The Spring Undergraduate Research Forum is a time each year when we suspend our other campus activities to celebrate the academically-centered creative endeavors and research efforts of Elon’s students. This year, over 140 proposals for presentation were submitted for consideration, and over 70 faculty members representing all disciplines on campus provided over 550 reviews of the submitted abstracts. Students were invited to present at SURF at the recommendation of that body of reviewers.

SURF is an integral part – a weeklong series of events that brings to light the wonderful diverse academic and creative pursuits in which our students engage each year.

We invite you to join and support the student presenters and performers as they share the joy of exploration and discovery that are the hallmarks of an intellectual community.

UNDERGRADUATE RESEARCH PROGRAM ADVISORY COMMITTEE

Dr. Eric Hall, Co-Chair Prof. Joel Hollingsworth, Co-Chair
Dr. Megan Isaac Prof. Lauren Kearns
Dr. Byung Lee Dr. Kyle Altmann
Dr. Mark Kurt Dr. Mark Enfield
Dr. Linda Wilmshurst Dr. Ryan Kirk
Dr. Yuko Miyamoto

Dr. Paul Miller, Director, Undergraduate Research Program

Undergraduate Research & Creative Endeavors includes activities undertaken by undergraduate students with significant faculty mentoring that: (1) lead to new scholarly insights and/or the creation of new works; (2) add to the discipline; and (3) involve critical analysis of the process and/or outcome of the activities. Quality undergraduate research and creative activity result in a product that has potential for peer-reviewed dissemination in the form of presentations, publications, exhibitions, or performances.
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Poster Session I
9:00am - 12:00pm; Authors Present 10:00am - 11:00am

Koury Business Center – First Floor

Morgan Julia Gregg & Robin L. LaCroix (Dr. Yuko Miyamoto)
Survival of Community-Associated Methicillin-Resistant Staphylococcus Aureus in Three Different Swimming Pool Environments (Chlorinated, Saltwater, and Biguanide Non-Chlorinated)

Ariana Wilkinson (Dr. Linda M. Niedziela)
Oil dispersant affects the activity of Na+/K+ ATPase in brine shrimp (Artemia franciscana)

Kaitlin G. Bogart & Isabelle M. Matejovsky (Dr. Caroline J. Ketcham)
From Monsters to Me: Fine Motor Drawing Development in 2-5 Year Old Children

Jamie Rachel Feldman, Courtney Ann Graham, Rachel Marie Perron, & Rebecca Anne Moffett (Dr. Eric E. Hall)
Does Exergaming Achieve the Same Levels of Intensity as Mentor-Based Physical Activity?

Stephanie Clark Lane & Robert Allen Hixon (Dr. Paul C. Miller)
Validation of the Pretie-Q Against Measures Obtained from an Objective Physical Activity Monitor

David James Lawton (Dr. Eric E. Hall)
The Influence of Concussion History on Cognitive Performance

Erin Elizabeth Lewandowski (Dr. Eric E. Hall)
Examining the Content of Television Programs on Anxiety Reduction in College Males

Andrea Lee March & Molly Ann Wellinghoff (Dr. Joyce A. Davis)
Kinematic Analysis of 100M Sprint Start

Francesco Paul Worley, Meredith Anne Meyer, Rachel Marie Perron, & Leah Menees Gardner (Dr. Joyce A. Davis)
Effect of Distraction Stimuli on Trunk Lean While Running

Madeline Eve Bronstein, Meghan Braun, Beth Cohen, & Manuel Maccou (Dr. Meredith Allison)
Undergraduates’ Knowledge of North Carolina Crime

Alexandra Leigh Einstein & Kelly Rebecca Molin (Dr. Gabie Smith)
Alcohol Use Stigmatization: The Impact of Age and Gender on Perceptions of Alcohol Behaviors

Lauren Finn (Dr. Maureen Vandermaas-Peeler)
Parent-child connections during a cooking activity: A study of guided participation and intersubjectivity

Evan Michael Gallena, Stephanie A. Hicks, Elizabeth N. Palmer, & Traci A. Weisberg (Dr. Kimberly L. Epting)
Time constraint differentially affects high and low print exposure writers
Poster Session I....continued

**Grace Anna Helms** (Dr. Gabie Smith)
Sexual Identity Development and Alcohol Risk-Taking: A Comparison of Heterosexual and Homosexual College Women

**Katie Lauren Kielek & Jennifer Kay Champ** (Dr. Amy Overman)
Associative Encoding in Younger Adults: A Strategy that Improves Memory for Pairs

**Sara M. Loving** (Dr. Maureen Vandermaas-Peeler)
Playing the Ladybug Game Again: Changes in Children’s Numeracy and Parent Guidance Strategies Over Time

**Carly Tamar Price** (Dr. Maureen Vandermaas-Peeler)
Mothers’ and Fathers’ Guidance during Play with Preschoolers

**Kristen N. Riggs** (Dr. Kimberly L. Epting)
Cheers vs. jeers: Effects of audience feedback on sports tasks

**Stephanie Alayne Robinson & Justin Alexander Sun** (Dr. Amy Overman)
The Effects of Different Encoding Strategies and Practice on Cued-Recall of Word Pairs

**Kristin Noel Schillings** (Dr. Gabie Smith)
Social Perceptions of Women's Sexuality
**Poster Session II  12:30pm – 1:30pm**

12:00pm - 3:00pm; Authors Present 12:30pm - 1:30pm

*Koury Business Center – First Floor*

**David Edward Bertsch** (Dr. Benjamin Evans)
Fabrication of Microfluidic Masters

**Daniel Robert Glass** (Dr. Benjamin Evans)
Fabrication of Ferroelastomeric Microparticles

**Kelsey M. Lapenas & Daniel Glass** (Dr. Benjamin Evans)
Biomimetic Cilia Functioning as Micromixers Within a Microfluidic Device

**Carly Alexis Fabrizio** (Dr. Kathy Matera)
Investigation of Lactoperoxidase Activity: The Classification of Oxidized Estradiol and Its Mechanistic Role in Damaging DNA

**Kelsey M. Van Dalfsen** (Dr. Eugene Grimley)
The Ortho-effect in the Formation of Meta-stable Intermediates in the Mass Spectra of Mono-substituted

**Kaitlyn Lee Schultz** (Dr. Matthew Valle)
The Determinants of Top Tier Research in Management

**Kate Sachs** (Dr. Don Grady)
Up in Smoke: How antismoking advertisements have changed youth smoking habits

**Rebecca J. Wetherbee** (Dr. Don Grady)
Censorship and Evolving Media Policy in China

**Russell Whitman Boozer** (Dr. Tina Das)
effects of Distance on Immigration Patterns in North America

**Cameron Elizabeth DePuy** (Dr. Steve DeLoach)
How the United States Went Wrong: An International Comparison on Carbon Emissions

**JT Fairley** (Dr. Thomas Tiemann)
Are Sustainable Cities Productive?

**Eleanor Graham Meacham** (Dr. Thomas Tiemann)
Unveiling the Bidding Process of the Olympics: An Empirical Analysis

**Joshua Lee Whanger** (Dr. Thomas Tiemann)
Urban Sprawl and Usage of the Single-Occupant Vehicle

**Timothy James Douglas** (Prof. Elizabeth K. Bailey)
Impact of Acute Coordinative and Aerobic Exercise on Attention in Graduate Students

**Emily Elizabeth Reynolds & Gregory Charles Mader** (Prof. Resa E. Walch)
An Examination of Nonmedical Use of Stimulants among Undergraduate Students at Elon University
Poster Session II....continued

Christie Nicole Staton (Prof. Elizabeth K. Bailey)
Changes in Activity and Eating Habits in Girls Aged 10-11 Following Participation in the Alamance- Girls in Motion Program

Amanda Marie Portoghese (Dr. Anne Marx)
The relationship between the area surrounding a venue and attendance

Lauren Elizabeth Ross (Dr. Anthony Weaver)
A Current Examination of the Historically Black Colleges and University Division I Athletic Directors
Session I (11:10 am - 12:30 pm)

LaRose Digital Theatre (Moderator: Dr. Mark Kurt)

11:10 am     James Walker Gorsuch (Dr. James Barbour)
Is Less Sex Safer Sex?: The Effects of Comprehensive Sex Education Policy on Teen Pregnancy Rates

11:30 am     Melissa Lynne Hunter (Dr. Mark Kurt)
The Effects of Health Care on the Labor Market in Non-Metro and Metro Areas

11:50 am     Joshua Lee Whanger (Dr. Mark Kurt)
Health Insurance: How American Entrepreneurs are Affected

12:10 am     Andrea Elise Dorrow (Dr. Steve DeLoach)
A Cost-Benefit Analysis of Orthopedic Care in Malawi

Koury Business Center 242 (Moderator: Dr. Susan Manring)

11:10 am     Clayton Morgan Winkelvoss (Dr. Anthony Amoruso)
Executive Compensation at Banks Receiving Federal Assistance under the Troubled Asset Relief Program

11:30 am     Stephanie Joy Allen (Dr. Susan L. Manring)
The Effects of Generational Differences on Cultural Values as Measured by the Hofstede Framework

11:50 am     Danielle Lynn Lewald (Dr. Susan L. Manring)
An Investigation of the Effectiveness of Adult ESL Programs for Spanish Speakers in Alamance County

12:10 pm     Steven Drew Briefel (Dr. Anthony Weaver)
Do Promotions Help? An Analysis of Attendance and Winning Percentage at Major League Baseball Games
Session I  (11:10 am - 12:30 pm)  ...continued...

**Koury Business Center 346 (Moderator: Dr. Tom Mould)**

11:10 am  **Ryan Matthew Bleam** (Dr. Anne Bolin)
Female Holistic Health Practitioners in the Suburban United States: An ethnographic exploration

11:30 am  **Julia Elinor Roberts** (Dr. Kim Jones)
Expanding Access to HIV Testing in Northern Minas Gerais, Brazil

11:50 am  **Katie Strickland** (Dr. Tom Arcaro)
Effective Development Aid in Ghana, West Africa: Hearing the Voice of the Recipient

12:10 pm  **Susan Angela Ramer** (Dr. Tom Mould)
Occaneechi Eagles: An Ethnography of Walking in Two Worlds

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**Koury Business Center 353 (Moderator: Prof. Janna Anderson)**

11:10 am  **Pamela Richter** (Dr. David Copeland)
Archiving Newspapers in the Digital Age

11:30 am  **Ashley Carmen Barnas** (Prof. Janna Anderson)
Seoul Searching: OECD Ministerial Participants’ Views on the Future of ICT’s

11:50 am  **Andie Nicole Diemer, Andrew James Smith, & Eugene Daniel**
(Prof. Janna Anderson)
Multistakeholder Governance: The Future of the Global Internet

12:10 pm  **Morgan Charles Little** (Prof. Janna Anderson)
Changing the Paradigm: Learning From the Media's Successes and Failures in the Internet Age
**McMichael 115 (Moderator: Dr. Kathy Matera)**

11:10 am Matthew Adam Horowitz (Dr. Karl D. Sienerth)
Studies of Rhodium(dpk) as a possible carbon dioxide reduction catalyst

11:30 am Anthony M. Rizzuto (Dr. Karl D. Sienerth)
Studies of a new rhodium-based carbon dioxide conversion catalyst

11:50 am Sara Ashley Dennin (Dr. Kathy Matera)
An Examination of the Oxidation of High-Density Lipoproteins: A Contributor to Heart Disease

12:10 pm Elise Margaret Post & Carley Fabrizio (Dr. Kathy Matera)
Kinetics and Binding Studies of Lactoperoxidase with Estradiol in the Presence of Hydrogen Peroxide

**McMichael 322 (Moderator: Dr. Ryan Kirk)**

11:10 am Jessica Lynn Sikking & Mica Denise McCullough (Dr. Janet S. MacFall)
Quantifying the Carbon and Pesticide Footprints of Elon University’s Dining Services

11:30 am Katrina Jane Folsom (Dr. Ryan Kirk)
Water Use and Conservation in North Carolina: Patterns and Policies
Session I  (11:10 am - 12:30 pm)  ...continued...

**McMichael 333 (Moderator: Dr. Duke Hutchings)**

11:10 am  **Jonathan Corbin Citty** (Dr. Duke Hutchings)
Design and Evaluation of an Image-Based Authentication System for Small Touch-screens

11:30 am  **Jamie Marie Schatz** (Dr. Megan Squire)
Collecting & Analyzing Data about Free, Libre, and Open Source Software

11:50 am  **Amanda Lee Ketner** (Dr. Alan Russell)
How Students Conceptualize Standard Deviation

12:10 pm  **Amanda Kathryn Brown** (Dr. J. Todd Lee)
An Agent-Based Model of Insecticide Treated Nets and Their Impact on Malaria Endemic Populations

**Center for the Arts, Yeager Auditorium (Moderator: Dr. Victoria Fischer Faw)**

11:10 am  **Monica Ren Wen Huang** (Prof. Mike Sanford)
The Hybridity of Identity Formation: Representing the Value of the Co-evolutionary Relationship Between Self and Community, Using Visual and Formal Languages

11:30 am  **Michelle H. Eichel** (Dr. Victoria Fischer Faw)
Rodrigo's Tres Evocaciones: A Case for Elevating Spanish Art Music in the Academic Milieu

- 8 -
Session II  (12:40 pm - 2:00 pm)

LaRose Digital Theatre (Moderator: Dr. Linda Wilmshurst)

12:40 pm     Jennifer Ann Oseroff (Dr. Catherine King)
Development of Self-Authorship in College Students: Impact of Sophomore Transitions Program

1:00 pm      Leigh Ammons Lampley (Dr. Linda Wilmshurst)
Effects of Culture on Gendered Stereotypes of Emotion

1:20 pm      Patricia Michele Serdy (Dr. Linda Wilmshurst)
Time perception, locus of control and self concept in college students with and without significant attention problems

Koury Business Center 242 (Moderator: Dr. Donna Van Bodegraven)

*Non-English Presentations

12:40 pm     Molly McKnight Costigan (Dr. Donna Van Bodegraven)
*La inmigración de México a los Estados Unidos y de Marruecos a España desde los ataques terroristas de 2001 y 2004: Un estudio comparativo de temas presentados en películas documentales

1:00 pm      Megan Danielle Cunningham (Dr. Sarah Glasco)
*Ce que c’est qu’écrire: Passion simple et L’Occupation d’Annie Ernaux  What it is to Write: Simple Passion and The Possession by Annie Ernaux

1:20 pm      Alexandra Marie Anderson (Dr. Sophie Adamson)
Media, Popular Culture and Implications on Today's French Politics
**Koury Business Center 346 (Moderator: Dr. Heidi Frontani)**

*Periclean Scholars Presentations*
(Note: This session runs until 2:20 pm)

12:40 pm  Olivia Rae Ackerman & Lauren Chafee Taylor  
(Dr. Heidi Frontani)  
HIV/AIDS in Ghana and South Africa: A Study of Trends in Prevalence Rates of Infection

1:00 pm  John Ryan McGreevy  (Dr. Heidi Frontani)  
Alternative Energy and Sustainable Development in Haiti: The Potential of Solar Ovens to Improve Women’s Workload

1:20 pm  Kristine Elizabeth Silvestri  (Dr. Heidi Frontani)  
An Assessment of Governmental- and Non-Governmental Policies and Programs to Reduce Medical Professionals’

1:40 pm  Francis Joseph Stiefel  (Dr. Heidi Frontani)  
Advocating for Change Through Nonviolence: Identifying Causal Factors in Violent Response to Student Activism During the U.S. Civil Rights Era and South Africa’s Anti-Apartheid Era

2:00 pm  Lauren Chafee Taylor  (Dr. Heidi Frontani)  
State Policies and Outmigration of Health Professionals from Ghana and South Africa
### Session II  (12:40 pm - 2:00 pm)  ...continued...

**Koury Business Center 353 (Moderator: Dr. Barbara Miller)**

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<td>Hannah E. Williams (Dr. Brooke Barnett)</td>
<td>Mediating Mumbai: A Rhetorical Analysis of the Indian, British and American Newsmagazine Coverage</td>
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<td>1:00 pm</td>
<td>Alex Walton (Dr. Barbara Miller)</td>
<td>Product Placement in Reality Television--Practitioner and Audience Perceptions</td>
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<td>1:20 pm</td>
<td>Alexandra Elizabeth Milan (Dr. Connie Book)</td>
<td>How moviemakers frame the media: An analysis of the portrayal of journalism in popular Vietnam-era cinema</td>
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<td>1:40 pm</td>
<td>Angie Lovelace (Dr. Harlen Makemson)</td>
<td>Iconic photos of the Vietnam War and their influence on collective memory</td>
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**McMichael 115 (Moderator: Dr. David Vandermast)**

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<td>12:40 pm</td>
<td>Alexandra L. Ford (Dr. Antonio Izzo)</td>
<td>The Effect of Soil Drying on the Bacterial Community in a Forest Soil in North Carolina</td>
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<td>1:00 pm</td>
<td>Laura Segars (Dr. Antonio Izzo)</td>
<td>Design and testing of a DNA-based approach for detecting the amatoxin gene from the ectomycorrhizal fungus Amanita bisporigera in environmental soil samples.</td>
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<td>1:20 pm</td>
<td>K. Elizabeth Galliher (Dr. David Vandermast)</td>
<td>Effects of beech bark disease on spring ephemerals in Great Smoky Mountains National Park</td>
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<td>1:40 pm</td>
<td>Julia Elinor Roberts (Dr. David Vandermast)</td>
<td>The composition and structure of beech gaps in Great Smoky Mountains National Park 15 years after beech bark disease</td>
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McMichael 322 (Moderator: Dr. Jean Schwind)

12:40 pm    Arwen Clo Bellamy Varner (Dr. Janet Myers)  
Motherhood and Sexuality in New Woman Fiction: George Egerton Redefines the Ideal Woman

1:00 pm      Conley E. Lyons (Dr. Jean Schwind)  
Maternal Reflections and Deflections: Understanding Feminine Identity in "Mad Men"

1:20 pm      Phoebe Susan Morris (Dr. Jean Schwind)  
"Traumatized by Supermodels": A Co-textual Comparison of Bridget Jones' Diary and Dove's Campaign for Real Beauty

1:40 pm      Maggie D. Northrup (Dr. Jean Schwind)  
A Freudian Critique of Objectivism
Session III  (2:10 pm – 3:50 pm)

LaRose Digital Theatre (Moderator: Dr. Chris Leupold)

2:10 pm  Jonathan Smith Mahlandt (Dr. Thomas Green)
Implicit Learning and Expertise: The Impact of Instruction on a Serial Reaction Time (SRT) Task

2:30 pm  Ryan Scott Schork (Dr. Chris Leupold)
Development and Pilot of a 180-Degree Feedback Instrument for Collegiate Athletic Coaches

2:50 pm  Christina Noelle Carter & Lauren Elizabeth Ellis
(Dr. Chris Leupold)
Stress in Retail Pharmacists and Their Intention to Leave

3:10 pm  Lauren Elizabeth Ellis & Christina Noelle Carter
(Dr. Chris Leupold)
To Stay or Go?: The Roles of Job Embeddedness and Correlate Factors in Retail Pharmacists’ Intentions to Leave

Koury Business Center 242
(Moderator: Dr. Caroline J. Ketcham)

2:10 pm  Bridget Ann Kelly (Dr. Caroline J. Ketcham)
The Biomechanics of Movements of Increasing Complexity in Novice and Advanced Dancers

2:30 pm  Emily Jean Main (Dr. Eric Hall)
The effect of exercise intensity on cognitive functioning during and following exercise

2:50 pm  James Dorsey Burns (Dr. Paul C. Miller)
Acute Effects of Whole Body Vibration on Functional Capabilities of Skeletal Muscle

3:10 pm  Nathan James Guerette (Dr. Stephen P. Bailey)
The Effect of Acute Quercetin Supplementation on Exercise Performance in a Heated Environment

3:30 pm  Paige Kensrue (Dr. Walter R. Bixby)
The Effects of Imagery on Performance and Pain Perception Associated with Delayed-Onset Muscle Soreness
Session III  (2:10 pm – 3:30 pm)  ...continued...

Koury Business Center 346 (Moderator: Dr. Evan Gatti)

*This session begins at 2:30

2:30 pm  Nichole Marie Rawlings (Dr. Evan Gatti)
Flat can be Deep: A Perspective on the Valuation and Common Perceptions of Two-Dimensional Artworks

Koury Business Center 353 (Moderator: Dr. Frances Ward-Johnson)

2:10 pm  Caroline Jessica Fox (Dr. Frances Ward-Johnson)
Picture Perfect: An Analysis of Two Women Politicians, Their Public Relations Image and Media

2:30 pm  Keadrick Peters (Dr. Frances Ward-Johnson)
The Battle of Images in Film: An Analysis of Movies by African American Directors Tyler Perry, John Singleton and Spike Lee

2:50 pm  Nneka Lashane Enurah (Dr. Frances Ward-Johnson)
The Business of Hollywood: Current State of Minority Images on the Silver Screen

3:10 pm  Margeaux Rose Corby (Dr. George Padgett)
Defining Barriers to Acceptance of Westernized Medicine Among Montagnard Refugees
Session III (2:10 pm – 3:30 pm)  ...continued...

**McMichael 115 (Moderator: Dr. Linda Niedziela)**

2:10 pm  Carly Erin Altizer (Dr. David E. Gammon)
Seasonal patterns of vocal mimicry in Northern Mockingbirds (Mimus polyglottos)

2:30 pm  Amelia Jean Helms (Dr. Jeffrey Coker)
Gene Expression During Tissue Regeneration of the Earthworm Lumbricus terrestris

2:50 pm  Janet Kathryn Schibler (Dr. Linda Niedziela)
Cardiovascular and Developmental Toxicity in Danio rerio, Zebrafish

3:10 pm  Kathryn A. Stackhouse (Dr. Linda Niedziela)
Developmental Toxicity of TCDD in Zebrafish (Danio rerio)

3:30 pm  Lisa Alexandra Bodine (Dr. Robert Vick)
Reducing Mortality Associated With Rotavirus Through Vaccination and Treatment

**McMichael 322 (Moderator: Dr. Prudence Layne)**

2:10 pm  Amanda Danielle Kennison (Dr. Megan Isaac)
Taking a Bite: New Media Sinks its Teeth into the Book and Changes its Future

2:30 pm  Erin N. Stevenson (Prof. Michael Strickland)
Seeing Seville: A Travel Writing Experience in Spain

2:50 pm  Katherine Leigh Meyer (Dr. Prudence Layne)
Becoming A Foot Soldier for Children's Human Rights in Africa

3:10 pm  Jordan L. Frederick (Dr. Rosemary Haskell)
Madness and the Disordered Mind in the Gothic Novels of Anne, Emily and Charlotte Bronte

**McMichael 333 (Moderator: Dr. Hunter Bacot)**

2:10 pm  Daniel G. Harwell (Dr. Hunter Bacot)
Early Voting in the 2008 Election

2:30 pm  McKenzie Raye Young (Dr. Hunter Bacot)
Partisanship and Ideological Changes in an Evolving Southern State

2:50 pm  Jenna Nicole Levy (Dr. Hunter Bacot)
An Indexing Strategy for Determining Likely Voters
Session IV  (3:40 pm – 5:00 pm)  ...continued...

LaRose Digital Theatre (Moderator: Dr. Kenn Gaither)

3:40 pm    Stephen Michael Ferguson (Dr. Kenn Gaither)
The Catholic Church and Its Use of Social Media

4:00 pm    Dannika Leigh Lewis (Dr. Richard Landesberg)
Foreign Correspondents in a Modern World: the past, present and future of global journalism

4:20 pm    Grace Ampian Trilling (Dr. Dr. Glenn Scott)
Press Freedom Critical Analysis, The Examination of East Asia: China, Singapore and North Korea

4:40 pm    W. Nathaniel Jones (Dr. John Burbridge)
Twitter and Business

Koury Business Center 242 (Moderator: Dr. Cynthia Fair)

3:40 pm    Taylor Elise Morrison (Dr. Cynthia Fair)
"I felt part of the decision-making process": A Longitudinal Study on Aspects of Control and Birth Satisfaction in the Prenatal and Postpartum Periods

4:00 pm    Lauren Chafee Taylor (Dr. Cynthia Fair)
“Listen to us”: Healthcare Providers’ Perspectives on Working Conditions and Suggestions for Improvement in HIV and Maternal Health Care in Cape Town, South Africa

4:20 pm    Anna Kristine Decker (Dr. Cynthia Fair)
“To Me It's Like Having a Kid, Kind Of”: Analysis of Student Reflections in a Developmental Mentoring/Service-Learning Program

4:40 pm    Kathryn Elise Hopkins (Dr. Cynthia Fair)
Developmental Mentoring, Relationship Quality and School Adjustment: The Chapel Buddy Project
**Koury Business Center 346 (Moderator: Dr. Michael Matthews)**

3:40 pm  Sara Paige Pasquinelli (Dr. David Crowe)
In Pursuit of Freedom: German Emigration to the United States between 1933-1941

4:00 pm  Ellis Hutchison Bridgers (Dr. Hui-hua Chang)
Septimius Severus: An Imperial Innovator?

4:20 pm  Kristen Elizabeth Klug (Dr. Michael Matthews)
The Mexican Revolution, the Frontline for Diplomacy During World War I: Germany’s Policy in Mexico and the Effects on the United States

4:40 pm  Lauren Julia Mottle (Dr. Rod Clare)
The Good and the Abhorrent Wars: Applying a Model of Student Movements to the University of North Carolina at Chapel Hill

**McMichael 115 (Moderator: Dr. Bird Stasz)**

4:20 pm  Sierra Elda Raimondi & Erin Rebecca Deans (Dr. Bird Stasz)
A Good Idea, but... Vanishing Rural Schools in Appalachia

4:40 pm  Kirby Claire Sypek (Dr. Terry Tomasek)
Stories From First-Year Teachers to Preservice Teachers

**McMichael 333 (Moderator: Dr. Laura Roselle)**

3:40 pm  Taylor Elizabeth Doe (Dr. Laura Roselle)
Campaigns and the Web: Email Communication in the 2008 Presidential Election

4:00 pm  Katherine Leigh Meyer (Dr. Laura Roselle)
Child Mortality, Illiteracy, and Soldiering in African Conflict Zones: A Case Study of Algeria, Chad, and Uganda

4:20 pm  Alyssa Marie Vigneault (Dr. Safia Swimelar)
Bosnia: The Modern Legacy of the Bloody Balkans?
ACCOUNTING

Executive Compensation at Banks Receiving Federal Assistance Under the Troubled Asset Relief Program

Clayton Winkelvoss (Dr. Anthony J. Amoruso) Department of Accounting

Over the past eighteen months, the American economy has experienced a downturn unmatched since the Great Depression. While many industries have come under scrutiny for their roles in the recession, the banking industry faced some of the most serious criticism due to the subprime mortgage meltdown, the collapse of the housing market, and the stagnation of credit markets. In order to rectify the situation, Congress approved a $700 billion bailout package in late 2008 to stabilize the financial sector (Herszenhorn, 2008). A significant feature of this plan was the Troubled Assets Relief Program (TARP), which was designed to buy troubled assets from financial institutions that had been weakened by the subprime mortgage crisis. Purchasing these assets would allow companies to stabilize their balance sheets and avoid further losses (Congressional Budget Office, 2009). Because TARP funds were intended to assist troubled banks, the public has been outraged by the size of the compensation packages paid to executives at these struggling financial institutions. Through my research, I examine the effectiveness of executive compensation by comparing corporate performance to changes in compensation for the 31 banks that accepted the most in TARP funds. In order to analyze the data, banks were partitioned into two groups: troubled banks and stable banks. “Troubled” banks are those that experienced significantly large declines in stock price and earnings per share relative to all banks. Preliminary results show that most banks decreased compensation from 2007 to 2008, with stable banks reducing compensation more so than troubled banks. The bonus portion of compensation, which is based on annual performance, was eliminated in all but three companies. While these results do not necessarily indicate a correlation between compensation and performance, it is important to understand that most of the compensation data for 2009 is currently being reported in proxy statements. This data, then, should reflect the negative performance of banks during the current recession.
Identity Formation: Representing Hybridity’s Role in the Co-Evolutionary Relationship between Self and Community

Monica Ren Wen Huang (Prof. Mike Sanford) Department of Art

Hybridity is a word meaning mixture. It can be used to describe a whole made up of two or more parts often in contrast to one another. I am interested in how hybridity can describe the process of identity formation, believing its construction to be something resulting in an anti-essentialist individual who embodies not an essence, but a collection of separate meanings and representations for who they are and/or were. Through my artwork, I express how an individual’s identity is continuous, variegated and changing based on outside, communal and cultural influences. In the context of this project, hybridity, then, becomes a meaningful, loaded term to describe heterogeneous communities made up of multiple impressionable individuals. Through my research I have investigated the roles that interpersonal perception and influence have on the individual’s ability to form single and multiple identities. I have deconstructed the process that forces the individual to constantly reconcile and redefine themselves in relationship to a community or collective that is perpetually in flux. Accordingly, I have discovered how the individual is weakened when separated from their community or historical, cultural context and why they are, in turn, simultaneously strengthened and defined within the collective. Seeing the give and take between self and other as a cycle characterized by sustained dialogue, I kept these questions in mind throughout the creative process:

*How does the individual survive, and a definition for their identity develop if they are independent of their community?

*How does the collective construct its perception of the individual and what are the social and interpersonal forces that influence that perception?

*How can my art engage the viewer in a dialogue between the art, themselves and their respective community?

Displayed today is a narrative. These ceramic figures reflect the artist’s hand and eye, each having undergone a physical change from the plastic malleable state to the hardened form, a product of the fire. On one end stands a lone, solid totem, undefined and lacking in descriptors of color and form. On the other end lives a cluster of animated, plant-like forms, existing as a community, intertwined and flowing throughout their shared space. This collective consists of highly decorated forms in both literal and figurative senses. On the surface they are imbued with warm color, enlivening their bodily movements. They have orifices and distinct extremities that give each its own identity. And, yet, they retain a feeling of belonging or familiarity to one another. Therefore, their aesthetic, visual and physical attributes translate into a conceptual, figurative meaning relevant to an audience that views them. The individual entity cannot exist without a context in which to be defined, one of both support and contrast. For, when the individual is taken out of its relevant community, it becomes comparable to the lone, solid totem in the room: undefined, indifferent and unambiguously close to no one.
ART HISTORY

Flat can be Deep: A Perspective on the Valuation and Common Perceptions of Two-Dimensional Artworks

Nichole M. Rawlings (Dr. Evan Gatti and Dr. Kirstin Ringelberg) Department of Art History

Beauty is in the eye of the beholder—that is what we have been trained to accept. However, it is possible that there are trends in modern artistic preference that can be explained through an analysis of past artistic movements. This paper will focus on a contemporary art project done by Soviet born artists Vitaly Komar and Alex Melamid. The project polls the art preferences of a wide range of people within a randomly selected sample population in both the U.S. and Europe. Born in Moscow, Russia where they attended art school and began an artistic partnership, the artists came to the United States in 1978 where they continued to create and display collaborative work until 2003. The works of Komar and Melamid are meant to inspire a questioning of the government or of society, and from 1994-1997 they embarked on a project that challenged contemporary notions of our subjective perceptions of art. While some critics have questioned the methods used to arrive at the final product, the end result is nonetheless an intriguing look at how modern viewers perceive artwork in some very “antiquated” ways. This paper is derived from research for my undergraduate Honors thesis, which synthesizes historiographic analysis, formal analyses of artworks, and modern case studies such as the Komar and Melamid survey. These case studies reveal trends of preference for naturalistic scenes utilizing one point perspective, despite the dominance of non-perspectival works in the West since the nineteenth century. The development of three-dimensional perspective in the Renaissance emphasized pictorial depth as necessary for “good” painting. The value of this Renaissance aesthetic is then affirmed by popular art history survey texts widely used in high school and college curricula. In the Komar and Melamid study a connection to the Renaissance may be recognized, and I suggest that through the exploration of this concept it may be determined that past artistic epochs continue to affect modern perceptions of work.

BIOLOGY

Seasonal Patterns of Vocal Mimicry in Northern Mockingbirds (Mimus Polyglottos)

Carly E. Altizer (Dr. David E. Gammon) Department of Biology

A large number of bird species are vocal mimics, meaning they imitate the sounds of other species. Despite the prevalence of vocal mimicry, virtually nothing is known about any seasonal variation in this behavior, or even whether seasonal variation exists. We hypothesized that the vocal mimicry of a prominent North American mimic, the Northern Mockingbird (Mimus polyglottos), would change based on the migration patterns of mimicked species and based on the stage of the breeding season. Song was sampled four times during a calendar year: fall after summer migrants had departed, early breeding season prior to any egg-laying, mid-breeding season, and late breeding season after summer migrants had arrived. Results showed that mockingbirds mimicked summer migrants throughout the year regardless of whether migrants were present. Furthermore, although the diversity of mimicry did not change significantly throughout the year, the overall frequency of mimicry was significantly higher in late spring. These results confirm the presence of seasonal influences on mockingbird vocal mimicry and suggest a seasonal model to explain certain aspects of song and mimicry.
Reducing Global Mortality Associated with Rotavirus through Vaccination and Treatment

Lisa A. Bodine (Dr. Robert Vick) Department of Biology

Rotavirus is the leading cause of severe childhood diarrhea. Without advanced medical care and treatment, a child with severe rotavirus infection can potentially die from dehydration. The annual mortality is estimated at 600,000 deaths per year (Glass et al., 2006). Currently there are two internationally approved vaccines designed for prevention which are neither 100% effective nor available to the majority of the world’s population (Shaw, 2006). We propose several novel ways to deal with prevention and treatment of rotavirus, and we specifically focus on global needs. A literature review using the latest medical journals was undertaken to suggest alternative methods of preventing mortality and treating the symptomatology. Since multiple issues concerning rotavirus and rotavirus infection were examined and proposed, various topics in the virological and medical literature were critically examined. The proposed methods of preventing rotavirus include DNA vaccines and protein subunit vaccines as well as several supportive therapies, including oral rehydration, antiemetics, and oral immunoglobulins, that may diminish the severity of the disease. These proposed therapies, singularly or in combination, are intended for regions lacking medical facilities, often areas of high rotavirus mortality. Our evaluation criteria of potential therapies included assessment of treatment efficacy, cost, route of administration, and storage.

The Effect of Soil Drying on the Bacterial Community in a Forest Soil in North Carolina

Alexandra L. Ford (Dr. Antonio Izzo) Department of Biology

In the future, global climate change will profoundly impact the natural environment. Current research has shown that these changes will lead to an increased chance of drought, along with a higher occurrence of soil drying. In order to further investigate this disturbance, the effect of soil drying on the bacterial community was examined in soil from a local forest ecosystem in North Carolina. The soil was subjected to a six week experimental drought in the laboratory and analyzed at three week time intervals. At each of these intervals, the quantity and composition of the cultivatable soil bacteria was measured using standard plate count methods, while non-cultivatable bacteria was analyzed using DNA analysis. Results of the standard plate counts showed a significant decrease in the bacterial population size in response to soil drying. Within the overall population of bacteria, one particular gram negative rod-shaped bacterium was significantly negatively impacted by the experimental drought. Based on the DNA analysis; however, the composition of the bacterial community remained highly diverse and showed no clear overall change during the entirety of the drought period. While the results across the study suggest that the overall bacterial population size may experience a generalized impact due to soil drying, the overall diversity of the community remained intact. It is important that scientific research work to clearly identify changes due to soil drying and how these changes may impact the functionality of the ecosystem.
Effects of Beech Bark Disease on Presence and Growth of Spring Ephemerals in Great Smoky Mountains National Park

Sarah E Galliher (Dr. David Vandermast) Department of Biology

For more than fifteen years, beech bark disease (BBD), a non-native insect-fungus pathogen complex, has caused much mortality in high elevation beech forests of Great Smoky Mountains National Park (GRSM). In the understory of a healthy beech forest, spring ephemerals typically thrive in the high sunlight and moisture-rich conditions that characterize the forest during the late winter and early spring months. In beech gaps affected by BBD, the canopy is diminished. The purpose of our study was to determine whether the change in canopy cover affects the presence and growth of spring ephemerals. Our hypotheses were that in the diseased forest, 1) spring ephemerals would emerge sooner, 2) there would be greater spring ephemeral species richness, and 3) spring ephemerals would have greater average cover per quadrat. Beginning mid-March 2009, data were recorded approximately once a week over an eleven week period. Sixteen 1m x 1m quadrats were set up and sampled in the healthy forest and in the diseased forest, creating 32 quadrats total. In each quadrat, every plant species was recorded and given a cover category. Results showed that 1) spring ephemerals did not emerge earlier in either forest type, 2) spring ephemeral species richness was consistently higher in the healthy forest, and 3) spring ephemeral cover was usually greater in the healthy forest. Contrary to the hypotheses, the diseased forest had significantly more total cover on most dates as well as greater species richness on the last four dates. This was due to the presence of summer herbs species not found in the healthy forest type. Our results suggest that the spring ephemeral period is shortened in the diseased forest compared to the healthy forest because of accelerated emergence of summer herbs.

Survival of Community-Associated Methicillin-Resistant Staphylococcus Aureus in Three Different Swimming Pool Environments (Chlorinated, Saltwater, and Biguanide Non-Chlorinated)

Morgan Julia Gregg, Robin LaCroix (Dr. Yuko Miyamoto) Department of Biology

The purpose of this study was to examine the viability of methicillin-resistant Staphylococcus aureus (MRSA) in 3 types of swimming pool environments. Community outbreaks of MRSA have become prevalent and almost rampant since 2006. MRSA has been found to be an increasingly alarming health concern after it began to spread from hospitals and healthcare facilities into other areas of the community. The well-described outbreaks in sports teams and other group youth activities raise the question of transmission of MRSA from a swimming pool environment. This experiment was performed from May to August of 2009 and was designed to determine whether swimming pools could serve as potential sources for large community outbreaks in both recreational and competitive swimming. Twenty-five samples of purulent material (pus) were collected, and all were plated on both a BBL™ Trypticase Soy Agar blood plate supplemented with 5% defibrinated sheep’s blood and also a BBL™ CHROMagar MRSA™ plate to determine presence of methicillin-resistant Staphylococcus aureus (MRSA). Each of the 3 types of swimming pool water (chlorinated, saltwater and biguanide Baquacil™) was obtained in sterile containers from (Greater Greenville, SC area) a local chlorinated neighborhood pool, the saltwater pool of a local fitness club, and from biguanide treated water samples obtained by the local pool and spa service representative. This study demonstrates that after one hour, all MRSA inoculants were found to be nonviable in chlorinated, saltwater, and biguanide treated water. This study indicates that swimming pool water that is properly maintained in both public and private swim centers is not likely to be a vehicle to spread MRSA from swimmer to swimmer.
Gene Expression during Tissue Regeneration of the Earthworm *Lumbricus Terrestris*

**Amelia Jean Helms** (Dr. Jeffrey Coker) Department of Biology

Terrestrial annelids (earthworms) are prime organisms for tissue regeneration studies due to their extensive capacity to regenerate. In order to understand genetic mechanisms involved in tissue regeneration, gene expression patterns were studied in wounded *Lumbricus terrestris* (nightcrawlers) throughout the regenerative process. Reverse-transcriptase polymerase chain reaction (RT-PCR) was employed to characterize relative levels of gene expression along nine timepoints during the regenerative process (from one minute to two weeks after wounding). RT-PCR indicated that two actin genes are differentially expressed during the regeneration timecourse. The semi-quantitative results of these RT-PCR reactions suggest that the role of actin as a “housekeeping gene” is not true during tissue regeneration. It appears that rather than being expressed at the same level throughout the process, actin genes are upregulated 24 hours and two week after cutting. This pattern of actin gene expression is an indicator of the complicated mechanisms behind tissue regeneration, and reinforces the need to better understand this intricate process. It also suggests that actin is not an appropriate control for tissue regeneration experiments.

The Composition and Structure of Beech Gaps in Great Smoky Mountains National Park 15 Years after Beech Bark Disease Infestation

**Julia Elinor Roberts** (Dr. David Vandermast) Department of Biology

Beech gaps are high elevation forest communities unique to the southern Appalachians and found primarily in Great Smoky Mountains National Park (GRSM). As their name suggests, high-elevation beech gaps are dominated by American beech (*Fagus grandifolia*) and are surrounded by forests consisting of other species. In 1985 trees were mapped in 11 high-elevation beech forests. In 1993, an invasive insect-fungal pathogen complex specific to beech (beech bark disease, or BBD) was identified in central GRSM near Clingmans Dome. The 1985 tree maps were used to re-establish and resample trees in these plots in 2000 and again in 2008-09. The data from 2000 indicate that BBD has caused significant beech mortality throughout eastern GRSM beech forests. This study includes the results of the 2000 study and reports on the additional changes to the composition and structure of beech forests through the summers of 2008 and 2009. Based on the results of the 2000 study and of other research on the effects of BBD elsewhere in North America, we hypothesized that 1) BBD would cause continued mortality in eastern GRSM beech forests, 2) BBD would have caused increased mortality in western GRSM beech forests, 3) that forests that had high mortality in 2000 would show signs of forming “aftermath” forests dominated by beech sprouts but with a greater abundance of opportunistic species than in healthy beech forests. Our results revealed that basal area (area of the plot covered by tree stem in $m^2$ per hectare) and stem density (the number of stems per hectare) decreased by 33% and 35.4%, respectively, and that much of the mortality since 2000 was in western GRSM. Furthermore, changes in the proportions of regenerating tree species suggest a compositional transition to aftermath forests. These results support the hypothesis of an overall reduction in plot basal area due to BBD-caused mortality of the largest beech trees, with increasing numbers of small non-beech replacement species. Our results ultimately suggest that GRSM contains a mosaic of declining and recovering high-elevation beech forests which correlate to the presence and progression of BBD.
Cardiovascular and Developmental Toxicity in *Danio Rerio*, Zebrafish

Janet K. Schibler (Dr. Linda Niedziela) Department of Biology

The compound 2,2’,4,4’-tetrabromodiphenyl ether (PBDE 47) serves as a flame retardant in plastics and textiles. Recent studies have found traces of the compound in animal tissue; specifically fish, marine mammals, and humans, and there is a growing concern that the compound could adversely affect various body systems. This study used zebrafish as a model organism to investigate the effects of PBDE 47 on the cardiovascular system. Three levels of toxicity were investigated: general toxicity, developmental toxicity, and mechanistic toxicity. Zebrafish embryos were exposed to 5 test concentrations: 100, 500, 1000, 2000, and 5000 µg/L from approximately 3 hours post-fertilization until 216 hours post-fertilization. General toxicity was determined by the lethality of the compound, measured daily. Developmental toxicity was assessed by measuring heart rate, and assessing morphological abnormalities daily, then measuring the length of the fish after hatching. An increase in the percent of larvae exposed to PBDE 47 that expressed arrhythmia was statistically significant. When arrhythmia occurred it was almost always in a 2:1 ratio with the atrium contracting twice as frequently as the ventricle. Both chambers exhibited steady rates of contraction, but the atrium displayed a relatively normal rate while the ventricle heart rate was severely decelerated. To determine the mechanism underlying the arrhythmia observed, a specific cardiac gene previously linked to cardiac arrhythmia was targeted and assessed. This gene, *zerg*, is orthologous to the human HERG gene, which encodes for a potassium channel that greatly contributes to heart rate and rhythm. Gene expression analysis is ongoing as we try to determine if *zerg* genes are responsible for the arrhythmia seen in this study.

Design and Testing of a DNA-Based Approach for Detecting the Amatoxin Gene from the Ectomycorrhizal Fungus *Amanita Bisporigera* in Environmental Soil Samples

Laura E. Segars (Dr. Antonio Izzo) Department of Biology

The mycorrhizal symbiosis is a widespread association between plant roots and fungi. Certain members of the ectomycorrhizal fungal genus *Amanita* produce amatoxins, which lead to extensive cell death by inhibiting an enzyme necessary for gene transcription. The purpose of this study was to design a DNA-based approach to detect and potentially quantitate one of the amatoxin genes within environmental soil samples. Previous studies have identified that the gene AMA1 is translated into the amatoxin alpha-amanitin. The known sequence of AMA1 was used to design primers to amplify a large portion of AMA1 via the polymerase chain reaction (PCR). DNA for the tests was isolated from locally-collected (Elon, NC) *Amanita* mushrooms, as well as from tissues samples of *A. virosa* and *A. bisporigera* obtained from the Duke Mycological Herbarium. DNA sequence analysis of the locally collected samples confirmed that they were *A. bisporigera*. Subsequent testing and analysis through agarose gel electrophoresis showed that the designed primers successfully amplified a target of approximately 300 base pairs which matched the predicted size of the AMA1 gene region targeted. By spiking a known concentration of *A. bisporigera* into a sample of DNA isolated from soil, we were able to preliminarily assess the sensitivity of this approach to detecting this gene in an environmental soil sample. Real-time PCR analysis suggests that detection of the gene was possible down to 0.05 ng/ul of *A. bisporigera* tissue, although additional non-desired targets were amplified as well. The amatoxin gene was only successfully amplified from *A. bisporigera*, not *A. virosa*, suggesting these primers may help distinguish between different *Amanita* toxin-producing species. Further refinement of the techniques used in this study would provide additional insight into the environmental expression of the amatoxin gene and microbial interactions.
Developmental Toxicity of TCDD in Zebrafish (*Danio Rerio*)

**Kathryn A. Stackhouse** (Dr. Linda M. Niedziela) Department of Biology

2,3,7,8-tetrachlorodibenzodioxin (TCDD) is an environmental toxin formed as a byproduct from the production of PVC plastic, waste-burning incinerators, and pesticides. The developmental toxicity of TCDD in zebrafish (*Danio rerio*) was investigated in this study. It had previously been found that early embryonic exposure to TCDD caused a decrease in swimming activity as dose increased. The purpose of this project was to investigate the cause of this abnormality. It was initially hypothesized that TCDD exposure caused a structural difference in somite segmentation, a process leading to the development of vertebrae, skeletal muscles, and skin controlled by an apoptotic mechanism. In order to study this hypothesis, the fish were bred and the embryos were collected and exposed to relevant concentrations of TCDD at the 8- to 16-cell stage. A concurrent solvent control was included in each trial. Somites were counted every four hours between 24 and 48 hours post fertilization. Also, digital photos and videos were taken in order to measure degree of spine curvature and body length. During data collection, severe pericardial and yolk sac edemas were observed as well as failure of swim bladder inflation. Preliminary data were not significantly different for somite segmentation, spine curvature, or body length. After confirming negative results, edema and swim bladder inflation were both pursued as a potential mechanism of toxicity. The data regarding edema and/or swim bladder inflation are promising. In the control group, there was no evidence of edema; however, severity of the edema increased significantly as dose increased. There was evidence of 100 percent successful swim bladder inflation in the control groups. Conversely, in the 1500, 2000, and 2500 ppt treatment groups, there was no evidence of swim bladder inflation. Additional data collection and analysis will focus on these morphological abnormalities in order to define the relationship.

Oil Dispersant Affects the Activity of NA+/K+ Atpase in Brine Shrimp (*Artemia Franciscana*)

**Ariana L. Wilkinson** (Dr. Linda M. Niedziela) Department of Biology

Oil dispersants are commonly used to aid in aquatic oil spill clean-up. However, oil dispersants themselves have toxic effects on aquatic organisms, such as brine shrimp. In order to study the mechanism of toxicity, Na’/K’ ATPase activity was evaluated in populations of *Artemia franciscana*, brine shrimp. Na’/K’ ATPase is an integral membrane protein that maintains the electrochemical gradient across the cell membrane. Because oil dispersants are surfactant-based, and surfactants affect membrane integrity; the hypothesis is that oil dispersants cause toxicity by altering Na’/K’ ATPase function. Brine shrimp cysts were hatched by incubating them for two days in synthetic sea water. Once hatched, an acute toxicity test was performed by adding 200 µL of brine shrimp to Sea Brat concentrations of 0 ppm (control), 10 ppm, 100 ppm and 1000 ppm in 10 mL of Instant Ocean. The mortality of brine shrimp was evaluated after 24 hours and 48 hours exposure. Following the acute toxicity test, protein quantification and Na’/K’ ATPase enzyme activity assays were performed at concentrations that caused limited mortality. Na’/K’ ATPase activity was isolated from Mg’ ATPase activity by adding ouabain to inhibit Na’/K’ ATPase function. Using a comparison of overall ATPase activity and Mg’ ATPase activity, Na’/K’ ATPase activity could be deduced. Exposure to Sea Brat generally increased Na’/K’ ATPase activity in brine shrimp compared to the control samples. This increased activity could suggest that Sea Brat causes the enzyme to become overactive to compensate for membrane damage while maintaining osmoregulation.
BUSINESS ADMINISTRATION

The Effects of Generational Differences on Cultural Values as Measured by the Hofstede Framework

Stephanie J. Allen (Dr. Susan L. Manring) Department of Business Administration

The purpose of this project was to determine whether Geert Hofstede’s cultural values continue to be a valid measure today, and whether those values differ across generations within the same national culture. Measurements were also made to determine whether studying abroad significantly affected the cultural values of today’s students. Many consider Hofstede to be the founder of cross-cultural management research and his formula has been well respected for many years. To determine the continued accuracy of his framework, Hofstede’s Questionnaire was given to BUS 323 students at Elon University serving as the generation Y sample. The Questionnaire was also given to Love School of Business professors, incorporating several older generations. Results for the entire American population studied indicate that all five values (Power Distance, Uncertainty Avoidance, Individualism, Masculinity, and Long-Term Orientation) are now significantly different than Hofstede’s original measurements. However, students have considerably higher Uncertainty Avoidance and Masculinity scores than all professors, and significantly lower Individualism and Long-Term Orientation. Additionally, students who had studied abroad have significantly lower Power Distance and Masculinity and significantly higher Individualism than students who had not studied abroad. Knowledge of these generational differences will engender more accurate knowledge and understanding of cultural differences within the US and across countries. Further, this research has important implications for preparing today’s students for study abroad experiences, and particularly for students seeking to develop international careers. The research findings will also be of value in enhancing Elon’s learning environment, by better understanding similarities and differences between students and professors.

Twitter and Business

W. Nathaniel Jones (Dr. John Burbridge and Professor Coleman Rich) Department of Business Administration

Many see Twitter as a novelty, but the service has the potential to revolutionize the way ideas are shared, namely by bringing together individual and broadcast communications effectively in one platform. Twitter is real-time, interactive, and it naturally supports communities. For these reasons, the medium presents a number of opportunities and challenges for businesses that are now able to connect to their customers in ways stronger than traditional communications would allow. This project addresses the question of how some companies are creating a competitive advantage by engaging with customers online through Twitter. In recent years, with the advent of “social media,” the dynamics of the customer-business relationship have been shifting dramatically. Customers are relying more on each other for information to make buying decisions, and they are expecting greater accessibility and responsiveness from companies. Businesses now have new opportunities to connect with customers, obtain real-time feedback, improve service, and develop mutually beneficial relationships. The research offers theoretical background for how Twitter adds value to communication between businesses and customers. It also summarizes who uses Twitter, why they use it, and how to get started engaging on the platform, including some of the challenges when measuring success in social media. Lastly, examples of best practices of companies using Twitter for engaging promotions, real time service recovery, PR and damage control, and internal communications and culture are given, along with recommendations for firms considering social media. These stories demonstrate some of the real world rewards and risks the service presents, and offers a framework for deciding when and how a given business should use the service.
The Determinants of Top Tier Research in Management

Kaitlyn L. Schultz (Dr. Matthew Valle) Department of Management

University and business school administrations undergo a great deal of pressure to make sure their faculty research output suffices the needs of presidents, deans, accrediting bodies, and press rankings and ratings. Publication rates in high quality (“top tier”) journals have been the traditional measure of research impact, yet little is known about the constellation of factors which lead to top tier research productivity. There may be significant factors that contribute to the ability of management faculty, in particular, to produce these top tier publications. We propose and test a model of factors which we believe lead to the publication of high quality research outputs in the management discipline. The model of factors includes status-based antecedents, job/organizational antecedents, and individual antecedents, which are then used to predict top tier research productivity. It has been suggested that high status-based antecedents such as institutions of academic origin and current academic affiliation will result in better opportunities for research productivity due to the network effect (Long et al., 1998). Research impact is also believed to be a function of the individual’s job and organizational context, illustrated by variables which measure the effect of editorial board memberships, institutional financial support, the availability of doctoral students, faculty academic rank, and public or private institution status (Podsakoff et al., 2008; Trieschmann et al., 2000). Lastly, the individual antecedent that is predicted to produce greater top tier research is the assessment of intellectual capacity by means of Graduate Management Admissions Test (GMAT) scores. Data was collected utilizing public web resources such as the Association to Advance Collegiate Schools of Business (AACSB), university profiles, and faculty résumés. Coupled with a comprehensive listing of top journals in management by Podsakoff et al. (2008), our preliminary regression analysis of 447 management faculty members support the proposed theories and suggest that by identifying the factors which lead to top tier productivity, we can share a greater appreciation for faculty research and the impacts they have on their institution’s overall mission.

An Investigation of the Effectiveness of Adult ESL Programs for Spanish Speakers in Alamance County

Danielle Lynn Lewald (Dr. Susan Manring) Department of Business Administration

Due to the rapid growth and expanding influence of the Hispanic and Latino population in N.C., the importance of efficient and successful English as a Second Language (ESL) programs is apparent. During the past decade alone, N.C. has experienced an influx of over 300,000 new Hispanic residents (“DCCC,” 2006). ESL programs are meant to provide students with the necessary skills in order to reach higher education and employment. This investigation is aimed at identifying ways in which the Adult ESL program of Alamance Community College (ACC) can better prepare their Spanish-speaking students for real world situations as they enter mainstream America. A partnership formed between the Kernodle Center for Service Learning and the Adult ESL program at ACC made it possible for the researcher to conduct 15-30 minute interviews with ESL instructors and to distribute surveys to over 100 ESL students at various levels of the program. Additional research is being gathered through interviews with local business employers with experience working with non-native English speakers. Using SPSS, survey results in the form of statistical data will be generated to measure how satisfied ESL students are with the current materials and methods used in their class, what they desire to see further incorporated into their lessons, and how helpful they feel their class is in preparing them for the workforce and other real world situations. Interviews with ESL instructors are being recorded and coded to find patterns among teachers’ opinions of what aspects of the ESL program is suffering most and what they believe would improve these areas. Coding of interviews with local business employers will be used to draw conclusions on how to make adult ESL students more marketable as they enter the workforce. Initial patterns have demonstrated ESL instructors’ desire for additional technological resources, institutionalized communication among ESL teachers, and knowledge of how current ESL resources can be better utilized. This research will be compiled in a marketing research report in order to highlight significant findings and offer recommendations for the improvement of ACC’s Adult ESL program.
CHEMISTRY

An Examination of the Oxidation of High-Density Lipoproteins: A Contributor to Heart Disease

Sara Ashley Dennin (Dr. Kathryn Mansfield Matera) Department of Chemistry

Heart disease is the leading cause of death in the United States and occurs when cholesterol accumulates in arterial walls. Lipoproteins are large, organized structures containing lipids (fats) and proteins that are responsible for the transportation of cholesterol. High-density lipoproteins (HDL) are involved in the removal of cholesterol from the body and therefore decrease the chance of developing heart disease. However, HDL can become oxidized and have been found to contribute to the progression of heart disease. The oxidation of apolipoprotein A-1, the main protein in HDL, and its coinciding amino acids were examined to determine the nature and extent of oxidation. The oxidation was visualized through the use of ultraviolet-visible spectroscopy, gel electrophoresis, Western blotting, and gas chromatography. These methods demonstrated the oxidation that is occurring within the HDL proteins. Apolipoprotein A-1 as well as lysine, when oxidized, demonstrated carbonyl formation. The activity of lecithin cholesterol acyltransferase (LCAT), an enzyme used during cholesterol transportation, was also examined through ultraviolet-visible spectroscopy. The activity of LCAT was altered when apolipoprotein A-1 was oxidized by Horseradish Peroxidase, therefore inhibiting the transportation of cholesterol. Further tests need to be investigated to either confirm or reject oxidation methods and create a mechanism that describes the oxidation process.

Investigation of Lactoperoxidase Activity: The Classification of Oxidized Estradiol and Its Mechanistic Role in Damaging DNA

Carly A. Fabrizio (Dr. Kathy Matera) Department of Chemistry

The enzyme lactoperoxidase (LPO) will oxidize various biomolecules while reducing hydrogen peroxide to water in the mammary, salivary, and mucosal glands of the human body. Hormones such as estrogens, which are readily available in the human body, are susceptible to oxidation by the lactoperoxidase enzyme. The product is a highly unstable free radical that can wipe out microbial presence, which is beneficial to the body. However, recent studies have shown the potential of these free radicals to interact with DNA and proteins in the vicinity to alter conformation and function, which may ultimately lead to cancer. Understanding the activation of carcinogenic free radicals and their mechanism in DNA damage would benefit breast cancer research, since a large concentration of LPO is found in the mammary glands of the body. Using gel electrophoresis, DNA damage caused by oxidized estradiol hormones was analyzed. Further techniques such as thin layer chromatography (TLC) and GC-MS were used to determine the presence of oxidized estradiol and attempt to classify its structure. Results showed that oxidized estradiol hormones were causing DNA damage similar to the way a cupper sulfate system would, through a one-electron system. Though the presence of oxidized estradiol was identified through TLC, further research should focus on isolating the oxidized hormone in order to further classify its structure. Based on these results, it is suggested that estradiol is oxidized in the presence of lactoperoxidase and binds to LPO near the edge of the porphyrin ring as opposed to directly on the iron-heme of the enzyme.
Studies of Rhodium (dpk) as a Possible Carbon Dioxide Reduction Catalyst

Matthew Adam Horowitz (Dr. Karl D. Sienerth) Department of Chemistry

Buildup of greenhouse gases, especially carbon dioxide, in the atmosphere is one of the biggest issues threatening our way of life. Over the last few decades substantial research has been done to devise methods to capture CO$_2$ from the atmosphere and store it – this process is called sequestering. Preferable to sequestration would be to chemically convert the CO$_2$ to other, more useful, compounds. An efficient way to carry out such conversion is through catalytic electrolysis -- using the energy in electricity to facilitate the chemical change. The catalyst investigated here, di-2-pyridyl (dpk) rhodium(III) – called Rh(dpk) for short - was first synthesized about 10 years ago, but was not studied as a possible CO$_2$ conversion catalyst.

Previous studies in our laboratory and in the literature have shown that other rhodium compounds catalyze CO$_2$ conversion; similarly, previous studies demonstrated that compounds in which dpk is bonded to different metal ions have a catalytic effect on chemical conversion of CO$_2$. It is logical, then, to consider the study of Rh(dpk) in the same vein. This presentation will focus on our synthesis of Rh(dpk) and subsequent electrochemical studies of that compound as a possible CO$_2$ reaction catalyst. Normally, a voltage of -2.2 V is needed to reduce CO$_2$ electrolytically, but our results indicate that Rh(dpk) facilitates the reduction at -1.4 volts, representing significant energy savings. Studies were conducted using both acetonitrile, a traditional electrochemical solvent, and a new mixed solvent system involving acetonitrile combined with a room temperature ionic liquid. The mixed solvent system exhibits dramatically increased CO$_2$ solubility which might, in the long run, lead to greatly increased efficiency.

Kinetics and Binding Studies of Lactoperoxidase with Estradiol in the Presence of Hydrogen Peroxide

Elise M. Post (Dr. Kathy Matera) Department of Chemistry

Lactoperoxidase (LPO) is an enzyme of the peroxidase family, typically found in mammalian milk, breast ducts, saliva and tears. Peroxidase enzymes contain a heme prosthetic group commonly found in its native state of Fe$^{3+}$. When combined with hydrogen peroxide, LPO is capable of oxidizing biomolecules, such as estrogens. The oxidized estrogen molecules are further able to attack and oxidize other molecules, such as DNA. Thus, the oxidized estrogen substrates are regarded as an important risk factor for breast cancer.

Initial binding studies between LPO and estradiol, a type of estrogen, confirmed that estradiol binds to LPO and thus is likely susceptible to oxidation by the enzyme. Kinetics experiments helped determine initial oxidation rates of the estradiol. Future work will obtain more data on the kinetics and binding studies of estradiol with lactoperoxidase, as well as the examination of additional estrogen such as estrone and estriol in an effort to determine more about the oxidation mechanism of lactoperoxidase.
Studies of a New Rhodium-Based Carbon Dioxide Conversion Catalyst

Anthony M. Rizzuto (Dr. Karl D. Sienerth) Department of Chemistry

Efficient conversion of carbon dioxide (CO\textsubscript{2}) into more useful substances has implications for environmental management both within the biosphere and in enclosed systems such as submarines and space vehicles. Because conversion of CO\textsubscript{2} requires immense energy investment, the last four decades have seen a great deal of research focusing on the development of effective CO\textsubscript{2} conversion catalysts. Many such proposed catalysts have involved organometallic structures that mimic the structure of natural CO\textsubscript{2} conversion catalysts, chlorophylls. For instance, strategic placement of carbon-oxygen double bonds (carbonyl groups) in the structure appears to lead to more effective catalysis. One reported catalyst that facilitates CO\textsubscript{2} conversion to other substances using electricity (electrochemistry) is [Rh(bpca)(tpy)][PF\textsubscript{6}]\textsuperscript{2-}, for which the authors reported a CO\textsubscript{2} reduction voltage of -1.44 V vs. Ag/AgCl, which represents an energy savings of about 25%. Our work focused on a compound with a similar structure but with the (tpy) group replaced by a second (bpca) group to increase the number of carbonyl groups in the compound. Following literature protocols, we synthesized [Rh(bpca)\textsubscript{2}][PF\textsubscript{6}] and characterized it using several analytical methods. Utilizing standard techniques, we studied the electrochemistry of [Rh(bpca)\textsubscript{2}][PF\textsubscript{6}] both in the absence of and in the presence of CO\textsubscript{2}. Experimental results provided clear indication of the catalytic reduction of CO\textsubscript{2} due to the presence of the [Rh(bpca)\textsubscript{2}][PF\textsubscript{6}] compound. This presentation will discuss the synthesis and characterization of that compound, as well as the electrochemical evidence for its potential use as a CO\textsubscript{2} conversion catalyst. †bpca = bis(2-pyridylcarbonyl)amide anion; tpy = terpyridine; Ag/AgCl is a common reference electrode used in non-aqueous solvents.

The Ortho-Effect in the Formation of Meta-Stable Intermediates in the Mass Spectra of Mono-Substituted Triphenylphosphines

Kelsey M. Van Dalisen (Dr. Eugene Grimley) Department of Chemistry

This study involves the introduction of samples of a homologous series of mono-substituted triphenylphosphines (the parent molecules) into the evacuated ionization chamber of a mass spectrometer. A mass spectrometer is an instrument used to determine the elemental composition of a parent molecule. Upon their introduction, gas phase parent molecules are ionized by bombardment with high energy electrons and subsequently undergo fragmentation into a set of stable and meta-stable sub-molecular species whose elemental compositions are characteristic of the parent molecule. This study was undertaken in order to add knowledge to the basic understanding of the formation and stability of intermediates formed from fragmented mono-substituted triphenylphosphine (PPh\textsubscript{3}) derivatives. The value of this study lies in the ability to produce new sub-molecular species of the parent molecule that possess stability only in the vacuum conditions of a mass spectrometer and are otherwise too unstable to be isolated in a condensed liquid or solid media. Previous fragmentation studies of PPh\textsubscript{3} and several PPh\textsubscript{3} derivatives indicated the formation of such meta-stable intermediates. In order to expand the series of compounds whose fragmentation patterns are understood, a number of PPh\textsubscript{3} derivatives with the substituents F, Cl, Br, I, CH\textsubscript{3}, and OCH\textsubscript{3} in the ortho position were studied. Analysis of intermediates formed from the fragmentation of the parent molecule gave information about how the nature and bonding of the studied substituents affected the character of nearby bonds in the molecule. Manual interpretation was used in conjunction with software assisted interpretation using “Mass Spec Calc Pro” to analyze the composition of the intermediates observed. With the exception of the iodo-substituted PPh\textsubscript{3} derivative, analysis of the fragmentation of all of the PPh\textsubscript{3} derivatives showed that intermediates analogous to those previously observed in the spectra of PPh\textsubscript{3} were formed upon fragmentation of the parent molecule. It was evident in the case of the iodo-substituted PPh\textsubscript{3} derivative that an iodine-carbon bond was preferentially broken in the fragmentation process and consequently the ortho-coupled intermediate containing the iodo substituent was not observed.
COMMUNICATIONS/JOURNALISM

Seoul Searching: OECD Ministerial Participants’ Views on the Future of ICT’s

Ashley C. Barnas (Professor Janna Anderson) School of Communications

A video ethnography and content study of leading economists and other attendees was conducted at the Organisation for Economic Co-operation and Development’s ministerial meeting on the future of the Internet economy. Results collected from the 31 interviews focus on the evolution of information and communication technologies. From June 16-18, 2008, the ministerial meeting in Seoul, Korea, was the OECD’s first since the 1990s. I conducted 31 interviews with foreign ministers, business leaders, technical experts, and representatives of civil society and academia. At the OECD ministerial event, these groups of people conferred with the goal of comparing experiences, seeking answers to common problems, and coordinating domestic and international policies. The OECD comprises 30 nations and is an international organization headquartered in a secretariat based in Paris. It has 200 committees, working groups, and expert groups that collect data, monitor trends, research social changes and evolving patterns in trade, environment, technology and other areas and forecast economic developments. In the voluntary interviews of about 5 to 10 minutes each, I asked for interviewees’ perspectives on the future of the Internet, what Internet governance issues are the most difficult to resolve to everyone’s satisfaction, and other questions tailored to each person’s area of expertise. After transcribing the full content of all 31 interviews, I conducted a content analysis, searching for and coding common themes among the different sectors represented at the meeting. Among the findings: recurring concerns for the future of the Internet include privacy in regard to social media, safety for children, and access to information and educational content for all people, everywhere.

Defining Barriers to Acceptance of Westernized Medicine Among Montagnard Refugees

Margeaux R. Corby (Dr. George Padgett) School of Communications

What are the cultural barriers to displaced populations’ acceptance of “Western” medicine and compliance to its tenets? How can medical practitioners overcome these barriers to improve the health of these displaced populations? Culture is primary in shaping an individual’s perception of illness and compliance with prescribed medical regimens. Identification of health-related cultural elements is critical, as the Healthy People 2010 report identified. Respect for these factors is essential to the acceptance of recommended care regimens and preventative programs (Kreuter et al., 2002). Refugee populations are at greater risk than other segments of the population (Kreps & Sparks, 2008) and are the most likely to experience dissonance with Western medical culture. A bridge must be created between cultural axioms and the foreign, yet effective interventions that Western medicine provides, in order for the target population to accept the medical notions of their new nation. This research attempts to guide health care providers in offering acceptable interventions that will better the overall health of the target population. This ethnographic study focused on collecting evidence-based cross-cultural health knowledge of the Montagnard community in Greensboro, North Carolina. Snowball sampling was used to contact members of the Montagnard community, through refugee resettlement agencies, community leaders and the United Montagnard Church. Photographs and video of informant interviews, their settings, and audio material from taped conversations were collected. These subjective narratives, in combination with investigator observations and review of previous research, were used to analyze the overall patterns observed in both first- and second-hand accounts of health-related activities and health care utilization by the Montagnard community. Patterns found included misunderstandings between patient and provider due to differences in defining illness, passive obedience, and false perceptions of Western medicine. These fostered patient noncompliance, explained ignorance of clinical appointment and payment systems and highlighted the influence of causation and collectivism in the decision to seek care. In order to overcome cultural barriers, health providers must be willing to familiarize themselves with a patient’s unique health culture. It is through multicultural awareness that health care providers can achieve treatment success and eliminate health care disparities between refugee and native populations.
Multistakeholder Governance: The Future of the Global Internet

Andie N. Diemer, Andrew J. Smith, & Eugene Daniel (Professor Janna Anderson) Department of Communications

This is a study of opinions of information technology stakeholders on issues pertaining to Internet governance. This includes perspectives from individuals associated with government, industry, civil society, research and academia from a variety of countries and backgrounds who were in attendance at the 2009 United Nations-facilitated Internet Governance Forum. This was the fourth annual meeting of the IGF, which addresses issues of access, critical Internet resources, diversity, openness, security, capacity building and development. Research was conducted in Sharm El Sheikh, Egypt, Nov. 15-18, 2009, at an IGF event that attracted more than 1,800 stakeholders from nearly 100 nations for a discussion of ideas and ideals as they relate to the future of information and communication technologies. Nearly 100 participants from a range of social, political, geographical and economic backgrounds participated in the voluntary survey in a convenience sample gathered in the village square and hallways of IGF. The basic purpose of Internet Governance Forum is to maximize the opportunities the Internet offers, addressing risks and challenges. The research revolved around collecting as many viewpoints as possible to assess the potential future of the Internet Governance Forum and sample stakeholder attitudes about how the Internet will be shaped. Research reflects that many challenges still face the Internet today and will continue to do so in the future, and that stakeholders view different sets of challenges as key to the positive development of information and communication technologies. Major areas of issue include access, security, censorship and ownership. Survey participants commented on challenges and how to approach them and offered input regarding the future improvement of the multistakeholder processes of the Internet Governance Forum.

The Business of Hollywood: Current State of Minority Images on the Silver Screen

Nneka Enurah (Mentor: Dr. Frances Ward-Johnson) Department of Communications

From the inception of popular media forms such as television and motion pictures, the images of minorities have been distorted, manipulated, and taken for granted. Those controlling the various avenues of commercial entertainment have exploited minorities for financial gain, both knowingly and unknowingly, for numerous years. Arguably, no other racial group has suffered more from stereotypes than African Americans. In particular, the Black image in movies has been portrayed in a negative light since depictions of the mammy, coon and pickininny from the late 1800s to mid-1950s. Today, there are less blatant images, but negative stereotypes of blacks still exist via the media. The purpose of this research is to ascertain the current status of blacks in the mainstream film industry. For many years in Hollywood, roles for blacks have often been limited to “black white male buddy films” and ethnic stereotypes used for comic relief. Films with black actors usually focused on white characters and their interpretations of situations. Often black characters were sidekicks or placed in limited supporting roles in action films. During the 1970s, “blaxploitation” films emerged to capture black audiences and often showed blacks in the ghetto with actors portraying pimps and drug dealers and over sexualized women. After analyzing five films from varying time periods, conducting focus groups with ordinary movie goers, one-on-one interviews with film experts and interpreting selected articles from Variety, the popular Hollywood business magazine, this research concluded that the film industry has never been more ripe for creating “new” African American images. When compared to other forms of media, the film industry has not only recognized black actors and actresses for their talents, but has also granted blacks “all the prestige, financial compensation, and opportunities available to white actors” (Leonard, 2009). According to this research, the industry has recently opened its doors not only to black actors but to black writers, directors, and producers more than any time period in history. The untold story, according to research, is that moviegoers, who are mostly white, attend more blockbusters that feature black actors, including those in leading roles, than ever before. Today’s filmmakers are raking in millions of dollars by using a more diverse cast to reflect the world that Americans live in, and therefore, feature more blacks in films.
The Catholic Church and Its Use of Social Media

Stephen M. Ferguson (Dr. Kenn Gaither) Department of Communications

As a 2000-year-old institution with over a billion followers worldwide, the Catholic Church is arguably the world’s largest organization. It spans myriad cultures, languages, races, political and social ideologies, and yet despite these differences provides a common thread among these “publics.” With such a widespread following, the Catholic Church needs a way to communicate effectively with these groups, reminding them of its mission and maintaining unity among adherents across countries and cultures. Doing this is no easy task, but the Church has realized the importance of utilizing technology to stay connected to its Catholic faithful, even prior to the creation of the Internet. In an excerpt from Inter Mirifica, a decree promulgated by Pope Paul VI, he said: “Among the wonderful technological discoveries which men of talent, especially in the present era, have made with God’s help, the Church welcomes and promotes with special interest those which have a most direct relation to men’s minds and which have uncovered new avenues of communicating most readily news, views and teachings of every sort. The most important of these inventions are those media which, such as the press, movies, radio, television and the like, can, of their very nature, reach and influence, not only individuals, but the very masses and the whole of human society, and thus can rightly be called the media of social communication” (1963). Through the use of content analysis, this research seeks to analyze how the Catholic Church represents itself through the use of sites such as YouTube, Facebook, and Twitter, and its effectiveness in utilizing these social media. Ultimately, the study intends to show how the Church has taken to promoting itself and its mission with greater urgency and, in the words of the Church’s current head, Pope Benedict XVI, has used new communication technologies to “introduce people to the life of the Church and help [its] contemporaries to discover the face of Christ” (2010).

Picture Perfect: An Analysis of Two Women Politicians, Their Public Relations Image and Media Portrayals

Caroline J. Fox (Dr. Frances Ward-Johnson) School of Communications

With the push for equal rights for women in politics and the election of more female public officials, the image of women in politics has garnered greater attention and changed drastically. The media has often been scrutinized for its portrayal of women in politics as the result of numerous studies showing bias in the coverage and framing of female candidates. Framing is described by Robert M. Entman of George Washington University as “select[ing] some aspects of a perceived reality and mak[ing] them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation. This research looks at the portrayal and framing of two women politicians—Sarah Palin and Hillary Clinton—their public relations portrayal, and their media framing. The questions that this research attempts to answer are: What was the intended image portrayal put into practice by the public relations team for each female candidate? Was the intended public relations portrayal of the female candidate easily visible in print journalism? And finally, if the intended public relations portrayal was different from the frame presented in the media, how did it change? To understand how these women were framed, articles from three major newspapers—the Washington Post, the New York Times, and USA Today—were analyzed, along with the press releases issued by their campaigns. These articles and releases were analyzed to show patterns in phraseology, article placement, valance, article subject, and positive and negative descriptors. The press releases and the articles were compared to determine if the positioning of the candidate via her public relations team was conveyed in the media, and to see if overall themes were consistent throughout coverage. This research determined that while there were some similarities between the press releases and the newspaper articles, overall media coverage did not reflect press releases messages or portrayals. This was due to factors such as the newspapers’ attempt to create “fair and balanced” coverage of candidates by presenting differing perspectives, the previous framing of the candidate in the media, or external events taking place in the candidates’ life.
Foreign Correspondents in a Modern World: The Past, Present, and Future of Global Journalism

Dannika Leigh Lewis (Dr. Richard Landesberg) Department of Communications

As the nation becomes increasingly interconnected with the world and its complex issues, major American news outlets continue to reduce the number of foreign bureaus in existence. Studies show that foreign reporting has experienced developments and declines both in quantity and quality throughout its short 20th century history. While various means of pursuing international news do exist, professionals in the business continue to be inconclusive about the future of this particular journalism and what it may entail. Based on a synthesis of information from scholarly journals, books, news articles and formal journalist discussions, it is apparent that global journalism has outgrown the traditional bounds of network structure; thus, foreign reporting will likely be made possible through a series of different classifications of journalists fulfilling different needs and not defined by coverage from a single correspondent. This research suggests that the emergence of unconventional outlets of international news will put new and greater responsibilities on traditional news organizations and audiences in a future where they are not only informed but also able to participate in the providing foreign news. Alternative news sources, such as non-governmental organizations and citizen journalist bloggers, have recently become more prominent in the realm of international coverage. However, traditional news outlets struggle with verifying the potentially biased or false information and making stories relevant for their audience. There is also concern whether or not the general public will accept the reformed standards of news as a new norm and/or recognize a new level of importance for communicating information about events occurring in different world regions. Citizen journalists online, particularly in the blogosphere, can offer a wealth of knowledge and information with an added human element. In these cases, foreign news would come from someone who truly understands the land, language and culture behind these worldwide situations while many of the current American-based correspondents sent overseas to report crisis, conflict or other issues struggle identifying with the situation and finding relevance to their audience here. This research concludes that as U.S. foreign bureaus and fixed foreign correspondents become fewer and other traditional methods (such as parachute journalism) prove ineffective in reporting complicated global issues, citizen journalists may fill a void that will keep the American public well informed of news from across the globe.

Changing the Paradigm: Learning from the Media’s Successes and Failures in the Internet Age

Morgan Charles Little (Prof. Janna Anderson) Department of Communications

The news industry, awash in profit and a strict adherence to traditional delivery methods, missed out on its chance to jump onto the initial Internet bandwagon. By treating online resources as auxiliary to physical alternatives, media magnates are now in a grim environment where a $74.5 million quarterly loss from the New York Times Co. is seen as a victory worthy of an 8.6 percent jump in its share prices. Finding a solution to this crisis facing the news industry, which has cost more than 46,699 jobs since the beginning of 2008, has split stakeholders into two camps. One, championed by the likes of Rupert Murdoch, focuses on changing to way the Internet works to force it to better adhere to pre-existing revenue models. The other, around which the blogging community and online news sources rally, advocates accepting the open source, advertising-focused environment of the Internet, and encouraging the news industry to redefine itself around the conventions of online commerce. I first researched the transformation the media has undergone in recent years, in particular regard to the ways in which traditional firms have reacted to and been impacted by the industry’s changing paradigm. Then, after analyzing this information and conducting long interviews with industry leaders, and in a sense, with the narrative being presented by respective firms, I drew up a series of recommendations on what the industry needs to do to regain profitability, what pitfalls it must avoid and how the public might be impacted by these changes.
Iconic Photos of the Vietnam War and Their Influence on Collective Memory

Angie J. Lovelace (Dr. Harlen Makemson), Department of Communications

The Vietnam War was defined as the “first televised war,” but it has been the still photos, the single frames, that have carved its place in history. Eddie Adams’ image of the execution of a Viet Cong member on the streets of Saigon and Nick Ut’s photo of a little girl running naked down the street after being burned by napalm are two examples of “iconic” photos as defined by scholars. These iconic photos have appeared repeatedly in the media, they have been reused and repurposed by popular culture, and they appear in history books as visual representations of the war. Previous scholars such as David Perlmutter suggest however that the public’s understanding of the circumstances captured by these photographs may be limited. If these scholars are correct, then what meanings are everyday citizens attaching to these iconic photographs? Through the use of in-depth interviews with a sample population of individuals, age 15 or older during the height of the war, oral history provided insight into the iconic qualities of the photographs and how they have contributed to collective memory of the war era. Results indicate there is a disconnect between recognition of the photos and an understanding of the details. Collective memories are shared memories, constructed by society. The photographs typically triggered memories concerning the issue of the draft and war protests occurring within the United States. None of the photographs studied focused on the American soldier, but people typically remembered how the war affected people they were close to, and how the country responded to the war. Iconic photos did not positively influence the collective memory of specific events and details of the war, instead they helped to frame the war within emotional and personal memories.

How Moviemakers Frame the Media: An Analysis of the Portrayal of Journalism in Popular Vietnam-Era Cinema

Alexandra E. Milan (Dr. Connie Book) Department of Communications

This research project, guided by framing theory, explores how journalism as a profession and the media were portrayed in film during a time in which journalism was arguably transforming its role in society – the Vietnam War. Rather than studying films focused primarily on journalism, a content analysis of the most popular films was conducted and the presence of the media in everyday life situations coded. The top five highest grossing films from 1968-1977 were included in the sample. These films were in production during the war, and their images reached more than 1 billion Americans. This research is significant because by making the deliberate choice to utilize media in their movies, filmmakers are unconsciously producing media frames about the function and role of the media during the Vietnam War. Framing theory argues that unconsciously, the portrayal of journalism in film generates thinking about how the media affect people’s lives and how journalism impacted the war. Filmmakers including images of media in film can be a powerful process, because when filmmakers communicate their unconscious perceptions of media to mass audiences, it is the filmmaker’s perspective audiences carry with them. The 50 films studied contained 460 representations of media that paint an overall picture of how media was portrayed to audiences in this era. Variables studied included the type of media present (i.e. newspapers, television), whether it appeared in the foreground or background of the scene, whether its use moved the action forward, and the reporter’s demographic information and professional conduct. Some key findings include that 53.3% of the media frames were of newspapers, characters responded to the media 32.6% of the time, the media moved the plot forward 45.4% of the time, 30.2% of television portrayals were framed as sensationalistic (using dramatic, over-the-top reporting that often stretches the truth and is concerned with increasing readership or viewership), and more Black and female journalists appeared in the last four years of the sample. The study also introduces a grounded theory in the qualitative data collected that cinema communicates in a visual and creative way history as it is happening.
The Battle of Images in Film: An Analysis of Movies by African American Directors
Tyler Perry, John Singleton and Spike Lee

Keadrick Peters (Dr. Frances Ward-Johnson) Department of Communications

This research addresses the internal battle African American film directors face while depicting images of the African American community. Today, Hollywood’s images of African Americans are no longer controlled by White movie makers. Over the past three decades, a number of Black film directors have been empowered to depict their own community instead of relying on outsiders. In the early twentieth century and before, many films by white directors depicted African American communities as violent urban life where people were loud, uneducated and behaved in a derogatory manner. However, what happens when African American film directors write the scenes? Is there a more accurate representation of the black community? If African American directors refuse to portray stereotypical negative images of the African American community are they applauded or heckled? Can African American film directors garner positive recognition from Hollywood critics without portraying negative images of the African American community? This qualitative research study seeks to identify the position African American film directors must take to appeal to critics in a predominately White Hollywood environment. The specific method that will be used to analyze the film directors approach will be based on the Entman and Rojecki film analysis framework. According to Cinema Score, African American film directors such as Spike Lee, John Singleton, and Tyler Perry have all individually grossed more than $50 million for their films. However, only Singleton’s films have received positive recognition from Hollywood. Unlike the others, Singleton’s film depictions are stereotypical of violent urban life, with even more negative portrayals of people of color. This research examines five films from 1988 to 2007, including Boyz N the Hood, Poetic Justice, Baby Boy, Why Did I Get Married, and Diary of Mad Black Woman. The research also investigates newspaper articles that feature critics comments and the directors comments about these films. The findings suggest regardless of the film directors race, the more stereotypical the image of the black community, the greater the success of the film. Hence, the internal battle facing African American directors.

Archiving Newspapers in the Digital Age

Pamela M. Richter (Dr. David Copeland) Department of Communications

This research will focus on how newspapers are adapting to the digital age in terms of preservation and archiving content. Newspapers currently are moving toward a more digital format, in terms of online only content and photographs. In the past, many newspapers had librarians or archivists focused on preserving the material at these organizations for historical purposes and also so that others could use them in the future; however, due to the rise of online and digital content, it is essential to examine what steps are being taken to preserve materials at newspapers today and in the future. Newspapers serve not only as a resource for information currently, but also serve as historical documentation for future generations. It is important to look at how they are looking to preserve this information and look at what will be lost if this information is not preserved in some format. This research will be conducted by examining current literature and journal articles on the topic. In addition, case studies will be conducted at local newspapers, such as the Greensboro News & Record, to examine firsthand what steps these organizations are taking to archive the digital information. Through looking at other studies, in addition to conducting my own research, I hope to draw a conclusion about whether or not newspaper companies are beginning to alter the process of preserving documents in order to adapt to the digital age.
**Up in Smoke: How Antismoking Advertisements have Changed Youth Smoking Habits**

**Katelynn M. Sachs** (Dr. Don Grady) Department of Communications

This paper begins as an analysis of youth antismoking advertisement research and campaigns in the twentieth century and their impact on youth smoking trends in the U.S. It identifies some of the most commonly used elements of youth antismoking advertisements from the 1970's until 2000, elements which were important in determining the best ways to reach youth and prevent them from smoking. The eight most prevalent elements in antismoking advertisements were identified in a 1998 study by Goldman and Glantz to be industry manipulation, addiction, youth access, secondhand smoke, cessation, short-term effects, long-term health effects and romantic rejection. The most successful of these were industry manipulation and secondhand smoke. Antismoking advertisements during this time period were also compared to those from the highly effective “truth” campaign launched in 2000, which used a variety of advertising elements and methods different from those used in the past. The second part of the paper is a study analyzing several of the “truth” campaign commercials by using previous antismoking advertising techniques aimed at youth to determine the effectiveness of the “truth” commercials according to previous research. A ranking scale was created according to research from the Goldman and Glantz study in order to analyze the “truth” campaign commercials. The results of the study showed that elements found to have the greatest antismoking impact on youth from previous studies were not those most prevalent in the truth advertisements. Because the “truth” campaign was determined to be extremely effective among youth antismoking trends, the study supports that a combination of different elements and techniques should be included in advertising rather than relying on the same elements every time.

**Press Freedom Critical Analysis, the Examination of East Asia: China, Singapore and North Korea**

**Grace A. Trilling** (Dr. Glenn Scott) Department of Communications

After completing an international communications course and examining Freedom House ratings, I have observed that this organization tends to classify nations into very broad categories according to press freedom. The organization differentiates between free, partly free and not free as its way to categorize 195 countries and territories around the world. Ratings are reached through analyzing the legal environment of each nation, the political pressure on journalists and the economic environment influencing access to information. Westernized assumptions surrounding press freedom and democracy have been established and applied to nations in the non-western world through Freedom House categories and other approaches. Since Siebert, Peterson & Schramm issued their book, *Four Theories of the Press* in 1963 and William Hachten theorized his five press concepts, western scholars have been attempting to classify media systems. The East Asian countries I have classified require more distinct and explanatory categories without this ethnocentric approach. While there is research and information about media systems, government structures and other factors affecting press freedom in East Asia, an analysis of these factors and how to categorize them in terms of press freedom has yet to be organized. This research serves as a critical analysis, through an integration of existing theories and research including the precedent of Hallin and Mancini who categorized Western Europe. Through this critical analysis, I was able to create my own recommendations and a new system of organization, surpassing the standard western notion of press freedom. I choose to explore China, Singapore and North Korea in my attempt to create a new categorical system. Asia’s large population, its emerging markets and the fact that the region exists outside of the western world with ratings of not free, has led me to use these countries for analysis. While the government-media relationship and economic factors are crucial, this research shows the importance of cultural factors when categorizing press freedom. In the case of East Asia, Confucianism is a cultural legacy that is impossible to ignore when creating press freedom categories.
Product Placement in Reality Television – Practitioner and Audience Perceptions

Gregory A. Walton (Dr. Barbara Miller) Department of Communications

Traditionally, sales of commercial time to advertisers have been the main source of revenue for television networks. In recent years, however, DVRs and other technologies have disrupted the traditional television advertising model, resulting in an increase in television product placements – the planned and unobtrusive entry of branded products into a program. Despite the growing use of product placements in television, research associated with this technique is limited. One study found that viewers watching a program they liked reported negative brand attitudes after seeing product placements, perhaps due to persuasion knowledge, or the awareness that they were being persuaded. While these results were based on scripted programming, there is little to no extant research that considers audience response to product placements in reality television, which may not activate audiences’ persuasion knowledge due to its supposed-reality nature. To investigate both practitioner and audience perceptions of product placement in reality television, which now represents the most prevalent form of prime time television programming, I first conducted preliminary interviews with NBC branded entertainment executives to learn about the extent and nature of the practice from professionals. I then conducted five focus groups with undergraduate students and adults over 25. Initial results indicate that industry executives view product placements, particularly in reality programming, as an integral part of the future of television advertising. Meanwhile, audiences have come to accept product placement as part of reality shows; however, they do not like when the placement is blatant, an attribute executives suggested made an “effective” placement. The focus group texts will be analyzed according to the qualitative coding procedures outlined by Strauss and Corbin. The Persuasion Knowledge Model will be applied as an analytic induction tool to analyze the findings for their synthesis with existing literature.

Censorship and Evolving Media Policy in China

Rebecca J. Wetherbee (Dr. Don Grady) Department of Communications

The People’s Republic of China is one of the largest and most populous countries on earth, and its political and economic power is increasing rapidly. According to the Council on Foreign Relations, there are more than 2,000 newspapers, 8,000 magazines, 374 television stations and 150 million Internet users in China, and all of these media outlets and media consumers are subject to government gatekeeping and censorship. The juxtaposition of China’s remarkable technological advancement, business savvy and cultural influence to its continued control of the media is, in many ways, unique to China, and therefore worthy of analysis. Somehow, despite the fact that China is quickly becoming a new world leader that rivals the United States, the government has been able to maintain old-world communistic policies toward its media but modern capitalistic policies toward the rest of its industries. This article is a meta-analysis of research by various journalists and scholars. It analyzes and organizes information related to the Chinese government’s recent responses to foreign media, its treatment of U.S. President Obama when he visited in November 2009, its relationship to Hong Kong and Taiwan, and the changes the government has made to some of its stringent policies for the purpose of increasing its economic influence. Research has shown that foreign media have influenced the Chinese government to make some policy changes, for instance during the 2008 Summer Olympics, though they are often subtle or only temporary. While many Chinese citizens are either unaware of or indifferent to the media censorship they endure, some technologically savvy citizens have found ways to seek and distribute information free from government controls. The government continues to exert punitive power over the regions of Taiwan and Hong Kong, which have purportedly free media. In the future, these regions could serve as models for a China with looser constraints. Ultimately, the pervasiveness of the Internet and China’s economic ambitions will lead to a freer media, whether it is because the government allows it or simply can no longer prevent it.
Mediating Mumbai: A Rhetorical Analysis of the Indian, British and American Newsmagazine Coverage of the November 2008 Attacks

Hannah E. Williams (Dr. Brooke Barnett) Department of Communications

Scholars have argued that terrorism and media exist in symbiotic relation to one another (Chailand & Blin, 2007; Tuman, 2003; Nacos, 2007) and that acts of terror are inherently newsworthy and must be covered (Barnett & Reynolds, 2009). Considering the inevitability of media terrorism coverage, scholarship focuses on how and why attacks are covered not whether they should be. Following the critical media industry studies research model proposed by Haven, Lotz and Tinic (2009), this in-depth case study of the first two weeks of coverage in nine Indian, British and American newsmagazines provides a more detailed snapshot of the editorial products and processes in the wake of the attacks. Three modes of rhetorical critique, Marxist, postcolonial and visual, are employed to systematically probe the newsmagazine content for emergent themes. The findings indicate the newsmagazines gave the attacks prominent placement, localized their significance and globalized the terrorist threat. An exploration of the news producers’ motivations or intents, which are key components of rhetorical analysis, and an understanding of the logistical factors that may have impacted the coverage form the second part of this study. Newsmagazine contributors were interviewed in Delhi, London and New York in an attempt to better understand writers’ and editors’ intents, to illuminate the practical limitations associated with the coverage, to resolve inconsistencies within the texts and to gain an insider perspective from their vantage points. In research interviews, the contributors addressed their goals for the coverage, their reportage and composition strategies and their self-perceived effectiveness. Grounded theory was used to identify the themes that emerged in the interviews regarding the journalistic intent, production logistics and overall evaluation of the coverage. McLuhan (1964) suggested that the medium was the message, and this study shows newsmagazine contributors faced medium-specific issues. For example, the weekly publication cycle of newsmagazines dictates less focus on breaking news or day-after analysis, striving instead for contextualization and analysis and emphasizing the importance of beat reporting and scoops. This study reveals how the Indian, British and American newsmagazines covered the attacks in Mumbai and the editorial processes that fueled that coverage.

COMPUTING SCIENCE

Design and Evaluation of an Image-Based Authentication System for Small Touch-Screens

Jonathan C. Citty (Dr. Duke Hutchings) Department of Computing Sciences

We address the issue of security related to password systems on small touch-screen devices. In the past the PIN system, 4 consecutive digits of 0-9, has been used in order to secure personal mobile devices, but 10000 possible combinations of PINs provides only minimal security. In order to improve upon the PIN system, we have introduced the idea of using an image-based password system. Past research has shown that image-based password systems exhibit high memorability, the ability of a user to remember a password, than PIN or text based passwords. The past research on image-based password systems has been performed on systems with “large-screen” displays, and our research is examining the effect the image-based passwords have on “small-screen” devices. Our system, TAPI, Touch-screen Authentication using Partitioned Images, uses 16 images each partitioned into 4 different sections, top, left, bottom, and right. A user’s password is comprised of 4 different sections of the overall 64 sections. We were able to test our system using 2 different lab studies. The first study was conducted with 15 Elon University students using a T-Mobile Android G1. 14 of 15 participants were able to remember their password after 1 week of non-use with a median entry speed of 7.1 seconds. The second lab study was conducted with 15 Elon University students using a Verizon Droid, which has a slightly larger screen and a higher resolution than the G1. 13 of 15 participants were able to remember their password after 1 week of non-use with a median entry speed of 4.6 seconds. Our results demonstrate that TAPI system is a viable alternative to the PIN system for small-screen touch screen devices as it offers greater security as well as high memorability at a reasonable entry speed. In our talk, we will also discuss future alterations and design considerations for TAPI.
Collecting & Analyzing Data about Free, Libre, and Open Source Software

Jamie Marie Schatz (Dr. Megan Squire) Department of Computing Sciences

FLOSSmole, is a project to collect data about free, libre, and open source software. It was developed in 2004 by Elon professor Megan Squire and colleagues from Syracuse University. The project “freely provides raw data about open source projects in multiple formats for anyone to download”. A main goal of this project is finding the most effective method of collecting and publicizing FLOSSmole data. After collecting data, the best way to publicize it is to develop and test different information architectures. Information architecture is the science of organizing and labeling web sites, intranets, online communities and software to support usability. Some of the specific tasks that I have completed include creating wikis and blogs, processing canned reports and queries, and building web-based solutions for increasing researcher’s awareness of the data. Every decision about FLOSSmole design can have a significant impact on usability. For instance, after data has been collected, how that data is displayed on the page can drastically change how a user perceives the data. Good design will engage new users but bad design may steer users away. One of the reasons that open source data is so disorganized and unmanageable is because no standards have been set to specify a description of a project. Therefore, the question that needs to be asked is: How is FLOSSmole data collected and what is the most effective method of modeling information architecture for that data? In order to answer this question about FLOSSmole data I did two things. First, I wrote a collector using spidering techniques and the PHP scripting language. Second, I constructed data models on the web using different types of information architectures. Upon completion of the project, I participated in every aspect of the distribution of FLOSSmole data, beginning with data collection and ending with release of project statistics onto the web.

ECONOMICS

Effects on Immigration Patterns in North America

Russell W. Boozer (Dr. Jayoti Das) Department of Economics

The essential question to be addressed in my research is whether international migrants choose to relocate to a country due to its distance from the United States. This will occur due to strict immigration policies in the United States. What began as a simple class paper in Econometrics has quickly evolved into my senior thesis. There are several important reasons that this question should be addressed. As the United States grows, most economists tend to think of how the country’s growth will affect other countries’ economies. However, typically immigration patterns in surrounding countries are left to be estimated and are of little consequence to American economists. I propose that countries such as Mexico and the United States will change drastically, in both economic growth and immigration, as our country grows even quicker. The reason this effect will be exacerbated in the years to come is that the United States has abnormally strict immigration policies. Therefore, since immigrants wishing to benefit from the United States’ growth cannot enter the country, they choose to relocate close to the border. They do this in order to benefit from agglomeration of labor-pools and regional spillovers that occur due to their proximity from the United States. As a continuation of my Econometrics research, I have gathered data for several months and have been completing a literature review and compiling my theory section. To test my theory, I have already begun and will continue to run regressions using a more complex model including demographic, macroeconomic, and variables that control for country differences. I also presented at the EEA Conference this past weekend and gained valuable feedback. I have found that distance does have an effect on immigration patterns in Asia. However, I am now changing datasets to use North American data instead and I planned on doing this early on because of the lack of data on Asian countries. Sorting through the econometric problems that are present in the data is mostly what I will be doing until the presentation, in addition to constructing a more sound theory section to base my question on.
How the United States went Wrong: An International Comparison of Carbon Emissions

Cameron E. DePuy (Dr. Steve DeLoach) Department of Economics

The debate on Carbon Emissions is one of the most important issues that the upcoming generations will have to face. Many countries, mainly in Europe, have established targets and are beginning to successfully reduce their emission levels. Unfortunately, the United States has not been able to achieve those same results. Previous research, comparing European countries and the United States, show that the on average European cities are denser and use a wider variety of transportation. Using cross-national and time series data, this study looks to show that carbon emissions are increased by a lower urban density and by a large amount of vehicles per capita. In other words, this paper attempts to prove that the United States has lagged behind Europe when it comes to reducing carbon emissions, due to how its urban areas developed and the transportation habits of its’ people. I theorized four models, one showing a basic relationship between carbon emissions and a few economic factors, the second adds in urban and transportation variables, the third controls for fixed effects, such as countries and years, and the fourth corrects for autocorrelation. The first two models followed the theory and had the correct expected signs. The third and fourth models did present some problems. Several variables became insignificant and there appears to be a large amount of autocorrelation affecting the models. However, the main variable that I wanted to connect carbon emissions to was the transportation variable of cars per capita. Cars per capita was significant in all four models and has the expected positive sign. For every one percent increase in cars per capita, there is a .11% increase in carbon emissions. There is a relationship between cars per capita and carbon emissions that causes carbon emissions to increase. Due to the fact that the United States has a significantly larger amount of cars per capita compared to European countries, this finding may explain why the US has struggled to reduce its emissions compared to Europe.

A Cost-Benefit Analysis of Orthopedic Care in Malawi

Andrea E. Dorrow (Dr. Steve DeLoach) Department of Economics

Disparities in healthcare across nations are alarming and remain largely inadequate. Often, the fate of the disabled in these developing nations remains unchanged simply because individuals lack access to adequate healthcare. Healthcare is an essential tool to aid growth in developing countries because a healthier individual will become a more productive member of society, increases in output, and overall increases in standards of living and quality of life. This study uses survey data collected in Malawi, as well as other supporting data sets to measure the long-run benefits of investments in health at the household level by constructing a cost-benefit analysis of the surgeries and treatments provided by the Beit Cure Hospital located in Blantyre, Malawi. The cost-benefit analysis demonstrates that the treatments provided by this hospital are significantly beneficial when compared to the net present value of potential future incomes of both men and women receiving the surgery in Malawi. These findings have significant policy implications in supporting credit opportunities for individuals in impoverished nations in order to invest in their health and long-run productivity.
Are Sustainable Cities Productive?

John Thomas Fairley (Dr. Thomas Tiemann) Department of Economics

The idea of sustainability has been a recent topic of extreme popularity and controversy. Businesses across the world refuse to become sustainable due to the cost of changes that they will have to make in their business practices. Despite the popular trend of ignoring sustainable practices, businesses and some cities have become sustainable and are prospering rather well. While many claim that becoming sustainable is simply too costly and will hurt business because they will have to increase prices, others claim that becoming sustainable will not only improve the environment but also make commodities cheaper in the long run: invoking a question that is often asked, do sustainable cities make commodities cheaper? This question is worth considering because it is the basis upon which many companies refuse to go green and become sustainable. The answer to this question could shed some light as to why companies, cities and people in general, become more sustainable. If the sustainable cities are able to make better use of their resources they should be able to make certain commodities cheaper. The question this paper directly asks is, do sustainable cities have a lower cost of living? I think that sustainable cities will have a lower cost of living and as a result the people in these cities will save more allowing them to spend more at local businesses. This in turn will increase local businesses utility. I am answering this question and proving this thesis through a series of regressions that looks at cities both internationally and strictly within the United States. These regressions will provide insight at how sustainability affects the cost of living within a city. I will also be observing the number of small businesses within these cities to determine if there is a trend of increased small businesses in sustainable cities. Results suggest that as a city becomes more sustainable the cost of living goes down.

Is Less Sex Safer Sex?: The Effects of Comprehensive Sex Education Policy on Teen Pregnancy Rates

James W. Gorsuch (Dr. Jim Barbour) Department of Economics

Throughout recent decades, a major debate in the United States has continued surrounding the issue of sex education in public schools. Teen pregnancy rates continue to be of public concern to Americans, and sex education certainly maintains a place in the issue as one attempt to reduce the consequences of teenage sex. Though historically the debate has been over whether to teach sex education in schools, the debate today centers on how to teach the programs; whether to teach only abstinence or to include education on contraception, protection, and other information in the program. This study addresses the question of whether a state policy instituted in Oregon in 2002 mandating that sex education be comprehensive has had significant reducing effects on teen pregnancy rates in the state. The study, based in Economic theory and Econometric analysis, centers on the theory that teens will choose to engage in sexual activity when the perceived benefits of sex outweigh the perceived costs. Sex education programs alter the costs of sexual activity by either emphasizing the risks and placing a moral cost on teen sex (abstinence-only) or teaching teens to reduce the risk of pregnancy and sexually transmitted infection, decreasing the perceived costs (comprehensive). This study hypothesizes that while comprehensive sex education will likely lead to higher rates of teen sexual activity, it will also likely reduce pregnancy rates due to the increase in safe sex practices expected among teens in these programs.

After extensively developing the Economic theory on the topic, based in existing literature, this study performs an econometric analysis on county-level data collected from the US Census Bureau, the Bureau of Economic Analysis, and state health departments for North Carolina and Oregon. Fixed Effects Regression models are constructed to establish the effects of Oregon’s comprehensive sex education policy on teen pregnancy rates in the state, controlling for various effects suggested by literature and theory as well as using North Carolina, another state with statewide sex education policy, as a control. This study finds that Oregon’s policy mandating comprehensive sex education has a significant reducing effect on teen pregnancy rates in Oregon.
The Effects of Health Care on the Labor Market in Non-Metro and Metro Areas

Melissa L. Hunter (Dr. Mark Kurt) Department of Economics

Healthcare has been and promises to continue being a hot topic for United States policy. Major changes are on the way and people are concerned with how these changes will affect them and their quality of life. Previous research has shown that employers make up for the cost of providing health insurance to their employees by lowering wages. This study links data from the Healthcare Cost and Utilization Project and the Survey of Income and Program Participation to look at the effect employer-based health insurance has on wages compared to other sources of health insurance in non-metro and metro areas. It will also look at how the costs of health insurance in these areas affect wages. I will use an OLS regression with robust standard errors to measure these effects. I will also use a Probit model to see how different factors, like whether or not an employer provides health insurance, affect the probability that a person will be employed. The paper shows that while wages are affected by health insurance, these effects differ by location and provider. Also, as healthcare costs increase, wages tend to increase as well. This may be because an increase in healthcare costs means that the quality of care provided is greater, which would increase a person’s overall health and productivity. This effect seems to be stronger in non-metro areas.

Unveiling the Bidding Process of the Olympics: An Empirical Analysis

Eleanor G. Meacham (Dr. Tom Tiemann) Department of Economics

The recent Winter Olympics in Vancouver, Canada and the Summer Olympics in Beijing, China, drew great international and media attention. Over the past thirty years the number of cities submitting bids has increased exponentially. This increase is largely due to the supposed benefits to growth, international standing and media attention that cities are to receive from hosting. While the number of cities submitting bids has increased the costs to host the event have also increased greatly, the high monetary risks involved in the bidding process warrants an investigation of the International Olympic Committee’s decisions. This research determines if the factors the IOC highlights as important in their evaluation of bid cities are actual guarantees for a city to attain votes in the bidding process. The data collected includes the cities which submitted bids and the number of votes they received. The proxies for the IOC’s requirements of bid cities, the specific characteristics of the bid city’s country are used as the aggregate measures. From this data statistical models were constructed to determine if any of the factors the IOC says they use in evaluating bid cities actually affect the number of first round votes a city receives. The results provide little evidence that the IOC’s criteria are determinants of the votes a city receives. This implies that outside factors such as personal preferences and bribes could be more important.
Health Insurance: How American Entrepreneurs are Affected

Joshua Lee Whanger (Dr. Mark Kurt) Department of Economics

Many factors play into an individual’s decision to start a business. In today’s society, where health insurance is closely tied to business and the choice of employment, those wishing to start their own business must take the cost of health insurance into account when deciding whether or not to begin and continue their business idea. Health insurance costs have been rising over the last two decades which are increasingly impacting all businesses, especially newly formed ones. It is clear that, as health insurance costs rise, small business owners are forced to operate without providing health insurance. Approximately 56.8% of companies with less than 50 employees did not offer health insurance in the 2008 fiscal year, according to the Medical Expenditures Panel Survey (MEPS). It is less clear what the impact of rising health insurance costs are on new business formation in general. Approximately 30% of new jobs in 2006 were in firms of less than 20 employees and nearly 80% of all new firms created in 2006 had less than 20 employees (Office of Advocacy). In order to empirically analyze this topic, I combined two disparate data sets: a dynamic data set provided by the Small Business Administration’s Office of Advocacy containing information regarding firm birth and death rates and data pertaining to average premiums paid by companies of various employment size based on the Medical Expenditures Panel Survey. I model the affect of health insurance premiums on the formation of new business over time. Other factors in the model include: inflation measures, real gross domestic product, and nominal interest rates. This study reiterates the fact that health insurance costs are considered by potential entrepreneurs through the use of current U.S. data and preliminary results show that the cost of health insurance to employers does have a significant effect on the number of firms created per year.

Urban Sprawl and Usage of the Single-Occupant Vehicle

Joshua L. Whanger (Dr. Tom Tiemann) Department of Economics

As the U.S. has experienced population growth, rising household incomes, and transportation improvements, urban sprawl (or the excessive spatial growth of cities) has become an accepted phenomenon of American life. Lower housing prices in the suburbs and lower commuting-cost penalties cooperatively increase the attractiveness of suburban locations and increased usage of personal vehicles (Brueckner, 2000). This study will address how the lower density population areas found in suburbs experience increased vehicle use and decreased public transportation use as seen through vehicle mode choice when traveling to work. In order to provide empirical analysis for this topic, I obtained a data sample from IPUMS consisting of survey-level data from 50,000 U.S. citizens (IPUMS collected this data using a 1-in-100 national random sample of the population known as the 2008 American Community Survey). All of my data was collected from this data set with the exception of a nation-wide gas price variable provided in the ACCRA cost of living index (COLI). After performing basic regression analysis, the results show how population density negatively affects an individual’s decision to utilize a personal vehicle as their means of transportation to work. This coincides with the accepted urban economics concept that urban sprawl decreases public transportation participation rates and increases reliance on the personal vehicle.
EDUCATION

A Good Idea, But… Vanishing Rural Schools in Appalachia

Sierra E. Raimondi & Erin R. Deans (Dr. Bird Stasz), Department of Education

Small rural schools have typically rendered the educational enterprise a personal, community and intellectual endeavor (DeYoung 1995; Rural School and Community Trust 2007). However, regardless of effectiveness and importance to all of these aspects, rural schools are being swallowed up in favor of district consolidation and financial efficiency. Our essential question is how to understand rural schools within the social context of what it means to be rural, how does that play out in schooling and ultimately in consolidation. The current school improvement program subsumes a reductionist argument that the measure of good is correlated with a formula that poses an optimum number of students, teachers, floor space, administrators, and agreed upon best delivery systems.

As DeYoung and Howley suggest “under the rubric of school ‘improvement’ many places that once provided schooling no longer do so; they have been improved out of existence” (1990, p. 63). This paper presents preliminary findings from an on-going ethnographic study of two Appalachian public schools, one bound for consolidation and the other remaining as one of four K-12 schools still in operation within the state of North Carolina. The data set consists of field notes, interviews, archival research, and photographs collected over the weeks at a time spent in the area. Through the voices of teachers, students, administrators and community members, this work captures more than a nostalgic look in the educational rear-view mirror by illuminating the human, instructional, and community costs of the consolidation movement and challenging the assumptions that underpin it. Themes within the research include the concept of homecoming, role of community, and way of life attached to the rural education system. This study is an attempt to tease out the features of these two rural schools as they represent lessons to be learned from current practice and form future research and educational policy.

Stories from First-Year Teachers to Preservice Teachers

Kirby C. Sypek (Dr. Terry Tomasek) School of Education

The purpose of this study was to identify major themes that emerge from first-year teacher interviews and autobiographical stories reflective of their feeling of success, and examine how preservice teachers respond to these first-year teacher autobiographical stories. This was done in an effort to contribute to the understanding of first-year teacher narratives as a potential source of information for preservice teachers to learn about the first-year teacher experience. The conceptual framework for this study is focused on teacher development and identity. Socially constructed knowledge claims is the theoretical orientation which provided guidance for this study. A qualitative research design was chosen in which grounded theory and narrative strategies of inquiry were used. The research questions were: How do first-year teachers describe success and what contributes to their feeling of success? How do preservice teachers respond to autobiographical stories written by first-year teachers that are reflective of their feeling of success? Data sources included ten first-year teacher interviews, autobiographical stories from these teachers, and preservice teacher focus group discussions. Upon conclusion of the interview, the first-year teacher was asked to write an autobiographical story that represented their feeling of success during their first year teaching. A cohort of preservice teachers read these stories in a focus group setting and discussed their reactions. A process of open coding was used to analyze all data and identify emerging themes. Results indicate that first-year teachers reflect most on their interactions with other school members and their emotions when discussing their first year teaching. Additionally, the majority of the first-year teachers described their success in relation to their interaction with one student. When reflecting on their feelings of success, they also described the various strategies they implemented before they felt successful. Initial findings suggest that preservice teachers, through their own experiences and reading these stories, define success in multiple ways, and reading first-year teacher stories helps them learn about the first-year teaching experience and think realistically about the successes they will encounter in the future. It appears first-year teacher stories could be used to bridge the gap between preservice teachers and the first-year teaching experience.
ENGLISH

Madness and the Disordered Mind in the Gothic Novels of Anne, Emily, and Charlotte Brontë

Jordan L. Frederick (Dr. Rosemary Haskell) Department of English

The fate of the insane in late 18th and early 19th century Britain was precarious. Psychiatry as a science did not exist prior to the late 18th century, and custody, not therapy, in private mad-houses was the order of the day for those deemed too dangerous or too demanding to be kept at home. The mid-1800s saw the start of a revolution in the treatment and understanding of the insane both from the medical world and from contemporary authors. This essay looks specifically at the treatment of madness in the novels of Anne, Emily and Charlotte Brontë through the application of new historical criticism, which calls for the comparison of literary as well as nonliterary “texts.” As part of this investigation, the research aims to determine how “madness” may have been used by the author as a reflection of, a critique of, or even a creation of, contemporary gender roles and as a means of social satire. By exploring gender roles of the Victorian age and the mental impact that living in a white male hegemony might have had on Victorian women, illumination concerning the characterizations of figures like Heathcliff, Lucy Snow and Helen Huntington may be achieved. The construct of the 19th century asylum – both as a sanctuary and as a place of confinement – figures strongly as a metaphor for social and intellectual constraints of the age, as does Jeremy Bentham’s concept of the panopticon and the penitentiary.

Taking a Bite: New Media Sinks Its Teeth into the Book and Changes Its Future

Amanda D. Kennison (Dr. Megan Isaac) Department of English

In an age where texting, surfing YouTube, and building up an iTunes collection are normative pastimes, sitting down to read a book seems archaic. The dawn of the digital age has pushed the printed book into the shadows; at least, that’s what many critics claim. However, traditional literary texts don’t have to be in conflict with new media. In fact, both forms of media can flourish through an integrated relationship. Using Stephenie Meyer’s “Vampire Empire” as a case study, this project examines the vital role new media has played in turning the Twilight series into a cultural phenomenon. The research considers how new media has spawned an interactive fan community. By studying a variety of fan activities and interviewing participants of the online community to determine how these activities influence reactions to the books, this project explores how reading has become more than a solitary activity and how, in turn, online participation has also led audiences to more deeply value some traditional books. Through studying the extent of the Twilight fan community and methods used to enhance the reading experience, this research that literary discourse has exploded beyond the traditional author-reader-text relationship. Using the work of media scholar Henry Jenkins and questions posed by literary scholar Roland Barthes in Death of the Author as a guide, this project inspects the current relationship between authors and readers. While new media forms allow fans more freedom to interact with author and text, the outside influence also threatens ideas about authorial intent and textual ownership. By exploring the ways new technologies have contributed to the immense popularity of the Twilight series, this project demonstrates new media’s potential affect on the future of the book. Beyond answering the question of how new media technologies influence the relationship between reader, writer, and text, this project provides literary scholars with a new framework to critically study literature. This project demonstrates how, as technology continues to evolve, scholars may analyze texts in relationship to how they are presented in spaces other than on the pages of a book.
Maternal Reflections and Deflections: Understanding Feminine Identity in *Mad Men*

Conley E. Lyons (Dr. Jean Schwind) Department of English

In *Feminism and Psychoanalytic Theory*, Nancy Chodorow postulates that despite recent changes in their economic and social position, most women still “have an attainable goal [to meet] – to marry and have children…[H]ow well they do this may bear on how people judge them” (33). The problems that this traditional idea of female identity presents for contemporary American women are brilliantly explored by the television show *Mad Men*. Set in the 1960s, *Mad Men* highlights the gap between new and old constructs of female identity through a particular focus on female characters’ relationships with their mothers. The daughters oscillate between emulating and rejecting their mothers’ lives. They are torn between wanting to be their mother’s child – to follow her example in home-making and raising a family – and becoming the antithesis of all things maternal: self-sufficient and free of caretaking obligations. I will use psychoanalytic and feminist theory to examine *Mad Men*’s three central female characters: Betty Draper, Peggy Olsen, and Joan Holloway. I will examine how the mother/daughter dynamic forms and shapes these characters’ basic identities, pinpoint the ways in which each woman struggles to rebel against internal or external maternal expectations, and demonstrate how these struggles manifest themselves. Additionally, I will explore the ways in which maternal rebellions continue in the post-feminist era by explaining the appeal of *Mad Men* for female viewers.

Becoming a Foot Soldier for Children’s Human Rights in Africa

Katherine L. Meyer (Dr. Prudence Layne) Department of English & African/African-American Studies

Jason Russell, Laren Poole, and Bobby Bailey traveled as young filmmakers in 2003 to Uganda and stumbled onto a problem that most of the world had not yet confronted: children recruited as soldiers in the country’s brutal war. The *Rough Cut* documentary that emerged from this trip became the recruitment tool and basis for Invisible Children, the organization the three men founded to enlist the help of America’s youth in ending the practice of child soldiering. As an impressionable high schooler, I was moved to action by the plight of Uganda’s children and wanted to learn and do more. During my first year at Elon in 2006, I founded a branch of Invisible Children and worked to mobilize the campus to end what to me was “the central issue plaguing Africa’s children.” What a difference two years make! Child soldiering, I discovered, is symptomatic of some of the larger issues (like poverty, disease, modern slavery . . . ) facing many of the continent’s youth, that Invisible Children is not the best or only method for combating the problem, and Uganda is not the only country grappling with the plight of its young people. My focus has expanded and shifted with these growing insights. As someone concerned with children’s human rights in Africa, I have learned the importance of comprehensive research in and outside the classroom, intimate knowledge of one’s subjects through ethnographic methods like interviews, surveys, and field work, a willingness to alter one’s perspective, and a plan of action shaped by one’s knowledge and experiences. These revelations have led to the creation of my own documentary, *Becoming a Foot Soldier for Children’s Human Rights in Africa*. It demonstrates the idea that student activists who are moved to pursue a cause with determination, passion, and perseverance will sometimes do more harm than good unless they educate themselves to the various perspectives, harness their paternalistic attitudes, and seek partnerships in creating sustainable solutions for their cause.
“Traumatized by Supermodels”: A Co-Textual Comparison of Bridget Jones’ Diary and Dove’s Campaign for Real Beauty

Phoebe S. Morris (Dr. Jean Schwind) Department of English

The idea that texts do not exist in isolation is central to the New Historicist theory. New Historicists believe that contemporaneous texts are “expressions of the same historical moment” and so illuminate one another (Barry, 2009, p. 167). In this paper I will use this New Historicist framework to create an inter-textual conversation between Bridget Jones’s Diary (1996) by Helen Fielding and the Dove’s Campaign for Real Beauty (2003). This conversation reveals the postfeminism of Bridget Jones’s Diary as it highlights a woman distressed about her body weight and obsessed with finding a husband. It also suggests that Dove is orchestrating a 60s-style feminist campaign squarely directed at Bridget that aims to diversify conceptions of beauty. Neither text is simple to decipher; they both have layers that complicate the discussion. Overall, though, Bridget Jones’s Diary is postfeminist in its negative representations of “strident” feminists, promotion of Cosmopolitan ideals of beauty, and portrayal of women in constant competition for male attention. Dove’s Campaign for Real Beauty responds to this book and other “chick” media by stressing the importance of individual beauty and self-acceptance. Dove’s feminist intent is somewhat undermined, however, by its parent company, Unilever, maker of Dove, also produces Slim-Fast and Axe (a line of men’s grooming products promoted by notoriously sexist ads).

A Freudian Critique of Objectivism

Margaret D. Northrup (Dr. Jean Schwind) Department of English

Ayn Rand, a 20th century Russian-American philosopher/novelist posited a theory of an ideal society which rested on supremely rational, atomistic individuals operating on their own self-transparent interests. Sigmund Freud postulated that society requires individuals to repress certain desires and longings that it deems inappropriate. Rand, on the other hand, suggests the opposite: society is healthiest and happiest when its members are allowed to pursue their own self-interest and desire, repressing nothing. Freud’s theories thus challenge Rand’s on two levels. First, Freud’s theory of the human psyche—through his outline of the id—problematises Rand’s implicit claim that human desire is self-transparent. Second, Freud’s theory of society and its relationship to the psyche, via the superego, challenges Rand’s atomistic picture of human interactions. I have chosen to critique Rand’s theory of the individual and society as it is presented in The Fountainhead through Freud’s writings on psychic structure and social theory as found in Civilization and Its Discontents.

Seeing Seville: A Travel Writing Experience in Spain

Erin N. Stevenson (Prof. Michael Strickland) Department of English

As we aspire to become global citizens, we venture off to new places, seeking to gain firsthand knowledge and insight about the ways of the world. “Seeing Seville: A Travel Writing Experience” is a series of four creative nonfiction essays that narrates my personal experiences as an American woman living in Seville, Spain and that also explores the meaning of the Spanish culture through the lens of travel writing. Contemporary travel writing requires that as the writer I be critically reflective and civically responsible, and therefore, the guiding research question throughout was how can I comprehend the merits and limits of my point of view in order to avoid imposing my cultural assumptions on “the Other” material? With this understanding of cross cultural travel writing as a mode through which we can perpetuate the appreciation of cultural differences, I attempt to show how I was able to identify with Seville and project myself into the culture while maintaining a narrative voice that is neither ethnocentric nor exploitive. Ethnographic research gives way to interpretive reflections, descriptions, and evaluations of the city’s people, history, food, traditions, and festivals within the texts. Each of the four essays highlights a niche element of the culture, transcends simple surface level realities and superficial descriptions so that the resulting text reveals value and significance. Ultimately, the goal is for the reader to recognize the authenticity of my individual experience in Seville.
Motherhood and Sexuality in New Woman Fiction: George Egerton Redefines the Ideal Woman

Arwen C.B. Varner (Dr. Janet Myers) Department of English

Throughout the Victorian Era, it was a widely held belief that the ideal woman should be devoid of sexual desire; decent women were to be mildly disdainful, though tolerant, of man’s irrepressible desires, and to be only passionate for the duties of motherhood and home-making. The sexual woman was the “fallen” woman. This project explores the works of female New Woman author George Egerton, who defied this paradox of disassociating motherhood and sexuality. It analyzes how she transforms the concept of the ideal woman in doing so. At the start of the New Woman cultural phenomenon, the 1890s, sexuality was the subject of intense controversy among feminist writers. Some argued that men should be compelled to rise to the moral standards of women and repress their uncouth impulses, while others asserted that women be allowed the same leniency as men. Either way, such conventional wisdom insisted that the coexistence of sexuality and motherhood was a violation of moral decency and not compatible with the womanly ideal. Conversely, Egerton redefines the perfect woman by representing this coexistence as necessary and ideal itself. Drawing on New Historicist criticism, this project compares the short stories of Egerton’s Keynotes and Discords with contemporary documents of the late 19th century, including conduct books and women’s periodicals. I argue that Egerton emphasizes motherhood as fulfilling to all women, yet struggles with the possible benefits of raising children out-of-wedlock. She reasons that marriage suffocates women because it only partially satisfies their sexuality through submission to their husbands. She transforms the ideal woman and defies Victorian convention by portraying sexuality as a natural and essential impulse of women, meant to accompany and enrich motherhood.

ENVIRONMENTAL STUDIES

Water Use and Conservation in North Carolina: Patterns and Policies

Katrina J. Folsom (Dr. Ryan Kirk) Department of Environmental Studies

During the summer of 2007, Raleigh North Carolina experienced dire water shortages when the city’s primary water source was reduced to less than 100 days of water supply. The combined forces of population growth and frequent droughts are causing water supply problems throughout NC, but the state lacks data and planning to manage these recurring droughts and the increasing demand. This study addresses this need by 1) examining which demographic and housing attributes influence per capita water use and 2) identifying and critically assessing existing water conservation policies. We collected water use data from local water supply plans and USGS national Water Use Surveys, and demographic data from the US Census. We organized the data within a Geographic Information System (GIS) and analyzed the influence of demographics and housing characteristics on water demand using regression analysis. We then identified and assessed water conservation policies through an extensive literature review and applied these findings to policies within NC. Our results indicate that large municipalities are more likely to sustain continually decreasing per capita water use than smaller utilities and housing density plays a role in water consumption. The policy analysis revealed that conservation potential in NC is far from being realized and that conservation-oriented rate structures and ordinances requiring water-efficient devices have the strongest potential to reduce water use in a cost-effective, sustainable manner. We conclude that North Carolina needs a more sophisticated demand management approach that focuses on utilities of all sizes and addresses systemic problems, such as funding and knowledge divides between large and small utilities.
Quantifying the Carbon and Pesticide Footprints of Common Foods Found in Elon University’s Dining Services

Jessica L. Sikking and Mica D. McCullough (Dr. Janet S. MacFall) Department of Environmental Studies

Elon University has made sustainability an institutional priority, by setting a goal of carbon neutrality by 2037. Since fiscal year 2008, Elon University has conducted annual greenhouse gas (GHG) inventories, but an important variable missing from these calculations is the footprint of the food purchased and provided in university dining halls. The University’s Office of Sustainability recognized this lack of information and requested that the Environmental Studies 2009 Fall Senior Seminar class calculate and quantify Elon University’s carbon and pesticide footprints of ten produce items found in Elon’s dining halls. Those items were bell peppers, strawberries, carrots, grapes, celery, potatoes, lettuce, pears, apples, and bananas. Carbon footprints for each commodity were calculated in two ways: calculations from Clean Air-Cool Planet’s (CA-CP) CHEFS initiative and estimates using relevant literature. The carbon footprint calculations from the literature included carbon contributions from farm practices, mode of transportation, and the distance traveled per commodity studied. The Pesticide Action Network’s website, “What’s On My Food”, was used to create an individual pesticide profile for each commodity. The pesticide residues found on each produce item and their categorization of health implications were noted. Only pesticides identified on ten percent of produce items were reported in this study. The major conclusion showed that the carbon footprint estimates from relevant literature were slightly higher than CA-CP’s estimates. Despite the discrepancy in the carbon footprint estimations, the produce items with the highest (bananas from the literature review, lettuce from CA-CP who did not examine bananas) and lowest (celery) carbon footprint were the same using the two methods. In terms of Elon’s pesticide footprint, celery was the most pesticide-heavy and bananas the least. The majority of the website’s listed pesticides were hormone disruptors. According to the literature, Elon’s total produce carbon footprint was 168,925.4 lbs of CO₂. It is important to note that a complete produce life-cycle analysis was not completed. CA-CP’s estimate of Elon’s carbon footprint of produce items was 21,150.8 lbs of CO₂. This discrepancy may have occurred because transportation methods and more stages of the production process were evaluated in this study than were measured by CA-CP.

EXERCISE SCIENCE

From Monsters to Me: Fine Motor Drawing Development in 2-5 Year Old Children

Kaitlin G. Bogart and Isabelle M. Matejevsky (Dr. Caroline J. Ketcham) Department of Exercise Science

Fine motor development is crucial to the foundation of skills that involve muscle strength and control for small movements using the fingers and wrist. Children engage in a variety of activities, such as drawing and handwriting, which require proper development. Fine motor development is an essential skill for success in school. Although there is much research on the fine motor development of school-aged children, there is little research on children aged five and under. Therefore, this study is the first in a series of studies attempting to quantitatively assess fine motor development in early drawing skills of children two to five years old. Researchers tested 25 children (2-5yrs old) from the First Presbyterian Child Development Center in Burlington, NC. Parents received information about the study and signed an informed consent prior to testing. Researchers familiarized children with themselves and the task. They were given options of crayon colors and asked to draw pictures of themselves and their families on as many pieces of paper as they needed. Data related to pen grip, joint involvement (coordination), paper orientation, which hand was used and if they switched, and how long it took them to draw were recorded at the time of testing. Pictures were then analyzed in relation to number of segments, number of colors, pieces of paper, detail of human features, size and spatial relationships were noted. Preliminary results suggest that as the children increase in age, they move from a shoulder/elbow coordination pattern to a wrist/finger pattern thus becoming more fine motor-based. Additionally the number of segments and complexity of drawings progress with age. This baseline study serves as a foundation for future studies that will quantitatively examine more refined measures of the underlying features of fine motor control development. The implications of this work will help standardize fine motor development in typical children and thus help identify those with motor delays earlier for targeted early intervention.
Acute Effects of Whole Body Vibration on Functional Capabilities of Skeletal Muscle

James D. Burns (Dr. Paul C. Miller and Dr. Eric E. Hall) Department of Exercise Science

Previous research has shown that the use of whole body vibration (WBV) may provide acute benefits in measures of muscular performance. The benefits may be different for athletes and non-athletes.

PURPOSE: To evaluate the benefits of WBV on muscle contractile performance and anaerobic performance for athletes and non-athletes. METHODS: 37 college males (19 non-athletes & 18 athletes) participated in this study. The vibration and control conditions were randomized and counterbalanced. Participants were instructed to stand on a Nitrofit Deluxe Vibration Platform for 2 min. During the vibration condition, the platform vibrated at 13 mm peak to peak amplitude and a frequency of 30 Hz. During the control session, participants were given the same instructions, but no vibration was applied.

Knee extension (KE)/flexion (KF) peak torque and average power was measured on a Biodex II Isokinetic Dynamometer at 6 speeds (1.05, 2.09, 3.14, 4.19, 5.24 & 6.28 rad/s). Anaerobic power was measured using both a vertical jump test and Wingate test. RESULTS: A RM GLM did not reveal a significant condition effect or group*condition interaction for vertical jump or any of the variables measured by the Wingate test (peak power, average power, and power drop). KF average power at 6.28 rad/s revealed a trend toward a significant group*condition interaction (p=.057). There were no other significant findings for any of the other isokinetic measures. CONCLUSION: These results do not support the use of WBV using these parameters to increases in performance. These results suggest that athletes only performed slightly better following WBV during higher contractile speeds while no differences were seen for non-athletes at any speed. This may be due to different training approaches with the athletes more likely to participate in high-speed training than non-athletes. Additionally, although previous research has described the optimal range for WBV frequency to be 25-30 Hz, it has recently been suggested that a WBV frequency of 30Hz may be near the limit of benefit and, therefore, the functional gains would be incremental. It is evident that more research needs to be conducted in order to elucidate the most appropriate protocols to be used for performance enhancement.

Does Exergaming Achieve the Same Levels of Intensity as Mentor-Based Physical Activity?

Jamie R. Feldman, Courtney A. Graham, Rachel M. Perron and Rebecca A. Moffett (Dr. Eric Hall) Department of Exercise Science

Childhood obesity is rapidly becoming a problem in developed countries. Two factors contributing to obesity are an unhealthy diet and a lack of physical activity. Exercise games, or “exergaming” was developed by video game designers to address the issue of sedentary behavior. Research on the relative success or failure of various exergames is limited. The purpose of this study was to explore the intensity levels of exergaming in comparison to a mentor-based physical activity program. Sixteen female participants (M age=9.4 ± 1.0), taken from the Girls in Motion program at Elon University, spent twenty minutes in outdoor mentor-based physical activity, and twenty minutes playing exercise games using the Wii console.

The Wii time was divided into ten minutes on the WiiFit and ten minutes on Wii Sports. WiiFit activities included hula hoop and one person run. The Wii Sports activities consisted of boxing and tennis. Heart rate monitors and accelerometers objectively measured exercise intensity while the Rate of Perceived Exertion scale (RPE; Borg, 1998) was used as a subjective measure of intensity. A Repeated Measures General Linear Model (RM GLM) found a significant time, condition and time*condition interaction (p < .01) for heart rate. Heart rate significantly increased during and immediately following exercise compared to beginning levels. Heart rate was also found to be highest for the WiiFit condition and this was significantly different from Wii Sports and mentor based physical activity. For RPE, the RM GLM showed a significant time effect with RPE being highest at the end of each condition. Data from the accelerometer found that the participants engaged in activity at moderate intensity or higher 62% and 53% of the time in mentor-based physical activity and WiiFit, respectively. No physical activity was performed at moderate intensity or higher in Wii Sports. Based on our findings, it can be concluded that the WiiFit exergame is better at reaching higher intensities than Wii Sports and that WiiFit can achieve intensity levels comparable to mentor-based physical activity.
The Effect of Acute Quercetin Supplementation on Exercise Performance in a Heated Environment

Nathan J. Guerette (Dr. Stephen P. Bailey and Dr. Paul C. Miller) Department of Exercise Science

Previous research has described a relationship between prolonged exercise in the heat and deficits in physical performance. It has also been suggested that these deficits can be attenuated by the acute ingestion of quercetin. PURPOSE: To examine the effect of acute quercetin supplementation on performance during prolonged exercise in a heated environment. METHODS: 12 college-aged males completed 4 testing sessions. During session 1, participants completed a graded exercise test and ventilatory threshold (VT) was identified. A practice 10k time trial on a cycle ergometer was completed in the second session. Sessions 3 & 4 involved the consumption of either 1,000 mg quercetin or a placebo 1 hour prior to exercise. Participants rode a cycle ergometer for 2 hours at 60% VT in a heat chamber (32°C, 70% humidity). Sessions 3 & 4 were randomized and counterbalanced. The administration of the treatments was double-blind. Physiological variables (heart rate, core temperature, blood glucose) and perceptual variables (RPE, affect, thermal comfort, and thermal sensation) were measured every 20 minutes throughout the trial. After 2 hours of exercise in the heat, each participant completed a 10 km time trial. RESULTS: A MANOVA revealed no differences between the conditions for any of the physiological or perceptual variables. Similarly, there were no differences seen in time trial performance between conditions. CONCLUSION: The results of this investigation do not support the use of acute quercetin supplementation of this magnitude to enhance exercise performance. The lack of differences may have been influenced by the dose of quercetin, the delivery mechanism, and the length of the exercise trial used in this investigation. Since dopamine may have an inverted-U dose response to quercetin, it may be possible that a dose of 1,000 mg may not elicit an ergogenic effect. It is also possible that the delivery mechanism may not be as effective as other formulations. The formulation as a chew may not deliver an adequate amount of quercetin into the blood. Lastly, it is possible that the 2 hour exercise trial may not have been long enough to elicit the desired physiological stress that would be potentially mitigated by quercetin.
The Biomechanics of Movements of Increasing Complexity in Novice and Advanced Dancers

Bridget A. Kelly (Dr. Caroline J. Ketcham) Department of Exercise Science

Dance training often stresses the importance of core engagement in order to maintain torso stability and prevent injury. Increased sway and lack of control of posture often leads to balance disturbances that can lead to injuries. Advanced dancers, for example, show a considerable incidence of low back and leg injuries usually a consequence of instability during complex balance tasks. The purpose of this study was to determine the biomechanical differences between novice and advanced dancers when completing tendus, dégagés, and battements, all movements which involve lifting one leg to various heights while maintaining balance on the supporting leg. A novice dancer group and an advanced dancer group, each with 15 participants, performed tendus, dégagés, and battements to the front on both their right and left legs. This was repeated to the side and back, with randomized blocks of trials. Reflexive markers were placed on anatomical landmarks of the torso and lower limb. Two video cameras (30Hz) were placed in the frontal and sagittal views to capture body position and joint angles. Body position was measured to examine any sway that occurs in the body when a dancer performs various movements involving the lifting of the leg. The kinematics of joints were also measured in order to examine how the angles of the joints shift during movement. HU-M-AN™ movement analysis software was used to digitize and analyze the kinematic data. Initial results showed rotation of the torso was found to some degree in all of the novice dancers, while 50% of advanced dancers had slight rotation. Thirty percent of novice dancers had a slight break in form in their support leg whereas there was no break in the form of advanced dancers. All novice dancers had shoulder movement in the sagittal plane with 58% of the group having excessive movement. The advanced dancers minimized this movement, although not completely. Both groups showed increased body movement as the working leg was brought to higher levels (p<.05). Advanced dancers have significantly less sway in the body during tendus, dégagés, and battements when compared to novice dancers. These results reveal that more dance training can help to effectively minimize sway in the body; however supplemental conditioning will still improve form in advanced dancers. The implications of this research extend to dance training technique and injury prevention.

The Effects of Imagery on Performance and Pain Perception Associated with Delayed-Onset Muscle Soreness

Paige Kensrue (Dr. Walter R. Bixby) Department of Exercise Science

Research has indicated that the use of imagery may aid in recovery from injuries and reduce the perception of pain in athletes during and after competitions. There is little research concerning acute pain and soreness, such as delayed-onset muscle soreness (DOMS). PURPOSE: To determine whether the use of guided imagery for healing will affect soreness, pressure pain threshold (PPT), and performance associated with DOMS. It was hypothesized that those who listen to a healing imagery script would report less soreness, higher pain threshold, and better performance following DOMS than a control group. METHODS: Participants (41) completed two days of testing with 48 hours between them. At the end of the first day, DOMS was induced by performing 6 sets of 15 reps of isokinetic eccentric exercise at -1.05 rad/sec. Each day consisted of tests of soreness, PPT, vertical jump, isokinetics at 6 speeds, and a Wingate test. 21 participants listened to a healing imagery script 10 times within the 48 hours after inducement of DOMS while 20 listened to relaxing music. RESULTS: Perception of muscle soreness was worse for the front and back of the leg (p<.01) regardless of group. PPT was lower after treatment in the lateral hamstring regardless of group (p<.01). Peak torque for knee extension at 1.05 rad/sec was reduced after treatment for both groups (p<.05). Peak torque for knee flexion at 2.09, 3.14, 5.24, & 6.28 rad/sec was better after treatment for both groups (p<.05) and peak torque for flexion was better at 6.28 rad/sec (p<.05) for both groups. Minimum power on the Wingate test was significantly higher following treatment for the imagery group while it was unchanged for the control group (p<.05). CONCLUSION: Healing imagery had no significant impact on perception of soreness, PPT, or isokinetic measures. Healing imagery did improve performance on the Wingate test, allowing the imagery participants to retain a higher level of power during the latter portion of the test. Further research is needed to determine if healing imagery can improve performance on longer anaerobic and possibly aerobic activities.
Validation of the Pretie-Q Against Measures Obtained from an Objective Physical Activity Monitor

Stephanie C. Lane and Robert A. Hixon (Dr. Paul C. Miller) Department of Exercise Science

Exercise participation rates in the United States today warrant significant concern. Most people do not accumulate adequate amounts of exercise at recommended intensities to derive health benefit. The Preference for and Tolerance of Intensity of Exercise Questionnaire (PRETIE-Q) is a projective instrument that can be used to assess an individual’s innate willingness to participate in exercise of varying intensities. This use of the PRETIE-Q may be valuable for the development of exercise programs. The PRETIE-Q has been previously validated against self-report exercise questionnaires. PURPOSE: The purpose of this study was to validate the PRETIE-Q against objectively measured exercise intensities. METHODS: Twenty-nine individuals (Mean age = 19.9 ± 0.9 years) participated in this investigation. They were asked to complete the PRETIE-Q to determine preference (PREF) for and tolerance (TOL) of high-intensity exercise. Actual exercise intensities were measured using an Actigraph GT1M physical activity monitor. This device was worn for 7 days and provided a depiction of routine daily exercise. RESULTS: A one-tailed Pearson’s correlation was performed to identify relationships between the results obtained from the PRETIE-Q and actual exercise intensities. Analyses revealed positive relationships for PREF and participation in both moderate-intensity (r=0.31; p<0.05) and very high-intensity (r=0.32; p<0.05) exercise. There were no significant correlations found between TOL and any of the exercise intensities (p>0.05). CONCLUSIONS: These data indicate that there is a relationship between PREF and measured exercise intensity. The importance of elucidating these characteristics may reside in the development of fitness programs. If a fitness professional were able to identify an individual’s inherent propensity for different exercise intensities prior to the development of an exercise prescription, then they would be able to more succinctly tailor that program to both the individual’s training goals and exercise preferences. This could be potentially beneficial for future exercise adherence and compliance.

The Influence of Concussion History on Cognitive Performance

David James Lawton (Dr. Eric Hall) Department of Exercise Science

Concussions are a common aspect of physical activity. An estimated number of 1.6-3.8 million sports and recreational concussions occur each year in the United States. Although concussions may be characterized by numerous symptoms such as loss of consciousness, nausea, and fatigue; posttraumatic impairment in brain function hallmarks the condition. Previous research believed this impairment to be transient. However, recent findings suggest that neurophysiologic and cognitive deficits persist long after initial trauma. Objective: To evaluate the effects of concussion history on cognitive performance as measured by concussion management software and other standardized cognitive tasks. Methods: Twenty-five subjects with a self-reported history of at least one diagnosed concussion and twenty-two control subjects participated in this study. Subjects completed three tasks during one testing session. The first was a computer based neurocognitive test called ImPACT which is commonly used by professional and collegiate sport teams. The second was an auditory odd ball task that consisted of a series of standard and non-standard tones. Subjects were instructed to ignore the standard tones and to respond to the non-standard tones. The third was a visual flanker task where participants were asked to respond to the direction of a centered arrow while ignoring surrounding congruent and incongruent arrows. Results: Preliminary data analyses showed no differences on performance on the different subscales of the ImPACT between the two groups. A significant difference was found for reaction time when viewing incongruent arrows with the concussed group responding more slowly than the control group (p = .05). However, there were no additional group differences in reaction time or errors for the auditory oddball task and the visual flanker task. Conclusion: In most cognitive tasks there were no differences in cognitive performance between those who had previously had a concussion and those who had not. However, reaction time on the incongruent flanker task did show performance decrements. Future research may want to examine different cognitive tasks because the ones used in the current study may not be sensitive enough to see decrements.
Examining the Content of Television Programs on Anxiety Reduction in College Males

Erin E. Lewandowski (Dr. Eric Hall) Department of Exercise Science

Previous research has shown that exercise may reduce anxiety levels. However, little research has examined whether viewing television programs during exercise influences this association. PURPOSE: To determine if the content of television programs influences anxiety responses following exercise. METHODS: Thirty male college students participated in this study and were instructed to exercise on a recumbent bicycle for 30 min (5 min warm-up, 22 min of experimental manipulation, 3 min cool-down) at moderate intensity (> 60% HRmax) on 3 different occasions. The conditions were viewing television programs depicting either a) ideal male body image b) ideal female body image or c) neutral body image. The State Anxiety Inventory (SA; Spielberger et al., 1970) and Physical Appearance State Anxiety Scale (PASA; Reed et al., 1991) were assessed prior to exercise, immediately following, and 10 min following exercise. RESULTS: RM GLM for SA showed a significant Time effect (p < 0.05) but not an effect for Condition or Condition*Time interaction (p > .05). This was a result of a decrease in SA at 10 min post-exercise. The RM GLM for PASA showed a significant Condition and Condition*Time Interaction (p < .05) and trend for Time effect (p < .10). PASA was higher in the ideal male body image condition compared to the other condition as a result of an increase immediately following exercise. Overall, there was a decrease in PASA at 10 min-post exercise. CONCLUSION: Regardless of exercise condition, participants experienced decreases in anxiety. However, those watching the television program featuring ideal male body images showed higher physical appearance state anxiety.

The Effect of Exercise Intensity on Cognitive Functioning During and Following Exercise

Emily J. Main (Dr. Eric Hall) Department of Exercise Science

The transient hypofrontality theory proposes that during exercise, metabolic resources will be primarily used by the regions of the brain responsible for movement. Thus, higher level cognitive processing, also called executive control, in the prefrontal cortex of the brain is sacrificed for the sake of sustaining physical movement. PURPOSE: The purpose of this study was to test the transient hypofrontality theory and further investigate the effect of exercise intensity on cognitive performance during and following exercise. METHODS: 28 participants (19 females) completed 4 testing sessions. The first session was a maximal graded exercise test to determine their ventilatory threshold (VT). The remaining 3 sessions were randomized and counterbalanced. Each subject completed the control condition (played handheld video game) and 2 exercise conditions (exercised on recumbent bike for 20 min @VT or at 75% VT). The Eriksen flanker task, a measure of executive control, was completed before, during, immediately following and 20 minutes following the condition. RESULTS: For response accuracy during the congruent trials of the flanker task, there were no significant main effects for session, time or session*time interaction (p > .05). However, for response accuracy of the incongruent trials, there was a significant session*time interaction (p = .005), but not a significant main effect for session or time (p > .05). This session*time interaction was due to a decrease in response accuracy in the @VT condition. CONCLUSION: During exercise @ VT, response accuracy for the more difficult task was impaired. These findings support the transient hypofrontality theory which states executive control is temporarily impaired during exercise at higher intensity but not impaired following exercise.
Kinematic Analysis of 100M Sprint Start

Molly Wellinghoff and Andrea March (Dr. Joyce Davis) Department of Exercise Science

A quick block start is an important skill to master for many track athletes since it impacts the final result of sprint races (Coh et al., 1998, 2006). Many factors contribute to performing an ‘ideal’ sprint start including the horizontal position of the center of gravity; amount and time of force application; hip, knee and ankle positions; initial velocity and acceleration (Harrison & Comyns, 2005; Puntayuth et al., 2002; Coh et al., 1998; Schot & Knutzen; 1992).

Purpose: The purpose was to analyze the starting technique of a collegiate female 100-meter sprinter and to make recommendations to optimize performance. Methods: Following a literature review, a theoretical model was developed describing the ideal performance for the 100 meter sprint start. A National Collegiate Athletic Association (NCAA) Division I female sprinter with two years of NCAA experience and two Southern Conference All Conference titles was filmed using standard kinematic procedures. Side views were recorded at 60 Hz using a SONY© digital video camera and analyzed using HU-M-AN© Motion Analysis software. Factors analyzed were the horizontal position of the center of gravity, the height of center of gravity, time of force application from the starting blocks, and hip, knee, and ankle angles. Performance was evaluated by comparing both quantitative and qualitative data to the idealized model.

Results: Film analysis showed the hip, knee, and ankle positions of the subject’s front leg to be close to ideal. The positions of the rear hip, knee, and ankle deviated greatly from the ideal model as did the height of the center of gravity. Time of force application on the starting block was comparable with the ideal model as was horizontal position of the center of gravity.

Conclusions: While this sprinter is performing near the ideal theoretical model, this analysis provides information for the coach and athlete to further optimize starting block technique. Rear leg angles could be improved, as well as attention given to lowering the height of her center of gravity. No changes are recommended regarding position of the front leg, horizontal position of the center of gravity, or time of force application.

Effect of Distraction Stimuli on Trunk Lean while Running

Francesco P. Worley, Meredith A. Meyer, Rachel M. Perron, and Leah M. Gardner (Dr. Joyce A. Davis) Department of Exercise Science

Many studies have examined the effects of fatigue on mechanical and psychological factors while running. Fatigue has been shown to alter running mechanics and associated with increases in forward trunk lean (Liemohn, 1990). Listening to music has been proposed as a distraction technique that may mitigate the negative psychological effects associated with fatigue (Yamashita, Iwai, Akimoto, Sugawara, Kono, 2006). The purpose of this study was to examine the effect of distraction on trunk lean while running to voluntary fatigue. Participants (12 male, 3 females; Mean age 20.37±2.37 years) volunteered to complete 4 exercise sessions. A graded exercise test was conducted during session one to determine fitness level and estimate ventilatory threshold (VT). VT was validated during session two and utilized to determine a running speed that would result in a running intensity 10% above VT. In sessions three and four, participants completed a 5 minute warm up at a self selected pace before running to voluntary fatigue at the prescribed speed. Conditions of music (MUS) and no distraction (ND) were randomly assigned. Digital video tape was recorded and analyzed in order to determine trunk lean (TL) during the first minute of exercise and at 50%, 75%, and 100% of total time to fatigue during ND and MUS conditions. A repeated measures general linear model was conducted with TL showing a significant effect for time in both conditions (p=.002). There was no effect for distraction. These results are consistent with previous findings showing that fatigue results in postural deviations. Listening to music does not appear to mitigate the negative effects of fatigue on running posture.
FOREIGN LANGUAGES

Media, Popular Culture and Implications on Today’s French Politics

Alexandra M. Anderson (Dr. Sophie Adamson) Department of Foreign Languages

Les Guignols de l’info is a popular spoof French political news program that has had tremendous impact on French popular culture since it first aired in 1988. Much like The Daily Show or The Colbert Report, this satirical puppet show is a nightly phenomenon in France. These puppets represent major French political players, such as Nicolas Sarkozy and Ségolène Royal as well as current events like the War in Iraq. In my research, attention is drawn to the Guignols’ impact on French public perception and behavior with specific examples of phrases and gestures that began on the program and have now been adopted by the general public. Furthermore, I examine the controversy caused by the Guignols de l’info when the puppet newscasters prematurely announced results in the primary of the 1995 presidential election, prompting masses of voters to rush to the polls in favor of Jacques Chirac. My research addresses the essential question: Is there substantial data to suggest that the Guignols have significant impact on voters in France, and if so, what conclusions can we draw about the political influence of the media in modern society? The importance of this research is paramount to how political culture has changed over the years and how the general public learns about the issues and candidates. This study allows us to look into possible implications of the media on the field of political science. In addition to television recordings, print articles and available statistics, such as ratings for the show, I also conduct my own interviews for this research project. With the participation of four college-aged French students currently studying at Elon University, I look at their perceptions of the Guignols’ influence to help gauge how this form of media has possibly challenged public thought more than many other forms of media. In my conclusion, I make a correlation between the show’s presentations of topics and voter response in elections.

Ce Que C’est Qu’écrire: Passion Simple Et L’occupation D’Annie Ernaux
What It Is To Write: Simple Passion and The Possession by Annie Ernaux

Megan D. Cunningham (Dr. Sarah Glasco) Department of Foreign Languages

This presentation will compare and contrast two works by Annie Ernaux: Passion Simple, published in 1991, and L’Occupation, published in 2002. While the two novellas have many similarities, Ernaux handles their themes very differently. These thematic expressions are groundbreaking and subversive in that Ernaux’s literary style transgresses the conventional “rules” of writing. For example, she does not create chapters, and thus the narrator moves from one mental state to another with fluidity. Furthermore, the narration is often a stream of consciousness in which not only aspects of life but also and more importantly the act of writing, itself, are common topics of discussion. The reader is able to detect a development in opinions concerning life and love that reflects a definite evolution in the author’s thought process between the two publications. Through literary analysis of the writing styles used in Ernaux’s works (lexical fields, syntax, and other stylistic devices), it becomes clear that the author and the narrators of these texts write to fill the void that exists in everyday life and to overcome the emotional obstacles that they face. In so doing, the significance of the act of writing as a therapeutic tool surfaces for the readers as well. By using the first person and never ascribing names to her characters, Ernaux is able to better identify with her readers through the narrator. As a result, the reader can assume the identity of either the narrator herself or any number of the characters mentioned within the two works. Thus, Ernaux’s texts serve as a “two-way gift,” in that the narrator profits from writing out her experiences and inner struggles, while the readers reciprocally profit from interpreting and identifying with them on their own, personal level. This presentation will be given in French.

Molly M. Costigan (Dr. Donna Van Bodegraven) Department of Foreign Languages

Due to unstable economic situations, a lack of lucrative job opportunities, and the living conditions in Mexico and Morocco, many residents of these countries choose to migrate north to the United States and Spain, respectively, and much of this immigration is undocumented. Since the terrorist attacks on September 11, 2001 in New York and on March 11, 2004 in Madrid, changes in the immigration policies of the United States and Spain have made it more difficult for immigrants to enter these countries, but have done little to deter them from coming. Increased security at the borders between the United States and Mexico and between Spain and Morocco, as well as a shift in attitudes concerning illegal immigration, have altered the appearance and the atmosphere of the borders, the routes and the dangers that are associated with crossing them, and even the reception that many undocumented immigrants receive when they arrive. These concepts are frequently the themes of documentary films about immigration in the United States and Spain, and filmmakers typically employ one of three modes to express these themes. This study seeks to determine how the appearance of themes and selection of modes reflect recent trends in immigration and the individual struggles faced by Mexican and Moroccan immigrants. After identifying common themes in a selection of documentary films and determining which themes, an analysis of the trends that emerged shows that the selection of mode reflects the nature of the theme, and that the prevalence of certain themes demonstrates the reality of Mexican and Moroccan immigrants. Presentation in Spanish.

HEALTH AND HUMAN PERFORMANCE

Impact of Acute Coordinative and Aerobic Exercise on Attention in Graduate Students

Timothy James Douglas (Prof. Elizabeth K. Bailey) Department of Health & Human Performance

Acute aerobic exercise improves cognitive function in adults. Similarly, acute coordinative exercise has been shown to improve attention in school age children in a class room setting PURPOSE: The purpose of this investigation was to determine if acute aerobic and coordinative exercise improves attention in graduate students in a class room setting. METHODS: Twenty-eight students (19 Women, 9 men; Age=24±1 years; BMI=22.9±0.6) enrolled in a Doctor of Physical Therapy Education program completed 3 experimental sessions, each separated by 7 days. Immediately before a 1 hour lecture period, subjects completed either 15 minutes of quiet sitting (REST), walking (AERO), or coordinative exercise (COORD). COORD consisted of a sequence of bilateral activities requiring gross and fine motor movement using balls of various sizes and types. Before completion of the experimental condition and immediately after the 1 hour lecture period, subjects completed the d2 test of attention. Experimental conditions were applied in a counter balanced fashion, at the same time of day, and under a consistent dietary environment. RESULTS: Heart rate was similar during AERO (121±3 bpm) and COORD (125±4 bpm). The total number of items processed (TN) on the d2 test increased from pre (REST=557±14; AERO=558±16; COORD=560±13) to post (REST=600±10; AERO=589±13; COORD=601±10) (p<0.001) in all experimental conditions. Similar improvements in concentration performance (CP) were observed from pre (REST=239±7; AERO=237±9; COORD=237±7) to post (REST=260±6; AERO=252±7; COORD=260±7). No changes in the number of errors on the d2 test were seen from pre to post. Furthermore, none of the measures of attention used in this investigation were impacted by AERO or COORD. CONCLUSIONS: The results of this investigation suggest that aerobic and coordinative exercise do not influence attention of graduate students in a classroom setting. It is possible that the potential positive impact of exercise on attention is not present in an adult population; however, this investigation does not address the potential impact of aerobic or coordinative exercise on all components of cognitive function.
An Examination of Nonmedical Use of Stimulants among Undergraduate Students at Elon University: Links with Other Risk Taking Behaviors

Emily E. Reynolds & Gregory C. Mader (Prof. Resa E. Walch) Department of Health and Human Performance

National studies indicate an increase in the misuse of nonmedical stimulant drugs among college students, specifically Adderall and Ritalin. Most studies find between 6 and 7 percent of college students report misusing stimulant medications in the past year; however, many researchers believe that the problem is underreported. This study was conducted to assess the prevalence of nonmedical use of stimulant drugs among undergraduates at Elon University, with emphasis on possible links between nonmedical use and other high-risk behaviors such as binge drinking. After piloting the survey with 30 students in October 2009, a random sample of 1000 Elon students were asked to participate in the web-based Survey of Health Behaviors Related to the Use of Stimulants. The survey was available over a 10 day period in November 2009. The response rate was 35 percent (352 students). Consistent with previous national research findings, the results of this survey indicate that 6.9 percent of Elon undergraduate students report nonmedical use of stimulant drugs once a month or more often. Additionally, nearly 90 percent of nonmedical stimulant users in the past month reported multiple binge drinking episodes during the same time period. The results of this study provide evidence of a link between multiple risk taking behaviors which may prove useful in developing educational and prevention strategies. Furthermore, this survey will be analyzed to identify possible motivation associated with the nonmedical use and misuse of stimulants and the perceived health risks associated with nonmedical use.

Changes in Activity and Eating Habits in Girls Aged 10-11 Following Participation in the Alamance- Girls In Motion Program

Christie N. Staton (Professor Elizabeth Bailey) Department of Health and Human Performance

Alamance - Girls in Motion (A-GIM) is a program that addresses issues of body image, nutrition, and exercise through mentorship and education in girls aged 10-11. Subjective data from previous sessions of A-GIM suggested that following participation, perceived body image, self esteem, and health behaviors are positively impacted, but changes in health behaviors have never been measured directly. Research suggests that increasing self-esteem in children can have a positive effect on body image and that physical activity is consistently related to improvements in self-esteem. PURPOSE: The purpose of this study was to quantitatively measure changes in physical activity (PA) and assess eating habits pre to post program, in an effort to explain the positive changes observed in body image and self-esteem. METHOD: 20 Elon University women and 20 girls volunteered to participate in A-GIM as mentors and mentees. College mentors were matched with girls based on shared interests. Mentors and mentees met weekly for 90 minutes to exercise and discuss program topics. Prior to, and following completion of the program, mentees completed the Block Kids Food Screener (a survey of food eaten the previous day), an activity questionnaire, and several questionnaires to evaluate perceived body image and self esteem. In addition, to objectively measure changes in PA, 12 girls were randomly chosen to wear an accelerometer for the first week of the program. Due to issues with availability, only 5 girls were able to wear accelerometers in the final week. RESULTS: While the PA questionnaire showed significant positive changes in frequency and duration of weekly PA, the accelerometer data did not show any significant changes. Analysis of nutrition data also did not result in any significant changes pre to post program. CONCLUSION: Although self reported PA appears to be improved following program participation, issues with accelerometer availability likely limited our ability to quantitatively observe changes in PA. In addition, a 1 day nutrition recall may not be the most effective way to assess change in eating habits in this age group. A further attempt to collect objective data on nutrition and PA changes is warranted to assess efficacy of A-GIM.
HISTORY AND GEOGRAPHY

Causal Factors in HIV/AIDS Prevalence Rates and Barriers to Infection Rate Reduction in Ghana and South Africa

Olivia R. Ackerman and Lauren C. Taylor (Dr. Heidi Frontani) Department of History & Geography

The HIV/AIDS pandemic continues to have an enormous impact on global health, especially in Africa. Although Africa accounts for just over 14.7 percent of the world's population, it is estimated to have more than 60 percent of AIDS cases. The authors used library research, visits to medical facilities, and interviews with health care providers to understand why Ghana and South Africa have such dramatically different HIV/AIDS infection rates (3 percent and 30 percent respectively) and what barriers exist to reducing these rates. Findings included that a key barrier to effective reduction of infection rates and the further spread of HIV/AIDS in both countries is stigma. Especially in rural areas, Ghanaians and South Africans view discussions of sexual activity, even with health care providers, as embarrassing and culturally inappropriate. Most refuse to even be tested for HIV/AIDS. Another obstacle to reducing HIV/AIDS infection rates in both countries is economic, including the shortage of trained medical professionals due to the outmigration of doctors, nurses, and pharmacists to other countries for greater pay, and the limited funds their Ministries of Health have to provide HIV/AIDS education or free prophylactics. South Africa’s prevalence rates appear to be higher for several reasons including: being the recipient of large volumes of male migrant workers in the mining industry who make use of sex worker services during their many months away from home, the failure of former President Thabo Mbeki to acknowledge that HIV causes AIDS or to enact effective policies to combat the disease’s spread, the debilitation and death of health care providers from HIV/AIDS which further reduces and already strained healthcare system, and the greater concentration of people in large urban slums, where disease transmission is rapid and the ability of health care providers to monitor patients’ use of anti-retroviral drugs to combat HIV is limited. Finally, whereas Ghana has been able to focus on prevention through media campaigns and other approaches and maintain a relatively low prevalence rate, South Africa has primarily focused on treatment for people living with HIV/AIDS and increases in the accessibility of testing.

Septimius Severus: An Imperial Innovator?

Ellis H. Bridgers (Dr. Hui-hua Chang) Department of History and Geography

Septimius Severus (193-211 CE) became the emperor of Rome when he arose victorious from civil war in 193 CE. Partially because of his militaristic means of coming to power, and also because of his instigation of several army reforms, Severus has been cited as a Roman emperor of unprecedented militarism. However, by comparing the actions of Severus to those of previous emperors, it becomes clear that none of Severus’ actions directly changed the Roman system of government as it existed when he first came to power. When the actions of Severus pertaining to his relationship with the military, his dealings with the senate, and his attempts to establish legitimacy and dynastic succession are compared to the actions of earlier emperors, it becomes clear that Severus was no innovator, but was following a tradition laid out by those who had come before him. Especially significant will be placed on a comparison of Severus with Augustus and Vespasian, who are most similar to him in that they both came to power out of civil war. This research implements ancient texts by Tacitus and Cassius Dio as well as archaeological evidence from numismatic and architectural sources. After reviewing this evidence, it becomes clear that Severus cannot be viewed as having altered the fundamentals of the principate in that his actions relating to the pillars of the imperial system were not unprecedented.
The Mexican Revolution, the Frontline for Diplomacy During World War I: Germany’s Policy in Mexico and the Effects on the United States

Kristen E. Klug (Dr. Michael Matthews) Department of History and Geography

Although isolated from a large part of international crises in the early twentieth century, the Mexican Revolution became involved in the conflicts of World War I. This research looks at how Germany’s shift in strategy and agenda in Mexico during World War I affected the United States policies in the Mexico Revolution. In 1914 the United States seemed to be progressively siding with the Allies, which threatened a secure victory for Germany. To prevent the United States from entering World War I on the side of the Allies, Germany shifted its policy in Mexico to deplete the U.S.’s energy and resources dedicated towards war. This research focuses on Germany’s relationship with Carranza, the anti-American propaganda campaign in Mexico, and the secret service operation as policies created to prevent the U.S. from entering World War I. The research concludes that as a result of Germany’s policies, the United States responded in Mexico by promoting peace as their agenda, implementing more liberal economic policies towards Mexico, and intensifying their intelligence operation. This research is critical in understanding the actions of countries in times of war and their impact on other countries. Foreign intervention in Mexico during World War I reflected changing diplomatic ideas as powerful countries began conducting their affairs in developing countries. Numerous scholars have written and identified the effects of foreign intervention in the Mexican Revolution including Ramón Eduardo Ruiz, The Great Rebellion, Alan Knight, The Mexican Revolution, and John Mason Hart, Revolutionary Mexico. Frederick Katz’s books The Secret War in Mexico and Deutschland, Diaz und die mexikanische Revolution remain the only detailed accounts of German intervention in the Mexican Revolution. Along with studying these accounts, research methods included the analysis of State Department records on the affairs in Mexico from 1910 to 1930 on microfilms at Chapel Hill and the analysis of numerous newspaper articles from The New York Times, Washington Post, and Christian Science Monitor from 1910 to 1920.

Alternative Energy and Sustainable Development in Haiti: The Potential of Solar Ovens to Improve Women’s Workload and Reduce Deforestation

John R. McGreevy (Dr. Heidi G. Frontani) Department of History and Geography

Most poor households in developing countries, reflecting more than 2.4 billion people or more than one third of humanity, rely on burning traditional biomass fuels including crop waste, dung, and wood to meet their basic energy needs. Although burning biomass fuels is an example of sustainable energy use, it can generate considerable smoke, harming human health, especially women’s, because they are the principle household members engaged in meal preparation and cooking. The collection of firewood can also contribute to a loss of tree cover. The aim of this study was to determine the potential for solar ovens to reduce reliance on firewood and charcoal as the main rural household fuel sources in Haiti. Methods included demonstrations of solar ovens, surveys, and interviewing non-salaried, rural Haitian women over three weeks about their daily routines, time spent gathering fuel, and degree of satisfaction with solar cooking relative to their traditional methods. Additional interviews were conducted with foreign aid workers and community members, including the local priest, professional school principal, and elders, to obtain a more comprehensive understanding of the fuel wood situation, including trends in fuel shortages and current initiatives. Interviews and surveys were conducted in French and Creole with a local assistant. Findings included that: 1) solar cookers reduced women’s workload on sunny days, but not on days of mixed sun and clouds; 2) long-standing connections with U.S. development workers increased villagers’ willingness in the main study site of Layaye to experiment with solar cookers, and 3) women’s solar cooker use did not reduce male villagers’ desire to fell trees for charcoal production and sale; thus the devices are not having the hoped for impact of slowing deforestation, even in the case of highly valued mango trees. Although solar oven use is currently limited in Haiti, more widespread use is possible, due to the country’s large rural population, minimal infrastructure for electricity generation and transfer to rural villages, and potential impact in urban and peri-urban areas, where natural disasters have limited the availability of fuel.
The Good and the Abhorrent Wars: Applying a Model of Student Movements to the University of North Carolina at Chapel Hill

Lauren J. Mottle (Dr. Rod Clare) Department of History & Geography

Did you know that a larger percentage of American college students protested in the 1930s than the 1960s? Scholars have sought to understand the factors that motivated students to demonstrate, focusing their efforts on the two most active decades, the 1930s and the 1960s. Lewis S. Feuer composed a seminal work analyzing student protest by outlining a progression that they should follow. Feuer’s model consists of five stages applied to student movements broadly throughout the United States. However, to test the resilience of the model, it should remain meaningful when examining specific actors in a movement. The University of North Carolina at Chapel Hill (UNC) is situated far from the epicenter of student activity in either the 1930s or the 1960s. Located in the conservative South, UNC provides a unique vantage point from which to scrutinize Feuer’s model. This research seeks to examine the prevalence the stages of the model on campus. When discussing the 1930s, the model fits nearly perfectly. For the 1960s, however, Feuer’s model is far more difficult to apply to create meaningful analysis. Student actions at UNC in the 1960s shift between stages at will, not following the distinct progression Feuer proscribes. Among several conclusions, we observe that major modifications need to be made to Feuer’s thesis to make it more regionally applicable.

In Pursuit of Freedom: German Emigration to the United States between 1933-1941

Sara Paige Pasquinelli (Dr. David Crowe) Department of History & Geography

This study examines the political actions, economic sanctions, and cultural obstacles that challenged German emigration to the United States between 1933 and 1941. Through extensive examination of government documents and personal accounts, the research exposes the tribulations characterizing exiled life. The Third Reich initiated cultural destruction and de-emphasized individuality which persuaded many citizens to flee their beloved homeland in pursuit of intellectual, political, and individual freedom. Over 100,000 exiles fled to the United States in search of protection and personal liberation. Both nations enacted restrictive legislation, such as immigration quotas and required proof of financial stability that hindered escape plans. Moreover, the Third Reich robbed emigrants of their finances because depleted funds limited their acceptance opportunities into other countries. Without fiscal security, exiles depended on American welfare. They took any available job, even if outside their profession, to build their family’s income. Those with professional skills or personal reputation that carried over, such as Thomas Mann and Albert Einstein, had less difficulty in securing jobs and adapting to American society. If the nation benefited from that exile’s presence, Americans willingly accepted these new immigrants. However, all Germans encountered social alienation as shown through discrimination and xenophobia that prohibited Germans from working certain occupations because of fears related to national security. Artists and writers struggled to readjust to American society and some notable emigrants such as playwright, Ernst Toller, committed suicide. These exiles witnessed the destruction of their heritage from abroad. Their cultural ideals perished as exiles altered their personal beliefs and behaviors to resemble their new homeland. Despite the American promise that all could pursue freedom, German emigrants yearned for their native homeland as they struggled in the United States.
An Assessment of Governmental- and Non-Governmental Policies and Programs to Reduce Medical Professionals’ Outmigration and HIV/AIDS Rates in Zambia

Kristine E. Silvestri (Dr. Heidi Frontani) Department of History & Geography

Zambia has one of the world’s highest rates of outmigration of trained health professionals, such that between 1978 and 1999 only 50 of 600 doctors trained in Zambian medical schools remained active in the country. The high death rate of health professionals from HIV/AIDS in Zambia exacerbates the problem of brain drain. United Nations documents, Zambian and other government documents, Zambian newspaper articles, and semi-structured interviews with health professionals with work experience in Zambia were utilized to evaluate the effectiveness of legislative approaches and economic incentive programs at reducing the loss of medical professionals from Zambia. It also investigates the strategies for reducing mortality from HIV/AIDS among medical professionals and the general public. It was found that tactics such as improving health facilities have reduced attrition slightly, but that additional approaches that combine Government of Zambia and nongovernmental/governmental organizations’ efforts are necessary. A prime example of effective collaboration is the Health Services & Systems Program which conducts human resource management and planning. Additional findings included that health workers were significantly more likely to remain in Zambia if they could be employed in nongovernmental organizations or private health ventures. Suggestions for improved healthcare policy in Zambia include continuing to support the growth of rural healthcare facilities, continuing World Health Organization initiatives to train more nursing and community health workers to administer medication to fight HIV, and allowing employees infected with HIV to receive treatment during office hours in onsite facilities. Areas for future research are discussed.

Advocating for Change Through Nonviolence: Identifying Causal Factors in Violent Response to Student Activism during the U.S. Civil Rights Era and South Africa’s Anti-Apartheid Era

Francis Joseph Stiefel IV (Dr. Heidi Frontani) Department of History & Geography

Student activism can be a powerful tool for progressive social change. Unfortunately, it not only can help bring an end to discriminatory laws and unjust practices, but also elicit responses ranging from measured discussion and debate to abductions, torture, and murder. The study of student-led campaigns can help identify ‘tipping points’ when sit-ins, marches, or other forms of protest put activists in harm’s way. This study examines student activism in the Civil Rights era in the USA and the anti-apartheid era in South Africa to better understand how student protests were able to create change and why certain protest events turned extremely violent and even deadly. It is based on library, archival, and field research in the United States and South Africa, including analysis of the writings of student leaders, articles from student newspapers, transcripts of activist interviews, still photos and video footage of protest events, and personal interviews with activists from student led movements. Preliminary findings indicate that students possess considerable knowledge of anti-activist responses to their own movement, but that they are relatively lacking in awareness of specific events or actions which led to violent outcomes in other protest movements. Such ignorance can be potentially deadly. A long term aim of this research is to produce a handbook which could be used by student activists not only to effectively and safely organize and campaign to promote social change and justice, but also understand where their voices and actions fit within a global history of young people seeking to prevent and end civil and human rights abuses and support human dignity.
State Policies and Outmigration of Health Professionals from Ghana and South Africa

Lauren Chafee Taylor (Dr. Heidi Frontani) Department of History & Geography

Ghana and South Africa have experienced extremely high rates of outmigration of medical professionals, especially to the United Kingdom and the United States. Such migration weakens already strained and inadequate healthcare systems and reduces the likelihood of meeting United Nations Millennium Development Goals related to health: reducing child mortality, improving maternal health, and combating contagious diseases. This study uses interviews, government and nongovernmental reports to examine measures taken by Ghana’s Rawlings (1993 to 2001) and Kufuor administrations (2001 to 2009) and South Africa’s Mandela (1994 to 1999) and Mbeki administrations (1999 to 2008) to improve their respective national health systems and reduce the outmigration of health professionals, including doctors, nurses, and pharmacists. The exploration of this issue is important as it provides insight into one of the most prominent causes for inadequate delivery of health services. Findings include that the Kufuor administration’s movement away from Rawlings’ construction of a few showcase medical facilities in urban areas to supporting thousands of smaller, basic facilities in rural areas has improved public access to health care. Incentives under the Kufuor administration have done little to slow the country’s loss of medical professionals. Ghana still loses over half of its medical professionals annually, a loss of nearly $4,000,000 in training costs. Similarly, to combat the substantial financial losses annually due to having the world’s third highest nurse outmigration rate South Africa’s Mbeki administration recently increased nurses’ pay by 20 percent. However, the increase still left South African nurses earning an average of $17,000 less than their counterparts in the United States and the United Kingdom, the two countries to which nurses primarily migrate. Nursing student enrollment and retention subsequently improved, but the long term impact is unclear.
HUMAN SERVICES STUDIES

“To Me It’s Like Having a Kid, Kind Of”: Analysis of Student Reflections in a Developmental Mentoring/Service-Learning Program

Anna K. Decker (Dr. Cynthia Fair) Department of Human Services Studies

There is a large body of literature suggests that participation in developmental mentoring programs as well as service-learning programs is beneficial for students through improvements in social, academic and psychological outcomes (Karcher, Davis & Powell, 2002; Billig, 2000). Developmental mentoring is characterized by relationships where students are both the recipients and providers of mentoring (Karcher, 2005). Mentoring research traditionally focuses on the benefits to be procured for mentees, as opposed to mentors. Recently, research has begun to shift from simply measuring these outcomes to examining the mechanisms that facilitate these achievements. These mechanisms include relationship quality in mentoring programs (Karcher, Nakkula & Harris, 2005) and guided reflection in service-learning programs (Ikeda, 2000). This qualitative study furthers these developments by analyzing student writing journals completed by 31 sixth graders participating in a developmental mentoring program functioning as a service-learning program: the Chapel Buddy program. An independent school located in the Southeast administers the Chapel Buddy program which pairs sixth graders with kindergarten students for the duration of one year. The present study sheds light on how students process their roles as mentors and how they process relationships developed with their mentees, through carefully guided reflection. Simultaneously, this study adds to the existing literature through an analysis of a developmental mentoring program functioning as a service-learning program. Analysis of writing journals was conducted utilizing grounded theory (Strauss & Corbin, 1990). Results indicated that most students enjoyed their roles; however, few students were truly able to articulate a mature understanding of their roles. Consequently, there was an overall lack of consensus among the sixth graders concerning their roles as Chapel Buddies. Further, results suggested that most students experienced positive changes in their relationships over time. In conjunction with this finding, sixth grade students appeared to have more realistic and nuanced expectations concerning relationships with their buddies by the end of the school year. This study emphasizes the importance of student reflection in service-learning programs and draws connections between developmental mentoring and service-learning programs. The Chapel Buddy program can serve as a low-cost model for other schools interested in providing leadership opportunities for students.
Developmental Mentoring, Relationship Quality and School Adjustment: The Chapel Buddy Project

Kate E. Hopkins (Cynthia Fair) Department of Human Service Studies

Developmental mentoring is an advisor type relationship between two students in a school-based program (Karcher, 2005). Such mentoring programs are known to have benefits for students including improved behavior and attitudes and foster connectedness to school (Karcher, Nakkula & Harris, 2005). This longitudinal study focuses on a developmental mentoring program involving 31 sixth grade mentors and 29 kindergarten mentees called the Chapel Buddy Program. The Chapel Buddy program pairs sixth grade students with kindergarten students. It is the sixth graders’ duty to escort their kindergarten Chapel Buddy to chapel and guide them through the service. The sixth graders and their buddies also participate in other regularly scheduled activities throughout the year designed to support the developing relationship between mentor and mentee. The primary goal of this project was to determine whether the relationship quality of the mentoring pairs effects their school adjustment. A secondary goal was to evaluate the Chapel Buddy Program for its effectiveness as a transition strategy for those students entering elementary and middle school. School adjustment was assessed via self-report and teacher ratings. Relationship quality was assessed through self-report. The study found that there was a decline in relationship quality over the school year for both grade levels, perhaps due to a more realistic view of the relationship by the end of the school year. Results also indicated that sixth grade students were more likely to adjust well to school if they reported high relationship quality with their mentee. Further, the program was found to have a significant main effect on predicting the school adjustment of the kindergarten students at the end of the year ($r^2=.49$, $p<.008$). However, it appears that the sixth grade students benefited the most from the program because their levels of relationship satisfaction were significantly correlated with adjustment to school ($r=.38$, $p<.05$). This study concludes that developmental mentoring has positive outcomes for the mentors as well as the mentees, and such a program can be successful for fostering adjustment to elementary and middle school.

"I Felt Part of the Decision-Making Process": A Longitudinal Study on Aspects of Control and Birth Satisfaction in the Prenatal and Postpartum Periods

Taylor E. Morrison (Dr. Cindy Fair) Human Service Studies

Birth satisfaction is a very important construct in a mother’s assessment of childbirth experiences. Low birth satisfaction levels are associated with compromised mother-infant relationships, postpartum depression, and posttraumatic stress disorder. One factor that significantly influences a woman’s birth satisfaction is control, including prenatal control, expectations for control, and control experienced during labor and delivery. The relationship between these three aspects of control and how they individually, and collectively, affect birth satisfaction were explored through a prospective longitudinal study. Thirty-one women, 26 to 40 weeks pregnant, were interviewed to assess prenatal control and birth expectations. Six weeks after delivery, women were interviewed again to assess control experienced in the delivery room and birth satisfaction levels. Depression was assessed during both the prenatal and postpartum interviews to control for it in analyses. Open-ended questions were also asked to gain the mothers’ perspectives on experiences of control. Results of this study indicate that prenatal control and birth expectations are not significantly related to birth satisfaction. However, control experienced during labor and delivery was found to be a strong predictor of birth satisfaction ($t=6.812, p<.001$). Further, women who were cared for by midwives reported significantly higher levels of both experienced control ($t=3.37, p=.007$) and birth satisfaction ($t=2.92, p=.001$). These findings were unrelated to method of delivery, indicating that Cesarean sections were not the cause of this discrepancy. Qualitative analyses found that women experienced greater control when there was communication between woman and provider, when the providers and loved ones gave support, and when providers respected the woman’s wishes. Control was also enhanced when women prepared for the birth and gained knowledge of the process. These results suggest that medical providers should employ techniques to enhance mothers’ perceptions of control during labor and delivery in order to maximize birth satisfaction, by communicating, supporting, and respecting the expressed wishes of laboring women.
“Listen To Us”: Healthcare Providers’ Perspectives on Working Conditions and Suggestions for Improvement in HIV and Maternal Health Care in Cape Town, South Africa

Lauren Chafee Taylor (Dr. Cindy Fair) Department of Human Service Studies

The viewpoints of healthcare providers in South Africa are not well represented in the literature regarding HIV-related maternal health. Yet these individuals are on the frontlines of providing care to mothers living with HIV as well as preventing mother-to-child-transmission of HIV. The current study explores the perspectives of healthcare providers and student nurses in Cape Town who care for mothers living with HIV. The data for this qualitative study were collected at Stellenbosch University in Cape Town, South Africa. Seventy-four midwives, 49 primary healthcare nurses and 126 nursing students provided written responses to a series of open-ended questions designed to elicit feedback on working conditions and suggestions for improving HIV-related maternal care. The authors used grounded theory to analyze the responses with a process of open coding to develop themes. Analyses revealed relatively difficult working conditions. Participants cared for an average of 33.6 patients per day. 76.3% of participants reported inadequate staffing and 50.6% reported lack of supervision. Suggestions for the improvement of HIV-related maternal care included: increased education for both the community and health professionals (30.5%); more grassroots level participation by the government including communication and partnerships between providers and officials (20.7%); and increased resources including hygienic supplies, equipment, facilities, and adequate staffing (17.4%). A minority of participants (10.4%) suggested punitive measures including reproductive limitations on women infected with HIV and obligatory identification of HIV status. This study identifies the challenging working conditions of current and future nurses in South Africa and indicates a need for more education, government involvement, and resources. A minority of participants supported interventions that could violate maternal autonomy and this warrants further investigation. It is incumbent upon policy makers to listen to the needs of those healthcare providers who provide HIV-related maternal care as means to ultimately improve patient care.
LEISURE AND SPORT MANAGEMENT

Do Promotions Help? An Analysis of Attendance and Winning Percentage at Major League Baseball Games

Steven D. Briefel (Dr. Tony Weaver) Department of Leisure & Sport Management

Many factors play a role in the overall consumer experience during Major League Baseball (MLB) games. Promotions in sports are short-term devices that convert the hesitant buyer into action (Beech & Chadwick, 2004). Simply put, promotions are used to lure fans to the stadium. This study will bridge the existing research gap examining the relationship between promotions and attendance, particularly during a recession, and the results of a game. The purpose of this study is to determine if promotions are independently associated with attendance and the result of a baseball game. This project encompasses eight MLB teams’ game-day promotions for the 2009 season. The teams being examined were selected because over the four previous seasons, they had the lowest attendance in their league. Four teams from both the American (AL) and National (NL) Leagues were selected. Data have been collected from websites and official box scores for the 2009 MLB season. This study examines the relationship between the following variables: Dependent variables: attendance as defined by percentage of full capacity and winning percentage; Independent variables: Opponent, opponent record, weather conditions, time of game, day of game, type of promotion. Descriptive statistics, bivariate and multivariate analyses examining the associations between the independent and dependent variables were used. Currently, data has been collected on 360 games for the eight selected teams. On average, teams have a winning percentage of .476 and draw 25,495 fans filling approximately 62.6% of stadium capacity. Promotions have been separated into seven different categories: price discount, giveaway, intrinsic value, player-specific giveaway, price discount/intrinsic value, giveaway/intrinsic value, and other. General linear model analyses controlling for team winning percentage indicates that a main promotion type effect is independently associated with game attendance (F = 3.19 (df = 6), p=.005). Specifically, one-way ANOVA indicates that a combination of an intrinsic promotion and giveaways resulted in the highest percentage stadium capacity (avg = 69.2%). Regression analysis revealed no association between promotion type and attendance on game result. In conclusion, this study will help teams identify factors that result in a successful promotion. More importantly, teams can reevaluate current promotional plans to create efficient marketing programs.

The Relationship between Characteristics of a Venue and Attendance

Amanda M. Portoghese (Prof. Anne C. Marx) Department of Leisure and Sport Management

Attending a sporting event as a spectator is currently the most popular way of participating in a leisure activity, and is one of the largest industries in the United States today (Trail, 2008). Despite the interest of spectators in attending a sporting event, many factors may prevent or constrain participation (Trail, Robinson, & Kim, 2008). Researchers have identified constraints that may affect whether a spectator will attend a sporting event including ticket price (Baade & Tiehen, 1990; Hansen & Gauthier, 1989; Pan & Gabert 1997; Zhang, Pease, Hui, & Michaud, 1995), other events (Hansen & Gauthier, 1989), weather conditions (Hansen & Gauthier, 1989; Noll, 1974) and distance to stadium (Hansen & Gauthier, 1989; Pan & Gabert, 1997). However, little research in sport management literature exists on how the area surrounding a venue impacts attendance (Armstrong, 2008). The purpose of this study was to examine how characteristics of a venue impacts attendance. Respondents attending graduate courses at a liberal arts university in the Southeast region will complete a 32-item questionnaire indicating on how characteristics of a venue including security, aesthetic, scoreboard, and stadium layout influence willingness to attend an event. Data will be analyzed using t-tests. Results from a pilot study (n=29) indicated the socioeconomics of an area was more a participation barrier to women than men (t=2.22; p<.05) and women were less willing to attend events with children (t=2.19; p<.05) as compared to men. Thus, it may be more efficient for facility managers to target safe venue marketing strategies toward women.
A Current Examination of the Historically Black Colleges and University Division I Athletic Directors

Lauren E. Ross (Dr. Anthony G. Weaver) Department of Leisure and Sport Management

The role of Athletic Director (AD) is a highly complex and critical position in a university. Despite its importance, however, the role is understudied and not particularly well understood. Furthermore, research is most limited regarding athletic directors of Historically Black Colleges and Universities (HBCUs) (Humphrey, 2008; Quarterman, 1992). The objective of this study, an outcome of a larger study, is to better understand the specific job tasks, duties, and work activities influencing performance of HBCU ADs. Data from the larger study, designed to understand and describe the position of Division I ADs (N=322), were collected from institution websites and media guides. Descriptive statistics and bivariate analyses were conducted to develop job profiles, identify trends in career paths, and examine differences between varying levels of Division I membership (HBCU, Football Championship Subdivision [FCS], Non-football, Bowl Championship Series [BCS]). Findings that served as the basis for the smaller study indicate that the majority of current Division I ADs have been in their position for 6.7±5.9 years (range 1-39 years) and work in BCS schools (38.3%). HBCU athletic directors however, remained at an institution a significantly less amount of years (HBCU=3.47; FCS=7.10; Non-football=8.38; BCS=5.96; p= .002). These results led to the development of a qualitative study targeting HBCU Division I ADs (n=5) utilizing semi-structured interviews and document analysis of newspaper and magazine articles, and university documents and publications. Interview questionnaires were shaped using Strategic Performance Modeling (SPM), which is a research-oriented approach to critically define core aspects of a given job. Phone interviews were conducted by a team of researchers and lasted approximately 30-45 minutes. Audio recordings were transcribed verbatim and analyzed for common themes.

Since 2007, 12 of the 23 Division I HBCU athletic directors are new to the position. Interviews with HBCU athletic directors (n=5) revealed that position longevity was greatly dependant on adequate financial resources, athletic success, and alumni satisfaction. Data suggest that much of the instability can be attributed to the volatility of their superiors, including but not limited to the role of the chancellors and presidents.

Findings have important practical applications as they can be used by HBCUs for developing more effective hiring processes allowing for overall improved performance management.
MATHEMATICS

An Agent-Based Model of Insecticide Treated Nets and Their Impact on Malaria Endemic Populations

Amanda K. Brown (Dr. J. Todd Lee and Dr. Karen Yokley) Department of Mathematics

One of the major diseases in sub-Saharan Africa, malaria causes millions of death across the continent every year. The current study explores malaria transmission from a mathematical point of view, creating an agent-based simulation based on a differential model. The agent-based simulation, allows for investigation of the use of insecticide treated bed nets (ITNs) as a prospective preventative measure for malaria. Using mosquitoes and humans as interacting agents under set parameters, the simulation provided time-based graphs showing the infection rates of the infected human and mosquito populations. The findings showed that protecting 60% of a population with ITNs will provide almost 90% infection reduction among that population, and increasing protection to 70% will almost entirely eliminate infection.

How Students Conceptualize Standard Deviation

Amanda L. Ketner (Dr. Alan Russell) Department of Mathematics

With the majority of first-year students at Elon University taking MTH 112: General Statistics, the concept of standard deviation should be familiar to many students. How well students understand that concept, however, is a different matter. This study sought to discover how students conceptualize standard deviation. By determining the pitfalls in how students think about standard deviation, professors of statistics courses can address these errors with future students. Six first-year students in two different General Statistics courses were interviewed using a “think aloud” approach while answering statistics questions scaffolded for difficulty based on Bloom’s Taxonomy, a classification for different levels of understanding. Students explained their reasoning for their answers for each question as well as other ways they could think of to approach the problem. While our research is not complete, our preliminary findings suggest that students consider standard deviation to be a fraction of the range, an indication of consistency, and a visualization of spread. This presentation will focus on how students conceptualize and misinterpret standard deviation as a fraction of the range.
**MUSIC**

*Rodrigo’s Tres Evocaciones: A Case for Elevating Spanish Art Music in the Academic Milieu*

Michelle H. Eichel (Dr. Victoria Fischer Faw) Department of Music

This research addresses the question of how Iberian Spanish keyboard music, from the eighteenth century to the present, has historically been marginalized in Euro-American scholarship and performance, despite the high quantity and quality of Spanish contributions. The inquiry encompasses radio and recording popularity of Spanish music, but focuses on classical instruction as the facet of Western culture that poses the greatest challenge to the integration of Spanish music scholarship and performance. This study posits that Spanish music deserves inclusion in the Euro-American classical tradition rather than relegation to the domain of ethnic frivolity. Following a discussion of the phenomenon and evidence of its strong and storied impact on Western attitudes toward Spanish music, the study addresses several potential causes of the lack of Spanish music and related interest in the West, particularly in the United States and Western Europe. The Black Legend (La leyenda negra) is presented as one of these possible causes, and its prevalent effects on the Western perception of Spanish music are identified and traced to the historical Inquisition-based inception of the Legend itself. Other potential contributing factors to the lack of Spanish music in Western culture are addressed and analyzed in comparison to the Black Legend theory. This study focuses on the music of Joaquín Rodrigo, who represents both the best of the Iberian Spanish art music tradition and modern music developments in Spain. His life and scholarly and compositional work, exemplified here by his *Tres Evocaciones*, illustrate the conclusion that much of Spanish keyboard art music should be included in the mainstream Western classical tradition. The presentation will conclude with a performance of a selected portion of *Tres Evocaciones*, a cycle for piano of images evoking Seville.

**PHYSICS**

*Fabrication of Microfluidic Masters*

David Bertsch (Dr. Benjamin Evans) Department of Physics

Microfluidic devices are quickly becoming a ubiquitous research tool in the fields of physics, biology, and chemistry. They consist of microscopic channels through which fluids may be pumped, mixed, and observed, and are an effective way of consolidating and miniaturizing an entire laboratory protocol. Such a self-contained ‘lab-on-a-chip’ provides a portable, robust, inexpensive package for complex medical diagnostic procedures, can be used in massively parallel systems for the production of hazardous reagents, and enables single-cell manipulation or dosing. Microfluidic devices are typically produced via photolithography. However, as a fast and cheap alternative to photolithography, Shrinky Dink shrinkable plastic was used to create the channels. There are two possible ways for using the shrinkable plastic to produce the channels, and both methods were tested. The first method consisted of designing a mold, printing it onto Shrinky Dink, and shrinking it into a channel mold. The second method consisted of manually creating the channel on the shrinkable plastic. The parameters of channel dimensions (i.e. channel height, channel width) were explored for each method and we present them here as a measure of the effectiveness of these new fabrication procedures.
Fabrication of Ferroelastomeric Microparticles

**Daniel R. Glass** (Dr. Ben Evans) Department of Physics

Magnetic microspheres are used in a wide variety of applications within the scientific community; they are pertinent to the medical field to transport drugs throughout the body, chemistry to cleanse a solution of radical particles and physics to test torques and forces of specific materials on a microscale. While magnetic microspheres are commercially available, very few products are available in the critical size range of 0.5 µm- 1 µm. This gap can be traced back to the current production methods; the smallest particles are generally grown chemically from an iron core, while the largest particles are produced by coating non-magnetic polymer spheres with a magnetic material. The material used to create such particles is a mixture of a novel magnetic-polymer composite (FFPDMS) and excess polymer (PDMS); excess PDMS is used to assist in crosslinking. To produce a colloidal suspension of FFPDMS, 1% hydrogen peroxide in water is added. Hydrogen peroxide is a heat activated crosslinking agent that will crosslink particles at 80º C. Different amounts of surfactant (sodium dodecyl sulfate, SDS) are added to the solution and shaken. By adjusting the physical parameters in my method (such as amount of surfactant), I am able to produce particles of a variety of diameters, including the critical 0.5 micron to 1 micron range. Accurate size measurements are an important part of collecting the necessary data. First, a digital image is obtained and transferred to a computer. Using an already existing scaling image we are able to use a program called ‘spot tracker’ to measure individual particle sizes. It was found that using a 1% concentration, by weight, resulted in particles that were 3.5 microns with a standard deviation of 2 microns.

Biomimetic Cilia Functioning as Micromixers within a Microfluidic Device

**Kelsey M. Lapenas, Daniel R. Glass** (Dr. Benjamin Evans) Department of Physics

Lab-on-a-chip (LOC) devices integrate one or more laboratory techniques onto a single, very small chip, which allows for lower reagent and fabrication costs, faster analysis, and less waste. LOC’s will eventually act as an inexpensive diagnostic tool which can be quickly and easily distributed to those communities that cannot afford large-scale laboratories. Often, lab-on-a-chip applications require small-scale mixing of multiple fluids. At this scale, however, fluid flow is laminar and so no turbulent mixing occurs when two fluids come into contact within a microfluidic system. We believe that biomimetic cilia actuated by an externally applied magnetic field will provide a solution to this mixing problem. We have successfully fabricated microfluidics channels and developed a protocol for fabricating biomimetic cilia composed of a polymer-magnetic nanoparticle composite material directly within a channel. In addition, we have optimized the fabrication techniques to enhance the viability of the cilia sample. Our fabrication technique allows us to retain the bending patterns of the biomimetic cilia within the microfluidic channel, thus resulting in an increase in the number of actuable cilia. We have begun to fabricate biomimetic cilia consisting of various concentrations of magnetic material. In the future, we hope to analyze the fluid flow using varying concentrations and determine the optimal concentration of magnetic material by recording the resulting bending and flow patterns of the actuators.
POLITICAL SCIENCE AND PUBLIC ADMINISTRATION

Campaigns and the Web: Email Communication in the 2008 Presidential Election

Taylor Elizabeth Doe (Dr. Laura Roselle) Department of Political Science & Public Administration

The campaigns run by the 2008 presidential candidates will be remembered as the most technologically advanced in American history. This paper examines the use of email communication from presidential campaigns to supporters and voters. It is important to understand how campaigns use email to reach their supporters and what types of messages and issues are the focuses of these emails. Email accounts were registered to the basic, national server as well as servers sent specifically to North Carolina and Florida residents, two battleground states in this election cycle. Emails were collected from the McCain, Clinton and Obama campaigns from May to November of 2008, totaling to more than 300 emails. These emails were then coded based on various factors, including sender, content, issue focus and donation solicitation. The resulting data shows that nearly all campaign emails include some form of donation request in their emails and that many emails include little to no information about the candidate’s stance on specific issues. Furthermore, few emails were sent to supporters targeting their specific states. The results from this study provide some insight as to how candidates are attempting to capitalize on the Internet’s ability to reach out to millions of voters across the nation without using expensive and often ineffective campaign ads.

Early Voting in the 2008 Election

Daniel G. Harwell (Dr. Hunter Bacot) Department of Political Science & Public Administration

This article examines in person Early Voting, which allows a voter to cast their ballot before Election Day, and specifically examines voter attributes to characterize those voters who are more likely to use Early Voting. This research examines the effect that race, age, income, level of education, likelihood of voting, and strength of partisanship have on Early Voting. As these variables have previously been shown to affect on Early Voting, this article re-examines these theories in terms of the 2008 Election using data from the American National Election Survey to assess the correlation between variables. Ultimately, this study finds that all previous theories regarding Early Voting held in the 2008 Election.

An Indexing Strategy for Determining Likely Voters

Jenna Levy (Dr. Hunter Bacot) Department of Political Science and Public Administration

For survey researchers interested in political and election polling, there is a continued interest in predicting who votes on Election Day from survey results. Trying to determine those respondents that actually vote from among respondents that say they will vote is a challenge. Though much progress has been made in this field, there remains interest in assessing the correspondence among those that say they will vote and then do vote. Polling organizations screen for voters differently and this is one of the key factors leading to disparities across public opinion results in determining likely voters leading up to an election (Duff et al. 2007; Wlezien & Erikson 2006; Traugott 2005; Pew 2001) . In addition, Gerber, Green, and Shachar (2003) and Plutzer (2002) find that the effect of past voting is more significant for determining a likely voter, while Duff et al. (2007) find that providing respondents with excuses for not voting is another factor that leads to better predictions of those who vote. Thus, this research: to identify among general population samples those respondents that say they will and do vote. Based on the literature, I examine likely voter questions to identify likely voters from a sample of the general population, i.e., not a sample of registered voters, or registered voters that vote. Initially, I identify those questions – derived from questions about voting interest, preference, and knowledge – that provide greater probabilities for determining whether one votes based on their responses to a battery of survey questions. Using these questions, I establish an index derived from point scales to delineate voters; I then compare these “likely voters” percentages to voting turnout for the 2008 general election to determine the accuracy of these question scales.
Child Mortality Illiteracy, and Soldiering in African Conflict Zones: A Case Study of Algeria, Chad, and Uganda

Katherine L. Meyer (Dr. Laura Roselle) Department of Political Science

The factors affecting the welfare of Africa’s children have been discussed amongst scholars for decades (Singer, 2005; Madhavan, 1999), but few have focused specifically on child mortality, illiteracy, and child soldiering. Comparing these three measures of child welfare provides a more holistic and defined approach to addressing solutions. This study will be one of the first to analyze how domestic political stability, religion, and international influence affect differing levels of child welfare in a conflict setting. A structured-focused case study methodology is used to assess these variables in the cases of Algeria, Uganda, and Chad. This study yielded surprising results that suggested that child welfare may be positive correlated to inclusion of identity groups, social equality, the degree of religion being embedded in the government and society, degree of religious affiliation in armed opposition groups, and level of international and nongovernmental organizations’ media pressure. In contrast to these positive correlations, the level of democracy, degree of rule of law, level of governmental effectiveness, and level of international funding were not as directly correlated with child welfare. The correlations were not only weaker than scholars had suggested (Shandra, Nobles, London, & Williamson, 2005; McManimon, 1999; Logan & Boeku-Betts, 1996; Kaldor, 2007; Norton, 2005), but also suggested negative correlations to child welfare in some circumstances.

Partisanship and Ideological Changes in an Evolving Southern State

McKenzie R. Young (Dr. Hunter Bacot) Department of Political Science

The Democratic Party in North Carolina enjoys relative success across state and local elections, but for national level elections the Republicans Party has remained in control since the mid-twentieth century (Nie, Verba, and Petroick, 1979). In the 2008 election, North Carolina voters defied expectations by voting in favor of Democrats in races for national offices. In order to examine whether this change is an evolving trend or a temporary exception, partisan and ideological trends as well as voter registration trends are observed. This study of changes in ideological self-identification and party affiliation gives an assessment of North Carolina’s political makeup and how the voting population has been altered from 2005 through 2009. These differences are then compared to shifts in the state’s voter registration by party affiliation to determine whether the 2008 election is a function of an electorate’s changing composition. Although North Carolina is deemed the most progressive southern state, this standing may be fleeting as the state comes to follow national tendencies and breaks with the standard observed in the rest of the region. Consequently, this research explores the growth in votes for Democratic and progressive candidates to understand the potential of a “new” North Carolina that is becoming more like its northern neighbors to form a new mid-Atlantic region in American politics (Knotts and Cooper, 2008).
Bosnia: The Modern Legacy of the Bloody Balkans?

Alyssa M. Vigneault (Dr. Safia Swimelar) Department of Political Science and Public Administration

To much of the world, the area of Southeastern Europe that comprised the Former Socialist Federal Republic of Yugoslavia is known simply and horribly as the 'Bloody Balkans.' The Balkans has become a popular metaphor for violence, civil unrest, and ethnically-based conflict. While the use of this term in reference in the area has become largely passe as the region attempts to modernize, chaos continues to simmer beneath the surface in the only Yugoslav successor state without a titular ethnic nation, Bosnia-Herzegovina. This research explores the historic instability of Southeastern Europe, and the ongoing issues in Bosnia, by addressing the question of whether the factors that led to the dissolution of Yugoslavia are present in modern Bosnia-Herzegovina. This research is of pivotal importance because, despite continued instability in this region, much of the world has lost interest as more timely issues arise, particularly in the Middle East. However, Bosnia cannot be forgotten. The last time that this country's tensions erupted in civil war, millions of people were displaced and hundreds of thousands murdered. The elections of 2010 were intended to mark the point in time when the stipulations of the Dayton Peace Accords were to have been accomplished, whereby Bosnia would be a stable independent democracy and foreign aid could be withdrawn. This research evidences that while the 2010 elections quickly approach, Bosnia has not yet met the level of stability supposed by the Peace Accords. Through a comparative analysis, this study finds that the factors that destabilized and ultimately led to the dissolution of former Yugoslavia are in fact present in modern Bosnia, demonstrating ongoing instability. The factors analyzed include: the presence of a weak political system, economic instability, the lack of a strong overarching national identity superior to separatist group identities, historic group experience and ethno-nationalism. These factors were analyzed primarily through secondary sources, including the review of existing scholarship and data from international agencies. As the research demonstrates a clear and continuing modern presence of the same factors that were present in Yugoslavia at the time of its dissolution, the study then endeavors to apply these findings by exploring the possible implications for the present and future stability of Bosnia-Herzegovina.
PSYCHOLOGY

Undergraduates’ Knowledge of North Carolina Crime

Madeline E. Bronstein, Meghan Braun, Beth Cohen, Manuel Maccou (Dr. Meredith Allison)  
Department of Psychology

The purpose of this descriptive study was: (1) to examine people’s understanding of North Carolina law and (2) their estimates of crime rates. First, the assumption in the criminal justice system is that citizens will be deterred from committing crimes if they possess the knowledge of what defines a crime. However, Roberts and Stalans (1999) stated that “significant discrepancies exist between the true state of the sentencing system and public knowledge.” Thus the purpose of Part I was to assess whether students have an accurate understanding of what constitutes a crime in North Carolina. Second, we examined people’s beliefs about crime rates. Past research has indicated that people over-estimate the frequency of violent crime and underestimate the frequency of nonviolent crime (Bartol & Bartol, 2006). For Part 2, we gave participants the total population of NC and asked them to rate the frequency of several crimes in NC in 2008 and compared their answers to the crime rates listed by the NC State Bureau of Investigation. 170 participants took part and the majority was from out of state. To assess their crime knowledge, we asked open-ended questions (e.g., what is the legal age for alcohol use) and closed-ended questions (e.g., Person A is 18 year old male and has sexual intercourse with a 16 year old female. Is this legal: yes/no). All participants correctly indicated the legal age for alcohol use. However, 30% did not correctly indicate .08 as the legal Blood Alcohol Content for Driving While Intoxicated. 65% did not correctly identify the legal age for sexual consent (16 years). In terms of crime rates, there was a great deal of variability in participants’ crime estimates (e.g., 5 vs. 5 million rapes). Participants were significantly more likely to underestimate aggravated assault, burglary, motor vehicle theft, larceny, and arson. Overall, participants were highly inaccurate in their estimates of the frequency of crime, with 100% of participants being inaccurate on 6/8 questions. Surprisingly, the length of time living in North Carolina was not correlated with any of the above questions.

Stress in Retail Pharmacists and Their Intention to Leave

Christina N. Carter and Lauren E. Ellis (Dr. Chris Leupold) Department of Psychology

As authors (Gaither et al., 2007) have projected a future shortage of pharmacists in the United States, it is becoming more critical for employers to retain these highly sought-after professionals. This study explored the role of dispositional, personal, and work setting variables in retail pharmacists’ intention to leave their current organizations. Through a national mail survey, data were collected from 143 retail pharmacists. The hypothesis that stressful work environments would predict intention to leave was partially supported. Specifically, stressful work environments predicted intention to leave within twelve months but not beyond. However, the hypothesis that disposition (core self evaluation, Judge et al., 2003) would predict intention to leave was supported in that pharmacists with stronger core self evaluation were more likely to stay. It was also found that, although they did not exhibit more stress in their work environments, female pharmacists were significantly more likely to leave within twelve months. Implications of these findings will be discussed as will directions for future research of this increasingly important health care provider role.
Alcohol Use Stigmatization: The Impact of Age and Gender on Perceptions of Alcohol Behaviors

Alexandra L. Einstein & Kelly R. Molin (Dr. Gabie E. Smith) Department of Psychology

Jones et al. (1984) identified stigma as having some characteristic or feature that classifies a person as “deviant, flawed, limited…or generally undesirable.” (p. 6). Stigma research overlaps with research on stereotyping; in the field of health psychology, stigma is examined as it is associated with the health behaviors and illness. Field research with patient populations has demonstrated the pervasive negative impact stigmas have on patient populations, such as depression, anxiety, low self-esteem, reduced social support, and avoidance of social interactions (Crandall & Coleman, 1992; Crandall & Moriarty, 1995; Kaplan & Toshima, 1990; Wright, 1983). Past literature examining gender and stereotyping suggests that those breaking traditional gender role expectations may be perceived more negatively. A separate line of research examining social perceptions of alcohol use suggests that heavy alcohol use and alcoholism are highly stigmatized in patient populations. The existing research on stigmatized perceptions of alcohol use and abuse has not examined how the characteristics of those who abuse alcohol (i.e., age and gender) or perceiver characteristics (i.e., gender or personality type) influences stigmatization. The current research used an experimental design in order to examine the influence of “user” and perceiver characteristics on the level of stigma directed toward those who abuse alcohol. Specifically, we created vignettes that described a fictitious target person’s alcohol use behaviors and consequences of heavy use. The vignettes varied in the target person’s age (college-age, middle-age) and gender (male, female). We examined whether age and gender of the target person affected level of perceivers’ stigmatization of the alcohol user. Findings demonstrated that age did not have a significant effect; however, gender of the target did influence level of stigmatization. We also examined the role of perceiver gender-role ideology on stigmatized perceptions of those abusing alcohol, demonstrating that participants with feminine gender role stigmatized targets at higher levels than those with masculine or androgynous attitudes. The results of the current study will extend the literature on stereotyping and stigmatization of alcohol users as well as research on how gender affects perceptions of health behaviors.

To Stay or Go?: The Roles of Job Embeddedness and Correlate Factors in Retail Pharmacists’ Intentions to Leave

Lauren E. Ellis and Christina N. Carter (Dr. Chris Leupold) Department of Psychology

Job embeddedness (JE) is an increasingly studied variable used to explain and predict employee turnover in organizations. Specifically, JE examines employees’ links to others and their organization, their job fit, and sacrifices associated with job change (Mitchell, Holtom, Lee, Sablynski, & Erez, 2001). Using a national mail survey, data was collected from retail pharmacists (n=143). In addition to revisiting the relationship between JE and intent-to-leave, the current study explored JE’s relationship with employee disposition, perceived organizational support (POS) and job satisfaction. Correlational analyses found that JE was significantly and positively related to POS, job satisfaction, and core self evaluation; JE was also significantly predictive of pharmacists’ intentions to leave their current positions. In addition, it was found that organizations’ proactive activities to increase JE (and thus employees’ intention to stay) did indeed predict pharmacists’ levels of JE. Implications for retail pharmacist employers are discussed which highlight the importance of fostering JE in order to preserve lower levels of turnover.

Parent-Child Connections during a Cooking Activity: A Study of Guided Participation and Intersubjectivity

Lauren L. Finn (Dr. Maureen Vandermaas-Peeler) Department of Psychology

Children learn about the world through social interactions with their parents in the home. Parents teach their children using a variety of methods, in a process known as guided participation (Rogoff, 1990). It is important that the dyad have a shared understanding and joint focus of attention, or intersubjectivity (Rogoff, 1990). In order to assess guided participation and intersubjectivity, we observed parents and their four-year-old child in a cooking task in the home. Twenty-four dyads were randomly assigned to two
groups, a social connections group in which parents were asked to make connections between the cooking event and the child’s knowledge and experiences, and a numeracy instruction group in which parents were asked to teach their child math during the cooking event. Both groups were provided with all necessary supplies to make crispy rice treats. The three dependent variables of interest in this analysis are observer-rated dyadic engagement (on a scale from 1, low, to 3, high), the number of bridges (connections to prior knowledge and events), and number of social connections (e.g., laughing, joking). Results of one-way ANOVAs indicated that parent-child dyads in the social connections group had significantly higher engagement and more bridges to prior knowledge, as compared to dyads asked to focus on numeracy instruction. Although dyads in both groups were engaged in the activity, our preliminary findings suggest the social interactions in the social connections group were more complex, of longer duration, and more integrated into the ongoing activity than those of the numeracy group. Our results suggest that parents in the numeracy group had significantly lowered engagement and shared focus with their children, two key elements of guided participation. Further analyses and conclusions related to guided participation and intersubjectivity are in progress.

Time Constraint Differentially Affects High and Low Print Exposure Writers

Evan M. Gallena, Stephanie A. Hicks, Elizabeth N. Palmer, & Traci A. Weisberg (Dr. Kimberly Epting) Department of Psychology

Effective communication requires speakers/writers to monitor and respond to the reactions of their listeners/readers in addition to their own speech or writing, a process called self-editing (Hayes & Flower, 1986; Postma, 2000). In writing, self-editing (i.e., revising or planning) may be influenced by various situational and writer characteristics. Literacy theory presumes how well or how much one reads directly correlates to how well one writes, and that better writers revise more (Snow, Burns, & Griffin, 1998). Print exposure – how much reading one has done – has correlated strongly to a variety of literacy-related cognitive abilities (e.g., Stanovich, 2000), yet little research has studied print exposure in relation to specific writing behaviors during the composition. We investigated effects of pre-response time (PRT) on self-editing in essay writing in high and low print exposure writers. Fifty participants completed two Print Exposure checklists from Stanovich & West (1989), from which composite print exposure (PE) scores were derived (26 high PE, 24 low PE). Participants typing speeds were measured using a transcription task, providing individually defined “pauses” during composition. The writing task required the composition of one- to two-paragraph essays in response to two prompts. Each prompt was presented for 10 or 70 seconds (PRT; randomized order) before participants could start typing their responses, during which they could plan their response. We recorded several dependent measures: quality/production, pauses (number, length), edit types (deletions, insertions, substitutions), total edits, and question reviews (number, time). Multivariate analyses most interestingly revealed significant interactions indicating that constraining the amount of time available to think about a response affected some aspects of editing, but those effects differed depending on print exposure. For example, high PE writers made more substitutions given the 70-second PRT, but low PE writers made more substitutions given the 10-second PRT. These findings suggest that the writing and editing process of high PE writers may be more stable than that of low PE writers, resulting in more meaning-based changes, whereas editing by low PE writers may reflect more indecision and inflexibility.
**Sexual Identity Development and Alcohol Risk-Taking: A Comparison of Heterosexual and Homosexual College Women**

Grace A. Helms (Gabie Smith) Department of Psychology

Alcohol use in women can place them at a higher risk for things such as sexual assault, illnesses, and disorders (Nolen-Hoeksema & Hilt, 2006). Heterosexual college-aged women highly reported a motivation to drink as a way to appear attractive to males (Young, Morales, McCabe, Boyd, D’Arcy, 2005). Alcohol use is cited as a coping mechanism for dealing with sexual identity conflict, as well (Scida & Vannicelli, 1979). This suggests that homosexual women may be at higher risk for drinking and also may be drinking for different reasons than their heterosexual peers. This study examines the relationship between sexual orientation and drinking levels of heterosexual and homosexual college-aged women along with motivations for drinking. A total of 49 women (23 heterosexuals and 21 homosexuals) completed an online survey to assess sexuality, drinking habits, and alcohol expectancies. Initial analysis indicates that as expected, there are differing trends in drinking motivations between the two groups of women such that heterosexual women reported being more motivated by sociability and enhanced sexuality than the homosexual women. For both groups, liquid courage and risk/aggression were correlated with drinking behavior. Overall, however, there was no significant difference for the two groups’ level of alcohol expectancies indicating that their drinking motivations are equally as strong, but have different roots. Also, as expected, there was no significant difference in alcohol behaviors between the two groups due to the high risk drinking environment of college. The lesbian sample reported more commitment to their sexuality, a more willingness to explore their sexuality, and more uncertainty about their sexual orientation while heterosexual women reported their sexual orientation being more integrated into their everyday life. We will examine whether if stage of sexual identity acceptance in lesbian women is correlated to drinking behavior. We will also report on qualitative data to better understand the relationship between sexuality, alcohol use, and drinking motivations.

**Associative Encoding in Younger Adults: A Strategy that Improves Memory for Pairs**

Katie L. Kielek & Jennifer K. Champ (Dr. Amy A. Overman) Department of Psychology

A recent study of memory in young and older adults (Overman & Becker, 2009) provided new evidence for the importance of forming associations during encoding of pairs of items. In that experiment, memory for word-face pairs was improved by repetitions of the pairs relative to repetitions of items in the pairs. Recent evidence (e.g., Naveh-Benjamin, Brav, & Levy, 2007) also suggests that using a strategy at encoding may improve later recall. However, to date no one has investigated the interacting role of repetition and encoding strategies. Therefore, our study examined both repetition and two different encoding strategies in younger adults. All participants were asked to look at two study lists of face-occupation pairs. One group of participants visualized a face doing an occupation (n=20) and the other group visualized a face speaking an occupation (n=20). Later, participants were presented with a pair and asked if they had seen it on the second study list. These test pairs were comprised of old pairs (seen on both study lists), new pairs (not previously seen), and rearranged pairs (contained faces and occupations that were old but were not the exact same pair as before). Three 2 (visualization vs. speaking) X 8 (condition) ANOVAs were conducted on the reaction time, accuracy and discrimination data. Results showed that the visualization group performed more accurately and responded faster than the speaking group (p<.05). Regardless of encoding strategy, for pairs that were shown just once, accuracy was lower, and participants took longer to respond (p<.05). Also pair repetition increased discrimination between old and new pairs (p<.05). This supports previous findings that repetition aids in memory of pairs, and suggests that not all encoding strategies significantly improve memory. Specifically, visualization is superior to other examined strategies. This is important for any learner but, especially for older adults who need more assistance in recalling information. Our next step will be to include older adults and determine whether the visualization encoding strategy will improve their memory as it did for younger adults.
Effects of Culture on Gender Stereotypes of Emotion

Leigh Ammons Lampley (Dr. Linda Wilmshurst) Department of Psychology

Previous research indicates that gender stereotypes predict emotional expression. Further, these sex stereotypes differ between cultures. However, few studies have compared Western countries, such as Ireland and the United States, to understand differences in emotional stereotyping. Research suggests that women are stereotyped to express more fear, guilt, love, shame, sadness, surprise, and sympathy than men. This study examines the possible differences in gender stereotypes of these seven emotions between the United States and Ireland. Participants were 54 Irish and 70 US Psychology students who filled out two surveys: the Cultural Stereotypes Questionnaire and the Social Roles Questionnaire. The Cultural Stereotypes Questionnaire measured expression of positive (love, surprise, sympathy) and negative (fear, shame, guilt, sadness) emotions using a 7 point Likert scale indicating agreement with statements about emotional expression. The Social Roles questionnaire measured gender role beliefs and assignment using a percentage scale where participants indicated their agreement with statements about gender role beliefs and assignments. Students rated male and female responses for both their own and the other culture. Analysis of the responses reveals that there are differences in the stereotypes of emotional expression between these two countries and these influence the evaluations of other cultures. Responses from the Cultural Stereotypes Questionnaire indicate males from both countries view Irish men as expressing more negative emotions than other groups. Participants from the US view females from the US and males from Ireland as expressing more positive emotions than other groups. Responses from the Social Roles Questionnaire indicate that male and female participants from the US shared similar beliefs about gender roles and these beliefs matched assignments that supported a more open set of beliefs about gender roles. However, responses from Irish participants were not consistent, meaning their beliefs did not match their role assignments. Irish males indicated more open gender role beliefs but endorsed traditional role assignments in day to day life, while Irish females indicated the opposite; they held more traditional beliefs but endorsed more open role assignments. Understanding these differences can help people avoid social rejection and embarrassing social norm violations while interacting with people from these countries.

Playing the Ladybug Game Again: Changes in Children’s Numeracy and Parent Guidance Strategies over Time

Sara M. Loving (Dr. Maureen Vandermaas-Peeler) Department of Psychology

Emergent numeracy refers to children’s early experiences with numbers during activities at home or in another social context before formal schooling begins (Anderson, 1997). Games are one way in which children can acquire numeracy skills through social interaction (Bjorklund, Hubertz & Reubens, 2004). In the current study 29 4-year old children and their parents played a board game that relied on the use of numeracy skills. Parents were assigned to either a control group or an instruction group that was provided with strategies on ways to incorporate numeracy while playing the game. Each dyad was recorded playing the game 3 times over a two-week period. This study analyzed the group differences between child-initiated numeracy interactions, mathematical errors, and correct responses over time, and focused primarily on counting, number recognition and addition/subtraction. Preliminary findings show that in all three sessions, children in the instruction group received more parental guidance than those in the control group and overall, had more correct responses. All children showed improvement over time in the number of correct responses (both child and parent-initiated), however the instruction group had more exposure to higher-level math (e.g., addition/subtraction) and increased in both their correct responses and errors. All children initiated more math interactions over the 3 times playing the game, but children in the instruction group initiated more numeracy at a higher level. These findings suggest that parent guidance and social interactions are important in the development and acquisition of early mathematical knowledge, and that with repeated exposure children will improve their skills and learn to apply numeracy in everyday situations.
Implicit Learning and Expertise: The Impact of Instruction on a Serial Reaction Time (SRT) Task

Jonathan Smith Mahlandt (Dr. Thomas Green) Department of Psychology

Previous studies have concluded that progression from novice to expert performance requires progression from explicit, rule-governed processes to more implicit, automatic processes (Abernethy et al., 2007; Hodges, Huys, & Starkes, 2007). Our study compared the impact of three types of instruction on implicit and explicit processes involved in the development of expert performance of an SRT task. Participants were initially presented with 1100 trials of the computer-based SRT task, during which a red circle appeared at one of four screen locations. Participants ($n = 119$) were instructed to press one of four keys, as quickly and accurately as possible, that corresponded to each of the four circle locations. Circle location varied consistently across trials in a repeating, twelve-trial sequence. Following completion of the initial 1100 trials, participants received one of three types of instruction. Participants in the rule application condition ($n = 40$) were explicitly instructed as to the nature of the underlying stimulus variation sequence. Participants in the control condition ($n = 39$) completed a distracter task that required them to solve a series of basic computational math problems. Participants in the teaching condition ($n = 40$) were instructed to write down a series of rules and/or tips, derived from their 1100 trials of task experience, that might aid a task novice in achieving optimal task performance. Following instruction, participants across conditions completed an additional 1100 trials of the SRT task. Results indicated a variety of performance outcomes across conditions. Immediately post-instruction, participants in the control group showed the greatest improvement in RT performance, followed by the teaching and rule application groups respectively. This likely occurred because the control group did not receive explicit instructions that might hinder implicit performance. However, in the last 1000 trials, rule application participants showed the best relative RT performance, followed by the teaching and control groups respectively. Ultimately, individuals in the rule application group were able to benefit from additional instruction that enhanced their already considerable task expertise. These results suggest that explicit knowledge may impede non-conscious, implicit processing, but that a combination of implicit and explicit processing may facilitate optimum task performance.

Development of Self-Authorship in College Students: Impact of Sophomore Transitions Program

Jennifer A. Oseroff (Dr. Catherine King) Department of Psychology

Baxter Magolda (1998) describes self-authorship as the capacity to chart a realistic course for your own life that integrates self and community – following your own passions while taking into account the needs and expectations of important others in your life. This research focused on the impacts of Charting Your Journey, a sophomore transitions course offered in 2009, on the development of students’ self authorship. The course included a retreat during Winter Term as well as classes during the spring, which brought up core issues that were designed to challenge students to begin thinking about themselves and their futures with intention and purpose. Participants were interviewed before and after the course and will be interviewed a third time at the end of their senior year. During the pre- and post- interviews, participants were asked questions in order to gain a sense of how each student perceived him or her self. We asked the students to develop a list of labels that described themselves by mapping them onto a model of the multiple dimensions of identity (Jones & McEwen, 2000). This model depicts a core sense of self surrounded by intersecting rings, or identity dimensions. Students were prompted to talk about conflicts between different aspects of themselves and how they negotiated those conflicts. During the first interview students described most of their conflicts as involving the expectations of others and time for multiple activities. Conflicts were either not solved or resolved by picking one perspective over the other (for example following their parents’ wishes with regard to choice of major). During the second interview, students reported fewer conflicts overall and higher level resolution strategies: participants frequently referred to the lessons they had learned through the program to help reframe their conflicts (e.g., realizing that their own passions can be integrated into their parent’s choice of major). This shift represents a movement toward greater self-authorship.
Mothers’ and Fathers’ Guidance during Play with Preschoolers

Carly Tamar Price (Dr. Maureen Vandermaas-Peeler) Department of Psychology

Play offers parents an opportunity to teach children about the world around them (Vygotsky, 1978). Sociodramatic play has been associated with school readiness abilities, such as self-regulation, social skills, language, early literacy skills, and problem-solving (Bredekamp, 2004; Bergen, 2002). Since parents act as teachers during play, it is important to examine the types of teaching behaviors they employ. Few studies have examined differences in gender of the parent as well as gender of the child during play activities. Bright and Stockdale (1984) found that fathers controlled and directed the play more than mothers. The purpose of this study was to explore parent-child interactions during a play activity. Twenty-six mothers and fathers and their three-year-old children participated in the study. Each mother-child and father-child dyad was observed in their home with a week separating each observation. They were asked to play for fifteen minutes using toys provided by the researcher. Interactions were videotaped and coded using the NOLDUS coding software for gender differences in teaching behaviors (focus, regulation of behavior, comprehension, elaboration, affect, and encouragement) and parental roles (playmate, follower, observer, and teacher/guide). Initial findings show that fathers are more likely than mothers to be followers during play, while mothers are more likely to be playmates and teacher/guides. The most frequent teaching behavior is comprehension. Overall, mothers teach more during play than fathers. Mothers are more likely to use affect during play. Mothers are also more likely to encourage their children and regulate their behavior. Further analyses of these interactions are in progress.

Cheers vs. Jeers: Effects of Audience Feedback on Sports Tasks

Kristen N. Riggs (Dr. Kim Epting) Department of Psychology

Both athletes and fans believe that audience support (e.g., cheering) is one of the top influences on a team’s success, particularly at home when the crowd is predominantly supportive (Courneya & Carron, 1992). This factor can possibly contribute to reported home-field advantage; that is when a team wins more games when it is playing at home than when it is the visiting team (e.g., Gayton & Coombs, 1995). Social facilitation studies with non-sport tasks suggest that an audience can enhance performance, at least for well-learned, familiar skills (Zajonc, 1965) such as the well-practiced, familiar skills of an athlete. Yet there are few direct investigations of whether distinctive types of audience feedback have differential effects on athletes’ performance of particular sports skills. In this study, 32 college athletes performed a familiar task in their respective sport (pitching, free throw shooting, hitting a golf ball) in front of three different audiences (cheering, jeering, and silent). Each athlete performed the task 10 times under each condition which was counterbalanced across participants. Basketball players’ free throw performance was unaffected by audience condition. However, jeers hurt performance for baseball pitchers, and both jeers and cheers resulted in worse performance for golfers. Thus, audiences or fans can impact performance, but impact may depend on sport, the specific sport skill, and specific audience behavior. These results suggest it might be appropriate to rethink the notion of the so-called “home-field advantage.” Perhaps the real benefit of being on one’s home field in terms of the crowd is that the larger home-crowd cheering may not boost performance, but more importantly may drown out the opposing fans’ jeering. The disadvantage for the visiting team is not that they cannot hear their fans’ cheering, but that their fans’ cheering cannot drown out the home teams jeers, which may hurt their performance.
The Effects of Different Encoding Strategies and Practice on Cued-Recall of Word Pairs

Stephanie A. Robinson and Justin A. Sun (Dr. Amy Overman) Department of Psychology

Recent research (e.g., Naveh-Benjamin, Brav, & Levy, 2007) suggests that the use of a strategy during the encoding process can improve memory. However, it is unclear if a particular encoding strategy is superior because the role of participants’ familiarity with the technique and the fact that some techniques draw on preexisting relationships both may be contributing to memory effects (Horiba, 1996.) Therefore, this novel study aimed to examine the effects that practice and use of different encoding strategies would have on memorization of word pairs that were semantically related or unrelated. Specifically, visualization and sentence elaboration were investigated to determine which was more effective for improving memory recall. This study also examined if practicing different encoding techniques in succession would improve memory as much as practicing the same technique twice. Additionally, the effect that preexisting relationships have on learning novel information was investigated. Participants were assigned an encoding strategy (sentence creation, visualization) and told to use this strategy to memorize an initial list of word pairs that were presented on a computer. Participants were then given a second list of new word pairs and were either told to keep the same strategy (specific practice), or to use a different strategy (general practice). Both lists included related and unrelated word pairs. Afterwards, participants received a list of individual words from the pair and were asked to provide the corresponding word in the pair. A 2(encoding strategy) x 2(relatedness) x 6(practice type) ANOVA was conducted on the cued recall data. Results indicate that visualization is a more effective encoding strategy than sentence formation and that general practice is as effective as specific practice in improving recall (p<.05). Additionally, semantically related pairs are better remembered overall than unrelated pairs, and unrelated pairs are more improved by the use of visualization than related pairs (p<.05). Understanding the best way to learn is very relevant to many academic fields and many people, from students to older adults. The findings of this study are not only applicable to the field of psychology, but to anyone who wishes to learn information in a more effective manner.

Social Perceptions of Women’s Sexuality

Kristin N. Schillings (Dr. Gabie Smith) Department of Psychology

In the last fifty years, gender roles have shifted dramatically. What used to be a markedly apparent double standard in the United States has now become blurred as advances in women’s rights have drastically changed women’s roles in society. However, we have by no means achieved equality. One of the ways in which inequality of the sexes presents itself is the gendered construction of sexuality. According to female control theory, most of the negative response to such behavior comes from women, as women are primarily responsible for maintaining the value of sex (Baumeister & Twenge, 2002). This response to sexuality has an impact not only on the way women are perceived by others, but on the way woman think about themselves and make decisions about their sexual health (Cate, et al., 1992). One of the factors which influence the way sex is perceived is the type of relationship. Sex is less judged when it takes place within the context of a committed relationship. This relationship does not necessarily have to be marital. There is a trend towards the acceptance of premarital sex, especially in college populations (Martin, et al., 2001). This study examined how a fictitious college-aged woman who participated in risky sexual behavior would be perceived based on her gender role and desire (or lack of desire) to be in a committed relationship. We included quantitative measures of social rejection and perception of target personality as well as qualitative measures assessing participants’ reactions to the target. Initial findings suggest that participants did not differ in their level of social rejection of perception of the personality of the fictitious woman, inconsistent with female control theory. Qualitative measures, however, indicated that the gender role and her level of emotional commitment had an effect on the way participants described the fictitious woman.
Development and Pilot of a 180-Degree Feedback Instrument for Collegiate Athletic Coaches

Ryan S. Schork (Dr. Chris Leupold) Department of Psychology

Building performance management tools on the basis of strategic job modeling (Schippmann, 1999) output is a technique used by many Fortune 500 companies as a means to accurately assessing employee performance and providing them specific and effective feedback. However, this formalized practice is rarely if ever done within the realm of athletics. Given the increasingly complex nature and business-orientation of the collegiate athletic coach role, and the fact that coaches typically receive very little specific behavioral feedback, the inclusion of such a practice could serve a great benefit to coaches and athletic departments. The purpose of the current study was to analyze the initial results of a questionnaire designed to assess the relevant work activities associated with successful athletic coaching at the collegiate level. This questionnaire was created on the basis of a competency-based performance model developed from structured interviews and focus groups with current student-athletes and coaches. An on-line survey of 59 specific coaching behaviors (clustered into nine separate, e.g., recruiting, game management, team leadership, etc.) was administered to current athletes and coaches using the SelectSurvey software package. Analyses revealed that, although created with the intent to be mutually exclusive, all performance dimensions were significantly and highly correlated (r greater than .7 for all pairs), and that there were no gender differences among ratings. Interpretation of these findings, as well as their implications and applications will be discussed.

Time Perception, Locus of Control and Self Concept in College Students with and without Significant Attention Problems

Patricia M. Serdy (Dr. Wilmshurst) Department of Psychology

This study investigated whether college students with significant attention problems (SAP) have more difficulty with time perception than their peers who do not have significant attention problems (Control Group). Further, the study examined whether time perception is related to self-concept, locus of control or GPA. Students were assigned to the SAP group if they scored above the 90th percentile on the Inattentive Scale (IA) or the Symptoms Total Scale (STS) of the Conner’s ADHD adult rating scales (CAARS); all other participants were assigned to the control group. Results showed that the SAP group scored significantly higher than the control group on all four scales of the CAARS. Significant between group differences were found for Total Self Concept (TSC), such that the SAP group scored significantly lower on the TSC than the control group, however, while no significant correlations related self-concept to other variables for the control group, analysis revealed that for the SAP group higher scores on the Rotter Locus of Control Scale (External Locus of Control) and lower scores on Maternal Academic Support were significantly related to lower scores of TSC. Contrary to expectations, the HAP group was found to take significantly less time to complete the study than the LAP group. In this study, time estimation and reproduction tasks used in a previous study (Barkely, Murphy & Busch, 2001) revealed no significant between group differences from Trial 1 and Trial 2 on time estimation and reproduction tasks However, significant differences were found between the SAP and the Control Group, on scales measuring Focus / Concentration, Scale, and Time Estimation Scale with students in the SAP group rating themselves significantly weaker on focusing and estimating time. These results suggest that although there were no significant between group differences on time perception and reproduction tasks, college students with attention problems still report greater difficulties estimating time than college students without attention problems in real world situations.
Age-Related Differences in Memory for Crime Details: A Behavioral and Electrophysiological Study

Kimberly B. Duggins (Dr. Amy Overman) Department of Psychology

It is known that aging affects memory ability, but it is still unclear how aging affects memory for crime information and what brain areas are involved in memory for crime information. Additionally, there is evidence that a person’s schemas, or expectations about an event, will influence what facts about the event are later remembered (Hess, 1985); however, it is unknown how schemas affect memory for crime information. In the present study, young (n = 52) and older (n = 52) adults read a paragraph about a criminal suspect describing either a “good” or “bad” childhood, then read a burglary description (adapted from Van Knippenberg et al., 1999) which contained equal amounts of incriminating, exonerating, and neutral evidence. Finally, participants viewed incriminating, exonerating, and neutral phrases from the burglary story on a computer. Half those phrases were exactly the same as in the story (targets) while half had been modified (lures). Participants pressed “true” if they recognized exact phrases from the story and pressed “false” if the phrases were not exactly the same as in the story. Brain activity was collected via scalp electrodes during the memory test. As expected, older adults had lower accuracy for all types of details, and they also falsely recognized more details than younger adults, with this difference being greater for incriminating than for exonerating details (p < .05). Additionally, older adults with lower Mini-Mental scores (MMSE) showed a greater difference in accuracy between incriminating and exonerating details (p < .05). These data suggest that older adults are more likely to accept incriminating evidence when they are uncertain, and that cognitive decline may focus greater attention on processing incriminating information than exonerating information, perhaps due to dependence on schemas about criminal suspects. Analysis of electrophysiological data is underway, but preliminary results suggest age-related differences in the processing of incriminating and exonerating details of a crime (p < .05). This research has practical applications to our justice system, where its results may help inform new witness procedures for older adults and increase awareness of how jurors, both young and old, remember crime information presented in court.

EFFECTS OF ORAL 5-HTP ADMINISTRATION ON A COMPUTERIZED DECISION MAKING TASK

Abbe C. Golding (Dr. Mathew H. Gendle) Department of Psychology

Serotonin is a neurotransmitter that is involved in mood, sleep regulation, and cognition; alterations in serotonin activity are associated with several clinical conditions including major depression. However, little research has been conducted on 5-hydroxytryptophan (5-HTP-the direct metabolic precursor to serotonin), despite its potential value as a therapeutic compound. 5-HTP is a plant product sold over the counter as an herbal medicine—it is not regulated as a drug by the FDA. There are no compelling financial reasons to conduct extensive clinical studies on this compound. As a result, current knowledge is limited in regards to the degree to which oral 5-HTP administration alters serotonin synthesis and release in the brain. The present study examined if oral administration of 5-HTP to young adult volunteers impacted performance on the Iowa Gambling Task (IGT), a computerized measure known to be sensitive to changes in serotonin levels in the prefrontal cortex of the brain. Students volunteered as participants and received either two 50 mg 5-HTP capsules or two placebo tablets, and were tested on the IGT following an absorption period. Results from this study demonstrated that oral 5-HTP impaired performance on the IGT relative to the placebo group, which indicated that 5-HTP may be psychoactive at moderate doses. The deficit seen by the 5-HTP group appears specific to the ambiguous component of the IGT task. These results indicate that decisions made under ambiguity may be differentially sensitive to increased 5-HT release or associated reductions in frontocortical dopamine activity. Excessive 5-HTP may hijack the enzyme that is responsible for converting L-Dopa to dopamine in dopaminergic neurons resulting in ectopic 5-HT release.
**SOCIOLOGY AND ANTHROPOLOGY**

**Female Holistic Health Practitioners in the Suburban United States: An Ethnographic Exploration**

Ryan M. Bleam (Dr. Anne Bolin) Department of Sociology and Anthropology

Despite an increase in consumer use in recent years, the topic of holistic health is largely absent from the national healthcare debate. This paper will explore holistic health, also known as CAM (complementary and alternative medicine), through the practitioner’s viewpoint in order to provide an experiential and emic (insider’s) perspective of this collaborative model of healthcare. As a qualitative study, my inquiry emphasized the career trajectory of holistic health practitioners through nine ethnographic interviews of members in the same holistic health collaborative in the Philadelphia suburbs. Consistent with the concept of holism, the goal of this collaborative is to bring together practitioners of many alternative modalities in order to offer “full-spectrum health”. The nine participants of this study are all females, residents of suburban Philadelphia, and range between 38 and 55 years of age. Each member of the collaborative addressed questions on the life events, attitudes, and beliefs that influenced her progression in becoming a holistic health practitioner. Data collection was ethnographic including interviews, field notes at the site of the practitioner’s office, and the researcher’s embodied participation in diverse holistic modalities such as acupuncture therapy. Interviews and observations were evaluated using Atlas.ti qualitative analysis software. Several themes emerged including 1) personal experience with an illness event and/or 2) an unfavorable experience with the biomedical model leading them to experiment with holistic health, 3) the development of a sense of personal empowerment through the use of holistic health and 4) the sharing of this sense of empowerment with others sustaining their interest in practice. This study contributes to the critical-interpretive approach in medical sociology/anthropology as well as responds to and expands upon Beauvoir’s (1950) analysis of “women’s intuition” as it relates to holistic health empowerment and medical epistemology.

**Occaneechi Eagles: An Ethnography of Walking in Two Worlds**

Susan Angela Ramer (Dr. Tom Mould) Department of Sociology & Anthropology

The Occaneechi Band of the Saponi Nation is North Carolina’s youngest and smallest state recognized American Indian tribe. Located in Mebane, NC this tribe has endured generations of identity repression, assimilation, and cultural genocide. Since their reorganization in 1984, the tribe has begun efforts of cultural revival. This research explores how the participation in the tribal youth group influences the youths’ internalization of cultural identity and tribal history. Specific media include oral history, dancing, drumming, singing, and native language lessons in Tutelo. My research seeks to address the ways in which the youth group provides a venue for the children to accept and navigate an Occaneechi identity within the US South. I have documented the extent and effectiveness of cultural internalization through extensive participant observation and open-ended interviews with twelve youth and thirteen adults. Interview responses and field notes were transcribed, coded, and analyzed, moving from open to closed coding as themes emerged. Themes that emerged from this research are based within the strong relationship between tribal knowledge and tribal identity. This research found that the acquisition of tribal knowledge and display of Occaneechi identity occurs through the venues of powwows and school days. Identity is negotiated outside of the tribe largely with the use of Tutelo as connection to and validation of their indigenous identity. Participants voiced sentiments that the program is being run inefficiently. Barriers in communication and planning prohibit the Eagles program from more successfully transmitting information to the youth and providing them opportunities to practice their cultural knowledge. With changes in organization and leadership, this program has the ability to grow and develop into a more stable venue for a dedicated indigenous population to reclaim and preserve their heritage and culture. This work contributes to the limited literature on grassroots efforts to educate American Indian youth in their indigenous heritage and culture.
Expanding Access to HIV Testing in Northern Minas Gerais, Brazil

Julia Elinor Roberts (Dr. Kim Jones) Department of Anthropology

Brazil serves as a potent example of a nation striving to meet the public healthcare needs of a complex and diverse society. To evaluate how a public hospital in Montes Claros, Brazil has attempted to reconcile outcome gaps with HIV/AIDS, this study examined aspects of the demographic profiles of public health clients receiving HIV exams in the largest city in Northern Minas Gerais at two respective sites. In the past five years, HUCF (Clemente Faria University Hospital) has undergone a massive expansion, drastically increasing the services offered and improving the related hospital infrastructure. For example, an Immunology Division was added in 2007, allowing for on-site HIV testing; prior to this, government-funded HIV testing was only available at the sexual health clinic, Centro de Testagem e Aconselhamento (CTA). Age, sex, and residential neighborhood for clients tested for HIV during an eight month period in 2007-2008 at HUCF and CTA were statistically compared. In comparison to CTA, the population served by HUCF included more women, people from rural areas, and youth (ages 10-16). These populations, who face inequities in access to HIV services on the national level in Brazil, were more likely to access testing at the hospital. This case study serves as an example to other municipalities of how it may be necessary to offer public health care services at diverse sites in order to provide access to target populations.

Effective Development Aid in Ghana, West Africa: Hearing the Voice of the Recipient

Katharine M. Strickland (Dr. Tom Arcaro) Department of Sociology & Anthropology

Ghana, West Africa, is a country that receives millions of dollars each year, through both government and private aid. It comes in the forms of checks, wire transfers, mosquito nets, medical supplies, and more. On the surface these projects seem to be doing a great deal of good. However, much money is funneled into projects that are not reaching their potential. Are these well-intentioned donations actually useful? Is there a way these resources could be better put to use to create more effective impact? And, most importantly, what part does or should the recipient play in the world of development aid? This project contributes to the growing field of aid research, and specifically adds to the current academic knowledge done by William Easterly, Robert Chambers, and others in the field of development aid. Ideally, this research will help people as they seek to create meaningful development projects all over the world. Using Elon University’s Periclean Scholar Health Clinic project in Kpoeta, Ghana as a case study, this project will discuss the opinions of the individuals receiving aid. Residents of Kpoeta were interviewed in December 2008 on the efficacy of the health clinic and on future aid projects in their village. Through this research as well as supporting scholarship, there is great reason to believe that the recipient’s voice is perhaps the most important as aid is being considered. While they are not the individuals with the large sums of money, they are the ones who will ultimately determine what gets used and what does not, what is effective and what is not. Therefore, the voice of the recipient should be valued in development project decision-making. In addition, this paper also explores challenges with conducting field research cross-culturally, including the issues of time, language barriers, and ethics.