APRIL 29, 2005
MEMPHIS, TENNESSEE

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Symposium Planning Committee 2005

Courtenay Harter (Fine Arts)
Eric Henager (Humanities)
Chris Mouron (Natural Sciences)
Thomas McGowan (Social Sciences)
Richard Redfearn (Chair, Natural Sciences)
Katie Jameson (Student Representative)
Sonia Singh (Student Representative)

Symposium at a Glance: for Friday, April 29, 2005

F = Fine Arts H = Humanities N = Natural Sciences S= Social Sciences

Event:	9:00	10:00	11:00	12:

Fine Arts Oral Presentations–Session 1

417 Clough, beginning at 10:40 a.m. until 12:00 noon

Session Chair: Hamlett Dobbins, Department of Art

10:40-11:00 **The Adventures and Travelings of Jenny Rogers**

Jenny Rogers
Faculty Mentor: Hamlett Dobbins
Department of Art

Making maps has been a way for me to figure out, literally and figuratively, where I have been and where I am going artistically. Projects include an atlas, a personal chronology, a project in which I send people treasure maps in the mail that will lead them to a buried treasure that I have selected for them individually as well as other prs

a transitional stage of the development of instrumental music as it moved away from vocal models to become anee

music program are the demands of both past and future, the risks of entertainment in worship, and the role of the music director.

3:00-3:20 **"A garden locked…a fountain sealed": The Song of Solomon in Botticini's *Nursing Madonna***

Georgianna Bowersox
Faculty mentors: Victor Coonin[1], Ellen Daugherty[1] and Gail Streete[2]
Departments of Art[1] and Religious Studies[2]

With engagement of artistic realism and the explosion of humanist thought, 15th century Italian Renaissance society became focused on their relationship with the spiritual in terms of the everyday. Reflecting these notions within art, religious i

The Department of Music
presents

The Gladys Cauthen Orchestra Soloist Competition

Thursday, April 28, 2005 — 4:00 p.m., Tuthill Performance Hall

Concerto for Flute and Orchestra in G major, K. 313 — Wolfgang Amadeus Mozart (1756-1791)
Allegro maestoso
Leigh Bonner, flute
JemmiLou Rye, piano

Concerto for Violin and Orchestra in G minor, Op. 26 — Max Bruch (1860-1920)
Finale: Allegro energico
Brittany Bostick, violin
Tom Barr, piano

Concerto for Piano and Orchestra in D minor, K. 466 — Wolfgang Amadeus Mozart (1756-1791)
Allegro
Kayti Fan, piano
Tom Bryant, piano

Suite Modale for Flute and String Orchestra — Ernst Bloch (1860-1959)
Emma O'Hagan, flute
Brian Ray, piano

"Exsultate, jubilate," K. 165 — Wolfgang Amadeus Mozart (1756-1791)
Exsultate, jubilate — Caroline King, soprano
Brian Ray, piano

Concerto for Flute and Orchestra in G major, Op. 29 — Carl Stamitz (1746-1801)
Allegro
Shruti Acharya, flute
Brian Ray, piano

"Non più, tutto ascolt…Non temer, amato bene," K. 490 — Wolfgang Amadeus Mozart (1756-1791)
Amy Moore, soprano
Brian Ray, piano

Andante Spinato and Grande Polonaise Brillante for Piano and Orchestra in E-flat major, Op. 22 — Frédéric Chopin (1810-1849)
Rene Orth, piano
Brian Ray, piano

forma a esta identidad auto-determinada. En su obra, esta región mítica de los aztecas abarca más que su significado mexica y la concepción del movimiento chicano de los años 70. El nuevo Aztlán es un espacio sin fronteras que incluye a todos los marginados, los pobres, las mujeres y hasta los homosexuales.

2:00-2:20 **La destrucción del arquetipo y la construcción de la verdad: La Virgen de Guadalupe en *El eterno femenino***

Jenna Sadar
Faculty Mentor: Amanda Irwin
Department of Modern Languages and Literatures

Desde hace siglos se ha puesto la Virgen María como el modelo seguir para la mujer. No es muy sorprendente, entonces, que al aparecer la Virgen de Guadalupe ella también se convirtió en un arquetipo literario.; más que eso, es un icono cultural en México. Sin embargo, ponerlas ella y a otras figuras de la historia mexicana es sumamente problemático para la identidad de la mexicana. En su única obra teatral, *El eter*

3:00-3:20 **Consequences of the Auricular Veneer in Chariton's *Callirhoe*: Translations or Transmogrifications?**
Zach Harris
Faculty Mentor: Kenny Morrell

Undergraduate Research an

11:40-12:00 **Finding Association Constants for Ionic Molecules using Monte Carlo Integration**

Paul Sinclair
Faculty Mentor: Shubho Banerjee
Department of Physics

Research into the condensation of ionic systems requires calculating a six dimensional integral that relates the number of free ions to the number of neutral molecules. Regular methods of integration, such as using the software *Mathematica* prove inadequate. Instead we use Monte Carlo Integration that uses random sampling of the integrand to estimate its average. Multiplying by the limits of integration for each variable then yields an estimate of the integral with accuracy that depends on the number of sampled points. The process is easily expanded tl

3:20-3:40 **Role of MRP4 in Testosterone Transport**
Matthew D. Cain

1:20-1:40 **Reducing Expression of Neuronal Interleukin-16 using Small Interfering RNA**

Sinifunanya E. Nwaobi
Aaron Creek
Faculty Mentors: Jay A. Blundon and Catherine P. Fenster
Department Biology

Neuronal interleukin-16 (NIL-16) is a cytoskeletal associated protein found exclusively in the cerebellum and hippocampus. NIL-16 selectively interacts with several neurotransmitter-gated and voltage-gated ion channels that are important for neural signaling. We believe that the interaction of NIL-16 with these ion channels m

migration in response to light and dissolved oxygen concentrations in the water column. I hypothesize that as oxygen stratification intensifies seasonally, dissolved oxygen rather than light will become the greater factor in determining average daytime and nighttime depths.

2:20-2:40

of hydrogen peroxide was established, though in either case further refinements are necessary before clinical implementation of the new technique is possible.

3:20-3:40 **Complementation of a Calcofluor-hypersensitive mutant in *Aspergillus nidulans* by a novel transmembrane protein**

Stanley Vance, Jr.
Faculty Mentors: Darlene Loprete[1] and Terry Hill[2]
Departments of Chemistry[1] and Biology[2]

The cell wall serves a variety of roles pertinent to fungal reproduction, grow

11:00-11:20 **Changes in Capital flows into South Korea during the Asian Financial Crisis**

Alex Hornaday
Faculty Mentor: Nick McKinney
Department of Economics and Business Administration

Although the Asian Financial Crisis began in Thailand and subsequently spread to many othep

12:00-12:20 **"The Market's Reaction to the September 11th Attacks: An Empirical Investigation of" the Aerospace and Defense Industry**

Pratik Patel
Faculty Mentor: Nick McKinney
Department of Economics and Business Administration

Though little has been written about the market's reaction to the September 11th terrorist attacks, stock market behavior has been the subject of much academic research for nearly a century. First introduced by Eugine Fama in 1970, the efficient market hypothesis (EMH) suggests that security prices reflect all available information. On this basis, financial markets are thought to be rationale and efficient in reflecting the underlying value of firms. Beginning in the 1980's, however, researchers found certain anomalies that caused them to question the efficiency and rationality of capital markets. The consensus among experts is that past notions of market efficiency are flawed in explaining the volatile nature of the stock mark

3:00-3:20 **“It’s only natural!”: Small independent natural food markets in a world of artificial colors, flavors, and large corporations**

Stephanie Goldstein
Faculty Mentor: Susan Kus
Department of Anthropology/Sociology

Ethnographies allow us to step into the world of the “other” by access of participant observation, and doing ethnography provides an opportunity to have first-hand experience with cultures and cultural scenes that are so different from our own. In order to understand the importance of organic and natural markets in the community I undertook an ethnography during this semester observing and interviewing the owner and employees of Square Foods, an independently owned organic food store in Midtown, Memphis. Midtown is home to many alternative lifestyles and beliefs, but one thing that many people in the area have tended to support in the last fifteen years is natural and organic food. As the owner of Square Foods told me one day, “pure and unadulterated food is a necessity, not a privilege”. Even though people’s individual lifestyles may be vastly different from one another, independent natural food markets tend to create th

Social Sciences Oral Present0ifacs – Sessfact4

302 Clough, be ſning at 1:00 pm until 4:00 pm

SessfactChair: Marsha Walton, Department of Psychology

1:00-1:20 **Exploring Campus Climate and Racism through Focus Groups**

Stephanie Albury
Kristina Dean
Albani Walker
Faculty Mentor: Anita Davis
Department of Psychology

This research is a continuation of research conducted actthe campus climate of Rhodes College during the Fall 2004 semester. Focus groups comprised of approximately 10 students will meet to further discuss issues of inclusn

Indeed, violence was used often to describe diverse areas of activity, such as communication, effort, politics, studying, relationships, and others. I found that less severe violence metaphors were used more than more deadly ones, but that highly destructive violence was still used frequently to describe experience. Gender differences also emerged; though men's and women's metaphors described similar genres of violence, women's metaphors tended to be less severe than men's. Women were also far m

Natural and Social Sciences Posters – Session 1: Natural Sciences

Frazier Jelke Lobby beginning at 1:00 pm until 3:00 pm

Session Chair: Richard Redfearn, Department of Chemistry

All posters will be available for viewing from 1:00 to 4:00. At least one of the student collaborators will be in attendance and available for discussion from 1:00-3:00. If a specific collaborator is presenting, that coauthor name is underlined.

Measuring the Rotational Velocity of the Sun Using the Doppler Effect and a Homemade Spectrometer

Kevin Andring
Drew Scott
Faculty Mentors: Brent Hoffmeister and Jay White
Department of Physics

Spectrometers are devices that use diffraction to separate a light source into a continuum of wavelengths. By projecting light through a diffraction grating, emission or absorption spectra can be recorded and used to analyze characteristics of the light source. When the source of the light has a velocity relative to an observer, these wavelen2 0 0 1s 44448.61995 Tm(grat)Tj6gt.63995 Tm(n2 0hsj10.02 0 0 10.02 449.120 10.02 439.98637 43.0015 Tc 0 Tw 10.2 43i98

The Diffusion of Heat through Metal

Scott Barrows
Adam Keckler
Whitney Tidwell
Faculty Mentors: Brent Hoffmeister and Shubho Banerjee
Department of Physics

The diffusion equation is a partial differential equation that d

The Gut-Reactor Theory and Gia[illegible]nt Pandas: [illegible]rnal Digesta Mixing as a Complication for Intake Modeling

[illegible] Moss Driscoll
[illegible] Allen Jack[illegible]

[illegible]andas (Ailuropoda melanoleuca) have the ability to internally mix digesta by [illegible]ed trials on a male and female giant panda at the Memphis Zoo. To test the pandas for internal digesta mixing, two separate colors of corn kernels were fed to the pandas at different time intervals (5, 10, and 15 minutesP1y398

A Microstructural Study of Ultrahigh Molecular Weight Polyethylene using TEM and Pyrolysis GC-MS

Terese A. Holm[1]
Carl W. Carlson[1] Rhodes '04
M. Andrew Scott[2]
Karyn E. Spence[2] Rhodes '03
Matt Shanks[2]
Asit K. Ray[3]
Faculty Mentors: Richard Redfearn[1] and Ann Viano[2]
Departments of Chemistry[1] and Physics[2], Rhodes College; Department of Chemical and Biochemical Engineering, Christian Brothers University[3]

Ultrahigh molecular weight polyethylene (UHMWPE) is a commonly used material in human joint prostheses. The combination of its non-reactivity in the body and its mechanical properties make UHMWPE ideal for cartilage replacement in artificial knee and hip joints. A drawback is the material's production of submicron wear particles, which can cause adverse biological reactions. Post processing of the material with gamma-irradiation and annealing has been shown to reduce the production of these wear particles. While the effects of these treatments on the macroscopic properties of UHMWPE have been investigated, few researc

-transformation to be capable of phenotype rescue for each mutant. However, neither mutant strain
on in the ORF for AN4897.2, suggesting that the gene acts as a high copy suppressor. The
slated product of AN4897.2 is an

Generation of a recombinant murine herpesvirus containing the Epstein-Barr virus viral interleukin-10 (vIL-10) gene

Desiree Steimer
Faculty Mentor: Gary Lindquester
Department of Biology

Epstein-Barr virus (EBV), a highly pervasive human pathogen, expresses a unique viral interleukin-10 (vIL-10) gene that has striking homology to the human interleukin-10 (IL-10). vIL-10 has not previously been well ho) mcharacterized because of the narrow host range of EBV. To study the function of vIL-10 and its role in EBV pathogenesis, murine gammaherpesvirus (MHV) i

Natural and Social Sciences Poster Session

All posters will be available for viewing from 1:00 to 4:00. At least one of the student collaborators will be in attendance and available for discussion from 2:00-4:00 pm. If a specific collaborator is presenting, that coauthor name is underlined.

Recognizing Diversity: Students' Experiences and Opinions on Diversity Acceptance in a Small Liberal Arts College Environment.

Michael Bray
Marisa Adams
Lindsay Sears
Faculty Mentor: Anita Davis
Department of Psychology

Prior research examining diversity amongst college undergraduate populations tends to focus primarily on racial diversity or sexual orientation (Ancis, Sedaleck, & Mohr, 2000; Evans & Broido, 2002; Hurt

provide a more complete understanding of the U. S. campus climate. Results of the study suggest that anti-GLBT attitudes are present on small, southern, liberal arts institutions. Results also suggest that women are more tolerant and supportive of GLBT issues than are men. Data suggests that exposure to various forms of diversity corresponds to more pro-GLBT attitudes. High religiosity was found to be highly correlated to anti-GLBT attitudes. The results of this study are used to make recommendations for changes in campus climate. **i**

experiences at a small liberal arts college, such as motivatio

Lynx lynx Genome Analysis: Phylogenetic Analysis S6 Ribosomal Protein

Matthew D. Cain

Undergraduate Research and Cre0ifve Acifvit

3:00-3:20 **Remediation Technologies**

Alex Chambers
Faculty Mentor: Carol Ekstrom
Department of Physics
Sponsor: Environmental Geology 214

This project outlines the innovative and established treatment technologies for remediation of contaminated soils. It looks at isolation methods, separation methods, and destructive methods as well as *in situ* versus *ex situ* processes. These methods along with soil remediation case studies are used to as34.52036 618.844.72165 618.84007dr31 9 90c29 10.02 415.89235 618.84007 Tm(i)Tj107 Tm(-esses.)Tj10.02 0 0 10

we found that the area is both highly used by pedestrians, but also a very busy, somewhat unsafe traffic area. In collecting this da

Undergraduate Research an

Temperature Effects of Crayfish Behavior
Sarah Cassidy
Ambreen Mardhani
Deena Patel
Karina Van Sickle
Faculty Mentor: Rosanna Cappellato
Department of Biology

The Effect of Worm Odors on the Behavior of Crayfish
Krissy Eron
Brittaney Glazer
Kimberly Godwin
Kacie Ross
Katie Slimp
Faculty Mentor: Carolyn Jaslow
Department of Biology

Crayfish Light Preference in an Aqueous Environment
Casey Derbes
Grant Hayes
Kelly Hoth
Amy Ross
Kelly Brier San Miguel
Faculty Mentor: Carolyn Jaslow
Department of Biology

Male vs. Male and Male vs. Female: Is Crawfish Aggression Affected by Gender?
Frances Benoist
Amie Cahill
Elizabeth Killion
Emily Smith
Faculty Mentor: Carolyn Jaslow
Department of Biology

The Effect of Size Variation on Aggressive Behavior and Bout Victories Among Male Crayfish
Mary Landon Downs
Jeremy Foon
Nici Thomas
Daniel Vanaman
Faculty Mentor: Carolyn Jaslow
Department of Biology

Female Crayfish Agonist Behavior Due to Different Environments
Matt Ricke
Eddy Han
Joe Williams
Mark Scott

Acknowledgement and Special Thanks to the following contributors:

Session Judges: Rhodes Faculty (F = Fine Arts, H = Humanities, N = Natural Sciences, S = Social Sciences)

Erin Harmon (F)
David Mason (F)
David Jilg (F)
Anna Dronzek (H)
Chris Seaton (N)
Shubho Banerjee (N)
Jay Blundon (N)
Anita Davis (S)
J. Peter Ekstrom (S)
Daniel Arce (S)
Ellen Daugherty (F)
Timothy Powell (F)
Rocío Rodríquez del Río (H)
Gail Streete (H)
Loretta Jackson-Hayes (N)
Rosanna Capellato (N)
Mauricio Cafiero (N)
Bette Ackerman (S)
Tom McGowan (S)
Mark Smith (S)
Diane Clark (F)
Rebecca Rothman (F)
Alexandra Kostina (H)
Tom Cohen (H)
Ivaylo Ilinkin (N)
David Kesler (N)
Annette Teepe (N)*
Hyun-Jeong Joyce Kim (S)
Chris Wetzel (S)
Marshall Gramm (S)
*working with student volunteers

Session Judges: St. Jude Children's Research Hospital Mentors

Monica Arroyo, Ph.D., Department of Structural Biology
Stacy Donovan, Ph.D., Department of Developmental Neurobiology
Steven Fenster, Ph.D., Department of Developmental Neurobiology
Adam Gromley, Ph.D., Department of Genetics/Tumor Cell Biology
David Vigerust, Ph.D., Department of Infectious Diseases

Musicians: Rhodes Jazz Combo and Plenary Lecture pianist

John Bass (Director)
Josh Jefferies (trumpet)
Matthew Horton (alto saxophone)
Ryan Nall (guitar)
Joe Noel (piano)
Rene Orth (piano)
Nate Smith (drums)
Stephanie Swindle (bass)
Charles White (tenor saxophone)
Megan Norman (pianist for the Plenary Lecture reception)

Special Session Organizers

Tony Becker: Animal Behavior
Carol Ekstrom: Environmental Research: Cypress Creek Oral Session
Carol Ekstrom: Environmental Research: SWEEP events
Michael Kirby & Carla Shirley: the Urban Studies Charrette
Rosanna Cappellato, Carolyn Jaslow, David Kesler: Biology II Laboratory Posters
Gary Lindquester: Molecular Biology: Bioinformatics Posters

The Office of Dean of the College for Financial Support, and the Center for Academic