considered an important leading indicator of economic growth. Consequently, the central bank of the U.S., the Federal Reserve Bank, targets certain interest rates, such as the federal funds and discount rates, to affect other interest rates and ultimately, economic prosperity. This study examines whether the Federal Reserve is effective in achieving this objective and, if so, within what time framework does the change take place.

To test this hypothesis, a set of time series variables was constructed for the period of 1954-2002, involving the following variables: federal funds rate, discount rate, prime rate, 1-year, 5-year, and 10-year government bond rates, unemployment rate, and real GDP. Several tests were performed to investigate the relationship of these variables. The cross lead (lag) correlations of these variables were first calculated. These statistics show the strength of the relationship of any two variables and the required timing for one to affect the other.

An econometric study was also undertaken in order to study these relationships. First, the stability properties of the time series variables must be investigated by performing unit root tests for all variables. Stationarity in the first differences allowed the test for the long-run equilibrium relationship of the variables - the

cointegration test. Evidence of cointegration supports the hypothesis that the variables have a long-run equilibrium relationship and permits the formulation of the Vector Error Correction Model (VECM). Bivariate and trivariate VECMs were formulated and estimated for various combinations of time-series variables to study the presence of econometric Granger Causality using three statistical tests. Preliminary results indicate evidence of econometric causality from the Federal Reserve target rates to long-term interest rates and economic growth. This supports an active monetary policy but further study is necessary to determine the time lapse between the change of the target rates and economic growth.

B. Room 116, Jeff Gibbons presiding

1. 10:45 Can changing story-telling behavior inflate mood?

Stephanie E. Pulas, Melanie K. Lopez, Crystal V. Harvey, Jeffrey A. Gibbons, *CNU*

Walker, Vogl, and Thompson (1997) showed evidence for a fading affect bias where emotions faded over time and negative emotions faded more than positive emotions. In addition, Harvey, Gibbons, and Walker (2002) found that participants' moods increased after following instructions to tell more stories or to tell stories to more different types of people. The current study was designed to determine which instructions (tell more stories or more different types of people) increased mood. Currently, participants estimated their storytelling behavior and mood, and participants were either given no instructions or they were given one of the four sets of instructions to carry out over two days: tell more stories, tell more different types of people their stories, or tell more stories more stories along with telling more different types of people. The results showed that participants who only told more stories or only told more different types of people experienced higher moods. This finding supports past research on the fading affect bias and shows that both storytelling instructions (telling more stories or more different types of people stories) can improve mood.

2. 11:10 The "No Child Left Behind" act and high-stakes testing: a literature review

Merriah Y. Daniel, Kelly B. Cartwright, *CNU*

The No Child Left Behind act (NCLB) was devised to insure that all American schools are on an even playing field and that every individual child has an equal opportunity of receiving a beneficial education. High-stakes tests have often become sole predictors of nationwide achievement in the American educational system. An example of one of these tests is the Virginia Standards of Learning tests. Under the new legislation, the administrators, educators, and students are made accountable for successful performance, and funding is allocated based on successful scores. Additionally, under this legislation students are permitted to transfer from failing

schools to satisfactory schools. Thus, failing schools get less funding because they have fewer students and lower scores. In the wake of the NCLB researchers have focused on high stakes testing and the ramifications of such testing. Therefore, the purpose of the present paper was to provide an overview of the risks of high stakes testing and the NCLB Act, the validity of high-stakes testing, and the effects on teachers, administrators, and students. The present review includes observational studies, empirical studies, and literature reviews. The conclusions drawn from the present paper are that high stakes testing is not a proper sole predictor of deficits in the educational system, that high stakes testing applies too much stress to all individuals involved, and that high stakes testing does not best serve America's youth.

3. 11:35 Personal appearances and how people form impressions: attractiveness and desirability in mate selection

Cristen Long, Jessica Rogers, Richard Walker, *Winston-Salem State U.*

Many people rate first impressions heavily in situations such as job interviews. Two experiments were conducted to investigate whether factors related to the physical characteristics of job applicants would affect the likelihood that they would be perceived as qualified. The first experiment tested the hypothesis that female applicants who wore makeup would be perceived as more qualified for a job than female applicants who did not wear makeup. Twenty African-American students were shown pictures of two applicants and asked to rate which applicant was appeared more professional. In condition 1, participants saw the face with make up first. In condition 2, participants saw the face with no make up first. A mixed analysis of variance was conducted. Picture Sequence (i.e., which picture came first) was the between factor and Picture Type (Makeup or No Makeup) was the within factor. There was no reliable difference between the make up and no make up pictures, but there was a significant effect of picture sequence. The results suggest that the second picture was judged relative to the first picture.

C.Room 112, Tarek Abdel-Fattah presiding

1. 10:45 Lead immobilization in soil and storm water from a small-arms range using phosphate, sedimentation, filtration and organo-silicate nanocomposite treatments

Larry K. Isaacs, Tarek Abdel-Fattah, *CNU*

Small-arms ranges (SAR) help train individuals on small-caliber weapons. Lead (Pb) from bullets fired at ranges accumulate in earthen berms and can mobilize as soluble lead organic complexes, or by adsorption on mineral or organic soils.

Mobilized lead in storm water run-off from SAR may exceed Clean Water Act Pb

limits. Phosphates and sedimentation filtration were used to immobilize and control lead. Organo-silicate nanocomposite were examined as possible end-of-point storm water discharge adsorbents. The equilibrium adsorption of aqueous Pb^{2+} by molecular sieves HMS, MCM-41, and MCM-48 were measured by Graphite Furnace Atomic Adsorption. Kinetics and isotherm models were prepared, and the effects of pH 2 to pH 12, competing ions, and 25°C to 45°C temperature, on performance were investigated. Before treatment average total lead concentration in storm water was in the range 865 $\mu g/L$ ($SD = 747$, $n = 5$) at pH = 7.06. After phosphate and sedimentation treatment lead concentration average was 98 $\mu g/L$ ($SD = 61$, $n = 5$) at pH = 7.4. HMS, MCM-41 and MCM-48 reactions were first order, with half-life reaction times of 65, 19 and 107 minutes, respectively. Reactions fit the Langmuir model ($r^2 = 0.96$, 0.91, and 0.99, respectively) and the Freundlich model ($r^2 = 0.93$, 0.95 and 0.98, respectively). Average percent Pb^{2+} removal for all temperatures measured for HMS, MCM-41, and MCM-48 were 94%, 97%, and 97%, respectively. Ionic competition reduced Pb^{2+} removal by HMS, but enhanced MCM-41 and MCM-48 performance. HMS began to release Pb^{2+} ions below pH = 6 and MCM-41 and 48 began to release Pb^{2+} below pH = 4. Desorption began at pH = 2.5 to 3.5, but could be regenerated with HCl.

2. 11:10 Belowground dissolved methane distribution in a melt-collapse wetland located in discontinuous permafrost zone of Canada

Whitney Carroll, Michael Harrison, Travis Comer, Jessie Mellon, Melinda Sparks, Gary Whiting, *CNU*

A large amount of the total methane emission from the earth's surface to the atmosphere originates from wetlands (peatlands) located in the high latitude region of the northern hemisphere. A large portion of these northern regions has frozen soil (permafrost) all year-round and contains most of the world's dead-plant matter (carbon). With potential warming in the near future of 2 C° to 4 C° for these regions, many frozen soils will melt. With some melting already occurring, this can significantly alter how carbon is processed and stored in these peatlands and affect the type and amount of gases released to the atmosphere. A primary concern is the conversion of soil carbon to methane gas, a very potent greenhouse gas. Within these melt features we measured belowground methane concentrations that reflect the processes of production and emission in these regions. At the interface of the melt

feature, the mean concentration was 143 micromolar. In the middle, belowground concentrations were higher (232 micromolar). The lower belowground concentrations within the melt and halfway regions maybe related to a combination of higher emissions or lower production of methane in these areas as compared to the middle of the melt feature.

3. 11:35 Detecting subsurface defects in metals using a superconducting quantum interference device

Jeffrey C. Mast, Raouf Selim, *CNU*

Superconducting quantum interference devices (SQUIDs) can be used in the detection of flaws in metals with eddy current techniques. However, to differentiate between rivets and the flaws that radiate from the rivets, the magnetic fields from eddy currents of two directions need to be analyzed. To this end, I will discuss an overview of a SQUID sensor currently in use at NASA Langley Research Center and the collection of data for the past year. I will also discuss the software that I have developed to distinguish between holes and slots (and combinations of these) in aluminum plates.

Lunch (on your own)

VISaturday 1:15 - 2:30 PM

A.Room 117, Clyde Brockett presiding

1. 1:15 Illustration and design: the art of visual communication

Jeremiah Santiago, Betty Anglin, *CNU*

As an illustrator for *The Captain's Log*, I have worked closely with the editors and staff so that my artwork will both support and enhance the stories that are published. I am also enrolled in an independent study class provided by the Fine Arts program which allows students to explore themes that are closer to their vocation and or medium. I have chosen illustration as my concentration and I have created a set goal of completing at least a dozen pieces by the end of this semester. These images will be taken and interpreted by myself from four to six published works being novels, short stories, and poetry. The stories I am working from include J. R. R. Tolkien's *Return of the King*, *All Things Bright and Beautiful* by James Herriot, John Herman's *Labyrinth*, and *Foundation* by Isaac Asimov. I have chosen approximately three scenes from each selection to illustrate, and from there I examine every detail from those scenes' description and record it through numerous sketches. For example, in *Return of the King*, we are introduced to the capital city of

Gondor, Minas Tirith. I have utilized the explicit layout of time, seasons, and also maps that are included in the Appendix to create my visualization of the scene. I interpreted the arrival of Gandalf at Minas Tirith and carefully placed the subtle details of aerial perspective and lighting, based upon the time of year and day, so that the final illustration would correspond to the text in every detail. It is with this procedure that I am able to translate text and display it with my own creative and artistic interpretation so that the readers can appreciate what they are reading better.

2. 1:40 American popular music: from patriotism to protest

Peter J. Mercier IV, Clyde Brockett, *CNU*

Popular music is often a reflection of the society in which it is produced. On the other hand, society itself is often influenced and motivated by the popular music of its time. In this paper, I will compare how the popular music of the World War II era and the popular music of the Vietnam era reflected and influenced America's political attitudes and ideologies. Whereas the popular music during WWII (1942-1945) was patriotic, nostalgic, and supportive of the war effort, the popular music during the Vietnam Conflict took on a decidedly different attitude, reflecting cynicism, influencing protest, and emphasizing the tragedies and evils of war.

3. 2:05 Parallel lives: the link between the Brontë and Prozorov sisters

Rian Kerfoot, Denise Gillman, *CNU*

Many parallels exist between the Prozorov sisters in Anton Chekov's *Three Sisters* and the lives of the infamous Brontës. Based on the knowledge that Chekhov read a biography about the literary threesome several years before the first production of the play, one is able to unearth many sources of influence from the history of the Brontës. Not only did they lead similar lives under comparable circumstances, but they shared character traits and family relationships as well. Both sets dealt with the loss of their mothers and were raised by their fathers. The Prozorov's brother Andrey is strikingly similar to the Brontës' brother Branwell, who was talented and intelligent but squandered his aspirations and fell into debt. The towns in which they reside are both stifling and isolated. The dreams expressed so eloquently by the Brontë sisters in their novels and poems are echoed in the words of the play. The Brontës and the Prozorovs longed for something more from life, something freer than was afforded them by their environment. The link is important because it adds a sense of reality, humanity, and history to a piece of important and celebrated drama.

B. Room 116, George Zestos presiding

1. 1:15 The effects of background music on reading comprehension in adolescents with or without attention deficit disorder

Meridith Jackson, Jeff Gibbons, *CNU*

This experiment will be conducted to determine whether rhythm and blues music will affect reading comprehension in adolescents with or without Attention Deficit Disorder (ADD). The participants will be separated into two groups: those individuals having music and those having no music. The resulting four groups will be ADD participants with music, ADD participants without music, non-ADD participants with music, and non-ADD participants without music. All groups will be given a short story to read while listening or not listening to music. Afterwards, the groups will be given a test on comprehension of the story while listening or not listening to music. The data will be analyzed to determine whether or not background music has a beneficial or adverse effect on reading comprehension across ADD or non-ADD adolescents. It is predicted that ADD adolescents will score better on the test with background music than the non-ADD adolescents with music, and their difference will be greater for ADD adolescents than non-ADD adolescents.

2. 1:40 The effects of mentoring and other factors on career planning

C. Ray Epps, Richard Walker, *Winston Salem State U.*

Sixty-eight African-American students participated in this study. A 21-item questionnaire was created to determine what factors may have played a role in the participants' decision in choosing their respective majors. The questionnaire included questions on issues such as: mentors, role models, and work/volunteer experience. Participants were given the questionnaire in an isolated classroom in groups of 10-20 participants. Participants received oral instructions, after which they signed consent forms. Each group of participants was given approximately 15-20 minutes to complete the survey. A series of Pearson product moment correlations were computed between factors that were thought to predict career goals (e.g., grades, mentorship, etc.) and the number of short-term and long term career goals reported by students. A positive correlation emerged between job/volunteer experience and whether or not students had mentors. This reflects that mentors have a role in encouraging students to seek out opportunities to gain experience and expand their knowledge base of their subject. A negative correlation was established between mentorship and number of goals. Students with mentors had fewer goals than students without mentors. This may be due to mentor intervention, to help students identify unrealistic goals. Alternatively, mentorship may stifle student creativity. Mentoring may have both positive and negative consequences for African-American

students. Mentoring may benefit students by increasing the opportunities they are exposed to in their major. However, mentoring may also stifle student interest in their major and the goals they set for themselves.

3. 2:05 The effect of music mood and genre on cognitive ability

Diane Cabiroy, Jeffrey Gibbons, *CNU*

Music mood and music genre will be evaluated to determine if each is related to cognitive ability. The 4 classroom groups of 11th-grade American History students will be randomly assigned to one of 4 conditions: upbeat, popular music; somber, popular music; upbeat, classical music; and somber, classical music. The participants will listen to the music as they learn a history lesson and take a corresponding test to measure their cognitive ability. The first hypothesis states that upbeat music will have a greater effect on cognitive ability compared to somber music. The second hypothesis states that classical music will have a greater effect on cognitive ability compared to popular music. The third hypothesis states that upbeat music will have a greater effect on cognitive ability compared to somber music, and that this difference will be larger in popular music compared to classical music.

C. Room 112, Peter Knipp presiding

1. 1:15 Detection of defects in metal structures through the use of a low- T_c SQUID

Michael McFarlane, Raouf Selim, *CNU*

In a time where many of us use air travel to quickly go from one place to another, proper inspection of the structural integrity of the planes we fly on is of the highest importance. Defects in an airplane's structure are easier to detect if they are somewhat large and on the surface of the metal. However, early detection of small defects can help prevent larger problems in the future. In addition the defect is usually hidden from sight, either inside the metal or underneath a rivet. Using a superconducting quantum interference device (SQUID), the most sensitive magnetic field detection device, we are able to look at and beneath the surface, finding defects that would not otherwise be detectable. However, the true challenge is not the collection of the data, but being able to filter and analyze it accurately. Using data acquisition and analysis software that we have designed, we are currently testing the depth limits of this method of detection and its ability to determine accurately the size, shape, and location of the defect.

2. 1:40 Using modified low-cost absorbents to remove 2,4-dichlorophenol from aqueous solutions

Emily Faulkenberry, Tarek Abdel-Fattah, *CNU*

The purpose of this study involves removing 2,4 dichlorophenol (DCP) from

aqueous solutions with several low-cost absorbents at various temperatures. The absorbents were modified with dodecylamine (DDA) surfactant to improve their ability to remove organic pollutants such as DCP. DCP is an aromatic compound used as antiseptics, herbicides, wood preservatives, and in the paper and pulp industry. At significant levels, exposure to DCP can cause death and chronic exposure results in kidney and liver damage. The naturally occurring zeolite absorbents (clinoptilolite and chabazite) in addition to Silica gel, were compared to more conventional materials such as molecular sieves (13X and 5A), aluminum oxide, and activated carbon (Calgon Filtrabsorb 400). The data show a positive correlation between increased temperature and an increased amount of DCP absorbed when using clinoptilolite, chabazite, silica gel, 5A, and activated carbon. However, the absorption observed with the molecular sieve 13X was basically independent from the temperature, and aluminum oxide absorbed less DCP as temperature increased. At 45°C, activated carbon absorbed almost 100 percent of the DCP. Other absorbents also successfully removed DCP. For example, aluminum oxide removes more than 50 percent of DCP at 24°C and the chabazite removes more than 50 percent at 45°C.

D.Room 100, Mary Rose Williams presiding

1. 1:15 Testing the effectiveness of an integrated cross-cultural training model: language training and adaptive skills for sojourners to a foreign environment
Mary S. Stevens, Mary Rose Williams, *CNU*

Various cross-cultural training models have been used in training people to function effectively and adapt in a culture foreign to their own. This paper contributes to previous studies that analyzed the integrated approach to cross-cultural training (CCT). Further, this study will test the hypothesis that ability to communicate effectively, specifically in the language of the host country, is the component of the integrated CCT model that has the biggest impact on adaptation. The integrated model used in this research consisted of the following five approaches: (1) the intellectual, (2) the self-awareness, (3) the behavioral, (4) the intercultural, and (5) the foreign language. The advantages of using an integrated cross-cultural training model is discussed and evidence is presented which supports the effectiveness of an integrated approach. Next, research on cross-cultural adaptation is discussed and an operational definition of cross-cultural adaptation is formulated. Finally, the research on adaptive skills and personality are presented and discussed; three characteristics, openness, strength, and positiveness, will be used to analyze and discuss the survey results. Finally, the paper suggests that more emphasis should be placed on language training as the most important component of the integrated CCT model. Also future studies should broaden the categories to

evaluate adaptive skills and personality.

2. 1:40 The rhetoric of body piercing: discovering identity through narrative analysis

Margo Scheinhaus, Mary Rose Williams, *CNU*

This research investigates piercing as an expression of identity management. Since the early 1990s, body piercing has grown into a more mainstream, socially accepted form of body modification and decoration in Western culture. Where once it was common for females only to have pierced ears, now men and women can have any body part pierced, from tongues to eyebrows to nipples to genitalia. Accessibility of piercing has moved from obscure tattoo parlors into mainstream shopping malls.

To examine the relationship between identity management and body piercing, a rhetorical analysis was conducted of stories told by those who are pierced. The data pool was derived from personal narratives posted to an Internet web forum, *The Body Modification E-Zine*. This research contributes to the significance of body piercing research to further our understanding of issues of identity management. Limitations of the research and suggestions for future study are discussed.

3. 2:05 Children's animated films and children's perception of justice
Hannah Goodwyn, Mary Rose Williams, *CNU*

Animated film is an important medium in the lives of adults and children all over the world. Consequently, communicative abilities of these films are worthy of study. Of particular note are Disney films, which have the ability to influence the formation of children's perceptions in such areas as race and gender roles, as well as on issues of social concern. Children, in particular, tend to identify with characters, often adopting attitudes and behaviors seen in movies, applying them to real life situations. This study examined how the concept of "justice" is constructed for and perceived by children as they view Disney films. The perception of justice that children gain from viewing films is important to study in order to understand how the medium may influence social perspectives on controversial issues. This study examined relevant literature on animated films and media effects. A combination of content analysis and sample testing constituted a preliminary study of the role of films in teaching children about justice. Two groups of children responded to pre-viewing questions, viewed *The Lion King* or *101 Dalmatians*, and completed a post-viewing interview session. Survey answers were analyzed in conjunction with a content analysis of the films in order to determine the means through which the film suggests notions of justice to viewers.

Break (2:30 - 2:45 PM) with refreshments in atrium

VII. Saturday 2:45 - 4:25 PM

A. Room 117, Carol Scovotti presiding

1. 2:45 Understanding a nonprofit organization's database through data miningCharles George, Carol Scovotti, *CNU*

The Carnivore Preservation Trust (CPT) is a non-profit organization that rescues abused, endangered animals, providing a shelter and humane living conditions for these animals to live out the rest of their lives. Established in 1986, it has rescued many tigers, caracals, ocelots, lions, snow leopards, black leopards, and jaguars. In 2001, CPT experienced high employee turnover. Several key administrators resigned and currently a volunteer director manages the organization. Non-profit organizations require donations to operate. The high employee turnover hampered CPT's fund-raising efforts and now threatens the organization's survival. The new staff was unaware of relationships with past donors. Donors didn't affiliate with the new staff. These problems stemmed from the underutilization of the organization's donor database. The database is an integral element of any organization as it drives all marketing decisions. However, CPT didn't know how to discover the knowledge hidden within this valuable resource. In this project, data-mining techniques were used to help the organization understand and enhance donor relationships. The first step was to analyze CPT's database to determine donation recency, the frequency with which an individual donates, and the monetary value of the donations. The RFM model is a widely used method for identifying an organization's best customers. Once the best donors were identified, an unsupervised clustering method was used to determine if the best donors could be geographically grouped. The results from this analysis will be used to help the organization target future offers to donors, increase response rates and identify new, prospective donors. Through the utilization of data mining, CPT will better understand who has supported its efforts in the past and attain the funds needed to keep saving endangered animals in the future.

2. 3:10 Foreign debt and economic growth in a group of developing countriesMatthew Hodge, George Zestos, *CNU*

This paper examines how foreign indebtedness has affected the growth and development of a small group of third world countries. An accumulation of foreign debt over a long period has repeatedly been shown to be a factor deterring countries from attaining economic growth and development. The reason high indebtedness leads countries to stagnation is that such countries must make large debt payments to

foreign banks and international organizations such as the International Monetary Fund and the World Bank. We chose Mexico, Argentina, Brazil, Turkey, Chile, and South Korea as the countries of our study. Each of these countries has applied different economic policies to cope with domestic and international economic problems. This research evaluated the policies that led the countries to high indebtedness and examines how each country coped with the problem of servicing its foreign debt. Both political and economic factors are examined. This research examined the fiscal, monetary, exchange rate, and trade policies of these countries and the policies of the international organizations such as the IMF and the World Bank toward the high indebted countries. Such policies were evaluated to determine whether they have been helpful in alleviating the foreign debt problem or if they have been an additional factor contributing to the demise and economic stagnation. Historical data were examined for real GDP growth, unemployment rates, exports, imports, interest rates, inflation, foreign exchange rates, foreign reserves, capital flows, and foreign direct investment to those countries. Data of the time-series variables were analyzed for the period 1950 to 2000.

3. 3:35 Saying "I do" to buying a homeAmber G. Godfrey, Carol Scovotti, *CNU*

The use of data mining techniques is not prominent in the real estate industry. They tend to use mass-marketing techniques rather than targeting specific segments. Each real estate agency has its own methods to locate and pursue prospects. Individual agents also have their own techniques, which include contacting the local chamber of commerce to obtain a list of people who have inquired about renting or buying, sending faxes to local businesses found in the yellow pages, mailings every month to individuals that match certain criteria, telemarketing, and visiting individuals in the general public. Engaged couples are an untapped market that real estate agencies should pursue. Data mining can use engagement announcements found in the newspaper, local store registries, and personal websites of engaged couples. The outcome will be a list of engaged couples that should be pursued to buy or rent a home. If a relationship can be established with a real estate agency at the beginning of a couple's new life together, then loyalty can be established.

B. Room 116, Andrew Velkey presiding

1. 2:45 The "eyes" have it: the relation between eye color and hand dominance on a psychomotor skills taskCheryl A. Taylor, Jeff Gibbons, *CNU*

Light-eyed individuals perform better at self-paced activities whereas dark-eyed individuals perform better at reactive tasks. In addition, right-handed individuals

perform better at fine motor skills whereas left-handed individuals have greater manual dexterity. This study will examine the relation between eye color, handedness, and psychomotor skills for 80 college students attending a southeastern university. A total of twenty participants will be assigned to groups, depending upon their eye color and their handedness. Individuals with dark-colored eyes are expected to score higher than individuals with light-colored eyes, and right-handed individuals are expected to score higher than left-handed individuals. Finally, dark-eyed individuals are expected to score higher than light-eyed individuals, and this difference will be greater for right-handers than for left-handers.

2. 3:10 Heroes or villains: the relation of television and movie viewing on memory for character sex in short stories

Cheryl A. Taylor, Janet Philips, KelleaJean Hester, Jeff Gibbons, *CNU*

Undergraduate students from Christopher Newport University were asked to read 4 short scenarios. Each of the 4 scenarios was created by crossing male and female main characters with positive and negative actions. In addition, each scenario contained a supporting character having the opposite sex of the main character in that particular scenario. A Latin Square was used to counterbalance the scenarios. After reading the scenarios and completing a 20-minute interpolated task, the participant's memories were evaluated and analyzed for character sex and story affect. Titles were given to each scenario in order to cue the participant's memories. The participants were also asked in a questionnaire about their television and movie viewing habits to determine if gender stereotypes portrayed in the media influenced their memories of the characters in the scenarios. Previous research suggests that the media should play a role in participants' memories of character sex and story affect.

3. 3:35 Identity theft

Candice Perkins, Richard Walker, *Winston-Salem State U.*

This literature review investigates identity theft, how it happens, and how to protect oneself. Identity theft is defined as the unauthorized use of personal information, such as credit cards, identity numbers, government documents, or financial accounts. This research summarizes a few case studies in identity theft and then considers what precautions people should take when using the Internet. The number one method of identity theft is records stolen from employers or other businesses. This method beats stolen credit cards, mail theft, and stolen purses and wallets. According to the Federal Trade Commission, identity theft has doubled since 2002. CEO's have been victimized by fired employees or by employees who throw away credit card receipts from lunches and a cleaning staff person takes the information, or by employees who provide credit cards. Anyone who has access to employment files that have personal information like social security numbers,

addresses and other data can steal anyone's identity. Running protection software and updating it regularly, is the safest way to get Internet protection. One should never give home address and social security numbers while making a credit card purchase, nor should one use passwords that include nicknames, pet's name, or mother's maiden name.

C.Room 112, Peter Knipp presiding

1. 2:45 Experiment and simulation of lock-exchange flows

Jerome Harris, Jamie Martin, *CNU*

The objective of this study is to investigate the dynamics and flow topology of density surges in fluids, which are more commonly referred to as gravity currents. In the atmosphere, the weather phenomenon of a cold front gust is just one example of a gravity current. In the ocean, turbidity currents are another example. An everyday example of a gravity current appears in the form of cold air propagating along the floor after opening an external house door on a cold day. To carry out our investigation of gravity currents, we have taken an arrangement of fluids commonly referred to as lock exchange. Under the lock-exchange setup, two fluids of different densities are initially separated into the right and left halves of a channel. Upon release of the starting obstruction, two mutually intruding currents, each primarily horizontal and buoyancy driven, develop. At CNU, computational simulations of the lock-exchange problem have already been performed. The results of those high resolution simulations reveal new features of gravity currents. The primary goal of this investigation has been to create an experimental setup designed to reproduce and verify some of the results uncovered in those computations. In this presentation we will describe the flow tank we constructed for this investigation. A movie, for the particular case in which we used two fluids having near equal densities, illustrates the flow during its early phase during which the two heads travel at near constant speed. For comparison, we will also show the results from a computational simulation which were done assuming similar conditions.

2. 3:10 Bottlenose dolphin (*Tursiops truncatus*) utilization of the Elizabeth River, Virginia

Kevin Foss, James R. Reed, *CNU*

The Elizabeth River represents a unique aquatic habitat for bottlenose dolphins. Heavily urbanized, the entire river is bounded almost totally by industrial, urban, suburban, commercial shipping and military facilities. Tidal in nature, total water flow is low. This river is ranked as one of the most polluted on the east coast. Dolphins are migratory in this area, appearing from May through October. Our studies were undertaken during 2000 from May to August, and from November to

December, and in 2001 from January to October. Standard small boat passive observation techniques were used, along with photography of individuals. A total of 72 cruises were made with 41 encounters in the two years. In 2000, 125 individuals were identified by photo identification, and a Caughley-recapture estimate was used to give a population estimate of 216. In seasonal terms, the dolphins appear in small numbers in April and May, increasing in June to a peak mean of 40 animals sighted per encounter in July. This mean decreases to 27 in August and September, and drops to 0 from November to March. Seasonally the group size ranges from 1 to over 80. Encounters per cruise peak at a mean of 1.00 in July, 0.62 in August and 0.76 in September. Behavioral observations include stereotyped bridge crossing behavior, a marked preference for a narrow (~20 m) track while passing Craney Island. Despite a peak of births in the area from May to June, there is little mating during June or July, with the incidence of sexual activity peaking in September.

3. 3:35 Squeak: after hours

Nancy M. Wilson, Randall Caton, *CNU*

The purpose of this project was to develop an interactive educational experience for middle school students using Squeak. Squeak is a multi-faceted application for object-oriented design and multimedia applications. It affords opportunities to users of all ages: from elementary school children to experienced programmers. This introductory research seeks to expose the education and computer science community to the realm of possibilities for developing and modeling educational products in the Squeak environment. Currently supported by the Viewpoints Research Institute in Glendale, CA and originated by Alan Kay, the originator of the object-oriented paradigm and Smalltalk, Squeak is an application with unlimited potential. Viewpoints Research Institute seeks to provide a "progressive learning" environment that enables students to develop their creative skills as well as technological skills. Squeak is available as a plug-in and is pre-dominantly platform independent. The user only needs to download the application and create a new project in order to explore the world of Squeak. The goal of this project was to create an activity in Squeak for middle school students where they could learn about the Northern Lights. Students would be encouraged to perform critical thinking in order to determine which other planets in our solar system may experience the same phenomenon. The activity is centered around a "book" that explains various concepts including: magnetism, planetary temperature, mean density, solar wind, etc. What will be presented are the history of Squeak, the application, framework, utilization, the "Northern Lights" project, and the overall goal of this research. It is hoped that by bringing recognition to the Squeak project and its unlimited potential, that more educational tools may be developed for our K-12 students.

4. 4:00 Methane emissions from melting permafrost sites in northern Alberta, Canada

Michael Harrison, Gary Whiting, *CNU*

Northern boreal peatlands are enormous stores of carbon, with the northern reaches of this region dominated by permafrost. Recently, permafrost fragmentation from melting has increased, due to perceived climate change and global warming, creating discontinuous permafrost. These sites are characterized by a permafrost "plateau" surrounding a collapsed, internal "lawn", with distinct vegetation changes associated with the two features. This study determined the CH_4 emissions from discontinuous permafrost areas. A closed chamber system was used to measure CH_4 emissions from selected plots on the permafrost plateau and on the internal lawn. Two transect sites were compared. HL2 exhibited a maximum CH_4 emission of $15.11 \text{ mg m}^{-2} \text{ hr}^{-1}$ in the internal lawn, with a minimum of $0 \text{ mg m}^{-2} \text{ hr}^{-1}$, in the permafrost plots. HL5 had a maximum emission of $8.85 \text{ mg m}^{-2} \text{ hr}^{-1}$ in the internal lawn, with a minimum emission on the permafrost plateau of $-0.15 \text{ mg m}^{-2} \text{ hr}^{-1}$. Seasonal CH_4 emissions reached a maximum around late August for both HL2 and HL5. This increase in methane flux seems to be most closely related to an increase in water table position. All melt plots exhibited a much higher water table with respect to soil surface.

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Paideia (pi-DAY-uh): the classical Greek education of liberal learning, which was believed to develop the intellectual, moral and aesthetic capacities.