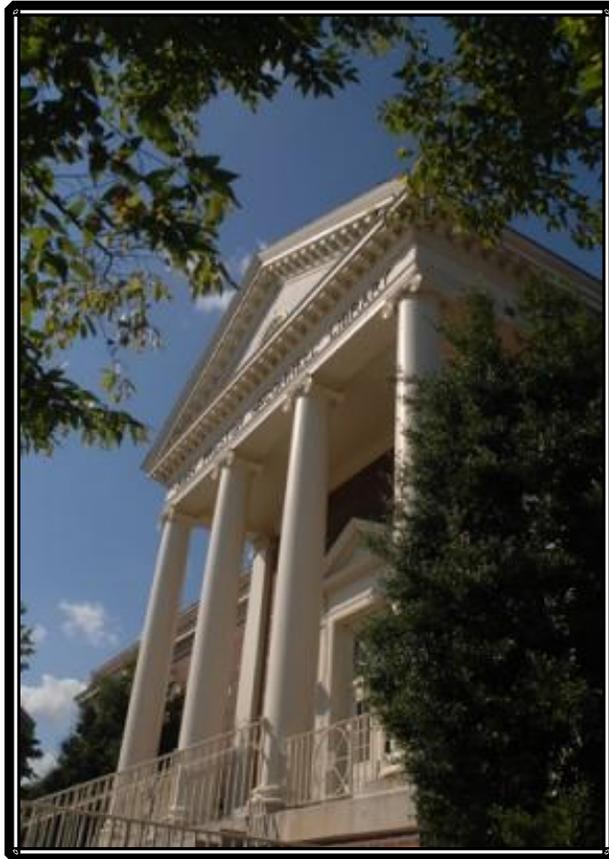


# 20<sup>th</sup> Annual Undergraduate/Graduate Student Engagement Forum



Radford University  
April 19<sup>th</sup>-21<sup>st</sup>, 2011

# 20<sup>th</sup> Annual Undergraduate/Graduate Student Engagement Forum

## Program & Abstracts

Editors:

Beth Strickler, Susan Slate, and Sarah Kerper  
Graduate Assistants for the Honors Academy

Joe King, Ph.D.

Director of the Honors Academy

Niels Christensen, Ph.D.

Interim Associate Director of the Honors Academy

Sponsored By:

The Honors Academy  
Graduate Student Council  
Student Government Association



The following individuals and offices are acknowledged for their contributions to the Forum:

Sally Cox, Event Planning Manager  
Sandy Rose, Honors Academy Office Manager  
Kiersten Newtoff & Kendahl Kean, Honors Academy Work Study Students  
Lora Gordon, University Photographer – For wonderful photography work  
Carolyn Turner, Radford University Printing Services  
Beth Strickler, Honors Academy Graduate Assistant  
Sarah Kerper, Honors Academy Graduate Assistant  
Susan Slate, Honors Academy Graduate Assistant

# Table of Contents

Welcome	4
Dr. Joe King, Director of the Honors Academy	
Dr. Niels Christensen, Associate Director of the Honors Academy	
Program Schedule	
Tuesday, April 19 <sup>th</sup>	5
Wednesday, April 20 <sup>th</sup>	11
Thursday, April 21 <sup>st</sup>	19
Senior Honors Capstone Presentations	25
Abstracts	38
Listed alphabetically by first author's last name	

# Welcome!

Welcome to the 20th Annual Undergraduate and Graduate Student Engagement Forum – our community’s celebration of student and faculty collaborative scholarship. The Forum is a testimony to the hard work of our students and the dedication of our faculty to an educational experience grounded in collaborative scholarship. We are proud to report that student engagement is alive and well at Radford University in the laboratory, library, classroom, field, and studio. Indeed, this year’s event includes over 250 presentations, posters, and performances by over 275 students. Rest assured that these presentations are only the tip of the proverbial iceberg in terms of hours of hard work.

The Forum provides concrete evidence that scholarship is contagious and, in fact, emerges from a wide variety of academic programs including study abroad, internships, service learning and a variety of campus leadership initiatives. Therefore it is the privilege that the Honors Academy plays a lead role in coordinating this event. The Honors Academy exists as an instantiation of collaborative scholarship and we are represented by the work of our graduating Highlander Scholars. Take a moment to read the abstracts of our Highlander Scholars’ Capstone Projects, which are the culmination of years of collaborative work with their professors both in and outside of their majors. The professional and personal friendships that resulted from these collaborations will remain with both parties for many years to come.

The Forum could not be such a success without the time devoted by students and their faculty mentors. In addition, countless hours of behind-the-scenes work was required for an undertaking of this magnitude. First, we thank Dr. Scartelli, interim provost who not only enthusiastically supports The Forum, but also provides the financial support for poster sessions and this program. Special thanks also to Ms. Carolyn Turner from Printing Services, Ms. Sally Cox from Student Events, and University Photographer Lora Gordon. Sally continues to excel in the daunting task of reserving the necessary rooms for the different presentations. Carolyn’s patience and professionalism allowed us to prepare a most professional program. Her willingness to wait for last minute photos and abstracts is truly appreciated. Such collaborators as these are truly a gift for which we should be thankful. Lora had amazing flexibility and patience to take and process those last minute photos.

The real work supporting the Forum is performed by an amazing team of students and staff in the Honors Academy office. We thank Beth Strickler, Sarah Kerper, and Susan Slate for their enthusiastic commitment and hard work in putting this program together. Their willingness to comply with dozens of ‘special requests’ and exceptions to our plans went beyond any reasonable expectations. This program and the entire Forum are a success largely due to their diligence. Thanks also go out to student volunteers who worked on implementing the Forum. Finally, thanks to Sandy Rose who keeps the Honors Academy office running while much attention and time were diverted to planning and implementing the Forum. She is our rudder during the hectic days leading up to the Forum.

It is a privilege to put together these works from our campus community. Enjoy the celebration!

Dr. Joe King  
Director of the Honors Academy

Dr. Niels Christensen  
Interim Associate Director of the Honors Academy

# *Schedule of Events*

*Tuesday, April 19<sup>th</sup>, 2011*

*Heth 022*

## **9:00-12:00 SURVEY RESEARCH METHODS SPECIAL SESSION**

Faculty Mentor: Jeanne Mekolichick

9:00-10:00: Brittany Bongrazio, Thomas Bowman, Sarah Fischetti, Stephen Lesiv

### ***Academic Achievement and Student Living Arrangements***

Brittany Bongrazio

### ***How Early Family Life Effects the Values and Beliefs of College Students***

Thomas Bowman

### ***Tattoos and their linked attitudes for Undergraduate Students***

Sarah Fischetti

### ***How Geographic Location Affects Environmental Attitudes and Behaviors***

Stephen Lesiv

10:00-11:00: Amy Dove, Jessica Bellamy, Courtney Hawkes, Daniel Mozer

### ***The Impact on Intergenerational Corporal Punishment***

Amy Dove

### ***Foster Teens: Learning the Effectiveness of Aging Out Programs***

Courtney Hawkes

### ***Gender Identification and Workout Goals: A Study of Undergraduate Students***

Daniel Mozer

### ***Religiosity, Morality, and Drug Policy: Perceptions of Marijuana Use Among Undergraduates***

Jessica Bellamy

11:00-12:00: Caitlin Hennessy, Michael Gibbs, Leslie Abernathy

### ***Self-esteem and Perceived Social Acceptance in Homosexual Young Adults***

Caitlin Hennessy

### ***Perceptions of post-secondary education, veterans and non-veterans***

Michael Gibbs

### ***The Influence of Sex and Values on College Students' Attitudes toward Genetically Modified Food***

Leslie Abernathy

## **2:00-4:00 POSTER PRESENTATION SESSION 1**

### ***Hopeless Resistance: The Self-Look in Carson McCullers's The Heart Is a Lonely Hunter***

Claire E. Lenviel

Faculty Mentor: Paul Witkowsky

### ***Federal & State Adult Offender Re-entry Initiatives***

Patrice L. Massey

Faculty Mentor: Lynn Taylor; Alice King-Ingham Moore

### ***Implementation of Heavy-Load Applications on Mobile Devices***

Justin Rutherford

Faculty Mentor: Prem Uppuluri

***Handheld, X-ray Fluorescence Investigation of Middle-Late Devonian, Pyritiferous, Millboro Shale, Southwestern Virginia***

Megan Wolf

Faculty Mentor: Parvinder Sethi

***Heth 045***

**11:00-12:45**

**SPECIAL SESSION CORE 103**

Faculty: April Asbury

***Compare and contrast; the song and poem of "Richard Cory"***

Emma Pitcock, Lelia Overton, Will Chitwood, Brandon Johnson, Lindsay Fox

***Richard Cory in Modern View***

Sadie Kneuper, Nadene Pence, Ashley Strader, Dillon Wade

***Facing it through the Eyes of a Vietnam War Veteran***

Vanessa Webb

***Critical Analysis of Radford University Athletics***

Becca Moyer, Alex Poletti, Bekah Willetts, James Cooke

**2:00-3:00**

**ORAL PRESENTATION SESSION 1**

***Nurse-Patient Relationship in Medically underserved Regions Around The world***

Rebecca B. Fabiyi, Erin G. Cruise, and Anthony R. Ramsey

Faculty Mentor: Anthony R. Ramsey and Erin G. Cruise

2:00-2:15

***Social Media, Organizational Websites and Public Relations: Establishing Relationships and Reducing Uncertainty with Stakeholders***

Les Miller, Rachel Greenway, and Laura John

Faculty Mentor: John Brummette

2:15-2:30

***Thermodynamic Investigation of Ternary Complex Formation of Ferrioxamine B and Imidazole***

Rebecca L. Mayfield

Faculty Mentor: J.I. Wirgau

2:30-2:45

***Aquatic Therapy: What is its Effectiveness and When is it Useful?***

Chelsea Kelley

Faculty Mentor: David Sallee

2:45-3:00

**3:30-5:00**

**ORAL PRESENTATION SESSION 2**

***An Overview of Inpatient Crisis Stabilization in Southwestern Virginia***

Amber Turman  
Faculty Mentor: Ann Elliott  
3:30-3:45

***Music Attitudes***

Christina Martin  
Faculty Mentor: Stevan Jackson  
3:45-4:15

***Deciphering, Analyzing and Approaching Teaching Methods in Children's Writing that is below Developmental Expectations***

Shannon N. Slattery  
Faculty Mentor: Carolyn Mathews  
4:15-4:45

***Does It Matter Who Your Teacher Is?***

Kristen DeWeese  
Faculty Mentor: Tricia Easterling  
4:45-5:00

***Heth 018***

**2:00-3:15**

**ORAL PRESENTATION SESSION 3**

***Edward Said: Concepts and Context***

Matt Prater  
Faculty Mentor: Jolanta W. Wawrzycka  
2:00-2:30

***Regenerative Rending***

Lacie Omps  
Faculty Mentor: Danah Bella  
2:30-2:45

***Medicine River/Astral Vacations: A Reading***

Matt Prater  
Faculty Mentor: Louis Gallo  
2:45-3:15

**4:00-5:00**

**ORAL PRESENTATION SESSION 4**

***Contorting Society***

Vince Michael Hitt  
Faculty Mentor: Halide Salam  
4:00-4:30

***Audio Production Portfolio***

Michael Andrews

Faculty Mentor: Joe Flickinger

4:30-4:45

***The increasing popularity of Synthetic Marijuana: The impact of the DEA's recent ban***

Roland C. Macher

Faculty Mentor: Tod Burke and Stephen Owen

4:45-5:00

***Heth 019***

**2:00 – 3:15 PM**

**SCIENCE AND RELIGION DEBATES**

**Should Galileo have been brought to trial? Should he have been convicted?**

Pro:

Breanna Bartos, Langley Looney, Jeona Anderson, Nick Sticinski

Con:

Matthew Wheeler, Matt Boyd, Jami Furr

**Natural Theology vs. Theology of Nature: Which most reasonably accommodates what we understand about Faith and Reason?**

Natural Theology:

Rita Saiban, Brooke Nelson, Brittany Wray, Miranda Bennett

Theology of Nature:

Katherine McHugh, Veronica Callahan, Cammie Sgarrella, Amber Lane

***CH 107***

**BBB SPECIAL SESSION I**

**5:00-6:00**

**ORAL PRESENTATIONS I**

***The Search for Proteins that Interact with HIRA***

Allie Mills

Faculty Mentor: Tara Phelps-Durr

5:00-5:15

***Anti-inflammatory Function of Cytochrome P450 Enzymes***

Gabrielle Silvers, Evin Williams, Justin Drake

Faculty Mentor: Peter Christmas

5:15-5:30

***Expression of Arsenic Resistance Genes in Bacteria from an Arsenic Mine***

Jasmine Jackson and Erin Fowler

Faculty Mentor: Georgia Hammond

5:30-5:45

***Mobilization of Arsenic by Bacteria from an Arsenic Mine***

Mercy Tom and Taylor McHugh

Faculty Mentor: Georgia Hammond

5:45-6:00

**6:00-7:00**

**Poster Session**

***Correlation between Corticosterone Levels and Parental Care in Eastern Bluebirds (*Sialia sialis*) in Urban and Rural Habitats***

Sarah Bartz, Anna Burgess, Holly French and Stephen Reeves

Faculty Mentor: Jason Davis and Judy Guinan

***Second-intermediate Host Preference of the Trematode, *Echinostoma trivolvis*, a widespread parasite of wildlife***

Juan Guacheta

Faculty Mentor: Jeremy Wojdak

***Class from a Different Perspective***

Michael Herring

Faculty Mentor: Georgia Hammond

***pH Effects on Larval Trematode Host-finding and Host Infection***

John Huth, Fionna Surette

Faculty Mentor: Jeremy Wojdak

***The Development of a Dichotomous Key to the Hair of Virginia Mammals***

Jasmine Jackson

Faculty Mentor: Robert Sheehy

***DNA Extraction from Blue Bird Blood Samples for Future DNA Fingerprint Analysis***

Luckele Milord

Faculty Mentor: Robert Sheehy

***Programming Genetic Simulation***

Justin Rutherford

Faculty Mentor: Robert Sheehy

***Interning at Merritt Island National Wildlife Refuge/Kennedy Space Center: Learning Wildlife Management Techniques***

Jessica Sosnicki

Faculty Mentor: Karen Franci

***Determining HIRA Expression and Rescuing HIRA Mutants***

Casondra Weller

Faculty Mentor: Tara Phelps-Durr

**7:15-8:15**

**ORAL PRESENTATIONS II**

***Identification of Bacteria from Mosquito Digestive Tracts Using Single-strand Conformation Polymorphisms***

Jennifer Gunnell

Faculty Mentor: Justin Anderson

7:15-7:30

***Modulation of La Crosse Virus Infection in Mosquitoes and Cell Culture by Exposure to Coffee Components***

Rachel Albert and Nicole Eastep

Faculty Mentor: Justin Anderson

7:30-7:45

***Floral and Faunal Response to Tree Fall, Gap Size, Age, and Structure in Selu Conservancy (Southern Appalachian Forest)***

Christinia Schoch

Faculty Mentor: Fred Singer

7:45-8:00

***Species Inhabitation and Regeneration in Tree Fall Gaps vs. Non-Gaps***

Nathan Lanier

Faculty Mentor: Fred Singer

8:00-8:15

***Wednesday, April 20<sup>th</sup>, 2011***

***Heth 018***

**9:00-10:30**

**HONORS ENGLISH 200 SPECIAL SESSION**

Faculty: Jo Ann Asbury

***Salem Witch Hunts vs. India Witch Hunts***

Jennifer Brown

***The Freemasons***

Colleen McBride & Tessa Law

***Food of the colonies***

Katlyn King & Mindy Pierett

***Disney's Stereotypes***

Molly Christopher

***Fashion Throughout the Decades***

Erica Stanley & Kayla Akers

***Ghost Stories from Virginia***

Megan O'Dowd & Laura Phelps

**12:00-1:45**

**ORAL PRESENTATION SESSION 1**

***Musical Themes in the Lord of the Rings Trilogy***

Jessica Albrecht

Faculty Mentor: Stevan Jackson

12:00-12:15

***Musical Ethnography of a Close Friend***

Stephen Lesiv

Faculty Mentor: Stevan Jackson

12:15-12:30

***The Cultural Significance of 'Turntablism'***

Josh Shultz

Faculty Mentor: Stevan Jackson

12:30-12:45

***Ethnography of The Blues***

Katie Boyd

Faculty Mentor: Stevan Jackson

12:45-1:00

***The Electric guitar and its influence on a great part of the American music culture***

Chelsea Shea

Faculty Mentor: Stevan Jackson

1:00-1:15

***Cherokee Music and Community Identity***

Jessica Cushman

Faculty Mentor: Stevan Jackson

1:15-1:45

**3:00-4:45**

**ORAL PRESENTATION SESSION 2**

***The Ethnomusicology of Video Games***

Aisilinn Lorraine Nelson

Faculty Mentor: Stevan Jackson

3:00-3:15

***An Ethnography on College Party Deejays.***

Matthew Reed

Faculty Mentor: Stevan Jackson

3:15-3:30

***Jimi Hendrix***

Alex Taylor

Faculty Mentor: Stevan Jackson

3:30-3:45

***Folk Rock and its Cross-Cultural Transitions***

Sarah Fischetti

Faculty Mentor: Stevan R Jackson

3:45-4:00

***Research Experiences for Undergraduates: Students' Perceptions of Conference Participation and Mentoring by College Generational Status and Sex***

Jessica Bellamy

Faculty Mentor: Jeanne Mekolichick

4:00-4:15

***Jazz Fusion: A History***

Anthony Mognoni

Faculty Mentor: Stevan Jackson

4:15-4:30

***New Age Rock Scene***

Joshua Judd

Faculty Mentor: Stevan Jackson

4:30-4:45

***Heth 016***

**10:00-11:00**

**CURRENT RESEARCH IN FORENSIC SCIENCE AND FORENSIC ANTHROPOLOGY SPECIAL SEASON**

Faculty Mentor: Donna C. Boyd

Matt Campbell

Danielle Fenimore

Laurel Finney

Lucy Hochstein

Jason Lesko

Rebecca Siegal

Michelle Whitman

Liz Zody

***Heth 019***

**11:30-1:00**

**ORAL PRESENTATION SESSION 1**

***A Walk in Someone Else's Shoes***

Robyn Weatherholtz

Faculty Mentor: Guy Axtell

11:30-12:00

***Can a Supreme Court Case affect the outcome of an election?***

Elizabeth Hopkins

Faculty Mentor: James Radford

12:00-12:15

***The Relationship Between Types of Motivation Within Sport***

Anita Puerto

Faculty Mentor: Monica Pazmino-Cevallos

12:15-12:30

***The Real Poe***

Angela Bullock

Faculty Mentor: JoAnn Asbury

12:30-12:45

***Marion: An Appalachian Town***

Alesia L. Crewey

Faculty Mentor: JoAnn Asbury

12:45-1:00

**2:15-3:30**

**ORAL PRESENTATION SESSION 2**

***The Origins of Jazz***

Andrew Imhoff

Faculty Mentor: Stevan Jackson

2:15-2:30

***"The Big Boom Theory: Powder, People, and Politics"***

Adam Bennett

Faculty Mentor: Matt Oyos

2:30-3:00

***Le Belle Chateau- A Wedding Hall***

Brittini Hammond & Lauren Reinhard

Faculty Mentor: Julie Temple

3:00-3:30

4:00

***Annual Creative Readings, 2011 English Club at Radford University***

Faculty Mentor: Kim Gainer, JoAnn Asbury, April Asbury

***Heth 044***

**3:00-5:00**

**MOUNTAIN MUSIC: AN HISTORICAL JOURNEY SPECIAL SESSION**

Faculty Mentors: Melinda Wagner & Brianna Kirker

Brianna Kirker

Sarah Wood

Brenna Ishler

Rachael Simon

Britni Belcher

David Eric Pidcock

Kelsey Lewis

Jonathan West

Caitlan Worsham

***Heth 045***

**1:30-3:00**

**ANTHROPOLOGICAL METHODS SPECIAL SESSION**

Faculty: Cliff Boyd

***The Heth Cemetery Project***

Daniel Riegel, William Willis, Robert Hancock, Brandon Buck, Jacob Conner, and Tyler Adams

***The Smithfield Paula Dean Never Knew: Preserving the significance of an Historical Plantation***  
Heather Bostic; Jason Lesko; Ashley Jones; Alaina Walker; Stefan Mehl, Robert Long; Brittany Belew

***Revamping Glencoe***

Elizabeth Zody, Laurel Finney, Matthew Campbell, Claire Percoco, Edvin Komi

***Geologic formations and their relationship to Archaic and Woodland sites in Virginia***

Rebecca Siegal

***Heth 014***

**2:00-4:00**

**POSTER PRESENTATION SESSION 1**

***Capstone Project: "Artist Shrine"***

Kathryn Mattox

Faculty Mentor: Alison Pack

***Teaching Methods for Foreign Language: A Review of the Literature and Sample Lesson Plan***

Chelsea Saville-Reynolds

Faculty Mentor: Blas Hernandez

***Little Brother and School Security***

Ekaterina Ramos

Faculty Mentor: Brenta Blevins

***Islamic Decorative Arts***

Callan Moody

Faculty Mentor: Carlee Bradbury

***Lighting Effects on Restaurant Revenue***

Kayla Enterline

Faculty Mentor: Joan Dickinson

***Is the Hippocratic Oath Ethical?***

Heather Price

Faculty Mentor: Guy Axtell

***Natural Childbirth Education and Planning***

Jessica Rakes

Faculty Mentor: Sharla Cooper

***Axonal Shearing vs. Hemorrhagic Incident: The Neuro Nurse's Role***

Sarah D. Easter

Faculty Mentor: Patricia Conklin

***Reintegration of Women Veterans: An Analysis of Resources***

Hannah Anderson

Faculty Mentor: Diane Hodge

**4:30-6:30**

**POSTER PRESENTATION SESSION 2**

***The effects of the background color used in images of male targets and the effects of outcome relevance on participants' ratings of attractiveness for the male targets***

Kristen Shifflett, Robbie Suthers, & Rachel Rose

Faculty Mentor: Jeffery Aspelmeier

***Effects of Exercise on Learning and Memory in Rats***

Amanda Adams & Sarah Fischetti

Faculty Mentor: Mark Whiting

***Women's Implicit and Explicit Attitudes as Predictors of Body Image and Body Mass Index***

Lyndsay West & Nik Anninos

Faculty Mentor: Jeffery Aspelmeier

***Effects of pro-handwashing messages on hand-washing in public restrooms***

Karmen Rizzo, Timothy Kennedy, Rebecca Lipford, Stephanie Gusler, and Jae Davis-Foster

Faculty Mentor: Jeff Willner

***Locus of Control Moderates the Relationship between Aggression and Frustration***

Katherine Rous, Jonathan Miller, & Leigh-Ann Ahrenberg

Faculty Mentor: Jeffery Aspelmeier

***The Effect of Primed Gender Stereotypes and Time Pressure on Victim Blaming in a Case of Sexual Assault***

Carly Andrascik, Johanna Case, & Audrey Engelund

Faculty Mentor: Jeffery Aspelmeier

***The Effects of Injunctive & Descriptive Norms on Intent to Exercise***

Ryan Hypes, Phil Tropp, Stephanie Ward

Faculty: Jeffery Aspelmeier

***What's Love Got to Do With It?: A Study on Relationship Satisfaction***

Kelsey Henry, Michelle Fischer, & Anna Daugherty

Faculty Mentor: Jeffery Aspelmeier

***iPartner: A Study of Relationship Satisfaction and Communication Satisfaction Among Long Distance Romantic Relationships***

L. Michelle Fischer

Faculty Mentor: Tracy J. Cohn

**CH 107**

**5:00-8:15**

**BBB SPECIAL SESSION II**

**5:00-6:00**

**ORAL PRESENTATIONS I**

***Analysis of Embryo Lethal HIRA Mutants in Arabidopsis thaliana***

Kellie Snooks

Faculty Mentor: Tara Phelps-Durr

5:00-5:15

***Differential Appetite-Related Responses to Central Neuropeptide Y in Polygenic Models of Anorexia and Obesity***

Collette Dougherty

Faculty Mentor: Mark Cline and Paul Siegel

5:15-5:30

***Exploring Roles of the RFamide Peptides in Food Intake Regulation***

Brandon Newmyer

Faculty Mentor: Mark Cline

5:30-5:45

***Cell Wall Histochemistry of Crystal-containing Idioblast Cells in Dieffenbachia seguine***

Erica Weston

Faculty Mentor: Gary Coté

5:45-6:00

**6:00-7:00**

**POSTER SESSION**

***Effects of Leaf-peel Culture on Crystal-containing Idioblasts in Dieffenbachia seguine***

Ohene Amponsem

Faculty Mentor: Gary Coté

***The Role of Museums in Studying Genetic Variability and Relationships of Endangered Populations***

Jason Langteau

Faculty Mentor: Karen Francl

***The Importance of Museum Collections to Bottlenose Dolphin (Tursiops spp.) Biodiversity and Conservation***

Clarissa Clarke and Jennifer Greenwood

Faculty Mentor: Karen Francl

***Using Museum Specimens to Find the Species of Whales for Sale in Japan and South Korea***

Holly French

Faculty Mentor: Karen Francl

***Effects of Steaming Hay on the Respiratory Systems of Horses with Heaves***

Ashly Goetting, Casey Harrell, Victoria Scott, and Taryn Yezek

Faculty Mentor: Karen Francl, Celeste Blumerich, and Virginia Maxwell

***Analysis of Proteins from Cells of Dieffenbachia that Synthesize Calcium Oxalate Crystals***

Jordan Hixon, Brian Ingram and Gary Coté

Faculty Mentor: Gary Coté

***Natural History Museums Role in Documenting Emerging Species***

Therese Ihrig

Faculty Mentor: Karen Francl

***Scanning Electron Microscopy of Dieffenbachia Cells and Crystals***

Brian Ingram

Faculty Mentor: Gary Coté

***Investigating the Effects of Prescribed Fire on Soil and Vegetation Properties at RU's Selu Conservancy***

Tessa Law, Lora Wagner, and Katie King  
Faculty Mentor: Karen Francl

***The Effect of Controlled Burns on Small Mammals at Radford University Selu Conservancy***

Kyle Maziariski, Kirbie Lapins, Jacob Bland, Lauren Edmondson, and Lelia Overton  
Faculty Mentor: Karen Francl

***Fueling the Fire: Reflections on a Peer Mentoring Experience for a Non-Majors Environmental Biology Field Project***

Kiersten Newtoff and Kelsey Townsend  
Faculty Mentor: Karen Francl

***Prescribed Fire and its Effects on Avian Life at Selu Conservancy in Montgomery County***

Carrie Wainright, Will Chitwood, Brianna Kirker, and Justin Everhart  
Faculty Mentor: Karen Francl

**7:15-8:15**

**ORAL PRESENTATIONS II**

***Wildlife Interpretation with Children: Assessing the Most Effective Teaching Techniques***

Meghan Stump  
Faculty Mentor: Karen Francl  
7:15-7:30

***Habitat Susceptibility to Invasive Plant Species at Selu Conservancy, Southwest Virginia***

Kiersten Newtoff and Weston Rogers  
Faculty Mentor: Christine Small  
7:30-7:45

***Quantifying Wing Damage of Summer Bats in the Northeastern United States***

Tessa Canniff  
Faculty Mentor: Karen Francl  
7:45-8:00

***Quantifying the Effects of Prescribed Fire on Small Mammal and Vegetative Communities at Caldwell Fields, Jefferson National Forest***

Kaelin Creange  
Faculty Mentor: Karen Francl and Christine Small  
8:00-8:15

***Thursday, April 21<sup>st</sup>, 2011***

***Heth 014***

**10:00-12:00 SURVEY RESEARCH METHODS SPECIAL SESSION**

Faculty Mentor: Jeanne Mekolichick

10:00-11:00: Matthew Reed, Ellie Gaither, Jeremy Bleakley

***A Look at the Self-Esteem and drinking behaviors of college students***

Matthew Reed

***The Relationships Between Academic Achievement and Student involvement Based on Living Arrangement***

Ellie Gaither

***Religiosity and political orientation***

Jeremy Bleakley

11:00-12:00: Amy Owens, Justin Hairston, Jessica Cushman

***Nuclear Family Connectivity and Academic Performance***

Amy Owens

***Undergraduate Student Perceptions Toward Mentoring***

Justin Hairston

***The Opinions of Undergraduate Majors on Education***

Jessica Cushman

**12:00-6:00 GENDER CONFERENCE SPECIAL SESSION**

Faculty: Hilary Lips

***Young Women's Perceptions of and Responses to Sexual Harassment***

Kelly Cooper

Faculty Mentor: Hilary Lips

***12:00-12:30***

***Examining the Role of Gender in Helping Behavior among Students and Faculty***

Sarah Kerper

Faculty Mentor: Jenessa Steele

***12:30-1:00***

**Coffee break (Funston, Knight & Gusler available at their poster)**

***Self-Compassion and Resilience in Men***

Megan Funston, Alexis Knight, Stephanie Gusler

Faculty Mentor: Sarah Hastings

***1:00-1:15***

**Panel on the "Gendered Marketing of Children's Toys"**

Elly Schulte, Lauren Genz, Brooke Nelson

***1:15-1:45***

**Panel on "The Gendered Consumer Culture"**

Caitlin Krueger, Sheena Palmer, Mary Dickerson, Katie Boyd, Hale

***1:45-2:15***

***Gendered career-family attitudes among current-generation university students***

Alynn Gordon, Katie Lawson

Faculty Mentor: Hilary Lips

2:45

***Understanding the Mechanisms Involved in the Stereotype Threat Effect for Women and Math Performance.***

Emily Latimer, Brittany Hiben, & Alynn Gordon

Faculty Mentor: Jeffery Aspelmeier

3:15

***Themes of Femininity and Power in the Portrayal of Women Leaders: An Extension of Research***

Kayla Huntley

Faculty Mentor: Hilary Lips

3:45

***Police Women: On the Mean Streets and on the Big Screen***

Dr. Kim Davies, Augusta State University

Keynote Speaker

4:15-5:30

***Heth 016***

**2:00-4:00**

**POSTER PRESENTATION SESSION 1**

***Marijuana in the U.S.: The fight for legalization and effective treatment options.***

Carole Pendleton

Faculty Mentor: Diane Hodge

***Novice vs. Expert: A Comparison of Decision-Making and Critical Thinking Skills***

Tarsha Epps

Faculty Mentor: Kereen Mullenbach

***Introductory Topics in Algebraic Geometry***

Camron Withrow

Faculty Mentor: John McGee

***Spectral Analysis of Sequential Time Reproductions and Scores on the Connors Adult ADHD Scale 2***

Philip Frum

Faculty Mentor: Thomas Pierce

***New River Valley Mental Health Needs Assessment***

Jenni Stroup, Chelsea Shea, Abigail James, & Taylor Jenkinson

Faculty Mentor: Ruth Riding-Malon

***(-)-Epigallocatechin gallate Effect on Functional Outcomes Following Experimental Traumatic Brain Injury***

Amanda VanLaeken, Tara Ardito

Faculty Mentor: Mark Whiting

***Factors Related to Occupational Differences in Divorce Rates***

Paul Park, Elizabeth Matt, Chad Carrick

Faculty Mentor: Michael Aamdot

***The Effects of Missing a Target Face in a Crowd on Heart Rate***

James Streett

Faculty Mentor: Thomas Pierce

***Adolescent exposure to NMDA antagonists in rats: An animal model of schizophrenia?***

Angel Medina, Andrew Tippie, & Amanda Adams

Faculty Mentor: Jeffery Willner

***The Spread of Communicable Diseases Throughout the World***

Kevin Caine

Faculty Mentor: Michelle Ren

***Stress and Contributing Factors Among Radford University Nursing Students***

Amber Smith

Faculty Mentor: Leonita Cutright and Anthony Ramsey

***Cardiac Variable Scoring in Obstructive Sleep Apnea***

Wesley DuBose, Amy Corbin, Ashley Taylor

Faculty Mentor: Adrian Aron

***Synthesis of Ethanol from Sugars, Starches, and Cellulose***

Jacob L. Shelton

Faculty Mentor: Christine K. Hermann

***Robotic Arm***

Christopher Biernacki

Faculty Mentor: Rhett Herman

***Heth 043***

**10:30-12:30**

Faculty: Sandra French

**LEADERSHIP SPECIAL SESSION**

Amanda White  
Blake McClary  
Brittney Howell  
Candace Clokey  
Christine Brown  
Dayna Powderly  
Elizabeth Young  
Erin Taylor  
Hannah Link

Jana M. Mosby  
Jennifer Robinette  
Jocelyn Stephens  
Jonathan West  
Jorge William Chavez Ayala  
Kaitlin Pondolfino  
Katelyn Meeks  
LaMarke Patterson  
Lauren Hammer

Les Miller  
Megan Patrick  
Megan Van Patten  
Michael Roundtree  
Randy Taylor  
Troy Nardone  
Tyler Wood  
William Clement

**1:00-5:00**

**SPECULATIVE FICTION: ALWAYS A SLIPPERY SLOPE? SPECIAL SESSION**

Faculty: Michelle Ren & Brenta Blevins

Jose Alcantara  
Katelyn Ames  
David Andrade  
Breanna Arsenault  
Chris Artigue  
Ray Augst  
Cameron Baumgardner  
Jessica Brosey  
Marion Carneal  
Jessica Clark  
Connor C. Crisanti  
Amanda Daniels  
Madeline Detyens  
Lindsey Dulling  
Sidney Encarnacion  
Harli Engel  
James Franco

Clay Gates  
Kata Gauthier  
Andrew Harris  
Eva Intravaia  
Meghan Judge  
Max Loomer  
Allison Marquardt  
Catherine McClellan  
Zach McCoy  
Jordan McDonald  
Molly McDowell  
Colleen McGrath  
Amy Moorcones  
Mike Mowery  
Matthew Nelson  
Josh Oakley  
Kelsey Page

Alex Palmer  
Ben Pasquel  
Regina Patterson  
Kelsey Pendergraft  
Kayla Perkins  
Daniel Pitkin  
Emily Reedy  
Tyler Robic  
Meaghan Rowley  
Stephanie Saunders  
Marie Stovall  
Clement Sydnor  
Rachel Tharp  
Justin Voss  
Kristen Wade  
Natalie Wrenn

***Heth 044***

**1:00- 2:30**

**ORAL PRESENTATION SESSION 1**

***Developing Democracies***

Joshua Melvin

Faculty Mentor: James Radford

*1:00-1:15*

***Eriching Middle School Health Education by Teaching Based on How the Brain Learns***

Margaret Prusaczyk

Faculty Mentor: Susan Miller

*1:15-1:45*

***Local Historical Figures and Legends of the Southwestern Virginia Area***

Chelsey Slep

Faculty Mentor: Mary Ferrari

*1:45-2:15*

***Doing Gender in Consumer Toys***

Jessica Brockmeyer

Faculty Mentor: Carla Corroto

*2:15-2:30*

**3:30-4:30**

**ORAL PRESENTATION SESSION 2**

***How Well Do You Know Your Healthcare Plan?***

Brittany Rainey & Kelsey Lewis

Faculty Mentor: Todd Makse

3:30-4:00

***A Social and Literary History of Satan***

Brandon Epps

Faculty Mentor: Paul Thomas

4:00-4:30

**5:00-6:15**

**ORAL PRESENTATION SESSION 3**

***Historical Perspectives on Censorship in Literature***

Ingrid Baker

Faculty Mentor: Erin Webster Garrett

5:00-5:30

***Fæder, Modor, Bearn: Inscribing Gender through the Family in Beowulf***

Brenta Blevins

Faculty Mentor: Moira Baker

5:30-5:45

***Sensibly Chic: Researching and Designing Around Claire McCardell and Coco Chanel***

Renata A. Schmersal

Faculty Mentor: Kathy Mitchell

5:45-6:00

***Heth 045***

**12:30-1:45**

**HEALTH 460 WORLD HEALTH DAY SPECIAL SESSION**

Faculty: Kathleen Poole

***Overview of World Health Day Theme***

Beth Longo, Kari Powers, Laura Janosko, Lauren Henley

***Antimicrobial Resistance #1***

Anna Zogby, Anna Bakhshi, Jackie Jenkins

***Antimicrobial Resistance #2***

Alex Kosakowski, Elizabeth West, Anne Hinley

***Malaria***

Whitney Salyers, Shannon Dooley, Emily Minnich, Sarah Schoonover

***Tuberculosis***

Mena Ariano, Kristen Rector, Lisa Weatherford, Lauren Armellino

***HIV/AIDS***

Amanda Powell, Ste'Keira Hayes, Emily Harvey, Sammy Kimmelman, Tori Russell

***Future Trends***

Haley Sturgill, Mathew Hoffman, Sarah Gayle Connell, Adam Caine

***Natural Disasters***

Albert Jett, Perry Rahil, Mark Nester

**2:00 – 3:00 PM                      SCIENCE AND RELIGION DEBATES**

**Is there Room for God in Evolution?**

Pro:

Lindsay Dawson, Autumn Berry, Rachael Vronek

Con:

Rebecca Jenkins, Evan Samples, Andrea Belloli

**3:00-4:00                              ORAL PRESENTATION SESSION 1**

***Multi-hop Wireless Electricity Charging in Wireless Sensor Networks***

Catherine Greene, Bretny Khamphavong, Chloe Norris, and Nancy White

Faculty Mentor: Hwajung Lee

3:00-3:30

***Kinetic Analysis of Oleic Acid Esterification Using a Solid Acid Carbon Catalyst***

McAlister Council-Troche

Faculty Mentor: Francis Webster

3:30-3:45

***Microwave Assisted Esterification of Fatty Acids for Biodiesel Production Using a Novel Carbon Based Solid Acid Catalyst***

Tyler Harclerode

Faculty Mentor: Francis Webster

3:45-4:00

# Highlander Scholars

## Senior Capstone Projects

### ***Audio Production Portfolio***

Michael Andrews

Faculty Mentor: Joe Flickinger

After going through the Production Technology concentration curriculum under the Media Studies degree at Radford University, I became frustrated with the lack of preparation to enter into the field of radio and audio production. The degree encompassed a lot more with video and journalistic characters instead.

The goal for my project was to design a course similar to the “Production Technology Portfolio” and “Journalism Portfolio” courses in which students spend the semester creating professional work that they then create a portfolio by the end of the semester to submit to future employers.

In order to do this, I had to select a book to use and read through it and pick the parts that best suit and teach about the world of radio. With my work in the two radio organizations at Radford University, Radio Free Radford and WVRU, I then have composed several commercials, PSAs and other audio productions that are standard in the field of radio. I have designed a syllabus to create a plan of study using the book, the campus radio stations, the audio lab in Porterfield, and job searching for the student to be fully prepared to apply for a job in radio.

I will be presenting samples of my portfolio and the syllabus I have designed. I also will hopefully have some results on how many students feel a course like this will be useful in the Media Studies department as well as their feelings on the video-intensive curriculum rather than a fair spread of both audio and video.



### ***"The Big Boom Theory: Powder, People, and Politics"***

Adam Bennett

Faculty Mentor: Matt Oyos

Bennett examines the impact that World War II had on the city of Radford, and the surrounding counties of the New River Valley. On August 22, 1940, when surveying began for an Army ammunition plant, the Radford area changed dramatically. This led to a change in the environment, the population, and the economy of this Appalachian community. Numerous primary sources gathered from the archives of local libraries, including Radford University and Virginia Tech, provide an in-depth examination of how a world war can impact a small, mountain city.



### ***Does It Matter Who Your Teacher Is?***

Kristen DeWeese

Faculty Mentor: Tricia Easterling

This research focuses on understanding the differences and similarities between homeschooling and traditional public schooling. Through research and interviewing I collected data on the two different educational alternatives. By interpreting the data collected I gained a deeper understanding for the social, educational, religious, and economical reasons for choosing one of the alternatives over the other. Through research I gained most of my knowledge about the facts of public schooling and homeschooling. I also learned information about each schooling approach and reasons why some parents choose one schooling alternative over the other. The observation of a kindergartner was another technique I used to learn more about homeschooling. It allowed me to personally experience a day in a homeschooling environment. Through interviewing I gained the knowledge of other people's ideas and feelings towards either schooling alternative. This allowed me to take others' experiences and listen to their ideas on the schooling of their choice. By completing this research I was able to gain a full understanding of the similarities and differences between homeschooling and traditional public schooling by using these three different researching techniques.



### ***Cardiac Variable Scoring in Obstrusuctive Sleep Apnea***

Wesley DuBose, Amy Corbin, Ashley Taylor

Faculty Mentor: Adrian Aron

Obstructive sleep apnea (OSA) is characterized by complete obstruction of the airway causing a stoppage of breathing leading to oxygen deprivation. OSA is mostly undiagnosed, although can be identified with an expensive overnight observation. This study aims to test a new way of screening for OSA in place of the overnight study. The study uses a six variable score, each variable has been shown to be unique to OSA sufferers. Using a bioimpedance cardiac monitor, patients were tested during periods of normal breathing with 30 sec apnea periods to simulate OSA conditions. Subjects were 15 healthy males (Mean  $\pm$  SD: age =  $37.7 \pm 5.6$  yr; BMI =  $22.7 \pm 1.8$ ; neck circumference =  $38.1 \pm 2.1$ ) and 17 recently diagnosed OSA patients (age =  $47.3 \pm 10.5$  yr; BMI =  $34.1 \pm 6.9$ ; AHI =  $40.9 \pm 33.8$ ). Healthy patients and patients recently diagnosed with OSA were given a score based on the prevalence of the following variables: BMI, neck circumference, myocardial contractility during and after Mueller Maneuver, stroke volume at second 90 and second 120 following MM. The assigned score was different between groups (OSA =  $4.1 \pm 1.3$ ; healthy =  $0.8 \pm 0.9$ ,  $p < 0.05$ ) and correlate positively with OSA severity ( $r = 0.6$ ,  $p < 0.05$ ). This score was shown to be predictive of OSA with neck circumference having the highest prognostic value. Future research is needed to determine this score accuracy in a larger population.



### ***Axonal Shearing vs. Hemorrhagic Incident: The Neuro Nurse's Role***

Sarah D. Easter

Faculty Mentor: Patricia Conklin

Neuroscience nurses provide leadership, knowledge, and expert reasoning while working with an interdisciplinary team for each case presented in acute and primary care settings. Distinguishing between diffuse axonal injuries and hemorrhagic accidents, their effects, and expected outcomes will assist the nurse in implementing nursing guidelines, working within the full scope of nursing practice, and promoting patient-centered care. The American Association of Neuroscience Nurses has developed evidence-based detection and treatment guidelines for providers to follow for an issue with such high prevalence. There are an estimated 7.1 million traumatic brain injuries occurring in the United States each year, leaving 5.3 million people with disabilities from these. Almost two-thirds of all traumatic brain injuries involve axonal shearing. More than fifty per cent of those with diffuse shearing die within two weeks of the initial injury. Cerebral vascular accidents are the third leading cause of death in the United States. As incidence continues to increase and treatment measures improve, survivors with related physical, emotional, and cognitive problems increase as well. There are approximately 5.7 million stroke survivors in the United States today. Nurses are at the forefront of care in the intensive setting and must keep up to date with rising trends and care modalities. The nurse plays an integral role in the treatment team of neurological patients and must be better recognized in the American health system. The purpose of this study is to bring to light the role of evidenced based nursing practice in achieving enhanced neurological outcomes for patients experiencing diffuse axonal injuries or cerebral vascular accidents (hemorrhagic incidents).

### ***Lighting Effects on Restaurant Revenue***

Kayla Enterline

Faculty Mentor: Joan Dickinson

The restaurant business is a rapidly growing industry that has become a part of our daily lives; making the design of restaurants of increasing interest. The design of a restaurant can further reinforce the intention of the environment and provide a major influence on patron spending and table turns, which both impact the restaurants overall success and revenue. One aspect of design that deserves more recognition in the restaurant atmosphere is lighting. While the use of electric and natural lighting on spending has been observed in retail environments, there are limited studies that address the relationship in restaurants. In the restaurant interior, the effects of full spectrum lighting on customer spending have been studied; however, there has been no research that examines exposure to natural lighting and customer spending. Although full spectrum lighting is known to render light more naturally, recent studies have shown that it still differs greatly in several important aspects, such as spectral power distribution, thus creating a need for further research on the affects of natural lighting on spending in restaurants. The purpose of this research was to examine different seating types and natural lighting on the amount of money spent. The data collection process is still in progress, but preliminary results from a pilot study indicate that customers tend to spend the majority of their time at a booth away from the window. The checks with amount spent support this conclusion. It was evident that customers overall spend more money when dining at booths compared to freestanding tables. The data collection method from the pilot study consisted of comparing two restaurants and examining the customers'



checks to determine if natural light influenced spending habits. This data collection method will be repeated in further detail for this research project.

***Lupus in a female collegiate athlete: A case report***

Meredith Epperley

Systemic lupus erythematosus (SLE) is a chronic autoimmune disease that affects the body's healthy tissues. In patients with SLE the immune system is impaired by the body itself, hence the name autoimmune. Although uncommon, this condition does exist in the athletic population. The rarity of SLE in the athletic population may be due to the lack of understanding of the disease manifestations. Careful attention must be taken in order to ensure the safety of athletes that have SLE. In an athletic setting, individuals will be cared for by Certified Athletic Trainers, team physicians, and other allied health care professionals. The purpose of this case study is to provide information for Certified Athletic Trainers to increase the value of care given to those specific athletes, thus giving more opportunity for patients with SLE to explore sports. This information will give Certified Athletic Trainers a better understanding of the physical, psychological, and emotional aspects of SLE.



***Novice vs. Expert: A Comparison of Decision-Making and Critical Thinking Skills***

Tarsha Epps

Faculty Mentor: Kereen Mullenbach

This study compared the critical thinking and decision-making skills between novice nurses and expert nurses and explored the phenomenon of intuition among nurses so that the information could be used to improve teaching methods in baccalaureate nursing programs. A group of Registered Nurses with five or more years of experience, as well as a group of senior-year nursing students completed a 56-question survey. Results were analyzed and showed that both groups demonstrated using both the analytical and intuitive processing method to decision-making. However, the expert nurses scores ranged closer to the intuitive-processing range and were significantly higher than the students.

***iPartner: A Study of Relationship Satisfaction and Communication Satisfaction Among Long Distance Romantic Relationships***

L. Michelle Fisher

Faculty Mentor: Tracy J. Cohn

The primary objective of this research is to examine the relationship between time spent using technology (particularly Skype) and the relationship satisfaction of partners in long-distance romantic relationships (LDRR). The expected sample is approximately 120 participants drawn from mid-sized university in the Southeast, all of whom are current students of psychology. Participants received a survey composed of the Relational Communication Scale, the Relationship Assessment Scale, the Measure of Attachment Qualities, and additional information questions regarding use of technology, relationship status, and demographics. Students were presented to them through the SONA research system and after giving informed consent participants completed the online survey anonymously. It was hypothesized that Skype will have an impact on the relationship satisfaction of individuals in both proximal romantic relationships and LDRRs, and individuals who indicate a high amount of time spent communicating with their romantic partners will also report lower levels of proximal friendship satisfaction. The findings indicate the amount of time spent using Skype to communicate with the LDRR



partner are positively associated with relational satisfaction and negatively associated with proximal relationships. There was a negative correlation between satisfaction of social interactions outside of the romantic relationship and time spent using technology to communicate with their partners.

### ***Novel Ideas***

Sharon Gravatt

Faculty Mentor: Margaret Devaney

My capstone was presented as a joint collaboration with Annalee Tull, but in two separate acts. The show represented our individual styles and growth in our field of dance. For my section, I abstracted movement inspired by words taken out of different novels. Each piece was its own entity, yet motifs ran through it to connect it into a cohesive larger picture. This capstone helped me to develop my own choreographic process. I learned how I create, work with my peers, what I like and don't like, and how much of myself I'm willing to give to a piece.



### **Africa and European Union Relations: Lessons from Egypt and Tunisia**

Heather Guillot

Faculty Mentor: Dr. Waggaman

While many African countries suffer politically and socially, most of the countries that previously colonized Africa are now members of the European Union (EU); a relatively thriving economic and political union that joins the majority of Europe. There are two countries in Africa that are emerging as extremely important factors in Africa-EU relations; Egypt and Tunisia, however; leaders within the EU and leaders across Africa have differing ideas about the EU's efforts to enhance Africa's economy and political efficacy. Both Tunisia and Egypt have been the highlight of news media, political discourse, and foreign government initiatives since the start of the new decade. The concern that the European Union member countries have in both Egypt and Tunisia's political unrest consists of many financial and social implications dating back to Europe's role in 19<sup>th</sup> and 20<sup>th</sup> century imperialism in Africa. With political turmoil ensuing and the desire for these countries to have democratic reform, there is not only an inherent obligation on the EU for assistance, but also an implicit common interest for the EU to support Egypt and Tunisia's state reforms. There is a long history of cultural, political, and economic intertwining of Africa and EU member states and they continue to intertwine through various trade agreements, grants, and humanitarian efforts. At the same time, careful consideration of the effects of these policies and procedures provides each government with immanent provisions for future relations. Egypt and Tunisia's unique and current political situations create a framework to judge the effectiveness of the EU's work to support them, and also a framework to explain past, present, and future outcomes of the partnerships endeavors.



***Identification of bacteria from mosquito digestive tracts using single-strand conformation polymorphisms***

Jennifer Gunnell

Faculty Mentor: Justin Anderson

Mosquitoes transmit a large number of important pathogen, including the malaria parasites and dengue viruses. For many of these, there are no good control mechanisms and no vaccines. We have been characterizing the bacterial community resident in the digestive tracts of the mosquito *Aedes albopictus* and determining whether these bacteria may possess antiviral activity against La Crosse virus. Initial characterizations in the lab were performed by sequencing of the 16S ribosomal RNA gene, a method which is fairly expensive and time-consuming. In this study, we have been assessing a method to identify the bacteria that rapidly identifies sequence differences that can then be compared to known bacteria. To date, we have tested X bacteria from *Ae. albopictus* females from three locations. None match our reference bacteria, and sequencing of the 16S gene confirms that they are different species. This suggests that the bacterial community in mosquitoes is quite diverse, and further study is warranted to characterize the individual species for their utility in preventing disease transmission.



***Can a Supreme Court Case affect the outcome of an election?***

Elizabeth Hopkins

Faculty Mentor: James Radford

In my research paper, I will examine how campaign financing has a major effect on elections. More specifically, what the authors of the books I chose failed to conclude, is how the U.S. Supreme Court Case *Citizens United v. Federal Election Commission* affected the outcome of the 2010 midterm election. Authors Matthew J. Streb, David K. Ryden, Charles L. Zelden, and Larry J. Sabato each give different insights on elections and politics, campaign financing, the U.S. Supreme Court and the electoral process, and the 2010 elections. I draw my conclusion from a synergetic analysis of each author's interpretation of these subjects.

***Aquatic Therapy: What is its Effectiveness and When is it Useful?***

Chelsea Kelley

Faculty Mentor: David Sallee

In modern day physical therapy settings, the use of aquatic therapy for rehabilitation has been a growing trend. There are many ways to utilize aquatic therapy both in a clinical outpatient and in an inpatient setting. Aquatic therapy is defined as any type of physical rehabilitation that involves placing the body, particularly any joint, in water to help aid in the recovery of the joint. In a review of five studies spanning from 2006 to 2010, many types and uses of aquatic therapy were presented. Two-hundred and eighty-eight subjects were tested over the five studies, and all five studies incorporated a control group who performed therapy on land and an experimental group consisting of various forms of aquatic therapy. The testing periods ranged from as short as 6 weeks of intervention up to 18



weeks of intervention. All of the studies focused on a self-reported pain scale during and after exercise as well as range of motion variations, strength gains and deficits, and function in activities of daily living. From these five studies, it can be concluded that aquatic therapy is useful for a wide variety of medical conditions including but not limited to: knee and hip replacements, osteoarthritis in the lower body, and fibromyalgia. While values during range of motion testing and strength testing are comparable between land and aquatic therapies, it is suggested that the speed of recovery increases with aquatic therapy due to a comfort level in the water and the ability of the patient to feel at ease pushing the body to its limits in rehabilitation.

### ***How Well Do You Know Your Healthcare Plan?***

Kelsey Lewis

Faculty Mentor: Todd Makse

“How Well Do You Know Your Healthcare Plan?” is a study of The Patient Protection and Affordable Care Act. It highlights the key aspects of the PPACA and how familiar students are with them. The study also compares an individual’s media exposure with their opinion and knowledge of the PPACA. A survey of 1000 Radford University students was conducted to determine this information. Other components of the project include an analysis of the ratio of factual information to political arguments in the media, the ethical responsibility of the media, and how these topics relate to the data gathered from the survey.



### ***The increasing popularity of Synthetic Marijuana: The impact of the DEA’s recent ban***

Roland C. Macher

Faculty Mentor: Tod Burke and Stephen Owen

This paper looks at the impact synthetic marijuana has had on society over the past few years and the issues that have arisen in a legal stand point. The DEA has recently placed a one year temporary restriction on the use of five synthetic chemicals that are being used to enhance plants and smoked, creating a euphoric –like high similar to that of marijuana. There is very little information in regards to what synthetic marijuana is as well as the effects that these chemicals have on the human body. Nevertheless, the FDA has deemed them unsafe for human consumption and advice against its use. Poison Control centers and Emergency rooms across the country have seen a major increase in the number of calls and visits related to synthetic marijuana, now labeled as a Schedule 1 narcotic. The concerns of medical and law enforcement officials is evident poses the question as to how to remove this drug from society effectively.



### ***"Artist Shrine"***

Kathryn Mattox

Faculty Mentor: Alison Pack

For my Honors Capstone Project, I have created a series of jewelry pieces that combine metal and wood. I really like the idea of mixing natural material into my art. The first piece is a set of two fingered rings that are carved out of wood with silver inlay. I also made a neck piece of a wooden cave with a small stalactite in its recess as the pendent with an oxidized woven chain. A large format professional poser also accompany my wood and metal pieces showing my influences, such as Andy Goldsworthy and Beth Legg and how my pieces relate to what is being down in jewelry and the art world.



### ***Roman Goddesses and Their Role in Roman Republic Society***

Kimberly Moore

Faculty Mentor: Mark Munzinger

The proposed paper and presentation will focus on Roman goddesses at the time of the Roman Republic. Roman religion had a powerful influence on their society, just as many religions of today affect society. I will examine where the Roman goddesses came from and how affected Roman society and culture, especially as Roman lands expanded to incorporate land outside of Rome. Some of the Roman goddesses were adopted from cultures they encountered during this expansion, leading to a remarkable infusion of local deities into an extensive Roman domain. Religion plays an important role in culture and history for many societies, ancient and modern. In light of the strong influence Roman culture still has on the modern world, it is important to understand where these people and their culture came from. Since men have traditionally dominated many societies, including their roles in religious practice, the paper will inspect the less emphasized roles of the goddesses as well as discussing those who worshiped them and their importance to the religion and culture. The research will discover if female deities and their patrons affected culture to an extent similar to their male counterparts or if all females, goddesses included, were required to be submissive to male authority. Goddesses in the Roman Republic were numerous and powerful, and many acts of worship and sacrifice were performed in their name. Also included in this paper are some of the reasons Roman citizens had for worshiping the many goddesses, especially those adopted from other cultures. Aside from being an interesting discussion from a historical perspective, this paper may provide insights into some of today's traditional view of the Roman Republic and how its culture still affects people today.



### ***Regenerative Rending***

Lacie Omps

Faculty Mentor: Danah Bella

"Regenerative Rending" is a choreographic study investigating superficial and profound borders within society, including culture, class, religion, maturation, relationships, and race. During the research process, the focus will be directed toward the development, perpetuation, and deconstruction of said divisions. Furthermore, the choreographic study will delve into individual perspectives as well as individual experiences within societal borders. Therefore, the methodology will include theories, studies, multimedia, literature, folk dances, and one-on-one interviews. The findings will culminate in a

thirty to forty minute choreographic project to be disseminated to my peers. Movement has the potential to evoke conversation relating to the theme of the choreographic study as well as allowing the opportunity to reexamine one's opinions and views. Throughout the choreographic study, movement phrases will pertain to the development, perpetuation, and deconstruction of said divisions within society. As such, my peers will have the opportunity to discuss with the choreographer her findings as well as their reaction to the movement presented.

***Medicine River/Astral Vacations: A Reading***

Matt Prater

Faculty Mentor: Louis Gallo

A reading a poems written during my time at RU, this presentation especially concerns the work I've done as part of my final Honors Project with Dr. Lou Gallo, a collection of thematically linked long poems under the working title Seven Cosmic Ballads. The poems deal, while bridging elements of formal and free verse technique, with regional identity, dream logic, world consciousness, and the philosophical concerns of mysticism and esoteric Christianity. If time permits, I would also like to read some of the shorter poems from a manuscript, Medicine River, whose subject is largely the healing process of ceremonial life passage, especially the death process and the transition to adulthood within a communal setting.



***Enriching Middle School Health Education by Teaching Based on How the Brain Learns***

Margaret Prusaczyk

Faculty Mentor: Susan Miller

In recent years, neuroscience has opened up potential in the realm of education through teaching based on the way in which the human brain learns. Understanding the general, biological functions and needs of the brain allows teachers to create classroom environments that better foster learning. By catering and adapting lesson plans to specific physical, emotional, and social needs of students based on brain science, this can aid in motivation of student learning. // The need for a physically, emotionally, and socially safe learning environment is a dominant educational concern. Once a safe, non-threatening environment is established, students feel comfortable to learn, express, and challenge themselves. Through a safe learning atmosphere, a teacher may more easily implement tactics to 'enrich' the environment. An enriched environment can boost student motivation and stimulate learning by playing into the emotional desires of brain. Tactics such as subject novelty, integration of student choice in lesson planning, and changing pace by adding activities and discussion all stimulate the brain. Making worldly connections between subject material and daily life offers a sense of relevance to students. This, in partnership with timely performance feedback by teachers to students through multi-faceted methods of assessment all serve to better education to the student holistically. Officially entitled, 'Let the Eagles Soar,' a program in association with Auburn Middle School, located in Riner, Virginia, served as the testing playground for a positively charged learning environment in matters regarding health education. 'Let the Eagles Soar,' was a Health Fair held at Auburn High School designed to promote physically active and healthy lifestyles amongst middle school students and the surrounding communities. With ever growing obesity trends and sedentary lifestyles overtaking today's youth, health education is an important hot topic nationwide. Effective and innovative health education is important for these recent

trends. Therefore, by transcending knowledge through brain compatible methods, teachers can more successfully communicate and motivate matters of health education to students. By seeking to understand how the brain learns and what motivates students, and applying these findings to health education, teachers could revolutionize health education for the future.

### ***How Well Do You Know Your Healthcare Plan?***

Kelsey Lewis

Faculty Mentor: Todd Makse

“How Well Do You Know Your Healthcare Plan?” is a study of The Patient Protection and Affordable Care Act. It highlights the key aspects of the PPACA and how familiar students are with them. The study also compares an individual’s media exposure with their opinion and knowledge of the PPACA. A survey of 1000 Radford University students was conducted to determine this information. Other components of the project include an analysis of the ratio of factual information to political arguments in the media, the ethical responsibility of the media, and how these topics relate to the data gathered from the survey.



### ***Natural Childbirth Education and Planning***

Jessica Rakes

Faculty Mentor: Sharla Cooper

Many pregnant mothers desire to have a natural childbirth, but this idea is pushed aside when the excitement and overwhelming stages of labor begin. Nurses should be more educated on the non-pharmacological methods and breathing techniques that can be offered to pregnant mothers. It is the duty of the nurse to be involved in allowing and encouraging pregnant mothers to follow their desired natural childbirth plan, rather than settling on pharmacological methods for pain management. Pregnant mothers should be informed of labor pain management opportunities and relaxation breathing techniques prior to hospitalization; if this is not accomplished, it is the nurse’s responsibility to be properly educated to coach their patients. Alongside childbirth education instructor, Megan McNamara, I observed alternative pain management strategies and breathing patterns to control labor pain. Candice Matthis, a Doula in the New River Valley, provided insight into coaching pregnant mothers through natural childbirth. Through evidence based research, childbirth education classes and the interview of a doula, I have formed a lesson plan to educate nursing students at Radford University. All information has been thoroughly researched and compiled into an evidenced based paper to achieve the goal of this Capstone; which is to further educate myself, future nurses, and pregnant mothers of breathing techniques and non-pharmacological methods used for pain management during the labor process.



### ***Implementation of Heavy-Load Applications on Mobile Devices***

Justin Rutherford

Faculty Mentor: Prem Uppuluri

Our goal is to develop a platform that will allow mobile devices to run resource-intensive applications. Our prototype is to have the mobile device outsource the application's execution to a server which would utilize a desktop grid computing platform to identify any computer on the Internet willing to provide resources. Once the application is executed on the identified resource provider, the server sends the results back to the mobile OS. Our presentation will focus on the implementation issues of the prototype. Specifically, we will present a survey of the mobile operating systems, the challenges we have encountered during implementation and a survey of the desktop grid computing platforms that this can be integrated with. We are currently implementing for the Android OS. Our first challenge was to use Android's Bluetooth or Wi-Fi libraries to develop the client and server. In our prototype, we plan to demonstrate by developing a Java program on the mobile OS and having it compiled using our mechanism. Specifically, we are working on the implementation in which the client will accept a Java program and dispatch it to the server using Wi-Fi connection libraries. Once connected, it will use a P2P search to identify servers that are willing to share their resources. Our plan is to customize existing P2P network implementations such as the FrostWire open-source software. We surveyed other P2P networks and the results of the survey will be included in our poster.

### ***Teaching Methods for Foreign Language: A Review of the Literature and Sample Lesson Plan***

Chelsea Saville-Reynolds

Faculty Mentor: Blas Hernandez

Many different methods for foreign language education beyond those commonly used in classrooms in the United States have been developed during the second half of this century. The necessity of changing the teaching methods used for foreign language education in this country will be discussed in this paper. These other methods will also be discussed, and a sample lesson plan will be provided. There are many reasons to advocate for a change in these methods, including a low number of high school students who complete more than two years of foreign. The number of bilingual citizens in the United States is relatively low in comparison to many European countries. One of the most important factors in this deficiency is the ineffectiveness of the most commonly used teaching methods. These methods do not focus on acquisition of a foreign language, which allows students to use the language in everyday contexts, but on learning it.



### ***Sensibly Chic: Researching and Designing Around Claire McCardell and Coco Chanel***

Renata Schmersal

Dr. Kathy Mitchell

As a fashion designer, a person will pull inspiration from many different sources. Current trends, interesting artwork, nature, and designers from previous decades are all popular sources of inspiration. Two iconic designers which have inspired many emerging as well as established fashion designers are Claire McCardell and Coco Chanel. Polar opposites in the fashion world, and yet they coincided in the same time periods and created unique legacies in the fashion world. During this project I sought to discover the two designer's greatest works and their unique lasting legacies before synthesizing their unique approaches to design in order to develop one modern line of cocktail



apparel. This was executed by doing research on both Chanel's and McCardell's lifestyles (what drove their designs), design history, and signature apparel. I then drew from this information and combined it with modern trends to begin the formation of a unique line of women's apparel. Twenty or more sketches of ensembles were developed, ten of which were chosen and put into a fully rendered drawing. One garment was selected and taken from sketch through the pattern making and construction processes to a completed garment. A comparison of the two designers was written into a research paper. A PowerPoint of the complete process, from inspiration to completed garment, was created in order to visually illustrate the process taken and include the research.

### ***Local Historical Figures and Legends of the Southwestern Virginia Area***

Chelsey Slemp

Faculty Mentor: Mary Ferrari

This research paper examines three famous historical figures in the southwest Virginia area: Mary Draper Ingles, Dr. Thomas Walker, and Daniel Boone. These three individuals all thrived in the surrounding area of southwestern Virginia, including northeast Tennessee and eastern Kentucky, during the mid-seventeen hundreds and on. It was during this time that settlers began to push the boundaries of westward movement even farther, and in my research I explain how the three of them played their own unique critical roles in this movement, whether that be of settler or explorer. Today, the three are remembered in their respective areas as heroes of sorts, having many public domains or affiliations named for them. This work takes these three and brings them each into their own historical light, debunking the facts from legend. My research centers on primary sources such as a manuscript, journal, and letters, with various extensive secondary sources on them as well. In addition, I have included research on the concept of westward movement in Virginia at the time, placing the subjects in historical context as well. This includes the politics surrounding western settlement, the formation of land companies, and the constant conflict with Native Americans, in particular the Shawnee. Each have their own factual story and background that can be deciphered from what has been left for historians to study, and this paper illustrates these facts.



### ***Stress and Contributing Factors Among Radford University Nursing Students***

Amber Smith

Faculty Mentor: Leonita Cutright, Anthony Ramsey

The capstone project for completion of my honors course of study in nursing consisted of completing a study based on stress and contributing factors among Radford University nursing students. A survey, based off student experience, faculty collaboration, and evidenced based research was developed to holistically assess stress in Radford University Nursing Students. The purpose of the research was to identify factors that contribute to stress in RU student nurses. I wanted to use preexisting research to outline the main stress factors for students including financial, academic, and personal issues. After reviewing existing data based on stress factors in nursing students, I sought to find if universal stress factors were similar to stress factors in RU nursing students. I utilized a variety of evidenced based research, student input, and faculty advising to create a survey which I feel holistically addressed stress factors in nursing students. After analysis of trends



among collected data, results were organized to develop a report which systematically outlined stress factors among RU nursing students. Using the stress factors identified areas of need and possible solutions to the stress causative factors were researched and identified. The original idea for my capstone was to develop a program which would assist students in completing the Radford University Nursing program with ease.

### ***Analysis of embryo lethal HIRA mutants in Arabidopsis thaliana***

Kellie C. Snooks

Faculty Mentor: Tara Phelps-Durr

In the plant species *Arabidopsis thaliana*, the HIRA gene codes for a protein involved in chromatin remodeling and DNA packaging. This protein determines which genes are expressed in the plant and which genes are silenced during development. However, mutations in this gene are never recovered as homozygotes, suggesting that inheriting two copies of a defective HIRA gene is lethal. The goal of my research is to identify the stage of development in which the lethality occurs and determine why mutations in HIRA are lethal. I have concluded that the lethality occurs shortly after fertilization during early embryo development. Currently, I am performing a variety of microscopy techniques to determine what causes the embryo lethality in HIRA mutants.

### ***Novel Ideas***

Annalee Tull

Faculty Mentor: Margaret Devaney

My honors capstone project consisted of rehearsing, choreographing and producing a show performed in tandem with Sharon Gravatt's capstone project in dance. We both had our own separate acts, but had the same ideas flowing through the entire show. My half centered on the First Amendment. There were a total of eight dances, each one representing a different freedom or idea found in the First Amendment. The show was intended to emphasize the great power we have with our freedoms and to emphasize our need to fight for and utilize our freedoms. The project consisted of researching the First Amendment and finding ways to abstract the meanings into movement. I then auditioned dancers for the public performance. I choreographed the eight dances, edited the music, designed costumes and had a lighting designer design lights. Sharon and I together made programs and posters for the performance. I rehearsed the dancers for eight weeks and presented my final compilation of dances on March 20, 2011 at 6 p.m. The crowd seemed pleased with the final product and the show went wonderfully.

### ***Cell Wall Histochemistry of Crystal-containing Idioblast Cells in Dieffenbachia seguine***

Erica Weston

Faculty Mentor: Gary Cote

The tropical aroid *Dieffenbachia seguine* produces calcium oxalate crystals in its leaves. It has been suggested that these crystals help protect the plant from herbivory. The cell walls of the crystal-containing cells have been shown to glow under polarized light, while those of other cells do not. The purpose of this research was to compare the cell wall composition of crystal-containing cells to other leaf cells of *D. seguine*. Samples of *D. seguine* were prepared for histochemistry in three different ways: leaf pieces were cleared using sodium hydroxide; leaves were hand-sectioned; and free crystals were obtained by grinding leaves. Hand sections of the stem of a commercial *Chrysanthemum* were used as a positive control. The samples were stained to detect phenolics, lignin, and other cell wall components. Samples were also



examined for autofluorescence. We found that the cell walls of the all the *D. seguine* leaf cells, crystal-containing and otherwise, appear to be essentially free of lignin and phenolics.

## Abstracts

(Listed Alphabetically by Author's Last Name)

### ***The Influence of Sex and Values on College Students' Attitudes toward Genetically Modified Food***

Leslie Abernathy

Faculty Mentor: Jeanne Mekolichick

The United States is the leading producer and consumer of genetically modified food (GMF). Unlike the European Union, the U.S does not require these products to be labeled, and in some instances regulated. Changes in the methods of food production have contributed to the logical disconnection of consumers from the food production process. With so much emphasis on health and proper eating habits in the United States, it is important to understand what factors contribute to attitude formations of biotech foods. Using this information, better policies can be implemented which focus on public safety, not just attitudes. The purpose of this investigation was to examine the possible links between sex and values on college students' attitudes toward genetically modified food, with particular interest on the influence of level of understanding and education on respondents' attitude toward GMF. Using an online survey, data were obtained from 93 respondents. Overall, findings show respondents held unfavorable attitudes toward GMF. Preliminary results demonstrate a significant relationship between positive attitudes and a low level of understanding. Attitudes are a complex construct in a constant state of evolution. Future research should evaluate the importance of knowledge and understanding on attitude formation.

*Oral Presentation:*      *Tuesday, April 19, 2011*      *11:00-12:00*      *Heth Hall 022*

### ***Effects of Exercise on Learning and Memory in Rats***

Amanda Adams and Sarah Fischetti

Faculty Mentor: Mark Whiting

Exercise has been well demonstrated in improving cognitive function, with special regard to the hippocampus, an area of the brain responsible for learning and memory. Short periods of forced exercise induce enhancements of synaptic plasticity in the hippocampus, possibly via brain-derived neurotrophic factor (BDNF) mediated mechanisms. The purpose of the present experiment was to test the effects of persistent exercise on hippocampal-dependent learning and memory. Female Long Evans rats (N = 15) swam ten minutes a day over a two week period. They were then compared with a control group (N = 15) in the Social Transmission of Food Preference Task. An independent samples t-test indicated that the difference between the control group and the exercise group was significant,  $t(26) = 3.297$ ,  $p < 0.05$ . Exercised rats performed considerably better on the Social Transmission of Food Preference Task, with a 73% preference for the previously encountered food. The results of this study suggest that exercise produces enhancements of hippocampal-dependent learning and memory in female Long Evans Rats. These effects are possibly due to exercise-induced increases in BDNF levels in the hippocampus.

*Poster Session:*      *Wednesday, April 20, 2011*      *4:30-6:30*      *Heth Hall 014*

### ***Modulation of La Crosse virus infection in mosquitoes and cell culture by exposure to coffee components***

Rachel Albert and Nicole Eastep

Faculty Mentor: Justin Anderson

La Crosse virus (LACV) is a mosquito-borne virus that potentially leads to severe pediatric encephalitis. We have been investigating plant-derived compounds that can be used to interrupt the transmission of this virus. Regular coffee kills LACV at high concentrations, and we have been investigating which components of coffee are

involved in this antiviral activity. Decaffeinated coffee retains virucidal activity, while caffeine alone does not appear to. La Crosse virus can be passed from an infected female to her progeny, and we have also attempted to cure these infections using coffee. *Aedes albopictus* mosquitoes reared in coffee have lower infection rates and have lower levels of virus in the body when they do become infected. Our studies demonstrate that it is possible to ameliorate an infection in an invertebrate vector of disease and could lead to novel control mechanisms.

*Oral Presentation: Tuesday, April 19, 2011 7:30-7:45 CH 107*

### ***Musical Themes in the Lord of the Rings Trilogy***

Jessica Albrecht

Faculty Mentor: Stevan Jackson

The purpose of my research is to show how certain musical themes designate certain characters or groups of people in the Lord of the Rings movie trilogy musical soundtrack. My goal is to identify and explain particular musical pieces within the soundtrack that are associated with specific characters and how these musical pieces are repeated and played each time the associated characters are being focused on in the movies. I explore such things as specific rhythms and melodies that are repeated multiple times in the movies. I look at what instruments are prevalent in these musical themes and how they mirror the characters they represent as well as looking at the emotions that these musical pieces invoke in people to discover how the music in the movie helps further the story along as a whole.

*Oral Presentation: Wednesday, April 20, 2011 12:00-12:15 Heth Hall 018*

### ***Reliance on Robotics in iRobot***

Jose Alcantara

Faculty Mentor: Michelle Ren

How have robotics changed our way of life? Our reliance on technology is a huge part of everyday life.

Technology has created a dependence, but has shaped our everyday lives. I planned to research how dependence on robotics affects our everyday lives, also where this dependence will take us.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### ***Gender Roles in Disney***

Maggie Allen, Alyssa Jackson, Emily Radcliffe, Caroline Martinez-Carranz

Faculty Mentor: April Asbury

Our presentation will focus on the gender roles demonstrated in Disney movies. These are worth examining because most people our age grew up watching these movies and we have built our perceptions of the roles different genders play in society. This topic relates to our Core 103 class because we have discussed analyzing media.

*Oral Presentation: Tuesday, April 19, 2011 11:00-12:45 Heth Hall 045*

### ***Overconsumption in Wall-E***

Katelyn Ames

Faculty Mentor: Michelle Ren

A look at over-consumption and its portrayal in the movie "Wall-E" made in 2008.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### ***Effects of leaf-peel culture on crystal-containing idioblasts in Dieffenbachia seguine***

Ohene Amponsem

Faculty Mentor: Gary Coté

*Dieffenbachia seguine* is a tropical plant which produces crystals of calcium oxalate. It has been proposed that the crystals prevent animals from eating the leaves. There are two major types of crystals in *Dieffenbachia* leaves, needle-like raphides and star-like druses. Biforines are an unusual cell with raphides that can be expelled. In three separate experiments we prepared *Dieffenbachia* leaf peels, with the lower surface removed, and floated them on calcium acetate at concentrations from 0 to 0.5 mM in an illuminated growth chamber for up to six

weeks. The numbers of each type of crystal were monitored by brightfield and polarization microscopy was no change in the numbers of any of the various kinds of raphide crystals on any calcium concentration, although there was considerable variability between plants. The number of druses, however, declined over the course of all three experiments, at all calcium concentrations, again with large plant-to-plant variation. It has been reported that calcium in idioblasts of *Lemna* can be mobilized. Our results suggest that druses are most easily mobilized of *Dieffenbachia* idioblasts at least in peel culture.

*Poster Session:*                      *Wednesday, April 20, 2011*                      *6:00-7:00*                      *CH 107*

***Reintegration of Women Veterans: An Analysis of Resources***

Hannah Anderson

Faculty Mentor: Diane Hodge

The purpose of this poster is to discuss recent research on common reintegration problems for Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF) women veterans. The access to and efficacy of post-deployment resources will be examined through the lens of diversity perspective and feminist theory. This poster will additionally scrutinize the policy enactment of the “Women Veterans Bill of Rights” (H.R. 5953) and its implementation at the institutional level of practice, particularly at the Veteran Affairs Medical Centers. As a vulnerable and, at times, disenfranchised population in the broader military context, women veterans require advocates who will confront and address resource deficits.

*Poster Session:*                      *Wednesday, April 20, 2011*                      *2:00-4:00*                      *Heth Hall 014*

***The Dangers of Epidemics and Proper Government Action***

David Andrade

Faculty Mentor: Brenta Blevins

The possibility of epidemics in our society is one that is dealt with daily, regardless of whether or not society as a whole is aware of it. Countless news stories crop up about new possible disease outbreaks or how certain food stuffs are recalled due to health concerns and yet few of us fully understand how dangerous these things could become if we don't put a stop to them quickly. The question isn't why or how these outbreaks may occur, but what are effective means to dealing with a possible outbreak and what can reasonably be done by the government to stop mass outbreak occurring. My research was done on the question on what is the best course of action in any general outbreak that can affect a larger population, and to what extent can the government place martial law.

*Special Poster Session:* *Thursday, April 21, 2011*                      *1:00-5:00*                      *Heth Hall 043*

***The Effect of Primed Gender Stereotypes and Time Pressure on Victim Blaming in a Case of Sexual Assault***

Carly Andrascik, Johanna Case, Audrey Englund

Faculty Mentor: Jeffery Aspelmeier

This experiment tests whether gender stereotypes influence the degree to which participants blame the victims of sexual assault. In a 2 (stereotype vs counter-stereotype) x 2 (high vs. low time pressure) design, 60 participants were asked to read one of two articles that highlight a college student; one that contains a highly gender stereotyped description and one that contains a counter-stereotyped description. Subsequently, participants were asked to rate the level of gender stereotypes presented in the article. Next, participants were asked to read an account of a sexual assault that occurred on a college campus and answer some factual questions about the article. They were also asked to rate the degree the victim is to blame for the incident and the degree to which the perpetrator is to blame. Half of the participants were given a limited amount of time to complete this task. It is expected that participants who read the stereotyped profile and were given a limited time to read and evaluate the sexual assault story will place the greatest amount of blame on the female victim. Further, it is expected that participants presented with the counter stereotyped profile and/or had no time constraints will place the greatest blame on the male perpetrator.

*Poster Session:*                      *Wednesday, April 20, 2011*                      *4:30-6:30*                      *Heth Hall 014*

***Audio Production Portfolio***

Michael Andrews

Faculty Mentor: Joe Flickinger

After going through the Production Technology concentration curriculum under the Media Studies degree at Radford University, I became frustrated with the lack of preparation to enter into the field of radio and audio production. The degree encompassed a lot more with video and journalistic characters instead.

The goal for my project was to design a course similar to the "Production Technology Portfolio" and "Journalism Portfolio" courses in which students spend the semester creating professional work that they then create a portfolio by the end of the semester to submit to future employers.

In order to do this, I had to select a book to use and read through it and pick the parts that best suit and teach about the world of radio. With my work in the two radio organizations at Radford University, Radio Free Radford and WVRU, I then have composed several commercials, PSAs and other audio productions that are standard in the field of radio. I have designed a syllabus to create a plan of study using the book, the campus radio stations, the audio lab in Porterfield, and job searching for the student to be fully prepared to apply for a job in radio.

I will be presenting samples of my portfolio and the syllabus I have designed. I also will hopefully have some results on how many students feel a course like this will be useful in the Media Studies department as well as their feelings on the video-intensive curriculum rather than a fair spread of both audio and video.

*Oral Presentation: Tuesday, April 19, 2011 4:30-4:45 Heth Hall 018*

### ***Social Networking in Today Society***

Breanna Arsenault

Faculty Mentor: Michele Ren

In today's society our world is prone to socializing using the internet rather than face to face contact. In the 2008 film Wall-E, Andrew Stanton, looks at the problem of maintaining relationships through technology, similar to modern day Facebook, Twitter, and eHarmony. I am going to explore how the use of technology is forming a new way to know people.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### ***Pandemic Viruses***

Chris Artigue

Faculty Mentor: Michele Ren, Lovina Goad

From the Black Plague, to the Avian Flu, and to the Swine Flu, human history has been littered with disease and death. The study of virology is an expanding field with ample potential towards finding a cure for such lethal viruses. However, the more you play with fire, the better probability you're going to get burned. With all the rapid developments in science and the quickening pace of viral resistance to new medicines, could there be a chance one virus has the chance to wipe out our entire species? Could it even be us that creates our own demise?

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### ***\*The Hills Have Eyes\* and the effects of nuclear exposure on humans***

Ray Augst

Faculty Mentor: Michele Ren

Poster will inform about the effects of nuclear exposure on humans and its presentation in the film \*The Hills Have Eyes.\*

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### ***Correlation between Corticosterone Levels and Parental Care in Eastern Bluebirds (Sialia sialis) in Urban and Rural Habitats***

Sarah Bartz, Anna Burgess, Holly French, Stephen Reeves

Faculty Mentor: Jason Davis, Judy Guinan

Stress may impair reproduction, and urban and rural habitats may differ in how stressful they are. To study this we looked at the relationship between stress hormones (corticosterone) and parental care in eastern bluebirds. We monitored parental behavior and collected corticosterone from nestlings and adults. Here we present data gathered over the last two years. We found that rural nestlings had higher levels of corticosterone and were fed more often.

Females with higher stress levels decreased their feeding efforts, while males mated to females with higher corticosterone levels increased the number of feeding trips they made to the nestlings.

*Poster Presentation: Tuesday, April 19, 2011 6:00-7:00 CH 107*

### ***Technology Addiction***

Cameron Baumgardner

Faculty Mentor: Michele Ren, Lovina Goad

This study investigated mankind's addiction to technology as seen in the Pixar film WALL-E. I am exploring what negative effects a dependence on technology can have on people as a society and on an individual level. Examples of the possible effects will be shown and analyzed from WALL-E and related to real world instances.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### ***Historical Perspectives on Censorship in Literature***

Ingrid Baker

Faculty Mentor: Erin Webster Garrett

Censorship is currently a source of heated debate among politicians, educators, parents, religious organizations, and the community at large. In order to address the literary implications of censorship, it is important to understand its historical background. Of particular interest is the rise of regulatory measures after the invention of the printing press. To a large degree, this presentation will address trends that were prevalent in the 16 - 19th centuries, both in England and America, while also drawing from the writings of Plato and others before this time. When this information is combined and studied, one can then evaluate the purpose of the First Amendment to the US Constitution. The simple fact that our Founding Fathers intentionally ratified an amendment related to the freedom of speech and press as the first to the Bill of Rights is indicative of the seriousness of the study.

*Oral Presentation: Thursday, April 21, 2011 5:00-5:30 Heth Hall 044*

### ***Religiosity, Morality, and Drug Policy: Perceptions of Marijuana Use Among Undergraduates***

Jessica Bellamy

Faculty Mentor: Jeanne Mekolichick

This study explores levels of religiosity and how it might relate to views held by undergraduate students concerning marijuana use and policy. An online survey was administered to a nonrandom convenience sample of 102 undergraduate students. I hypothesized 1) undergraduates with higher levels of overall religiosity will differ in their views on drug policy from students with lower levels of overall religiosity and 2) undergraduates who report higher levels of immorality associated with marijuana use will be more likely to vote against legislation supporting decriminalization, legalization, or medicinal marijuana use. Preliminary data analysis supports both hypotheses. In addition the data suggests there is a relationship between religiosity and immorality associated with marijuana use. Future analysis will test for differences by political affiliations and sex. Fewer than half of respondents reported they identify with a particular religion. Of the majority that does not, only a few students (n=7) report they are Atheist contrary to the common belief that a lack of formal religion results in the belief there is no god. This finding is consistent with literature that reports an emerging pattern of young people identifying as spiritual rather than religious. Future research should focus on those who do not identify with a particular religion and how the belief in spirituality or agnosticism might affect likely voting behavior and perceived immorality of marijuana use.

*Oral Presentation: Tuesday, April 19, 2011 10:00-11:00 Heth Hall 022*

### ***Research Experiences for Undergraduates: Students' Perceptions of Conference Participation and Mentoring by College Generational Status and Sex***

Jessica Bellamy

Faculty Mentor: Jeanne Mekolichick

This research presents perspectives of undergraduates who participated in a mentored undergraduate research experience (URE) that resulted in a presentation at a regional or national Sociology conference. With a particular focus on differences by college generational status and sex, the study examines students' perception of the mentoring relationship along with the benefits of conference participation. A web-based survey was administered to two groups of undergraduates after they participated in a mentored URE that resulted in a presentation at the 2010 Southern Sociological Society's (SSS) Annual Meeting or the 2010 American Sociological Association's (ASA) Annual Meeting (N=59). The majority of respondents were women of senior status and continuing college generation families. Most students were presenting at a research conference for the first time outside their home institution and for most, this was the first professional research conference they attended. Overall students found the URE and presentational experience beneficial. Some anecdotal differences are suggested in relation to college generational status and sex. Future work should include larger samples of undergraduate researchers in various disciplinary fields to examine college generational status and sex.

*Oral Presentation: Wednesday, April 20, 2011 4:00-4:15 Heth Hall 018*

***"The Big Boom Theory: Powder, People, and Politics"***

Adam Bennett

Faculty Mentor: Matt Oyos

Bennett examines the impact that World War II had on the city of Radford, and the surrounding counties of the New River Valley. On August 22, 1940, when surveying began for an Army ammunition plant, the Radford area changed dramatically. This led to a change in the environment, the population, and the economy of this Appalachian community. Numerous primary sources gathered from the archives of local libraries, including Radford University and Virginia Tech, provide an in-depth examination of how a world war can impact a small, mountain city.

*Oral Presentation: Wednesday, April 20, 2011 2:30-3:00 Heth Hall 019*

***Religiosity and political orientation***

Jeremy Bleakley

Faculty Mentor: Jeanne Mekolichick

To regard the intersection of politics and religion in contemporary America as a contentious issue is an understatement. Few societal constructs as these have done more to both establish civilizations as well as destroy them, which brings about a focus on how the two . Despite the heterogeneous nation we Americans live in, a strong religious identity is most popularly regarded as a determinant of a notably conservative political slant. Can it be that a strong religious identity coupled with anything but a strictly conservative political orientation be resolved in the individual? This research seeks an understanding of the relationship between reported political and religious beliefs in order to more accurately depict the environment in which identities are socially constructed. This research draws on identity theory as well as social interactionism as perspectives with which to frame the research question. While the web-based anonymous survey accompanying this research does ask for individual beliefs regarding certain political and religious topics, the knowledge gained may help to better understand group identity formation on a macro-scale.

*Oral Presentation: Thursday, April 21, 2011 10:00-11:00 Heth Hall 014*

***The Smithfield Paula Dean Never Knew: Preserving the significance of an Historical Plantation***

Heather Bostic; Jason Lesko; Ashley Jones; Alaina Walker; Stefan Mehl, Robert Long; Brittany Belew

Faculty Mentor: Charles C. Boyd

The Smithfield Plantation in Blacksburg, Virginia has been a site of historical significance since Revolutionary times. Its occupants weathered the hardship of the Revolutionary War despite multiple threats from various Native American groups as well as British-loyal Tories. Currently the grounds of the plantation adjoin Virginia Tech's campus, and there are plans to place a log structure on the site for the purpose of making a replica blacksmith shop. The goal of our study is to determine the current historical significance of this location before said blacksmith shop is put in place. By mapping out a Phase I survey grid and digging a series of shovel test pits

at preset intervals, our hope is to determine whether or not it would be appropriate to conduct a larger Phase II or Phase III excavation before any additional construction takes place on the site.

*Oral Presentation: Wednesday, April 20<sup>th</sup>, 2011 1:30-3:00 Heth Hall 045*

### ***Doing Gender in Consumer Toys***

Jessica Brockmeyer

Faculty Mentor: Carla Corroto

Consuming in the U.S.: Agents of Socialization is a research project that I conducted in the toy sections of a large retail chain in Fairlawn, Virginia. The goal of the research was to investigate how parents initiate children to “doing gender” by just walking down toy isles at their local shopping center. I found that toy companies still market feminine toys to young girls and masculine toys to young boys. Femininity and masculinity are so prevalent in the American consumer society that companies start their gender specific marketing at the pre-school age of children. Huge chain stores are very much involved in the process as well because they often use feminine colors to line the shelves that display toys to girls and masculine colors to line the shelves marketed to boys. It is evident that gender expectations and norms are assigned at a very young age. Society as a whole expects certain feminine behaviors from girls and certain masculine behaviors from men and the toy industry has tapped into that.

*Oral Presentation: Thursday, April 21, 2011 2:15-2:30 Heth Hall 044*

### ***Little Brother and The Advancement in Surveillance and Technology***

Jessica Brosey

Faculty Mentor: Brenta Blevins

Do you ever feel like you’re being watched? Well, most of the time you probably are. Surveillance is expected to increase by an average of 45% year after year from now until 2013. Technology and surveillance can sometimes go too far and invade our privacy. Technology is becoming so advanced that there are so many different ways the government can watch you. Hotels and banks now have face recognition cameras, and police officers have cameras that can read up to 900 plates per minute. The story Little Brother is a good example of how surveillance could go too far.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### ***A Champion and Leader I Respect***

Christine Brown

Faculty Mentor: Sandy French

My presentation is on the great Billie Jean King and I admire her as a leader and a positive role model for females in sports and in life. Billie Jean King was one of the greatest female tennis athletes in the world and has been a tireless fighter for women’s rights in sports and a champion for social change and equality. To use her own word she became a “shero.” By being a leader King lifted women’s sports, successfully fighting for equal prize money for men and women tennis players. She helped create a world of opportunity for all female athletes. Her leadership qualities reflect those traits I respect and have a high regard for her as a female athlete myself.

*Special Session: Thursday, April 21, 2011 10:30-12:30 Heth Hall 043*

### ***Salem Witch Hunts vs. India Witch Hunts***

Jennifer Brown

Faculty Mentor: JoAnn Asbury

This presentation will be comparing the Salem witch hunts and the modern day witch hunts which are currently taking place in India. During the presentation there will be comparisons between the similarities between the Salem witch hunts and the India witch hunts and the differences between the Salem witch hunts and the India witch hunts.

*Oral Presentation:*            *Wednesday, April, 20, 2011*    *9:00-10:30*            *Heth 018*

***Robotic Arm***

Christopher Biernacki

Faculty Mentor: Rhett Herman

I will be presenting my Capstone Project at the Undergraduate Student Engagement Forum. My presentation consists of the work I have done from this semester in my PHYS 488H course. I have been working on a robotic arm that is analogous to the human arm. The arm consists of a skeleton of the bones, (humorous, radius, and ulna) which are guided by servo-motors that have been programmed to make a coordinated movement, such as a hand wave. I shall demonstrate this model arm at the poster session. My presentation will consist of three main parts. First, the arm itself will be set up to display its motion. Second, the programming code I have written to make each of the motors move in a synchronized fashion will be discussed. Third, the anatomy of the human arm and my robotic arm model will be discussed on topics such as how they are similar and what differs.

*Poster Session:*            *Thursday, April 21, 2011*            *2:00-4:00*            *Heth Hall 016*

***Fæder, Modor, Bearn: Inscribing Gender through the Family in Beowulf***

Brenta Blevins

Faculty Mentor: Moira Baker

Although Beowulf is frequently conceived as a masculine poem set in a patriarchal medieval era, the work includes both male and female characters and defines gender expectations for both sexes, not merely the masculine. Over the last 20-30 years, critical attention turned toward the shaping of both the feminine and the masculine within Beowulf. In doing so, feminists have established the importance of Grendel's mother and recovered Danish Queen Wealhtheow from the margins of Beowulf criticism. Less attention has been paid to the royal family's children, with only some criticism regarding daughter Freawaru and less yet to sons Hrethric or Hrothmund. Examining Hrothgar, Wealhtheow, and their children—including the symbolically adopted Beowulf—reveals gender is constructed through the family in Beowulf, creating a seemingly stable but ultimately destructive dynamic because the gendered family roles are placed in dichotomous societal roles. The application to Beowulf of Judith Butler's ideas of gender construction through repetition and iterative inscription reveals that the adult characters repeatedly define and transfer gender expectations through verbal, active, and customary modes to the children who sustain those sex-based roles from childhood to adulthood through their family functions. In their predicted futures, the children replicate explicit instruction and implicit demonstrations to perform the same roles as their parents, those of peace-weavers and vengeance-seekers, and, therefore, they repeat cycles of sustained gender-based violence and create an ultimately unstable family-based tribal society.

*Oral Presentation:*            *Thursday, April 21, 2011*            *5:30-5:45*            *Heth Hall 044*

***Academic Achievement and Student Living Arrangements***

Brittany Bongrazio

Faculty Mentor: Jeanne Mekolichick

This study hypothesized that student's living on campus would have higher levels of academic achievement and greater student involvement. An anonymous survey using Qualtrics was administered and gathered through a sample of convenience. Preliminary analysis shows no relationship between a student's living arrangements and their GPA's. Student involvement could not be assessed because too few respondents were active outside the classroom. Discussed in conclusion are directions for future research.

*Oral Presentation:*            *Tuesday, April 19, 2011*            *9:00-10:00*            *Heth Hall 022*

***How Early Family Life Effects the Values and Beliefs of College Students***

Thomas Bowman

Faculty Mentor: Jeanne Mekolichick

This research project was designed to look at the relationship between the views and beliefs of college students' parents on religion and education and the current views and beliefs of college students on religion and education. More specifically I wanted to see if college students, as they got older and moved away from their parents, began

to develop their own values and beliefs of both education and religion or if they continued to follow what their parents valued and believed. I gathered my data through sending out an anonymous online survey using a sample of convenience with n~ 90 respondents. I used three articles that I found along with my own thoughts to support my hypothesis. College students' values of religion differed from their parent's while their values on education stayed the same.

*Oral Presentation: Tuesday, April 19, 2011 9:00-10:00 Heth Hall 022*

### ***Ethnography of The Blues***

Katie Boyd

Faculty Mentor: Stevan Jackson

The purpose of my research is to find out what it is about Blues music that draws people to it and if they most identify themselves with Blues music. I attended live Blues sessions once a week and obtained my information by interviewing the audience and band members. While talking to the people that were in attendance on the nights I went, I learned that most of them were there for the music. I also learned that Blues music is not only a type of music, hobby, or passion, but a way of life.

*Oral Presentation: Wednesday, April 20, 2011 12:45-1:00 Heth Hall 018*

### ***Gender Finding in Children's Clothing***

Katie Boyd

Faculty Mentor: Carla Corroto

The purpose of my research is to discover if there are gendered aspects to children's clothing. I observed shoppers at a national retail chain to see their shopping habits and see how they chose products based on the (supposed) gender of the child. I found that children's clothing is stereotyped based on the gender of the child it is intended for. Whether it was infant's, toddler's or children's clothing, it was very easy to see whether it was for a boy or girl. My findings have broad implications for the continuation of traditional gender expectations, socialization, and equality.

*Oral Presentation: Thursday, April 21, 2011 1:45 Heth Hall 014*

### ***The Real Poe***

Angela Bullock

Faculty Mentor: JoAnn Asbury

Edgar Allen Poe is without a doubt a master of many forms of literature and was a pioneer of his time. His works still make readers shiver to their core with fright. He was born in Massachusetts, but he considered himself a Virginian, which proudly claims him. Over the years after his death, his reputation was tarnished with exaggerations and even lies. This presentation dispels those myths and shines a light on the true Virginian legend that is Edgar Allen Poe.

*Oral Presentation: Wednesday, April 20, 2011 12:30-12:45 Heth Hall 019*

### ***The Spread of Communicable Diseases Throughout the World***

Kevin Caine

Faculty Mentor: Michelle Ren

Research a topic stemming from one aspect of a speculative story (may be fiction, film, television, etc.) and form an argument about how the author(s) of said story has dealt with that issue. / The movie "I Am Legend" and it's take on communicable diseases.

*Poster Session: Thursday, April 21, 2011 2:00-4:00 Heth Hall 016*

### ***When Scavengers Attack: Outdoor Decomposition of Remains in an Urban Environment***

Matt Campbell

Faculty Mentor: Donna C. Boyd

Previous research by Klippel and Synsteliën (2007) and Morton and Lord (2006) have identified complex variables in the effect of scavenging on decomposition and recovery of human remains in a forensic setting. The current research is focused on the effect of covering on decomposition, particularly in terms of its relationship to changes in accessibility for insects and other scavengers. Samples used in this research are lamb shanks (minus the wool) as well as pig femora and ribs. Samples are placed in three different contexts in an urban environment: covered in leaves, wrapped in a rug, and placed inside a trash bag: Daily and weekly observations of these samples are conducted to measure the progression of decomposition. It is hypothesized that the trash-bag body will be the slowest to decompose due to the protection that the trash bag environment provides from scavengers. The implications for this research for understanding differential decomposition and its application toward determining Postmortem Interval (PMI) or Time Since Death (TSD) for forensic human remains in urban environments are discussed.

*Special Session: Wednesday, April 20, 2011 10:00-11:00 Heth Hall 016*

### ***QUANTIFYING WING DAMAGE OF SUMMER BATS IN THE NORTHEASTERN UNITED STATES***

Tess Canniff

Faculty Mentor: Karen Francl

Environmental Solutions & Innovations, Inc., Cincinnati, OH 45232 (DS, VB) / As part of efforts to survey for the federally endangered Indiana bat (*Myotis sodalis*) in West Virginia and Pennsylvania, we investigated presumed impacts of white-nose syndrome (WNS) by quantifying wing damage on 248 bats of 7 species. From 20 May – 15 August 2010, we photographed bat wings lit with back-light to reveal damage - scars, holes, and blotching (non-uniform pigmentation). After quantifying the relative percent cover of these damage types in ImageJ software, we employed analyses of variance to determine if percent area of damage was accurately reflected in application of the categorical wing damage index (WDI) developed by Reichert and Kunz (2009). Preliminary analyses showed that the WDI is useful for assessing damage: proportional cover of blotching ( $F = 17.435$ ,  $df = 2$ ,  $p < 0.001$ ) and scars ( $F = 47.352$ ,  $df = 2$ ,  $p < 0.001$ ) increased with higher WDI values. Percentage cover of holes was less related to WDI scores. Our small dataset shows no statistical differences in wing damage among species or between cave bats and tree bats. However, additional wing assessments are on-going; larger sample sizes may better identify species-specific trends. Our research will aid efforts to standardize and accurately assess wing damage and thus understand presumed effects of WNS on bat communities in the northeastern United States

*Oral Presentation: Wednesday, April 20, 2011 7:45-8:00 CH 107*

### ***Cloning***

Marion Carneal

Faculty Mentor: Michele Ren, Lovina Goad

This poster presentation will be exploring how cloning could possibly benefit or hinder our society medically. Cloning has been a controversial topic in previous political debates on whether or not experimenting on human embryos is morally correct. By cloning, is society burdening itself or saving millions of lives from disease?

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### ***Abraham Lincoln's "Failures" and "Successes"***

Jorge William Chavez Ayala

Faculty Mentor: Sandy French

Abraham Lincoln's failure and successes inspire and remind me that anything is possible if one never gives up and continuously pursues his/her dreams. Especially how Lincoln managed to overcome his failures and never give up his dreams. Abraham Lincoln possessed so many of the skills that a leader should possess in order to be successful. I believe that overcoming so many setbacks and achieving what Abraham Lincoln achieved makes him not just a great leader, but an incredible role model of perseverance. I have identified events in which Abraham Lincoln reflects his leadership skills as well as leadership styles in which I believe falls right into as he pursued the presidency of the United States.

*Special Session: Thursday, April 21, 2011 10:30-12:30 Heth Hall 043*

***Disney's Stereotypes***

Molly Christopher

Faculty Mentor: JoAnn Asbury

I will show how Disney can be analyzed to demonstrate certain stereotypes between men and women as presented to children. I will show the "false" stereotypes derived from other researchers as well as present new

information to show well rounded, developed characters. I intend to prove that though it may seem that princesses are simple, conforming women and kings are strong and dominant, there are aspects of each to compliment the other's gender.

*Oral Presentation: Wednesday, April 20, 2011 9:00-10:30 Heth 018*

***Water Shortages in Octavia Butler's Parable of the Sower***

Jessica Clark

My presentation will inform audiences about water shortages in the U.S., an issue that is very much alive in Octavia Butler's "Parable of The Sower." I will discuss the issue of water shortages when "Parable of The Sower" was written (1993), and its current state today.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

***The importance of museum collections to bottlenose dolphin (Tursiops spp.) biodiversity and conservation***

Clarissa Clarke and Jennifer Greenwood

Faculty Mentor: Karen Francl

The Marine Mammal Protection Act of 1972, in an effort to conserve marine ecosystems and their functions, mandates protection of marine mammal species like the bottlenose dolphin (*Tursiops* spp.). Despite the popularity of bottlenose dolphins in tourism and a fascination with their complex social behavior, there is relatively little scientific research on *Tursiops* population dynamics and ecology. Considering the importance of genetic variation to species survival, identifying and conserving morphologically and genetically distinct sub-populations is essential to the maintenance of the ocean's biodiversity. Researchers have emphasized the significance of further studies and analysis to substantiate evidence of extant and extinct *Tursiops* species. Museums collect, organize, and make easily accessible many of the specimens researchers need in order to perform such indispensable investigations. Our poster examines the contribution of museum collections to differentiation of *Tursiops* species.

*Poster Session: Wednesday, April 20, 2011 6:00-7:00 CH 107*

***Bonhoeffer***

William Clement

Faculty Mentor: Sandra French

The leader I am presenting is Dietrich Bonhoeffer and my focus is how his actions exemplify the transformational leadership theory. This is a courageous and conviction driven man who went against what the government taught and worked tirelessly for peace and to dispell the Nazi propoganda that was being soaked up by Germany during the second world war. He was and is still an inspiration to people around the world and demonstrates what it means to transform and be transformed by the lives of ones followers.

*Special Session: Thursday, April 21, 2011 10:30-12:30 Heth Hall 043*

## **Mussolini**

Candace Clokey

Faculty Mentor: Sandra French

My poster discusses the leadership Winston Churchill exhibited during World War II. During World War II, Churchill, the British prime minister at the time, single handedly inspired the British people to fight back against Adolf Hitler and Nazi Germany. During World War II, Churchill demonstrated transformational leadership. My poster will discuss the characteristics of transformational leadership and how Churchill was a transformational leader.

*Special Session: Thursday, April 21, 2011 10:30-12:30 Heth Hall 043*

## ***Young Women's Perceptions of and Responses to Sexual Harassment***

Kelly Cooper

Faculty Mentor: Hilary Lips

Sexual harassment in the workplace is a major problem that affects thousands of individuals each year. In recent years, a number of researchers have examined the consequences of sexual harassment and attempted to develop models of the ways victims manage and cope with the experience. Although these studies have provided excellent direction in terms of understanding the dimensions of responses to sexual harassment, they suffer from several limitations. One of these is a failure to examine victims' reported responses in terms of timelines, focusing instead on responses at a single point in time. Another is a failure to look at victims' accounts of the emotional responses connected with their chosen coping strategies. Finally, most of this research has focused on fulltime women workers in their 30s and 40s. The current research focuses specifically and in depth on the experiences of young women (in their early twenties) who are students and part-time workers. Through semi-structured, detailed interviews with 10 such workers, we hoped to gain a perspective on how this group responds to sexual harassment, how that response is seen by them as changing or evolving over the minutes, days, and weeks following the harassment incident, and how they evaluate the coping mechanisms they chose. By gathering this information, we hope to assess whether current models of coping with sexual harassment are applicable to young women in the current cultural context.

*Oral Presentation: Thursday, April 21, 2011 12::00 Heth Hall 014*

## ***Kinetic Analysis of Oleic Acid Esterification Using a Solid Acid Carbon Catalyst***

McAlister Council-Troche

Faculty Mentor: Francis Webster

The interest in alternative fuels has increased dramatically in recent years due to the rising cost and the environmental concerns related to fossil fuels use. Biodiesel represents a non-toxic and carbon-neutral fuel representing one component in our strategic approach to reduce dependence on petroleum based fuels. In this work, a novel solid acid carbon catalyst derived from the simple treatment of sugars with sulfuric acid was developed to catalyze the esterification of oleic acid to form methyl oleate. In a typical synthesis, a concentrated solution of either sucrose or glucose was added at a constant rate to concentrated sulfuric acid at 150 degrees Celsius, resulting in immediate dehydration of the sugar to form the carbon catalyst. The carbon was cold filtered and dialyzed to remove residual sulfuric acid, freeze dried overnight, and then vacuum dried at 110oC before use. Catalytic activity was evaluated using the esterification of oleic acid using methanol at 65oC in a Parr Instruments closed system reactor. Samples were taken at specific time intervals over a twenty four hour period and analyzed using high performance liquid chromatography (HPLC) to monitor the reaction kinetics. Results showed that more than 90% of the oleic acid could be converted to methyl oleate under certain conditions. The kinetic results were also used to help elucidate the reaction mechanism using the Langmuir-Hinshelwood kinetic model for surface catalyzed reactions.

*Oral Presentation: Thursday, April 21, 2011 3:30-3:45 Heth Hall 045*

## ***QUANTIFYING THE EFFECTS OF PRESCRIBED FIRE ON SMALL MAMMAL AND VEGETATIVE COMMUNITIES AT CALDWELL FIELDS, JEFFERSON NATIONAL FOREST***

Kaelin E. Creange

Faculty Mentor: Karen E. Francl and Christine J. Small

In our 3-year project, we quantified short term effects of prescribed fire on small mammals and vegetation at Caldwell Fields, Montgomery Co., VA (Jefferson National Forest). We surveyed three paired sites (creek, forest, and field) in the summers of 2008 (pre-burn), 2009 (ca. 2-4 months post-burn), and 2010 (ca. 14-16 months post-burn). Only field sites were burned, although the north side of the creek acted as a natural barrier. In 19,640 trap-nights across 3 years, we discovered 605 individuals of 14 mammalian species. We also recorded 241 plant species in yearly plot surveys. Multi-Response Permutation Procedures (MRPP) showed substantial pre- versus post-burn differences in mammal communities metrics in the two field sites, but minimal annual differences for vegetative communities across all sites. Sorenson similarly revealed that mammal communities differed substantially between 2008 and 2009/2010 in the two field sites (similarity as low as 7% from 2008 to 2009) while all other sites showed substantially greater year-to-year similarities (>50% for all sites). Minimal changes in vegetation between pre- and post-burn years suggests that plant species in these habitats are tolerant of low-intensity surface fire. In contrast, fire has had profound effect on small mammal communities in the fields, and our data suggest that these populations still have not recovered. This mammal trend is important, considering these fields are burned on a 3-year rotation.

*Oral Presentation: Wednesday, April 20, 2011 8:00-8:15 CH 107*

### ***Marion: An Appalachian Town***

Alesia L. Crewey

Faculty Mentor: JoAnn Asbury

The title of my project is Marion: An Appalachian Town. This project will examine Marion, Virginia and its location points of interest, history, famous aspects, and community. My point of this presentation is to show the beauty of this small Appalachian town. I will show how friends, family and the beauty of this southern town make a big deal of this little community we have.

*Oral Presentation: Wednesday, April 20, 2011 12:45-1:00 Heth Hall 019*

### ***Global Warming***

Connor C. Crisanti

Faculty Mentor: Michele Ren, Lovina Goad

What is the biggest problem currently facing our environment today? Global Warming is the rise in atmospheric temperatures due to the gases released that are then trapped in the atmosphere. This poster presents the way in which Global Warming has manifested its way into our society, and includes research that not only demonstrates the immediate dangers of Global Warming, but also the long term effects it will have on the environment and overall the Planet Earth.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### ***Cherokee Music and Community Identity***

Jessica Cushman

Faculty Mentor: Stevan Jackson

I am studying the cultural aspects of Cherokee music today and how their turbulent history and innovative and adaptive ways have contributed to the overall sense of identity for its members. / The white and Christian influence on Cherokee culture has remained under scrutiny since first contact. Because of the violent and forcible integration of these cultures, Cherokees are left with a disillusioned sense of tribal identity. Music has been a way for natives to remember their past traditions pre-contact. It is also very Christian in nature, creating an identity which bridges potentially violent cultural differences. It is important for natives to be able to reconcile their past with the present day innovations in thought and ultimately musical expression. / Using music as a means to unite and educate people is seen throughout all cultures. For Cherokees, the Trail of Tears Singing Ceremony is a perfect example of said reconciliation. The general theme is to remember the thousands lost during the removal of natives from their lands. The style is very Christian, with religious lyrics and group participation in foot stomping and loud applause. / Such activity is essential for any group to relay messages of cultural unity and identity. It is important to emphasize this in schools in order to create a stronger sense of identity within the community.

Unification is vital for an individual's success, and inevitably creates a community of people who are committed to ensuring a brighter future for all.

*Oral Presentation: Wednesday, April 20, 2011 1:15-1:45 Heth Hall 018*

### ***The Opinions of Undergraduate Majors on Education***

Jessica Cushman

Faculty Mentor: Jeanne Mekolichick

I have conducted a survey for my Survey Research Methods class with Dr. Mekolichick. It is entitled "The Opinions of Undergraduate Majors on Education" and it asks students their opinions as well as their experience in high school and with Radford's Core program and how each has influenced their decision for their major. I hypothesized that students will favor Radford's Core program more if they had not been prepared for college in high school. Results show that a lot of students find out what they major in from classes they took in high school. Most of these students knew what they wanted to major in before coming to college. High school experience will indicate whether or not students will choose to enter college, and it is during this time students are able to turn their interest into a pursuit for higher education. I would like to talk about what high schools can do to encourage students to enter college. Many students believe the Core program to be beneficial to their educational experience, and I would like to talk about what type of high school curriculum similar to the Core would be able to better nurture each individual student's interests. If more students in high school had teachers and counselors help them focus on an interest and find the right college for them, then there would be more students interested in higher education.

*Oral Presentation: Thursday, April 21, 2011 11:00-12:00 Heth Hall 014*

### ***Can Artificial Intelligence Surpass Human Intelligence***

Amanda Daniels

Faculty Mentor: Michele Ren, Lovina Goad

Will robots ever have the intelligence to surpass human intelligence? Will robots ever have human-like emotions? This presentation will explore whether or not robots will one day have artificial intelligence that is superior to human intelligence, and if possible, how humans could create such a thing. It will also explore the concept of robots having the possibility to share emotions with humans.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### ***Global Warming in Parable of the Sower***

Madeline Detyens

Faculty Mentor: Michele Ren

Global Warming and climate change is a big issue the world is dealing with today and one of the main topics portrayed in Octavia Butler's novel, Parable of the Sower. The lack of human responsibility for our planet is what's causing Global Warming and if we do not change the issue, it is presumed to get worse.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### ***Does It Matter Who Your Teacher Is?***

Kristen DeWeese

Faculty Mentor: Tricia Easterling

This research focuses on understanding the differences and similarities between homeschooling and traditional public schooling. Through research and interviewing I collected data on the two different educational alternatives. By interpreting the data collected I gained a deeper understanding for the social, educational, religious, and economical reasons for choosing one of the alternatives over the other. Through research I gained most of my knowledge about the facts of public schooling and homeschooling. I also learned information about each schooling approach and reasons why some parents choose one schooling alternative over the other. The observation of a kindergartner was another technique I used to learn more about homeschooling. It allowed me to personally experience a day in a homeschooling environment. Through interviewing I gained the knowledge of other people's ideas and feelings towards either schooling alternative. This allowed me to take others'

experiences and listen to their ideas on the schooling of their choice. By completing this research I was able to gain a full understanding of the similarities and differences between homeschooling and traditional public schooling by using these three different researching techniques.

*Oral Presentation: Tuesday, April 19, 2011 4:45-5:00 Heth Hall 045*

### ***Greeting Cards: A Gendered Analysis***

Mary Dickerson

Faculty Mentor: Carla Corotto

This research was performed to determine if consumer culture is gendered and typed as masculine or feminine, and how consumer goods as agents of socialization define and shape gender expectations. By observing, taking field notes, and performing content analysis of birthday greeting cards for boys and girls at a large international retailer, I came to several conclusions. One, consumer culture is indeed gendered masculine and feminine. The birthday cards are divided into sections based on gender. Further the layout of the sections as well as colors, textures, font styles, characters, songs, and phrases on the cards, clearly demonstrate gender typing. Cards dominated by dark, vibrant colors, male superheroes, sports, and strong, robust phrases are marketed for young males. Cards marketed for young females are dominated by pastel colors, princesses, glitter, and dainty phrases. Another conclusion from these observations is that greeting card companies are effective socializing groups that help to solidify what is socially acceptable to market towards males and females. These cards also play into schema theory and help children to develop their own schema for each gender based on their surroundings. By giving, receiving, and viewing these gendered cards, ideas of masculinity and femininity are actively developed and reinforced. Birthday cards provide an easy agent of consumer culture to strengthen gender perception at an early age that carries through adolescence into adulthood.

*Oral Presentation: Thursday, April 21, 2011 1:45 Heth Hall 014*

### ***Differential appetite-related responses to central neuropeptide Y in polygenic models of anorexia and obesity***

Collette Dougherty

Faculty Mentor: Mark Cline, Paul Siegel

Neuropeptide Y (NPY) is a 36 residue hypothalamic neurotransmitter that is one of the most potent stimulators of food intake. To our knowledge, the effects of NPY have not been reported in polygenic models of body weight dysfunction. Therefore, the purpose of the present study was to measure the magnitude of food intake stimulation in chicken models of hypo- and hyperphagia that are anorexic and obese, respectively. These models are the result of long-term divergent selection (53 years) for either low (LWS) or high (HWS) body weight. In Experiment 1, chicks from both lines received intracerebroventricular (ICV) injections of 0, 0.3, 1.0, or 3.0 nmol chicken NPY and food and water intake were recorded at 30 minute intervals for a total of 180 minutes post-injection. The HWS line responded to all doses of NPY tested with significantly increased cumulative food intake through 180 minutes post-injection; however, the LWS did not respond to any dose at any time. Water intake was not affected in either line. In Experiment 2, chicks were injected with 3.0 nmol NPY and hypothalamic c-Fos immunoreactivity was quantified. Although the LWS did not respond with increased food intake, per preliminary analysis there was increased activity in the paraventricular nucleus as was the case in the HWS line. Therefore, there is hypothalamic signaling after ICV NPY in both lines, but there is likely some NPY-induced hunger blocking mechanism present in the LWS line. Results from this study suggest differences in the central appetite pathways between these unique models that may contribute to their phenotypes, which could be targeted for the development of novel anti-obesity treatments.

*Oral Presentation: Wednesday, April 20, 2011 5:15-5:30 CH 107*

### ***The Impact on Intergenerational Corporal Punishment***

Amy Dove

Faculty Mentor: Jeanne Mekolichick

Disciplining children and adolescents is an essential part of childrearing for parents. There is an array of different methods used in disciplining children from time-out to corporal punishment (CP). However it is unclear how or why parents choose one method over another. This study hypothesizes adult-children that experienced higher levels of CP as a child will be more likely to have favorable attitudes towards the use of CP. Using an anonymous online survey and a sample of convenience, 269 respondents residing in Virginia participated in the study. Results demonstrate a weak positive correlation ( $r(249)=.241, p<.01$ ), between higher levels of experience of CP as a child and favorable attitudes towards the use of CP. However there was no significant difference in attitudes or experience of adult-children raised in dual or single parent homes. Findings are consistent with the literature on experience with CP and attitudes towards its use, with adult's attitudes towards CP being similar to those of their parent(s).

*Oral Presentation: Tuesday, April 19, 2011 10:00-11:00 Heth Hall 022*

### ***CARDIAC VARIABLE SCORING IN OBSTRUCTIVE SLEEP APNEA***

Wesley DuBose, Amy Corbin, Ashley Taylor

Faculty Mentor: Adrian Aron

Obstructive sleep apnea (OSA) is characterized by complete obstruction of the airway causing a stoppage of breathing leading to oxygen deprivation. OSA is mostly undiagnosed, although can be identified with an expensive overnight observation. This study aims to test a new way of screening for OSA in place of the overnight study. The study uses a six variable score, each variable has been shown to be unique to OSA sufferers. Using a bioimpedance cardiac monitor, patients were tested during periods of normal breathing with 30 sec apnea periods to simulate OSA conditions. Subjects were 15 healthy males (Mean  $\pm$  SD: age =  $37.7 \pm 5.6$  yr; BMI =  $22.7 \pm 1.8$ ; neck circumference =  $38.1 \pm 2.1$ ) and 17 recently diagnosed OSA patients (age =  $47.3 \pm 10.5$  yr; BMI =  $34.1 \pm 6.9$ ; AHI =  $40.9 \pm 33.8$ ). Healthy patients and patients recently diagnosed with OSA were given a score based on the prevalence of the following variables: BMI, neck circumference, myocardial contractility during and after Mueller Maneuver, stroke volume at second 90 and second 120 following MM. The assigned score was different between groups (OSA =  $4.1 \pm 1.3$ ; healthy =  $0.8 \pm 0.9$ ,  $p < 0.05$ ) and correlate positively with OSA severity ( $r = 0.6$ ,  $p < 0.05$ ). This score was shown to be predictive of OSA with neck circumference having the highest prognostic value. Future research is needed to determine this score accuracy in a larger population.

*Poster Session: Thursday, April 21, 2011 2:00-4:00 Heth Hall 016*

### ***Cure of Cancer***

Lindsey Dulling

Faculty Mentor: Michele Ren, Lovina Goad

Finding a treatment to cancer has been an ongoing search for many years now. This presentation is about the effects that could take place when the search is complete and we have found a cure. It will mainly focus on the virus aspect and the possibility of creating a vaccine or antiviral drug. Is it possible that the effects of the vaccine that took place in the movie "I am legend" can become a reality in our future?

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### ***Robotics In Today's World***

Sidney Encarnacion

Faculty Mentor: Brenta Blevins

As humans, do you believe that we are becoming too dependent on our technology, or not? The movie, I Robot, portrayed a world with an incredible use of robotics. This project will analyze the use of technology in today's society and also take a deeper look at its use in today's workforce.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

***I Am Legend and the Cancer Epidemic***

Harli Engel

Faculty Mentor: Michelle Ren

A look at how the cancer epidemic and the search for a cure stems from the speculative fiction novel and film I Am Legend.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

***A Social and Literary History of Satan***

Brandon Epps

Faculty Mentor: Paul Thomas

One of the oldest and most troubling philosophical questions that mankind faces is the problem of evil. According to the Christian faith, God is omnipotent, omniscient, and benevolent. However, one needs not do more than look outside to see a world drowning in suffering, iniquity, malice. Considering this, it is difficult to argue that the nature of God is in fact all good creating this philosophical problem. In an effort to rectify this issue, many religions have asserted there is a negative force inferior to God that is responsible for the state of the world. That force in the Christian faith is known as the Devil or Satan. By briefly surveying modern Western conceptions of Satan, examining Satan in Judeo-Christian texts, and briefly exploring the development of Satan in religion over the past four thousand years, it will be revealed that Satan is less an embodiment of cosmic evil and more a way of understanding, explaining, and perhaps coming to terms with the negativity that is part of our reality.

*Oral Presentation: Thursday, April 21, 2011 4:00-4:30 Heth Hall 045*

***Novice vs. Expert: A Comparison of Decision-Making and Critical Thinking Skills***

Tarsha Epps

Faculty Mentor: Kereen Mullenbach

This study compared the critical thinking and decision-making skills between novice nurses and expert nurses and explored the phenomenon of intuition among nurses so that the information could be used to improve teaching methods in baccalaureate nursing programs. A group of Registered Nurses with five or more years of experience, as well as a group of senior-year nursing students completed a 56-question survey. Results were analyzed and showed that both groups demonstrated using both the analytical and intuitive processing method to decision-making. However, the expert nurses scores ranged closer to the intuitive-processing range and were significantly higher than the students.

*Poster Presentation: Thursday, April 21, 2011 2:00-4:00 Heth Hall 016*

***Axonal Shearing vs. Hemorrhagic Incident: The Neuro Nurse's Role***

Sarah D. Easter

Faculty Mentor: Patricia Conklin

Neuroscience nurses provide leadership, knowledge, and expert reasoning while working with an interdisciplinary team for each case presented in acute and primary care settings. Distinguishing between diffuse axonal injuries and hemorrhagic accidents, their effects, and expected outcomes will assist the nurse in implementing nursing guidelines, working within the full scope of nursing practice, and promoting patient-centered care. The American Association of Neuroscience Nurses has developed evidence-based detection and treatment guidelines for providers to follow for an issue with such high prevalence. There are an estimated 7.1 million traumatic brain injuries occurring in the United States each year, leaving 5.3 million people with disabilities from these. Almost two-thirds of all traumatic brain injuries involve axonal shearing. More than fifty per cent of those with diffuse shearing die within two weeks of the initial injury. Cerebral vascular accidents are the third leading cause of death in the United States. As incidence continues to increase and treatment measures improve, survivors with related physical, emotional, and cognitive problems increase as well. There are approximately 5.7 million stroke

survivors in the United States today. Nurses are at the forefront of care in the intensive setting and must keep up to date with rising trends and care modalities. The nurse plays an integral role in the treatment team of neurological patients and must be better recognized in the American health system. The purpose of this study is to bring to light the role of evidenced based nursing practice in achieving enhanced neurological outcomes for patients experiencing diffuse axonal injuries or cerebral vascular accidents (hemorrhagic incidents).

*Poster Session: Wednesday, April 20, 2011 2:00-4:00 Heth Hall 014*

### ***Lighting Effects on Restaurant Revenue***

Kayla Enterline

Faculty Mentor: Joan Dickinson

The restaurant business is a rapidly growing industry that has become a part of our daily lives; making the design of restaurants of increasing interest. The design of a restaurant can further reinforce the intention of the environment and provide a major influence on patron spending and table turns, which both impact the restaurants overall success and revenue. One aspect of design that deserves more recognition in the restaurant atmosphere is lighting. While the use of electric and natural lighting on spending has been observed in retail environments, there are limited studies that address the relationship in restaurants. In the restaurant interior, the effects of full spectrum lighting on customer spending have been studied; however, there has been no research that examines exposure to natural lighting and customer spending. Although full spectrum lighting is known to render light more naturally, recent studies have shown that it still differs greatly in several important aspects, such as spectral power distribution, thus creating a need for further research on the affects of natural lighting on spending in restaurants. The purpose of this research was to examine different seating types and natural lighting on the amount of money spent. The data collection process is still in progress, but preliminary results from a pilot study indicate that customers tend to spend the majority of their time at a booth away from the window. The checks with amount spent support this conclusion. It was evident that customers overall spend more money when dining at booths compared to freestanding tables. The data collection method from the pilot study consisted of comparing two restaurants and examining the customers' checks to determine if natural light influenced spending habits. This data collection method will be repeated in further detail for this research project.

*Poster Session: Wednesday, April 20, 2011 2:00-4:00 Heth Hall 014*

### ***Nurse-Patient Relationship in Medically underserved Regions Around The world***

Rebecca B. Fabiyi, Erin G. Cruise, and Anthony R. Ramsey

Faculty Mentor: Anthony R. Ramsey and Erin G. Cruise

This paper reviews the nurse-patient relationship in medically underserved regions around the world. The importance of ideal relationship to improve the quality of health care systems in the medically underserved regions is explained. Under-staffing could result in higher number of patients to a nurse in the medically underserved regions. This could be burdensome; nevertheless nurse should not misrelate or mistreat the patients because of such stress. The prerequisites for developing nurse-patient relationship include: caring for the patient as a person and as a client, competent in the nursing profession and in connecting with patients, and having professional wisdom (a combination of knowledge and experience). The main stages in the development of the nurse-patient relationship involve the nurse to (i) reach out to the patient by asking questions that are specific to that particular patient, (ii) remove the masks of anonymity, (iii) reach a level of truthfulness, (iv) reach a level of solidarity (the patient feels that the nurse is on his or her side), and (v) true negotiation of care. Further detail shall be discussed.

*Oral Presentation: Tuesday, April 19, 2011 2:00-2:15 Heth Hall 045*

### ***Sharp Force Trauma Analysis: A Study of Postmortem Dismemberment in Relation to Tool Mark Identification***

Danielle Fenimore

Faculty Mentor: Donna C. Boyd

Dismemberment of human remains has been previously suggested to occur primarily with the goal of ease of disposal of remains (undetected). Prior research studies on dismemberment have been conducted to understand the mechanics of cut marks and the clues they leave on bone that help trauma experts classify the weapon that made the specific marks (i.e., tool mark identification). Previous studies conducted have used newly purchased tools as comparisons for tool mark identification patterns and have met with mixed success in these identifications. These IDs are often limited to class characteristics (e.g., of general saw characteristics) rather than to the specific instrument. It is proposed here that this is not a viable and relevant comparative method for tool mark ID and that these prior research studies do not accurately reflect actual dismemberment cases. In this experiment, a test sample of porcine shoulders (substituting as human models) are dismembered with well-worn and readily available common tools (saws). The goal of the test subjects involved in the dismemberment is to attempt to remove the limbs as quickly as possible. The hypothesis is that due to haste and the use of worn tools, there will be deviation in the tool mark identification patterns found by previous researchers. It is proposed that this is a more realistic comparative model for postmortem human dismemberment.

*Special Session: Wednesday, April 20, 2011 10:00-11:00 Heth Hall 016*

### ***Examining Ballistic Fracture Patterns in a Sample of *Sus scrofa*: Forensic Applications to Understanding Ballistic Forensic Trauma in Human Remains***

Laurel Finney

Faculty Mentor: Donna C. Boyd

Previous research on ballistic trauma to human remains (Berryman and Symes 1998) has identified a number of questions regarding the effects of this trauma on human remains, particularly in relation to the effect of caliber size on fracture patterns. Previous experimental studies have alternately used fleshed and defleshed pig (*Sus scrofa*) remains as human models, with little examination of the effect of defleshing on the results. The current study seeks to explore these variables (fleshing vs. defleshing; caliber size) in relation to ballistic trauma. Eight pig crania are used as the study sample--two fleshed were shot with a Taurus .38 special revolver, two fleshed were shot with a .45 Paraordinance Warthog 1911 gun. The four defleshed pigs were similarly inflicted with ballistic trauma. The hypothesis of this project is that the presence of fleshing will produce different fracture patterns compared to the defleshed remains. The second hypothesis is that fracture patterns from the .45 caliber will be more significant (e.g., larger surface area) compared to the .38 caliber due to the higher energy impact associated with the .45. Implications for understanding ballistic trauma in human remains are discussed.

*Special Session: Wednesday, April 20, 2011 10:00-11:00 Heth Hall 016*

### ***Folk Rock and its Cross-Cultural Transitions***

Sarah Fischetti

Faculty Mentor: Stevan R Jackson

The purpose of my research is to show how folk rock music has evolved and to trace back its origins and early influences in understanding the rise in popularity and various forms of implementation. By establishing somewhat a historical timeline, folk rock music can be seen in many venues on the smaller scale, where there is a more casual culmination of 2-3 people; as well as on the larger scale, being performed for an audience in the hundreds or thousands; such as in large concert halls or in various sized music festivals. One important distinction my research included is in recognizing the effects of music space on a performance and its associated sacredness to its audience. This style of music has embraced the use of modern instrumentation and looks at this tool as a means for further popularizing this genre of music, as it is constantly being adapted for younger and more cross-cultural audiences outside its original beginnings.

*Oral Presentation: Wednesday, April 20, 2011 3:45-4:00 Heth Hall 018*

### ***Tattoos and their linked attitudes for Undergraduate Students***

Sarah Fischetti

Faculty Mentor: Jeanne Mekolichick

The primary purpose of this study was to examine undergraduate students' attitudes toward people with tattoos. A survey was conducted and administered using Facebook, a social networking tool that included the 17-item

measure of the Martin Stigma Against Tattoos Survey (MSATS). The independent variables “visibility of tattoo,” “size of tattoo,” and number of tattoos on the respondent is accounted for and attitudes were measured. Findings were consistent with the literature and while most respondents were women who did not have tattoos, those that did have tattoos saw their choices with “No regrets.” The size of the tattoo was a predictor of evaluation only for men and women who did not have tattoos themselves and participants with more conservative attitudes evaluated more negatively to questions regarding people who have tattoos. Future research directions are offered.

*Oral Presentation: Tuesday, April 19, 2011 9:00-10:00 Heth Hall 022*

***iPartner: A Study of Relationship Satisfaction and Communication Satisfaction Among Long Distance Romantic Relationships***

L. Michelle Fisher

Faculty Mentor: Tracy J. Cohn

The primary objective of this research is to examine the relationship between time spent using technology (particularly Skype) and the relationship satisfaction of partners in long-distance romantic relationships (LDRR). The expected sample is approximately 120 participants drawn from mid-sized university in the Southeast, all of whom are current students of psychology. Participants received a survey composed of the Relational Communication Scale, the Relationship Assessment Scale, the Measure of Attachment Qualities, and additional information questions regarding use of technology, relationship status, and demographics. Students were presented to them through the SONA research system and after giving informed consent participants completed the online survey anonymously. It was hypothesized that Skype will have an impact on the relationship satisfaction of individuals in both proximal romantic relationships and LDRRs, and individuals who indicate a high amount of time spent communicating with their romantic partners will also report lower levels of proximal friendship satisfaction. The findings indicate the amount of time spent using Skype to communicate with the LDRR partner are positively associated with relational satisfaction and negatively associated with proximal relationships. There was a negative correlation between satisfaction of social interactions outside of the romantic relationship and time spent using technology to communicate with their partners.

*Poster Session: Wednesday, April 20, 2011 4:30-6:30 Heth Hall 014*

***Obesity***

James Franco

Faculty Mentor: Brenta Blevins

This project analyzes the growing problem of human obesity. People in the world today are eating more, eating unhealthier, and exercising less due to technology. If we continue like this, we are not going to be able to do our everyday activities without the help of technology. Have you ever thought of the world one day where no one can walk because all humans are extremely obese and people can only move around on hover chairs like in the movie WALL-E?

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

***Using museum specimens to find the species of whales for sale in Japan and South Korea***

Holly French

Faculty Mentor: Karen Francl

Museum specimens in collections have always been used for a variety of educational and research purposes. Recently, they have proven useful in legal proceedings, as well. In this project, they were utilized to check the legality of meat for sale in Japanese and South Korean markets. From historical whaling activities, we are able to use the products that are found in museums in order to obtain their DNA through minimally invasive techniques. After specimen sampling and DNA sequencing, the DNA sequences are submitted to GenBank, an international genetic database where the genomes of billions of organisms are archived. The information on GenBank is then used to identify which species of dolphins and whales are found in Japanese and South Korean markets and sushi restaurants. Obtaining DNA through techniques that do not destroy the museum specimen allows for successful identification and gives researchers an alternative technique to help manage marine mammal populations.

*Poster Session: Wednesday, April 20, 2011 6:00-7:00 CH 107*

### ***Spectral Analysis of Sequential Time Reproductions and Scores on the Connors Adult ADHD Scale 2***

Philip Frum

Faculty Mentor: Thomas Pierce

Fifty-seven undergraduates performed a time reproduction task in which they were presented with a series of tones occurring at 2.5s intervals. Participants were asked to press a button as close to each tone as possible. Superlab software presented the tones and recorded the number of milliseconds between button presses. After one minute the tones stopped and participants were asked to continue pressing the space bar at the same rate for an additional 110 trials. Spectral analysis was conducted on each participant's series of sequential time reproductions. This is based on the idea that faster and slower cycles exist across a series of trials and that various numbers of trials are required for the completion of these cycles (e.g., a complete cycle every 5 trials, every 10 trials, etc). It calculates the variance associated with every possible cycle length. If the variance from trial to trial were purely random then all cycle lengths should be represented in the data to nearly the same degree and account for approximately the same amount of variance (a pattern known as "white noise"). Results show that longer cycle lengths have significantly more variance than shorter cycles, indicating the presence of "pink noise" or non-random patterns of change over time. We anticipate that additional analyses will show that the presence of pink noise in the variability of sequential time reproductions will be associated with more negative scores from the Connors Adults ADHD Scale.

*Poster Session: Thursday, April 21, 2011 2:00-4:00 Heth Hall 016*

### ***Self-Compassion and Resilience in Men***

Megan Funston, Alexis Knight, Stephanie Gusler

Faculty Mentor: Sarah Hastings

Positive psychology is a branch of psychology which emphasizes the best qualities of individuals. In those who have survived abuse, literature demonstrates that resilience is possible. Self-compassion may impact level of resilience. Self-compassion is comprised of three components. The first is self-kindness, which means that people view themselves gently rather than casting judgment upon themselves. The second is common humanity, which accepts that personal challenges are part of every human's life rather than feeling alone with their experiences. The last aspect is mindfulness, which involves having the ability to be aware of negative thoughts or feelings but not dwelling upon them (Neff, 2009). Our study is part of a larger research project involving an online survey completed by 380 males. Participants responded to three questions about self-compassion and its relevance to men. We used a qualitative approach and developed categories to group participants' responses. The questions asked participants to define self-compassion in their own words, explain challenges men face in applying self-compassion, and describe difficulties participants endure in everyday life which interfere with self-compassion. We were able to identify themes which provide insight as to how personal compassion affects men. Implications of this study include understanding how self-compassion can be useful to men. Results will advance awareness of the factors that promote resilience in men.

*Poster Session: Thursday, April 21, 2011 1:00-1:15 Heth Hall 014*

### ***Annual Creative Readings, 2011 English Club at Radford University***

Faculty Mentor: Kim Gainer, JoAnn Asbury, April Asbury

A reading of creative works by members of the English Club at Radford University, this event is designed in conjunction with the 3rd Annual Highlander Literary Festival, and allows students a chance to participate in the same reading/performance process as their professional models.

*Oral Presentation: Wednesday, April 20, 2011 2:00-2:15 Heth Hall 019*

### ***The Relationships Between Academic Achievement and Student Involvement Based on Living Arrangement***

Ellie Gaither

Faculty Mentor: Jeanne Mekolichick

It is a common belief that college students living off campus will have a lower GPA compared to students living on campus. Another assumption is that students living on campus participate in on campus events. After reviewing the literature on these topics I hypothesized that living arrangements do not affect GPA and that students that live off campus participate in on campus events. The variables being measured are GPA, on campus events attended and living arrangement. To test my hypotheses I sent out an anonymous online survey to 62 undergraduate students. I used the Qualtrics program to develop a survey asking the undergraduate students about their living arrangements; the number of on campus events attended last semester and their estimated GPA as well as basic demographic information such as age, race, gender, and class standing. Preliminary results show that GPA is not affected by living arrangement and that students living off campus attend on campus events more often than those students living on campus. Results also showed that living arrangement was related to age and class standing of the students. Future research should look at reasons why students living on or off campus participate in on campus events and why the common assumption is that on campus students have higher GPAs than off campus students.

*Oral Presentation: Thursday, April 21, 2011 10:00-11:00 Heth Hall 014*

### ***The science behind virology in the popular movie, I Am Legend, and it's real life capabilities***

Clay Gates

Faculty Mentor: Michele Ren, Lovina Goad

In the movie I Am Legend, a cure for cancer is created by using a virus to attack the cancerous cells in the body. This method is being perfected right now, as we speak, but how close is society to being cancer-free? This paper

will explore the methods and science behind virology and the connection with cancer in regards to eradicating it, and how close the scientific community is to reaching this miracle cure.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### **Children of Men: Linking hardship and racism**

Kata Gauthier

Faculty Mentor: Michelle Ren

My presentation looks at the film "Children of Men" (2006) and the link between economic hardship, national disasters and anti-immigration and racism today and its effects on our future.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### ***Perceptions of post-secondary education, veterans and non-veterans***

Michael Gibbs

Faculty Mentor: Jeanna Mekolichick

This quantitative study addresses the perceptions of post-secondary education of veterans and non-veterans. This work seeks to fill a quantitative void in the mostly qualitative work produced on similar subjects regarding veterans and their transition to college after military service. Factors accounting for differences in perception between the target populations were thought to be stress, association with the "college student" identity, academic performance and confidence in a scholastic environment. This study attempts to isolate and quantify how veterans perceive school in comparison with students on a traditional academic trajectory. Employing a survey purposely designed for this project and including adapted scales from existing research, I measure these variables using online and paper surveys in compliance with IRB regulations; the results were surprising. The Initial hypothesis suggested that veterans would not associate with the "college student identity, self-report lower levels of stress and remain on par or slightly better in regards to academic performance and confidence than their peers. Initial findings suggest that other than age, veterans are very similar to other students. Contradictory to the hypothesis and a matter of interest, veterans self-reported elevated levels of stress compared to non-veterans. This may be related to family or work obligations that many adult students deal with in addition to school and not related to veteran status. This work in conjunction with future research, which identifies the specific stressors reported by veterans, can possibly aid educational institutions in forming more effective support networks for students returning to school from conflicts abroad.

*Oral Presentation: Tuesday, April 19, 2011 11:00-12:00 Heth Hall 022*

***Effects of Steaming Hay on the Respiratory systems of Horses with Heaves***

Ashly Goetting, Casey Harrell, Victoria Scott, and Taryn Yezek

Faculty Mentor: Karen Francl, Celeste Blumerich, Virginia Maxwell

The purpose of our study was to determine if steaming hay was beneficial to several respiratory metrics associated with horses with heaves. From February 7 – March 2, 2011, we studied 6 horses with clinical signs of heaves housed at the Virginia-Maryland Regional College of Veterinary Medicine. Three horses were given 10 days of steamed hay and 10 days of dry hay (with 3 days in between treatments), and 3 received the treatments in the reverse order. Daily, we measured clinical score (combination of nostril flare & abdominal breathing effort), mucous score, & quantitative preference for steamed versus dry hay. We hypothesized that steamed hay would show “healthier” clinical & mucous scores than dry hay, & that horses would consume significantly more steamed hay. Comparisons were examined with paired t-tests. We hope to determine if steaming hay is a useful & cost-effective process that would allow horses with heaves to continue to consume hay rather than a more expensive alternative.

*Poster Session: Wednesday, April 20, 2011 6:00-7:00 CH 107*

***Gendered career-family attitudes among current-generation university students***

Alynn Gordon, Katie Lawson

Faculty Mentor: Hilary M. Lips

Past literature on gender differences in attitudes related to work and family has shown gender differences on such attitudes and that they tend to define success differently, as well as hold different expectations of career and roles within marriage/family. The current study examined career and family attitudes among 332 university students enrolled in business and psychology classes. Participants completed the Career Family Attitudes Measure (CFAM; Sanders et al, 1998), Modern Sexism Scale (MSS; Swim et al, 1995) and portions of the Liberal Feminism Scale (LF; Henley et al, 1998). Multivariate analyses of variance using the factor scores as dependent variables showed that there were significant differences between female and male respondents on five of the six subscales of the CFAM, with women revealing more concern about equality in marriage and men exhibiting more traditional attitudes toward family and career. Men also scored higher than women on the three components of the MSS; women scored higher than men on LF items. The majority of respondents said their mothers had been employed full-time during their childhood; women and men did not differ in this respect. Mothers employment history was significantly related to respondents career and family attitudes with respect to Dominance, Spousal Support, and Family Focus subscales of the CFAM. These findings suggest that young people's attitudes toward career and family focus have changed little, despite changes in women's workforce participation.

*Oral Presentation: Thursday, April 21, 2011 2:45 Heth Hall 014*

***Greece's Economic Crisis and the European Union***

Heather Guillot

Faculty Mentor: James Radford

Although Greece has only been in the European Union for about a decade, it has been a rocky road. When Greece's first attempt to join the EU emerged in the mid 1900's, they did not meet the economic standards for entry due to high inflation and low GDP. It was at this point that the Greek government decided to make a public commitment to meeting the requirements of admission to the EU. Greece gained full participation in the EU in 2001. In 2010 Greece experienced a huge economic crisis; the issues that they were having before entry into the EU remained hidden in their economic policies. Greece now carries the unfortunate burden of being one of the few members who have the potential to cause detrimental harm to the entire union. There are also several internal political implications for the economic unrest Greece is experiencing. Because Greece has always been a nation with lower incomes and standards of living than more affluent countries, the citizens are not compelled to support the tough austerity measures the government is trying to implement for taxation. Greece also has a very active and powerful labor party who will make the implementation of such austere financial reforms very difficult. Amongst these political issues lie the current distress and frustration of citizens that has amounted to large street riots.

These riots add to the pressure being placed on the government and also contribute to the disintegration of any prospects for gaining confidence from the international or local communities.

***Africa and European Union Relations: Lessons from Egypt and Tunisia***

Heather Guillot

Faculty Mentor: Craig Waggaman

While many African countries suffer politically and socially, most of the countries that previously colonized Africa are now members of the European Union (EU); a relatively thriving economic and political union that joins the majority of Europe. There are two countries in Africa that are emerging as extremely important factors in Africa-EU relations; Egypt and Tunisia, however; leaders within the EU and leaders across Africa have differing ideas about the EU's efforts to enhance Africa's economy and political efficacy. Both Tunisia and Egypt have been the highlight of news media, political discourse, and foreign government initiatives since the start of the new decade. The concern that the European Union member countries have in both Egypt and Tunisia's political unrest consists of many financial and social implications dating back to Europe's role in 19<sup>th</sup> and 20<sup>th</sup> century imperialism in Africa. With political turmoil ensuing and the desire for these countries to have democratic reform, there is not only an inherent obligation on the EU for assistance, but also an implicit common interest for the EU to support Egypt and Tunisia's state reforms. There is a long history of cultural, political, and economic intertwining of Africa and EU member states and they continue to intertwine through various trade agreements, grants, and humanitarian efforts. At the same time, careful consideration of the effects of these policies and procedures provides each government with immanent provisions for future relations. Egypt and Tunisia's unique and current political situations create a framework to judge the effectiveness of the EU's work to support them, and also a framework to explain past, present, and future outcomes of the partnerships endeavors.

***Multi-hop Wireless Electricity Charging in Wireless Sensor Networks***

Catherine Greene, Bretny Khamphavong, Chloe Norris and Nancy White

Faculty Mentor: Hwajung Lee

Wireless Sensor Networks (WSNs) are a key data gathering tool for researchers in a variety of fields. However, the individual nodes in the network suffer from limited power and thus need to be charged regularly. A long standing assumption has been that batteries for wireless sensors are too difficult or expensive to charge. The objective of our research is to prototype the use of WiTricity wireless charging technology to charge the nodes. This would then allow them to stay in the field much longer and at a much lower cost. In order to achieve this goal, energy must be distributed as efficiently as possible. An optimization model must be created in order to compute the best algorithm for sensor interaction, which would then be integrated into a nesC simulation. By taking this approach our research allows us to write code that simulates node communication of their power needs to other nodes.

*Oral Presentation: Thursday, April 21, 2011 3:00-3:30 Heth Hall 045*

***Second-intermediate host preference of the trematode Echinostoma trivolvis, a widespread parasite of wildlife.***

Juan Guacheta

Faculty Mentor: Jeremy Wojdak

Echinostoma trivolvis, like most trematodes, has a complex lifecycle involving several different host species. Its first intermediate host is always the freshwater snail Helisoma trivolvis, yet its secondary host can vary (e.g., amphibians, snails). Cercariae, the free-swimming larval stage that seeks out secondary hosts, is known to orient towards hosts using chemical cues. We conducted an experiment to measure the secondary host preference of Echinostoma trivolvis. Chemical cues from two potential host species, the snails Helisoma trivolvis and Physa gyrina, were presented to the cercariae of Echinostoma on either side of a linear chamber. . Movement of larval parasites towards either side was measured several times over 16 minutes and constituted our measure of preference . Studying the lifecycle of this trematode is important because it infects local amphibians, mammals, and birds, and because it is quite similar to parasites that cause serious disease in ~200 million people worldwide.

*Poster Presentation: Tuesday, April 19, 2011 6:00-7:00 CH 107*

***Identification of bacteria from mosquito digestive tracts using single-strand conformation polymorphisms***

Jennifer Gunnell

Faculty Mentor: Justin Anderson

Mosquitoes transmit a large number of important pathogen, including the malaria parasites and dengue viruses. For many of these, there are no good control mechanisms and no vaccines. We have been characterizing the bacterial community resident in the digestive tracts of the mosquito *Aedes albopictus* and determining whether these bacteria may possess antiviral activity against La Crosse virus. Initial characterizations in the lab were performed by sequencing of the 16S ribosomal RNA gene, a method which is fairly expensive and time-consuming. In this study, we have been assessing a method to identify the bacteria that rapidly identifies sequence differences that can then be compared to known bacteria. To date, we have tested X bacteria from *Ae. albopictus* females from three locations. None match our reference bacteria, and sequencing of the 16S gene confirms that they are different species. This suggests that the bacterial community in mosquitoes is quite diverse, and further study is warranted to characterize the individual species for their utility in preventing disease transmission.

*Oral Presentation: Tuesday, April 19, 2011 7:15-7:30 CH 107*

***Undergraduate Student Perceptions Toward Mentoring***

Justin Hairston

Faculty Mentor: Jeanne Mekolichick

Effective mentoring has five components: the relationship is focused on achievement or gaining knowledge, it consists of support, direct assistance, and role modeling, the benefits are reciprocal, personal relations by nature, and the mentors have a greater experience, achievement and influence within the mentoring setting (Girves, Zepeda, and Gwathmey 2005: 541). The purpose of this study is to examine the relationships of undergraduate students and their experiences with mentoring relationships and how it relates to academic success. The participants in this study were 93 undergraduate students who completed an online survey, providing information about their mentoring experiences using the College Student Mentoring Scale (Crisp 2009). Convenience sample was gathered using Facebook and emailing sociology professors to send to their students. It was hypothesized that the more a student feels a mentoring relationship that is benefiting them, the higher the student's academic success. Preliminary results suggested that while almost every student engaged in a relationship while in attending college, the grade point average (GPA) of the student did not have much of a relation. Future research should examine what kinds of mentoring relationship in which the student was engaged, along with the frequency of the relationship.

*Oral Presentation: Thursday, April 21, 2011 11:00-12:00 Heth Hall 014*

***Cleopatra: Queen of Kings***

Lauren Hammer

Faculty Mentor: Sandra French

A trait approach analysis of Cleopatra's leadership through an exploration of events and affairs.

*Special Session: Thursday, April 21, 2011 10:30-12:30 Heth Hall 043*

***Le Belle Chateau- A Wedding Hall***

Brittini Hammond, Lauren Reinhard

Faculty Mentor: Julie Temple

Le Belle Chateau is a Wedding Hall dedicated to creating a feeling of love and enchantment for those lucky couples who book the space for their big day. We will be presenting this project illustrating the design process as a whole. We will walk people through how we complete a design project including both the creative and research aspects of interior design.

*Oral Presentation: Wednesday, April 20, 2011 3:00-3:30 Heth Hall 019*

***Microwave Assisted Esterification of Fatty Acids for Biodiesel Production Using a Novel Carbon Based Solid Acid Catalyst***

Tyler Harclerode

Faculty Mentor: Francis Webster

Since the first article on microwave assisted synthesis was published in 1986 using a domestic microwave oven, the number of research efforts focusing on the improved synthetic methods using this technique has grown exponentially. This technique has been applied to a wide range of chemical reactions including esterifications, etherifications, arylations, and hydrolysis reactions. In this work, a novel solid acid carbon catalyst derived from the simple treatment of sugar with sulfuric acid was developed to esterify oleic acid to synthesize methyl oleate (biodiesel). The carbon was prepared through the dehydration of concentrated sugar solutions by addition to sulfuric acid at 150oC. The resulting carbon material formed was then cold filtered, and dialyzed overnight against distilled water. Before use, the catalytic carbon was heated at 110oC under vacuum to remove water vapor. Catalyzed synthesis of methyl oleate was performed using a Mars microwave reactor using 400watts, a duty cycle of 10%, and constant stirring. The reaction temperature was maintained at 60oC and monitored using a fiber optic temperature probe. Samples were taken at various time intervals and analyzed using high performance liquid chromatography (HPLC) to monitor the progress of the reaction. Results showed significantly higher rate constants for the reaction when compared to conventional heating methods.

*Oral Presentation: Thursday, April 21, 2011 3:45-4:00 Heth Hall 045*

### ***Too Much School Security***

Andrew Harris

Faculty Mentor: Brenta Blevins

This project analyzed how security in schools has gone too far. This project is based on an issue presented in the book Little Brother by Cory Doctorow. This presentation discusses ways schools have gone too far with their security. It talks about how students don't necessarily feel safer with all the security that their school has invested in. Having too much school security is a major issue we face today.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### ***Foster Teens: Learning the Effectiveness of Aging Out Programs***

Courtney Hawkes

Faculty Mentor: Jeanne Mekolichick

In the United States there are an estimated 463,000 children in the foster care system. While many children end up being reunited with their family or put in permanent placement, some do not. Each year nearly 20,000 children become emancipated or age out of the system. In this study two variables are being examined: The perceived effectiveness of Independent Living and Mentoring Services. Through email, Social Work professionals at agencies in Virginia including Essex County, Montgomery County, and King and Queen County were contacted. A link to the online anonymous survey was attached. Measuring the attitudes of Social Work professionals, we can take a closer look on how effective or non-effective they find the services. I anticipate that many of the Social Work professionals will find Independent Living services more effective than Mentoring. Contrary to expectations, preliminary results show that more participants found mentoring services more effective than independent living services.

*Oral Presentation: Tuesday, April 19, 2011 10:00-11:00 Heth Hall 022*

### ***Self-esteem and Perceived Social Acceptance in Homosexual Young Adults***

Caitlin Hennessy

Faculty Mentor: Jeanne Mekolichick

Using a dramaturgical perspective (Goffman 1959) focusing specifically on discreditable stigmas, I examined the relationships between sexual orientation, self-esteem, perceived social acceptance and disclosure status. I hypothesized that individuals identifying as part of the sexual minority would score lower than heterosexuals in self-esteem and perceived social acceptance. Concurrently, I hypothesized that those who disclosed sexual orientation ("came out of the closet") would score higher in self-esteem. Participants (N=414) responded to an anonymous online survey recruited using snowball sampling methods. Independent sample t-tests were used to test the hypotheses. Preliminary results indicate that there were no significant differences in self-esteem between

heterosexuals and homosexuals. Individuals identifying as heterosexual did score slightly higher in Perceived Social Acceptance than those identifying as homosexual or bisexual. Significantly, females were more likely than males to disclose sexual orientation to family and friends. Further, white females were more likely than their nonwhite counterparts to disclose orientation. Discussed in conclusion are the impacts of increasing social change with more tolerance and acceptability of minority groups.

*Oral Presentation: Tuesday, April 19, 2011 11:00-12:00 Heth Hall 022*

### ***Class from a different perspective***

Michael Herring

Faculty Mentor: Georgia Hammond

In most class settings there are two very different standpoints to be considered; that of a student and that of an instructor. Generally, graduate programs allow the student to view both by mandating the student assist in teaching a course as a student-teacher. Student-teaching is required by graduate students as an application of their knowledge; and for some, a method of evaluation. Teaching a course as a student can also serve as a review and improve the student's ability to communicate information. Unfortunately, undergraduate students are rarely given this opportunity as a student-teacher limiting them to a single standpoint during their course work - that of a student. An alternative option more commonly available to selective undergraduate students is to become a teacher's assistant. During my senior year as an undergraduate at Radford University, I was given the invaluable opportunity of becoming a teacher's assistant. As a former student of Dr. Georgia Hammond, I was offered the opportunity in assisting her instruction of Biology 450, Molecular Biology. While Dr. Hammond's benefit rested mostly in aid with class preparations, I was able to gain in every situation; even where I had not expected. The following work will discuss the experiences and knowledge gained in assisting with Molecular Biology, and focus on the additional benefit in viewing a course from a different perspective.

*Poster Presentation: Tuesday, April 19, 2011 6:00-7:00 CH 107*

### ***Contorting Society***

Vince Michael Hitt

Faculty Mentor: Halide Salam

My paintings focus on myself as the subject, affected by the obtrusive media and advertisement that alter my daily existence, such as the constant use of media, cell phones, iPod and the computer. I use large-scale surfaces so that I can get into the physicality of paint and mark making and incorporate found objects and/or loose materials, i.e. newsprint, wood, and string. I apply the paint in a variety of layers so as to create emphasis between space and subject matter. / My subject matter for most of my work deals with the human hand as a metaphor for the actions that we carry out in this world. I see the hand shaping and constructing society, such as the disconnection from the natural world. I deliberately create conflict between subject matter and of space by pushing the hand(s) beyond the boundaries of two-dimensional space and by blending and layering color. This process relates to my continued interest between the real and the illusive. Like Jenny Saville, I emphasize the contortion of malleable skin in the hand as well as the gesture of the hand in order to provide a sense of motion that reflects repulsion between space and object. My work is a continued process where I persistently look at social conflicts, political sandals, debates, and other interesting topics that can disrupt the public's attention. Since I began this conquest, I have been living and breathing paint while looking and experimenting with other agents, surfaces, and ideas to build and learn from.

*Oral Presentation: Tuesday, April 19, 2011 4:00-4:30 Heth Hall 018*

### ***Analysis of Proteins from Cells of Dieffenbachia that Synthesize Calcium Oxalate Crystals***

Jordan C. Hixon, Brian Ingram and Gary G. Coté

Faculty Mentor: Gary G. Cote

Many plants have cells that make and maintain crystals of calcium oxalate, which have been suggested to serve as a defense mechanism against herbivores. Understanding the proteins of these cells could give insight into how crystals are created and maintained. This could also lead to better understanding of crystallization in animal shell, bone and teeth. We extracted proteins from whole leaf samples of two tropical aroids, *Dieffenbachia seguine* and *Pistia stratiotes*. We also isolated crystal-containing cells from both species by two alternative methods and extracted proteins from these cells. The isolated proteins were analyzed by polyacrylamide gel electrophoresis, and the gels were silver-stained. A variety of proteins of different molecular weights were found in all samples.

*Poster Session: Wednesday, April 20, 2011 6:00-7:00 CH 107*

### ***What's Love Got to Do With It?: A Study on Relationship Satisfaction***

Kelsey Henry, Michelle Fisher, Anna Daugherty

Faculty Mentor: Jeffery Aspelmeier

The goal of the current study is to investigate the relationship between attachment style (IV) and relationship satisfaction (DV) among unmarried college students at Radford University focusing on differences in gender roles. Approximately 150 undergraduate students were recruited from the psychology department participant pool and asked to complete online surveys. The Experiences in Close Relationships-Revised Scale (ECR-R; Fraley, Waller, & Brennan, 2000) was used to measure attachment styles. Masculinity and femininity was measured using the Bem Sex Role Inventory (BSRI; Bem, 1979). Relationship satisfaction was measured with the Relationship Assessment Scale (RAS; Hendrick, 1988). It was hypothesized that participants with high levels of femininity will report higher levels of satisfaction, individuals with high androgyny scores will report moderate to high levels of relationship satisfaction, and individuals with high levels of masculinity will report the lowest levels of relationship satisfaction. It was also thought that individuals with secure attachment will report higher levels of satisfaction, whereas individuals who are securely attached and in a relationship with an individual who is not securely attached will report lower levels of relationship satisfaction. Finally, individuals that are securely attached and have high levels of femininity will report the highest relationship

*Poster Session: Wednesday, April 20, 2011 4:30-6:30 Heth Hall 014*

### ***Antimicrobial Resistance: No action today, no cure tomorrow***

HLTH 460 Students (International Health)

Faculty Mentor: Kathleen Poole

Students in Dr. Poole's HLTH 460 (International Health) class are working in small groups to create a total of 7-8 posters to commemorate World Health Day 2011. The theme of World Health Day 2011 is antimicrobial resistance and its global spread. Antimicrobial resistance threatens the continued effectiveness of many medications that are used today to treat the sick while at the same time it risks jeopardizing important medical advances being made against major infectious diseases. Posters will be created on each of the following topics: an overview of World Health Day 2011, antimicrobial resistance, malaria, tuberculosis, HIV/AIDS, recent natural disasters, and future trends in global disease.

*Special Session: Thursday, April 21, 2011 12:30-1:45 Heth Hall 045*

### ***Digital Reconstruction of Infant Cranial Trauma: A Preliminary Study***

Lucy Hochstein

Faculty Mentor: Donna C. Boyd

The goal of this study is to develop a method for creating three-dimensional digital representations of perimortem cranial fracturing while assessing its utility for more detailed reconstruction of traumatic events than previously realized through visual and metric analyses. In prior studies, it has been difficult to reconstruct cranial trauma involving blunt and sharp force impact due to the significant degree of plastic deformation from the slow loading of traumatic forces and the ductile properties inherent in infant bone. Digital mapping may aid in reconstruction and interpretation of fracture patterns and understanding the variables affecting fracture propagation (e.g., buttressing, suture lines, force, characteristics of striking instruments, as well as energy, number, and sequence of

blows). Since prior research has shown that porcine samples are acceptable as human models, the experimental sample here is composed of nine skulls from stillborn pigs (*Sus scrofa*). Three are inflicted with blunt force trauma, three inflicted with sharp force trauma and three serve as controls (no trauma). Fracture patterning is analyzed with the aid of the RUFISI Keyence VX-1000 Digital Microscope as well as the Microscribe Digitizer in order to explore the potential for three-dimensional modeling of perimortem trauma. The ultimate aim of the study is to increase our understanding of pediatric death events involving cranial trauma.

*Special Session: Wednesday, April 20, 2011 10:00-11:00 Heth Hall 016*

### ***Can a Supreme Court Case affect the outcome of an election?***

Elizabeth Hopkins

Faculty Mentor: James Radford

In my research paper, I will examine how campaign financing has a major effect on elections. More specifically, what the authors of the books I chose failed to conclude, is how the U.S. Supreme Court Case *Citizens United v. Federal Election Commission* affected the outcome of the 2010 midterm election. Authors Matthew J. Streb, David K. Ryden, Charles L. Zelden, and Larry J. Sabato each give different insights on elections and politics, campaign financing, the U.S. Supreme Court and the electoral process, and the 2010 elections. I draw my conclusion from a synergetic analysis of each author's interpretation of these subjects.

*Oral Presentation: Wednesday, April 20, 2011 12:00-12:15 Heth Hall 019*

### ***Eleanor Roosevelt: The Authentic Leader***

Brittney Howell

Faculty Mentor: Sandra French

Eleanor Roosevelt demonstrates the three authentic leadership approaches: intrapersonal, developmental, and interpersonal. She is authentic in that she took great meaning from her life experiences, developed that meaning, and paved the way for human rights and social equality. Eleanor's leadership style also exemplifies Bill George's Authentic Leadership Approach. The five characteristics of this approach include being purposeful, value centered, relational, self-disciplined, and compassionate. Eleanor demonstrated all of these characteristics well in the tasks that she fulfilled throughout her lifetime, resulting in her nickname, 'First Lady of the World.'

*Special Session: Thursday, April 21, 2011 10:30-12:30 Heth Hall 043*

### ***Themes of Femininity and Power in the Portrayal of Women Leaders: An Extension of Research***

Kayla Huntley

Faculty Mentor: Hilary Lips

In this research, I will explore an extension of Apfelbaum (1993) and Rojahn, Fischer, & Willemsen (1997) studies—which indicate that the perception and experience of women leaders can vary dramatically by culture—and present more current examples of the cultural definitions of leadership and femininity. I will also continue to explore how these definitions interact and conflict in particular societies through their portrayals in different media. / Leadership studies in psychology seldom distinguish or acknowledge gender and racial difference (Chin, 2008), but are nevertheless “generalized as being universal to both women and men” (p. 701) across cultures. There is a persistently recurrent fallacy that women do not possess leadership qualities and any hindrance in their advancement is explained away by their “own lack of motivation” as well as the notion that leading is a “man’s job.” / National culture is one of the primary elucidators for women’s access to and experience of leadership. Logically, if women are not given adequate access, they cannot adequately find success. A problem that is all too real for many women across many cultures throughout the world. This connection can also be seen in the treatment of women leaders by their compatriots and in how they view their own abilities. While, realistically, the perceived dichotomy between femininity and leadership does not exist, cultural beliefs about contradictions between what it means to be a leader, often implying the deployment of traits viewed as predominantly masculine, and what it means to be feminine do exist.

*Oral Presentation: Thursday, April 21, 2011 3:45 Heth Hall 014*

***pH effects on larval trematode host-finding and host infection.***

John Huth and Fionna Surette

Faculty Mentor: Jeremy Wojdak

Trematodes (i.e. “flatworms”, “flukes”) are parasites that have complex life cycles involving multiple hosts. We studied the trematode *Echinostoma trivolvis*, which is widespread in North America, and infects the snail *Helisoma trivolvis* as its first host, then various amphibians and snails as 2nd hosts, and finally muskrats and wildfowl as definitive hosts. Because of the necessity of moving from first host to second host in a very short time (e.g., 12h), the success of the free-swimming cercarial stage, and thus the entire life cycle, is dependent on highly attuned host-finding behavior; the larvae find a desirable host by responding to a variety of environmental cues, and chemical cues emitted by the host. The purpose of our experiments was to determine if varying water pH the parasite’s ability to recognize its host’s cues. pH was thought important because of the changes in amino acid affinity for receptors with changing acidity, and because of other studies where pH had strong impacts on prey animals’ ability to detect predators chemically. We manipulated water pH and measured larval parasite movement towards host chemical cues, and encystment success in the host.

*Poster Presentation: Tuesday, April 19, 2011 6:00-7:00 CH 107*

***The Effects of Injunctive & Descriptive Norms on Intent to Exercise***

Ryan Hypes, Phil Tropp, Stephanie Ward

Faculty Mentor: Jeffery Aspelmeier

The experiment will evaluate the effects of injunctive and descriptive norms on intent to exercise. Approximately 150 undergraduate students will complete an experimental study presented in an online format. Norm types are descriptive and injunctive. Exercise attitudes are measured using an author constructed measure that evaluates attitudes toward six categories of exercise: Weekly, Daily Cardiovascular Endurance Training, Strength Training, Muscle Tone Training, and Flexibility Training. Each category is evaluated on six dimensions presented in a seven point semantic format. To measure participant’s commitment to exercise, participants are presented with a hypothetical program Radford University is considering implementing. Participants are asked how much time they would volunteer to three moderately-intense exercise program tasks and three leisurely tasks. Expected results: participants with negative attitudes towards exercise will have the weakest commitment to exercise regardless of norm message read; participants with positive exercise attitudes will be affected by the type of norm presented; participants who get a combination of injunctive /descriptive norms will show higher intent to commit to exercise; participants who receive messages containing only descriptive or injunctive norms will show less intent to commit to exercise; participants who receive descriptive norms will show more intent to commit to exercise compared to participants that receive injunctive norms.

*Poster Presentation: Wednesday, April 20, 2011 4:30-6:30 Heth Hall 014*

***The Origins of Jazz***

Andrew Imhoff

Faculty Mentor: Stevan Jackson

Jazz is one of the first American music styles that is still in wide use today. I plan to research the origins of jazz music, including those from Europe and Africa. Particularly, I will look at European military marches, blues and ragtime. I will focus on form, instrumentation and style.

*Oral Presentation:*

*Wednesday, April 20, 2011 2:15-2:30 Heth Hall 019*

***Natural history museums role in documenting emerging species***

Therese Ihrig

Faculty Mentor: Karen E. Francl

Natural history museums play a significant role in documenting emerging species through new collections and through re-examinations of older specimens. Through the latter route, I report how researchers have documented

new whale species, two bat species, and additional king crab species. The conspecific whales were reinvestigated and deemed two separate species based on morphological evidence and DNA. Two new species of flying fox bats were discovered in museum collections, albeit too late; both were already extinct before they were fully identified. New king crab species were discovered from old, unidentified collections, as well. Museum specimens are an invaluable resource for cataloging organisms. First-time or re-examinations of older specimens may still provide a wealth of information for today's researchers, and will continue to help us with many aspects of public education and ground-breaking research.

*Poster Session:*            *Wednesday, April 20, 2011*      *6:00-7:00*      *CH 107*

### ***Scanning Electron Microscopy of Dieffenbachia Cells and Crystals***

Brian Ingram

Faculty Mentor: Gary Coté

Dieffenbachia is one of many plants that contain crystals of calcium oxalate. Their purpose is unknown, but multiple theories suggest that they could deter herbivores, maintain mineral balance, give structural support, or sequester waste. Dieffenbachia leaves contain raphides, which are long, thin crystals, and druses, which are star-shaped. Some cells containing raphides are able to shoot the crystals out; these are called biforines. We used scanning electron microscopy to study the crystals in Dieffenbachia. We were able to image both raphides and druses, as well as the cell walls of biforines. Crystals appear to be smooth, without barbs. Large raphides had grooves at each end of the crystal, as previously reported for *Xanthosoma sagittifolium*, and suspected for Dieffenbachia. We were also able to image very small crystals that had not been clearly imaged before.

*Poster Session:*            *Wednesday, April 20, 2011*      *6:00-7:00*      *CH 107*

### ***Conundrum of Technology***

Eva Intravaia

Faculty Mentor: Michelle Ren, Brenta Blevins

What do you cherish more, your privacy or your safety? The novel *Little Brother* by Cory Doctorow illustrates the excessive power that both our government and technology have over us. A controversial topic in today's society is whether technology and our government have an unnecessary amount of access to our private information or if their surveillance over us is entirely necessary to ensure the safety of our country. This poster presentation examines our government's role to ensure its citizens' safety and whether it crosses the line of safety, therefore, denying our American right to privacy.

*Special Poster Session:* *Thursday, April 21, 2011*      *1:00-5:00*      *Heth Hall 043*

### ***The Development of a Dichotomous Key to the Hair of Virginia Mammals***

Jasmine Y. Jackson

Faculty Mentor: Robert Sheehy

Studying diets of predators or scavengers is difficult because often the only evidence of diet is found by examining feces or pellets (undigested food regurgitated by birds). This evidence may consist only of hair from the prey species. In order to help in the identification of diet we have been conducting research on furs of different mammals, such as: rabbits, foxes, voles, coyotes, and bears in order to construct a dichotomous key to mammal hair of Virginia. Fur from various mammals was photographed using both the light microscope and the Scanning Electron Microscope (SEM). Variation within and among hair samples will be used to construct a key, which may then aid in identifying the origin of the fur found in the pellets of vultures or the feces of carnivores such as coyotes.

*Poster Presentation:*    *Tuesday, April 19, 2011*            *6:00-7:00*      *CH 107*

### ***Expression of Arsenic Resistance Genes in Bacteria from an Arsenic Mine***

Jasmine Y. Jackson and Erin A. Fowler

Faculty Mentor: Georgia A. Hammond

We have analyzed our culture collection from an abandoned arsenic mine for the presence of arsenic resistance genes, and have determined that each of the seventy bacteria has the gene, *arsC*, arsenate reductase. The arsenic

resistance gene, *arsC*, converts arsenate to arsenite. This reduction reaction provides the bacterial cell with the potential to oxidize organic compounds and gain energy from the process. Arsenate is toxic to bacterial cells because it shuts down energy production; arsenite, the more toxic of the two forms, destroys protein folding. Many bacteria then eliminate the arsenite out into the environment using a membrane-bound transport protein. Our study focuses on expression of *arsC* in cultures raised in 5ug/mL arsenate. This concentration is similar to concentrations found in the environment from which they were isolated. As a control we also analyze *arsC* expression in the same cultures raised under conditions without arsenic. Our preliminary results using Real-Time PCR indicate that in cultures raised without arsenate, there is no *arsC* expression. In cultures raised in the presence of arsenate, we see high levels of *arsC* expression relative to other housekeeping genes. These data are significant in terms of understanding how bacteria can mobilize toxic forms of oxygen in the environment.

*Oral Presentation: Tuesday, April 19, 2011 5:30-5:45 CH 107*

### ***New Age Rock Scene***

Joshua Judd

Faculty Mentor: Stevan Jackson

The purpose of my presentation is to delve into the not very popular music scene of a different genre of rock called pop punk/scream/hardcore music. It is a new genre because the types of vocals are different, compared to most rock and heavy metal music. The music comes with its own culture also. It bred a new type of clothing style, much like the movement with grunge music, but the styles are different. / The music will be the focus of the presentation. I will be attending different concerts/shows to document different sounds the bands have and the type of vocals/instruments used. To an untrained ear, the music all sounds the same, but rather, if you study each band you can see much of the same roots but after that they make their own sound. I will be doing interviews with different local bands to the scene. Getting a band with a big record label to answer questions might be a little bit more difficult. I will use a PowerPoint presentation with videos and interviews to show my progress with the study of this genre.

*Oral Presentation: Wednesday, April 20, 2011 4:30-4:45 Heth Hall 018*

### ***Cancer research, I am Legend***

Meghan Judge

Faculty Mentor: Michelle Ren

A look at cancer research and its uses in the movie "I am Legend" made in 2007 and in the book, published in 1954.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### ***Aquatic Therapy: What is its Effectiveness and When is it Useful?***

Chelsea Kelley

Faculty Mentor: David Sallee

In modern day physical therapy settings, the use of aquatic therapy for rehabilitation has been a growing trend. There are many ways to utilize aquatic therapy both in a clinical outpatient and in an inpatient setting. Aquatic therapy is defined as any type of physical rehabilitation that involves placing the body, particularly any joint, in water to help aid in the recovery of the joint. In a review of five studies spanning from 2006 to 2010, many types and uses of aquatic therapy were presented. Two-hundred and eighty-eight subjects were tested over the five studies, and all five studies incorporated a control group who performed therapy on land and an experimental group consisting of various forms of aquatic therapy. The testing periods ranged from as short as 6 weeks of intervention up to 18 weeks of intervention. All of the studies focused on a self-reported pain scale during and after exercise as well as range of motion variations, strength gains and deficits, and function in activities of daily living. From these five studies, it can be concluded that aquatic therapy is useful for a wide variety of medical conditions including but not limited to: knee and hip replacements, osteoarthritis in the lower body, and fibromyalgia. While values during range of motion testing and strength testing are comparable between land and aquatic therapies, it is suggested that the speed of recovery increases with aquatic therapy due to a comfort level in the water and the ability of the patient to feel at ease pushing the body to its limits in rehabilitation.

*Oral Presentation:*      *Tuesday, April 19, 2011*      *2:45-3:00*      *Heth Hall 045*

***Examining the Role of Gender in Helping Behavior among Students and Faculty***

Sarah Kerper

Faculty Mentor: Jenessa Steele

The overarching goal of this ongoing research project is to assess the prosocial culture at Radford University. How do students and faculty help one another? What factors predict whether or not a student or faculty member helps? Is gender a key variable in determining helping behavior among students and faculty? We will present research conducted in collaboration with the Radford University Sexual Assault Task Force on identifying barriers to bystander intervention for sexual assault. Initial findings suggest barriers to bystander intervention vary by student gender. For example, women were significantly more likely than men to report having a skill deficit as a barrier to intervene in a sexual assault bystander situation. In addition, a review of the literature on prosocial behavior promotes differences in influential factors of help seeking, the likelihood of helping others, and the extent to which they would be helped, based on both the gender of the potential helper and the person requiring assistance. For instance, founded on gender roles, males should be expected to help in situations in which they would be deemed as chivalrous and heroic, whereas supportive females should thrive in interpersonal helping situations. The application of these findings to the student-faculty relationship, plans for future research, and implementation of the potential results in the form of faculty training and education will also be discussed.

*Oral Presentation:*      *Thursday, April 21, 2011*      *12:30*      *Heth Hall 014*

***Food of the colonies***

Katlyn King and Mindy Pierett

Faculty Mentor: Jo Ann Asbury

In this project, we will be traveling through the thirteen original colonies to learn about their culture by investigating the abundant amount of foods that were prevalent in the past and what foods were carried through in tradition to the present. A brochure will provide in detail the place, food, and recipe. Our goal of this project is to investigate the colonies from the view point of food to gain a broader perspective on the food resources they had to use, how they put them to use, and how they relate to the other colonies choices of food and recipes.

*Oral Presentation:*      *Wednesday, April 20, 2011*      *9:00-10:30*      *Heth Hall 018*

***Mountain Music: An Historical Journey***

Brianna Kirker, Sarah Wood, Brenna Ishler, Rachael Simon, Britni Belcher, David Eric Pidcock, Kelsey Lewis, Jonathan West, Caitlan Worsham

Faculty Mentor: Melinda Wagner

Mountain Music: An Historical Journey, is a documentary film of the 2011 Appalachian Awareness Day, created and hosted by the Appalachian Events Committee. Our group planned this event, which consisted of choosing a theme, researching the time periods of music, and booking performers that represented the different styles of music. While the event was being conducted our group filmed the show, which represented an accurate historical progression of Appalachian music starting with the 1600s to present day. Each time period was represented by a different band that also explained the difference between the types of music. Members of the Appalachian Events Committee conducted interviews with each group and included excerpts from both performances and interviews in the documentary.

*Special Session:*      *Wednesday, April 20, 2011*      *3:00-5:00*      *Heth Hall 044*

***Richard Cory in Modern View***

Sadie Kneuper, Nadene Pence, Ashley Strader, Dillon Wade

Faculty Mentor: April Asbury

We are making a comparison power point/ video of the poem Richard Cory. We're comparing past social status from the time period of Richard Cory and how they have changed today, a modern example of Richard Cory, and if depression is more prominent in higher or lower classes.

*Oral Presentation:*      *Tuesday, April 19, 2011*      *11:00-12:45*      *Heth Hall 045*

### **Heteronormativity, Socialization, and Consumer Culture: The Marketing of Children's Clothes**

Caitlin Krueger

Faculty Mentor: Carla Corroto

Today, consumer culture is significantly gendered, primarily reinforcing two binary genders; masculine and feminine. In a capitalist, so-called-market-driven consumer culture, creating and labeling a distinct gender identity has become part of the marketing, advertising, accessorizing, and polarizing scheme. / / From data gathered via content analysis at a large corporate retailer in the area, I was able to observe how these specific gender expectations were reinforced through the design and display of children's clothing. From a very young age, children are socialized and expected to conform to traditional gender displays. By exposure to separate clothing categories in at the store (boy/girl), children are already exposed to a narrow set of feminine or masculine choices. / / Consumer goods reinforce and communicate daily the "importance" (as it is extremely important in our culture to fit in) of heteronormativity, which structures social life so that heterosexuality is always assumed, expected, ordinary and privileged. With this paper I analyze the role consumer goods have in "doing" gender.

*Panel Discussion: Thursday, April 21, 2011 1:45 Heth Hall 014*

### ***The Role of Museums in Studying Genetic Variability and Relationships of Endangered Populations***

Jason Langteau

Faculty Mentor: Karen Franci

Natural history collections (NHC) have been an important part in preserving and displaying the Earth's past since their inception. Now with the improvements in DNA extraction and sequencing technology, these artifacts are giving population geneticists a way to see back hundreds of years in some cases to identify if the species in question has always maintained a very low level of genetic diversity or if some sudden catastrophe caused a bottleneck. The two examples in the poster present cases where with this new information helps conservation biologists identify solutions addressing the specific genetic past of the Yellowstone grizzly bear and Atlantic salmon. In both cases where previous conservation management plans were working under the assumption of extreme genetic variation being lost, the NHC data allowed for smaller manipulations to be made that still reaches for the goal of a stable population but less of an impact on the surrounding environment.

*Poster Session: Wednesday, April 20, 2011 6:00-7:00 CH 107*

### ***Species Inhabitation and Regeneration in Tree Fall Gaps vs. Non-Gaps***

Nathan Lanier

Faculty Mentor: Fredrick Singer

Tree fall gaps, both spontaneous and anthropogenic, exhibit distinctive patterns of species regeneration, distribution, and abundance in comparison to surrounding understory. Tree gaps are caused when large trees fall over, resulting in gaps in the overhead canopy. The dispersion and abundance of species seen in these environments may differ from what we see in non-gaps. Some studies have shown that while species richness may not deviate that much between gaps and non-gaps, the order of species abundance tends to change significantly. I studied ten naturally occurring tree fall gaps, and established ten control plots at Selu Conservancy to compare sapling ratios, arthropod dispersion and abundance, and the abundance of salamanders per unit of cover. I also compared vertebrate activity and visitation in gaps versus control plots utilizing the presence of vertebrate scat. I assessed the hypothesis that gaps would have more shade intolerant plant species and more herbivores that feed on these plants, including insect and vertebrate herbivores. I also proposed that gaps would have a greater number of salamanders that prey on these insects, in comparison to control plots.

*Oral Presentation: Tuesday, April 19, 2011 8:00-8:15 CH 107*

### ***Understanding the Mechanisms Involved in the Stereotype Threat Effect for Women and Math Performance.***

Emily Latimer, Brittany Hiben, and Alynn Gordon

Faculty Mentor: Jeffery Aspelmeier

Studies of Stereotype Threat show that reminding women about stereotypes regarding women being poor at math causes math competent women to do more poorly on difficult math tasks. The Integrated Process Model

(Schmader, Johns, & Forbes, 2008) suggest that stereotype threat is the result of the influence of self-control attempts that result from activation of the stereotype. The present study tests the hypothesis that taking away a person's ability to exercise self-control will reduce the effects of stereotype threat. Approximately 150 women were recruited from the Psychology Department participant pool at Radford University. After completing a measure of perceived math competence, randomly assigned groups completed either a writing task that depletes self-control resources or a control task. Next randomly assigned groups completed a series of math word problems after either being reminded of the stereotype or after getting a counter-stereotype message. Among women exposed to stereotype threat, it is expected that women high in math competence who have been depleted of self-control resources will correctly solve more math problems than math competent women who have not been depleted. Among women who have not been exposed to stereotype threat, it is expected that math competent women who have been depleted of self-regulation resources will perform worse than women who have not been depleted.

*Oral Presentation: Thursday, April 21, 2011 3:15 Heth Hall 014*

***Investigating the Effects of Prescribed Fire on Soil and Vegetation Properties at RU's Selu Conservancy***

Tessa Law, Lora Wagner, and Katie King

Faculty Mentor: Karen Franci

The goal of our project was to investigate the effects of prescribed fire on soil and vegetation properties at Radford University's Selu Conservancy. In our experiment we surveyed the plots once pre-burned, once initially following the burn, and once three weeks after the burn. In six 10m x 10m plots, measurements and tests were completed for soil regarding soil texture, soil moisture, soil pH, and organic matter. For vegetation we determined the total vegetation volume and the vertical distribution of vegetation (using range poles) and the percent coverage of major plant forms, including invasive species. Each measurement was taken pre-burned and will be compared to post-burn data initially following the burn and several weeks after. We predict that one week after the burn, organic matter of the soil will decrease, but there will be an increase in soil pH. By week three, there will be more organic matter. The total vegetation volume and vertical diversity will be very low one week after the burn. The percent cover vegetation will change in that the cover of invasive species will decrease and there will be a significant amount of bare ground. Three weeks after the burn, the vegetation will be increasing, and close to 100% coverage of grass.

*Poster Session: Wednesday, April 20, 2011 6:00-7:00 CH 107*

***Hopeless Resistance: The Self-Look in Carson McCullers's The Heart Is a Lonely Hunter***

Claire E. Lenviel

Faculty Mentor: Paul Witkowsky

In Carson McCullers's first novel, *The Heart Is a Lonely Hunter*, human relationships are explored most typically on a macro-structural level addressing race, class, and gender tensions. While these structures influence the characters of the book, I suggest that the novel can and should be explored on a more fundamental human level, one that affects all humans in relation with others. Using Jean-Paul Sartre's theory of "the look" from *Being and Nothingness* reveals how the characters are symbolic of our fated isolation through the discrepancies between the Self and the Other. In reaction to the limitations the Other places on the Self, the characters search for ways to escape, overcome, or cope with the look. The main characters, with the exception of Biff who copes just as Sartre recommends, attempt to challenge the freedom of the Other by determining their own being-for-others, their own observable identity. This act of self-determination, the self-look, describes the intent of the characters to control their own objectification by being simultaneously subject and object, which Sartre himself declares impossible. This paper, in addition to presenting an alternative reading of Carson McCullers's most famous novel, transcends the literature itself as it comments on a fundamental dilemma of human existence. When studying the limitations of the look, a possible negotiation in the form of the self-look, and its inevitable failure, we see more clearly the overwhelming power of the look and the immense challenge in finding ways to cope with or resist against our inevitable objectification.

*Poster Session: Tuesday, April 19, 2011 2:00-4:00 Heth Hall 022*

### ***Hide in Plain Sight: Evaluation of Frozen Cut Marks on the Ribs of Sus scrofa***

Jason Lesko

Faculty Mentor: Donna C. Boyd

Previous research on human decomposition has shown a multitude of factors affecting the rate and manner of decomposition. The relationship between these factors and evidence for perimortem and postmortem trauma is also not fully understood. MacAulay et al (2009) studied the effects of decomposition and weathering on remains undergoing gunshot trauma. However, the effects of short and long term exposure to extreme cold or frozen environments on bone has not been thoroughly documented. A study by Tersigni (2007) demonstrates that we cannot rule out the possibility of significant changes occurring in the structure of bone that has been frozen. The purpose of this study is to examine the effects and possible changes in cut mark trauma on bones in a frozen context. The current research involves placing cut marks on the ribs of a sample of deceased pigs (*Sus scrofa*) and placing two groups of these ribs in two different contexts--one frozen and one non-frozen but buried in the ground. The purpose of the study is to determine the effects of ice and frozen climates on perimortem and postmortem sharp force traumatized bone. This will be conducted over a short time period, with the potential for extending the results to a much longer time period. Based on previous research by MacAulay et al. (2009), it is hypothesized here that while the cut marks made to these frozen ribs will still be identifiable, they will have an appearance that is atypical of cut marks found on non-frozen remains. Discussion of the macroscopic and microscopic changes associated with these frozen samples will be included in this presentation. These results will be applicable to the identification of perimortem and postmortem trauma in human remains recovered from frigid environments.

*Special Session: Wednesday, April 20, 2011 10:00-11:00 Heth Hall 016*

### ***How Geographic Location Affects Environmental Attitudes and Behaviors***

Stephen Lesiv

Faculty Mentor: Jeanne Mekolichick

Research on environmental attitudes and behaviors has been an important topic facing social scientists. In my research, I determined how geographic location affects these environmental attitudes and behaviors. I predicted that respondents from rural areas were more likely to have a more positive attitude towards the environment and also more positive environmental behaviors. My online Qualtrics survey yielded 65 respondents and the results proved my hypothesis to be somewhat correct. Respondents' attitudes towards environmental attitude from all geographic locations (Urban, Suburban, Rural) were all relatively uniform, most responding positively regarding their attitude toward the environment. Like the environmental attitudes, respondents' environmental behaviors were constant regardless of geographic location. In further research, I would like to acquire more respondents therefore yielding more accurate results concerning how a person's sense of geographic location can affect their environmental attitude and behaviors. Additionally, because only college students over the age of 18 were surveyed, it does not demonstrate how the entire population feels and behaves towards the environment.

*Oral Presentation: Tuesday, April 19, 2011 9:00-10:00 Heth Hall 022*

### ***Musical Ethnography of a Close Friend***

Stephen Lesiv

Faculty Mentor: Stevan Jackson

Studying music and its implications has always been intriguing to ethnographers worldwide. In my research, I studied how a close friend of mine who creates mostly hip-hop music has assimilated into our music culture. The purpose of my research is to examine how a person can go from having a dream of creating music that the masses will like to actually achieving this dream, and how modern technology affects this. By using actual performances and in-depth interviews, I studied the inner workings of creating music. It seems people nowadays are more likely to classify themselves with music that fits their own, unique generation. The implications of my work are to demonstrate how artists can move progressively to the status of an artist and performer to who people can identify.

*Oral Presentation: Wednesday, April 20, 2011 12:15-12:30 Heth Hall 018*

***Genetics: The best or worst thing to expose***

Max Loomer

Faculty Mentor: Brenta Blevins

Could genetics be the next thing employers will be looking at? This project analyzed how close society is to using our genetics in ways we've never seen such as finding new cures and maybe even genetic profiling in the business world. Based off the 1997 movie Gattaca in which they portray a world that has become just that.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

***The increasing popularity of Synthetic Marijuana: The impact of the DEA's recent ban***

Roland C. Macher

Faculty Mentor: Tod Burke and Stephen Owen

This paper looks at the impact synthetic marijuana has had on society over the past few years and the issues that have arisen in a legal stand point. The DEA has recently placed a one year temporary restriction on the use of five synthetic chemicals that are being used to enhance plants and smoked, creating a euphoric –like high similar to that of marijuana. There is very little information in regards to what synthetic marijuana is as well as the effects that these chemicals have on the human body. Nevertheless, the FDA has deemed them unsafe for human consumption and advice against its use. Poison Control centers and Emergency rooms across the country have seen a major increase in the number of calls and visits related to synthetic marijuana, now labeled as a Schedule 1 narcotic. The concerns of medical and law enforcement officials is evident poses the question as to how to remove this drug from society effectively.

*Oral Presentation: Tuesday, April 19, 2011 4:45-5:00 Heth Hall 018*

***Radiation fallout in the novel "On the Beach"***

Allison Marquardt

Faculty Mentor: Michelle Ren

My research is based on the novel, On the Beach, by Nevil Shute, and the potential problems of radiation fallout.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

***Federal & State Adult Offender Re-entry Initiatives***

Patrice L. Massey

Faculty Mentor: Lynn Taylor; Alice King-Ingham Moore

There has been an overwhelming amount of research conducted about the criminal justice system's unsuccessfulness in providing adequate rehabilitative programs. The purpose of this paper is twofold: the criminal justice system will be reviewed including but not limited to rehabilitative programs, recidivism rates, and societal views. In addition to an overview, federal (The Second Chance Act of 2007) and Virginia State mandates on adult re-entry initiatives will be introduced, compared and contrasted as a lens for evaluating the criminal justice system as a whole. This paper will explore theoretical perspectives and/or models: Incremental and Elite Models are discussed as it relates to federal policy (The Second Chance Act of 2007) and Labeling Theory is discussed as it relates to offenders and recidivism rates. A critical literature review was conducted to explore the components of empirically based criminal justice programs that are successful with offender re-entry and reducing recidivism rates. The criminal justice system is just one social institution that has an effect on hundreds of thousands of individuals within society. In conclusion, this paper will also explore societal implications as it relates to social work practice.

*Poster Session: Tuesday, April 19, 2011 2:00-4:00 Heth Hall 022*

***Music Attitudes***

Christina Martin

Faculty Mentor: Stevan Jackson

The purpose of my research is to show the opinions of people on different types of music in various cultures. My goal is to find out the attitudes of those being surveyed, including vocal range quality of voice, and the interest of the songs. The focus of my study is to seek the opinions and wide views of different people and their thoughts on different qualities of what they consider music. My research includes a variety of topics in a survey using questions addressing different generations (new- old), voice quality (good -bad), vocal range (low –high), amount of interest in the song (none-very) and various other questions.

*Oral Presentation: Tuesday, April 19, 2011 3:45-4:15 Heth Hall 045*

***Capstone Project: "Artist Shrine"***

Kathryn Mattox

Faculty Mentor: Alison Pack

My capstone project showcases my skills I have learned in jewelry and metalwork. The “Artist Shrine” is a large copper box that is divided into four sections, which holds and displays the other components. They consist of a lost-wax cast silver female figure, a fine silver woven chain with Raven’s Wing pearls and silver beads in its center, a phoenix upon a cross as the pendent, the clasp is a crown of thorns, three nails as the toggle three vine cast rings and will have one other piece. My shrine is a reflection of the Medieval Christian reliquaries and shrines. Artists, like Joseph Cornell, a sculptor and Mariko Kusumoto, a metalsmith, also inspired my shrine; both of their works revolve around creating boxes. The accompanying poster includes my progression in creating these pieces through digital pictures, how my work relates to what is being done in jewelry and the art world.

*Poster Session: Wednesday, April 20, 2011 2:00-4:00 Heth Hall 014*

***Thermodynamic Investigation of Ternary Complex Formation of Ferrioxamine B and Imidazole***

Rebecca L. Mayfield

Faculty Mentor: J.I. Wirgau

The reduction of ferrioxamine B by ascorbate has been found to be exceedingly slow in vitro, but is facilitated by the presence of iron(II) specific chelators including bipyridine and phenanthroline. This investigation studied the ability of imidazole a monodentate iron(II) chelator to form a ternary complex with ferrioxamine B. The formation of a ternary complex has been previously determined to play an important role in the reduction of ferrioxamine B by biologically reducing agents. Spectrophotometric titration data is given to support the formation of a ternary complex between ferrioxamine B and imidazole. The stoichiometry and formation constant for the formation of the ternary complex were determined. The results reported here are relevant to the use of ferrioxamine B and ascorbic acid in combination therapy and may provide an explanation for the variability in the effectiveness of this combination therapy with variations in ascorbate/ferrioxamine B ratio.

*Oral Presentation: Tuesday, April 19, 2011 2:30-2:45 Heth Hall 045*

***The Effect of Controlled Burns on Small Mammals at Radford University Selu Conservancy***

Kyle Maziariski, Kirbie Lapins, Jacob Bland, Lauren Edmondson, Lelia Overton

Faculty Mentor: Karen Francl

We examined the effects of a prescribed burn on the small mammals in a designated field at Selu Conservancy. The group hypothesized that the metrics of the mammal community, like species richness and the number of individuals captured per trapping effort, would be largely unaffected. To test this hypothesis, three survey periods were surveyed using Sherman live traps. One survey period was before the fire on March 17, and two periods were 1 and 3 weeks post-fire. For each survey period, there were 250 traps spread out among a total of five lines, spaced five meters apart. The traps were set on Thursday afternoons and checked Friday morning and afternoon, and Saturday morning on February 18-19, March 25-26, and April 7-8, 2011. The species, sex, age, weight,

whether they had been caught before, and their measurements were all recorded each time the animals were captured. Before the burn we captured two deer or white-footed mice (*Peromyscus*) and three meadow voles (*Microtus pennsylvanicus*). Post-burn surveys are on-going.

*Poster Session: Wednesday, April 20, 2011 6:00-7:00 CH 107*

### ***The Freemasons***

Colleen McBride and Tessa Law

Faculty Mentor: Joann Asbury

One of the biggest secrets of American history lies in the mystery of the freemasons. The point of our presentation aims at uncovering many of the myths, rituals, and symbols of the freemasons. As depicted in Poe's *Cask of Amontillado* and today's hit movie, *National Treasure*, the air of mystery around the freemasons has lingered over the course of the years. Freemasonry remains a key component to studying literature of our time and of the past. Our goal is to gather research to signify the importance of the fraternity as a key reference in literature.

*Oral Presentation: Wednesday, April, 20, 2011 9:00-:10:30 Heth 018*

### ***General Petraeus - The Adaptive Leader***

Blake McClary

Faculty Mentor: Sandra French

General Petraeus has become a household name to most Americans today, yet still most people couldn't explain what he did. Petraeus not only crafted and commanded the successful 'surge' into Iraq in 2007, but more importantly instilled a new style of thinking into the Army. To be more specific, an open-minded Army that is now capable of more than just destruction, but of also rebuilding relations and completing what was previously unorthodox. Petraeus still stays true to the old-school Army roots, simultaneously being the forefront of this evolution in thinking that has been instrumental in our peace keeping efforts overseas. "The truth is not found in any one school of thought, and arguably it's found in discussion among them," he says. "This is a flexibility of mind that really helps you when you are in ambiguous, tough situations." My poster will discuss the specifics of his leadership style and demonstrate its success in Iraq.

*Special Session: Thursday, April 21, 2011 10:30-12:30 Heth Hall 043*

### ***Present and Potencial Problems with Pollution***

Catherine McClellan

Faculty Mentor: Michelle Ren

I will be researching how pollution is currently effecting our environemt as well as relating it to the film *Wall-e*.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### ***Societal Collapse***

Zach McCoy

Faculty Mentor: Michelle Ren

Based on the problem of societal collapse in the 2006 film "*Children of Men*."

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### ***Global Warming in "The Day After Tomorrow"***

Jordan McDonald

Faculty Mentor: Michele Ren, Lovina Goad

Will the world soon come to an end due to the effects of global warming? This poster presentation will present the issues of global warming, exactly what it is, what its effects are, and what can be done to prevent it. The movie, "The Day After Tomorrow", is referred to, to help provide examples and comparisons, to what could and could not potentially happen in the years to come. The purpose of this poster is to simplify and better explain the threats of global warming in a way that catches the viewers' attention and makes them more interested about the topic.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

***Psychoanalysis within Inception***

Molly McDowell

Faculty Mentor: Michele Ren, Lovina Goad

This presentation will explore the topic of psychoanalysis and how it relates to the practices used by the characters in the film "Inception". In the same way the characters construct elaborate schemes in order to plant or extract ideas, thoughts, and secrets from people's dreams; psychoanalysis is used by therapists to delve into

dreams, extract repressed memories, and to analyze thoughts. This presentation will challenge the validity and accuracy of psychoanalysis being trusted as a proven method of medical science, and more importantly the effect psychoanalysis ultimately has on patients after undergoing the process.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

***V for Vendetta and the Distrust in Government***

Colleen McGrath

Faculty Mentor: Brenta Blevins

The social issue looked at in this presentation is the distrust in the government and how the government has brought this upon itself. V for Vendetta is a perfect allusion to what some people fear from the government; it describes a situation in which a totalitarian government overuses its power over its people and how a man changed by a cruel experiment fights back. This issue will be also based on scandals the government has already done and are being still investigated to this day.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

***Adolescent exposure to NMDA antagonists in rats: An animal model of schizophrenia?***

Angel Medina, Andrew Tippie, Amanda Adams

Faculty Mentor: Jeffery Willner

The NMDA (N-Methyl-D-Aspartate) receptor for the neurotransmitter glutamate has been implicated in a variety of important functions in the brain. Activation of this receptor, for example, plays a critical role in triggering long-term potentiation in the hippocampus, a widely studied cellular model of learning and memory in the mammalian brain. More recently, evidence has been accumulating that dysfunction of NMDA receptors in the brain may play an important role in the onset and development of schizophrenia in humans. // We examined a possible role for NMDA receptors in schizophrenia by examining whether interference with these receptors during adolescent development would have lasting effects on their functioning in adulthood. Adolescent rats received daily, subcutaneous injections of saline or one of two doses (.05 or .1 mg/kg) of MK-801, a potent NMDA antagonist, between postnatal days 35 and 49. Upon reaching adulthood (90 days postnatal), the rats were tested on two behavioral tasks (latent inhibition and grooming) often studied in animal models of schizophrenia, and a spatial strategy utilization task that has been used to assess hippocampal function. Results obtained on the various behavioral tasks will be presented, and the adequacy of adolescent interference with NMDA receptor functioning as a model of schizophrenia in adults will be discussed.

*Poster Session: Thursday, April 21, 2011 2:00-4:00 Heth Hall 016*

***Reflections on Leadership: General Robert E. Lee***

Katelyn Meeks

Faculty Mentor: Sandra French

Although his story was not a complete success, General Robert E. Lee is one of history's most celebrated leaders. Lee was often regarded as a dutiful servant of his country and many believed when given the opportunity, he would prove himself. The Mexican War in 1846 was the first time Lee faced battle and this became a defining moment in Lee's military career. Shortly after, he became the Superintendent at West Point. It was here that Lee picked up the traits that allowed him to inspire and lead, he was the kind of man that people would fight for. Lee's life soon changed though. In April of 1861, Virginia quit the union. As a man of duty and his state, Lee resigned commission in the Army reflecting his beliefs of duty, devotion, and loyalty. Lee began to shine as a transformational leader after becoming a general in the confederate army within six months. He was called to lead an army in 1862 and immediately took command; Lee was explained as "audacity personified". He always instilled expectations of victory and stressed a sense of morale through tough times. His troops followed him proudly and undoubtedly. In April of 1865, Lee surrendered and ended the American Civil War at Appomattox. General Grant of the Potomac army respected Lee and as Lee exited the Appomattox Courthouse, he was cheered by the confederates and saluted by the union. General Lee, although not perfect, nor always successful, lead in ways that are still admired today.

*Special Session: Thursday, April 21, 2011 10:30-12:30 Heth Hall 043*

### ***Developing Democracies***

Joshua Melvin

Faculty Mentor: James Radford

Developing liberal democracies around the world have become important throughout the world today with established governments helping to devote resources towards their development. Through the use of different books, case studies and research, an understanding of the ways in which these newly forming liberal democracies are influenced by forces from the international and regional community has been gained. The end result of the research shows that a mixed level of success has been reached in developing liberal democracies throughout the world.

*Oral Presentation: Thursday, April 21, 2011 1:00-1:15 Heth Hall 044*

### ***DNA extraction from Blue Bird Blood Samples for future DNA fingerprint analysis***

Luckele T.C. Milord

Faculty Mentor: Robert Sheehy

In order to understand songbird mating systems, it is important to understand the factors which influence the tendency to mate outside their pair bond (extra pair copulations or EPC). In this study, we will attempt to assess the frequency of EPC and to identify conditions which may lead to an increase tendency of birds to be involved in EPCs. The examination of an offspring's parentage can assess the presence or absence of extra pair copulation. Samples of blood from both male and female Eastern blue birds (*Sialia sialis*) were fractionated to isolate deoxyribonucleic acid (DNA). Using modified extraction methods from the QIAGEN Dneasy Blood and Tissue kit, we were able to obtain adequate concentration of DNA for further analysis. DNA yields are well affected by the volume/concentration of the amalgamate enzymes and buffer solutions, and lengthened incubation periods and the initial volume of blood. Quantification of DNA was determined by spectrophotometry. The evaluation of the quality of DNA was provided by gel electrophoresis through a 1.0% agarose gel. Results show standardized high molecular weights for extracted DNA samples. We will use the isolated DNA with Simple Tandem Repeat (STR) analysis for paternity testing to identify genetic relationships among individuals of nesting groups of blue birds.

*Poster Presentation: Tuesday, April 19, 2011 6:00-7:00 CH 107*

### ***Thomas J. "Stonewall" Jackson: Leadership and Influence among the Confederates***

Les Miller

Faculty Mentor: Sandra French

Arguably the most recognizable general to lead during the American Civil War was Thomas "Stonewall" Jackson. Jackson came from humble beginnings and tragedy to become an almost mythical Greek-like god for the Confederate army. His rise began in the Mexican War in 1846 where he was able to hone his skills as a leader and master of military maneuvers. In 1851 he was appointed to the Virginia Military Institute as a professor of

artillery and remained there until the breakout of the war in 1861. The name “Stonewall” instilled fear into most Yankee soldiers and allowed Jackson to have the upper hand in most engagements. Jackson's humbleness and somewhat introverted nature allowed him to find common ground with his men and to motivate them. This helped “The Stonewall brigade” believe in the cause for which they were fighting and is undoubtedly the most important part of his legacy. Jackson was a transformational leader whose mastery of the military maneuvers and leadership befuddled Union forces throughout his tenure in the Confederate Army. Although at the time he was arguably the most famous general in the world, he was mortally wounded by his own men at the Battle of Chancellorsville. Had he not been killed, it is hypothesized that the war could have gone another direction but his leadership and legend would be revered for decades to come.

*Special Session: Thursday, April 21, 2011 10:30-12:30 Heth Hall 043*

***Social Media, Organizational Websites and Public Relations: Establishing Relationships and Reducing Uncertainty with Stakeholders***

Les Miller, Rachel Greenway, and Laura John

Faculty Mentor: John Brummette

Public relations is utilized by organizations to establish mutually advantageous relationships with stakeholders that determine their survival and profitability. Social media and enhanced organizational websites have become important tools that have redefined the conceptualization of the modern consumer and business relationship, and more importantly, the relationship formation strategies used by organizations and public relations practitioners. The purpose of this study is to gain a deeper understanding the relational uncertainty that exists between consumers and businesses and how it is effectively reduced by consumers using online media. Data obtained from 2 focus groups will be analyzed using grounded theory to provide a deeper understanding of consumer uncertainty. This study also discusses several uncertainty reduction strategies that can be used by public relations practitioners to facilitate the formation of relationships with consumers.

*Oral Presentation: Tuesday, April 19, 2011 2:15-2:30 Heth Hall 045*

***The Search for Proteins That Interact with HIRA***

Allie Mills

Faculty Mentor: Tara Phelps-Durr

HIRA (HISTONE REPRESSION A) is a chromatin remodeling protein that impacts development by influencing the packaging of DNA. Specifically, HIRA is known to promote cell differentiation by turning off the KNOX genes, a group of genes that maintain stem cell identity. HIRA is highly conserved in everything from yeast to humans. Defects in HIRA can lead to problems in humans such as DiGeorge syndrome, a craniofacial and heart malformation disorder. Severe mutations in HIRA cause embryo lethality in both plants and animals. In this study, bioinformatics research was performed to identify potential protein interactors of HIRA including: MULTI SUPPRESSOR OF IRA 1, HISTONE DEACETYLASE 6, FACIATA2, and ANTI-SILENCING FUNCTION1a. A CPRG assay was carried out to test the interactions between HIRA and the proteins found in the bioinformatics research. Identifying proteins that interact with HIRA will help form a better understanding of HIRA's role in development.

*Oral Presentation: Tuesday, April 19, 2011 5:00-5:15 CH 107*

***Jazz Fusion: A History***

Anthony Mollignoni

Faculty Mentor: Stevan Jackson

Jazz fusion remains a misunderstood genre within the context of jazz and with my project I delve into the evolution of jazz fusion/jazz rock in order to show its importance and relevance to world music. My research includes its early beginnings with legendary influences such as Miles Davis, John Coltrane, Ornette Coleman, Herbie Hancock, and others. This paper elaborates on the stylistic variations of the genre as well the collaborative

efforts of many future pioneers of fusion with the jazz greats, such as Miles Davis 1969's Bitches Brew LP which featured John McLaughlin, Chick Corea, Josef Zawinul, and Wayne Shorter. My research involves interviews via email with notable jazz musicians such as Dave Holland, Chick Corea, Stanley Clarke, Lenny White, Al Di Meola, Herbie Hancock, Pat Metheny, and Wayne Shorter. With their interviews I will clarify the importance of this genre and its effect on the music culture past and present.

*Oral Presentation: Wednesday, April 20, 2011 4:15-4:30 Heth Hall 018*

### ***Islamic Decorative Arts***

Callan Moody

Faculty Mentor: Carlee Bradbury

Text is everywhere. We encounter it on a daily basis, in e-mails, on street signs, or coffee mugs. This text may seem generic and unimportant, but we still pay attention to it. We usually don't see this text as decorative or illustrative, but there are cultures that do. The Islamic material arts, during the 5th to 10th centuries, used text to decorate their ceramics, rather than decorative patterns and bright colors, for example, a plate dating from the 9th to the 10th centuries from Uzbekistan is only covered in monochromatic black text, that almost looks abstracted into a beautiful design. I will examine the idea of Islamic text as image, and to examine the meaning of the text selected to decorate the ceramics, as well as why it was selected. I will employ both new and traditional methods of studying art, as well as using my knowledge of the Arabic language and Arabic culture, to examine ceramics in the collections of the Museum of Fine Arts in Boston, as well as other museums in Boston and Washington D.C. The items from these collections will be my primary source materials, and help me to answer the research question of the role of text as image on Islamic decorative arts.

*Poster Session: Wednesday, April 20, 2011 2:00-4:00 Heth Hall 014*

### ***Apocalyptic Themes and Issues in Modern Film and Society***

Amy Moorcones

Faculty Mentor: Brenta Blevins

This project analyzed apocalyptic themes in our modern day society, specifically in film. The project focuses on the speculative fiction film Armageddon and its relation to real world issues. The project discusses the possible outcomes of a major apocalyptic event occurring in our modern day society, and touches on some efforts that NASA is making in order to prevent something major from occurring. As the year 2012 approaches, hysteria is already amounting about at a possible apocalyptic event. The topic of this project is relevant to the present day concerns of our society.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### ***Roman Goddesses and Their Role in Roman Republic Society***

Kimberly Moore

Faculty Mentor: Mark Munzinger

The proposed paper and presentation will focus on Roman goddesses at the time of the Roman Republic. Roman religion had a powerful influence on their society, just as many religions of today affect society. I will examine where the Roman goddesses came from and how affected Roman society and culture, especially as Roman lands expanded to incorporate land outside of Rome. Some of the Roman goddesses were adopted from cultures they encountered during this expansion, leading to a remarkable infusion of local deities into an extensive Roman domain. Religion plays an important role in culture and history for many societies, ancient and modern. In light of the strong influence Roman culture still has on the modern world, it is important to understand where these people and their culture came from. Since men have traditionally dominated many societies, including their roles in religious practice, the paper will inspect the less emphasized roles of the goddesses as well as discussing those who worshiped them and their importance to the religion and culture. The research will discover if female deities and their patrons affected culture to an extent similar to their male counterparts or if all females, goddesses included, were required to be submissive to male authority. Goddesses in the Roman Republic were numerous

and powerful, and many acts of worship and sacrifice were performed in their name. Also included in this paper are some of the reasons Roman citizens had for worshipping the many goddesses, especially those adopted from other cultures. Aside from being an interesting discussion from a historical perspective, this paper may provide insights into some of today's traditional view of the Roman Republic and how its culture still affects people today.

***Authentic Leadership--Intrapersonal Approach***

Jana M. Mosby

Faculty Mentor: Sandra French

My presentation will focus on the study of Authentic Leadership, more specially focused on the intrapersonal definition. Leaders use their self-concept to lead their followers. The leader attaches his or her life experiences to their leadership.

*Special Session: Thursday, April 21, 2011 10:30-12:30 Heth Hall 043*

***Overuse of Technology in the movie I, Robot***

Mike Mowery

Faculty Mentor: Michele Ren

I plan to show the abuse of technology showed in the movie I, Robot and the series of books I, Robot written by Isaac Asimov.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

***Critical Analysis of Radford University Athletics***

Becca Moyer, Alex Poletti, Bekah Willetts, James Cooke

Faculty Mentor: April J Asbury

Our group is analyzing the factors of Radford University club sports teams and what it takes to become divisional sports team. We are tying this into our core curriculum because we are doing a critical analysis of the issues of sports teams that affects students.

*Oral Presentation: Tuesday, April 19, 2011 11:00-12:45 Heth Hall 045*

***Gender Identification and Workout Goals: A Study of Undergraduate Students***

Daniel Mozer

Faculty Mentor: Jeanne Mekolichick

Of the many differences individuals have throughout society, one's sex is the first difference that is determined. Anything from what clothes someone wears or how an individual interacts with others is determined by their sex. The process of socialization has created two sets of characteristics, one for males and another for females. This process is the main reason for the social differences between males and females. Thus, gender and the process of gender socialization have created different workout goals or motivations for men and women to exercise. The main purpose of this study is to examine a possible relationship between men and women's workout goals. The participants in this study were 110 undergraduate students (45 males; 65 females). Participants completed an anonymous online survey that detailed the amount of time they exercise, what types of exercises they participate in, different workout goals, personal attributes, and demographics that included sex, age, and academic year. T-test analyses revealed a significant difference between male and female workout motivations in the following areas, weight management, increasing strength, competition and challenge. The implication of these preliminary results suggests that there is a difference in men and women's workout goals. These findings are important and are a foundation for future research in this area.

*Oral Presentation: Tuesday, April 19, 2011 10:00-11:00 Heth Hall 022*

***Winston Churchill's Transformational Leadership***

Troy Nardone tnardone@radford.edu

Faculty Mentor: Sandra French

*Special Session: Thursday, April 21, 2011 10:30-12:30 Heth Hall 043*

***The Ethnomusicology of Video Games***

Aisilinn Lorraine Nelson

Faculty Mentor: Stevan Jackson

The purpose of my research is to see how video game soundtracks have an impact on an individual's life. My goal is to find the correlation between the gender and age of an individual and how the soundtracks have had an effect on their memories, playing abilities, and with whom they decide to have social interactions. I am also looking into whether these individuals consider themselves to be "gamers" or not and the relevance of that. My key methodology for gathering data is the use of surveys. My preliminary results suggest that more men between the ages of 18-24 will have been affected the most by the music in videogames. This is a relevant scientific study because stereotypically men play videogames more than women.

*Oral Presentation: Wednesday, April 20, 2011 3:00-3:15 Heth Hall 018*

***Possibility of humans living on Mars - Red Planet***

Matthew Nelson

Faculty Mentor: Michele Ren

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

***Consumerism Today: No One is Toying With Gender***

Brooke Nelson

Faculty Mentor: Carla Corroto

I conducted content analysis of children's toys at a national retail outlet to see if toys are still a medium in the social construction of gender and socialization. In a Leesburg, VA store I observed toys and people buying toys, and took extensive field notes and photographs. I found that toys are a major catalyst in socialization and are props for how children "do" gender. The colors and textures of the products were traditionally gendered - dark and rough for boys or light and soft for girls. The aisle displays were also color-coded: the girls' aisles were pink and the boys' aisles blue. Boys were able to choose from action figures to trucks to musical instruments. Girls were generally given dolls and dress up clothes. Also, although these toys were marketed toward the different genders, it was more acceptable for girls to look at boys' toys than boys to look at girls' toys. I found that not many toys challenged the traditional gender roles. Furthermore, I noticed that there were many examples of identical toys with different names and different colors marketed toward boys or girls. In sum, toys enforce gendered expectations with few exceptions.

*Panel Discussion: Thursday, April 21, 2011 1:15 Heth Hall 014*

***Exploring roles of the RFamide peptides in food intake regulation.***

Brandon Newmyer

Faculty Mentor: Mark Cline

Members of the RFamide family of neurotransmitters arose early in evolution, are found in a wide range of species, and cause a variety of physiological responses. Recently, a focus of our lab group has been to evaluate the appetite-related roles of some members from this group, especially members of the neuropeptide FF (NPFF) subfamily. We have demonstrated the anorexigenic effects of NPFF, neuropeptide VF (NPVF), neuropeptide AF (NPAF) and neuropeptide SF (NSPF) using avian models. Of these, NPAF exerts the highest magnitude and longest duration of cumulative anorexia. Our results demonstrate that most of these effects are mediated via the dorsomedial nucleus, the ventromedial hypothalamus, and the paraventricular nucleus in most cases. In several cases we have demonstrated that this group's induced anorexia is mediated via interactions of the innate opioid

and orexigenic systems. More recently we have expanded our testing into mammalian models, and documented the anorexigenic roles of NPVF, NPAF, and LPLRFamide. We have also demonstrated the differential effects of NPAF in unique obese and anorexic models, which may in part be responsible for their opposing phenotypes. The purpose of this presentation is to summarize our results and to present proposed mechanisms through which they affect food intake.

*Oral Presentation: Wednesday, April 20, 2011 5:30-5:45 CH 107*

***Fueling the Fire: Reflections on a Peer Mentoring Experience for a Non-Majors Environmental Biology Field Project***

Kiersten Newtoff and Kelsey Townsend

Faculty Mentor: Karen Francel

In Spring 2011, we acted as student mentors for Dr. Karen Francel's Honors section of Environmental Biology for non-majors. We assisted with a semester-long field project that examined the short-term effects of fire on vegetation, soils, birds and mammals in a field at Radford University's Selu Conservancy (Montgomery County). As peer mentors, we assisted with the techniques associated with data collection and analysis. Because the mentors are current Biology majors, the students in the class were able to look to us as a resource and a guide, as well as a fellow student. As mentors, we received invaluable experience not only working in the lab and field, but working as a model for students who originally had little exposure to topics in field biology. Our poster focuses on our experiences with non-Biology majors in an Honors Biology course, how we helped to broaden the students' academic horizons, and we mentors also gained invaluable experiences as teachers and leaders.

*Poster Session: Wednesday, April 20, 2011 6:00-7:00 CH 107*

***Habitat susceptibility to invasive plant species at Selu Conservancy, southwest Virginia***

Kiersten Newtoff and Weston Rogers

Faculty Mentor: Christine Small

Non-native invasive species are a leading cause of global biodiversity loss; they disrupt natural ecosystem integrity by displacing native species, interrupt succession, and alter food webs. Our objective was to characterize habitats and site conditions that inhibit non-native invasive plants and those that encourage greater prevalence of invasives. We sampled 140 plots (100-400 m<sup>2</sup>) in forests, fields, and wetlands at Selu Conservancy, a 156 ha natural area in southwest Virginia. In each plot, we measured tree, shrub, and herbaceous species abundance and characterized site conditions (e.g., topography, light, soil pH and organic matter). Non-native species were found in nearly all plots (87.9%). The most prevalent invasives were Japanese honeysuckle (54.3% frequency) and multiflora rose (62.9%). Non-Metric Multidimensional Scaling ordination analysis revealed that invasive abundance was positively correlated with light availability ( $r = 0.51$ ) and soil pH (0.30), particularly in wetlands and fields, and negatively correlated with tree richness (-0.54) and basal area (-0.56) in forests. From this, we conclude that invasive species at Selu Conservancy are highly competitive in landscapes with greater abiotic resource availability (e.g., light, soil fertility, moisture) and inhibited in resource poor habitats. By identifying biotic and abiotic conditions most susceptible to invasives, land managers can more effectively concentrate their resources on these threatened habitats.

*Oral Presentation: Wednesday, April 20, 2011 7:30-7:45 CH 107*

***Bio-engineering in The Postman***

Josh Oakley

Faculty Mentor: Michelle Ren, Lovina Goad

One main factor in the movie *The Postman* is bio-engineering and the destruction of society.

*Special Poster*

*r Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

***Ghost Stories from Virginia***

Megan O'Dowd, Laura Phelps  
Faculty Mentor: JoAnn Asbury

We are presenting our project on ghost stories from different areas of Virginia. All of the ghost stories we're presenting on are historical landmarks. They were all built between the 18th and 20th centuries.

*Oral Presentation: Wednesday, April, 20, 2011 9:00-10:30 Heth 018*

### ***Regenerative Rending***

Lacie Omph

Faculty Mentor: Danah Bella

“Regenerative Rending” is a choreographic study investigating superficial and profound borders within society, including culture, class, religion, maturation, relationships, and race. During the research process, the focus will be directed toward the development, perpetuation, and deconstruction of said divisions. Furthermore, the choreographic study will delve into individual perspectives as well as individual experiences within societal borders. Therefore, the methodology will include theories, studies, multimedia, literature, folk dances, and one-on-one interviews. The findings will culminate in a thirty to forty minute choreographic project to be disseminated to my peers. Movement has the potential to evoke conversation relating to the theme of the choreographic study as well as allowing the opportunity to reexamine one’s opinions and views. Throughout the choreographic study, movement phrases will pertain to the development, perpetuation, and deconstruction of said divisions within society. As such, my peers will have the opportunity to discuss with the choreographer her findings as well as their reaction to the movement presented.

*Oral Presentation: Tuesday, April 19, 2011 2:30-2:45 Heth Hall 018*

### ***Nuclear Family Connectivity and Academic Performance***

Amy Owens

Faculty Mentor: Jeanne Mekolichick

The nuclear family, consisting of father, mother, and their children, is a primary social group bearing great influence, through intra-member interactions, on the development of personal characteristics of members within the group. These interactions can be understood as the triangular, emotional molecule that shapes the human over the course of life. This research claims that college students who spend more time interacting with members of their nuclear family have higher grade point averages than college students who spend less time interacting with members of their nuclear family. In order to investigate this claim, data was collected from a population sample of 55 undergraduate college students by using an online anonymous survey. In a preliminary analysis, this qualitative study found associations between self reported grade point averages of college students, and the self reported amount of time these college students spend with their nuclear family members on a weekly basis per semester. These preliminary results support the idea that primary groups influence personal characteristics of members within the group. Future research might focus on categorizing these interactions within the group, as some interactions may be more influential than others.

*Oral Presentation: Thursday, April 21, 2011 11:00-12:00 Heth Hall 014*

### ***Genetic Engineering in "My Sister's Keeper"***

Kelsey Page

Faculty Mentor: Michele Ren, Lovina Goad

Is it ethically and morally right for parents to choose the genetic make-up of their unborn child, like ordering off the dollar menu at McDonalds? This research analyzed genetic engineering and human reproduction, while discussing the moral and ethical issues involved. This is prevalent in the movie, My Sister’s Keeper, which walks a fine line between what is morally and ethically just in today’s society.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### ***Little Brother and Government Control of Technology***

Alex Palmer

Faculty Mentor: Brenta Blevins

For my topic I will be analyzing the effect of government control of technology, and comparing it to the book Little Brother. One real world example of this control is that the North Korean government is presently cutting off its citizens from information and communication technology. It has set up a domestic intranet to keep its citizens cut off from the outside world. How does such control affect a county's citizens?

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

***No Baby Stuff: An Analysis of Gender Control and Infants' Clothing***

Sheena Palmer

Faculty Mentor: Carla Corroto

The purpose of this study is to determine if or how outline infant and children's clothing reinforces gender identity. Babies and children are socialized from birth and this is influenced through consumer culture. By performing a detailed content analysis of the children's clothing department in a top-selling national retail store, I explore if and how consumer products are tailored to and create gender identities. This paper explains how marketing is used as an agent of social control and how consumer products are designed to reflect and reify gender norms.

*Panel Discussion: Thursday, April 21, 2011 1:45 Heth Hall 014*

***Factors Related to Occupational Differences in Divorce Rates***

Paul Park, Elizabeth Matt, Chad Carrick

Faculty Mentor: Michael Aamdot

A recent study by McCoy and Aamodt (2010) revealed great differences in divorce rates of employees in 450 occupations. Building upon that study, the current research attempts to explain these occupational differences by comparing occupational divorce rates with O\*NET occupational ratings of Work Values, Work Styles, Interests, Educational Requirements, Cognitive Ability, and Median Wage unique to those occupations. Additional relationships were drawn between divorce rates and fatality rates, though information regarding fatality rates-by occupation was somewhat limited to a handful of occupations. The goal was to determine whether any relationships existed between occupational divorce-rates and personal characteristics/attributes commonly reported by incumbents of those positions.

*Poster Session: Thursday, April 21, 2011 2:00-4:00 Heth Hall 016*

***Futuristic Robotics-I,Robot***

Ben Pasquel

Faculty Mentor: Michele Ren

A look at artificial intelligence and its uses in the short stories "I,Robot" made in the 1950's and its movie in 2004.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

***Lessons on the Court and Lessons on Life***

Megan Patrick

Faculty Mentor: Sandra French

I chose to compose a poster on Mike Krzyzewski, the head coach for the Duke Blue Devils men's basketball team. "Coach K", as he is commonly called, is a leader in my eyes not just because I am a Duke fan and "cameron crazy" at heart, but because he leads his team both on and off the court. Not only has he broken records as a coach, but he has also given his guidance and support to many spectacular athletes throughout his career.

*Special Session: Thursday, April 21, 2011 10:30-12:30 Heth Hall 043*

***Huey P. Newton***

LaMarke Patterson

Faculty Mentor: Sandra French

Huey P. Newton had an influential role in refocusing the civil rights movement's attention to the problems of the black community. Newton was able to tap into the frustration and anger of urban Blacks in order to bring to light

social injustice and change. Historians have devoted much attention of the early 1960's, to Malcolm X and Dr .Martin Luther King Jr., they have ignored the Black Panthers. The Panthers and Huey P. Newton's leadership of the Party are as significant to the Black freedom struggle as more widely known leaders of the Civil Rights Movement. His achievement orientated leadership as well as the traits that he inherently carries make Newtown one of the unsung heroes of the Civil Rights Movement.

*Special Session: Thursday, April 21, 2011 10:30-12:30 Heth Hall 043*

### ***Genetic Engineering and Cloning***

Regina Patterson

Faculty Mentor: Michele Ren, Lovina Goad

This exhibition will present research on genetic engineering and how it affects mankind. Genetic Engineering is the creation by collaborating different genes and DNA to form an organism. So is the formulating and cloning of extinct creatures using ancient DNA ethical?

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### ***What is in store for our Earth's future?***

Kelsey Pendergraft

Faculty Mentor: Michelle Ren, Lovina Goad

Will global warming cause weather patterns to destroy our future earth? With the research i have found on this topic i have found some scientific speculation on what is to come and what we can do to slow these effects down. My poster will present my research on what I have found on this topic. Maybe the weather will not turn out like in "The Day After Tomorrow" and destroy our environment but, what will happen?

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### ***Marijuana in the U.S.: The fight for legalization and effective treatment options.***

Carole Pendleton

Faculty Mentor: Diane Hodge

The first piece of federal legislation to formally regulate marijuana was the Narcotics Act of 1914, which regulated heroin, cocaine, and marijuana. Under the Controlled Substances Act of 1970, marijuana was classified as a Schedule I drug on the basis that it has "a high potential for abuse." Which means that the public perception is that people get on marijuana, they get hooked and become "potheads," and it begins to dominate their lives. A part of society's perception was due to the influence of media and "yellow journalism" initiated in the 20's and 30's – historically the time of prohibition in the U.S. - and their claim that marijuana was a menace to society and something to be feared. In order to fight this argument for prohibition, legalization advocates need to make the argument that marijuana is not as addictive as government sources claim and that legalizing the substance will benefit society far more than prohibiting it. Within this research and meta-analysis, I will document the process by which this substance became illegal, cite evidence proving that it is potentially less harmful than alcohol (a substance that survived prohibition) on the human body and to society, cite the DSM criteria for clinically diagnosing cannabis abuse/dependence highlighting it's differences among other addictive substances, and prove through meta-analysis and critical thinking that there are more effective ways to treat marijuana users than placing them in abstinence based programs. It will challenge us to think about why we haven't addressed this issue and why we as a society continue to feed into the ignorance and bias that made the drug illegal in the first place and the generic models of treatment users continue to be subjected to, ineffective. This study will also give the readers alternatives and avenues to explore should they be persuaded to advocate for this cause.

*Poster Session: Thursday, April 21, 2011 2:00-4:00 Heth Hall 016*

### ***End of the World: A Time to Come?***

Kayla Perkins

Faculty Mentor: Brenta Blevins

Have you ever worried about nuclear warfare and if it could ever happen in your lifetime? You're not the only one; according to a recent survey, 89% of Americans believe this will happen soon. This project analyzes nuclear warfare and the modern thoughts and fears about it. It takes a look at several speculative fictions concerning the end of the world and how they play into the fears of human beings.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

***The Island: A glimpse of cloning in modern days.***

Daniel Pitkin

Faculty Mentor: Brenta Blevins

Have you ever wondered what life will be like once scientists can develop fully functional human clones? That's the main issue Caspian Tredwell-Owen approached in his speculative fiction movie, *The Island*. In *The Island* human clones are grown for the purpose of supplying replacement organs and limbs to wealthy people who are injured in accidents or simply don't take care of their selves. My researched argument will explore the controversy surrounding cloning and the very real problem of people who need organ transplants and the lack of such organs. I will compare these issues in *The Island* and modern days.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

***Compare and contrast; the song and poem of "Richard Cory"***

Emma Pitcock, Lelia Overton, Will Chitwood, Brandon Johnson, Lindsay Fox

Faculty Mentor: April J. Asbury

We will present a comparison in the form of a video of the poem and song "Richard Cory". Paul Simon's Richard is more ostentatious in both his behavior and fashion. Edwin Arlington Robinson's Richard is more reserved and royal. Our project should embody the personalities, lifestyles and audience's opinions of the two Richards.

*Oral Presentation: Tuesday, April 19, 2011 11:00-12:45 Heth Hall 045*

***Leadership Qualities of Princess Diana***

Kaitlin Pondolfino

Faculty Mentor: Sandra French

I plan to discuss all the leadership qualities Princess Diana possessed during her life. I will go in depth about her involvement with charity work. Although she experience life struggles, she always remained a poised role model.

*Special Session: Thursday, April 21, 2011 10:30-12:30 Heth Hall 043*

***Oprah leads the way***

Dayna Powderly

Faculty Mentor: Sandra French

"I don't know what the future holds but I know who holds it."- Oprah Winfrey. Although she was not born a leader, she used her struggles to rise above and is now one of the world's most influential women. She is a prime example of a transformational leader. Her charisma and vision for positive change in the world has inspired her followers greatly. Not only is she the first African American woman to reach billionaire status, she has continued to stay humble while being admired by millions. Most importantly, she believes in herself.

*Special Session: Thursday, April 21, 2011 10:30-12:30 Heth Hall 043*

***Edward Said: Concepts and Context***

Matt Prater

Faculty Mentor: Jolanta W. Wawrzycka

A basic introduction to the post-colonialist theorist and his theories, this presentation has been designed for a graduate level audience as a proactive instructional tool. It covers the basic concepts of orientalism, the other, secular criticism, and other concepts central to the work of Said. The presentation lasts approximately 30 minutes and involves extensive use of PowerPoint and other multimedia tools.

*Oral Presentation: Tuesday, April 19, 2011 2:00-2:30 Heth Hall 018*

### ***Medicine River/Astral Vacations: A Reading***

Matt Prater

Faculty Mentor: Louis Gallo

A reading a poems written during my time at RU, this presentation especially concerns the work I've done as part of my final Honors Project with Dr. Lou Gallo, a collection of thematically linked long poems under the working title Seven Cosmic Ballads. The poems deal, while bridging elements of formal and free verse technique, with regional identity, dream logic, world consciousness, and the philosophical concerns of mysticism and esoteric Christianity. If time permits, I would also like to read some of the shorter poems from a manuscript, *Medicine River*, whose subject is largely the healing process of ceremonial life passage, especially the death process and the transition to adulthood within a communal setting.

*Oral Presentation: Tuesday, April 19, 2011 2:45-3:15 Heth Hall 018*

### ***Is the Hippocratic Oath Ethical?***

Heather Price

Faculty Mentor: Guy Axtell

When doctors take the Hippocratic Oath, they are pledging to a standard code of care and professional ethics or responsibility. The Hippocratic Oath is not required by most modern medical schools, but some schools do require it, and many people believe that having doctor's take the Hippocratic Oath is the utmost ethical way to insure that doctors of our society act responsibly. Yet should go about their work, but a lot of the basic principles that Hippocrates wrote about seem to have been lost to the years and the way modern society seems to work. For example, one part of the modern version of this code reads "I will prevent disease whenever I can, for prevention is preferable to care." (Lasagna), but this seems to be lost in modern day care because of the way insurance and payment for services is set up. In American society today preventative care is too expensive and it is seen as an "alternative medicine". So should the code be administered in its traditional form? Should it be updated to better meet the needs of today's societies? Also, should each country create their own code to benefit their cultural needs and ethical standards? Another section of the modern oath states "If it is given me to save a life, all thanks. But it may also be within my power to take a life; this awesome responsibility must be faced with great humbleness and awareness of my own frailty. Above all, I must not play at God." (Lasagna) So ethically how do we approach this oath, its specific content, and it's force as a standard of physician ethics and conduct? This poster will address all of these important but controversial issues.

*Poster Session: Wednesday, April 20, 2011 2:00-4:00 Heth Hall 014*

### ***Eriching Middle School Health Education by Teaching Based on How the Brain Learns***

Margaret Prusaczyk

Faculty Mentor: Susan Miller

In recent years, neuroscience has opened up potential in the realm of education through teaching based on the way in which the human brain learns. Understanding the general, biological functions and needs of the brain allows teachers to create classroom environments that better foster learning. By catering and adapting lesson plans to specific physical, emotional, and social needs of students based on brain science, this can aid in motivation of student learning. The need for a physically, emotionally, and socially safe learning environment is a dominant educational concern. Once a safe, non-threatening environment is established, students feel comfortable to learn, express, and challenge themselves. Through a safe learning atmosphere, a teacher may more easily implement tactics to 'enrich' the environment. An enriched environment can boost student motivation and stimulate learning by playing into the emotional desires of brain. Tactics such as subject novelty, integration of student choice in lesson planning, and changing pace by adding activities and discussion all stimulate the brain. Making worldly connections between subject material and daily life offers a sense of relevance to students. This, in partnership with timely performance feedback by teachers to students through multi-faceted methods of assessment all serve to better education to the student holistically. Officially entitled, 'Let the Eagles Soar,' a program in association with Auburn Middle School, located in Riner, Virginia, served as the testing playground for a positively charged learning environment in matters regarding health education. 'Let the Eagles Soar,' was a Health Fair held at

Auburn High School designed to promote physically active and healthy lifestyles amongst middle school students and the surrounding communities. With ever growing obesity trends and sedentary lifestyles overtaking today's youth, health education is an important hot topic nationwide. Effective and innovative health education is important for these recent trends. Therefore, by transcending knowledge through brain compatible methods, teachers can more successfully communicate and motivate matters of health education to students. By seeking to understand how the brain learns and what motivates students, and applying these findings to health education, teachers could revolutionize health education for the future.

*Oral Presentation: Thursday, April 21, 2011 1:15-1:45 Heth Hall 044*

### ***The Relationship Between Types of Motivation Within Sport***

Anita Puerto

Faculty Mentor: Monica Pazmino-Cevallos

Motivation is a call for action. Specifically, in sport, motivation gets a team on the field, through a hot day of practice, or over a bad loss to a long-time rival. However, regardless of the situation, motivation is easily influenced. It changes with each person, each circumstance and perspective, and each desired outcome, both of the team and the individual player. No matter the sport, the type of motivation is dependant upon the athletes' feelings toward each other, toward their leader, and the individual expectations for the game. Motivation can be altered according to the preference of the athletes or the coaches, and the need for a certain type of motivation to achieve the desired outcome. After researching the different types of motivation, I conducted structured interviews within the field of sport. I will interview coaches and athletes from both individual sports, such as swimming and golf, and from team-oriented sports, such as soccer and basketball. From these interviews, I will take note of the types of motivation used within the group, which types are most effective, and why that type works well. I will examine possible comparisons between the types of motivation used by each group, within and between each sport type. I will be examining the different types of motivation presented in each interview and drawing them together to introduce the relationship between the types of motivation. I will present my findings in a Prezi Presentation.

*Oral Presentation: Wednesday, April 20, 2011 12:15-12:30 Heth Hall 019*

### ***Natural Childbirth Education and Planning***

Jessica Rakes

Faculty Mentor: Sharla Cooper

Many pregnant mothers desire to have a natural childbirth, but this idea is pushed aside when the excitement and overwhelming stages of labor begin. Nurses should be more educated on the non-pharmacological methods and breathing techniques that can be offered to pregnant mothers. It is the duty of the nurse to be involved in allowing and encouraging pregnant mothers to follow their desired natural childbirth plan, rather than settling on pharmacological methods for pain management. Pregnant mothers should be informed of labor pain management opportunities and relaxation breathing techniques prior to hospitalization; if this is not accomplished, it is the nurse's responsibility to be properly educated to coach their patients. / Alongside childbirth education instructor, Megan McNamara, I observed alternative pain management strategies and breathing patterns to control labor pain. Candice Matthis, a Doula in the New River Valley, provided insight into coaching pregnant mothers through natural childbirth. Through evidence based research, childbirth education classes and the interview of a doula, I have formed a lesson plan to educate nursing students at Radford University. All information has been thoroughly researched and compiled into an evidenced based paper to achieve the goal of this Capstone; which is to further educate myself, future nurses, and pregnant mothers of breathing techniques and non-pharmacological methods used for pain management during the labor process.

*Poster Session: Wednesday, April 20, 2011 2:00-4:00 Heth Hall 014*

### ***Little Brother and School Security***

Ekaterina Ramos

Faculty Mentor: Brenta Blevins

Imagine yourself in a situation where every move or every word you say is either being traced or watched. If you think about it, almost everywhere you go there will be some kind of a surveillance setup or something that has to do with the government watching people's every move. In *Little Brother*, Cory Doctorow's characters are in the same situation; they also have surveillance in their school as well and, just like us in our society, they are not very happy with the fact that there is surveillance in their schools. The purpose of this poster is to let people know how our society does not give us the freedom that we should have and that we are always being watched no matter what we do.

*Poster Session: Wednesday, April 20, 2011 2:00-4:00 Heth Hall 014*

### ***How Well Do You Know Your Healthcare Plan?***

Brittany Rainey & Kelsey Lewis

Faculty Mentor: Todd Makse

"How Well Do You Know Your Healthcare Plan?" is a study of The Patient Protection and Affordable Care Act. It highlights the key aspects of the PPACA and how familiar students are with them. The study also compares an individual's media exposure with their opinion and knowledge of the PPACA. A survey of 1000 Radford University students was conducted to determine this information. Other components of the project include an analysis of the ratio of factual information to political arguments in the media, the ethical responsibility of the media, and how these topics relate to the data gathered from the survey.

*Oral Presentation: Thursday, April 21, 2011 3:30-4:00 Heth Hall 044*

### ***The Future In Genetic Engineering***

Emily Reedy

Faculty Mentor: Michele Ren, Lovina Goad

This presentation will analyze whether or not the biological engineering issues in the film "Jurassic Park" could one day turn into reality. This research will evaluate the genetic engineering advancements paleontologist James Horner is making with fellow scientists at the University of Montana. However, is the science world ready for experimental breeding of extinct prehistoric creatures?

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### ***A Ethnography on College Party Deejays.***

Matthew Reed

Faculty Mentor: Stevan Jackson

College deejays are a large and wide spread group and are vital to the musical culture surrounding college campuses. In my research on college deejays I asked a number of questions as I both interviewed and experienced first-hand the culture of deejays. What are the difficulties which deejays face? What impact has the digital music culture had on the role of deejays? What are the expectations of deejays as a whole? What role do deejays ultimately play in a party setting? How has the environment for developing deejays changed over the past few years? How have the expectations of deejays ultimately changed or been effected as how we get our music changes? These are just a few of the questions that arose and were answered during the process of conducting my research. The preliminary data indicates a great deal of shift in the deejay culture, and the expectations of the role of a deejay. Some of the revelations made about these shifts in what it means to be a deejay are both surprising and predictable given the great changes which music has experienced in the past decade.

*Oral Presentation: Wednesday, April 20, 2011 3:15-3:30 Heth Hall 018*

### ***A Look at the Self-Esteem and drinking behaviors of college students***

Matthew Reed

Faculty Mentor: Jeanne Mekolichick

Drinking has long been accepted for its effects of bringing people together in social settings, the reason behind the need for alcohol to bring people together. In my study I choose to examine what effect self-esteem if any had on the drinking culture present on college campuses nationwide. Along with examining the effects of self-esteem the study also examines the types of drinkers present and types of drinking situations on college campuses comparing

these variables in an attempt to draw a conclusion on drinking culture. Data for the study was collected using an anonymous online survey making use of the Qualtrics survey software. The data was then examined making use of PASW software. The preliminary data suggest an interesting lack of trend of self-esteem across the board based on types of drinkers and their social situations, though an interesting trend within the data has surfaced that suggests room for greater research on the topic.

*Oral Presentation: Thursday, April 21, 2011 10:00-11:00 Heth Hall 014*

### ***The Heth Cemetery Project***

Daniel Riegel, William Willis, Robert Hancock, Brandon Buck, Jacob Conner, and Tyler Adams

Faculty Mentor: Cliff Boyd

Archaeology has a number of potential applications in reconstructing local histories. Located outside of Radford University is a forgotten cemetery that holds the remains of one of the founding families of the city of Radford. Over time this cemetery has fallen into disrepair and a portion of history has been lost. Through the use of archaeological methods, it is hoped to reconstruct the history of the Heth family cemetery. One goal of this project is to locate the graves, and plot the extent of the cemetery by clearing the land, mapping the cemetery, by using ground penetrating radar, and identifying c-transforms and n-transforms. The second goal of the project is to construct a genealogy of the cemetery's inhabitants by interviewing the family's descendants and examining historical documents that contain information on the cemetery's inhabitants. Ultimately through the information obtained from the recovery of graves, and the construction of a family history of the inhabitants, it is hoped that we can bring the historical importance of the cemetery into the community's awareness, possibly register the cemetery as a historical landmark, and provide the city of Radford with a richer understanding of the Heth family and the past of Radford.

*Oral Presentation: Wednesday, April 20, 2011 1:30-3:00 Heth Hall 045*

### ***Effects of pro-handwashing messages on hand-washing in public restrooms***

Karmen Rizzo, Timothy Kennedy, Rebecca Lipford, Stephanie Gusler, and Jae Davis-Foster

Faculty Mentor: Jeff Willner

Handwashing is one of the most effective methods for preventing and limiting the spread of disease-causing germs and viruses, but people do not wash their hands anywhere near as often as they should. The present study was conducted to examine whether posting pro-washing messages in public restrooms would affect rates of handwashing by males and females on a college campus. Signs with pro-washing or neutral messages were posted in restrooms on campus during a one-week period in late March, and observers rated whether people using the restrooms had washed their hands by listening for the sounds of running water and operation of the paper towel dispenser prior to an individual's exit from the restroom. Data will be presented on baseline rates of handwashing in this setting, whether females and males differ in how often they wash their hands, and whether females and males are equally affected by pro-handwashing messages.

*Poster Session: Wednesday, April 20, 2011 4:30-6:30 Heth Hall 014*

### ***Social Conditioning: Servants in the mind***

Tyler Robic

Faculty Mentor: Michele Ren

Aldous Huxley in Brave New world created a world in which social conditioning controls the mass's thoughts about everything. Exploring how this would arise, and what techniques for "brainwashing" he proposes, in order to expose how we are controlled presently.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### ***Transformational Leadership Style Displayed by Joan of Arc***

Jennifer Robinette

Faculty Mentor: Sandra French

Throughout history, Joan of Arc has been presented as one of the most influential and effective leaders of, not just the Middle Ages, but of all time. At that point in history the Hundred Years War was taking place between England and France. During this time, Joan, a teenager, began having visions that she claimed were the voices from God. She said her visions told her to drive the English out of France, and that is what she set out to accomplish. It is said in *Leadership: Theory and Practice, 5th Edition* that transformational leadership is the process whereby a person engages with others and creates a connection that raises the level of motivation and morality in both the leader and the follower. With her visionary leadership style she was able to convince the leader of France to let her co-command in battle and inspire fellow soldiers to stand behind her. Through her exceptional transformational leadership style she was able to win the respect of the people of France and later become recognized as Saint Joan of Arc.

*Special Session:*            *Thursday, April 21, 2011*            *10:30-12:30*            *Heth Hall 043*

### ***Tony Dungy: Authentic Leader***

Michael Roundtree

Faculty Mentor: Sandra French

My poster presentation is about Tony Dungy and the culmination of deeply grounded faith, family and quiet leadership tactics that have made him one of the greatest men of our time. His authentic and transformational leadership qualities have affected the lives of many in such a positive way and has lead to a life of greatness.

*Special Session:*            *Thursday, April 21, 2011*            *10:30-12:30*            *Heth Hall 043*

### ***Locus of Control Moderates the Relationship between Aggression and Frustration***

Katherine Rous, Jonathan Miller, Leigh-Ann Ahrenberg

Faculty Mentor: Jeffery Aspelmeier

This study is being conducted to better understand the link between frustration and aggression. Prior research has found that aggression will always follow frustration and that aggression is the only real outcome that happens in the event of frustration (Dollard et al., 1939). The present study tests whether frustration is a factor in the amount of aggression people show when playing a simple game. Approximately 60 participants were recruited from the Psychology Department participant pool. First participants completed a measure of locus of control. Half of the participants were asked to complete an easy task while listening to a clip of a young child crying and afterward they were asked to play a game where their clicks were recorded. The other half completed the easy task in silence. An interaction between frustration and locus of control is expected. Among participants with external locus of control, it is expected that listening to the aversive audio clip will increase aggression compared to participants who did not hear the clip. Among participants with internal locus of control, aggression is expected to be low regardless of frustration condition.

*Poster Session:*            *Wednesday, April 20, 2011*            *4:30-6:30*            *Heth Hall 014*

### ***Advances in Medical Industry***

Meaghan Rowley

Faculty Mentor: Michele Ren, Lovina Goad

Medical Enhancement is based on the improvement of medical usage dealing with treatment. This poster presentation will present the advances in the medical industry. It will be discussing how the advances can help or endanger the society today. Also, this poster will discuss about what advances that have been taken in the past and whether or not they have been beneficial to society.

*Special Poster Session:* *Thursday, April 21, 2011*            *1:00-5:00*            *Heth Hall 043*

### ***Implementation of Heavy-Load Applications on Mobile Devices***

Justin Rutherford

Faculty Mentor: Prem Uppuluri

Our goal is to develop a platform that will allow mobile devices to run resource-intensive applications. Our prototype is to have the mobile device outsource the application's execution to a server which would utilize a desktop grid computing platform to identify any computer on the Internet willing to provide resources. Once the application is executed on the identified resource provider, the server sends the results back to the mobile OS. Our presentation will focus on the implementation issues of the prototype. Specifically, we will present a survey of the mobile operating systems, the challenges we have encountered during implementation and a survey of the desktop grid computing platforms that this can be integrated with. We are currently implementing for the Android OS. Our first challenge was to use Android's Bluetooth or Wi-Fi libraries to develop the client and server. In our prototype, we plan to demonstrate by developing a Java program on the mobile OS and having it compiled using our mechanism. Specifically, we are working on the implementation in which the client will accept a Java program and dispatch it to the server using Wi-Fi connection libraries. Once connected, it will use a P2P search to identify servers that are willing to share their resources. Our plan is to customize existing P2P network implementations such as the FrostWire open-source software. We surveyed other P2P networks and the results of the survey will be included in our poster.

*Poster Session: Tuesday, April 19, 2011 2:00-4:00 Heth Hall 022*

### ***Programming Genetic Simulation***

Justin Rutherford

Faculty Mentor: Bob Sheehy

Simulations are an important approach to studying many biological processes such as evolutionary changes in allele frequencies. The goal of this project was to create an interface for an application that will simulate population genetics over a large number of generations. This application is written in the Java Runtime Environment. The application is module based which allows new panels with new options to be added with relative ease. The current panels include: The main panel, which allows the user to select options, related to frequency of genes, sex linkage, and genotype fitness. Other panels allow the user to select options for varying natural selection, migration, mutation rates, mating preferences, and degree of linkage disequilibrium between two loci. Finally, there is the execution/review module. This module allows the user to review all the options selected in the previous modules before executing the simulation. Once the simulation has started the program will iterate through each generation and show a graph representing allele frequency and rate of fixation for each allele. Once the simulation has been completed all the data is written to an excel spreadsheet which allows the user to view the complete detailed set of data and to perform further statistical analysis.

*Poster Presentation: Tuesday, April 19, 2011 6:00-7:00 CH 107*

### ***Cancer Cure Research***

Stephanie Saunders

Faculty Mentor: Michele Ren

For this assignment, I will look into the cancer cure research issue in the film, "I am Legend" and explain how it relates to our future.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### ***Teaching Methods for Foreign Language: A Review of the Literature and Sample Lesson Plan***

Chelsea Saville-Reynolds

Faculty Mentor: Blas Hernandez

Many different methods for foreign language education beyond those commonly used in classrooms in the United States have been developed during the second half of this century. The necessity of changing the teaching methods used for foreign language education in this country will be discussed in this paper. These other methods will also be discussed, and a sample lesson plan will be provided. There are many reasons to advocate for a change in these methods, including a low number of high school students who complete more than two years of foreign. The number of bilingual citizens in the United States is relatively low in comparison to many European countries. One of the most important factors in this deficiency is the ineffectiveness of the most commonly used

teaching methods. These methods do not focus on acquisition of a foreign language, which allows students to use the language in everyday contexts, but on learning it.

*Poster Session: Wednesday, April 20, 2011 2:00-4:00 Heth Hall 014*

***Sensibly Chic: Researching and Designing Around Claire McCardell and Coco Chanel***

Renata A. Schmersal

Faculty Mentor: Kathy Mitchell

As a fashion designer, a person will pull inspiration from many different sources. Current trends, interesting artwork, nature, and designers from previous decades are all popular sources of inspiration. Two iconic designers which have inspired many emerging as well as established fashion designers are Claire McCardell and Coco Chanel. Polar opposites in the fashion world, and yet they coincided in the same time periods and created unique legacies in the fashion world. During this project I sought to discover the two designer's greatest works and their unique lasting legacies before synthesizing their unique approaches to design in order to develop one modern line of cocktail apparel. This was executed by doing research on both Chanel's and McCardell's lifestyles (what drove their designs), design history, and signature apparel. I then drew from this information and combined it with modern trends to begin the formation of a unique line of women's apparel. Twenty or more sketches of ensembles were developed, ten of which were chosen and put into a fully rendered drawing. One garment was selected and taken from sketch through the pattern making and construction processes to a completed garment. A comparison of the two designers was written into a research paper. A PowerPoint of the complete process, from inspiration to completed garment, was created in order to visually illustrate the process taken and include the research.

*Oral Presentation: Thursday, April 21, 2011 5:45-6:00 Heth Hall 044*

***Floral and faunal response to tree fall gap size, age, and structure in Selu Conservancy (Southern Appalachian forest).***

Christinia Schoch

Faculty Mentor: Fred Singer

Tree fall gaps, both natural and artificial, have been studied as environments demonstrating patterns of species regeneration, abundance, and distribution differing from the surrounding understory. Larger gaps have a greater amount of solar radiation reaching the forest floor than smaller gaps, and different species compose the gap habitat at different stages of succession. Tree fall gaps at Selu Conservancy were expected to behave according to the initial floristics model which argues that floral composition after disturbance is determined by the floral composition at the time of disturbance, and that species change dominance over time as a result of differential growth and development. 10 tree fall gaps of natural creation and 10 control sites were surveyed for salamanders, arthropods, and floral composition in Selu Conservancy. Gap size was expected to have a positive correlation with the ratio of shade intolerant tree species to tolerant species, herbivorous arthropods, and detritivorous arthropods. A negative correlation with the number of salamanders per unit cover, and omnivorous and predacious arthropods was expected for gap size. No correlation to ants, millipedes, parasitoids or dipterans was expected for gap size. Gap age was expected to have a positive correlation with the ratio of shade intolerant tree species to tolerant species, the ratio of saplings to seedlings, the number of salamanders per unit cover, and the ratio of herbivorous to detritivorous arthropods. Gap age was expected to have a negative correlation with the ratio of fast growing tree species to slow growing tree species.

*Oral Presentation: Tuesday, April 19, 2011 7:45-8:00 CH 107*

***Toys: Girls have to be princesses or mommies while boys get to take over the world***

Elly Schulte

Faculty Mentor: Carla Corroto

The purpose of this study was to see how/if toys are marketed based on gender in a large corporate retailer in the US. The physical layout of the store was explored and the location of the toys was the focus of study. The study highlights how stores separate toys based on what gender they are marketed towards as well as what kinds of toys

are marketed towards different genders. Feminine toys are more limited in options and enforced traditional gendered roles and stereotypes. Masculine toys have a larger range in options and have real world reference.  
*Panel Discussion: Thursday, April 21, 2011 1:15 Heth Hall 014*

***The Electric guitar and its influence on a great part of the American music culture***

Chelsea Shea

Faculty Mentor: Stevan Jackson

The purpose of my research is to find out how and if people can relate the electric guitar with the American culture. As the guitar has evolved, the electric guitar has played a key role in most American music (rock and roll, blues, and country to name a few) and my research was conducted to see if others in this Appalachian area see the electric guitar as symbolic of American music trends. To uncover any beliefs and attitudes towards the electric guitar, I interviewed a few people who have a great passion for music and live through it on a daily basis (some play guitar, other do not). I also wanted to focus this research on the electric guitar to get a better, more general understanding of the instrument inside and out, as well as the technique, style, and innovations that are common with this instrument. This part of research led me into listening to guitar solos from some of our times most memorable and talented guitar players. Through this, it is evident how the electric guitar can be a tool for expressing emotions, protests, and soul in times where words just weren't good enough.

*Oral Presentation: Wednesday, April 20, 2011 1:00-1:15 Heth Hall 018*

***Synthesis of Ethanol from Sugars, Starches, and Cellulose***

Jacob L. Shelton

Faculty Mentor: Christine K. Hermann

Ethanol's importance as a biofuel additive has grown in recent years and has brought about the need for a renewable source of fermentation material. This research explores fermentation of various sugar and cellulosic feedstocks such as fruit juices, whole corn, corn starch, bamboo, grasses, and waste paper sources. Various pretreatment methods were developed for the feedstocks based on the complexity of the saccharides and polysaccharides present in the material. These methods include forms of acid hydrolysis paired with physical breakdown of the sample. The treated material was then mixed with dry active yeast, allowed to ferment for seven days, and distilled in a fractional distillation apparatus. Purity of ethanol product was determined by density and evaluated in efficiency as a percentage of mass of ethanol from mass of feedstock. All materials explored in this research proved to be viable sources of ethanol.

*Poster Session: Thursday, April 21, 2011 2:00-4:00 Heth Hall 016*

***The effects of the background color used in images of male targets and the effects of outcome relevance on participants' ratings of attractiveness for the male targets***

Kristen Shifflett, Robbie Suthers, Rachel Rose

Faculty Mentor: Jeffery Aspelmeier

The proposed study will investigate the effects of the background color used in images of male targets and the effects of outcome relevance on participants' ratings of attractiveness for the male targets. In a 4 (red, blue, yellow, or grey background) x 2 (low relevance vs. high relevance) design, approximately 150 participants completes an online study where they were be asked to view a photo of young adult male with one of four colored backgrounds. Participants were asked to assume that the target is either "someone you have class with" or "someone you could potentially marry." Participant rate the attractiveness of the target on several dimensions (e.g., romantic attraction, degree of suitability, degree of similarity). Results are expected to show that color only influences ratings of attractiveness when the relevance of the target is low (someone in your class), but not when the decision matters (a potential mate).

*Poster Session: Wednesday, April 20, 2011 4:30-6:30 Heth Hall 014*

***The Cultural Significance of 'Turntablism'***

Josh Shultz

Faculty Mentor: Stevan Jackson

We are all familiar with the stereotypical image of the modern DJ, however few consider the role that the DJ has played shaping modern music. My research examines 'turntablism', and how the turntable has defied its original intended use, to become a completely unique musical instrument, which has helped to shape entire musical genres and developed into its own subculture. My research focuses on the cultural significance of the turntable as an instrument, and I achieved this by examining the historical roots of the 'turntablism', by interviewing DJ's of varying backgrounds and by examining the musical genres 'turntablists' have helped to shape.

*Oral Presentation: Wednesday, April 20, 2011 12:30-12:45 Heth Hall 018*

***Cortical Chop: An Evaluation of Sharp-Force Tool Mark Signature Analysis in Forensic Anthropology***

Rebecca Siegal

Faculty Mentor: Donna C. Boyd

Previous research on sharp force trauma in Forensic Anthropology has focused on the potential for identifying tool mark signatures for instruments involved in inflicting this trauma. These signatures have typically been limited to identification of general class characteristics (e.g., general saw or knife type) rather than specific instruments (Symes 1992, 2010). This research is focused on distinguishing cut marks on bone made by a variety of tools. These tools include a variety of types of knives, screwdrivers, tent stakes, skewers, letter openers, and swords; these tools will be applied to a sample of deer long bones. Each bone will have one tool that is used to mark it. Marks will be observed using the RUFISI VX-1000 Keyence Digital Microscope in an attempt to distinguish its class and specific tool signatures. It is hypothesized that marks left by swords, knives, and letter openers will be similar due to the similar manner in which they penetrate bone. Likewise, screwdrivers, tent stakes, and skewers should also resemble each other in their signatures on bone. Included in this presentation will be a discussion of previous research on sharp force trauma and the implications of the current research for contributing to this body of knowledge. Applications for interpreting sharp-force trauma in a forensic setting will also be discussed.

*Special Session: Wednesday, April 20, 2011 10:00-11:00 Heth Hall 016*

***Geologic formations and their relationship to Archaic and Woodland sites in Virginia***

Rebecca Siegal

Faculty Mentor: Cliff Boyd

Stone tools and debitage from eighteen multicomponent sites in southwest Virginia are being studied to figure out where the raw material came from and what time period the tools were used. The flakes and debitage raw material was identified with the help of Dr Cliff Boyd. Maps of each site were obtained from the Virginia state archaeologist. The site maps will be compared to geologic maps of the area to figure out how close the raw material was to each site. Some of the artifact bags from these sites had the geologic formation identified already. Some of the bags did not have the formation so those will be identified by the geologic maps. Pictures of the raw material will be presented next to pictures of the maps showing the geologic formations. One source that will be used is *First People: The Early Indians of Virginia*. This book talks about the different types of stone tools used by the Indians in Virginia.

*Oral Presentation: Wednesday, April 20, 2011 1:30-3:00 Heth Hall 045*

***Anti-inflammatory function of cytochrome P450 enzymes***

Gabrielle Silvers, Evin Guilliams, and Justin Drake

Faculty Mentor: Peter Christmas

Cytochrome P450 4F3 (CYP4F3) is a candidate anti-inflammatory enzyme in humans. During inflammation, blood cells such as neutrophils and monocytes move out of the bloodstream and accumulate at a site of infection. These cells attack and destroy invading pathogens, but an excessive or inappropriate response can cause destruction of healthy tissue leading to inflammatory disease. CYP4F3 inactivates a signal molecule called

leukotriene B4 that is needed for migration of neutrophils and monocytes out of the blood. The mouse homologue is CYP4F18. To determine if CYP4F18 suppresses inflammation *in vivo*, a model of renal ischemia-reperfusion injury was used to compare the inflammatory response in wild type and CYP4F18 knockout mice. In this study, the expression of inflammatory markers was measured by real time PCR. There was a significant increase in lineage markers for neutrophils and monocytes, and for cytokines such as IL1 that act as general markers for inflammation, in ischemic kidney tissue from CYP4F18 knockout mice compared to wild type. The data supports an anti-inflammatory role for CYP4F18.

*Oral Presentation: Tuesday, April 19, 2011 5:15-5:30 CH 107*

***“Deciphering, Analyzing and Approaching Teaching Methods in Children’s Writing that is below Developmental Expectations”***

Shannon N. Slattery

Faculty Mentor: Carolyn Mathews

The purpose of the research was to gain insight on the best methods for instructing children who are below developmental expectations in the area of writing. I implemented these different methods while working during a six week period with a second grade student who appears to have dysgraphia. The methods I tested included those that worked on the student’s fine motor control, while also those of repetition, revision, and modeling. I then analyzed the student’s response to the activities to gauge their effectiveness. As a result I learned that given the proper context some methods may work better than others; however the best methods are the ones that scaffold the students’ learning, allowing them to reach across their zone of proximal development. The implications of this research suggest that for students with dysgraphia, an interest in the activities is essential for improvement and that constant reinforcement of the proper handwriting skills is critical.

*Oral Presentation: Tuesday, April 19, 2011 4:15-4:45 Heth Hall 045*

***Local Historical Figures and Legends of the Southwestern Virginia Area***

Chelsey Slemp

Faculty Mentor: Mary Ferrari

This research paper examines three famous historical figures in the southwest Virginia area: Mary Draper Ingles, Dr. Thomas Walker, and Daniel Boone. These three individuals all thrived in the surrounding area of southwestern Virginia, including northeast Tennessee and eastern Kentucky, during the mid-seventeen hundreds and on. It was during this time that settlers began to push the boundaries of westward movement even farther, and in my research I explain how the three of them played their own unique critical roles in this movement, whether that be of settler or explorer. Today, the three are remembered in their respective areas as heroes of sorts, having many public domains or affiliations named for them. This work takes these three and brings them each into their own historical light, debunking the facts from legend. My research centers on primary sources such as a manuscript, journal, and letters, with various extensive secondary sources on them as well. In addition, I have included research on the concept of westward movement in Virginia at the time, placing the subjects in historical context as well. This includes the politics surrounding western settlement, the formation of land companies, and the constant conflict with Native Americans, in particular the Shawnee. Each have their own factual story and background that can be deciphered from what has been left for historians to study, and this paper illustrates these facts.

*Oral Presentation: Thursday, April 21, 2011 1:45-2:15 Heth Hall 044*

***Stress and Contributing Factors Among Radford University Nursing Students***

Amber Smith

Faculty Mentor: Leonita Cutright, Anthony Ramsey

The capstone project for completion of my honors course of study in nursing consisted of completing a study based on stress and contributing factors among Radford University nursing students. A survey, based off student experience, faculty collaboration, and evidenced based research was developed to holistically assess stress in Radford University Nursing Students. The purpose of the research was to identify factors that contribute to stress in RU student nurses. I wanted to use preexisting research to outline the main stress factors for students including

financial, academic, and personal issues. After reviewing existing data based on stress factors in nursing students, I sought to find if universal stress factors were similar to stress factors in RU nursing students. I utilized a variety of evidenced based research, student input, and faculty advising to create a survey which I feel holistically addressed stress factors in nursing students. After analysis of trends among collected data, results were organized to develop a report which systematically outlined stress factors among RU nursing students. Using the stress factors identified areas of need and possible solutions to the stress causative factors were researched and identified. The original idea for my capstone was to develop a program which would assist students in completing the Radford University Nursing program with ease.

*Poster Session: Thursday, April 21, 2011 2:00-4:00 Heth Hall 016*

***Analysis of embryo lethal HIRA mutants in Arabidopsis thaliana***

Kellie C. Snooks

Faculty Mentor: Tara Phelps-Durr

In the plant species *Arabidopsis thaliana*, the HIRA gene codes for a protein involved in chromatin remodeling and DNA packaging. This protein determines which genes are expressed in the plant and which genes are silenced during development. However, mutations in this gene are never recovered as homozygotes, suggesting that inheriting two copies of a defective HIRA gene is lethal. The goal of my research is to identify the stage of development in which the lethality occurs and determine why mutations in HIRA are lethal. I have concluded that the lethality occurs shortly after fertilization during early embryo development. Currently, I am performing a variety of microscopy techniques to determine what causes the embryo lethality in HIRA mutants.

*Oral Presentation: Wednesday, April 20, 2011 5:00-5:15 CH 107*

***Interning at Merritt Island National Wildlife Refuge/Kennedy Space Center***

Jessica Sosnicki

Faculty Mentor: Karen Francl

I completed an internship, during the summer of 2010, at Merritt Island National Wildlife Refuge. This opportunity taught me the extent of strenuous fieldwork and litigation that goes into managing natural areas. The goals of my internship were to learn techniques and skills that contribute to the field of natural resource management. As an intern, I contributed to a number of projects, including invasive plant removal, sea turtle surveys, small mammal trapping, volunteering at the refuge visitor center, assisting in research conducted by the NASA Ecological Program, and work with the Gulf Coast Deepwater Horizon oil spill. The skills I acquired from this internship have given me insight into the career of wildlife biology. I was able to apply what I have learned in college to a real world setting. It allowed me to learn the skills and knowledge needed to become a wildlife biologist and develop a stronger passion for conservation that will stay with me, long after I graduate.

*Poster Presentation: Tuesday, April 19, 2011 6:00-7:00 CH 107*

***Fashion Throughout the Decades***

Erica Stanley and Kayla Akers

Faculty Mentor: Jo Ann Asbury

Our project, Fashion Throughout the Decades, is about women's fashions in American Literature. We will not only tell our audience what the characters we read about dressed in, but show them as well. We intend on making a magazine as a visual with all the outfits that our many different characters wore in each of the stories. By showing and explaining the clothing that has been used previously in our country, we can show readers exactly how to picture those characters we read about, which will hopefully help them visualize and feel more enthralled with the literature we have the opportunity to read.

*Oral Presentation: Wednesday, April, 20, 2011 9:00-10:30 Heth 018*

***Finding the leader within you***

Jocelyn Stephens

Faculty Mentor: Sandra French

*Special Session: Thursday, April 21, 2011 10:30-12:30 Heth Hall 043*

***The Day After Tomorrow: Global Warming and Human Survival or Extinction***

Marie Stovall

Faculty Mentor: Brenta Blevins

Is the human race really the cause of the world's end? Could humanity's effect on global warming really bring our own extinction? Global warming is a continuing projection of the Earth's temperature increasing. The movie *The Day After Tomorrow* shows examples of what could come of the world if we do not change our ways. The main focus of the presentation is what the effects of human actions are doing to the world currently and what we can do to change our ways.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

***The Effects of Missing a Target Face in a Crowd on Heart Rate***

James Streett

Faculty Mentor: Thomas Pierce

This study examined the ability to learn a set of six target faces, each presented in black and white with a black background, and then accurately detect them while embedded within 3x3 matrices of distracter faces. Each participant's heart rate was monitored while performing this task. The purpose of the study was to identify a unique heart rate response for each of four signal detection response categories. In particular, its purpose was to identify a unique pattern of change in heart rate specifically on miss trials, where a target face was present within a 3x3 matrix, but the participant did not indicate this through button response. Participants consisted of undergraduate students with ages ranging from 18 to 24. Materials used in this experiment consisted of two dell computers, with one running a stimulus presentation program called SuperLab 4.0 which presented each of the six target faces as well as the 84 matrices of faces to the participants. The other computer ran a heart rate monitor program called WINDAQ DATA Acquisition Software which recorded each participant's heart rate. Results showed that there was an orienting reflex present, but did not lend support to the hypothesis that it would be affected by the signal detection category of response made by the participants during the facial recognition task. Overall, it didn't matter what categories the response fell under; with each of the four grand total averages there was significant deceleration.

*Poster Session: Thursday, April 21, 2011 2:00-4:00 Heth Hall 016*

***New River Valley Mental Health Needs Assessment***

Jenni Stroup, Chelsea Shea, Abigail James, Taylor Jenkinson

Faculty Mentor: Ruth Riding-Malon

Previous research has indicated that Posttraumatic Stress Disorder (PTSD) and substance use disorders are often co-occurring, and that substance use is prevalent in Appalachia (Wunsch et al., 2009). The present study examined the prevalence of dual diagnosis, PTSD and co-morbid substance use disorders (SUD) in the New River Valley (NRV) in SW Virginia which is situated in Appalachia. In order to find prevalence rates among those with limited resources, the study surveyed patients of the Free Clinic and of the Mental Health Association of the NRV (MHANRV). Participants filled out questionnaires about symptoms of mental health distress and substance use. The results indicated that over 50 percent of participants experienced symptoms of depression, anxiety, and/or PTSD. Furthermore, 28 percent of participants reported using alcohol once a month or less and 24 percent endorsed drinking more than four drinks at one time; 10 percent of study participants reported using non-prescription drugs, and 12 percent admitted using prescription drugs to get high. Due to the apparent discrepancy between the present study's results and national prevalence rates of co-occurring PTSD and substance use disorders, and because of the limited responses from 89 participants, additional assurances about the confidentiality of results were added to a second wave of data collection. Results from the second wave of data collection will be analyzed and compared to the first wave of data. Finding will be shared with local mental health service providers and utilized to recommend and plan services that address the needs of the local population.

*Poster Session: Thursday, April 21, 2011 2:00-4:00 Heth Hall 016*

***Wildlife Interpretation with Children: Assessing the Most Effective Teaching Techniques***

Meghan K. Stump

Faculty Mentor: Karen E. Francl

Contemporary youth in our society are frequently associated with a progressing technological lifestyle. Exposure to this culture at a young age may divert interest and career choices far from the natural resources. The USDA Forest Service (USFS) recognizes the importance of investing environmental interpretation with younger generations and offers numerous educational opportunities nationwide. At the USFS Eastern Divide Ranger District in Blacksburg, VA, I assessed children ages 3-9 in multiple wildlife interpretive programs during summer and fall 2010. My goal was to determine which teaching techniques were most enduring and influential to youth of these ages. These factors were assessed by querying 50 parents and guardians and quizzing 5 reoccurring pupils. Childrens' responses to data were tracked over time to note positive and negative reactions. Fifty-eight percent of parents stated demonstrations were highly effectual with the remainder believing in photos and combinations of media. Three-quarters of children more efficiently retained comprehensive wildlife topics first introduced in a classroom before traveling outdoors. This associative method of interpretation is valuable because it allows youth an opportunity for rewarding, personal identification when in nature rather than simply being lectured in a closed setting.

*Oral Presentation: Wednesday, April 20, 2011 7:15-7:30 CH 107*

### ***WALL-E and Garbage Issues***

Clement Sydnor

Faculty Mentor: Brenta Blevins

This project analyzed the amount of trash put out by humans. Do you ever realize how much garbage you produce and throw away into nature? This project is to enlighten the community about how much humans trash the Earth with actual trash. Movies like WALL-E try to show a depiction of what Earth will look like if there is too much garbage on Earth.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### ***Jimi Hendrix***

Alex Taylor

Faculty Mentor: Steven Jackson

Jimi Hendrix was undoubtedly one of the greatest musicians of the 20th century. Despite his inability to read or write sheet music, he pioneered new ways to play the guitar. In this study, a close look was taken into the life of Jimi Hendrix and his music. The goal was to find how he revolutionized music then and now. This was done by comparing and contrasting the guitar and how it was played before and after Hendrix. Music across genres was analyzed for evidence of his influence. Along with Hendrix's musical impact, the impact he had on people around the world with his music was also looked into. More detailed information follows in the report.

*Oral Presentation: Wednesday, April 20, 2011 3:30-3:45 Heth Hall 018*

### ***Queen Elizabeth I***

Erin Taylor

Faculty Mentor: Sandra French

Queen Elizabeth I was born September 7, 1533 in Greenwich, England to King Henry the VIII and Anne Boleyn. She is known as one of the best leaders in British history as well as one of the best educated women of her time. It was through her political skills and strong character that she was able to get her country back on track to become a world power. She is truly a unique person who possesses many attributes and skills that make her a fantastic leader.

*Special Session: Thursday, April 21, 2011 10:30-12:30 Heth Hall 043*

### ***Tactics for the Struggle: Nelson Mandela and Situational Leadership***

Randy Taylor

Faculty Mentor: Sandra French

The poster portrays the depth and complexity of Nelson Mandela's leadership style that constantly fluctuates. The poster focuses on Mandela's eight leadership lessons and the underlying theme of each- every behavior is simply a tactic for goal attainment. Through the eight lessons of leadership, Mandela's leadership style is examined

through the theoretical lens of Situational Leadership. A functional relationship is observed among supportive and directive leadership behaviors, with one facilitating the attainment of the other. The true essence of Mandela's leadership style reflects that followers are continuously plotted up and down a developmental continuum and that the leadership style must match each follower's developmental level that is constantly in flux. Nelson Mandela's style proves the true essence of Situational Leadership- the theory is rooted in the notion that leadership isn't static.

*Special Session: Thursday, April 21, 2011 10:30-12:30 Heth Hall 043*

### ***Are Online Social Networks Invading Privacy?***

Rachel Tharp

Faculty Mentor: Brenta Blevins

This poster presentation looks at how social networking and communication have become very popular in a short amount of time by examining the book *Little Brother* by Cory Doctorow. People are spending hours each day on the internet communicating, purchasing items, or browsing the internet. Important and personal data, including credit-card number and bank account information are stored on the internet. Online websites, like Facebook, Twitter, blogging, etc. have been booming in such little time, little do people know that all of the information they put on internet sites can be seen by the government and businesses at any time.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### ***Mobilization of Arsenic by Bacteria from an Arsenic Mine***

Mercy Tom and Taylor McHugh

Faculty Mentor: Georgia A. Hammond

The toxicity of arsenic to all living creatures makes it very important to study. There are two important redox forms of arsenic in nature, arsenate and arsenite. Arsenate shuts down energy production and arsenite inactivates proteins. Bacteria with genes for metabolizing arsenate (ars B and ars C) can take in arsenate from the environment and convert it to arsenite. The ars B gene product then expels the arsenite out of the cell. Bacteria in our culture collection that originally grew at an abandoned arsenic mine all have the arsenate resistance genes, ars B and ars C. Using our lab cultures that were grown in high concentrations of arsenate (1ug/mL), we determined the ability of each culture to convert arsenate to arsenite. Our preliminary results demonstrate that all seventy of our cultures were able to grow in this high concentration of arsenate and ten percent of the cultures that we tested grew very well (according to viable cell counts). In order to determine arsenite output and arsenate output we used column chromatography. Cultures that grew well had large outputs of arsenite relative to the arsenate in which they were grown. Our data from these experiments are important in understanding how environmental bacteria, through their metabolism, can affect concentrations of toxic forms of arsenic in nature.

*Oral Presentation: Tuesday, April 19, 2011 5:45-6:00 CH 107*

### ***Novel Ideas***

Annalee Tull

Faculty Mentor: Margaret Devaney

My honors capstone project consisted of rehearsing, choreographing and producing a show performed in tandem with Sharon Gravatt's capstone project in dance. We both had our own separate acts, but had the same ideas flowing through the entire show. My half centered on the First Amendment. There were a total of eight dances, each one representing a different freedom or idea found in the First Amendment. The show was intended to emphasize the great power we have with our freedoms and to emphasize our need to fight for and utilize our freedoms. The project consisted of researching the First Amendment and finding ways to abstract the meanings into movement. I then auditioned dancers for the public performance. I choreographed the eight dances, edited the music, designed costumes and had a lighting designer design lights. Sharon and I together made programs and posters for the performance. I rehearsed the dancers for eight weeks and presented my final compilation of dances on March 20, 2011 at 6 p.m. The crowd seemed pleased with the final product and the show went wonderfully.

*Oral Presentation: Thursday, April 21, 2011 6:00-6:15 Heth Hall 044*

***An Overview of Inpatient Crisis Stabilization in Southwestern Virginia***

Amber Turman

Faculty Mentor: Ann Elliott

The presentation will briefly highlight typical experiences within an inpatient crisis stabilization clinic located in Southwestern Virginia. Information will be presented from the view-point of an master's level intern working with both Licensed Professional Counselors (LPCs) and Licensed Clinical Social Workers (LCSWs). The duties of an intern will be identified and no more than three case studies will be presented; one from the treatment of an adolescent, one from the treatment of an adult patient with severe mental illness, and one from the treatment of an adult patient with a substance abuse history.

*Oral Presentation: Tuesday, April 19, 2011 3:30-3:45 Heth Hall 045*

***(-)-Epigallocatechin gallate Effect on Functional Outcomes Following Experimental Traumatic Brain Injury***

Amanda VanLaeken, Tara Ardito

Faculty Mentor: Mark Whiting

Flavonoids such as (-)-epigallocatechin gallate (EGCG), the primary catechin found in green tea, may have beneficial effects following nervous system injury. Recent studies suggest that flavonoids may be effective in treating a number of neurological conditions. However, it is unclear to what extent EGCG therapy translates into improved outcome following nervous system injury. The present study investigated EGCG as a potential treatment of traumatic brain injury (TBI), a major public health concern for which there is currently no accepted treatment. Adult male and female Long-Evans rats were administered a moderate level of TBI and injected with 50 or 100mg/kg EGCG 15min or 3hr post-injury. Compared to untreated animals receiving TBI, males treated with EGCG at 15min displayed significant improvements in both motor and cognitive function. Histological analysis also indicated that early post-injury EGCG treatment is neuroprotective. However, these effects were not present in females or in males receiving treatment 3hrs following injury. Injured animals treated with EGCG at 3hr post-injury failed to show significant improvements in motor, cognitive, or histological outcome compared to injured, untreated animals. These results suggest that early EGCG therapy following moderate TBI may be an effective treatment for injury-induced motor and cognitive dysfunction. However, the lack of efficacy for reducing behavioural dysfunction in females suggests that dosing parameters may

*Poster Session: Thursday, April 21, 2011 2:00-4:00 Heth Hall 016*

***Benjamin Franklin: An Authentic Leader***

Megan Van Patten

Faculty Mentor: Sandra French

Beneath a French statue of Benjamin Franklin reads the inscription, "He snatched the lightning from the sky and the scepter from tyrants." Beyond the political contributions Franklin made to society, is a story of rebellion, curiosity, and faith. This presentation tells that story through the lens of an Authentic Leadership Style theory.

*Special Session: Thursday, April 21, 2011 10:30-12:30 Heth Hall 043*

***Cyber-security: Past, Present, and Future***

Justin Voss

Faculty Mentor: Michele Ren, Lovina Goad

This presentation will discuss the history, current nature, and future of security with respect to the internet, and our growing dependence on it. The research will touch upon how the internet, and securing it, came into being, and move forward in time, introducing topics such as hackers, viruses, and cyber-espionage, and the security risks they pose to society and the institutions created therein, as well as the individual.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### ***Body Image and Uglies***

Kristen Wade

Faculty Mentor: Brenta Blevins

This project analyzes the issues of body image. The novel *Uglies* by Scott Westerfeld lets us know that if we keep trying to achieve "perfection," then we will have an even bigger problem in the future.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### ***Prescribed Fire and its Effects on Avian Life at Selu Conservancy in Montgomery County***

Carrie Wainright, Will Chitwood, Brianna Kirker, Justin Everhart

Faculty Mentor: Karen Francl

The goal of the project was to research the effects of a prescribed fire on avian life at the Selu Conservancy in Montgomery County, Virginia. We hypothesized that there would be an increase in bird species richness and quantity after the burn. We surveyed the site a total of 12 times by walking the length of the field with binoculars and an audio recorder for 15 minutes. One survey week was pre-burn and two of the weeks were post-burn, with each period consisting of 4 surveys (two in the morning, two in the afternoon). We determined the species richness and quantity of avian life for each time period. We also compared the relative number of species inside versus outside the plot to better understand if differences are due to the fire or due to other conditions. Before the burn on March 17, we recorded eight species outside of the plot and thirteen species inside of the plot. Our post-burn results are pending.

*Poster Session: Wednesday, April 20, 2011 6:00-7:00 CH 107*

### ***A Walk in Someone Else's Shoes***

Robyn Weatherholtz

Faculty Mentor: Guy Axtell

Tolerance of the beliefs of all people is an ethical and moral issue that has lately fallen to the wayside. The purpose of this project is to evaluate various ethical and moral scenarios on the basis of five major concepts of ethical morality studied over the course of the semester. The purpose of the course is to examine moral and ethical reasoning; to do that, one must be able to consider all sides of an issue and base moral and ethical decisions only after careful consideration. Three specific ethically-problematic "cases" or scenarios that call ethics and morals into question were read and then an analysis of concepts was done. The concept base analysis was derived from the following ethical and moral concepts: Ethical Relativism, Egoism, Altruism, Utilitarianism, and Deontology. After examination and analysis the results are presented in a poster, and shared with the Radford University community via the Undergraduate forum. To not only put ourselves in someone else's shoes, but to try on many pairs is critical to the promotion of tolerance and the acceptance and acknowledgement of the beliefs of all people.

*Oral Presentation: Wednesday, April 20, 2011 11:30-12:00 Heth Hall 019*

### ***Facing it through the eyes of a Vietnam War veteran***

Vanessa Webb

Faculty Mentor: April J. Asbury

The Objective is to examine the poem "Facing it" by Yusef Komunyakaa and relate the traumatic tone to my family history. I will achieve this through a presentation featuring visuals, videos and two interviews.

*Oral Presentation: Tuesday, April 19, 2011 11:00-12:45 Heth Hall 045*

### ***Determining HIRA expression and rescuing hira mutants***

Casondra Weller

Faculty Mentor: Tara Phelps-Durr

In Arabidopsis plants, HIRA is known to influence gene expression during plant development by modifying chromatin structure. However, little is known about the HIRA gene in plants. To determine where the HIRA gene is expressed during development, three different promoter regions of the HIRA gene were cloned such that they

are fused to a reporter gene. These clones will be transformed into both mutant and wild type Arabidopsis plants using Agrobacterium. Determining where the reporter gene is expressed in the transgenic plants will reveal where HIRA is expressed during normal development. In addition to generating the promoter clones, we also cloned the full length HIRA cDNA. This clone will be transformed into hira mutant Arabidopsis plants. HIRA mutants are embryo lethal. Transforming the full length HIRA clone into these mutants could potentially save the lethal homozygous Arabidopsis plants. In the future, this full length HIRA cDNA clone will be mutated by site directed mutagenesis. If mutant versions of this clone fail to save the lethal homozygous Arabidopsis plants it suggests that the mutated region of HIRA is important for protein function.

*Poster Presentation: Tuesday, April 19, 2011 6:00-7:00 CH 107*

### ***Walt Disney: A Glance at Leadership***

Hannah Link

Faculty Mentor: Sandra French

A glance at Walt Disney's life and how his leadership style assisted him in constructing one of the most recognizable names to his day.

*Special Session: Thursday, April 21, 2011 10:30-12:30 Heth Hall 043*

### ***Lieutenant General Lewis "Chesty" Puller: A Giant Among Marines***

Jonathan West

Faculty Mentor: Sandra French

Lieutenant General Lewis "Chesty" Puller is a legend in the Marine Corps history of warfare. He is credited for being one of the most decorated Marines ever and the only Marine to earn five Navy Cross. Often, seen at the front leading Marines in combat Chesty Puller never back down from a fight put up against him. By examining this Marine legend, my purpose is to find out why he was such a successful leader. He is credited for bravery and leading Marines through some of the most dangerous conflicts in history. But how did he do it? This poster will examine his leadership and the styles of leadership Chesty Puller used.

*Special Session: Thursday, April 21, 2011 10:30-12:30 Heth Hall 043*

### ***Women's Implicit and Explicit Attitudes as Predictors of Body Image and Body Mass Index***

Lyndsay West and Nik Anninos

Faculty Mentor: Jeffery Aspelmeier

The goal of this study was to investigate college females' implicit and explicit anti-fat biases and how it predicts body image and body mass index. We expect to obtain data from between twenty to eighty students who will participate in groups of ten in a classroom on campus. To measure implicit attitudes a paper pencil version of the IAT (Bassett & Dabbs, 2003) was used and a short questionnaire was given to measure BMI. Explicit anti-fat attitudes were measured using an anti-fat attitudes questionnaire (Crandall, 1994), and body image was measured using subscales of the EDI-2 (Garner & Olmsted, 1984). Multiple regression analyses will be used to test the hypothesis that the implicit anti-fat attitudes test will be a stronger predictor of body image and BMI than explicit anti-fat attitudes.

*Poster Session: Wednesday, April 20, 2011 4:30-6:30 Heth Hall 014*

### ***Cell Wall Histochemistry of Crystal-containing Idioblast Cells in Dieffenbachia seguine***

Erica Weston

Faculty Mentor: Gary Cote

The tropical aroid Dieffenbachia seguine produces calcium oxalate crystals in its leaves. It has been suggested that these crystals help protect the plant from herbivory. The cell walls of the crystal-containing cells have been shown to glow under polarized light, while those of other cells do not. The purpose of this research was to

compare the cell wall composition of crystal-containing cells to other leaf cells of *D. seguine*. Samples of *D. seguine* were prepared for histochemistry in three different ways: leaf pieces were cleared using sodium hydroxide; leaves were hand-sectioned; and free crystals were obtained by grinding leaves. Hand sections of the stem of a commercial *Chrysanthemum* were used as a positive control. The samples were stained to detect phenolics, lignin, and other cell wall components. Samples were also examined for autofluorescence. We found that the cell walls of the all the *D. seguine* leaf cells, crystal-containing and otherwise, appear to be essentially free of lignin and phenolics.

*Oral Presentation:*      *Wednesday, April 20, 2011*      *5:45-6:00*      *CH 107*

### ***Joe Pa***

Amanda White

Faculty Mentor: Sandra French

Born in 1926, Joe Paterno has been the Head Football Coach at Penn State University for 41 seasons. In this time, 11 U.S. Presidents have been through the White House. Throughout his career, Coach Paterno has had five undefeated seasons, 33 bowl appearances, and two National Championships. Coach Paterno has been more than a football coach, especially to the Penn State community. He has been involved with numerous charities and fundraises that have gone to improving Penn State. After being elected to the College Football Hall of Fame in 2006, Coach Paterno has permanently left his mark on college football and Penn State University.

*Special Session:*      *Thursday, April 21, 2011*      *10:30-12:30*      *Heth Hall 043*

### ***Slant of Sex: Bicondylar Angle as a Tool for Sex Determination in Unidentified Forensic Human Remains***

Michelle Whitman

Faculty Mentor: Donna C. Boyd

The femur is studied by anthropologists for many different applications. Forensic Anthropologists use the femur to determine stature and sex because it has 75% or more variation across individuals and sexes (Stewart 1979; Van Gerven 1972). Prior methods for sex determination include measurement of the femur head diameter as well as midshaft circumference; however, these portions of the femur are not always well preserved in fragmentary remains. The purpose of this research is to explore an alternate method for sex determination from the femur. The hypothesis tested is that sex can be accurately determined from the femoral bicondylar angle. The bicondylar angle of the femur represents the angle of deflection of the femur from superior to inferior view and is measured as the angle between the long axis of the femoral shaft and a line tangent to the distal extent of both femoral condyles. It is unique to humans in response to their development of bipedal walking and is believed to be greater in females compared to males because of morphological adaptations related to childbirth. This research has as its goals the following: 1) develop a more user-friendly method for measuring the bicondylar femoral angle; and 2) test the hypothesis that females have a greater bicondylar angle than males and that this criterion can be applied to forensic differentiation of sex in unidentified human remains. After development of a method for measuring the bicondylar angle, it will be tested on a small sample of known age and sex human remains housed at the Virginia Office of the Chief Medical Examiner (Western District) in Roanoke, Virginia.

*Special Session:*      *Wednesday, April 20, 2011*      *10:00-11:00*      *Heth Hall 016*

### ***Introductory Topics in Algebraic Geometry***

Camron Withrow

Faculty Mentor: John McGee

Algebraic geometry is a branch of mathematics that investigates the properties of curves and surfaces in finite dimensional spaces using the mathematical tools of abstract algebra and topology. Our project involved the study of introductory topics in algebraic geometry. We first established that the zero sets of polynomials over an algebraically closed field form the closed sets of a topology and then proceeded to investigate the properties of this (the Zariski) topology. We then studied the connections between algebraic sets and the ideals of the polynomial rings associated with these sets. We were able to prove some of the basic mathematical theorems of this subject area as presented in the textbook "Algebraic Geometry" by Robin Hartshorne.

*Poster Session:*      *Thursday, April 21, 2011*      *2:00-4:00*      *Heth Hall 016*

***Handheld, X-ray fluorescence investigation of middle-late Devonian, pyritiferous, millboro shale, southwestern Virginia***

Megan Wolf

Faculty Mentor: Parvinder Sethi

The Millboro Shale is a ubiquitous lithologic unit in the Middle-Late Devonian stratigraphic architecture in Southwestern Virginia. The Millboro Shale extends through West Virginia, Virginia, Tennessee, Maryland and Pennsylvania and represents relatively shallow-marine accumulation of organic-carbon-rich sediment. Recent sedimentologic and organic and inorganic geochemical research has highlighted the non-uniform distribution of highly-pyritized intervals in this shale, with oxidative production of sulfuric acid posing a distinct threat to the local groundwater table. / The central hypothesis of this research was that a use of a state-of-the-art, portable, X-ray fluorescence (XRF) instrument, for measuring a full-spectrum of elements and their concentrations, in the field setting shows a statistically-significant, positive correlation with values obtained via the typical methodology of extracting a sample and conducting elemental concentration analysis of samples in the laboratory. If supported, data from this study will have important ramifications on utilization of emerging, portable XRF technology for a rapid, real-time, on-site analysis of black shale facies such as the Millboro Shale. / At a Millboro shale outcrop in Radford Virginia, researchers repelled down a ten meter outcrop and studied samples at ten centimeter intervals. Samples were first analyzed with the handheld XRF instrument, following which a sample was carefully extracted and catalogued. The data from the field measurements of these samples is being compared to the data generated from XRF analysis of elemental concentrations in the laboratory. / Results of this research will constitute an important first-step in evaluating both the applicability and reliability of such a hand-held, rapid XRF analysis of shales with heterogeneous mineralogy and sedimentology alike the Millboro Shale.

*Poster Session: Tuesday, April 19, 2011 2:00-4:00 Heth Hall 022*

***Captain Andy Haldane: Reflection of Leadership in the United States Marine Corp***

Tyler Wood

Faculty Mentor: Sandra French

As a young college student, thrust into the turbulent and hostile environment of World War II, Captain Andy Haldane exhibited a quality of leadership unmatched by many in his time. He was able to relate and lead men in a place where death was an every day part of life. Through various styles and qualities of leadership Haldane commanded respect from the men of his platoon. This respect would maintain the mental psych of his young Marines through days where it was impossible to know whether they would live or die; where environments were constantly changing and adaptability was vital for survival. Captain Haldane's life was stripped away on a lonesome stretch of the Japan's Empire in the Pacific Theater of War, however his actions in leadership will live forever in history and in the minds of those who served beside him. It's impossible to truly understand the psychological impact the war brought to the people who served in the Pacific, but we can take away Haldane's example of formidable leadership amongst the dark world of violence that was WWII.

*Special Session: Thursday, April 21, 2011 10:30-12:30 Heth Hall 043*

***Are Americans too dependent on technology?***

Natalie Wrenn

Faculty Mentor: Brenta Blevins

This poster presentation shows how Americans have become dependent on technology by using the movie Surrogates as an example. The movie shows a dramatic view of the future where we live our lives through robot surrogates.

*Special Poster Session: Thursday, April 21, 2011 1:00-5:00 Heth Hall 043*

### ***A Look at Leadership through Vince Lombardi's Eyes***

Elizabeth Young

Faculty Mentor: Sandra French

Vince Lombardi is one of the greats from NFL history. He took a losing team and made them amazing. He also changed the way football was played. This poster will delve into what it is that made Lombardi so good at what he did.

*Special Session:*

*Thursday, April 21, 2011*

*10:30-12:30*

*Heth Hall 043*

### ***Revamping Glencoe***

Elizabeth Zody, Laurel Finney, Matthew Campbell, Claire Percoco, Edwin Komi

Faculty Mentor: Charles C. Boyd

In 1974 and 1975 the Trigg site was excavated in what we know today as Bissett Park in Radford, Virginia. Native Americans inhabited this site until the 1670s. Some artifacts have been preserved and put on display at the Glencoe Museum in Radford. Unfortunately, the current exhibit at Glencoe is unsatisfactory. Cases are unorganized and there is little information explaining the Trigg site, its artifacts, and its importance to Radford and the archaeological record. / Our goal is to bring these Native Americans to life. We want to create a more inviting, informational, and interactive atmosphere. One task that our group wants to accomplish is to present a fictional story about life at the Trigg site while using correct artifacts and information to explain this. In addition to rearranging the display cases in a more organized fashion, we plan on providing visitors with ample note cards within the displays that discuss the artifacts. The museum does have a great collection of arrowheads on display; however, it does need to be reexamined because there are rocks and other materials within the mix. In the same room as the Trigg site exhibit, there is a corner that contains a case and banner that discusses women's rights in Radford. We hope that we are able to move this display out of the room in order to give us more space to redesign the preexisting exhibit. It will be our objective to give a refreshing spin on the Trigg site exhibit.

*Oral Presentation: Wednesday, April 20<sup>th</sup>, 2011 1:30-3:00 Heth Hall 045*

### ***Dispose and Decompose***

Liz Zody

Faculty Mentor: Donna Boyd

This research explores the effects of garbage on various conditions of human remains. The variables in the study include porcine remains (which serve as human models) buried in between a layer of garbage, porcine remains placed on top of garbage, as well as a buried controlled subject for comparison. Remains are monitored and kept from scavenging with the assistance of wire netting; the effects of garbage on the rate of decomposition are observed. My hypothesis is that the presence of garbage will accelerate the rate of decomposition due to the combination of acids, carbons, and other gases emitted during the breakdown of garbage.

*Special Session: Wednesday, April 20, 2011 10:00-11:00 Heth Hall 016*