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Symposium Planning Committee 2004

Eric Gottlieb (Natural Sciences)
Eric Henager (Humanities)
David Jilg (Fine Arts)
Thomas McGowan (Social Sciences)
Richard Redfearn (Natural Sciences)
Sonia Singh (Student Representative)
Katie Jameson (Student Representative)
Lindsay Moody (Student Representative)

Abbreviated Schedule:

Plenary Lecture: Tuesday, April 27

**Dr. Van Savage, B.S. Physics, Rhodes College, 1996; Ph.D. Physics,
Washington University, 2001**

Reception: Hyde Hall 6:30 pm
Lecture: 201 Kennedy Hall 7:15-8:15 pm

“Resource distribution networks and biochemical reaction kinetics: a unifying approach to

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Humanities Oral Presentations – Session 1

108 Buckman, beginning at 1:00 pm until 3:40 pm

1:00-2:20 Panel: Authenticating (Legitimizing) PTw 13.9 0 0 13.9 725.859Tm(y)TjETBT/0ics:

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3:20-3:40 **A Sisterhood of Patriarchy: Sororities and Gender Norms**

Caroline Bishop

Faculty Mentor: Dee Garceau

Department of Women's Studies

In a society in which feminism has become a respected political and academic endeavor, it is tempting to look to college sorority as an institution that might offer positive reinforcement of feminist ideals and a truly transformative concept of "sisterhood". One might hope that the women in these sororities have learned to work together to erase the practices of patriarchy. However, in my paper I utilize numerous studies and the critical examination of my own experiences to prove that the college sorority does more to promote than to obliterate the androcentric model. I demonstrate that it is through the process of institutionalization that these women come to accept that the end result of the sorority experience ought to be homogamy (marriage with a man of appropriate social and ethnic background). Thus, united with the common goal



The paper evaluates four specific paintings in which appear reoccurring symbols such as a crown, a halo, or a famous black cultural icon. Basquiat's art uses these symbols as an exposition of and (alternative to) the roles superimposed onto a collective black psyche by socially constructed ideals of "blackness." Within the parameters

purpose of determining the costs involved with public education is to examine the limitations on involvement for low-income students, and to assess the accessibility of these school necessities to the working poor.

“Memphis Daycares: Are You Getting What You’re Paying For?”

Sara Connaughton

Ashley Wells

Lauren Dodd

Becca Eza

Jenny Schneider

Faculty Mentor: Gail Murray

Department of History

Our project investigates the availability and quality of low-cost daycares in Memphis, Tennessee.

1:40-2:00 **Cooperative and creative storytelling of fantastic worlds: An ethnographic look at “Dungeons and Dragons.”**

Ryan Thames

Faculty Mentor: Professor Susan Kus

Department of Anthropology and Sociology

Ethnographic fieldwork involving participation in another’s culture allows the social scientist to go beyond second-hand research and distanced observation to achieve first-hand engagement with a cultural scene and an experiential rapport with members of the culture studied. The method of participant-observation has proven invaluable to my understanding of the cultural scene of “role-playing” gamers. “Role-playing” games such as “Dungeons and Dragons” and their “gamers” are often stigmatized due to the use of “alienating” jargon and involvement in fantasy themes that appear to non-gamers as a deliberate distancing from mainstream society and “reality”—stigma not attached to video games with similar jargon and themes. Through participation in sessions of a game of “Dungeons and Dragons” and dialogue with players and a “game-master”, I discovered another side to this oft-misunderstood culture. Such “gaming” elicits active and creative imagination instead of “video stupor”. It utilizes dice and rules to avoid t

study attempts to focus the lights and “camera” on the action of the cultural scene behind the movie scenes being filmed on the set of one independent film production.

2:40-3:00 ***Break***

3:00-3:20 **De Cleyre Cooperative: “The ‘real’ Real World” of Communal Living**

Mary Claire Giffin

Faculty Mentor: Susan Kus

Department of Anthropology/Sociology

The art of ethnography allows the field of anthropology to introduce different cultures or aspects of “other” cultural scenes to an audience often unaware and uneducated about them. Ethnography educates the world about the world, and therefore can bring understanding to the self through the “Other.” This semester I engaged in an ethn

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system were significantly more efficient than trades made before it. Secondly, by assuming a no-arbitrage condition holds, we can estimate the point values for each of the draft pick as determined by the terms of trade between teams. From this, we can test whether these values are significantly different from those assumed under Johnson's system, that is, determine if the market presents systematic arbitrage opportunities.

2:40-3:00 **The Determinants of Senate Voting Patterns and International Trade Agreements:
The Cases of NAFTA and GATT**
Emily Costarides

methodology, each player's statistics can be transformed into a marginal revenue product that they generate for their team. The marginal revenue product can then be compared with the salary that they actually made to determine whether players are over or underpaid. I believe that over and under payment will vary with the experience of each player. Players who are eligible for free agency will probably be overpaid, whereas those who are not eligible for free agency are likely to be underpaid.

3:40-4:00 **Factors Affecting Test Scores in Tennessee Public Schools**

Jennifer Dill

Faculty Mentor: Nick McKinney

Department of Economics

Labor Economists often explore the benefits of additional years of education for a worker. Within the field of education, school boards have recently debated whether to pay teachers according to their experience and education or according to their students' standardized test scores. Rather than looking at how additional years of education enhance the salaries of teachers and faculty, this paper explores how additional years of education affect the education of students in Tennessee during 2002.

variation for these measurements which is defined as $100\% \times \text{standard deviation} / \text{mean}$. Our measurements yielded a coefficient of variation of 2.1%. Thus we conclude that changes in bone density should produce changes in ultrasonic backscatter that are larger than 2% for this diagnostic technique to be clinically viable.

10:40-11:00 **A Video Imaging Technique for Measuring Cardiac Mechanical Response to Weak AC Stimuli**

Taylor Whaley

Chip Hartigan

Dr. Nicolle Kramer, Department of Biomedical Engineering, University of Memphis

Dr. Robert Malkin, Department of Biomedical Engineering, University of Memphis.

Faculty Mentor: Dr. Brent Hoffmeister

Department of Physics

Current flowing from a power source through a patient, via medical equipment, known as leakage current, poses a serious threat to some patients through the induction of ventricular fibrillation (VF). Furthermore, medical instruments that pass current medical standards for leakage ($50 \mu\text{A}$) are potentially dangerous through the threat of hemodynamic collapse at electrical levels below the VF threshold. The objective of our study is to confirm the known electrical and mechanical activity of the heart during weak AC stimulation with a visual procedure that captures mechanical displacement. By visually recording displacement, we hope to surpass the current understanding of heart arrhythmias by correlating visual cardiac displacement with mechanical force data. The advantage of the current study lies in the use of in-vivo sensor probes placed in the heart, measuring mechanical displacement of contractile forces. We foresee the correlation of the visual displacement data with the mechanical force data during sinusoidal rhythm in hopes of establishing an effective non-invasive technique for visually recording mechanical displacement.

11:00-11:20 **Hamiltonicity in the Twice-Punctured Hypercube**

Adam Richardson

Faculty Mentor: Eric Gottlieb

Department of Mathematics

The vertices of the n -dimensional hypercube Q_n may be represented by the set of all binary strings of length n , with two vertices connected by an edge if and only if their binary string representations differ in exactly one position (i.e. vertex 001 is connected to vertex 000, but not to vertex 010). It is well known that, for any positive integer value of n , it is possible to move along the edges of the hypercube from one vertex to another in such a way that one visits each vertex exactly once and ends on a vertex that is connected to the vertex from which one began. Somewhat surprisingly, if one “shaves off” two vertices from Q_n and smoothes over the edges leading from those vertices, the resulting “punctured hypercube” has this same property if and only if the removed vertices are an odd number of edges away from one another. We summarize an original proof of this statement and show how this result may be applied to the question of whether this property is preserved when one removes four vertices in this manner from a hypercube of dimension greater than three. We show that the property holds for this last figure if and only if exactly two of the vertices removed have an even number of ones in their binary string representation.

11:20-11:40 **Functional MR Imaging of Attention De**

Children surviving cancer or cancer therapy that affects the central nervous system are at risk for neuropsychological and cognitive impairments impacting academic performance and quality of life. Evidence from behavioral studies suggests cancer and cancer therapy induced deficits in the ability to sustain attention underlie these impairments. Functional MRI (fMRI) was used to investigate the physiological bases for these attention deficits. Subjects were school-aged (6-17) survivors (n = 24) of pediatric brain tumors or leukemia at least one year off treatment, and healthy siblings (n = 11) of the same ages. Results indicate significantly decreased volume of activation ($p = 0.05$) in survivors (694.29 voxels) compared to healthy siblings (1480.67 voxels). Average distances activated regions from target regions of interest were larger ($p < .01$) for survivors (10.43 voxels) than healthy siblings (5.98 voxels). These results indicate reduced volume and concentration of cortical activation in survivors compared to healthy siblings.

11:40-12:00 **Effects of Plastic Implants on Magnetically Induced Currents in the Body**

Andrew R. Shores

Faculty Mentor: Brent Hoffmeister

Department of Physics

Magnetic Resonance Imaging (MRI) is one of the leading medical imaging techniques in use today. MRI machines use rapidly switched gradient magnetic fields to localize the NMR signals to produce an image. Time varying magnetic fields su

age.

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We studied the handedness of two giant panda *Ailuropoda melanoleuca* at the Memphis City Zoo from October 2003 to May 2004. The predominate usage of paws appeared to be sexually dimorphic; the male showed a preference for right paw usage and the female left paw usage. We recorded the usage of paws during feeding, grooming, and all other interactions. By comparing the repetitive use of each paw during feeding, grooming, and other activity, we detected a preferred usage by each individual panda. The possible explanations were analyzed and it was concluded that the difference in usage could be attributed to a sexual preference. Finally, we compared the results of the male to that of the female and based our conclusions on data collected and previous literature.

Natural and Social Sciences Posters – Session 1

Frazier Jelke Lobby beginning at 1:15 pm until 2:30 pm

All posters will be available for viewing from 1:00 to 4:00. In a specific Session, posters will be manned by one of the student collaborators for that poster during the time specified.

Mechanisms of Immune Evasion: Development of Murine Gammaherpesvirus as a Model for Human Epstein Barr Virus Infection

Andrew Burk

Dr. Jeff Sample, St. Jude Children's Research Hospital

Faculty Mentor: Dr. Gary Lindquester

Department of Biology

Murine Herpesvirus (MuHV-4) serves as a model sy

Also, the identity of combustion offgases of biodiesel vs. petroleum-based diesel will be compared uf.411(u)Tj10.02 0 0 10.02 127.916

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(R205) is hyperbranched, hyperseptat

The study investigated the effectiveness of animated agents within the iSTART trainer. Animated agents are life-like characters that reside in virtual worlds and serve as tutors or co-learners to help students to achieve pedagogical goals. In the iSTART tutorial, animated agents introduce to students meta-cognitive reading strategies such as comprehension monitoring, bridging, and comprehension, and help the students apply them when reading scientific texts. The current iSTART trainer with agents was compared to agent and text, voice and text, text-only, and voice-only tutorials to examine whether agents enhance students' preference and performance. One hundred and eighty students from Rhodes and University of Memphis participated in the study. Preliminary results showed overall preference was ordered in terms of condition com

Animal Behavior “Mini-Symposium”

Frazier Jelke Lecture Hall C, beginning at 1:00 pm until 4:00 pm

Session organizer: Tony Becker, Department of Biology.

1:00-1:25 **Maternal and Non-Maternal Interactions of an Infant *Colobus abyssinicus***

Siamac Salehy

Jon Berger

Gaines Fricke

Queena Chae

1:25-1:50 **Age-Related Mock Fighting and Aggression of *Zalophus californianus* Sea Lions in Captivity**

Lindsay Chapman

Elaine Odle

Stacie Beverly

Julie Bishop

1:50-2:05 ***Break***

2:05-2:30 **Approach and Response Behaviors between Male and Female Baboons**

Emily Bryson

Matin Ghafuri

Deana Satar

Tonya Thurber

2:30-2:55 **Facial Expression and Social Hierarchy in the Bonobo, *Pan paniscus***

Jennifer Herrold

Chip Hartigan

Moss Driscoll

2:55-3:10 ***Break***

3:10-3:35 **Play Behavior in Jaguar, *Panthera onca*, Cubs: a Practice for Hunting in the Wild, or a Recreational Activity?**

Lauren Fay

Lisa Harsch

Desiree Steimer

Carolyn Westfall

3:35-4:00 **Preening and Feeding Behavior in Leadbeater’s Cockatoos, *Cactua leadbeateri***

Lydia Andras

Michael Burke

Holly Heath

Justin Marler

Rhodes Institute for Regional Studies

205 Kennedy, beginning at 10:30 am until 11:45 am; 1:00 pm to 2:45 pm

The Rhodes Institute for Regional Studies held its inaugural session during the summer of 2003, during which students spent eight weeks working on inter-disciplinary research papers with a regional focus. Rhodes Institute Fellows originally presented their work to each other at the end of last summer's Institute. Today they present their papers to the entire campus community.

11:15-11:40 **The W.C. Handy Blues Aw**

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lead, and EPA regulations on lead toxins in the environment. We will also be addressing some of the lead toxin information the Sierra Club has found with their Water Sentinels program. Additionally, we will be discussing studies done by other colleges and universities around the United States which may provide a model for a service learning project for Environmental Geology next year.

1:20-1:40 **Vertical Soil Analysis Extended**

Katie Lane

Wendy Brooks

Faculty Mentor: Carol Ekstrom

Department of Physics

Sponsor: Environmental Geology 214

The Cypress Creek floodplain in the Vollintine-Evergreen neighborhood is known to be contaminated with pesticides, which compa0 0 10.02 205.5226 5iw02 72.00034 651.36023 BDC 59.01994 Tm(ic5le.02 387.45363 570.53924

2:20-2:40 **Less Water = More Pizza**

Jenn Bulmash

Rachel Hays

Faculty Mentor: Carol Ekstrom

Department of Physics

Sponsor: Environmental Geology 214

Many college students do not realize the environmental implications of their actions, such as simply taking a shower in which 9-12 gallons of water are used per person, per day. This audit attempts to see if the residents of Stewart Hall will decrease their water consumption due to increased awareness of water usage and the incentive of a pizza party. The water meter at Snowden and University shows how much water is being used. Taking two measurements for any one given period of time, in this case fou

3:20-3:40 **Saving Memphis' Riverfront**

Marc Lissauer

Faculty Mentor: Michael Kirby

Interdisciplinary Studies

Sponsor: Urban Studies, GIS

The historic founders of Memphis designed the riverfront promenade as public area for the use of Memphians. The Riverfront Development Corporation (RDC), with the authority of the local government, designed a plan for the area focusing on commercial and residential development. The plans breach the originally designed purpose of the land. In addition, several buildings of historical significance will be demolished. Using successful riverfront development strategies from other cities, this project will create a plan for the riverfront promenade to preserve its historical significance. A separate plan for commercial and residential development will be created to displace the RDC's interest in the area. Using Geographic Information Systems (GIS) A map of downtown will be dev

heavy dependence on the automobile and the limited role of mass transportation Memphis is spiraling into a similar air quality disaster just like the city of Atlanta

historical significance. A separate plan for commercial and residential development will be created outside of the area dedicated for public use. Geographic Information Systems (GIS) will use a map of downtown which includes information about the use, condition, and type of the building or property, to determine the area that would most benefit from a particular plan for commercial and economic development

The Effect of Water Temperature on the Frequency of Aggressive and Non-aggressive Behaviors in Crayfish

Julie Bitely

Tiffany Burch

Alexis Davis

Sophie Gatins

Abbie Tucker

Faculty Mentor: Steven Brewer

Department of Biology

Intensity and Quantity of Aggressive Behavior between Opposite Sex Crayfish

Lori Fairchild

Akram Knefati

Therese Rapski

Cyrus Tanhaee

Faculty Mentor: Steven Brewer

Department of Biology

Gender Aggression in Crayfish

Lauren Bartling

Lynsey Major

Ke Qi

Kelly Reed

Faculty Mentor: Steven Brewer

Department of Biology

Male Agnostic Behavior in Crayfish With and Without the Presence of a Female

Anne-Marie Crifasi

Peter Hart

Matthew Law

Katina Papatopoulos

Faculty Mentor: Cate Fenster

Department of Biology

Conditioning Crayfish Behavior Using Electrical Shock Deterrents

Nauzie Jafari

Joshua Jeffries

Sini Nwaobi

Treniese Polk

Faculty Mentor: Cate Fenster

Department of Biology

The Effects of Substrate on Crayfish Bouts

Megan Benson
John Bordelon
Chris Ernst
Jeff Freyder
Faculty Mentor: Cate Fenster
Department of Biology

Crayfish Response to Light and Dark Environments

Sarah Chikowski
Sara Connaughton
Lindsay Joe
Jessika Morris
Faculty Mentor: Cate Fenster
Department of Biology

Crayfish Shelter-seeking Behavior as a Response to Light Intensity

Matthew Cain
Erick Isaacson
Brad Petkovich
Andrew Romeo
Faculty Mentor: Cate Fenster
Department of Biology

Competitive Aggression and Intrasexual Selection in Crayfish

Laura Hettinger
Monica Huerta
Shawn Paterakis
Bethany Reisner
Faculty Mentor: Carolyn Jaslow
Department of Biology

Does Texture Affect Crayfish Substrate Choice?

Sara Bransford
Teresa Bell
Melissa Ticker
Alison Lohse
Faculty Mentor: Carolyn Jaslow
Department of Biology

The Effect of Shelter Presence on the Agonistic Behavior of Male Crayfish

Adam Bohnert
Aaron Creek
Adam Robinson
Nick Stutzman
Faculty Mentor: Carolyn Jaslow
Department of Biology

Agonistic Behavior and Interference Competition in Male Crayfish

Elizabeth Erny

Harold Jackson

Ashton Potter

Ed Smith

Faculty Mentor: Carolyn Jaslow

Department of Biology

Do Crayfish Show a Preference for a Specific Type of Protection: Camouflage or Barrier?

Hilary Mast

Lauren Kokajko

Susan Truss

Kristan Ward

Faculty Mentor: Carolyn Jaslow

Department of Biology

Does Size Influence Behavioral Interactions Between Female Crayfish?

Emily Backues

John Gehrig

Christy Simecka

Will Sheftall

Faculty Mentor: David Kesler

Department of Biology

Crayfish Habitat Preference Between Gravel, Rock, and Boulders

Grant Bale

Courtney Cockerell

Acknowledgement and Special Thanks to the following contributors: