

2nd Annual
Scholars Week
Program and Abstracts
Table of Contents

Welcome Letters..... 01

F. King Alexander, President
Gary Brockway, Provost and Vice President for Academic Affairs
Dannie E. Harrison, Dean, College of Business and Public Affairs
Jack Rose, Dean, College of Education
Sandra Jordan, Dean, College of Humanities and Fine Arts
Elizabeth Blodgett, Dean, College of Health Sciences and Human Services
Neil Weber, Dean, College of Science, Engineering, and Technology
James Rudolph, Director, School of Agriculture
URSA Advisory Board

Program

Monday, April 21..... 07
Tuesday, April 22..... 09
Wednesday, April 23..... 10
Scholars Week Luncheon..... 14
Friday, April 25..... 14

Special Events

OMAS Annual Student Art Exhibit..... 15
MSU Dance Company presents “A New World” 15

Special Recognition..... 16

In Print..... 17

Abstracts..... 19

Financial Support for

Scholars Week

provided by

Murray State University

and through an award from the

Howard Hughes Medical Institute

Welcome to Murray State University's second annual Scholars Week, an event that celebrates a very successful year of scholarly and research achievement by our students and faculty.

This past year has proven to be a particularly exciting and productive year for many of our students and faculty. Earlier this year many of our students joined other undergraduates from Kentucky's seven public universities in Posters-at-the-Capitol, an event coordinated by Murray State University in Frankfort that helps ensure that our state legislators understand the importance of research, scholarly, and creative work to Kentucky's higher education students. Murray State's URSA grants program, one of only a handful of such programs in the nation, continues to provide MSU undergraduates with financial support to pursue their research, scholarly, and creative interests. Most importantly, our students, along with their faculty co-authors, are publishing their work in highly-regarded professional journals and presenting their work at local, regional, national, and even international conferences and workshops.

As you look over the abstracts for Scholars Week, you will find an outstanding array of faculty-mentored undergraduate and graduate student work. I would encourage members of the Murray State family to support these young scholars by attending their presentations. I would also encourage people from the Murray community to come and see how Murray State is making a difference in our students' lives and how our students are working to better understand our world and how they are impacting the social and economic development of our cities, counties, state, and nation.



**F. King Alexander, Ph.D.
President, Murray State University**

Welcome to the second annual *Scholars Week* at Murray State University! Please join us in this university-wide celebration of undergraduate and graduate research, scholarship, and creative activity. As you view the contents of this program, you will note the many student accomplishments in a variety of academic disciplines. During the week, students will have the opportunity to showcase their scholarship efforts through oral presentations, poster sessions, exhibits, and performances.



I applaud the efforts of our Office of Undergraduate Research and Scholarly Activity in organizing and coordinating this *Scholars Week*. I believe research, scholarship, and teaching go hand-in-hand and provide one of the very best learning environments for students. Through the efforts of our dedicated faculty, Murray State University is developing into one of Kentucky's institutions of choice for students who want to engage in the process of discovery and do significant research and creative work as undergraduates.

I encourage all of you to take advantage of the activities this week and enjoy!

**Gary Brockway, Ph.D
Provost, Murray State University**





On behalf of the College of Business and Public Affairs, may I extend our “congratulations” to those who have gone that “extra mile” to participate in this second annual “*Scholars Week*”. With your research, scholarship, and creative activity, you have met the challenge and won! Booker T. Washington is quoted as saying, “Life is a grindstone. Whether it grinds you down or polishes you up depends on what you are made of.” By participating in *Scholars Week*, you “shine” a bit brighter. This took commitment on your part and commitment is what transforms promise into reality. James Womack said, “Commitment unlocks the doors of imagination, allows vision and gives us the ‘right stuff’ to turn our dreams into reality.” By your “commitment” to

experience “true learning” and meeting the “challenge” to participate in *Scholars Week*, you are developing the “right stuff.” Keep it up and never stop reaching for more!

Dannie E. Harrison, Ph.D.
Dean, College of Business and Public Affairs

The College of Education is excited to support and participate in the second annual *Scholars Week*. As the entire campus of Murray State University joins to celebrate undergraduate and graduate scholarship, research, and creative activity, the accomplishments of Murray State students will be held high for all to see. These student efforts are reflections of the contributions of our faculty in focusing on preparing students to become exemplary professionals who will continue their creative and research activities. As you visit the various exhibits and presentations, I hope your appreciation for the exciting learning environment the university is fostering will be enhanced. *Scholars Week* demonstrates that Murray State University is preparing students to make significant contributions to a global and technological society. I encourage you to enjoy this event and to congratulate the participants on their accomplishments.



Jack Rose, Ed.D.
Dean, College of Education



Murray State University's *Scholars Week* provides an exciting opportunity to recognize and celebrate the academic achievements of our undergraduate and graduate students, and showcase the results of their research, scholarly, and creative projects. Research, fundamental and applied, is an essential component of our curricula. Throughout history, major discoveries and new knowledge were essential to human progress. Through active research agendas and creative endeavors our faculty and students explore the boundaries of their disciplines and expand our realm of possibilities. Discovery through research encourages a sense of relevance and excitement in the classroom as new knowledge is applied to society, industry, and beyond. The faculty in the College of Humanities and Fine Arts work together with their students on research and creative projects in the classroom, clinics, and studios. In this way they become partners in the exploration of

disciplines and the acquisition of new knowledge. This partnership expands the potential of our students to think independently, creatively, and critically. As one of the top universities in the nation, this is our ultimate mission.

Sandra Jordan, Ph.D.
Dean, College of Humanities and Fine Arts

The second annual *Scholars Week* at Murray State University is a testament to the university's continuing commitment to active learning through ongoing research relationships between faculty members and students. You will see the results of collaborations between faculty and both undergraduate and graduate students as they work together to contribute to the knowledge base in their respective disciplines. *Scholars Week* celebrates the products of these collaborations as well as the process. As you examine these exhibits, join us in appreciation of the diversity of intellectual and creative activity that is an important part of the way of life at Murray State.



Elizabeth Blodgett, Ph.D.
Dean, College of Health Sciences and Human Service



The primary goal of Murray State University’s faculty and staff is to “foster student-centered learning and development.” Central to the mission statement of Murray State is a strong commitment to recruit and retain highly credentialed professionals, deeply involved in the intellectual development of students. During MSU *Scholars Week*, we celebrate the research, scholarship, and creative accomplishments of our students – testimony of the strength and dedication of students and faculty toward the enterprise of learning. May we see in this week an image of an even greater commitment to a lifetime of scholarly contribution to society.

Neil V. Weber, Ph.D.
**Dean, College of Science,
Engineering, and Technology**

On behalf of the School of Agriculture, I would like to welcome you to this unique opportunity to celebrate research, scholarly, and creative activity. It is also a time to showcase our dedicated faculty who are devoted to personal and professional growth.

Life is a journey with many avenues. As you participate in this event, you will view the numerous ways the University is committed to academic excellence as well as providing the opportunity to explore these avenues.

I would like to commend all participants in this event.



James A. Rudolph, Ed.D.
Director, School of Agriculture

A WELCOME FROM THE *SCHOLARS WEEK* ORGANIZING COMMITTEE

The organizing committee and the Undergraduate Research and Scholarly Activity (URSA) office would like to welcome you to Murray State University's second annual *Scholars Week*. As this celebration of our students' achievements grows on our campus, so too does Murray State's reputation and stature among our peers as an institution that deeply cares about student learning.

We commend all the students participating in this year's *Scholars Week*. Your accomplishments make you stand out from your peers. The time and effort you are putting into your education will pay significant dividends when you apply for graduate school, professional school, or that first job.

The members of the organizing committee and URSA office would also like to extend a special thank you to all those faculty who spent countless hours bringing the students who are participating in this year's *Scholars Week* to the level of excellence we see demonstrated in their work. We are also gratified to see that an ever increasing number of Murray State faculty are recognizing the importance of engaging students in research, scholarly, and creative work and committing the time it takes to ensure their students' success in these endeavors.

Our student scholars need your support and encouragement. Please join us in celebrating the accomplishments of our students and academic excellence at Murray State University by attending as many of the *Scholars Week* performances, oral presentations, and poster sessions as your schedule will allow.

Scholars Week Organizing Committee

Pictured L to R: (Back Row) Ken Carstens, Kenneth Bowman, Joy Navan, Paula Waddill, Fred Miller, Tracey Bernard, and Tom Lough. (Front Row) John Mateja, David Ferguson, Marcia Hobbs, Zbynek Smetana, and Jim McCoy. (Not pictured: Howard Whiteman)



Undergraduate Research and Scholarly Activity (URSA) Advisory Board

Howard Whiteman, PhD.
Biological Science

Tom Lough, PhD.
Education

Fred Miller, PhD.
Business Administration

Kenneth Bowman, PhD.
Agriculture

Tracey Bernard, PhD.
Occupational Safety and Health

Joy Navan, PhD.
Education

Jim McCoy, PhD.
Economics and Finance

Marcia Hobbs, R.N., D.S.N.
Nursing

John Mateja, PhD.
Director, URSA

Zbynek Smetana, PhD.
Art

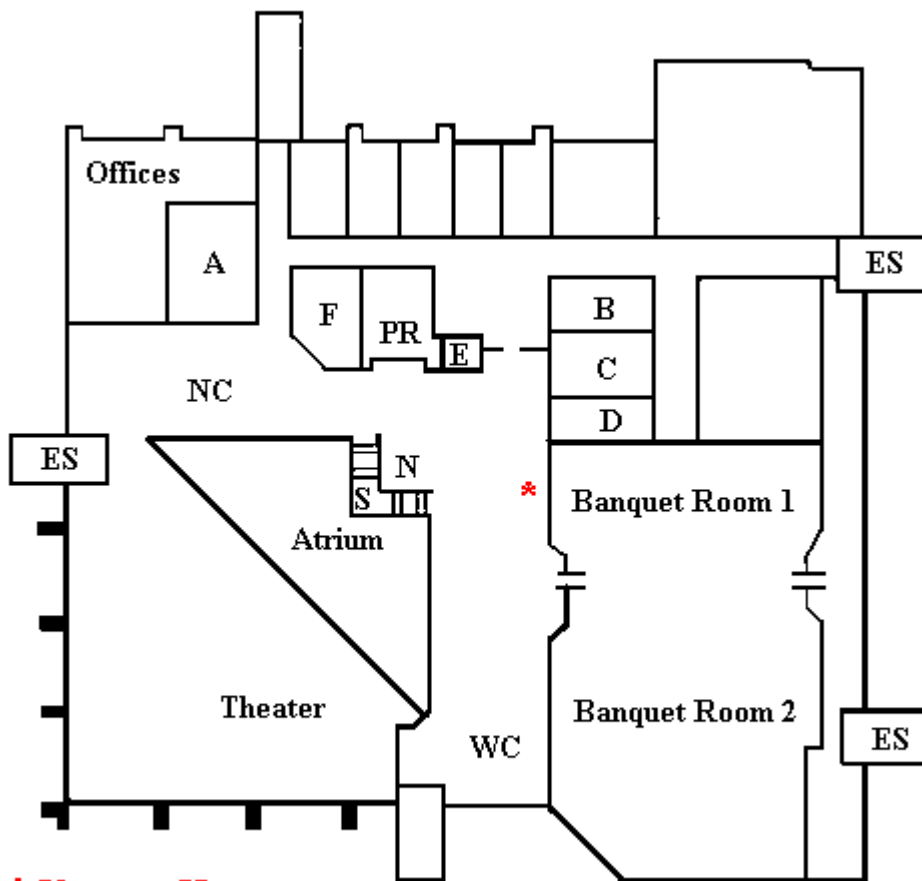
Paula Waddill, PhD.
Psychology

David Ferguson, PhD.
Agriculture

Ken Carstens, PhD.
Geoscience

Murray State University
Scholars Week

April 21 - 25, 2003



*** You are Here**

- A – Barkley Room**
- B – Ohio Room**
- C – Mississippi Room**
- D – Cumberland Room**
- S – Center Stairs**
- NC – North Concourse**

- E – Elevator**
- F – Tennessee Room**
- N – Crow’s Nest**
- PR – Public Restrooms**
- ES – Emergency Stairs**
- WC – West Concourse**

Monday, April 21, 2003

Curris Center

Oral Sessions

Session 1 – History, Sociology, and Criminal Justice

Mississippi Room

Session Chair: Dr. Ken Wolf

12:30 p.m. – 2:45 p.m.

Maryalice Bighinatti - History

A Salem Witchcraft Trial Survivor

Jerad Moxley - History

Sidney Hillman and the First Political Action Committee

Kara Curran - History

They Did Their Part

Jason Marchmon - Sociology

Wendell Berry, Technophobes, and Bill Gates: An Analysis of the History, Factors, and Impact of the Western Concepts of Progress and Technological Acceleration.

Roman Shapla – Sociology

Towards an Anthropological Understanding of Primitivist Theory

George R. Whitfield – Political Science/Philosophy
Origins

Brenda Alexander - Sociology/Criminal Justice

Intermediate Sanctions: Are They Helpful?

Nathan Baird - Criminal Justice

Imagery in Political Cartoons: A Content Analysis

Traca E. Huff – Criminal Justice

The Weed and Seed Program Unveiled

Session 2 – Conservation Biology Symposium

Barkley Room

Session Chair: Dr. Howard Whiteman

1:30 p.m. – 4:15 p.m.

Angelyn Renee Buchanan - Biology

Beaver and Their Effects on Biodiversity

Marty Davenport - Conservation Biology

Teaching Conservation Biology to Students in the Fourth and Fifth Grades

Rebecca Foust – Wildlife/Fisheries Science

Effects of Forest Type on Bird Diversity in Clark's River National Wildlife Refuge

Ashley Gilson - Biology

Medicinal Plant: An Ecology Lab

Beth A. Kobylarz - Biology

The Effect of Road Type and Traffic Intensity on Amphibian Road Mortality

BREAK: 2:45 p.m. - 3:00 p.m.

Amelia Lehman - Biology

Endangered Bat Microhabitat Assessment on Fort Campbell Military Reservation

Debra McCuiston - Biology

Comparison of Anuran Diversity and Population Health at Murphy's Pond and Ponds in the Surrounding Area

Kelly E. Somerlot - Biology

Survey of Songbird Mortality Due to Window Collisions on the Murray State University Campus

Sue Retinger - Biology

Restoration of the American Chestnut

Heather Venter - Biology

Eagle Nesting Habitat Use in Land between the Lakes

Session 3 – Gender Differences in Today's Society: "He Says.. She Says.."

Ohio Room

Session Chair: Dr. Ed Brewer

3:00 p.m. – 4:00 p.m.

Presenters:

Natalie Bringham

Katherine Konrad

Amy McCloskey

Carrie Parnell

Session 4 – Honors Program: Senior Thesis Presentation

Barkley Room

Session Chair: Dr. Mark Malinauskas

6:00 p.m. – 9:00 p.m.

Sara Bailey - Organizational Communication

Diversity in the Classroom

Joseph B. Bogle - Agribusiness/Economics

Analysis of Costs of Smoking Related Illnesses

Doug Herring - Spanish / Political Science

Euskadi ta Askatasuna

Whitney L. Holland - Spanish/Psychology

Sport Fans and Racial Attitudes

BREAK: 7:20 p.m. - 7:30 p.m.

Michelle A. Meyer - Sociology

Environmentalism: A Study of College Students' Attitudes, Behaviors, and Knowledge

Whitney Nichole Oliver - Agribusiness/Economics

A Study on the Estimated Possible Tobacco Tax Revenues Associated With a State Increase on Cigarettes for Kentucky

Jessica Reagan - Business Administration/German
The Brothers Grimm: Fact or Fiction?

Justin Taylor – Agribusiness / Economics

Worldwide AgLink Program

P
R
O
G
R
A
M
*
*
*
*
*

Monday, April 21, 2003

Curris Center

Poster Session

Session 1 – Sigma Xi Poster Competition Large Ballroom

Session Chair: Dr. Renee Fister

9:00 a.m. – 12:00 p.m. Poster set up.

12:00 p.m. – 4:00 p.m. Poster judging.

01 - Catherine Aubee – Biology/Global Studies

*Breeding Phenology in the Polymorphic Mole Salamander, *Ambystoma talpoideum* in Western KY*

02 – Craig R. Bayens - Psychology

Factors Affecting Attitudes Toward Tattooed People

03 – Richard Blalock - Biology/PreMed

The Effects of Testosterone on the Mammalian Immune System: Immunosuppression or Immunoredistribution.

04 – Timothy Travis Brown - Wildlife Biology

*Effects of Water Level Fluctuation on Body Weight and Parasitism by *Eimeria Arizonensis* in White-footed Mice (*Peromyscus leucopus*) Living Near a Reservoir.*

05 – Spencer D. Chambers - Chemistry and Biology

Diel Emergence Patterns of Ecologically Important, Fish-Parasitic, Gnathiid Isopod Larvae on Caribbean Coral Reefs

06 – Melissa Engleman - Biology

Allelopathic Interactions among Flora of the Ledbetter Embayment Mudflat

07 – Adam Farley - Chemistry

Nucleotide Binding in the Active Site of an Aminoglycoside Phosphotransferase Enzyme (APH(3')-IIIa)

08 – Courtney Flood, Adam Bell, and Scott Lowe - Agriculture Education

Trickle Irrigation of Burley and Dark-Fired Cured Tobacco

09 – Adam Green - Wildlife Biology

Factors Affecting Seasonal Migration of Herpetofauna Within a Reservoir Embayment

10 – John Michael Head - Geology

The Canoe Creek Mastodon, Henderson, Kentucky

11 – Kevin Keane - Psychology

Reducing the Stigma Associated with Depression

12 – Casey King - Architecture

Donald Hudson - Electromechanical Engineering

Rapid Prototyping Using CAD/CAM Software

13 – Joshua Seay Kitchens – Chemistry

Polychlorinated Biphenyls and Chlorinated Pesticides Concentrations in Fish from Kentucky Lake

14 – Joseph M. Lambrix - Geoscience

Linear Regression Prediction Models for Turbidity in Kentucky Lake Utilizing LandSat 7 ETM+ and KLMP in situ data

15 – Han-Yu K. Lee - Computer Science

Applications of Finite Topologies Using Maple

16 – April Morganti - Nursing

Evidence Based Practice: Weighing the Evidence for Monthly Weights in Long Term Care

17 – Janine Perkins - Biomedical Science

*Sympatry or Integradation between *L.t. sypspila* and *L.t. elapsoides* in Western Kentucky*

18 – Kosta Seaford - Chemistry

Effects of Water Level Fluctuations on Selected Organic Compounds and Metal Concentrations in Surface Sediments from Ledbetter Embayment of Kentucky Lake

19 – Satinder Sidhu - Biology /Chemistry / PreMed

Autonomous Differentiation of the Head Region in Chick Embryos

20 – Kelly E. Somerlot - Biology

Landscape Patterns of Terrestrial Vertebrate Species Richness in Kentucky: Factors Influencing Future Planning

21 – Valorie Titus - Biology

*Patterns of Movement in the Copperhead (*Agkistrodon contortrix*) in the Land between the Lakes National Recreation Area*

22 – Maninder Kaur Virk, Richard Blalock, and Marshall Welch - Biology / Pre Med

*Patterns of Energy Allocation in Immunochallenged and Testosterone-treated White-footed Mice (*Peromyscus leucopus*).*

Session 2 – Nursing

Concourse - West

Session Chair: Dr. Sharon McKenna

2:00 p.m. – 4:00 p.m.

01 – Anthony Belmont, Jamie Cary, and Jarred Dennison - Nursing

Cricoid Pressure: Assessing Knowledge and Skill

02 – Christa Blane, Robin Hill, Kim Kamber, and Tiffany Williams - Nursing

Evidenced Based Practice in Nursing Skills

03 – Michael Carney and Wesley Sturgill - Nursing

Bair Hugger vs. Fluid Warmer in Preventing Intraoperative Hypothermia in the Laparoscopic Cholecystectomy Patient

04, 05, 06 – Gelia Chappell, Nancy Jackson, Kathy Long, and Nikki Wheeler - Nursing

Expanding A Hospice Program to Include a Local Federal Prison (3 poster display)

07 – Krista Fennel and Julie Royster - Nursing

The Effects of Sleep on Short-Term Memory Recall in Night Shift vs. Day Shift Nurses

08 – Steve Hallman and Candace West - Nursing
Effectiveness of Intradermally Injected Lidocaine vs. Normal Saline Prior to Peripheral Intravenous Cannulation

09 – Christy Hart and Martha Kloss - Nursing
Effects of Exercise on Hot Flashes

10 – Susan Kyle - Social Work
Timeline of the Development of African American Education

11 – April Morganti - Nursing
Evidence Based Practice: Weighing the Evidence for Monthly Weights in Long Term Care

12 – Martina Thompson, Maureen Hosey-Williams, Kandice Skabo, and Kristie Friedrich - Nursing
Evidence-Based Practice: Reducing a Risk Factor for Reinfarction

Session 3 – College of Education

Sandra J. Flynn Graduate Research Symposium in Education

Alexander Hall Atrium

Session Chairs: Dr. Joy Navan and Matthew Portillo

5:00 p.m. – 7:00 p.m.

01 – Eileen Cameron – Human Development and Leadership

Qualitative Study of Cohabitation

02 – Robyn Galloway – English Education
Gender Grouping at the Middle School Level

03 – Susan Kalberer – English Education
Improving the Instruction of Poetry in the High School Classroom

04 – Wisanu P. Krutngoen – Educational Leadership and Global Policy

A Historical Investigation of Asian and American Educational and Economic Factors and Their Affect on Student Learning between 1980 and 2000

05 – Kevin Meacham – Elementary Education
Male Elementary Teachers: An Action Research Study

06 – Susan Morgan – Early Childhood Education
The School Assessment and Eligibility Process for Young Children with Brachial Plexus Injuries

07 – Brooke Payne – Elementary Education
Effects of Departmentalization vs. Whole Class Instruction at the Fourth Grade Level

08 – Scott J. Terry – Secondary Education
An Evaluation of Trends in Student Achievement for Kentucky High Schools Using Different School Day Schedules

09 – April Willett – English Education
Vocabulary Development in Improving Reading Comprehension at the High School Level

10 – Jijun Zhang – School Administration
Is There a Relationship between Money Input and Student Academic Performance?

Session 4 – Educational Leadership Students - Community Profiles

Alexander Hall Atrium

Session Chairs: Dr. Mary Yeatts

5:00 p.m. – 7:00 p.m.

Jill McCormack	Keri Dowdy	Judith Self
Jennifer Adams	Matt Dobson	Lisa Canler
Allison Young	Rhonda Budde	Trent Bates
Barry Leonard	Chris Sheffer	Danette Jones

Tuesday, April 22, 2003
Curris Center

Poster Sessions

Session 1 – Psychology

Concourse - West

Session Chair: Dr. Paula Waddill

9:30 a.m. – 10:30 a.m.

01 – Virginia Ashby - Psychology
Watch Wearing Behavior in College Students

02 – Craig R. Bayens - Psychology
Factors Affecting Attitudes Toward Tattooed People

03 – Ashley Billington - Psychology
Social Perceptions of Homelessness

04 – Emily Brame - Psychology
Gender, Uniforms, and Customers' Perceptions

05 – Lisa Brumley - Psychology
The Evaluation of Peer and Sibling Aggression in 5th Grade Students

06 – Lisa Brumley - Psychology
Attitudes Toward Genetic Testing

07 – Misty Emerson - Psychology
Childhood Discipline

08 – Hubie Harris - Psychology
Smokers' and Nonsmokers' Opinions on Smoking

09 – Kevin Keane - Psychology
Reducing the Stigma Associated with Depression

10 – Sylvester J. Merritt - Psychology
Circadian Rhythms and Math Performance

11 – Andrea Miller - Psychology
Perceived Level of Commitment Involved in Marriage

12 – Lauren Porter - Psychology
How College Students View Prayer

13 – Stefan Schels - Psychology
The Other-Race Effect in Facial Recognition

14 – Manuela Singer - Psychology
Memory for Emotion Words and Associated Colors

15 – Juniaty Wijaya - Psychology
Emotional Expression

Session 2 - Sigma Xi Poster Session **Poster Finalist Judging**

Large Ballroom

2:30 p.m. – 4:00 p.m.

Tuesday, April 22, 2003 Curris Center

Oral Sessions

Session 1 – Chemistry, Mathematics, and Computer Science

Barkley Room

Session Chair: Dr. Ricky Cox

1:30 p.m. – 3:15 p.m.

Adam Farley - Chemistry

*Nucleotide Binding in the Active Site of an
Aminoglyco-side Phosphotransferase Enzyme
(APH(3')-IIIa)*

Eric L. Suits - Chemistry

Preparation of Beta Carotene Analog

Ryan Clark - Mathematics

*The Four Color Conjecture: Any Map May be Colored
With at Most Four Colors.*

Holly Clark - Mathematics

Cryptography: The Science of Secrecy

Han-Yu K. Lee - Computer Science

*Applications of Finite Topologies Using Maple
Software*

Rick Petersen - Computer Science

*Geographically Organized, Dynamically Created
Index of Webcams*

Michael Moode - Organizational Communication

*Identifying Communication Strategies That Affect
Individual Creativity Within Organizations*

Session 2 – Modern Languages

Barkley Room

Session Chair: Dr. Janice Morgan

3:30 p.m. – 5:30 p.m.

Clemencia Marin Cignoni - Spanish

Salvador Reality and Myth

Doug Herring - Spanish / Political Science

Don Quijote and Sancho Panza

Whitney Lane Holland - Spanish / Psychology

*The Patriarch of Creativity and Modernism in
Spanish Cinema*

Michelle Barber – Business Adm./German

The German Gay and Lesbian Movement

Sarah Luker - Spanish

The Controversy of La Malinche

Sherry Webb - Spanish / Political Science

Mexican Gangs, a Search for Identity

Benjamin Wilhelm - Spanish

*The Tradition of Flamenco: Its Presence Throughout
the Centuries.*

Grisel Williams – Spanish/Business Administration
World Bank's Influences on the Dominican Republic

Session 3 – Honors Program: Senior Thesis Presentation

Barkley Room

Session Chair: Dr. Mark Malinauskas

6:00 p.m. – 8:30 p.m.

Catherine R. Betz – Philosophy with Literature
Emphasis

Philosophical Interpretations of Hamlet

Levi J. Burkett - English Literature

The Aesthetic of Change in the Harlem Renaissance

Anthony Burba - Political Science

*George W. Bush's Foreign Policy: The Doctrine of
Destruction*

Emily Burroughs - Sociology

Cultural Materialist Approach to War

Jonathan Sircy- English Literature/Creative
Writing

*Time and Again: The Intersection of Kurt Vonnegut
and the Anglo-Saxon Poets*

Drew Thompson - Political Science

The Tennessee Valley Authority: A Political History

Sigma Xi Banquet

Large Ballroom

6:30 p.m. – 8:30 p.m.



Wednesday, April 23, 2003 Curris Center

Oral Sessions

Session 1 – College of Education:

Teacher Education Services

Crows Nest – 3rd Floor Curris Center

Session Chair: Dr. Jeanie Robertson

9:30 a.m. – 1:30 p.m.

Student Teachers' Eligibility Portfolios

Janna Choate - Elementary Education

Sherri Watkins - Elementary Education

Alisha Payton - Art Education

Jensen Douglas - Art

Alyson English - English

Tiffanie Holt - Math

Jennifer Gream - Middle School English / Math

Wednesday, April 23, 2003

Curris Center

Oral Sessions

Session 2 – Occupational Safety and Health

Ohio Room

Session Chair: Dr. Eileen Mason

9:30 a.m. – 10:30 a.m.

Mock Trial: Krummel vs. Bombardier **OSH 301 Class (Product Liability)**

Class Members:

Kathryn Baird	Nicholas Baker
Larry R. Goode	Jody Jackson
Brandon Ladd	David Schell
Holly Swearingen	Tiffany White

Session 3 – Multicultural, Class, and Gender Studies

Mississippi Room

Session Chair: Dr. Pamela Edwards

9:30 a.m. – 11:15 a.m.

Erin Brantley - Sociology

Marijuana Prohibition in the United States in Terms of Class and Minority Oppression.

Sara Bailey – Organizational Communication

The Reality of Rosie

Michelle Barber – Business Adm./German

Campus Climates For GLBT College Students Across the Nation and Kentucky

Maryalice Bighinatti - History

Immigrant Adaptation and Three of Its Classic Stages

Session 4 – Business Planning

Barkley Room

Session Chair: Dr. Patsy Nichols

9:30 a.m. – 10:15 a.m.

**Rachel Cheek, Kelly Fineman, Ryan Polczynski,
Joshua Ricks, and Bradley Wilson**

Business/Marketing Plan for a Local Video Arcade

Leslie Whitehead, Kelly Lady, Nick Calhoon,

Ashley Futrell and Daniel Groffy

Business/Marketing Plan for a Bookstore/Coffee Shop

Bradley Wilson

Business/Marketing Plan for Pneumatic Motor Carriage Inc.

Session 5 – C-RUI Research Symposium

Barkley Room

Session Chair: Dr. Howard Whitman

3:30 p.m. – 5:00 p.m.

Hannah M. Beard - Biology / Pre Med

Amplified Ribosomal DNA Restrictions Analysis of Archebacteria of the Littoral Zone of Ledbetter Embayment, Kentucky Lake.

Barrett Brown - Biology / Chemistry

Alkyl- and Chlorophenol Residues in Sediment and Mussel Tissue Samples: An Analytical Method Development

Timothy Travis Brown - Wildlife Biology

Effects of Water Level Fluctuation on Body Weight and Parasitism by Eimeria arizonensis in White-footed Mice (Peromyscus leucopus) Living Near a Reservoir.

Melissa Engleman - Biology

Allelopathic Interactions among Flora of the Ledbetter Embayment Mudflat

Adam Green - Wildlife Biology

Factors Affecting Seasonal Migration of Herpetofauna Within a Reservoir Embayment

Joell Hill - Biology/Pre Med

Using Chlorophyll Fluorescence to Determine Wetland Plant Response to Flooding Stress

Session 6 – Sharing Tomorrow: Globalizing MSU

Ohio Room

Session Chair: Dr. Michael Basile

3:30 p.m. – 5:00 p.m.

Jorge Andujar - Global Studies

An Analysis of the Causes of Underdevelopment in the Andean Countries: A Comparison of Historical and Current Cultural, Political, and Economic Relations

Jeremy Edwards - Organizational Communication

The Practice of Cultural Collectivism as a Barrier of Communication between Japanese and American Businesses: An Analysis of Cultural Misunderstanding as an International Dilemma.

Miki Kimura - Print Journalism

A Comparative Analysis of Media Coverage of the Pending War on Iraq

Josh Pairsh - Criminal Justice

International Drug Trade in Colombia and Russia: A Comparative Analysis of Cultural and Historical Causes and Government Control Policies.

David Shams - Political Science / Global Studies

A Comparative Analysis of External and Internal Impacts of the Islamic Revolution on Iran's Economy

Benjamin Wilhelm - Spanish

Ecotourism vs. Environment

Wednesday, April 23, 2003

Curris Center

Poster Session

Session 1 – General Session*

Small Ballroom

9:00 a.m. – 11:30 a.m.

* Students will be with their posters from 10:30 a.m. to 11:30 a.m.

** Sigma Xi Poster Competition Participant

01 – Virginia Ashby - Psychology

Watch Wearing Behavior in College Students

02 - Catherine Aubee – Biology/Global Studies

Breeding Phenology in the Polymorphic Mole

*Salamander, *Ambystoma talpoideum* in Western KY*

03 – Craig R. Bayens - Psychology

Factors Affecting Attitudes toward Tattooed People

04 – Anthony Belmont, Jamie Cary, and

Jarred Dennison - Nursing

Cricoid Pressure: Assessing Knowledge and Skill

05 – Maryalice Bighinatti - History

Archiving for an Active Military Division

06 – Ashley Billington - Psychology

Social Perceptions of Homelessness

07 – Richard Blalock - Biology/Premed

The Effects of Testosterone on the Mammalian Immune

System: Immunosuppression or Immunoredistribution.

08 – Christa Blane, Robin Hill, Kim Kamber, and

Tiffany Williams - Nursing

Evidenced Based Practice in Nursing Skills

09 – Jenny Bowden - Outdoor Recreation

Players in Progress – A Service Learning Project

10 – Emily Brame - Psychology

Gender, Uniforms, and Customers' Perceptions

11 – Timothy Travis Brown - Wildlife Biology

Effects of Water Level Fluctuation on Body Weight and

*Parasitism by *Eimeria Arizonensis* in White-footed*

*Mice (*Peromyscus leucopus*) Living Near a Reservoir.*

12 – Lisa Brumley - Psychology

The Evaluation of Peer and Sibling Aggression in

5th Grade Students.

13 – Lisa Brumley - Psychology

Attitudes Toward Genetic Testing

14 – Eileen Cameron – Human Development and

Leadership

Qualitative Study of Cohabitation

15 – Michael Carney and Wesley Sturgill

Bair Hugger vs. Fluid Warmer in Preventing

Intraoperative Hypothermia in the Laparoscopic

Cholecystectomy Patient

16 – Spencer D. Chambers - Chemistry and Biology

Diel Emergence Patterns of Ecologically Important,

Fish-Parasitic, Gnathiid Isopod Larvae on Caribbean

Coral Reefs

17, 18, 19 – Gelia Chappell, Nancy Jackson,

Kathy Long, and Nikki Wheeler - Nursing

Expanding A Hospice Program to Include a Local

Federal Prison (3 poster display)

20 – Sarah Culp - Outdoor Recreation

My Experience in 1850

21 – Carla Creasey, Jesse Gray, Chad Hall, J.C.

Hicks, and Cody Robertson - Agriculture Science

The Effects of Recommended Rates of Nitrogen and

Foliar Fertilization on Dark-Fired Tobacco

22 – Misty Emerson - Psychology

Childhood Discipline

23 – Melissa Engleman - Biology

Allelopathic Interactions among Flora of the Ledbetter

Embayment Mudflat

24 – Adam Farley - Chemistry

Nucleotide Binding in the Active Site of an

Aminoglycoside Phosphotransferase Enzyme

(APH(3')-IIIa)

25 – Krista Fennel and Julie Royster - Nursing

The Effects of Sleep on Short-Term Memory Recall in

Night Shift vs. Day Shift Nurses

26 – Courtney Flood, Adam Bell, and Scott Lowe -

Agriculture Education

Trickle Irrigation of Burley and Dark-Fired Cured

Tobacco

27 – Robyn Galloway – English Education

Gender Grouping at the Middle School Level

28 – Olivia Grace, Brandon Chandler, Cory Hicks,

and Joshua Monroe - Agriculture Science

Evaluation of Dark Fire-Cured Tobacco Varieties

29 – Adam Green - Wildlife Biology

Factors Affecting Seasonal Migration of Herpetofauna

Within a Reservoir Embayment

30 – Jordan Hall and Neil Vowels - Chemistry

Synthesis of New Alkylaminotricarba-arachno-

decaborane Derivatives

31 – Steve Hallman and Candace West - Nursing

Effectiveness of Intradermally Injected Lidocaine vs.

Normal Saline Prior to Peripheral Intravenous

Cannulation

32 – Hubie Harris - Psychology

Smokers' and Nonsmokers' Opinions on Smoking

33 – Christy Hart and Martha Kloss - Nursing

Effects of Exercise on Hot Flashes

34 – John Michael Head - Geology

The Canoe Creek Mastodon, Henderson, Kentucky

35– Susan Kalberer – English Education

Improving the Instruction of Poetry in the High School

Classroom

36 – Kevin Keane - Psychology

Reducing the Stigma Associated with Depression

37 – Casey King - Architecture

Donald Hudson - Electromechanical Engineering

Rapid Prototyping using CAD/CAM Software

38 – Joshua Seay Kitchens - Chemistry
Polychlorinated Biphenyls and Chlorinated Pesticides Concentrations in Fish from Kentucky Lake

39 – Wisanu P. Krutngoen - Educational Leadership and Global Policy
A Historical Investigation of Asian and American Educational and Economic Factors and Their Affect on Student Learning between 1980 and 2000

40 – Susan Kyle – Social Work
Timeline of the Development of African American Education

41 – Joseph M. Lambrix - Geoscience
Linear Regression Prediction Models for Turbidity in Kentucky Lake Utilizing LandSat 7 ETM+ and KLMP in Situ Data

42 – Han-Yu K. Lee - Computer Science
Applications of Finite Topologies Using Maple

43 – Kevin Meacham – Elementary Education
Male Elementary Teachers: An Action Research Study

44 – Sylvester J. Merritt - Psychology
Circadian Rhythms and Math Performance

45 – Andrea Miller - Psychology
Perceived Level of Commitment Involved in Marriage

46 – Susan Morgan – Interdisciplinary Early Childhood Education
The School Assessment and Eligibility Process for Young Children with Brachial Plexus Injuries

47 – April Morganti - Nursing
Evidence Based Practice: Weighing the Evidence for Monthly Weights in Long Term Care

48 – Ashley Odom - Outdoor Recreation
Disaster Blaster: An Emergency Preparedness Community Event

49 – Brooke Payne – Elementary Education
Effects of Departmentalization vs. Whole Class Instruction at the Fourth Grade Level

50 – Janine Perkins - Biomedical Science
Sympatry or Integradation between L.t. sypspila and L.t. elapsoides in Western Kentucky

51 – Lauren Porter - Psychology
How College Students View Prayer

52 – Kosta Seaford - Chemistry
Effects of Water Level Fluctuations on Selected Organic Compounds and Metal Concentrations in Surface Sediments from Ledbetter Embayment of Kentucky Lake

53 – Satinder Sidhu - Biology / Chemistry / Pre Med
Autonomous Differentiation of the Head Region in Chick Embryos

54 – Kelly E. Somerlot - Biology
Landscape Patterns of Terrestrial Vertebrate Species Richness in Kentucky: Factors Influencing Future Planning

55 – Stefan Schels - Psychology
The Other-Race Effect in Facial Recognition

56– Manuela Singer - Psychology
Memory for Emotion Words and Associated Colors

57 – Scott J. Terry – Secondary Education
An Evaluation of Trends in Student Achievement for Kentucky High Schools Using Different School Day Schedules

58 – Valorie Titus - Biology
Patterns of Movement in the Copperhead (Agkistrodon contortrix) in the Land between the Lakes National Recreation Area

59 – Martina Thompson - Nursing
Evidence-Based Practice: Reducing a Risk Factor for Reinfarction

60 – Maninder Kaur Virk, Richard Blalock, and Marshall Welch - Biology / Pre Med
Patterns of Energy Allocation in Immunochallenged and Testosterone-treated White-footed Mice (Peromyscus leucopus).

61 – Juniaty Wijaya - Psychology
Emotional Expression

62 – April Willett – English Education
Vocabulary Development in Improving Reading Comprehension at the High School Level

63 – Jijun Zhang – School Administration
Is There a Relationship between Money Input and Student Academic Performance?



Wednesday, April 23, 2003
Curris Center

President's Scholars Week
Luncheon*

Large Ball Room

Moderator: Dr. John Mateja

11:30 a.m. – 1:00 p.m.

President's Welcome:

Dr. F. King Alexander

Recognition of:

- 1) **MSU Alumni Association Distinguished Researcher Award Recipient**
Presenter: Dr. F. King Alexander
- 2) **CISR Presidential Research Fellows**
Presenter: Dr. Chuck Hulick
- 3) **Sigma Xi Award Recipients**
Presenter: Dr. Susan Hendricks
- 4) **URSA Grant Recipients**
Presenter: Dr. John Mateja
- 5) **Posters-at-the-Capitol Participants**
Presenter: Dr. John Mateja
- 6) **Best Student Essays**
Presenter: Dr. William Foreman

MSU Choral Presentation

Director: Dr. Bradley Almquist

***Open to all Scholars Week student presenters and their faculty mentor/sponsors.**

The MSU Concert Choir

Dr. Bradley Almquist, Conductor

Derrick McReynolds, Graduate Assistant

Angie Beltz, Piano

Choir Members:

Abby Aiken
Billy Arnold
Cordez L. Bacon
William Bell
Angie Beltz
Abby Bernardini
Kevin Broy
Jason Chapman
Ches Clark
Megan Claussen
Bethany Clyatt
Paul Corder
Dustin Cunningham
Kathy Dobbins

Alaina Evans
Rebecca Garmon
Erica Geniec
Sarah Guffey
Nathaniel Hantle
Joseph Hart
Lacy Hinkebein
Sheri Hudson
Lizzie Hurst
Matthew Ijames
Chris Kent
Jordan Kinsey
Natalie Krupansky
Jeremy Lee

Friday, April 25, 2003
Farrell Hall

Price Doyle Fine Arts Building

Session Chair: Dr. Sonya G. Baker

1:30 p.m. – 2:30 p.m.

Lecture-Recital

Natalie Krupansky



SPECIAL EVENTS

April 16 – May 11, 2003

**Clara M. Eagle Art Gallery
Price Doyle Fine Arts Building
and Curris Center Gallery**

OMAS Annual Student Art Exhibit

Award Ceremony

**Clara M. Eagle Art Gallery
April 18, 2003
6:00 p.m. – 8:00 p.m.**

Jurors: **Rick Smith**
 Southern Illinois University
 Jan Kirstein
 Head of Fine Arts Department
 Franklin High School

OMAS Faculty Advisor: Paul Sasso

BFA Senior Exhibition:

Jess Adkins and Margaret Harper
April 16 – 27 Clara Eagle Gallery
Collen Heineman and Tommy
Montgomery
April 16 – 27 Curris Center Gallery
Nick Alley and Eric Foster
April 30 – May 11 Curris Center
Gallery

BA / BS Group Exhibition

April 30 – May 11 Clara Eagle Gallery

Murray State University

Scholars Week

April 25, 26, and 27, 2003

**Robert E. Johnson Theatre
Price Doyle Fine Arts Building**

MSU Dance Company

presents

A New World

Artistic Director: Ivan Pulinkala

April 25 and 26: 7:00 p.m.

April 27: 2:30 p.m.

FREE to MSU Students with valid ID
Tickets: \$10- General admission; \$7- MSU faculty and staff,
AARP, and other students. **Reservations: 270-762-4421**

MURRAY STATE UNIVERSITY DANCE COMPANY

Emilee Norvell	Elizabeth Whitesell
Morgan Carlisle	Michelle Meyer
Shanan Miller	Danna Grigson
Lauren Paukley	Leslie Marsh
Mary Mather	Eryn Murray
Camilla Buckingham	Kyoko Aoyama
Emily Gorman	Rebecca Lee
Amanda Jessie	Mark Borum
Alissa Volp	Christine Lin
Andrea Reynolds	Paloma Ho
Rachael Alberta	Pamela Grey
Esta Muncy	Toby Pruett
Justen Arnold	Joey Judd
Brian Malloy	Adam Ellis

Program

***Dirty Business:* Choreography by Ivan Pulinkala**

***As Time Moves On:* Choreography by Ivan Pulinkala**

***Coffee Break:* Choreography by Joey Judd and Ivan Pulinkala**

***Learning to Fall:* Choreography by Emily Gorman**

Intermission

***Gloria:* Choreography by Caitlin Trainor**

***In a Moment:* Choreography by Christine Lin**

***No Way Out:* Choreography by Ivan Pulinkala**

***2nd Construction:* Choreography by Ivan Pulinkala**

***A New World:* Choreography by Ivan Pulinkala**

SPECIAL RECOGNITION

Best Student Essays 2002 Winners

College of Education

Alyson English

"Equality" vs. "Excellence": The Myth of Mutual Exclusivity in Educating America's Gifted Students

College of Health Sciences and Human Services

Nicole Cash

Truth and D.A.R.E.: Is the Drug Abuse Resistance Education Program Effective?

College of Humanities and Fine Arts

Mitchum Owen

Anti-Americanism

College of Science, Engineering, and Technology

Jared Vincent *The Effect Tree Density Has on Understory Coverage*

College of Business and Public Affairs

Kristen Watson

Twist of Fate

Personal Essay

Daniel Heath

The Secret Past of my Grandpa

URSA GRANT RECIPIENTS

Spencer Chambers / Dr. Paul Sikkel

Catherine Aubee / Dr. Howard Whiteman

Joshua Kitchens / Dr. Bommanna Loganathan

Jordan Hall / Dr. David Owen

John Head / Dr. Ken Carstens

Kara Curran / Dr. Ken Wolf

Han-Yu K. Lee / Dr. John Porter

Courtney Flood / Dr. Kenneth Bowman

Timothy Midkiff / Dr. Michael Johnson

Cara Creasey / Dr. Jay Morgan

Trent LeBaron / Dr. Ricky Cox

Olivia Grace / Dr. David Ferguson

Jeard Moxley / Dr. Ken Wolf

Whitney Holland / Dr. Daniel Wann

Craig Bayens / Dr. Alysia Ritter

Traca Huff / Dr. Paul Lucko

Roy J. Taylor / Dr. Kenneth Bowman

Dawn Hightree / Dr. Zbynek Smetana

Posters-at-the-Capitol Participants

Catherine Aubee

Adam Green

Sponsor / Mentor: Dr. Howard Whitman

Richard Blalock

Maninder K. Virk

Sponsor / Mentor: Dr. Terry Derting

Brandon Chandler

Olivia Grace

Cory Hicks

Joshua Monroe

Sponsor / Mentor: David Ferguson

Carla Creasey

Jesse Gray

Chad Hall

J.C. Hicks

Cody Robertson

Sponsor / Mentor: Jay Morgan

Adam Bell

Courtney Flood

Justin Lovell

Scott Lowe

Sponsor / Mentor: Dr. Kenneth Bowman

Melissa Engleman

Sponsor / Mentor: Dr. William Spencer

Maryalice Bighinatti

Sponsor / Mentor: Dr. William Mulligan

Kimberly Freeman

Sponsor / Mentor: Dr. Ken Wolf

Joshua Kitchens

Sponsor / Mentor: Dr. Bommanna Loganathan

Han-Yu K. Lee

Sponsor / Mentor: Dr. John Porter

Janine Perkins

Sponsor / Mentor: Dr. Ed Zimmerer

Ryan Pigford

Sponsor / Mentor: Dr. James Hereford

Satinder Sidhu

Sponsor / Mentor: Dr. David Canning

April 1 – April 30, 2003

Waterfield Library Exhibit

**IN PRINT: Murray State University
Undergraduate and Graduate Student Publications**

Adam R. Farley

Dr. James R. Cox, Department of Chemistry - Murray State University

Dr. David Boehr and Gerard Wright, McMaster University – Hamilton, Ontario Canada

Analysis of the π - π Stacking Interactions between the Aminoglycoside Antibiotic Kinase APH(3') - IIIa and Its Nucleotide Ligands

Chemistry & Biology - Volume 9, November 2002, Pages 1209 – 1217

Craig R. Bayens

Dr. Alysia D. Ritter, Department of Psychology - Murray State University

Dr. Joel L. Royalty, Department of Psychology - Murray State University

Factors Affecting Attitudes toward Tattooed People

Presented at the 49th Annual meeting of Southeastern Psychological Association - New Orleans 2003

Julia Runyon

Dr. Alysia D. Ritter, Department of Psychology - Murray State University

The Effect of Job Type on Impressions of Employability of People with Disabilities

Exploring in Psychology - 2002 Edition Volume 5, Pages 79 – 84

Amanda Wallace

Dr. Alysia D. Ritter, Department of Psychology - Murray State University

The Effects of Instruction Type on Comprehension and Task Performance

Exploring in Psychology - 2002 Edition Volume 5, Pages 60 – 63

Nancy Son Carstens

Dr. James Hammack, Department of History - Murray State University

Dr. Kenneth Wolf, Department of History - Murray State University

The Making of a Myth: George Rogers Clark and Terese DeLeyba

The Filson History Quarterly, Spring 2002 - Volume 76 No. 2, Pages 121 - 158

Kosta D. Seaford

Dr. Bommanna G. Loganathan - Department of Chemistry – Murray State University

Dr. David A. Owens - Department of Chemistry – Murray State University

Effects of Water Level Fluctuations on Selected Organic Compounds and Metal Concentrations in Surface Sediments from Ledbetter Embayment of Kentucky Lake

Journal of Environmental Monitoring and Restoration (JEMREST), December 2002, Volume 1 No.1
Pages 64 - 79

Graduate Student

Undergraduate Student

April 1 – 30, 2003
Waterfield Library Exhibit

IN PRINT: Murray State University
Undergraduate and Graduate Student Publications

Kosta D. Seaford

Dr. Bommanna G. Loganathan, Department of Chemistry – Murray State University
Dr. Nobuyasu Hanari, Advanced Industrial Science and Technology - Tsukuba, Japan
Dr. Kenneth Sajwan, Department of Biology - Savannah State University
Polychlorinated Naphthalenes in Pine Needles: An Atmospheric Evaluation of Selected Locations in the Southeastern United States
Organohalogen Compounds – Polychlorinated Naphthalenes and DLPCBs, Volume 58 (2002), Pages 133 - 136

David G. Hood

Master of Public Administration Program – Murray State University
Survival Skills: Marketing Strategies for a Slow Economy
“Business EDGE”, Kentucky’s Small Business Development Center, Fall 2002, Page 3

Jane H. Bright, Peggy A. Davis, and Donna Sinclair

Renee T. Ridley - Department of Nursing – Murray State University
What Influences a Woman to Choose Vaginal Birth after Cesarean?
Journal of Obstetric, Gynecologic, and Neonatal Nursing (JOGNN) - November/December 2002, Page 665 - 672

Sarah Shelton

Dr. Laura Liljequist, Department of Psychology – Murray State University
Characteristics and Behaviors Associated with Body Image in Male Domestic Violence Offenders
Pergamon - Eating Behaviors 3, March 19, 2002, Pages 217 – 227

Al R. Rochelle

Dr. Daniel Wann, Department of Psychology -- Murray State University
Dr. Joel L. Royalty, Department of Psychology - Murray State University
Using Motivation and Team Identification to Predict Sport Fans’ Emotional Responses to Team Performance
Journal of Sport Behavior - Volume 25 No. 2, Pages 207 – 216

Graduate Student
Undergraduate Student

Brenda Alexander - Sociology and Criminal Justice

Intermediate Sanctions: Are They Helpful?

Sponsor / Mentor: Dr. Paul Lucko

Intermediate sanctions, including halfway houses attempt to punish well as rehabilitate criminals outside of prison. Facilities, such as Dismas Charities halfway houses, are critical for ex-offenders. They allow them to spend portions of their sentences in a community-like atmosphere where they make the transition from prison to free society. Halfway houses also offer a tremendous amount of physical, emotional, and spiritual support to ex-offenders. Halfway houses, sometimes known as residential community corrections facilities, provide substance abuse counseling, education, and health care, as well as personal counseling. These programs cannot work miracles. Unless residents are willing to change their lives after returning to society, mandatory treatment and therapeutic programs will not succeed. Offenders will likely return to criminal lifestyles. Little scholarly research exists in relation to halfway houses. It is important to determine whether such intermediate sanctions are useful or whether, instead, if they are a waste of tax money. My ethnographic investigation consists of interviews with several former offenders who have resided in halfway houses. I have contacted officials with the Dismas Charities halfway house in Owensboro, Kentucky, and the Fuller Center in Paducah. After considering popular attitudes and perceptions, I compare my finding with extant literature on the subject.

Jorge Andujar - Global Studies

An Analysis of the Causes of Underdevelopment in the Andean Countries: A Comparison of Historical and Current Cultural, Political, and Economic Relations

Sponsor / Mentor: Dr. Michael Basile

Underdevelopment in the Andean countries is a big problem that affects millions of people. This paper is looking at the political, economic, cultural, and historical factors that contribute to this problem. I will start off by mentioning the historical facts, such as the imperialism and oppression that the Andean countries faced from Spanish colonization. Then the paper looks at current cultural, political and economic relations which affect the Andean countries today. I am using this study to look at the issue of underdevelopment today and how it is a big problem in many parts of the world. This paper will explore the question of whether underdevelopment is a real process that contrasts with traditional linear notions of development.

Virginia Ashby - Psychology

Watch Wearing Behavior in College Students

Sponsor / Mentor: Dr. Paula Waddill

The goal of this study was to look at relationships between time awareness and various aspects of personality. Participants in this study consisted of 62 undergraduate volunteers from Murray State University. Each student was evaluated on watch wearing behavior, time awareness, introversion, extroversion, intrinsic motivation, instrumental motivation, and locus of control. Results showed that although none of the correlations between the watch wearing behavior, time awareness, and any aspect of personality proved to be significant, there were some that approached significance. These were intrinsic motivation and time awareness with a positive correlation and scores on the IPIP and the time estimation task, which were also positively correlated. these findings would be helpful in any future researc.

Catherine Aubee - Biology/Global Studies

Breeding Phenology in the Polymorphic Mole Salamander in Western Kentucky.

Sponsor / Mentor: Dr. Howard Whiteman

Ambystoma talpoideum, commonly known as the mole salamander, reaches the northern extremities of its range in western Kentucky. As a facultative paedomorphic species, *A. talpoideum* presents an opportunity to study the comparative life histories and potential interactions of metamorphic and paedomorphic individuals within the same population. The focus of this research was to locate potential breeding sites of *A. talpoideum* in western Kentucky and to observe breeding patterns within these populations. Paedomorphic individuals have been confirmed at two sites in rural Calloway County and at one of twelve potential sites in Land Between the Lakes (LBL). Breeding activity (indicated by cloacal swelling and the presence of spermatophores) at the LBL site concluded by mid-February 2002. No metamorphic salamanders were found at this site until December 2002. Metamorphic individuals were discovered at the Calloway County sites in December 2001 and 2002, and have shown signs of breeding activity during the same time frame as paedomorphic individuals. Breeding at the Calloway County sites continued through February 2002 and waned in early March 2002 during the first year of study. The timing of breeding is atypical because previous studies have shown that paedomorphic individuals generally begin and cease breeding earlier than metamorphic individuals. Exceptions have been noted when paedomorphic salamanders have only recently reached maturity. Current analysis of paedomorphic versus metamorphic snout-vent length (SVL) measurements supports this hypothesis. Sampling will continue throughout the 2002-03 season.



Sara Bailey - Organizational Communication

The Reality of Rosie

Sponsor / Mentor: Dr. Pamela Edwards

World War II was a time for change in the lives of women. During World War II, the United States government used propaganda slogans and posters to recruit women to the workforce and to create a "new woman." Who was this "new woman" and was this "new woman" a reality? To answer these questions, I first want to discuss the government's reasons for recruiting women to the workforce and how they accomplished this. Then I will discuss how the government's communication affected these women and the jobs that they joined. Second, I will discuss the "new woman", who she was, her qualities, her benefits, and her characteristics. Then I will discuss how this affected the American woman and her image. Lastly, I will discuss the reality of the women's lives during World War II. I will discuss the workforce and its problems, along with the women's jobs and lives at home. By discussing these three main areas, we will be able to answer who this "new woman" was and if this "new woman" was a reality. By answering these questions, we will be able to see "The Reality of Rosie."

Sara Bailey - Organizational Communication

Diversity in the Classroom

Sponsor / Mentor: Dr. Mark Malinauskas and Dr. Lou Tillson

When students from different backgrounds begin to interact with teachers and other students within the classroom setting, there are bound to be some misunderstandings. That is why the question, "What impact does diversity have on interpersonal relationships in the classroom?" is proposed. This paper will prove that diversity does have an impact on interpersonal relationships in the classroom, by studying the areas of diversity and interpersonal relationships and applying and analyzing them through communication theories.

Kathryn Baird, Nicholas Baker, Larry R. Goode, Brandon Ladd, David Schell, Holly Swearingen, and Tiffany White

Mock Trial: Krummel vs. Bombardier

Sponsor / Mentor: Dr. Eileen Mason

The class will present a mock trial based on the case of Krummel vs. Bombardier. The audience will serve as the jury for the mock trial. The Krummels purchased two (2) Bombardier Sea-Doo personal watercraft. Mr. Krummel fell off the Sea-Doo and suffered a broken leg. He sued Bombardier for damages, claiming that Bombardier failed to warn users of this danger.

Nathan Baird - Criminal Justice

Imagery in Political Cartoons: A Content Analysis

Sponsor / Mentor: Dr. Ed Armstrong

Postmodern media scholars have noted that visual imagery is "the language of the sense," while the meaning of words is "obscure" and "evasive." Thus the purpose of this paper is to present the findings of a content analysis of political cartoons that appeared in Views of the World, an internationally syndicated series, during a three month period (July 7-Sept. 8, 2002). My goal is to categorize the cartoons in terms of gender representations, domestic figures versus foreign nationalities, and favorable versus unfavorable portrayals of these representations. Upon analysis, I find that the cartoon images are disproportionately masculine (88% to 22%), more representative of Americans (46% to 20%) and present Americans in a more negative way than they do foreign nationalities (73% to 64%).

Michelle Barber - Business Administration/German

Campus Climates for GLBT (Gay, Lesbian, Bisexual and Transgender) College Students Across the Nation and in Kentucky

Sponsor / Mentor: Dr. Staci Stone

A study of the current research and literature concerning GLBT (gay, lesbian, bisexual and transgender) college students and their college experiences and/or campus climates will be described.

Michelle Barber – Business Administration/German

The German Gay and Lesbian Movement

Sponsor / Mentor: Dr. Milton Grimes

Craig R. Bayens - Psychology
Factors Affecting Attitudes Toward Tattooed People
Sponsor / Mentor: Alysia D. Ritter

Historically, tattoos have been associated with social deviance and antisocial or rebellious behavior. They also have been largely restricted to males. More recently, tattoos have become popular among celebrities, women, and young people. The present study sought to determine if the increased popularity of tattoos would be reflected in the attitudes of college students toward tattooed individuals. It also tested the hypotheses that these attitudes are a function of the gender of the tattooed person, and that the perceptions of tattooed people based solely on a photograph could be altered significantly by providing positive or negative descriptions of the people.

Hannah Beard - Pre-Medicine
Amplified Ribosomal DNA Restrictions Analysis of Archebacteria of the Littoral Zone of Ledbetter Embayment, Kentucky Lake.
Sponsor / Mentor: Dr. Timothy C. Johnston

DNA was extracted from sediment samples using the Ultraclean Soil DNA kit (Bio101) with the Fast Prep instrument (Bio101) and used as template to amplify rDNA fragments. Samples for DNA extraction were taken from five sites along a transect from the littoral zone of the Ledbetter Embayment in June and July, 2002 (zone flooded) and in February 2002 (zone exposed). The primers used in the PCR reactions were shown to be specific for Archebacterial sequences. The fragments were then inserted into the pGEM cloning vector and transformed into *E. coli*. Plasmid DNA was reisolated from 10 transformants from the five samples taken on each date and used as template in PCR reactions to amplify the inserts. The amplified inserts were then digested with *AluI* and the fragments resolved on 4 to 20% non-denaturing polyacrylamide gels to yield a restriction pattern for each clone. The restriction patterns were visually analyzed to reveal the identical clones. Each different pattern indicated a separate Archeal species. In February 38 different patterns were found, and in June, 38 different patterns were found. In total, 109 clones were analyzed to produce 76 different patterns. Only four of these patterns were found in both February and June. These data suggest succession of archebacterial species in the littoral zone sediments as the temperature and water level changes between winter pool and summer pool. The clones will be sequenced and compared to a database to determine the species and group of Archaea that each clone came from.

Anthony Belmont, Jamie Cary, and Jarred Dennison
Cricoid Pressure: Assessing Knowledge and Skill
Mentor / Sponsor: Michael Perlow

Purpose: The intent of this study was to assess the knowledge and skill of cricoid pressure application among select groups who routinely utilize it. **Method:** This study utilized a non-experimental descriptive design. Data collection included a survey developed by the researchers and a demonstration of cricoid pressure on a scale-mounted manikin. A convenience sample was taken from a 410-bed hospital in a Southern state. To be included in the study, the participant had to be a registered nurse (RN) practicing in one of four areas where the performance of cricoid pressure is routine at the time of data collection: emergency room, operating room, obstetrical, and post-anesthesia care. The RN's voluntarily answered a questionnaire developed by the researchers. The questionnaire consisted of eight items; the first seven were multiple-choice while the last involved demonstration of cricoid pressure on a scale-mounted manikin for reading. By using an airway model, the researchers were able to collect data without risk to the participants and involved no actual patients. **Findings:** 35% of the respondents were from the OR, 35% from OB, 17.5% from PACU, and 12.5% from the ER. Forty two and a half percent of the participants reported some prior formal training in cricoid pressure while the remaining 57.5% reported no prior formal training. Question three had 25% of the participants pick the correct recommended range for cricoid pressure, which is 30-40 Newtons (3.06-4.08 kg). Question four indicated that 75% knew that the primary reason to use cricoid pressure was aspiration prevention in the "at risk" patient. Forty percent answered question five correctly by picking active vomiting as the contraindication to cricoid pressure. In regard to reasons for releasing cricoid pressure, 52.5% answered correctly by choosing pressure held for greater than five minutes. The anatomically correct finger placement for cricoid pressure was identified by only 42.5%. Finally, the demonstration portion showed an average pressure of 2.87 kg by those previously trained with a maximum pressure reading of 6.35 kg and a minimum pressure reading of .96 kg. Those without prior training had an average of 2.73 kg with maximum and minimum pressures at 6.19 kg and .40 kg, respectively. **Discussion:** The findings of this study do not indicate a clinical significance between those trained versus those without prior training. The overall responses to the questionnaire do indicate a lack of knowledge among the participants as a whole. These findings might be viewed as support for initiating an education program for those who routinely apply cricoid pressure, a potentially life saving maneuver for "at risk" patients.

Catherine R. Betz - Philosophy with Literature Emphasis

Philosophical Interpretations of Hamlet

Sponsor / Mentor: Dr. Neil Kennedy

Possibly more than any other of Shakespeare's works, Hamlet has been the subject of myriad interpretations by its performers, audiences, and readers. Each interpretation, whether psychoanalytic, political, archetypal, or philosophical in nature, reveals new underlying themes and implications that contribute to the text's richly complex tradition. In this paper, I will present and explore two philosophical interpretations of Shakespeare's Hamlet. First, I will briefly discuss the evolution of the work's critical and interpretive tradition, placing the two approaches that I will focus on within their historical and philosophical periods. Next, I will examine the work as the romantic tradition interpreted it, focusing especially on the writings and lectures of Samuel Coleridge. Finally, I will explore Hamlet through an existential lens, concentrating specifically on writings by Friedrich Nietzsche, Søren Kierkegaard, and Jean-Paul Sartre. Each interpretation will offer different perspectives on this work, creating insights that will contribute to the overall reading of the text, as well as to a more complete understanding of the philosophical and literary epochs discussed. Using Hamlet as a springboard, I hope to elicit some of the similarities and differences between the philosophies of the romantic and existential traditions.

Maryalice Bighinatti - History

Elizabeth Proctor: A Salem Witchcraft Trial Survivor

Sponsor / Mentor: Dr. Ken Wolf

Historians who have analyzed the Salem witchcraft trials of 1692 often ignore Elizabeth Proctor. Not a single book exists specifically detailing her ordeal, and the transcripts from her trial are the only primary sources available. Her wrongful conviction for the use of witchcraft is usually detailed as a secondary event parallel to her husband's own trial and eventual execution. This paper argues that Elizabeth Proctor's case deserves more recognition. Her conviction was the result of hate, originating from false accusations made against her by a small group of adolescent females, who used the courts to carry out their personal vendettas. Her occupations as midwife and tavern manager, and Puritan belief within the community that women were most susceptible to demonic possession together became the evidences used to substantiate her conviction. My paper explored the individual reasons why each girl accused Mrs. Proctor, and how they collectively sought to gain a conviction against her. In an attempt to reconstruct her trial; events leading to her arrest, testimony used against her and affidavits submitted on her behalf are discussed. Colonial as well as English property and criminal law, and societal views regarding social class distinction are included to prove how the courts were able to issue arbitrary punishments against the accused. The conclusion discusses the life Mrs. Proctor led following her unexpected release from prison as a testimony to the indomitable spirit of this woman who, though pregnant, accepted a sentence of execution rather than admit to a crime she did not commit.

Maryalice Bighinatti – History

Creating a Historic Archival System for an Active Military Division

Sponsor / Mentor: Dr. William Mulligan

The Don F. Pratt Museum on Ft. Campbell, Kentucky, keeps the 101st Airborne Division's triumphs and sacrifices alive, but holds an even greater responsibility to those serving the 101st Division. Through a proper archival system, the museum preserves artifacts and documents brought back from military operations. Beginning in October 2001 and ending August 2002, I had the honor of interning at the Pratt Museum. Originally assigned to learn various aspects of museum administration, my task narrowed to archiving all documents brought back from Operation Desert Shield and Desert Storm. Before Operation Anaconda, the database and archival system I was maintaining became a utilized source to find information on equipment that was to be used in desert conditions. Having first hand resources available for quick reference allowed those responsible for transporting equipment to alter shipments that would have otherwise been rendered useless upon arrival in Afghanistan. The database also became a quick reference tool for those in charge of soldiers on the battlefield to compare conditions and situations experienced during the Gulf War. While not yet a complete system, the database is now viewed as helpful tool for lessons learned in preparation for training and potential unit deployment.

Maryalice Bighinatti – History/Multiculture, Class, and Gender Studies

Immigrant Adaptation and Three of Its Classic Stages

Sponsor / Mentor: Dr. Staci Stone

The project will examine cultural traditions and American Feminism to show how both play an important role in the Americanization process of three generations of Mexican-American women. The focus of the project will be on Immigrant Adaptation and its last three classic stages: assimilation of children, rejection of culture by the grandchildren, and a return to the cultural roots by the great grandchildren. A biographical video will be produced to allow for further understanding of the mentioned stages. The primary subject is a mother of five who raised her four daughters according to many Mexican traditions, but who was influenced by the Feminist and counterculture movement in Los Angeles during the mid 60's and early 70's. Particular attention will be given to the fact that Feminism enabled her to alter previous life choices and later ensure her daughters would have a "voice" in their male dominated culture. Interviews with two of her daughters and two granddaughters will prove how these women follow in succession the classic stages of Immigrant Adaptation. A short paper will also be submitted containing academic research on the project's focus

Ashley Billington - Psychology

Social Perceptions of Homelessness

Sponsor / Mentor: Dr. Paula Waddill

Homelessness is not a new problem but one that is becoming more pronounced in times of economic slowdown and rising unemployment. Previous research has focused on the root causes of homelessness as well as the psychological effects of homelessness on individuals. Unlike previous research, this study was designed to investigate the factors that may contribute to an individual's attitudes toward homelessness. The predictor variables in this study were gender, degree of conservatism, knowledge of homelessness, and experience with the issue of homelessness. Attitudes toward the homeless were measured using the Attitudes Toward the Homeless Inventory. Possible applications based on the results of this study are presented.

Richard Blalock - Biology / Pre-Med

The Effects of Testosterone on the Mammalian Immune System: Immunosuppression or Immuno-redistribution.

Sponsor / Mentor: Dr. Terry Derting

Testosterone is believed to be immunosuppressive in mammals. Recent research suggests, however, that testosterone may cause redistribution of leukocytes rather than an actual reduction in leukocyte numbers. One hormone known to induce immunoredistribution is corticosterone. To investigate the effects of testosterone, we tested the null hypotheses that: 1) testosterone has no effect on corticosterone level and 2) testosterone has no effect on the distribution of leukocytes. We established four groups of adult male white-footed mice (*Peromyscus leucopus*): 1) control, 2) testosterone-treated, 3) immunochallenged, and 4) testosterone-treated and immunochallenged. Testosterone injections were given to mice for 10 days. The immunochallenged mice were treated with sheep red blood cells (SRBC) and phytohemagglutinin (PHA). To determine if immunoredistribution occurred blood samples were taken from the heart and the retro-orbital sinus. There was no significant redistribution of leukocytes in any group of mice; however, the reaction to PHA was much greater in the control mice than the testosterone treated mice. Total white blood cell counts revealed no significant differences between the control group and testosterone treated group. Corticosterone levels were lowered by the testosterone injections so redistribution could not have occurred due to corticosterone. We concluded that testosterone does not raise corticosterone levels and is not related to immunoredistribution. Testosterone did lower the activity of leukocytes.

Christa Blane, Robin Hill, Kim Kamber, and Tiffany Williams - Nursing

Evidenced Based Practice in Nursing Skills

Sponsor / Mentor: Dr. Sharon McKenna

Four senior nursing students were assigned to assist the sophomore students with both practice labs and skills "check-off". The four senior nursing students carefully reviewed the method by which each skill was being performed and conducted a literature review to determine if they were indeed following the best practice for each procedure based upon what current research revealed. The senior nursing students then analyzed their findings. Of the nursing skills reviewed, one was being performed according to evidence based practice; three needed adjustment to bring them in line with the current evidence-based standards. The senior nursing students then made recommendations for changes and emphasized the need for further studies. The NUR 200 skills "check-off" sheets were updated according to standard evidence based practice. The senior nursing students also compiled an evidenced based practice manual to be used for reference in further skills labs.

Joseph B. Bogle - Agribusiness
Analysis of Costs of Smoking Related Illnesses
Sponsor / Mentor: Dr. Kenneth Bowman

The cost of cigarette related illnesses has come into the spotlight in recent years due to the many lawsuits against tobacco companies from smokers who are trying to recover their healthcare costs. To protect themselves from further lawsuits, and to balance out the future costs to states from smoking related illnesses, the tobacco companies created a settlement agreement with the states. Now that states are beginning to spend these settlement funds, an analysis of expected healthcare costs is needed to plan for future expenditures. Cigarette use may often lead to some form of smoking related illness, which creates health care costs that non-smokers do not face. These health care costs may include, but are not limited to, Medicaid costs, private insurance costs, and hospital costs. It is important to note that in studies respectively published by The Center for Disease Control and the Journal for Consumer Affairs that smoking may create \$50 billion per year in costs while reducing life expectancy by 5.0 to 6.2 years. Therefore, smoking may or may not actually increase the costs to healthcare agencies because of the shortened lives of smokers. A controversial study published by tobacco manufacturer Phillip Morris states that smoking benefits actually outweigh the costs in the Czech Republic. Objectives for this analysis should include costs by disease category, cost by race, gender, education, age, and costs by socio-economic background. This analysis should also be extended to cover non-direct costs from smoking, such as loss of productivity and the effects on the work environment. By evaluating these categories, the effects of smoking related illnesses can be better understood.

Jenny Bowden - Outdoor Recreation and Leisure Services
A Service Learning Project
Sponsor / Mentor: Dr. Kelly Rogers

This poster represents a service-learning project that I completed in the fall of 2002. I was able to talk to young kids about PIPS - Players in Progress. This is a basketball program that not only helps them see the importance of staying involved, but also discipline.

Emily Brame - Psychology
Gender, Uniforms, and Customers' Perceptions
Sponsor / Mentor: Dr. Paula Waddill

A sample of forty Murray State University students were asked to complete a questionnaire which would measure their perceptions of a person in a photograph. Ten were asked to view a picture of a male in a smock, ten were asked to view a male in a lab coat, ten were asked to view a female in a smock, and ten were asked to view a female in a lab coat. There was no difference between males and females in the photograph on various characteristics. Results showed that individuals in a lab coat were not perceived as more trustworthy or knowledgeable than individuals in a smock, and individuals in a smock were not perceived as more approachable than individuals in a lab coat, although all results were in the predicted direction. Results did find that individuals in a lab coat were perceived as more intelligent than individuals in a smock.

Erin Brantley – Sociology
Marijuana Prohibition: Questions Related to Class and Minority Oppression
Sponsor / Mentor: Pamela Edwards

The purpose of this paper is to discuss marijuana prohibition in the United States in terms of class and minority oppression. Throughout human history, with the exception of the last 70 years, marijuana grew naturally and was readily available to everyone that wished to partake in its pleasures. But in 1936, the United States Congress approved the Marijuana Tax Act that made the plant illegal. To understand the complex dimensions of the criminalization of marijuana and their links to class and minority oppression, I employ a theoretical perspective known as social constructionism. Specifically, this paper: (1) summarizes that social constructionism perspective and applies this perspective to marijuana prohibition, and (2) interprets marijuana prohibition as part of the ongoing American oppression of lower class and ethnic minorities.

Natalie Bringham - Public Relations, Katherine Konrad – Advertising,
Amy McCloskey - Organizational Communication, and Carrie Parnell - Advertising
Gender Differences in Today's Society: "He Says . . . , She Says...."
Sponsor / Mentor: Dr. Ed Brewer

This is one of four presentations exploring gender differences in today's society. We review the literature on the effects of gender on power perception. Research indicates that men focus more on using communication techniques that make themselves appear powerful. Women do not find that as important as maintaining relationships and making friends.

Barrett Brown - Chemistry/Biology***Alkyl- and Chlorophenol Residues in Sediment and Mussel Tissue Samples: An Analytical Method Development*****Sponsor / Mentor: Dr. Bommanna Loganathan and Dr. David Owen**

As part of MSU's C-RUI program, this study deals with the dynamics of alkyl and chlorophenol pollutants in Ledbetter embayment of Kentucky Lake. Alkyl and chlorophenols are widely used in a variety of industries, agricultural pesticides, and a diversity of consumer products. Because of their widespread use, persistence, and bioaccumulative properties, these compounds were reported to contaminate natural waters and bioaccumulate in aquatic organisms and cause harmful effects. However, very little is known on the levels of alkyl and chlorophenol contamination in the Kentucky Lake ecosystem. This presentation deals with development of analytical procedures to measure trace (parts per billion) amounts of alkyl and chlorophenols. Analytical procedures were adopted from methods previously implemented, however, modifications were made to improve accuracy, precision, and to allow for lower detection limits. Samples were stored at 20 degrees Celsius in pre-cleaned I-CHEM jars, freeze-dried, and then Soxhlet extracted for 17 hours using a 3:1 ratio of dichloromethane to hexane. Rotary evaporation was used to concentrate the extracts. Florisil column chromatography techniques were used for cleanup and separation. The first fraction eluted with hexane contained PCBs, the second fraction eluted with 20% methylene chloride in hexane contained pesticides, and the third fraction eluted with 1:1 methylene chloride and methanol contained alkyl and chlorophenols. This elution pattern was validated with known concentrations of standards. The HPLC was calibrated using standards, resulting in a r2 correlation of 0.998. After further validation using recovery tests, the procedure will be adopted to sediment and elsewhere in freshwater mussel samples collected from Ledbetter embayment and Kentucky Lake.

Timothy Travis Brown – Wildlife Biology***Effects of Water Level Fluctuation on Body Weight and Parasitism by Eimeria arizonensis in White-footed Mice (Peromyscus leucopus) Living Near a Reservoir.*****Sponsor / Mentor: Dr. Claire Fuller**

We are examining the effects of parasitism on white-footed mice (*Peromyscus leucopus*) inhabiting lands that surround Kentucky Lake, a reservoir on the Tennessee River in Western Kentucky. We hypothesize that mice living in the moist, flood-prone environments around the reservoir will be parasitized more frequently and weigh less than those in drier areas surrounding the lake, because of flood associated stress and the loss of food sources due to flooding. We are conducting a mark-recapture study to determine body weight and examining feces for parasites. Here, we present monthly rates of parasitism by *Eimeria arizonensis* on two littoral zone sites, two floodplain sites, and two non-flooding sites. We also compare animal mass between these sites. We have completed seven months of trapping in this year-long study. Our preliminary results show seasonal variation in levels of parasitism and mass of animals. However, there are no significant differences between wet and dry sites. Funding was provided by an NSF CRUI grant to the Department of Biology, MSU.

Lisa Brumley – Psychology***Attitudes Toward Genetic Testing*****Sponsor / Mentor: Dr. Paula Waddill**

One of the most serious issues in today's society is the advancing biological technology. This study examined gender differences among college student's attitudes toward genetic testing and counseling. Eighty-seven Murray State students completed a booklet containing three scenarios depicting a particular family history. The participants were asked to rate their attitudes toward genetic testing and counseling for each scenario. There was no significant difference between genders to have genetic testing when there was a previous history of physical or mental disorders than when there was no history. There was a significant correlation between general knowledge of genetic disorders and genetic testing and counseling. These results may be important implications for psychologists, genetic counselors, other medical officials and those who are planning a family.

Lisa Brumley - Psychology***The Evaluation of Peer and Sibling Aggression in 5th Grade Students*****Sponsor / Mentor: Dr. Renae Duncan**

The current study examines peer and sibling aggression in 98 5th grade students. It determines the relationship between peer bullying in schools and sibling bullying and it carefully investigates the relationship between bullying and psychological difficulties that are related. The results concluded that children who were peer bullies and victims of peer bullying reported the highest frequency of sibling bullying and victimization. Furthermore, significant group effects for sibling and peer-bully involvement were revealed as well as a sibling by peer bullying interaction in level of self-reported psychological difficulties. The general results from this study indicate those children who were both bullies and victims reported the highest level of psychological difficulty. Victims, bullies, and those not involved in bullying followed in that respective order.

Angelyn Renee Buchanan - Biology
Beaver and Their Effects on Biodiversity
Sponsor / Mentor: Dr. Howard Whiteman

The aspect of beavers on surrounding vegetation has not been well studied, yet beaver are thought to be keystone species in riparian zones. I predict that beaver create a “dead zone” in the area of their lodge due to flooding but foraging areas will not be as affected by the presence of beaver. For the purpose of this project the area of Land Between the Lakes KY and TN will be the primary research area. A total of six creeks will be studied. Two creeks will be inhabited by a beaver colony. Two of the creeks will be beaver foraging areas. The last two will be areas that have not been inhabited by beaver. Samples of understory plants will be taken from a 2 meter by 2 meter plot along the six creeks. Data collected from the creeks will be compared to determine whether the presence of beaver creates or hinders diversity of plants. Results will be reported at a latter date.

Anthony Burba - Political Science
George W. Bush's Foreign Policy: The Doctrine of Destruction
Sponsor / Mentor: Dr. Farouk Umar

With the inception of the Bush Doctrine, the world’s mighty hegemon has not only attempted to legitimize its existence as such, but has proclaimed that existence as necessary for proper global order. The idea that America will actively pursue its own predominance in the world is not new for a world superpower. The Roman Empire, Napoleonic France, the British Empire, and Nazi Germany all pursued similar policies of preemptive diplomatic and/or military action against possible challengers to their own perceived world orders. These policies have yet to prove successful. I wish to examine how these policies have changed and will continue to change America’s role in the world. Further, I feel it would be useful to examine possible consequences, positive or negative, that this new policy shift may have.

Levi J. Burkett - English Literature
"FIRE!" The Aesthetic of Change in the Harlem Renaissance
Sponsor / Mentor: Dr. Laura Dawkins

The Harlem Renaissance is a general term applied to a cultural and artistic movement which strove to enfranchise the African-American community and legitimize the art forms (literature, music and visual art) of that community in the 1920’s. The dominating criticism pertaining to this period claims, however, that these goals were not met, and that the failure of the “renaissance” lies in the hands of the artists themselves who, in the face of wealthy white patrons, pandered to the general, and mostly Caucasian, public’s appetite for exhibitionism and the exotic from African-American artists. This study will try to defer that criticism by closely studying the literary journal Fire, which was published late in the Harlem Renaissance period and includes writings and drawing from many of the most influential artists of Harlem in the 1920’s. This journal illustrates the interesting genius of the late Harlem Renaissance in the aesthetic rift that the artists and writers created by presenting the white public with the exotic they desired, and through that answered key cultural questions to attain the primary goals of the period. This technique is best shown through this journal Fire and, I believe, contradicts the prevailing criticism on the era.

Emily Burroughs - Sociology
Cultural Materialist Approach to War
Sponsor / Mentor: Lillian Daughaday

Throughout history, anthropologists and sociologists have given many explanations to the causes of war. Ideological, biological, and political reasons have all been used to discuss war. The primary objective of this paper is to assert that conflict essentially derives from the lack of resources. When basic needs are not met, conflict ensues. This work will apply the ideas of Marvin Harris, a cultural materialist who focuses on the mode of production and reproduction to explain warfare. Using the countries of Sierra Leone, Nepal, and Columbia, this paper will apply the cultural materialist approach to war.

Eileen Cameron - Human Development & Leadership

Qualitative Study of Cohabitation

Sponsor / Mentor: Dr. Renee Campoy

This qualitative research investigates the issue of cohabitation. An increased acceptance of cohabitation shows a marked shift in society's moral values (Anderson, 1998; Axin & Barber, 1997; Bumpass, Sweet, & Cherlin, 1991; Humble, 1999; Martin, Martin, & Martin, 2001; Popenoe & Whitehead, 2002). An underlying theory behind the high divorce rate among couples who cohabit is the cohabitation effect (Cohan & Kleinbaum, 2002) wherein couples who cohabit prior to marriage suffer greater instability than those who do not. The research suggests that variables such as age, communication and problem solving skills, level of relationship commitment, family/moral values, education, income level, race, and geographic location aid in the occurrence of the cohabitation effect. This research explores the relationships of six married couples who cohabited prior to marriage and remain married despite empirical findings.

Michael Carney and Wesley Sturgill

Bair Hugger vs. Fluid Warmer in Preventing Intraoperative Hypothermia in the Laparoscopic Cholecystectomy Patient

Mentor / Sponsor: Michael Perlow

Purpose: The purpose of this study was to determine the best warming device in preventing intraoperative hypothermia in the laparoscopic cholecystectomy surgery patient. **Method:** Forty patients were randomly assigned to either have a Bair Hugger or a fluid warmer during their laparoscopic cholecystectomy procedure. Participants were interviewed pre-operatively if they were between the ages of 18 and 80, and if their weight was between 50 and 150 kilograms. After induction of anesthesia, the pre-selected warmer was utilized and a beginning temperature was recorded using an esophageal thermistor. Temperatures were recorded after induction, at 15-minute intervals, and at the end of the surgery. **Findings:** No differences were noted between the two warmers in preventing hypothermia. **Discussion:** Since neither warmer was statistically better than the other, we did a cost analysis and found the Bair Hugger to be less costly to the hospital and the patient. Therefore, the Bair Hugger can be used if there is not a specific indication for the fluid warmer or a need for both to be used. Our review of literature did not include a study specifically matching these two warmers together. We recommend another study with more patients and tighter controls over the variables that may have affected our data.

Spencer D. Chambers - Chemistry / Biology

Diel Emergence Patterns of Ecologically Important, Fish-Parasitic, Gnathiid Isopod Larvae on Caribbean Coral Reefs

Mentor / Sponsor: Dr. Paul C. Sikkell

We quantified diel emergence patterns of gnathiid isopod larvae (pranizae) at one location in Puerto Rico and two locations in the US Virgin Islands, during June and July of 2001. We set 4-6 emergence traps during each of 12 replicate sampling cycles, changing sampling jars at the cod end 2-4 times per cycle. When jars were retrieved after two approximately equal (12 h) periods at the Puerto Rico site, there was a slightly (but not significant) greater average number of pranizae in the daytime samples. When jars were collected more frequently, the number of pranizae captured per unit time sampled was significantly higher during the early-morning and near-dusk periods at the Puerto Rico and St. John, USVI sites, but not the St. Thomas, USVI site. Gnathiids collected in night samples were significantly larger than those collected during the day. These data are not consistent with the hypothesis that tropical reef gnathiids emerge exclusively or mainly at night. However, our finding that many pranizae do emerge at night as well as dusk and early morning, combined with observations that gnathiids are larger and fish are not cleaned at night, suggests that hosts should experience the greatest gnathiid loads early in the morning, and possibly at dusk.

Gelia Chappell, Nancy Jackson, Kathy Long, and Nikki Wheeler - Nursing

Expanding Hospice to A Local Federal Prison (A Set of 3 Posters)

Sponsor / Mentor: Dr. Sharon McKenna

As the general population ages, prisoners in Federal Department of Corrections facilities also face the aging process and the myriad conditions that accompany end of life. Lourdes Hospice is an active community service that seeks to bring compassion and quality care to patients and families living with life threatening illnesses. The purpose of this project was to investigate the feasibility of expanding current Lourdes Hospice services to include inmates of a local federal prison.

Rachel Cheek, Kelly Fineman, Ryan Polczynski, Joshua Ricks, and Bradley Wilson – Accounting, Independent Studies, and Applied Mathematics
Business/Marketing Plan for a Local Video Arcade
Sponsor / Mentor: Dr. Patsy Nichols

This is a business/marketing plan for a video arcade to locate in Murray. Its sole purpose is to provide entertainment to college students while maintaining a safe atmosphere. This plan features all the various aspects of the business plan and what each part entails.

Janna Choate - Elementary Education
Student Teaching Coordinator: Jeanie Robertson
Sherri Watkins - Elementary Education
Student Teaching Coordinator: Carol Ann Rudolph
Alisha Payton - Art Education
Jensen Douglas - Art
Jennifer Gream - Middle School English / Math
Student Teaching Coordinator: Dr. Bonnie Higginson
Alyson English - English
Tiffanie Holt - Math
Student Teaching Coordinator: Dr. Ginny Richerson
Student Teachers' Eligibility Portfolios
Jeanie Robertson Coordinator of Student Teaching
College of Education - Teacher Education Services

Each student teacher is required to present an eligibility portfolio and supporting material to faculty during the student teaching semester. Both a hard copy in notebook format and electronic version of the portfolio must be submitted. Developing an eligibility portfolio involves selecting appropriate artifacts to demonstrate attainment of the professional skills and dispositions represented in the New Teacher Standards. The eligibility portfolio also requires a reflective statement for each standard. While selecting a good artifact that addresses a standard is important, the reflections are where the student teachers are able to communicate their understanding and share their thinking about important teaching and learning issues. Through these reflections they demonstrate their competencies related to each of the New Teacher Standards. The focus of the Murray State University College of Education's conceptual framework is to prepare graduates to become reflective decision-makers and to achieve Kentucky Standards. The eligibility portfolios provide the opportunity for student teachers to verify that they have achieved these goals.

Clemencia Marin Cignoni - Spanish
Salvador Reality and Myth
Sponsor / Mentor: Dr. Leon Bodevin

During the 1980's, El Salvador went into the regimen of D'Abusson, a political leader who took the land from his people under the pretense of a communist social movement. These events lead to the support of the United State government of Ronald Reagan. Joan Didion, writer and historian, visited the country to clarify the facts that there was not such political movement and that the rights of the people were being abused. Oliver Stone presented these facts in the form of a hard but compelling movie that allowed the American public to experience the results and suffering of a zone of war in Latin America. Both did a wonderful job at it but there were interesting differences between both authors and an equally interesting message worth your time to hear and apply in this time of war.

Holly Clark - Mathematics
Cryptography: The Science of Secrecy
Sponsor / Mentor: Dr. Rob Donnelly

Throughout history, governments, militaries, and sometimes even common people needed ways to securely send messages. We shall explore the science of secrecy as it progressed from World War I to today and possibilities for the future. The advancement that will be of greatest emphasis is the creation of a Public Key Cryptography system. This idea solved the problem of needing to safely transport a Private Key to the intended recipient of the message. Public Key Cryptography also allowed online communication, credit card purchases, and banking to be a safe possibility. Furthermore, we shall address some problems that still remain unsolved and possibilities for future cryptography schemes.

Ryan Clark - Mathematics***The Four Color Conjecture: Any Map May Be Colored with at Most Four Colors*****Sponsor / Mentor: Dr. Scott Lewis**

Among the most famous problems of all time, finding a formal proof of the conjecture (known as The Four Color Problem) was a source of confusion and frustration to mathematicians and amateurs alike for over 150 years. We give a colorful history of the Four Color Problem, and discuss its difficulties as well as its eventual "solution."

Carla Creasey, Jesse Gray, Chad Hill, J.C. Hicks, and Cody Robertson - Agriculture Science***The Effects of Recommended Rates of Nitrogen and Foliar Fertilization on Dark-Fired Tobacco*****Sponsor / Mentor: Dr. Jay Morgan**

The recommended rates of nitrogen for the production of dark-fired tobacco are 300 lbs./acre in Kentucky. In the past, many producers have used in excess of 400 lbs./acre of soil-incorporated nitrogen in addition to spraying foliar fertilizer throughout the growing season. Studies have been conducted from the year 2000 to the present in Princeton, Kentucky, and in Springfield, Tennessee. The same study was started in Murray, Kentucky, in the year 2001, and conducted again in 2002 as a joint project between the University of Kentucky and Murray State University. The purpose of this study was to determine the optimum rate of incorporating nitrogen and also investigates the effects of foliar fertilizer on dark-fired tobacco. The study was repeated in 2002 with irrigation because many growers who had incorporated irrigation with high rates of nitrogen fertilization, reached yields in excess of 4000 lbs./acre versus the 2500-3200 lbs./acre achieved in the research plots, which were not irrigated. The experiment utilized a split-plot design arranged in a randomized complete block with three replications. The plots consisted of 200, 300, and 400 lbs. Nitrogen/acre incorporated, and subplots of three foliar fertilizer products applied every two weeks after transplanting with an unsprayed check, with 100 or 200 lbs. of nitrogen/acre side dress into the remaining plots to obtain 300 and 400 lbs. nitrogen/acre. Results from 2002 indicate there is no significant benefit of foliar fertilization in Dark Fired Tobacco. A significant (.10) difference was found between the 200 and 300 lb/ac soil applied nitrogen fertilization rates. There were no significant difference in any of the mean gross income results from the soil applied or foliar applied fertilization rates.

Sarah Culp - Outdoor Recreation and Leisure Services***My Experience in 1850*****Sponsor / Mentor: Dr. Kelly Rogers**

This poster includes a detailed report of my service leaning experience that I dedicated to Land Between the Lakes, more specifically, The Homeplace. The Homeplace re-creates what life was like on a southern farm in the 1850's. The farm includes authentic houses and furniture, as well as barns and animals. My service included: interpretation, helping with programs, and performing daily chores. I enjoyed my service at The Homeplace and the experience of life in the 1850's.

Kara Curran - History***They Did Their Part*****Sponsor / Mentor: Dr. Ken Wolf**

This paper studies the lives and impact of the Five Sullivan Brothers of World War II. The five boys were from a very tight knit family in Waterloo, Iowa. When they refused to enter the service unless they all could join and serve together, the navy finally agreed and then used the brothers' action to help recruit more sailors. To this day, the image of the five brothers and the members of their families are being used in positive and negative ways. For this paper, I interviewed family members and in it I present their views on how the navy used the brothers and present my own conclusions on this issue.

Marty Davenport – Conservation Biology***Teaching Conservation Biology to Students in the Fourth and Fifth Grades*****Sponsor / Mentor: Dr. Howard Whiteman**

Early education of the general public in the importance of biodiversity, extinction, and the interconnectivity of life are important to the success of Conservation Biology efforts. A teaching unit designed for the fourth or fifth grades was created to introduce these complex, but important, concepts of conservation biology to students who do not possess knowledge of genetics or evolution. The unit used an interactive game to teach these concepts. A pre-test and post-test were used to determine the effectiveness of the teaching unit. The data were then analyzed to determine if there was a significant difference between the pre-test and post-test results. Results will be evaluated in light of the goals of Kentucky's core science curriculum and of conservation biology.

Jeremy R. Edwards - Organizational Communication

The Practice of Cultural Collectivism as a Barrier of Communication Between Japanese and American Businesses: An Analysis of Cultural Misunderstanding as an International Dilemma.

Sponsor / Mentor: Dr. Michael Basile

Collectivism is a cultural communication term referring to concept of groupism and relationship-oriented behaviors that are evident in the Japanese society and organizational business culture. In contrast, individualism is the nature of the American society and business, which so strongly opposes the cultural behaviors of the Japanese. The process of communicating and negotiating business transactions between these two contradicting cultures depends greatly upon cultural awareness. The capacity of American businesses to adjust to Japanese collectivistic cultural styles presents a major international dilemma. Being that the United States and Japan are the leading emerging economies of the twenty-first century, it is imperative that their international business communication be managed properly. The question that surfaces is; to what extent will the communicative norms of Japan and the United States aggravate or diminish the international business relationship and their market involvement? The study and analysis of cultural traits and basic values of social systems are valid and important disciplines when considering this international predicament. The purpose of this research will be to answer the questions: What is the affect of collectivism on international business communication between American and Japanese businesses and how does the practice of cultural collectivism act as a barrier of communication between Japanese and American businesses? Three significant variables will be examined in an attempt to clarify the issue: collectivism, facets of international business communication, and the Japanese business organization, practices, and organization.

Misty Emerson - Psychology

Childhood Discipline

Sponsor / Mentor: Dr. Paula Waddill

Today with increasing violence and aggression in children, adolescence, teens, and young adults, discipline techniques are questioned. What determines how one will discipline their children? Does it rely on their previous history of childhood discipline, their aggression level, the individual's trust level, or does one's gender play an important role? The present study investigated these factors in relation to how one plans to physically discipline their children. Participants were asked to complete four questionnaires. The questionnaires assessed overall, physical, and verbal aggression; as well as trust level, how one was disciplined as a child, and how one will discipline their children. Results show that previous physical discipline did not produce a significant relationship on the individual's level of aggression. Findings also show individual's plans to discipline their children, for the most part, the way they were disciplined during childhood. Individuals with higher physical aggression, as well as overall aggression levels, tend to plan to physically discipline their children more. Males were significantly higher in overall and physical aggression than females. Males planned to physically discipline their children more than females, and females planned to verbally discipline their children more than males.

Melissa Engleman - Biology

Allelopathic Interactions Among Flora of the Ledbetter Embayment Mudflat

Sponsor / Mentor: Dr. William Spencer

Observations of the plants living on the Ledbetter Embayment Mudflat of Kentucky Lake have led to testing for the presence of allelopathy. Observations of *Eleocharis* were the inspiring factor of the study. Allelopathy is defined as the direct or indirect effect of one plant on another through the production of organic chemical compounds that escape into the environment. These organic chemicals are known as allelochemicals and can be produced through the leaves (leachates) and roots (exudates) of a plant. Allelopathic interactions have been observed using lettuce seed assays and photosynthetic rate comparisons. Statistical results indicate the presence of allelopathy in the mudflat environment. The plants tested in this study include *Eleocharis acicularia*, *Potamogeton diversifolius*, *Rotala ramosior*, *Sagittaria montevidensis*, *Justicia americana*, *Xanthum strumarium*, and a species of the genus *Carex*. The purpose of this study is to determine the role and importance allelopathy plays but not the chemical nature of the allelochemicals involved. Several tests can be done using these plants to determine the importance of allelopathy in the environment, but actual field tests are difficult to conduct. Further study is planned to determine the importance of allelopathic interactions in the mudflat environment.

Adam Farley - Chemistry

Nucleotide Binding in the Active Site of an Aminoglycoside Phosphotransferase Enzyme (APH(3')-IIIa)

Sponsor / Mentor: Dr. James R. Cox

The rise in bacterial resistance to antibiotics has reached a crisis level and is considered a public health emergency. Pathogenic bacteria have countered the overuse of antibiotics by expressing a multitude of gene products that render the drugs ineffective. A family of bacterial enzymes that serves as detoxifying agents of aminoglycoside antibiotics has been identified as aminoglycoside 3-phosphotransferases (APH(3,S)). An important contact in the nucleotide-binding pocket of an aminoglycoside antibiotic kinase, APH(3')-IIIa, is a pi-pi stacking interaction between Tyr42 and the adenine ring of bound ligands. An investigation of the prevalence of similar Tyr-adenine interactions revealed that many different protein systems employ an aromatic amino-acid side chain in the recognition of ligands that contain an adenine ring. The geometry of these stacking interactions involving Tyr suggests that electrostatics play a role in the attraction between these aromatic systems because, in many cases, the oxygen atom of the Tyr side chain projects toward the less electronegative region of the adenine ring system. Kinetic and calorimetric experiments on wild type and mutant forms of APH(3')-IIIa have yielded further experimental evidence of the importance of electrostatics in the nucleotide-binding site of this particular enzyme. Understanding the nature of the pi-pi stacking interaction in APH(3')-IIIa will facilitate inhibitor design strategies that target the adenine-binding region of APH-type enzymes. This program is an initial step in a program geared toward regaining the clinical effectiveness of aminoglycoside antibiotics.

Krista Fennel and Julie Royster

The Effects of Sleep on Short-Term Memory Recall in Night Shift vs. Day Shift Nurses

Mentor / Sponsor: Barbara Kearney

Purpose: The purpose of this study was to examine the effect of sleep on short-term memory recall in day shift vs. night shift nurses. **Method:** A structured, nonexperimental research design was utilized, with data collected through the use of a sleep questionnaire and completion of a memory recall test at two southern hospitals. The memory recall test was an abbreviated version of the Rey Auditory Verbal Learning Test (RAVLT). Using this data collection tool, participants listened to a taped recording of 15 words on three separate occasions or trials. Each time the list was played, a memory test was conducted, with participants listing all recalled words from the recorded list. Criteria for inclusion in the study were the abilities to read, write, and speak English, and that the participants be registered nurses or licensed practical nurses between the ages of 20 and 55, working a 12-hour shift from 7 pm to 7 am or 7 am to 7 pm. Following the testing, the participants completed a brief questionnaire. Questions included the each participant's age, shift worked, and average number of hours of sleep obtained in a 24-hour period. Additionally, night shift nurses were asked to report whether their sleep occurred during the day, night, or both. The sample population consisted of 60 nurses, 30 of who worked the day shift, and 30 who worked the night shift. **Findings:** Statistically, there were no significant differences in hours of sleep obtained or the number of recalled words on trials 1, 2, or 3 between day shift and night shift nurses. The mean hours of sleep obtained by day shift nurses was 6.15 hours and the mean for night shift nurses was 5.92 hours. Although the mean number of recalled words was slightly lower for night shift nurses, the difference was statistically insignificant. **Discussion:** The results of this study do not support any effect of sleep on the cognitive process of short-term memory recall. However, the study does provide a foundation for future studies to further explore the effect of shift work on both physical and mental health and wellness of the nursing workforce.

Courtney Flood, Adam Bell, and Scott Lowe - Agriculture Education

Trickle Irrigation of Burley and Dark-Fired Cured Tobacco

Mentor / Sponsor: Dr. Kenneth Bowman

A study was conducted to determine the effectiveness of drip irrigation in the production of burley and dark fire-cured tobacco. Burley and dark fire-cured plots were treated as separate experiments; TN 90 was the burley variety and NL Madole was the dark variety. A randomized complete block with three replications was used for each study. Plot size was four rows, with data collected only from the two middle rows of each plot. Water used was from the city water source. Lay flat tubing was placed between each replication, with drip tape placed the length of each row near the base of the plants. A water flow meter was used for each plot to determine the amount of water each plot received and a ball valve so that it could be irrigated as a separate event. Burley plots were transplanted on June 4th and dark plots were transplanted on June 7th, with irrigation withheld from all plots approximately six weeks following transplanting. After this period, irrigation was applied by the following treatments: 1) Check plot with no irrigation; 2) a weekly minimum of 2.5 cm of water, including incident rainfall with drip tape placed along the rows; 3) application of 2.5 cm of water every ten days, including incident rainfall with drip tape placed along the rows; 4) application of 2.5 cm of water every ten days, including incident rainfall with drip tape placed down every other middle row; 5) irrigation applied as indicated by available soil moisture measured by sensors, with drip tape down each row. Irrigation treatments continued until the dark plot was harvested on September 11th and the burley plot on September 10th.

Rebecca Foust - Wildlife and Fisheries Science

Effects of Forest Type on Bird Diversity in Clark's River National Wildlife Refuge

Sponsor / Mentor: Dr. Howard Whiteman

Natural forests versus anthropogenically-altered forests may lead to different levels of biodiversity and community structure. To test this hypothesis, I compared bird populations from a monocultured tree habitat to populations from a natural bottomland habitat. The study was conducted on the Clark's River National Wildlife Refuge located in Marshall, McCracken, and Graves Counties, Kentucky. A high priority site for protection by the Fish and Wildlife Services Bottomland Hardwood Preservation Program, the refuge was established in 1997, and is currently the only National Wildlife Refuge in the state of Kentucky. The most significant resources of the refuge are the wetland habitat complexes formed by the river, creeks, beaver ponds, and natural ponding. These bottomland forests are used as breeding, wintering, and migration habitat by many species of migratory birds. Acquired land from Westvaco Company provided the Sweetgum monoculture sampling areas. Sample areas of each habitat type were chosen with edge effects in perspective. I predicted that bird diversity would be lower in the Sweetgum area, given its lack of tree diversity. Bird counts began in mid-February and will continue into early April. Results of this analysis have created additional information for the refuge and will be further discussed in the presentation.

Robyn Galloway - English Education

Gender Grouping at the Middle School Level

Sponsor / Mentor: Dr. Renee Campoy

Many schools are experimenting with same-gender classrooms and/or schools. In this action research study, 51 girls and 46 boys were placed in same gender classrooms at the middle school. Administrators, teachers, parents, and students were interviewed to determine how single gender classrooms affected achievement and behavior. Achievement results were measured by teacher made tests. Behavior results were measured by the number of discipline notices and by teacher perceptions as determined by interview.

Ashley Gilson - Biology

Medicinal Plants: An Ecology Lab

Sponsor / Mentor: Dr. Howard Whiteman

Medicinal plants are on the decline due to expanding popularity and shrinking habitat and range. This large-scale consumption has led to a \$3 billion market with over 60 million consumers. There are over 175 plants native to the United States that are used in non-prescription drugs. Twenty of these species are "at risk" plants and are the most sensitive to human impact. The conservation and education of these species are necessary to protect these native plants. The main key to the conservation of these plants is to create awareness and knowledge of the public. To aid this effort, the study of medicinal plants should be incorporated into the curriculum of college students. I am developing a lab that investigates 10 medicinal plants, their uses, and any current conservation efforts for use in an introductory ecology class. A group of students would be assigned a plant and research the Internet or other material to learn about the importance of the plant. The students would conclude their findings and review it with the class. Making students aware of the great value of plants to medicine may help reduce over utilization and sustain natural rates of reproduction.

Emily Gorman - Business Admin Major / Dance Minor

Learning to Fall

Sponsor / Mentor: Dr. Ivan Pulinkala

In a changing world, filled with the possibilities of war, terrorism, and evil, it is important to develop relationships that support and comfort us. "Learning to Fall" is an exploration of the idea of trust. This bond between two humans is the basis of every relationship. It is an intimate unspoken code that allows us to develop friendships, intimacy, and basic interdependence. The issue of trust has been approached and interpreted in a universal manner through this piece. I wanted the audience to experience the piece through their own personal life experiences. "Learning to Fall" is an exploration of the idea of trust in movement, between nine bodies in space. The initial movement is very structured and linear; the dancers have no physical contact with each other as they begin to move through space. As the piece evolves, the idea of trust gives way to physical contact, as the dancers begin to explore the physics of weight bearing. Through a physical exploration of time, space, and force, the dancers are able to develop the idea of trust on both a physical and emotional level. This cycle of evolution is very personal to me as I begin the transition towards my post-graduate education in dance. My relationships of trust have developed both within my personal being and with others around me. I wanted to explore this concept through movement, not only to express myself, but also to help with my personal transition. Communicating this through nine dancers has helped me grow and realize that when you venture away from your norms, your support system of trust has got to grow, in order to allow yourself to push the limits within yourself even further.

Olivia Grace, Brandon Chandler, Cory Hicks, and Joshua Monroe - Agriculture Science

Evaluation of Dark Fire-Cured Tobacco Varieties

Sponsor / Mentor: Dr. David Ferguson

On the campus of Murray State University, we have five acres of dark fire-cured tobacco for research test plots. To better enable dark-fired tobacco producers to select the best varieties of tobacco, we have conducted replicated trials to compare the advantages and disadvantages of current commercial dark tobacco varieties during the 2002 season. The varieties tested include DF 485, DF 911, DT 583, DT 595, DT 508, DT 518, DT 592, KY 160, KY 171, KY 190, TN D94, TN D950, VA 355, VA 359, VA 309, Little Crittenden, TR Madole, Jordan Madole, Smith Madole, Narrow-leaf Madole, Elliott Madole, and Black Mammoth. The two experimental breeding lines also included in the trial were SN 2105 and SN 2108. The layout of the test plots was a randomized complete block design with four replications. Each plot was 300 ft², with 4,350 plants per acre. The following herbicides were applied: 1.1 pounds of pendimethalin per acre and 4 ounces of sulfentrazone per acre. The amount of fertilizer applied was 300 lbs. N, 200 lbs. P₂O₅, and 200 lbs. K₂O per acre, respectively. The plots were transplanted into the field on June 4. No irrigation was applied to these plots. On August 1, the plants were detopped. Suckers were controlled by applying a butralin and fatty alcohol mix to each plant. The plants were harvested, or housed in the barn on September 10, 11, and 12. We will be reporting the overall yields, yield of each leaf grade, and the quality of the leaves from each variety. Statistical analysis will be conducted to determine differences between the varieties.

Adam Green - Biology

Factors Affecting Seasonal Migration of Herpetofauna Within a Reservoir Embayment

Sponsor / Mentor: Dr. Howard Whiteman

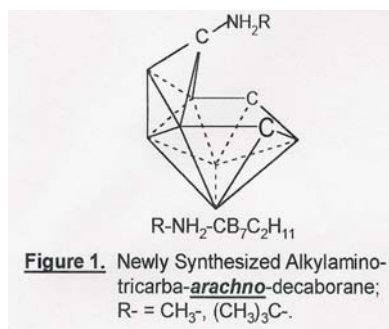
Reptiles and amphibians are important indicator species of the health of an ecosystem. However, little research has been conducted on the ecology of reptiles and amphibians within man-made reservoirs. This study focuses on the variables that affect movements of herpetofauna within Ledbetter Bay on Kentucky Lake, a reservoir of the Tennessee River. From April – October, 2002, numerous species of herpetofauna were captured, and environmental variables, such as water depth, water and air temperatures, and lake elevation, were recorded. Red-eared sliders, Ouchita map turtles, and musk turtles were the most common species captured within the embayment. Analysis showed no significant factors to determine abundance, and sex, date, and turtle body size did not affect direction and distance of movement by turtles.

Jordan Hall - Chemistry

Synthesis of New Alkylaminotricarba-arachno-decaborane Derivatives

Sponsor / Mentor: Dr. David Owens

This research was performed by URSA-supported undergraduate Jordan Hall and graduate student Neil Vowels and supervised by faculty advisor Dr. David Owen. The synthesis of tricarbaboranes (BpC₃H_(p+3+q))(n-) has been postulated since the mid 1960s with the development of dicarba- and monocarbaboranes, but few compounds of the tricarba- class had been produced to date. Dicarbaboranes have been utilized in the newly developed form of cancer therapy known as Boron Neutron Capture Therapy (BNCT). BNCT uses the neutron capture reaction of boron-10 to produce alpha particles (4He²⁺) and 7Li³⁺ ions that result in the death of the malignant cells⁻¹. This research has yet to incorporate the use of tricarbaboranes. The team has recently elaborated a fairly general method of carbon insertion into carbaborane cages that uses isonitriles. Several derivatives have been successfully produced such as the two shown in Figure 1.



The success of this synthesis has been confirmed by infrared and 11B NMR spectra. A t-butyl derivative and a CH₃-NH₂-CB₈C₂H₁₀ derivative have also been synthesized in a similar fashion. The development of metal complexes (i.e. iron, nickel, etc.) has also been postulated in addition to some R-NH₂-CB₉C₂H₉ and R-NH₂-CB₁₀C₂H₁₀ derivatives. The team has proposed the probable use for these compounds in BNCT research. Support by CISR, Gordon Fund, URSA, NMR Director William G. Stevens at the Medical School of SIU-Carbondale, and Bill Curtis, glassblower there, is greatly acknowledged.

1. Freemantle, Michael. Boron Neutron Capture Therapy: Boron-rich porphyrin compound holds promise for treating cancer. <http://pubs.acs.org/cen/topstory/8034/print/8034notw8.html> (accessed Jan. 2003).

Steve Hallman and Candace West

Effectiveness of Intradermally Injected Lidocaine vs. Normal Saline Prior to Peripheral Intravenous Cannulation

Mentor / Sponsor: Michael Perlow

Purpose: The purpose of this study was to evaluate the effect of intradermally injected lidocaine and normal saline in pain perception prior to IV cannulation. **Method:** A Quasi-Experimental Design was conducted in which two research personnel utilized a questionnaire containing close-ended questions. The study sample consisted of 58 adult same day surgery patients and was conducted as a double-blind randomization. Gender was not a consideration during selection and participants had to be greater than 18 years of age. Interview questions consisted of whether or not there had been previous IV cannulations, prior numbing efforts, and if the participant would prefer a treatment when future IVs were initiated. A visual analog scale of 0-10 evaluated pain perception. The questionnaire was completed within 5 minutes of IV cannulation. **Findings:** Twenty-six of the participants received a treatment of normal saline and 32 received lidocaine. The data from the visual analog scale indicated less pain with the normal saline treatment. The data from the close-ended questions indicated there was less pain with the lidocaine treatment. **Discussion:** The participants in this study indicated that there was approximately an equal difference in pain perception between the two treatments. The discoveries in this study provide a foundation for the choice of treatments prior to IV cannulation.

Hubie Harris - Psychology

Smokers' and Nonsmokers' Opinions on Smoking

Sponsor / Mentor: Dr. Paula Waddill

Many studies have been conducted to assess smokers' and nonsmokers' opinions on smoking. Several of the studies have shown that smokers' attitudes toward smoking reflect cognitive dissonance. However, few studies evaluate how a negative stimulus or information about cognitive dissonance might affect smokers' and nonsmokers' attitudes toward smoking. The purpose of this study was to investigate different circumstances that may affect smokers' and nonsmokers' opinions on smoking. Participants were smokers and nonsmokers who were given no information (control group), were presented with an informational paragraph about cognitive dissonance, or were shown graphic pictures of the physical effects of smoking. Afterwards, they filled out a demographics sheet and the Smoking Attitudes Scale (SAS).

Christy Hart and Martha Kloss – Nursing

Effects of Exercise on Hot Flashes

Mentor / Sponsor: Connie Siefker

Purpose: This study examined the relationship between aerobic activity and the frequency and intensity of hot flashes as experienced by women between the ages of 40 and 65. **Method:** The study was conducted using a correlational design. The setting was in exercise centers, women's health centers, and physicians offices. A convenience sample of women who were transitioning through menopause were recruited in a southern state by displaying a poster describing the study and requesting volunteers to complete a 5-minute questionnaire. This research study included women who exercise regularly and women who do not. Participation was based on a volunteer basis, and included as many volunteers as could be accrued (n=174). Participants were not excluded from the study based on the cause of menopausal status due to hysterectomy or cancer therapy, but were excluded if they indicated on the questionnaire that they were currently taking hormone replacement therapy or birth control pills (n=42). Questions on the survey included age, age of onset of hot flashes, the frequency and intensity of hot flashes as rated on a scale, and if participated in physical activity for 30 minutes at least three times per week. **Findings:** Exercise that maintained an increased heart rate for at least 30 minutes at least three times per week was reported by 48% (n=63) of the participants. Sixty nine percent of the participants experienced hot flashes, with 17% (n=22) reporting severe hot flashes, 23% (n=31) moderate, 28% (n=37) mild, and 31% (n=41) of the participants did not experience hot flashes. The frequency of hot flashes were classified as follows: several times daily 24% (n=32), daily 17% (n=22), greater than three times per week 16% (n=21), weekly 12% (n=16), and 30% (n=39) of the participants reported that they never experienced hot flashes. The magnitude of the relationship between exercise and the intensity of hot flashes was insignificant ($r = -0.0794$). The magnitude of the relationship between exercise and frequency of hot flashes was also insignificant ($r = -.0019$). **Discussion:** There were no statistically significant associations between hot flashes and physical activity.

John Michael Head – Geology
The Canoe Creek Mastodon, Henderson, Kentucky
Sponsor / Mentor: Dr. Ken Carstens / Dr. Tom Kind

A partial skeleton of an American Mastodon (*Mammuth americanum*) was discovered in 1953 in Henderson County, Kentucky. Scientists from local universities, museums, as well as the Kentucky State and U.S. Geological Survey came to the site. The excavation lasted 13 days, where upon the mastodon bones were taken to Audubon State Park in Henderson, Kentucky. The bones were found relatively close together and in their primary context. They were in very poor condition and most required protection before they could be moved. The bones were on display at Audubon State Park until 1988 when the skull was moved to Big Bone Lick State Park in Boone County, Kentucky. No scientific report was prepared at the time of the excavation, however, based on research, the following has been determined. The mastodon was found in the alluvial valley of Canoe Creek's North Fork. The bones were located in a yellow brown silt loam, in the bottom of the creek. No flora or fauna was identified in association with the mastodon. Based on tusk size and tooth wear, the mastodon was a young male approximately 27 yrs old. Pollen analysis indicates the animal died 12,000 to 15,000 years ago in an open boreal wetland. The mastodon was found in an upright or standing position. In conjunction with the pollen data, this indicates the animal became trapped in the soft ground of a Pleistocene marsh. The animal may have died from exhaustion or drowning, and then became buried during the subsequent flooding events.

Doug Herring – Spanish / Political Science
Don Quijote and Sancho Panza
Sponsor / Mentor: Dr. Mica Howe

Don Quijote is the tale of a good-natured hidalgo in central Spain who takes up knight-errantry in order to restore the glory days of the Golden Age into the world. Don Quijote longs for the Middle Ages, when kings and lords ruled, when knights were the respected protectors of the people, and when there was no such thing as a middle class. He detests the direction in which the world is headed, namely toward the Renaissance and the modern world. The irony of this novel is that as the story progresses and Don Quijote continues to fight for his beliefs, the Don's relationship with his squire Sancho evolves in the opposite direction of Quijote's ideal social and political structure. The Don and Sancho grow closer throughout the novel, lessening the gap between their positions in society. This development signifies the transition of the world from the hierarchical structure of a medieval society to one driven by the individualism of the Renaissance.

Doug Herring – Spanish / Political Science
Euskadi ta Askatasuna
Sponsor / Mentor: Dr. Mica Howe

Terrorism has become a major issue in American society with the recent attention it has been given by the government and media. By watching television or reading the newspaper, however, one might get the impression that "terrorist" is synonymous with "Islamic fundamentalist." This, however, is far from the truth. There are many terrorist groups in the world today that are not based in the Middle East and whose cause has nothing to do with religion. One of these is ETA, the Basque separatist group working out of northern Spain and southern France. This paper will take an in-depth look at ETA in order to obtain a better understanding of the organization and what it wants.

Joell Hill - Pre-Medicine
Using Chlorophyll Fluorescence to Determine Wetland Plant Response to Flooding Stress
Sponsor / Mentor: Dr. William Spencer

Chlorophyll Fluorescence is the emission of energy as light from excited electrons in plants. Under "normal" conditions the energy would be used to produce ATP, and NADPH. When the light-dependent reactions of photosynthesis are decoupled from the light-independent reactions, fluorescence occurs. Fluorescence estimates the amount of absorbed quanta that are not used in photosynthesis. In other words, the more light that is emitted the more stressed the plant. Two hypotheses were formed. Aerial leaves from the *Justicia Americana* plants do exhibit acclimation to the aerial environment and the submersed leaves do exhibit acclimation to the aerial environment. Using pulse-modulated chlorophyll fluorescence, it was found that aerial leaves exhibit less stress in the submersed environment than submersed leaves in the aerial environment. When the environment is changed, the amount of stress increases in both submersed and aerial leaves. Submersed leaves are better able to use energy dissipated from the reduction of NADP⁺ into NADPH, which indicates tolerance and also the submersed leaves are better able to prevent thylakoid damage from light, which also indicates tolerance.

Whitney L. Holland - Psychology / Spanish

Sport Fans and Racial Attitudes

Sponsor / Mentor: Dr. Daniel L. Wann

In 1999, Wann et al. showed that identification with a local sports team was positively correlated with psychological health. Similarly, "tolerant" individuals (meaning individuals who displayed less anti-black attitudes) were shown to be more psychologically healthy than more racist individuals (Hightower, 1997). Therefore, this study intends to expand on this knowledge and investigate the link between sport team identification and racial attitudes. It is expected that those who are more highly identified with a sports team will harbor less anti-black attitudes. Additionally, since mere sport fandom has been shown to have little effect on psychological health (Wann et al., 1999), it is expected that mere sport fandom will have little relation to racial attitudes.

Whitney L. Holland - Psychology / Spanish

The Patriarch of Creativity and Modernism in Spanish Cinema

Sponsor / Mentor: Dr. Leon Bodevin

Francisco Franco, the legendary dictator of Spain for nearly 40 years, is generally connected with a harsh and stifling regime. Most people consider his extremist policies and manipulation of mass media as having stifled artists of all mediums. However, this presentation will examine the possibility that Franco's harsh censorship policies, particularly for the cinema of Spain, actually were the motivation for their creativity and gave Spanish cinema its uniqueness.

Donald Hudson - Electromechanical Engineering Technology

Casey King - Architecture

Rapid Prototyping Using CAD/CAM

Sponsor / Mentor: Dr. Manocher Djasemi

Rapid prototyping (RP) is an emerging technology aimed at product prototyping in a short time and with minimum cost. A number of RP systems have been developed including stereolithography, selective laser sintering, and CAD/CAM (computer aided design/computer-aided manufacturing). This presentation demonstrates the application of CAD/CAM in rapid prototyping.

CAD/CAM uses geometrical data saved in CAD to generate cutting tool paths and eventually a part program known as NC program. The NC program controls the motions of a machine tool equipped with a cutting tool that in turn shapes a prototype. The entire process could last a few hours compared to days or weeks in traditional prototyping methods.

In this project, CAD/CAM technology has been used to produce a prototype of a new golf putter design. The prototyping process involved creating complex 3-dimensional surfaces, cutting toolpaths and fabrication of design.

Traca E. Huff - Criminal Justice

The Weed and Seed Program Unveiled

Sponsor / Mentor: Dr. Paul Lucko

The federal Weed and Seed Program, based upon the ideals of James Q. Wilson's "Broken Windows Theory," seeks to strengthen communities by enforcing laws and establishing environmental beautification and social programs in neighborhoods characterized by concentrated poverty and extensive criminal activities. Referencing successful endeavors in Dyersburg, Tennessee, and elsewhere in the United States, this study proposes a similar project for Paducah, Kentucky.

Susan Kalberer - English Education

Improving the Instruction of Poetry in the High School Classroom

Sponsor / Mentor: Dr. Renee Campoy

Poetry can be a difficult subject to teach to high school students. This action research project based on the theories and strategies of Kenneth Koch explored how to improve student attitudes toward poetry reading, their understanding of a variety of different types of poetry, and how to produce their own creative thought-provoking poems.

Kevin Keane - Psychology***Reducing the Stigma Associated with Depression*****Sponsor / Mentor: Dr. Paula Waddill**

Previous research has shown that different types of education have different effects on reducing the stigma associated with mental disorders like schizophrenia. Few studies, however, have investigated the effects of these various forms of education on reducing stigmas about depression. This study investigated how different types of educational information people's short-term and long-term (one-week) attitudes towards those who suffer from depression. Participants either received no information on depression (control), a list of descriptive symptoms, or a short passage describing common misconceptions about depression. A social attitudes questionnaire was then administered to determine the effect of different amounts of education on people's attitudes towards depression. This research may help to determine if brief education programs are worthwhile for reducing the negative stigmas associated with depression.

Miki Kimura - Print Journalism***A Comparative Analysis of Media Coverage of the Pending War on Iraq*****Sponsor / Mentor: Dr. Michael Basile**

This is a comparative study of media coverage of the build-up to the Iraq war in the U.S., Great Britain, and Japan. From the perspective of mass communications theories about the "Magic Bullet" and "Opinion Leaders," a survey of press articles and op ed pieces in leading newspapers in particular is conducted to determine the reciprocal influences operating between the press and other social institutions like government and industry on public opinion. After looking at the historical role of the press in each country, the study applies mass communications theory to illustrate similarities and contrasts in press coverage on this issue.

Joshua Seay Kitchens - Chemistry***Polychlorinated biphenyls and Chlorinated Pesticides Concentrations in Fish from Kentucky Lake*****Sponsor / Mentor: Dr. Bommanna Loganathan**

Polychlorinated biphenyls (PCBs) and chlorinated pesticides are well known environmental pollutants and known to be responsible for serious environmental and health problems. One of the major routes of human exposure to PCBs and chlorinated pesticides is consumption of contaminated fish. The purpose of this study is to measure the levels of PCBs and chlorinated pesticides in Kentucky Lake fish. Several species of fish were collected from selected locations in the Kentucky Lake. The samples were dissected and only edible flesh portions were analyzed for PCB congeners and selected chlorinated pesticides. Standard analytical procedures were followed to measure the compounds in fish. In general, total PCB concentrations in fish fillet were relatively higher than the pesticides. Total PCB concentrations in Kentucky Lake fish ranged from 1.6 ng/g wet weight to 73 ng/g wet weight. Chlorinated pesticide concentration in fish ranged from 1.14 ng/g wet weight to 3.3 ng/g wet weight. The levels of PCBs and chlorinated pesticides in Kentucky Lake fish were below the Food and Drug Administrations (FDA) established limits for human consumption.

Beth A. Kobylarz - Biology***The Effect of Road Type and Traffic Intensity on Amphibian Road Mortality*****Sponsor / Mentor: Dr. Howard Whiteman**

Motor traffic can be a major cause of mortality for some species. Dispersing organisms may be hindered in landscapes with roads because they are more likely to come in contact with roads or even cross roads, and therefore these species may be more vulnerable to traffic mortality. In order to quantify the effects of vehicular traffic on the seasonal dispersal of amphibians and to better understand the implications of road kills on amphibian populations, an amphibian road mortality census was performed. The road mortality census was conducted along four 1-km sections of paved and unpaved roads within Land Between The Lakes National Recreation Area, Kentucky. Roads were categorized as (1) two-lane, paved highway, (2) two-lane, paved scenic road, (3) unpaved, off-highway road, and (4) gravel road. Traffic intensity was quantified as the number of vehicles per hour for each studied section of road and was used as an index of the number of potential amphibian road mortality. Dead and live frogs, toads, and salamanders were counted along each 1-km segment of the roads, and their relative positions to the road were also noted. The results of the road mortality study are pending the completion of the census and will be discussed upon its culmination.

Natalie Krupansky – Music

The impact of Rossini for Mezzo-Soprano Roles and His Use of Bel Canto

Sponsor / Mentor: Dr. Sonya Baker

This is a lecture/recital that takes an investigative look at the bel canto style of singing which was popular during the late 18th and 19th centuries in Italy. It also will discuss Rossini's use of bel canto styles and techniques. Also discussed will be the impact Rossini had on roles for mezzo-sopranos in opera.

Wisanu P. Krutngoen - Educational Leadership and Global Policy

A Historical Investigation of Asian and American Educational and Economic Factors and Their Affect on Student Learning Between 1980 and 2000

Sponsor / Mentor: Dr. Richard Flynn

The purpose of this study was to examine the relationship between education and economics in Thailand and the United States from 1980 to 2000. Several educational factors (e.g., educational governance and administration, educational constitution, educational outcomes), were studied in correlation with economic developmental components (e.g., GNP per Capita, trade, banking system, standards of living.) Comparisons of the economical and educational relationship of the two countries were made and summarized. These economic and educational factors were investigated holistically both in the review of literature and through the use of a Pearson r statistical correlation. From the study results, conclusions were made: education and economics are related to each other; and they are related to each other in the way that the better the economy a country has, the higher number of students that are provided with education. A country's economy, either strong or weak, does not affect student achievement on international tests.

Susan Kyle - Social Work

Timeline of the Development of African American Education

Sponsor / Mentor: Dr. Peggy Pittman-Munke

Many legal changes have occurred within the last fifty years, giving African Americans greater access to education following the landmark Supreme Court decision *Brown v. Board of Education of Topeka* (1954), but still inequality exists in our schools. Many "law-abiding" citizens, mostly Southern whites have responded by circumventing the laws using such methods as implementing standardized tests to prevent equal access to quality education. Affirmative Action programs, designed to address racial inequality have been challenged by claims of reverse discrimination. Fifty years after *Brown v. Brown*, advantaged African Americans are attaining academic excellence while the plight of disadvantaged blacks remains relatively unchanged. A timeline, that begins with ratification of the Fourteenth Amendment in 1868 and continues into the present day, exemplifies national and Kentucky events and people that have been significant in education among African Americans.

Joseph M. Lambrix - Geoscience

Linear Regression Prediction Models for Turbidity in Kentucky Lake Utilizing LandSat 7 ETM+ and KLMP In Situ Data

Sponsor / Mentor: Dr. Burl Naugle

Kentucky Lake was formed in 1944. Since then, it has been a focus of water quality monitoring. LandSat Thematic Mapper (TM) and Enhanced Thematic Mapper Plus (ETM+) data coincides with in situ data taken from the corresponding date. The goal of this research is to see if there is a correlation between band reflectance and turbidity using LandSat 7 ETM+ imagery data along with in situ data collected concurrently by the Kentucky Lake Monitoring Program (KLMP) in 2000 and 2001. All of the reflective bands as well as both thermal bands were evaluated with the exception of the Panchromatic. Stepwise regression models and correlations were created using the statistical analysis system (SAS).

Han-Yu K. Lee - Mathematics***Applications of Finite Topologies Using Maple*****Sponsor / Mentor: Dr. John Porter**

Let $X = \{1, 2, \dots, k\}$. A topology T on the set X is a family of subsets of X that satisfy the following conditions: i) T is closed under arbitrary unions, ii) T is closed under finite intersections, and iii) X and the empty set, \emptyset , are in T . The relationship of finite topologies to Boolean matrices, Boolean functions is investigated. Boolean matrices are those matrices that contain only a one and a zero in each entry. A topogeneous matrix is a $k \times k$ transitive, reflexive, Boolean matrix such that $M^2 \subseteq M$. A one-to-one correspondence between the set of all $k \times k$ topogeneous matrices $M = (m_{ij})$ and the collection of all topologies T on the set X is obtained by letting each entry m_{ij} in the matrix M equal to one if and only if i is in the closure of j . A Boolean function is a function from any set to the set $\{0,1\}$. Code each subset Y of X with a binary number, s , of length k by setting the i th position to one if and only if i is an element of Y . We can use Karnaugh maps to produce a Boolean function that represents each topology. Conversely, given these Boolean functions we can reproduce the topologies.

Amelia Lehman - Biology***Endangered Bat Microhabitat Assessment on Fort Campbell Military Reservation*****Sponsor / Mentor: Dr. Howard Whiteman**

With populations of Eastern cave bat species declining dramatically, identification and preservation of possible and probable habitat has become imperative. Of the ten Eastern cave bat species, three are listed as endangered, and include the Indiana bat (*Myotis sodalis*), the Gray bat (*Myotis grisescens*), and Townsend's big-eared bat (*Plecotus townsendii*) (Harvey, 1992). Fort Campbell Military Reservation has recorded foraging Indiana and Gray bats within post boundaries. The reservation, in cooperation with the U.S. Fish and Wildlife Service, has initiated a project to survey WWII bunkers for suitable microclimate to support Indiana and Gray bat populations. I hypothesized that the bunkers would not maintain suitable microclimate. Bunkers were assessed initially for bat inhabitation. Between February and April 2003, temperature and relative humidity of the bunkers were recorded in one-hour increments. Results will be presented and discussed in light of the hypothesis.

Christine Lin - Dance Major (Exchange student from Taiwan)***In a Moment*****Sponsor / Mentor: Dr. Ivan Pulinkala**

The choreography for "In A Moment" was inspired by basic human emotions that we all experience in life. The music provided a number of images for me, that I was able to transform into movement phrases. The stark, tranquil elegance of the musical score, lead me to make a decision to choreograph this piece as a duet. There seemed to be a need to form a sacred intimacy, which could be reflected through the intimate bond between two bodies moving in space. The use of silence was an important element used in the interpretation of this piece. The slow non-virtuosity in the movement provided the right vocabulary through which I was able to portray an honesty and intimacy between the two dancers on stage. Some of my movement inspiration for "In A Moment" draws from Chinese traditional dance. The use of gesture, the expression of the eyes, and the flexible use of the torso, helped me bring out the physicality in the movement. I chose to use the technique of movement repetition and accumulation to develop a sense of inter-dependency between the two dancers on stage. "In A Moment", can be interpreted on many levels. Personally, it reflects my relationship with my parents, my sister, and my boyfriend. It is a complex, non-logical, non-linear exploration into the human psyche, the results of which, are carved in space through movement.

Sarah Luker - Spanish***The Controversy of La Malinche*****Sponsor / Mentor: Dr. Leon Bodevin**

La Malinche was an indigenous woman who translated for Cortes during the Spanish Conquest of Mexico. There is a great deal of controversy among Mexicans as to whether she is a hero or a traitor because she aided the Spaniards in conquering Mexico. I will examine both aspects of the debate and explain how she has influenced both the social and linguistic aspects of Mexican life.

Jason Marchmon - Sociology

Wendell Berry, Technophobes, and Bill Gates: An Analysis of the History, Factors, and Impact of the Western Concepts of Progress and Technological Acceleration.

Sponsor / Mentor: Dr. Ed Armstrong and Dr. Pat McCutchen

Are we moving too fast? Do technology and economics provide the thrust of history? A look at the changing concept of progress exposes several variant themes. This essay will provide a brief overview of the concept of progress in history and Western culture and identify the various types of progress. I will examine the factors inherent in the systems of progress and discuss the impact of the Western/ American version of the concept on the individual and society. A brief analysis of the historical, sociological, and literary views of progress is presented. My analysis will show that although improvements have been achieved in many areas, the current incarnation of progress can prove detrimental. The unintended effects of technological innovation and acceleration often cause a new set of problems that must be addressed.

Debra McCuiston - Biology

Comparison of Anuran Diversity and Population Health at Murphy's Pond and Ponds in the Surrounding Area

Sponsor / Mentor: Dr. Howard Whiteman

Amphibian populations have declined in recent years worldwide. While some researchers are trying to discover the reasons for the decline, others are monitoring populations and diversity of the species still present. My research will monitor anuran diversity and population size by using Kentucky Frog Logger's surveys to collect data at Murphy's Pond and at four ponds in the surrounding area. Two of the ponds are stocked farm ponds and two of the ponds are unstocked wood ponds. With the data I collect, I will compare the diversity of anurans found at each of the sites and also compare the population health of each species by listening to the male anuran breeding calls and estimating the relative numbers of calling males. I hypothesize that there will be greater diversity and a larger population of anurans at Murphy's Pond than in any of the other ponds, because Murphy's Pond is a more protected environment.

Kevin Meacham - Elementary Education

Male Elementary Teachers: An Action Research Study

Sponsor / Mentor: Dr. Renee Campoy

This qualitative, action research investigation examines male teachers at the elementary school level. Through interviews with practicing and pre-service teachers, the reasons for and the decision to teach at the elementary level were documented. Particular difficulties and discriminations against male teachers were also found. Elementary student perceptions of male teachers were also collected and analyzed through interview, drawings, and writings.

Sylvester J. Merritt - Psychology & Sociology

Circadian Rhythms and Math Performance

Sponsor / Mentor: Dr. Paula Waddill

Circadian rhythms are human's daily 24-hour biological cycles. This study examined the relationship between one's preference for participating in activities at a particular time of day and one's performance on a math examination. Participants were first asked to take a math examination adapted from the Graduate Record Exam Study Guide. Participants then filled out a questionnaire and a demographic sheet about their preferred time for activities and their average activity level at different times of day. Responses were then used to categorize each participant as a "morning person" or an "evening person". Results indicated no significant difference in math performance between morning and evening people.

Michelle A. Meyer - Sociology

Environmentalism: A Study of College Students' Attitudes, Behaviors, and Knowledge

Sponsor / Mentor: Dr. Edward Armstrong

Environmental issues pervade modern society, including energy conservation, deforestation, air and water pollution, species loss, global warming, and population pressures. Deforestation causes climate changes, species loss, food chain disruption, and brings humans into contact with diseases that our immune systems cannot handle. Rising energy use has increased demands for fossil fuels that cause air pollution, acid rain, global warming, and contamination of groundwater. Oil is currently a headlined national issue as we prepare for war with Iraq. Population pressures have increased the need for food supplies leading to a rising use of contaminating pesticides, and increased development of large meat farms whose waste pollutes water and air and cause topsoil loss. Environmental issues are thus societal problems. Attitudes and opinions of society contribute to environmental depletion. All plans of action to increase environmental awareness must begin with a specification of the factors that influence views on the environment. In my senior thesis I will work to find a correlation between demographic factors

Michelle A. Meyer – Sociology (Continued)

(gender, academic major, and parental financial and academic background) and environmental opinion and action. My thesis hopes to identify specifically the college student environmental perspective because often personal beliefs are changed or confirmed during the college experience. My research will include a survey directed at four main categories: specific opinion, specific action, general opinion, and general action on different environmental topics. One section will include questions concerning knowledge of local and global environmental issues to determine if students' awareness of issues contributes to their beliefs about the environment.

Andrea Miller - Psychology

Perceived Level of Commitment Involved in Marriage

Sponsor / Mentor: Dr. Paula Waddill

This study consisted of 64 participants, all of which were students at Murray State University. They were measured on the level of commitment they perceived to be involved in marriage. The point of the study was to determine whether attitudes on cohabitation, idealization of marriage, and the marital status of one's parents were useful predictors of the commitment level. Idealization and cohabitation attitudes were significant predictors of the level of commitment one perceived to be involved in marriage. Parents' marital status was not a predictor, although it approached significance.

Michael Moode - Organizational Communication

Identifying Communication Strategies that Affect Individual Creativity Within Organizations

Sponsor / Mentor: Dr. Steve Cox

The ability to think creatively and act upon creative thought has undoubtedly been the key factor in the development of human civilization. From the invention of the wheel to the marvels of our contemporary society, creative thinking has yielded products that have improved and enhanced our lives: helping us to work; to understand our world; to reach out to one-another; and to enjoy our lives. Yet over the course of a lifetime, one's creative potential is often taken for granted. Communication behaviors ranging from the interpersonal to mass communication/cultural levels have effects that regulate, restrict, and sometimes outright discourage the expression of creative thinking. In an organizational context, numerous implicit and overt messages have been identified that impact the scope and depth of one's creative expression. The emerging wave of organizational communication theories, however, places a renewed value on the creative potential of individuals within organizations. Supervisors are encouraged to exercise "out of the box" thinking while at the same time viewing organizational subordinates in terms of their "intellectual capital" to be invested in and utilized in pursuit of organizational goals. With this attitude in mind, it is argued that the most valuable outcome of expressed creativity is innovation, the lifeblood of modern organizations. As demonstrated through recent historical examples, innovation plays a crucial role in the improvement, revitalization, expansion, competition, and adaptation of organizations even in spite of turbulence, uncertainty, and change. Reviewing popular and academic literature, a variety of perspectives suggest numerous ways through which an individual's creativity is influenced within an organization. Given the value of individual creativity, this research places its focus upon the communication behaviors that both positively and negatively affect the expression of one's creative ability within organizations, particularly the perceived communication strategies used in transmitting those messages that affect creative expression.

Susan Morgan - Interdisciplinary Early Childhood Education

The School Assessment and Eligibility Process for Young Children with Brachial Plexus Injuries

Sponsor / Mentor: Dr. Jo Robertson

All children with special needs must be evaluated for eligibility for school special education and related services. But are current standardized, norm-referenced assessment instruments serving our preschool and early elementary students and their families well? This research project looks at how very young children in one disability community are evaluated and assessed and how involved their families are in the process. An internet survey was set up as a link to the United Brachial Plexus Network website. Parents of children with brachial plexus injuries aged 3-8 were invited to take the survey about their experiences with the eligibility process. Random results look at the range of assessment instruments used across the nation and how satisfied and knowledgeable parents are about the process.

April Morganti - Nursing

Evidence Based Practice: Weighing the Evidence for Monthly Weights in Long Term Care

Sponsor / Mentor: Dr. Sharon McKenna

The purpose of this project is to complete a literature search using research articles to determine the rationale for monthly weights in residents of local long term care facilities, to compile literature that discusses ways of determining nutritional status of long term care residents, and to examine current practices in local programs to determine how nutritional status is assessed. The ultimate plan for this project is to compare regional disparities and/or similarities in dealing with weight management in patients at risk for nutritional deficiencies.

Jerad Moxley - History

Sidney Hillman and the first Political Action Committee

Sponsor / Mentor: Dr. Ken Wolf

In 1943, the CIO formed the first Political Action Committee under the leadership of Sidney Hillman. The PAC's goals, according to Hillman, were to organize and register "progressive" voters to counteract the growing "reactionary" element in American Politics. The PAC was not just limited to labor but was split into two parts: the CIO-PAC, which was devoted only to Labor, and the National Citizens PAC (NC-PAC), used to raise money from those outside the labor movement. Most analyses of this PAC has only looked at the effect on labor voting; this one will also try to take into account the possible effects of the NC-PAC. My analysis is supported primary research in the file of personal letters of Sidney Hillman and others in the PAC available at Cornell University. A statistical analysis measures the impact of the PAC on election returns from 1944. Finally, the paper looks at the influence of Hillman's PAC on the formation of other political action committees.

Ashley Odom - Outdoor Recreation and Leisure Services

Disaster Blaster: An Emergency Preparedness Community Event

Sponsor / Mentor: Dr. Kelly Rogers

In partnership with several local businesses and organizations, the Calloway County American Red Cross sponsored Disaster Blaster, a community-wide event designed to encourage emergency preparedness for families in the area. The focus of the entire project can be summed up in five steps: make a plan, build a kit, get trained, volunteer, and give blood. Held in the Lowe's parking lot on March 29, Disaster Blaster reached out to the community through informational and hands-on booths for adults and various safety-related games for children of all ages. As a volunteer programmer for the event, my job was to plan and implement the children's activities of the day. I began by gathering information to be presented as the focus of the activities. The information included fire, tornado, and earthquake safety, in addition to areas such as building and using a family disaster supplies kit. I then met and collaborated with other leaders and volunteers to brainstorm ideas about what activities to plan for the different age groups. After deciding on several, we collected the needed materials and supplies and thoroughly planned the set up of each activity. I arrived early the day of the event in order to set up and prepare for the anticipated crowd. Throughout the event, I helped to lead and supervise the activities.

Whitney Nichole Oliver - Agribusiness Economics

Estimated Possible Tobacco Tax Revenues Associated with a State Increase on Cigarettes for Kentucky

Sponsor / Mentor: Dr. Kenneth Bowman

The state excise tax on cigarettes is a fee assessed by the government levied to that product so that it impacts only those who purchase the product. The revenue generated by this excise tax can be utilized in any program deemed worthy by the State Legislature. As of the year 2000, slightly more than one-third of the current adult population of Kentucky smoked. Given the amount of potential revenue, it is often questioned as to why the state only requires a \$0.03 state excise tax per pack of cigarettes. The state excise tax has remained constant in Kentucky since 1970 when it was instated, which leaves Kentucky with the second lowest state excise tax in the United States, following only Virginia with a \$0.025 per pack tax. Of the seven states bordering Kentucky, the state average is \$0.378 per pack, approximately \$0.34 higher than Kentucky's tax. Since an addition to the state excise tax on cigarettes is essentially a problem of demand elasticity, revenues lost from persons who discontinue their purchases must be taken into consideration. Although some smokers will stop purchasing the product, the demand for cigarettes is very price inelastic. A one percent increase in the total cost of a pack of cigarettes will cause a much smaller decrease in the consumption. Tax revenues would increase, health problems would decrease and state expenditures on smoking related illnesses would decrease, ceteris paribus. Public interest groups, excluding smokers and those supporting tobacco companies, present information in support of an increase in the state excise tax. To evaluate the validity of the claims made by increased tax supporters, various states' changes in taxes over time must be analyzed to determine if tax revenues created by an additional excise tax on tobacco would equal or exceed those already generated by the current tax. Through the examination of this material, the estimated possible tobacco tax revenues associated with a state increase in taxes on cigarettes will be estimated for Kentucky.

Josh Pairsh - Criminal Justice

International Drug Trade in Colombia and Russia: A Comparative Analysis of Cultural and Historical Causes and Government Control Policies.

Sponsor / Mentor: Dr. Michael Basile

Combating drug trafficking in Colombia and Russia has seen limited success. This study looks at historical and cultural conditions that have supported drug trafficking in each country with a view to analyzing reasons for lack of enforcement success. The study posits a disjuncture between enforcement policy and actual conditions under which drug trafficking occurs. The historical and cultural effects of narco-terrorism, crime, drug-use, and socio-economic conditions will be examined in each country to determine the nature and extent of this discord and prospects for remedying it.

Brooke Payne - Elementary Education***Effects of Departmentalization vs. Whole Class Instruction at the Fourth Grade Level*****Sponsor / Mentor: Dr. Renee Campoy**

This action research study explored the effects of departmentalization versus whole class instruction at the fourth grade level. The CTBS and portfolio scores of 160 students (81 students departmentalized, 79 whole classroom) were compared to determine which was the most effective instructional organization. The school located in Western Kentucky includes a faculty of 54 and an enrollment of 686 students. The school enrolls mainly urban children from lower to middle class backgrounds. Sixty-five percent of the students were on free and reduced lunch.

Janine Perkins - Biomedical Science***Sympatry or Integradation Between L.t. sypila and L.t. elapsoides in Western Kentucky*****Sponsor / Mentor: Dr. Ed Zimmerer**

Lampropeltis triangulum sypila (the Redmilk Snake) and *Lampropeltis triangulum elapsoides* (the Scarlet Kingsnake) are small to medium tricolored snakes belonging to a much larger group that ranges throughout most of the US, Mexico, Central American and much of South America. Although currently listed as members of the same species there is a growing belief that they may in fact represent two distinct species. In western Kentucky where both occur, they have been described by some as intergrading, and by others as living in sympatry. To test these alternative hypotheses, we have analyzed mitochondrial 16s rRNA gene sequence from both subspecies to look for the presence or absence of gene flow. A comparison of the roughly 860 base pair sequence of 16s gene sequence from both subspecies shows nearly a seven percent difference. Sequence from *L.t. sypila* from areas where both occur shows sequence identity to reference *L.t. sypila* from areas where only it occurs. Similarly, sequence from *L.t. elapsoides* from sympatric areas shows only identity to reference *L.t. elapsoides* form more southern reference populations where only it occurs. Although we are still in the process of collecting more samples, the data so far gives no indication of gene flow, and supports the second hypothesis that these two subspecies in western Kentucky are living in sympatry and acting as two true species.

Rick Petersen - Computer Science***FUNBROTHER.COM: A Geographically Organized, Dynamically Created Index of Webcams*****Sponsor / Mentor: Dr. Victor Raj**

As stated in the title, Funbrother.com is/will become a geographically organized index of Webcams. You are presented with a world image, you click upon a continent, then upon a country, and in some cases upon a further divided region, to receive an alphabetized list of all the webcams in that area. The larger part of the challenge of this project is the dynamic content creation through the use of PHP and a MYSQL database backend. There are no actual webpages on the site, it's all created as the user requests it. Using this dynamic framework and the idea of cameras organized by physical location, possible security/business ventures have been considered and will continue to be looked into.

Lauren Porter - Psychology***How College Students View Prayer*****Sponsor / Mentor: Dr. Paula Waddill**

The goal of this study was to determine if certain factors related to the ways in which college students view prayer. Six factors were evaluated in terms of their relation to perceptions of prayer: optimism, social desirability, perceived health and well being, general prayer habits, reasons for petitionary prayer, and opinions of prayer. Participants were given a packet containing six questionnaires measuring each of the above factors, as well as a demographics survey. The results are discussed in terms of their implications for religious belief and activity among college students.

Jessica Reagan - Business Administration & German***The Brothers Grimm: Fact or Fiction?*****Sponsor / Mentor: Dr. Grimes**

Fairy tales: we all have heard them, Brothers Grimm perhaps most of all. Popular long before people even imagined television, fairy tales have been passed down from generation to generation entertaining people since the beginning of speech, and now the name "Grimm" is synonymous with fairy tales. But are the Brothers Grimm tales fact or fiction: how much of their stories come from the mouths of storytellers and how much from their own hands? The Brothers Grimm were real people who grew up on the stories that would later make them famous. Background on their lives provides a better understanding of how they became involved with fairy tales. Their various works establish them as scholars and literary geniuses. Comparable to Goethe, Schiller, and Herder, the Brothers Grimm fit in well with the movement among German-speaking peoples to create a unified Germany with its own identity. Brothers Grimm fairy tales were accepted as an anthology of German culture. Despite

Jessica Reagan - Business Administration & German (Continued)

their reputations as scholars simply anthologizing existing tales, it is widely accepted that the brothers “adapted” their tales. What separates the fact of these fairy tales as folklore from the fiction of them as great works of literature? There would likely be noticeable differences between the tales before the Brothers Grimm, as first written for the anthology, as rewritten for children, and as they are known today. The idea of “Fact versus Fiction” ties together the discussion of the brothers, their audience, and the development of their tales.

Sue Retinger - Biology

Restoration of the American Chestnut

Sponsor / Mentor: Dr. Howard Whiteman

The American Chestnut (*Castanea dentata*) was once the predominant deciduous tree in the forests of eastern United States from Maine to Georgia along the length and breadth of the Appalachian Mountains and west to Illinois and Kentucky. The American Chestnut predominance was ended in the early 1900's with the introduction of a fungal bark blight, *Cryphonectria parasitica*, which in 40 years time destroyed the mature American Chestnut forests. In the 1980's many concerted efforts aimed at restoration by crossing the blight resistant Chinese Chestnut with the blight susceptible American Chestnut and backcrossing with the American Chestnut have been gaining ground through the establishment of non-profit foundations and cooperatives. Blight resistant trees have been produced by the grafting method and the seed nuts are used to reestablish American Chestnuts. Coordinating with the American Chestnut Cooperatives Foundation (ACCF), seed nuts from blight resistant stock will be planted in the woods at Hancock Biological Station (HBS). Two sites have been located on east facing slopes west of the boat dock. The moderately acid, clay/sand soil found in this area is conducive to chestnut growth. Twelve seed nuts will be planted directly in the field and twelve will be started in a peat and sand mixture in the greenhouse. The purpose of this research is twofold. First, to compare the sprouting and survival rates between seed nuts planted directly in the field and seed nuts started under greenhouse conditions and transplanted to the forest. Second, to establish a monitoring process in coordination with ACCF for reestablishing the American Chestnut in Kentucky.

Stefan Schels - Psychology

The Other-Race Effect in Facial Recognition

Sponsor / Mentor: Dr. Paula Waddill

The other-race effect in facial recognition is an important issue in criminal investigation and eyewitness interrogation. The other-race effect refers to the decreased likelihood of correctly identifying a member of a race other than one's own as "previously seen". An issue of practical relevance that has not been investigated yet is the difference in the magnitude of the other-race effect in different recognition paradigms. In the most commonly implemented research paradigm, participants are shown facial stimuli one at a time during the test phase. The recognition method actually used in perpetrator identification procedures in criminal investigation, however, is the lineup approach, where participants are shown groups of six people and must pick the one seen before. The present study evaluated the magnitude of the other-race effect as it occurs in the standard paradigm compared to the lineup approach. The relevance of the findings for eyewitness identification techniques is discussed.

Kosta Seaford - Chemistry

Effects of Water Level Fluctuations on Selected Organic Compounds and Metal Concentrations in Surface Sediments from Ledbetter Embayment of Kentucky Lake

Sponsor / Mentor: Dr. Bommanna Loganathan / Dr. David Owen

This study is part of Murray State University's Collaborative Research in Undergraduate Institutions (C-RUI) program established to quantitatively characterize the effect of human induced, seasonal water level fluctuations upon biogeochemical and ecological processes within the littoral zone of the Kentucky Lake. This study describes the effect of water level changes on selected organic pollutants and inorganic elements in sediments of Ledbetter Embayment of Kentucky Lake. Polychlorinated biphenyls (PCBs), chlorinated pesticides (DDTs, hexachlorobenzene (HCB), chlordane compounds (CHLs)) and selected metals (manganese, copper and strontium) were analyzed in surface sediments collected during low pool and high pool seasons of 2000-2001. PCBs and chlorinated pesticides in sediments presented similar distribution patterns during low pool and high pool seasons. Individual analyte concentrations in sediments were relatively higher during the high pool seasons. A similar trend was also observed for Mn (low pool 113 mg/kg dry sediment and high pool 241 mg/kg dry sediment) and Sr (low pool 4.77 mg/kg dry sediment and high pool 6.78 mg/kg dry sediment) concentrations in the sediments. Copper concentrations (low pool 13.7 mg/kg dry sediment and high pool 6.21 mg/kg dry sediment) in sediment showed a reverse trend. The seasonal changes in the concentrations of the contaminants, including parent compounds and their metabolites, in the Ledbetter Embayment indicate that the exposure to biota varies during different seasons.

David Shams - Political Science and Global Studies***A Comparative Analysis of External and Internal Impacts of the Islamic Revolution on Iran's Economy*****Sponsor / Mentor: Dr. Michael Basile**

Since the Islamic Revolution of 1979, the Iranian economy has struggled between the forces of globalization and religious policy imposed by one of the few Islamic states in the world. This study looks at external efforts to both constrain and facilitate the opening of Iran's economy to participation in globalization as well as at internal government imposed policies to insure religious compliance by Iranian international business concerns. The study seeks to illuminate the issues that arise between competing ideologies of globalization and religious control in the Iranian post-revolutionary context.

Roman Shapla – Sociology***Towards an Anthropological Understanding of Primitivist Theory*****Sponsor / Mentor: Dr. Steve Jones**

In order to protect rapidly disappearing indigenous cultures and remedy the alienating aspects of modern civilization a general understanding of the theories of Primitivism, using various case studies from within the anthropological literature, is needed. These theories include focusing on subject areas which are crucial to appreciating primitive societies: notably the role of technology, the lack of specialization, the "zero-work ethic", and the bio-centric worldview and their interrelatedness with the ethical principles of equality, cooperation, selflessness, and absolute liberty. A familiarity with Primitivist theory is essential towards a better understanding of relations between western civilization and endangered indigenous peoples.

Satinder Sidhu - Pre Med / Biology / Chemistry***Autonomous Differentiation of the Head Region in Chick Embryos*****Sponsor / Mentor: Dr. David Canning**

The growth and differentiation of the presumptive head region in chick embryos has been studied. In case of amniote embryos, the head forms from a small region of epithelium immediately anterior to the notochord. This area, referred to as the prechordal plate, is thought to be under instructive signaling influences emanating from the underlying endoderm that ultimately dictates the morphogenesis and cytodifferentiation of cells of the head. However, it is not known how cell interactions in the prechordal plate lead to morphogenesis of the head tissues. In this study chick embryos were incubated to various lengths of time according to the desired stage. Embryos were removed from the eggs and the presumptive head region dissected away from the rest of the embryo. This small piece of tissue was then cultured in isolation for periods of 24-48 hours. The cultures were cryosectioned and probed with fluorescently labeled monoclonal antibodies to reveal specific patterns of adhesion molecules and extracellular matrix molecules. Images of the cultures were digitized with peltier-cooled photomicroscopy in order to detect and record expression of specific epitopes. Chondroitin sulfate, an ECM molecule seems to exhibit a very localized and specific pattern during the head formation. The resulting distribution of these molecules can be related to a cellular mechanism suggesting that the head develops autonomously and independent of the embryonic axis.

Manuela Singer - Psychology***Memory for Emotion Words and Associated Colors*****Sponsor / Mentor: Dr. Paula Waddill**

This study investigated the memory for emotion words presented in color. People associate certain colors with certain emotional meanings and vice versa. Previous studies have shown that memory for the color in which words were presented was better for emotional words than for neutral words. Color and emotion preferences also change with age, but colors and emotions are consistently related to each other within a particular age class. In this study participants were presented with positive and negative emotion words. One half of the words were presented in a commonly associated color (yellow or pink for the positive emotions, brown or dark purple for the negative emotions) and the other half were presented in a non-associated color. Participants performed a free-recall test, a word recognition test, and a color-memory test. The results are discussed in regard to emotional meaning (positive vs. negative), arousal level (active vs. passive), and color brightness (bright vs. dark) of the stimuli.

Jonathan Sircy - English Literature/Creative Writing
The Intersection of Kurt Vonnegut and the Anglo-Saxon Poets
Sponsor / Mentor: Dr. Warren Edminster

The tone of nearly all Anglo-Saxon poetry is elegiac. The writers of these poems expound a distinctly bleak worldview, a place where “fate is inflexible” (“The Wanderer”) and where the wise Lord “grants glory” to some, and to others “a sad lot” (“Deor”). Although this small collection of poems deals primarily with isolation and exile, each of the speakers manages to make some universal statement about the human condition. One conclusion generally voiced by the Anglo-Saxon poets is that time is cyclical. The universality of suffering and pain, the inevitable decay brought on by the passing of time, the eventual loneliness and separation from loved ones – these particular situations are repeated “time and again” (“The Wanderer”). Twentieth Century American novelist Kurt Vonnegut Jr. highlights the same thematic elements that engrossed the anonymous Anglo-Saxon poets over one thousand years earlier. His novels tackle apocalyptic technology, particularly in *Cat’s Cradle* and *Slaughterhouse-Five*, but beneath the scientific subject matter is the same examination of man’s reaction to pain and suffering. Confronted with the horrible firebombing of Dresden, Germany, Vonnegut acquiesces with a simple, “So it goes.” He downplays the current turmoil of his characters with the assurance that it has all happened before and will all happen again. While Vonnegut chooses to cloak his themes in black humor and postmodern fictional devices, his view of time echoes that of the elegiac poets. The elegies communicate a singular sense of existential dread in the face of a cold universe. In the aftermath of the Second World War, Kurt Vonnegut reacts the very same way. His characters try to impose order on a universe that seems anything but orderly. What is gained from the side-by-side comparison of the elegiac poems and the Vonnegut novels is a reminder that the essential human condition has changed little over the past millennium.

Kelly E. Somerlot - Biology
Landscape Patterns of Terrestrial Vertebrate Species Richness in Kentucky: Factors Influencing Future Planning
Sponsor / Mentor: Dr. Terry Derting

As human populations continue to expand, increased development of the landscape reflects changes occurring in our natural environment. Along with the alteration of the shape and composition of these natural areas come related impacts on wildlife species. The challenge to preserve the diversity of species and the habitats they require becomes more complex as human populations place heavier demands on the environment for resources and space. In order to quantify human land-use demands in regard to biodiversity found in Kentucky I evaluated the relationship between human development and wildlife diversity. Thirteen extrinsic variables characterizing land use in Kentucky were analyzed with regard to biodiversity indices, such as species richness, taxonomic diversity, and frequency of special status species (i.e., endangered and threatened species). Variables used to characterize land use patterns were quantified for each county in the state using a geographic information system. Species richness analyses for all native terrestrial vertebrates were also done on a county level using the predicted species distributions from the Kentucky Gap Analysis Project (KY-GAP). The resulting model provides a better understanding of the regional impacts habitat fragmentation, human population growth, and land developments have on biodiversity in Kentucky. Taking these kinds of relationships into account in future land-use planning and wildlife management can incorporate proactive conservation strategies, as well as aid in attempts towards environmental restoration.

Kelly E. Somerlot – Biology
Survey of Songbird Mortality Due to Window Collisions on the Murray State University Campus
Sponsor / Mentor: Dr. Howard Whiteman

The U.S. Fish and Wildlife Service estimates that window strikes may account for as many as 976 million bird deaths each year. Bird collisions involving mirrored and reflective windows are most likely due to the illusion of habitat or open sky mirrored on the glass. The inability of birds to perceive clear windows as a barrier can also result in window collisions, especially when indoor plants and open space is visible from outside. Some studies have suggested that more publicized loss of birds to domestic cats, oil spills, and pesticide poisoning may actually account for fewer deaths than those caused by windows and glass walls. Because avian predators and scavengers have been known to regularly visit accident-prone collision sights for stunned or dead birds, the evidence of window strike problems may be removed before the severity of the mortality factor is realized. Concern regarding bird window collisions at Murray State University arose due to a number of songbird deaths caused by window strikes in 2002, and the abundance of reflective and tinted windows located across the campus. To determine the approximate avian mortality caused by window collisions at Murray State, transects were established around the perimeter of a variety of buildings with different window types and architectural styles. Each transect was checked in the mid-morning, on a daily basis over a 10-week period, in order to identify the frequency of dead birds in regard to location and the rate of collision throughout the migration season. Results will be discussed.

Eric L. Suits - Chemistry
Preparation of Beta-Carotene Analog
Sponsor / Mentor: Dr. Jin Liu

Beta-carotene, the yellow pigment in carrot, is a well-known natural pigment, and its anticancer property has been documented. In the study of the conformational change of the beta-carotene structure in biological systems, the synthesis of 6-s-cis-locked beta-carotene was proposed.

Roy Justin Taylor - Agribusiness
Worldwide AgLink Program
Sponsor / Mentor: Dr. Kenneth Bowman

My honors senior thesis involves completing the project report for the Foreign Agriculture Service's Worldwide Agriculture Link Program. I began working with this project last summer during my internship in Washington D.C. with the Foreign Agricultural Service (FAS). I worked extensively during my three-month internship compiling data and tracking down former participants. I have since completed my research and will present my findings regarding the overall effectiveness of the AgLink grant program. The Worldwide AgLink program evolved from several earlier incarnations of programs aimed at selecting small agribusinesses for travel grants to eastern Europe in order to help them link up with their US counterparts. Aglink added the element of accountability and was therefore a departure from the typical government idea of giving huge grants to projects then never learning the results. Along with accountability, AgLink included accessibility and crucial advice to participants both before and after a trip. It was an opportunity for FAS to use its people on the ground in places like Romania and Estonia to help facilitate personal interactions between future trading partners. Now that the last AgLink participant has returned from his trip one question remains: Was AgLink successful? Did it help foster lasting trading partnerships between small agribusinesses? Or, would all of those government man-hours and thousands of dollars been better served in some other program that did not require as much bureaucratic time? Through this paper I will seek to will gain a better understanding of how grant programs are evaluated and specifically how well AgLink met its goals.

Scott J. Terry - Secondary Education
An Evaluation of Trends in Student Achievement for Kentucky High Schools Using Different School Day Schedules
Sponsor / Mentor: Dr. Robert Lyons

In the last twenty years, the American educational system has come under increasing criticism. The 1983 *A Nation at Risk* report and the 1994 *Prisoners of Time* report were both very critical of education in the United States and predicted dire consequences for the United States and its place in the world if the system was not changed. The passage of the No Child Left Behind Act of 2002 by Congress created an accountability system which instituted its own set of dire consequences for schools and districts which did not perform up to the standards set by the act. Within this environment, it has become increasingly important that programmatic changes, such as the adoption of block scheduling, be scrutinized in terms of the student achievement outcomes by which schools have been held accountable. The purpose of this study was threefold: (a) to establish the prevalence of the use of different types of alternative school day schedules in Kentucky's public high schools in 2001, (b) to determine the extent to which trends existed in student achievement between schools using different forms of alternative school day scheduling, and (c) to determine whether a relationship existed between the type of school day schedule used in 2001-2002 and schools' accountability classifications for the 2000-2002 biennium. This study found no significant relationship existed between school day schedules and scores on the CTBS/5 and KCCT. Also, no significant relationship existed between school day schedule and school accountability classification.

Martina Thompson, Maureen Hosey-Williams, Kandice Skabo, and Kristie Friedrich - Nursing
Evidence-Based Practice: Reducing a Risk Factor for Reinfarction
Sponsor / Mentor: Dr. Sharon McKenna

This project studies depression as a risk factor for reinfarction within one year of a myocardial infarction. Studies have shown depression after infarction to be the single greatest risk factor for reinfarction within a year, a risk greater than smoking, weight, blood cholesterol, exercise, or any of the other highly publicized risk factors. This segment of the project evaluates current cardiac rehabilitation programs to see whether and how depression after infarction is addressed.

Drew K. Thompson - Political Science
The Tennessee Valley Authority: A Political History
Sponsor / Mentor: Dr. Farouk Umar

This project examines the historical and political development of the Tennessee Valley Authority, America's largest publicly owned electric utility. Established as a part of Roosevelt's New Deal, TVA was given the responsibility of the Tennessee River and its Valley, which at that time was among the most sorely affected by the Great Depression. Implementing a series of dam and power plant constructions, TVA became the instrument of salvation for thousands in rural Tennessee, Alabama, Mississippi, and Kentucky providing jobs with solid wages and security as well as affordable electrical power to many isolated rural communities. At the time of its conception, TVA was seen as something of a novelty. A government agency, run like a private enterprise, owned by its customers, governed by the federal government yet independently operated. Unique in the entire nation, TVA has permeated all aspects of the economy, culture and politics in the Valley. While initially embraced, TVA has not been immune to controversy in the last seventy years. With the growth and expansion of private, investor-owned utilities as well as wide-spread public distaste for all aspects of the federal government not operating within their budgets, TVA has faced an increasingly hostile public both within the Valley and without. Debates over environmental legislation, fear and distrust of nuclear power, regional controversies over coal procurement, sales and consumption have all led to a political climate that questions TVA's validity for the United States in the 21st Century. In the political arena from the federal government all the way down to individual city council resolutions, TVA faces daily challenges in carrying out its intended purpose. While working to promote the economy of the Tennessee Valley and thus the lives of her residents, TVA has constantly struggled to maintain balance; playing the role of Authority and Benefactor at the same time. This struggle has been further complicated by fluctuating national economies, improved understanding of the environmental impacts of power production, and the capricious support of a bi-partisan political system. This study will examine TVA's political past, present, and future. Having explored the historical significance of TVA, we will trace the political developments, evolutions, and trends TVA has experienced in its quest to maintain relevance. With specific emphasis placed on Kentucky, TVA's most embattled state, the study will dissect Political TVA and its subsequent stratification from the local to federal levels of government. Using this intensive examination of TVA in a cellular, microcosmic level will then provide a useful foundation in understanding the overall course of political action that TVA takes and will take in its quest to remain an integral and rooted entity in the physical, economic, and cultural landscape of the Tennessee Valley and the nation as a whole.

Valorie Titus – Biology
Patterns of Movement in the Copperhead (*Agkistrodon contortrix*) in the Land Between the Lakes
Sponsor / Mentor: Dr. Ed Zimmerer

The copperhead (*Agkistrodon contortrix*) is possibly the most abundant large snake species found in the Land Between the Lakes National Recreation Area. Between 60-70% of snakes captured at night road cruising are copperheads. To investigate population densities and patterns of movement in this species, snakes were sampled by night-driving roads associated with the Wranglers Camp area, the Nature Station Area, and the Trace connecting the two. GPS coordinates were recorded at every point of observation for both alive (AOR) and dead (DOR) snakes. DOR individuals represent nearly 50% of those observed. Live snakes were marked and released at their site of capture. Out of 101 marked, and 198 observed (DOR + AOR) only one was a recapture. Current data suggests that sites of road crossing are not random in this area with some sites showing apparently greater activity than others. It is not yet determined whether this is due to local differences in population density or to preference variability in road crossing sites.

Maninder Kaur Virk, Richard Blalock, and Marshall Welch - Biology/Pre-med
Patterns of Energy Allocation in Immunochallenged and Testosterone-Treated White-Footed Mice
Sponsor / Mentor: Dr. Terry Derting

The cost of mounting an immune response was studied in normal and testosterone-treated male white-footed mice (*Peromyscus leucopus*) that were fed ad libitum. We tested the null hypotheses: 1) there is no change in metabolic rate during an immunochallenge and 2) there is no change in energy allocation to other systems during an immunochallenge. We established four groups of animals: 1) control, 2) testosterone-treated, 3) immunochallenged, and 4) immunochallenged plus testosterone. Testosterone propionate injections were given to elevate the level of testosterone. Immunochallenged animals were injected with sheep red blood cells (SRBC) and phytohemagglutination (PHA) to challenge the humoral and cell mediated branches of the immune system, respectively. To test our first hypothesis we determined the daily metabolic rate (DMR) and the resting metabolic rate (RMR) of each animal. To test our second hypothesis we measured the masses of the body organs. There was a significant increase in RMR in the immunochallenged animals, but no difference in DMR among groups. Thus, our first hypothesis was partially supported. Immunochallenge had no significant effect on the masses of intestinal and vital organs, but was associated with a significant increase in the masses of the reproductive organs. We, therefore, rejected our second hypothesis. Our findings indicated that there was a significant cost associated with mounting an immune response, as indicated by the increase in RMR. In addition, there was an increase in energy allocation to the reproductive organs. Thus, under good conditions there was no trade-off in energy use for immunity and reproduction.

Heather Venter - Biology***Eagle Nesting Habitat use in Land Between the Lakes*****Sponsor / Mentor: Dr. Howard Whiteman**

Since the mid-1980's, biologists at The Land Between the Lakes (LBL) National Recreational Area in Kentucky and Tennessee have been working to bring back the resident Bald Eagle (*Haliaeetus leucocephalus*) population. During the 1980's, 44 birds were raised and released inside LBL in an effort to increase the numbers of resident eagles. In 1984, LBL experienced the first nesting effort by a released bird. In 2001, there were 12 successful nests between both the Kentucky and Tennessee portions of the area. My goal is to help define the environmental parameters surrounding these eagles' nests. I will collect data including: nest tree species, tree height, nest height, diameter of the nest tree at breast height (DBH), basal area, distance to lake and distance to closest human disturbance. Hopefully, this research will reveal any consistencies in nest selection and thereby give the Forest Service a management strategy to improve habitat for nesting eagles.

Sherry Webb – Spanish / Political Science***Mexican Gangs, a Search for Identity*****Sponsor / Mentor: Dr. Mica Howe**

As the number of Mexican immigrants grows, so does the growth of gang involvement. Often where previous attempts to assimilate have failed, gangs have experienced popularity as an alternative subculture to both American and Mexican lifestyles. During the course of this study, I will be examining the rise and emergence of gangs from the Mexican Barrios (communities), the struggle to choose between two very different, if not conflicting, cultural lifestyles, and the appeasement that gangs offer their members by providing an alternative identity.

Leslie Whitehead, Kelly Lady, Nick Calhoun, Ashley Futrell, and Daniel Groffy - Business***A Business Plan for a Murray Bookstore/Coffee Shop*****Sponsor / Mentor: Dr. Patsy Nichols**

We will be presenting the business plan for our bookstore/coffee shop. In the presentation we will describe our business and how we plan to manage it, explain our financial situations, and also provide quotes, floor plans, and other vital information to starting to a business.

George Robert Whitfield - Political Science/Philosophy***Origins*****Sponsor / Mentor: Dr. Gina Claywell**

Throughout history, mankind has questioned how and why he exists. This presentation discusses the two most popular explanations for origins: evolutionary theory and intelligent design theory. The thesis will argue that there is not sufficient evidence to accept either position as fact. It will consist of an fifteen-minute mini-lecture, followed by a brief question/answer period. Participants should be familiar with basic biological terms and concepts.

Juniaty Wijaya - Psychology***Emotional Expression*****Sponsor / Mentor: Dr. Paula Waddill**

This study was conducted to determine if males and females differ in expressing emotions. There were 48 Murray State University students who participated in the study. Two surveys were administered. The first one consisted of 24 scenarios depicting eight basic emotional responses, with three scenarios representing each emotion. The participants were asked to rate the intensity of their emotional response to the event described in each scenario. The second survey consisted of 16 titles, two per emotion. Participants were asked to think about a previous emotionally intense life experience and to pick the title that best described their experience. The results indicated that women reported more intense feelings of disgust, sadness, and fear than men. There was no significant difference between men and women in the choice of emotional titles; both males and females recalled primarily sad or serene life experiences.

Benjamin Wilhelm - Spanish***The Tradition of Flamenco: Its Presence Throughout the Centuries.*****Sponsor / Mentor: Dr. Mica Howe**

Flamenco is a part of the very fabric of Spanish life. We've all heard of it, but what exactly is it? Where did it originate? To what extent does it still exist and how important is it to contemporary Spanish culture?

Benjamin Wilhelm - Spanish

Ecotourism vs. Environment

Sponsor / Mentor: Dr. Michael Basile

Ecotourism lets people explore nature upclose and personal, while teaching to preserve the environment for future exploration. However, does ecotourism negatively expose the environment to careless people and, if so, what damage is being done? Is the damage irreversible, or is there a chance to rectify the harm?

Grisel Williams - Spanish/Business Administration

World Bank's Influences on the Dominican Republic

Sponsor / Mentor: Dr. Jorge Medina

This presentation is going to focus on the economic help the Dominican Republic has received from the World Bank. Special emphasis on education and transportation network.

April Willett - English Education

Vocabulary Development in Improving Reading Comprehension at the High School Level

Sponsor / Mentor: Dr. Renee Campoy

Research has shown that vocabulary development can be an effective means to improve the reading comprehension of high school students. The high school English teacher in this action research project investigated a variety of vocabulary development strategies in order to improve students' reading comprehension.

Bradley Wilson - Applied Mathematics / Pre-MBA

Business/Marketing Plan for Pneumatic Motor Carriages Inc.

Sponsor / Mentor: Dr. Patsy Nichols

This is a business plan for Pneumatic Motor Carriages Inc., which is a new automobile manufacturer of pneumatic, fluid-driven automobiles. The idea behind this business is that pneumatic-powered vehicles will be the future of the zero emission vehicles. The business plan will incorporate all aspects of the business.

Jijun Zhang - School Administration

Is There a Relationship Between Money Input and Student Academic Performance?

Sponsor / Mentor: Dr. Robert Lyons

Is there a relationship between money input and student academic performance? This quantitative study employed data from Kentucky public schools, including the variables of instructional money, number of special education students, socioeconomic status (SES) and students CTBS/5 test scores. The result was that there was no relationship found between the money input and students' academic performance; however, SES mattered significantly in student performance. The threatening variables were discussed together with some suggestions for further studies.

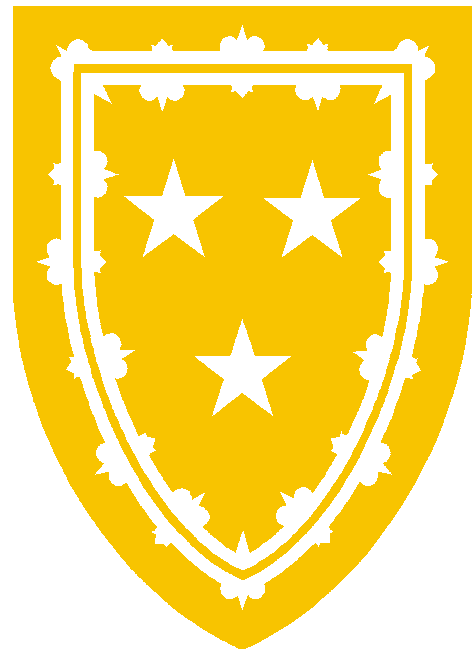


MURRAY STATE UNIVERSITY
URSA OFFICE
329 WELLS HALL

College of Services • College of Humanities and Fine Arts

Murray State University

Scholars Week



A Celebration of Student
Research, Scholarship, and
Creative Work

April 21-25, 2003

College of Education • College of Health Sciences and Human Services

College of Business and Public Affairs • College of Agriculture

College of Science, Engineering, and Technology • School of Agriculture