

# Undergraduate Research and Creative Activity Symposium

APRIL 28, 2006  
MEMPHIS, TENNESSEE



## **Abbreviated Schedule**

### **The Gladys Cauthen Orchestra Soloist Competition: Thursday, April 27**

*Tuthill Performance Hall in Hassell Hall, 3:30 p.m.*

### **Plenary Lecture: Thursday, April 27**

**Ms. Kandace K. Holladay, Instructor of Spanish, University of Central Florida**

**B.A. Spanish, Rhodes College, 1996; M.A. Spanish, University of Central Florida, 2000; A.B.D. Spanish, University of Florida, 2005**

*Lecture: McCallum Ballroom 6:00-7:00 pm*

*Reception: Crain Lobby 7:15 pm*

**“The historical-political vision of Mexico in the drama of Marcela del Río, Elena Garro, Rosario Castellanos and Luisa Josefina Hernández”**

Four Mexican women playwrights use the theatrical genre to critique official versions of

**Fine Arts Oral Presentations – Session 1**

*417 Clough, beginning at 10:30 a.m. until 12:00 noon*

*Session Chair: David McCa*





3:00-3:20

**Sharp Emotions**

Rene Orth

Faculty Mentor: Brandon Goff

Department of Music

We all have

**Additional Fine Arts Contributions to URCAS 2006:**

**The Gladys Cauthen Orchestra Soloist Competition**

*Thursday, April 27, 2006*

*3:30 p.m.*

*Tuthill Performance Hall in Hassell Hall*

*The program is presented in its entirety on page 8, following.*

**CODA pARTy on the green**

*The Green, Friday and Saturday, April 28 and 29, 2006*

**CODA pARTy on the green**

*The program is presented in its entirety on page 9, following.*



**Fine Arts – The Gladys Cauthen Orchestra Soloist Competition**

***Tuthill Performance Hall, Thursday, 3:30 p.m.***

*Ah! perfido, spergiuro*, Op. 65

Emily Baldwin, soprano  
Tom Bryant, piano

Ludwig van Beethoven  
(1770-1827)

*Am Bach legnt unterm Schattenbaum*

Susan Wang, soprano  
Tom Bryant, piano

Johann Christian Bach  
(1735-1782)

Piano Concerto No. 21 in C major, K. 467

*Allegro maestoso*

Tatiana Cerna, piano  
Tom Bryant, piano

Wolfgang Amadeus Mozart  
(1756-1791)

*Laudate Pueri Dominum*, RV 601

Excelsus  
Sicut erat  
Amen

Amy Wells, soprano  
Tom Bryant, piano

Antonio Vivaldi  
(1678-1741)

Piano Concerto No. 3 in C minor, Op. 37

*Allegro con brio*

Jo Beth Campbell, piano  
Tom Bryant, piano

Ludwig van Beethoven  
(1770-1827)

*Le Nozze di Figaro*, K. 492

Voi che sapete  
Non so più cosa son, cosa faccio

Lindsey Cloud, soprano  
Debbie Smith, piano

Wolfgang Amadeus Mozart  
(1756-1791)

*Linda di Chamounix*

O luce di quest' anima

Amy Moore, soprano  
Debbie Smith, piano

Gaetano Donizetti  
(1797-1848)

Piano Concerto No. 1 in E-flat Major, S. 124

*Allegro maestoso*

*Quasi adagio*

*Allegro marziale animato*

Rene Orth, piano  
Brian Ray, piano

Franz Liszt  
(1811-1886)

**Fine Arts – CODA pARTy on the green**

*The Green, Friday and Saturday*

**CODA pARTy on the green**

**CODA Scholars:**

Daniel Frankel

Lauren Kennedy

Evie Plumb

Meredith Reynolds

Casey Roman

Andrew Whaley

Stephanie Wilson

Christine Zhu

Staff Mentor: John Weeden, Assistant Director, CODA Scholars program

The arts have long been the medium by which humans express their inner vision and creativity. It is the intention of the CODA Scholars to heighten t



11:45-12:10 **The Antarctic Great Game: The United States and Oil Reserves in the South Pole**

Adam Doupé

Faculty Mentor: Lynn Zastoupil

Department of History

In *Colossus*, Niall Ferguson argues that the United States can in many ways be seen as a





Progressive Era. Overton Park firmly established a culture of leisure at the turn of the century in its role as a place of weekend family refuge. In spite of these positive effects, Overton Park also served as a testament to the negative impact of Southern Progressivism, a paradoxical development process in which white city leadership encouraged the betterment of African Americans while simultaneously promulgating hierarchical segregation. Though city leaders committed themselves to ideals of social reform and improvement, racism





**Humanities Oral Presentations — Session 5**

***108 Buckman, beginning at 1:30 pm until 3:15 pm***

***Session Chair: Eric Henager, Department of Modern Languages and Literatures***

1:30-1:55 **Laura Esquivel: una voz femenina en una sociedad machista**

Brandi Pippin

Faculty Mentor: Rocío Rodríguez-del Río

Department of Modern Languages and Literatures

Mexican novelist Laura Esquivel has captivated her readers time and time again with her creative narrations of women and love in Mexican society. Gender roles in Mexico of the past and today are dictated by “Machismo” but feminism has begun to find its roots in places such as the novels of Laura Esquivel. Her first novel, *Como agua para chocolate* (1989) provides a truly femini



**Humanities Oral Presentations — Session 6**

***110 Buckman, beginning at 1:30 pm until 3:15 pm***

***Session Chair: Katherine Panagakos, Department of Greek and Roman Studies***

1:30-1:55    **Scythian Tombs and Burial Rituals in Herodotus and Beyond**

Mackenzie Zalin

Faculty Mentor: Katherine Panagakos

Department of Greek and Rom

2:45-3:10 **The Dual Nature of Ritual in the *Pomerium***

Andrew Svec

Faculty Mentor: Kenneth Morrell

Department of Greek and Roman Studies

The *pomerium* is the ancient circle that encircles the city of Rome. Founded by Romulus, th

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aligning the melodies of variations using a well-known string matching algorithm. Our new algo2 439.77962 710.82066

1:40-2:00 **Orbita**







thus cannot metabolize phenylalanine, causing phenylketonuria. Several quantum mechanical methods were used to calculate the binding energy between BH<sub>4</sub> and several mutants of PheOH. We show several mutations that both decrease and increase the binding of the cofactor. This molecular level understanding of projected degrees of severity of phenylketonuria and their likelihood provides an accurate paradigm around which to base further projections of other mutations that may cause or augment phenylketonuria. Furthermore, the degree of accuracy obtained from the cheapest method of binding analysis as compared to the most accurate known method of analysis has shown that only a certain level of quantum mechanical accuracy is necessary in order to determine an adequate binding energy between BH<sub>4</sub> and a mutated enzyme.

**Extraction studies on *Solidago odora* (sweet goldenrod) directed towards the isolation of new medicinal compounds**

Amie Demmel

Harold Robinson<sup>1</sup>

Stanwyn G. Shetler<sup>1</sup>

Faculty Mentor: Richard Redfearn<sup>2</sup>

<sup>1</sup>Department of Botany, Smithsonian Institution, National Museum of Natural History, Washington, DC

<sup>2</sup>Department of Chemistry

The inspirationr2802781oiatat

## **Optimization of Pulse Tube Refrigerator Components**

John Janeski<sup>1</sup>

Peter Bradley<sup>2</sup>

Michael Lewis<sup>2</sup>

Ray Radebaugh<sup>2</sup>

<sup>1</sup>Department of Physics, Rhodes College

<sup>2</sup>Cryogenics Division, National Institute of Standards and Technology, Department of Commerce

Cryocoolers have many applications in space, military, medicine, and telecommunications that require them to be small, durable and able to deliver temperatures below 20 K. The pulse tube refrigerator is a regenerative refrigerator that

we developed a procedure to slowly and rapidly reduce th

developmentally regulated modulation during growth and reproduction. The architectural relationships between the numerous polysaccharides and glycoproteins of the wall are

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**The role of NIL-16 in long term potentiation formation in the CA1 and CA3 synapses of the mouse hippocampus**

Gaines Fricke



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**Genetic Characterization of Cell Wall Defects in Four Mutant Strains of *Aspergillus nidulans***

Crystal Phelps

Claire Litherland

Faculty Men

reproducible luciferase activity, while little to no activity was detected from negative control samples. These data suggest that Cln3 protein is detectable using this system.

**Generation of a recombinant murine herpesvirus containing the Epstein-Barr virus interleukin-10 gene driven by the mouse phosphoglycerate kinase (pgk) promoter**

Sandra L. Obreza

Faculty Mentor: Dr. Gary Lindquester

Department of Biology

The human Epstein-Barr virus (EBV), an incredibly pervasive human pathogen, is the etiological agent of infectious mononucleosis and is associated with several forms of cancer. The murine gammaherpesvirus (MHV) may provide a viable animal model of EBV infection. Viral interleukin-10 (vIL-10) is a gene unique to

**Social Sciences Oral Presentations – Session 1**  
***102 Clough, beginning at 10:30 am until 1:00 pm***

***Theme: Cultural Scenes: At hoo***

salons such as Super Cuts frequented mostly by whites, the black beauty salon has challenged corporations by remaining small, independent businesses, owned and operated primarily by black women. These successful businesses have been popularized by the blockbuster film “Beauty Shop;” yet this film misses many of the taken-for-granted aspects of this cultural scene. Through participant-observation, I have gained insight into the culture of the “God is Good” salon where customers and stylists have created a communu910.02 0 0 10.7f653330t(l)Tj10.02 0 0 1c5 T006 Tm(u)Tj10.j100 96 664.8006 Tm(u)T09

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2:30-2:40 ***Break***

2:40-3:00 **The Power of Media Representations: The Generalization and Vilification of “Arabs.”**

Hazami Barmada

Faculty Mentor: Carla Shirley

Departme

gender, and sexual preference “match up”. The purpose of my study is to gain an understanding of identity and community formation of local transgendered peoples. In doing so, I will examine the so-called paradox that transpeople are sai

1:30-1:50 **Implications of Radiation Therapy on Memory in Craniopharyngioma Patients**

Gena Dolson<sup>1</sup>

Thomas Merchant<sup>2</sup>

Faculty Mentor: Steven Lloyd<sup>1</sup>

Department of Radiation Oncology, St Jude Children's Research Hospital<sup>2</sup>;

Department of Psychology, Rhodes College<sup>1</sup>

Craniopharyngioma is a rapidly metastasizing tumor that accounts for 10% of pediatric tumors. Although it initially develops in the suprasellar region near the pituitary gland and hypothalamus, it typically invades the cerebral ventricles and progresses to a number of brain areas including the frontal lobes. The most effective and standard treatment for this tumor involves radiation therapy, which can be deleterious to the neuronal tissues contained in or around the target areas or radiation trajectories. The impact of radiation on frontal lobe damage is integral in understanding the possible memory deficits produced by craniopharyngioma treatment, since this region is thought to house execu





3:20-3:40 **Children's Description, Attitudes and Understanding of Health-Related Events**

Abigail Ray

Faculty Mentor: Marsha Walton

Department of Psychology

How children describe and understand illness and other health-related events is a relatively unexplored area in theoretical and empirical psychological research. Theories on children's perception of health have been weakly supported with empirical evidence. Empirical studies evaluating children's understanding of illness and symptom perception have used supplied-response type questionnaires and interviews. These formats force children to pick an answer that may or may not accurately describe their beliefs. Previous research suggests a need for a change in research methods to include personal narratives as a mode of gaining information about how children describe and understand health. Narrative format allows for open-ended interpretation and elaboration on personal concerns. The current study is a descriptive analysis of a set of children's narratives for instances of health-related events. Out of a set of 346 narratives, 115 narratives were coded as containing health-related events. These health-related stories were coded based on how each child chooses to





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1:15-1:30

2:00-2:15 **Plans for an Environmental “Memphis Connection”**

Anne Barenkamp  
Adam deNobriga  
Wheeler Graf

We investigated projects that could be included into a Memphis Connection trip for Orientation that would focus on sustainability and the environment. One of these was Sardis Lake, a Mid-south state park in Sardis, MS. The lake was created in 1940 to aid in the flood control of the Yazoo River Basin, and includes a dam, swamp and flood channel. This trip would give incoming freshmen the opportunity to experience various aspects of water control and its affect on the environment in the Mid-south. Other projects include the environmental footprint of the Rhodes library, and campus efforts to promoting sustainability.

2:15-2:30 **A Survey of Campus Sustainable Practices**

Paul Echols  
Artie Quinn  
Collin Shultenover  
Faculty Mentor: Carol Ekstrom  
Department of Physics (Geology)  
(No abstract submitted.)

**Community Involvement in Environmental Research:**  
**SWEEP: Storm Water Environmental Education Project**

**Faculty Mentor for SWEEP: Carol Ekstrom, Department of Physics (Geology)**

*SWEEP is an after-school program that partners Rhodes College and Cypress Middle School to focus on science and environmental education. It was funded by an EPA grant for 2002-2003, an Associated colleges of the south, Campus/Community Partners grant for 2004, A Congressionally Directed Gant for 2004-2006, and a HUD COPC grant for 2005-2007. Rhodes students John Gehrig, Lorraine Mallott, Kevin Dinh, and Sara Connaughton have worked with Cypress SWEEP students on a variety of projects.*

Our SWEEP partners are Cypress Middle School science teachers Ms. Brenda Pritle, Ms. Gwendolyn Shorter; Cypress Middle School Principal Mr. Raymond Vasser; Cypress Middle School students Jerome Bolton, Erica Bush, Darrell Clark, Andrea Clark, Andrea Conley, Ferrell Daylos, Terry Donald, Jerrel Douglas, Tierre Dugger, Chorlie Every, Isaac Grandberry, Ronnie Harris, Deandre Hill, Anntanaisie Lewis, Marcus McAdams, Rodrequize Mcatec, Alexias Moore, Roderick Moore, Kai Owens, Jerrica Parker, Courtney Pollion, Alford Robinson, Layla Robinson, Curnessia Sanders, Jevin States, Janeisha Walker; A.K.A. sorority, and Lichterman Nature Center.

**Lobby by Frazier Jelke Room 143, and Frazier Jelke Amphitheatre**

2:30-3:20 **SWEEP models and posters.**

3:20 **SWEEP rap in FJ Amphitheatre (rain location: Fraz**

**Biology II Laboratory Projects: Crayfish Behavior**

*Frazier Jelke 141w and 143w, beginning at 1:15 pm until 2:45 pm*

*Session Chairs: Rosanna Cappellato, Jim Arma*

Adam Teer  
Faculty Mentor: David Kesler  
Department of Biology

**Rumble in the Swamp**

Michael Hadler  
Will Andress  
Charles Hoggard  
Faculty Mentor: David Kesler  
Department of Biology

**The Effect of Water Temperature on Crayfish Aggressive Behavior**

Daniel Wilkinson  
Lane Lovett  
Ella Neely  
Todd Madison

**Temperature Aggression Tendencies of *Procambarus* sp.**

Claire Litherland  
Mary Ellen Dumas  
Jessica Cross  
Whitney Hayden  
Faculty Mentor: David Kesler  
Department of Biology

**Creature Comforts: The Substrate Preference of Female Crayfish**

Kara Purdy  
Kate Parker  
Megan Fogelman  
Pam Raasch

**The Effects of Sex Differences on Agonistic Behavior in *Procambarus* sp.**

Kelsey Dean  
Lindsey Gibson  
Sabrina Seriff  
La'Sandria Ward  
Faculty Mentor: David Kesler  
Department of Biology

**Male vs. Male and Male vs. Female: Does Gender Affect Crayfish Aggression?**

Drew Hubbard  
JR Bizzell  
Michael Powell  
Beven McWilliams  
Faculty Mentor: Rosanna Cappellato  
Department of Biology

**Does Water Quench a Crayfish's Thirst for Aggression? The Effect of the Absence of Water on Crayfish Agonistic Behavior**

Stephanie Wilson

Chang Liu

Sina Nezakatgoo

Tomo Suzuki

Faculty Mentor: Rosanna Cappellato

Department of Biology

Faculty Mentor: Jim Armacost, Jr.  
Department of Biology

**The Effect of Water Temperature on Aggression in the Crayfish (*Procambarus* sp.)**

Mehul Patel  
Evan Somers  
Arijit Paul  
Anum Minhas  
Arthur Riggs  
Faculty Mentor: Jim Armacost, Jr.  
Department of Biology

**The Effect of Shelters on the Agonistic Behavior in the Crayfish (*Procambarus* sp.)**

Elizabeth Wingo  
Kim Green  
Taylor Butker  
Laura Pettibon  
Faculty Mentor: Jim Armacost, Jr.  
Department of Biology

**Does Aggressiveness Differ Between Crayfish of Different Genera (*Procambarus* and *Orconectes*)**

Dean Shroyer  
David Johns  
Jesse Everett  
Brett Miller  
Faculty Mentor: Jim Armacost, Jr.  
Department of Biology





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