

Fall 2014

## Fall 2014 Student Research Day Abstract Volume

Chapman University Office of Undergraduate Research and Creative Activity

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CHAPMAN UNIVERSITY

# STUDENT RESEARCH DAY

WEDNESDAY, DECEMBER 10, 2014

FALL SESSION

## ABSTRACT VOLUME



CHAPMAN  
UNIVERSITY

OFFICE OF  
UNDERGRADUATE RESEARCH

## MESSAGE FROM THE CO-DIRECTORS

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Greetings and welcome to the 2014 Fall Chapman University Student Research Day. This celebration highlights the breadth and depth of scholarly research and creative activity conducted by Chapman undergraduate and graduate students. It is a truly exciting day to learn about, explore, and appreciate the efforts that students and faculty have put into a wide variety of research and creative projects across the campus. It is our hope that all members of the university community can engage in and benefit from the Chapman University Student Research Day.

To students--take a look at the impressive range of projects in which your classmates have been involved over the past year, and become inspired to continue or participate for the first time in research yourselves during your time here at Chapman University.

To faculty--recognize the hard work of the students you have mentored, taught, and supervised, and celebrate the culmination of their efforts in a professional presentation setting.

To all--enjoy learning about this unique aspect of a Chapman education that allows students to engage in scholarly activity at the highest level: expanding knowledge and pushing at the boundaries of one's academic discipline.

Thanks for coming, and enjoy the day!

*Dr. Christopher Kim is Co-Director of the Office of Undergraduate Research and Associate Dean of Academic Programs in the Schmid College of Science & Technology at Chapman University.*



*Dr. Anna Leahy is Co-Director of the Office of Undergraduate Research and Associate Director of the MFA program in creative writing at Chapman University.*

## ACKNOWLEDGEMENTS

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The Office of Undergraduate Research gratefully acknowledges the following individuals and programs for their support:

- Schmid College of Science and Technology
- Dr. Glenn Pfeiffer, Vice Chancellor for Academic Administration
- Staff event volunteers from Schmid and Wilkinson Colleges



CHAPMAN  
UNIVERSITY

SCHMID COLLEGE OF SCIENCE  
AND TECHNOLOGY

## KEYNOTE SPEAKER: AKIN CEYLAN

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Since graduating with his BS/BA in management from the George L. Argyros School of Business and Economics in 1990, Mr. Ceylan has been a consummate ambassador of the Chapman spirit, regularly participating in alumni events and contributing to the Chapman Fund and the Argyros School's Fund for Excellence. Mr. Ceylan is a member of the Chapman University President's Circle and currently serves as vice president of communications for Chapman's Alumni Executive Board of Directors.

Mr. Ceylan received a Certificate in Contract Management from the University of California Irvine in 1995. He also completed a curriculum of Real Estate courses, has been a Licensed California Real Estate Broker since 2008 and is the owner of PARC PLACE REALTY in Thousand Oaks.

Mr. Ceylan is currently the COO of Home Entertainment for Lionsgate. He joined Lionsgate Entertainment in October 2005 and sets the strategic direction for Content Operations in Home Entertainment, overseeing all activities related to manufacturing and distribution for Digital & Physical Media content, system development, supplier partner agreements & relationships, and operational governance – all with an emphasis on revenue maximization & cost efficiency, collaboration & execution, and service & performance.

Mr. Ceylan also served as SVP Domestic Operations at MGM Studios and was responsible for overseeing the Home Entertainment Group's operational activities for North America, where he played a key role in the development and start-up of distribution for the MGM library of content.

Before joining MGM Studios in 1999, Mr. Ceylan's tenure in retail spanned 19 years. He began his career with Dixie Farms Markets as a clerks helper in 1980. Soon after, he joined the Lucky Stores division of American Stores Company and spent the next 14 years working in various capacities in both divisional and corporate headquarters that included the clerk, grocery store manager, replenishment buyer, replenishment analyst and national inventory manager positions.



## SCHEDULE OF EVENTS

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<b>8:00 – 9:20am</b>	<b>Morning Poster Session</b> <b>Check-in and poster setup</b>	<b>Bush Conference Center</b> <i>Beckman Hall, Room 404</i>
<b>9:30 – 11:30am</b>	<b>Morning Poster Session</b> <i>Science and Technology</i>	<b>Bush Conference Center</b> <i>Beckman Hall, Room 404</i>
<b>12:00 – 1:30pm</b>	<b>Lunch keynote speaker</b> <i>Akin C. Ceylan</i> <i>RSVP required</i>	<b>Argyros Forum</b> <i>Room 209 ABC</i>
<b>1:30 – 2:50pm</b>	<b>Afternoon Poster Session</b> <b>Check-in and poster setup</b>	<b>Bush Conference Center</b> <i>Beckman Hall, Room 404</i>
<b>3:00 – 5:00pm</b>	<b>Afternoon Poster Session</b> <i>Arts, Education, Humanities, and Social Sciences</i>	<b>Bush Conference Center</b> <i>Beckman Hall, Room 404</i>

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# MORNING POSTER SESSION: ABSTRACT TITLES

## GRADUATE STUDENTS

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### CREAN COLLEGE, MARRIAGE AND FAMILY THERAPY PROGRAM

1. **Wonder Woman's Lasso: Understanding Gender and Sexuality Through Comic Books**

*Presenter(s):* Justin Huft

*Advisor(s):* Dr. Naveen Jonathan

### SCHMID COLLEGE, COMPUTATIONAL AND DATA SCIENCES

2. **Analysis of Pelvic Motion through Repeated Pair Time Measurements Analysis**

*Presenter(s):* Kyle Anderson

*Advisor(s):* Dr. Cyril Rakovski

3. **Effect of Haplotype Phase Estimation on Type I Error of Exact Tests for Association**

*Presenter(s):* Louis Ehwerhemuepha, Alexandria Smith

*Advisor(s):* Dr. Cyril Rakovski

4. **Novel Study on US Hybrid Vehicle Sales**

*Presenter(s):* Alex Leipf

*Advisor(s):* Dr. Cyril Rakovski

5. **Long Term Ground/Model Based Precipitation Wavelet Analysis**

*Presenter(s):* Luciano Rodriguez, Mohamed Allali

*Advisor(s):* Dr. Hesham El-Askary, Dr. Cyril Rakovski

6. **Hyperion Imaging Changes in Soil salinity in the San Joaquin Valley, CA acquired through**

*Presenter(s):* Kristen Whitney

*Advisor(s):* Dr. Hesham El-Askary

### SCHMID COLLEGE, COMPUTER SCIENCE

7. **Aerosols and Hurricane Sandy**

*Presenter(s):* Andrew Fontenot

*Advisor(s):* Dr. Hesham El-Askary

### SCHMID COLLEGE, FOOD SCIENCE

8. **Experimental comparison of triangle and tetrad tests**

*Presenter(s):* Shweta Birwadkar, Shridhruti Abbaraju, Ann Enverga, Samantha Fredericks, Bill Hsu, Vikalp Joisar, Brendan Wong

*Advisor(s):* Dr. Fredric Caporaso, Dr. Criselda S. Toto

9. **Sensory evaluation of potato chips using tetrad, triangle and hedonic test methods**  
*Presenter(s):* Sabrina Davis, Teresa Gomez, Alex Hoang, Maulik Pandya, Dhwani Patel, Karina Rodriguez, Amanda Shin  
*Advisor(s):* Dr. Frederic Caporaso, Dr. Criselda Toto, Dr. Criselda S. Toto
10. **Comparison of Tetrad and Degree of Difference Sensory Testing Methods in Evaluating the Quality of flower Tortillas**  
*Presenter(s):* Kristine Futralan, Dr. Criselda Toto, Heather McDonald  
*Advisor(s):* Dr. Fredric Caporaso
11. **Sensory evaluation of pork sausage patties with added freeze dried coffee using tetrad and hedonic methods**  
*Presenter(s):* Tiffany Hashimoto, Katrina Jully, Xiaoxuan Liu, Kelly Sparks, Jessica Thomas, Xueting Zhong  
*Advisor(s):* Dr. Fredric Caporaso, Dr. Criselda S. Toto, Dr. Lilian Were
12. **Comparative effects of low-dose irradiation and methyl bromide fumigation on microbiological quality of fresh strawberries and blueberries and effect of irradiation on survivability of Salmonella Enterica and Listeria Monocytogenes.**  
*Presenter(s):* Vikalp Joisar  
*Advisor(s):* Dr. Anuradha Prakash, Dr. Cyril Rakovski
13. **The Effects of Commercial Irradiation or Fumigation on the Quality and Shelf Life of Blueberries Shipped from Georgia to California.**  
*Presenter(s):* Karina Rodriguez  
*Advisor(s):* Dr. Anuradha Prakash, Dr. Cyril Rakovski
14. **Design, Synthesis, and Biological Evaluation of a Cell-Penetrating Peptide-Curcumin Conjugate**  
*Presenter(s):* Naglaa El-Sayed, Amir Shirazi  
*Advisor(s):* Dr. Keykavous Parang, Dr. Rakesh Tiwari

# MORNING POSTER SESSION: ABSTRACT TITLES UNDERGRADUATE STUDENTS

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## CREAN COLLEGE, DEPARTMENT OF HEALTH SCIENCES

**15. A Preliminary Study of Distracted Driving**

**Presenter(s):** Sarina Karwande, Ashley Nieto, Lauren Rhodes

**Advisor(s):** Dr. Roberta Lessor

**16. The Effect of Chronic Sleep deprivation on Tumor Necrosis Factor Alpha and Bone Health in Peri-Menopausal Rats**

**Presenter(s):** Megan Robertson, Cody Arbuckle, Derek Booth, Milton Greenberg, Eric Sternlicht, Dr. Kenneth D. Sumida, Erin Wainwright

**Advisor(s):** Dr. Frank Frisch; Dr. Milton Greenberg

## CREAN COLLEGE, DEPARTMENT OF PSYCHOLOGY

**17. Increasing Response Time and Response Evaluation Time Compensates for Learning Difficulties in Persons at Risk for Alcoholism**

**Presenter(s):** Yasmin Akbari

**Advisor(s):** Dr. Steven Schandler

**18. Social Support From Maternal Grandmother Increases Positive and Decrease Negative Maternal Behaviors**

**Presenter(s):** Mariel Barojas, Bonnie Truong

**Advisor(s):** Dr. Jennifer A. Hahn-Holbrook

**19. Accommodating Hyperaroused Information Processing in Persons at Risk for Alcoholism**

**Presenter(s):** Kellianne Clark, Jaclyn Cutler

**Advisor(s):** Dr. Steven Schandler

**20. Do Happy and Optimistic People Eat Healthier?**

**Presenter(s):** Karynna Okabe-Miyamoto, Alexandra Macias, Roxy Nouri, Olivia Silke, Bailey Waln, Jin Wen

**Advisor(s):** Dr. Julia Boehm

**21. Increasing Learning Response Evaluation Time Allows More Effective Allocation of Information Processing Resources in Persons at Risk for Alcoholism**

**Presenter(s):** Brooke Snelgrove, Lilian Andrade, Taylor Stephens, Reyn Yoshiura

**Advisor(s):** Dr. Steven Schandler

**22. Maternal Employment Predicts Maternal Stimulation of Development and Infant Mood in Play**

**Presenter(s):** Bonnie Truong, Mariel Barojas

**Advisor(s):** Dr. Jennifer A. Hahn-Holbrook

**23. Self-Complexity and Personality Integration: An Examination of Fractal Distributions in MMPI-2 Reaction Times**

**Presenter(s):** Kathryn Wann, Catherine Asuncion, Otto Cadsky, Kyle Horst, Andrea Kavajian

**Advisor(s):** Dr. David Pincus

**SCHMID COLLEGE, BIOCHEMISTRY & MOLECULAR BIOLOGY**

**24. Mass distribution and surface area trends of size-fractionated arsenic-bearing mine tailings**

**Presenter(s):** Kory Cablay

**Advisor(s):** Dr. Christopher Kim

**25. Novel immune-deficient transgenic AD model exhibits altered pathogenesis with increased amyloid pathology and neuroinflammation**

**Presenter(s):** Lauren Camargo, Dr. Mathew Blurton-Jones, Samuel Marsh

**Advisor(s):** Dr. Elaine Schwartz

**26. Exploring Microbial Decomposition in Peatlands**

**Presenter(s):** Kristin Gabriel

**Advisor(s):** Dr. Jason Keller, Dr. Cassandra Medvedef

**27. Sensitization Within Species and Across Evolution**

**Presenter(s):** Jordan Gilmore

**Advisor(s):** Dr. William Wright

**28. Engineered PLGA Nanoparticles for Delivery of siRNA in Breast Cancer Cells**

**Presenter(s):** Sydney Pong, Dr. Samit Shah

**Advisor(s):** Dr. Elaine Schwartz

**29. Chromatographic and Mass Spectral**

**Identification of Discovered and Novel Cannabimimetic Indole Derivatives**

**Presenter(s):** Jonathan Redrico

**Advisor(s):** Dr. John Krstenansky of KGI

**30. Dancing Through Life: Allosteric Transitions and Structural Analysis of Hsp70 and Hsp10 Chaperone Proteins**

**Presenter(s):** Gabrielle Stetz

**Advisor(s):** Dr. Gennady Verkhivker

**31. Quantified Collagen Fiber Orientation in Bovine Pericardium and its Implications in Bioprosthetic Heart Valve Construction**

**Presenter(s):** Jonathan Woo

**Advisor(s):** Dr. Elaine Schwartz

## **SCHMID COLLEGE, BIOLOGICAL SCIENCES**

- 32. How the Presence of Plastic in the North Pacific Gyre Affects the Growth of *Thalassiosira* through Remote Sensing and Laboratory Replication.**

***Presenter(s):*** Jordynn Brennan

***Advisor(s):*** Dr. Hesham El-Askary

- 33. Analysis of Markers for Prostate Field Cancerization**

***Presenter(s):*** Emily Frisch, Kristin Gabriel

***Advisor(s):*** Dr. Marco Bisoffi

- 34. The non-lethal effects of climate change on the territoriality of *Lottia gigantea***

***Presenter(s):*** Tracey Gunanto, Christina Chavez, Jessica Martinez

***Advisor(s):*** Dr. William Wright

- 35. Assessment of the Effects of Caffeine, Gallic Acid, and Epigallocatechin-3-gallate on Cell Inhibition, PIM-3 and E. cadherin Protein Levels in Two Lines of Pancreatic Cancer Cells**

***Presenter(s):*** Lena Haddad

***Advisor(s):*** Dr. Melissa Rowland-Goldsmith

- 36. TOXICITY AND COSMESIS OUTCOMES FOR SINGLE FRACTION INTRA-OPERATIVE ELECTRON RADIOTHERAPY (IOERT) FOR BREAST CANCER**

***Presenter(s):*** Monica Hanna, Robert B. Ash, MD, Wesley Babaran, MD, Michele M. Carpenter, MD, Afshin Forouzannia, MD, Jay K. Harness, MD, Brian Kaltenecker, Snehith Maddula, Lawrence D. Wagman, MD, and Venita L. Williams, MD

***Advisor(s):*** Dr. Kenneth Sumida

- 37. Early growth response 1 expression in prostate tissues indicates field cancerization**

***Presenter(s):*** Dor Shoshan

***Advisor(s):*** Dr. Marco Bisoffi

- 38. Effect of exposure time on Cu(II) adsorption and retention to iron oxyhydroxide nanoparticles**

***Presenter(s):*** Anthony Torossian, Jack Jacobs

***Advisor(s):*** Dr. Christopher Kim

## **SCHMID COLLEGE, CHEMISTRY**

- 39. Analysis of carbon cycling and optical properties of dissolved organic matter in northern peatlands**

***Presenter(s):*** Jenny Bowen, Cassandra Medvedeff

***Advisor(s):*** Dr. Jason Keller

- 40. WITHDRAWN**

## **SCHMID COLLEGE, COMPUTER SCIENCE**

### **41. Full Adder Design and Analysis**

***Presenter(s):*** Garrett Isaacs, Josh Gotham, Earl Huskey

***Advisor(s):*** Dr. Peiyi Zhao

### **42. Smart Dresser**

***Presenter(s):*** Aneesha Prakash, Mirabel Rice, Justine Stewart, Jennifer Re

***Advisor(s):*** Dr. Erik Linstead

### **43. Detecting, repairing and preventing mobile applications bugs**

***Presenter(s):*** Yoko Yamaguchi

***Advisor(s):*** Dr. Adrian Nistor

## **SCHMID COLLEGE, ENVIRONMENTAL SCIENCE AND POLICY**

### **44. Irvine Ranch Water District Natural Treatment System**

***Presenter(s):*** Luis Genis, Alfredo Alfaro, Casey Louis, Ian Swift

***Advisor(s):*** Dr. Jason Keller

### **45. The Effect of Arsenic Exposure on Feeding Habits of Hermit Crabs**

***Presenter(s):*** Natalie Kobayashi

***Advisor(s):*** Dr. Christopher Kim

### **46. The Importance of Methylo trophic Methanogenesis in Northern Minnesota Peatlands**

***Presenter(s):*** Nikole Meade, Cassandra Medvedeff

***Advisor(s):*** Dr. Jason Keller

### **47. A Trend Analysis of Aerosol Related Parameters and their Relation to Precipitation Variability in Arizona**

***Presenter(s):*** Krista Rasmussen

***Advisor(s):*** Dr. Hesham El-Askary

### **48. Remote sensing analysis of 2009 California Station Fire aerosols**

***Presenter(s):*** Christopher Thatcher

***Advisor(s):*** Dr. Hesham El-Askary

### **49. Geospatial Distribution and Characteristics of E-Cigarette Retailers: Are Youth at Risk?**

***Presenter(s):*** Patsornkarn (Nate) Vorapharuek, Brett Galland, Clayton Heard, Katie Henderson

***Advisor(s):*** Dr. Georgiana Bostean

### **50. The Study of Arsenic Bioaccessibility as a function of number of days since rainfall and the concentration of Arsenic.**

***Presenter(s):*** Katherine Whiteman

***Advisor(s):*** Dr. Christopher Kim

## **SCHMID COLLEGE, PHYSICS AND COMPUTATIONAL SCIENCE**

### **51. Hearing the Shape of a Drum: Calculating Harmonic Overtones for Arbitrary Drum Shapes**

***Presenter(s):*** William Johnston-Carter

***Advisor(s):*** Dr. Roman Buniy

## **SCHMID COLLEGE, SOFTWARE ENGINEERING**

### **52. A Comparison Between Mobile and Desktop Bugs**

***Presenter(s):*** Michael Pollind

***Advisor(s):*** Dr. Adrian Nistor



## AFTERNOON POSTER SESSION: ABSTRACT TITLES GRADUATE STUDENTS

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### WILKINSON COLLEGE, DEPARTMENT OF ENGLISH

1. **There is no Post-Colonialism: Brian Friel and Translations**

*Presenter(s):* Robin Wyatt Dunn

*Advisor(s):* Dr. Justine Van Meter

### WILKINSON COLLEGE, DEPARTMENT OF POLITICAL SCIENCE

2. **CHINA-BASED INDUSTRIAL ESPIONAGE AS AN EMERGING U.S. NATIONAL SECURITY ISSUE**

*Presenter(s):* Joel Savary

*Advisor(s):* Dr. Lynn Horton

## AFTERNOON POSTER SESSION: ABSTRACT TITLES UNDERGRADUATE STUDENTS

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### ARGYROS SCHOOL OF BUSINESS & ECONOMICS

3. **The Effect of ISIS on Family Structure Systems**

*Presenter(s):* Kelsey Ruegger, Kellie Langwell

*Advisor(s):* Dr. Patricia See

### COLLEGE OF EDUCATIONAL STUDIES

4. **Challenges That Constrain Computational Tool Development & Adoption**

*Presenter(s):* Ryan Farrell, Dominique Stewart

*Advisor(s):* Dr. Kerk Kee

5. **Exploring the connection between video games play and cheating among adolescents**

*Presenter(s):* Brandon Nease

*Advisor(s):* Dr. Michelle Samura

### COLLEGE OF PERFORMING ARTS

6. **Theater Education through the Common Core**

*Presenter(s):* Brandon Nease

*Advisor(s):* Dr. Jocelyn Buckner

- 7. "Staging Style: A Director's Quest through Style"**  
*Presenter(s):* Peyton Ashby  
*Advisor(s):* Dr. Jocelyn Buckner
- 8. Birth By Sleep: An Immersive Adventure Through Wonderland**  
*Presenter(s):* Edward Bass  
*Advisor(s):* Dr. Jocelyn L. Buckner
- 9. Mirroring Reality: Music in Video Games**  
*Presenter(s):* Allison Burr  
*Advisor(s):* Dr. Amy Graziano
- 10. Understanding Theatre in the Modern Moment Using Perspectives of the Past**  
*Presenter(s):* Sara Curtis  
*Advisor(s):* Dr. Jocelyn L. Buckner
- 11. Time May Change Me, But Acting Styles Never Waiver**  
*Presenter(s):* Joey De Felice  
*Advisor(s):* Michael Nehring
- 12. Self-Discovery and the "Bystander Approach" through Theatre for Development**  
*Presenter(s):* Joshua Dominguez  
*Advisor(s):* Dr. Jocelyn Buckner
- 13. Lighting Design Proposal for Tom Stoppard's *Rosencratz and Guildenstern are Dead* Chapman University Spring 2015**  
*Presenter(s):* Nikolai Eiteneer  
*Advisor(s):* Dr. Jocelyn Buckner
- 14. Walking in the Burnt Hole**  
*Presenter(s):* Sophia Friedman  
*Advisor(s):* Dr. Jocelyn Buckner
- 15. All for Art and Art for All: Examining the Benefits of Unified Arts Festivals for Independent Artists**  
*Presenter(s):* Anton Gress  
*Advisor(s):* Dr. Jocelyn Buckner
- 16. The Psychology of Performance**  
*Presenter(s):* Shaina Hammer  
*Advisor(s):* Dr. Jocelyn Buckner
- 17. Exploring Unusual Post-Grad Professions**  
*Presenter(s):* Caroline Hawkins  
*Advisor(s):* Dr. Jocelyn L. Buckner
- 18. "Arts for instigating social change: Truth behind the Sinking of the MV Sewol"**  
*Presenter(s):* Hyeyeon Ivy  
*Advisor(s):* Dr. Jocelyn Buckner

19. **"Devising: Improving a Perceived Glistening Community"**  
*Presenter(s):* Katie Laner  
*Advisor(s):* Dr. Jocelyn Buckner
20. **HAIR: A History and Performance of American Masculinities**  
*Presenter(s):* Adam Lee  
*Advisor(s):* Dr. Jocelyn Buckner
21. **Cross-Cultural Examination of Animal Personification in Live Performance**  
*Presenter(s):* Hotaru Morita  
*Advisor(s):* Dr. Maiya Murphy
22. **"I can Take an Empty Space and call it a Stage": Searching for a Through-Line in the Diverse Roles of the Theatre Director**  
*Presenter(s):* Bettina Mueller-Tuescher  
*Advisor(s):* Dr. Jocelyn Buckner
23. **Kinetic Sculpture in Living Art: The Mechanics of Kinetic Rain Explained, It's Many Places in Theatre, and the Integrated Rehearsal Process Technology Demands.**  
*Presenter(s):* Francesca Muscolo  
*Advisor(s):* Dr. Jocelyn L. Buckner
24. **Inside the Boudoir: Designing the World of Lynn Nottage's Intimate Apparel**  
*Presenter(s):* Megan Parish  
*Advisor(s):* Dr. Jocelyn Buckner
25. **The Man Who Laughs At Himself:  
A Look at Stand-Up Comedy and What Values It Has in Liberal Arts Education**  
*Presenter(s):* David Patterson  
*Advisor(s):* Dr. Nina LeNoir Micheal Nehring
26. **The Culture of Negativity**  
*Presenter(s):* Jesse Pudles  
*Advisor(s):* Dr. Jocelyn Buckner
27. **"In Defense of 'Liveness': The Changing Relationship between the Audience and the Theatre in American Culture"**  
*Presenter(s):* Allison Reidy  
*Advisor(s):* Dr. Jocelyn Buckner
28. **"The Dream of the Theatre is Alive In Portland: The Potential of a New Theatre Company to Succeed"**  
*Presenter(s):* Amaya Santamaria  
*Advisor(s):* Dr. Jocelyn Buckner
29. **Sensuality, Camels, and Islam: Disney Music and American Perception of the Middle Eastern Experience**  
*Presenter(s):* Laura Schildbach  
*Advisor(s):* Dr. Amy Graziano

**30. Stage Management Jobs and Qualifications**

*Presenter(s):* Sarah Stavich

*Advisor(s):* Dr. Jocelyn Buckner

**31. Deconstructing Chaos: The Role of Tonal Hierarchy in Music Perception**

*Presenter(s):* Gabrielle Stetz

*Advisor(s):* Dr. Amy Graziano

**32. Cultivating an Understanding of Talent**

*Presenter(s):* Ryan Stiffelman

*Advisor(s):* Dr. Jocelyn Buckner

**33. Examining Tennessee Williams with a Modern Feminist Lens**

*Presenter(s):* Audrey Thayer

*Advisor(s):* Dr. Jocelyn Buckner

**34. Mind+Body: Experiences of Young Adult Oncology**

*Presenter(s):* Jake Russell Thompson

*Advisor(s):* Dr. Jocelyn Buckner

**35. What's Cookin' Good Lookin': The Rise and Phenomena of the Female Celebrity Foodie and the Contribution of Social Media**

*Presenter(s):* Alison Weiss

*Advisor(s):* Dr. Jocelyn Buckner

**36. K-Pop Or K-Death? The Mirrored Oppression From Hollywood In The 1930s**

*Presenter(s):* Molly Welsh

*Advisor(s):* Dr. Jocelyn Buckner

**37. "The Modern Performance Art vs. Traditional Theatre: The Division Between the Contemporary and the Conventional"**

*Presenter(s):* Sally Woo

*Advisor(s):* Dr. Jocelyn L. Buckner

**DODGE COLLEGE OF FILM & MEDIA ARTS**

**38. Nonbinary Gender Character Design**

*Presenter(s):* Natalie Ordway

*Advisor(s):* Dr. Ian Barnard

**WILKINSON COLLEGE, DEPARTMENT OF ART**

**39. Transphobia in College Greek Life**

*Presenter(s):* Emma Foss, Lusihei (Landyn) Pan

*Advisor(s):* Dr. Ian Barnard

## **WILKINSON COLLEGE, DEPARTMENT OF COMMUNICATION STUDIES**

**40. The Importance of Team Organization When Implementing Computational Tools**

***Presenter(s):*** Arielle Berman, Clifford Davis, Lauren Henderson

***Advisor(s):*** Dr. Kerk Kee

**41. Jealousy and the Relationship Between Equity Restoration via Retaliation and Surveillance**

***Presenter(s):*** Camille Burdge, Karen Gonzale, Launa Kressin, Olivia Martinez, Bora Song

***Advisor(s):*** Dr. Jennifer Bevan

**42. Unwanted Electronic Communication: Cyber-stalking and Cyber-Harassment**

***Presenter(s):*** Jacqueline Clark, Al-Leigh Roden

***Advisor(s):*** Dr. Elaine L. Davies

**43. Ongoing/Unresolved conflicts: Serial Arguments Between K-12 Parents and Teachers**

***Presenter(s):*** Jacob Decker, Jordan Batti, Kevin Chang, Charles Evans, Jamie Mark

***Advisor(s):*** Dr. Jennifer Bevan Dr. Roxanne Greitz Miller

**44. Time-Related Issues Surrounding Computational Tool Development in e-Science Projects**

***Presenter(s):*** Joanna Diaz, Mona Sleiman

***Advisor(s):*** Dr. Kerk Kee

**45. Communication strategies for computational tool development, adoption, and diffusion**

***Presenter(s):*** Isabel Dimaranan, Tyler Bice, Susan Chen

***Advisor(s):*** Dr. Kerk Kee

**46. Instructor Responses to Student's Evaluations on RateMyProfessors.com**

***Presenter(s):*** Andrea Frisina, Susan Weinstein

***Advisor(s):*** Dr. Jake Liang

**47. A Preliminary Model for Diffusing an Experimental Tool Beyond Its Inception Group**

***Presenter(s):*** Lucas Halopoff, Jake Schmidt, Brian Quatch

***Advisor(s):*** Dr. Kerk Kee

**48. Examining Avoidance Conflict Strategy in Unresolved Serial Arguments Between Parents and K-12 Teachers**

***Presenter(s):*** Casey Hamilton, Melanie Au-Yeung, Sarah Clevenger, Kate DeSalvo, Reily Ford

***Advisor(s):*** Dr. Jennifer Bevan, Dr. Roxanne Greitz Miller

**49. The role of jealousy in romantic relationships: The effect of surveillance on relationship satisfaction**

***Presenter(s):*** Jamie Hlavacek, Sarah Gilbert, Scott Metts, Cesarina Moretti, Taylor Sellers

***Advisor(s):*** Dr. Jennifer Bevan

**50. The Key Principles of Virtual Organizational Structures for Effective & Productive Experimental Tool Development in e-Science**

***Presenter(s):*** Christian Keroles, Len Hamilton

***Advisor(s):*** Dr. Kerk Kee

**51. WITHDRAWN**

**52. The Proteus Effect - Priming vs. Motivated Preparation Explanations**

*Presenter(s):* Sarah Miller, Mike Schwartz, Miranda Wall

*Advisor(s):* Dr. Jake Liang

**53. How to Compose Engaging Content on Chapman Blogs: Concepts that Reflect Blog Views, Number of Comments, and Social Score**

*Presenter(s):* Angelina Riccio, Tatiana Broukhim, Shelby Ticsay

*Advisor(s):* Dr. Jake Liang

**54. Persuasion and Sharing**

*Presenter(s):* Shelby Stanton, Christina Lopez, Tim Seavey

*Advisor(s):* Dr. Jake Liang

**55. K-12 Teachers and Parents: How Do Length and Frequency of Serial Arguments Affect Perceived Resolvability in the Teacher-Parent Relationship?**

*Presenter(s):* Justin Villasenor, Jimena Galvan, Selena Pang, Paula Pearl, Miranda Wall

*Advisor(s):* Dr. Jennifer Bevan

**56. Communication strategy involved in creating successful co-production between computational technologists and domain scientists**

*Presenter(s):* Travis Watkins, Michelle Williams, Duncan Wilson

*Advisor(s):* Dr. Kerk Kee

**WILKINSON COLLEGE, DEPARTMENT OF HISTORY**

**57. The Relationship between the American Government and Society: Congressman John O'Connor and New York's 16th District during the Great Depression**

*Presenter(s):* Kristine Avena

*Advisor(s):* Dr. Jennifer Keene

**58. The Image of Bobby Sands**

*Presenter(s):* Reed Burke

*Advisor(s):* Dr. Leland Estes

**59. Prizefighting a New Culture**

*Presenter(s):* Logan Dale

*Advisor(s):* Dr. Vanessa Gunther

**60. Making First Contact: Early US-Muslim Exchange and Interaction**

*Presenter(s):* Alfredo Gonzalez

*Advisor(s):* Dr. William Cumiford

**61. The Qualities of Fact: A History of Information in Mexico's Church-State Conflicts**

*Presenter(s):* Alexander Odicino

*Advisor(s):* Dr. Carolyn Vieira-Martinez

**62. The Origins of the Great War: British Parliament and Belgian Neutrality**

***Presenter(s):*** Maci Reed

***Advisor(s):*** Dr. Jennifer Keene, Dr. Carolyn Vieira-Martinez

**63. Impact of the Tank in World War I**

***Presenter(s):*** Alec Shumate

***Advisor(s):*** Dr. Carolyn Vieira-Martinez

**64. After the Famine: Return Migrants in Nineteenth Century Ireland**

***Presenter(s):*** Brittany Walsh

***Advisor(s):*** Dr. Carolyn Vieira-Martinez

**WILKINSON COLLEGE, PEACE STUDIES PROGRAM**

**65. The Gender Gap, The Democratic Party, and War**

***Presenter(s):*** Madeline Robinson

***Advisor(s):*** Dr. Ann Gordon

**66. Class Contributions: How Attitudes on Welfare are Shaped in the U.S.**

***Presenter(s):*** Julia White

***Advisor(s):*** Dr. Richard Ruppel, Dr. Nubar Hovsepain

**WILKINSON COLLEGE, DEPARTMENT OF POLITICAL SCIENCE**

**67. Marijuana Legalization: who's in favor?**

***Presenter(s):*** Haifa Alomair

***Advisor(s):*** Dr. Ann Gordon

**68. Analysis of Recent Voter Turnout Rate for Young Adults**

***Presenter(s):*** Shaia Araghi, Christine Lathrop

***Advisor(s):*** Dr. Andrea Molle

**69. American: American Identification and U.S. Party Affiliation**

***Presenter(s):*** Erika Aranda

***Advisor(s):*** Dr. Ann Gordon

**70. Iranian Nuclear Proliferation and News Outlets**

***Presenter(s):*** Bailey Burlingame

***Advisor(s):*** Dr. Andrea Molle

**71. The Election of Obama and its Effect on Racism in the United States**

***Presenter(s):*** Mackenzie Carl

***Advisor(s):*** Dr. Ann Gordon

**72. Trust in Government: An Analytical Approach to Public Perception**

***Presenter(s):*** Pilar Fabregas

***Advisor(s):*** Dr. Ann Gordon

- 73. Impact of Religiosity on Support for Gay Rights**  
*Presenter(s):* Nick Fernandes  
*Advisor(s):* Dr. Ann Gordon
- 74. Who is the Absentee Voter?**  
*Presenter(s):* Alyse Frederick  
*Advisor(s):* Dr. Ann Gordon
- 75. Religion's effect on Public Opinion Toward the Middle East**  
*Presenter(s):* Mavrick Gaunt  
*Advisor(s):* Dr. Ann Gordon
- 76. Challenging the Common Wisdom of Voter Mobilization: A discussion on the effectiveness of various Voter Mobilization Techniques**  
*Presenter(s):* Brad Joyner  
*Advisor(s):* Dr. Ann Gordon
- 77. Voting Turnout in Young Voters**  
*Presenter(s):* Christine Lathrop, Shaia Araghi  
*Advisor(s):* Dr. Andrea Molle
- 78. Political Mobilization and Technology**  
*Presenter(s):* Chris Molina  
*Advisor(s):* Dr. Ann Gordon
- 79. Biasses in the Supreme Court**  
*Presenter(s):* Riley Munks  
*Advisor(s):* Dr. Ann Gordon
- 80. Shaping Factors of U.S. Public Opinion on Foreign Policy**  
*Presenter(s):* Julianne O'Connor  
*Advisor(s):* Dr. Ann Gordon
- 81. The Effects of Social Media and the Internet on Political Participation**  
*Presenter(s):* Leslie Orozco  
*Advisor(s):* Dr. Andrea Molle
- 82. The Effects of News Media Exposure on Public Decisions**  
*Presenter(s):* Jackson Scott  
*Advisor(s):* Dr. Andrea Molle
- 83. Testing Duverger's Law in Large Scale Simulation Aided Experiments**  
*Presenter(s):* Caleb Sturges  
*Advisor(s):* Dr. Andrea Molle
- 84. How to Make South Sudan's Currency Relevant**  
*Presenter(s):* Ajay Swaminathan  
*Advisor(s):* Dr. Crystal Murphy



**85. Obama 2012: A Yield for Post-Racial America?**

***Presenter(s):*** Calah Vargas

***Advisor(s):*** Dr. Ann Gordon

**86. Public Opinion on Economic Inequality**

***Presenter(s):*** Christina Vetter

***Advisor(s):*** Dr. Ann Gordon

**WILKINSON COLLEGE, DEPARTMENT OF SOCIOLOGY**

**87. Iran's Plan to Reverse a Declining Population**

***Presenter(s):*** Ashley Broderick

***Advisor(s):*** Dr. Patricia See

**88. Women As Objects: The International Bride Trade**

***Presenter(s):*** Penelope Burner

***Advisor(s):*** Dr. Patricia See

**89. Can you hear me? Do you care?: The Police as Agents of Social Control Against Black Women in the United States**

***Presenter(s):*** Desiree Greenhouse

***Advisor(s):*** Dr. Lynn Horton, Dr. Tekle Woldemikael

**90. "I am not like them": Teen mothers identity work and deviance disavow**

***Presenter(s):*** Amy Mckelvey

***Advisor(s):*** Dr. Lynn Horton

**91. The Nescience of Prospective Parents Adopting Children with Prenatal Substance Exposure**

***Presenter(s):*** Michaela Torrie

***Advisor(s):*** Dr. Patricia See



MORNING POSTER SESSION  
SCIENCE AND TECHNOLOGY

ABSTRACTS

GRADUATE STUDENTS

POSTERS 1- 14



# **MORNING POSTER SESSION: ABSTRACTS**

## **GRADUATE STUDENTS**

### **CREAN COLLEGE, MARRIAGE AND FAMILY THERAPY PROGRAM**

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#### **Poster 1**

##### **Wonder Woman's Lasso: Understanding Gender and Sexuality Through Comic Books**

**Presenter(s):** Justin Huft

**Advisor(s):** Dr. Naveen Jonathan

To understand how gender and sexuality are portrayed in comics, an extremely understudied medium, we analyzed comic books ( $n = 100$ ) and graphic novels ( $n = 5$ ), looking for ways gender and sexuality were displayed and discussed. Preliminary results indicate femininity is commonly portrayed as submissive, less capable, highly sexualized and stigmatized for being this way, and were often relegated to a secondary role. Masculinity is portrayed as highly sexual, strong, aggressive, intelligent, and dispassionate. Race appeared to have a moderating effect on how gender was portrayed, with greater exotification of women of color, and more acts of unnecessary violence by men of color. Existing literature indicating that comics, used in therapy, can be a helpful way to explore identity. These current findings support previous research, and would provide an additional understanding of gender and sexuality in an area predominately focused on race and ethnicity (Gavigan, 2012).

### **SCHMID COLLEGE, COMPUTATIONAL AND DATA SCIENCES**

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#### **Poster 2**

##### **Analysis of Pelvic Motion through Repeated Pair Time Measurements Analysis**

**Presenter(s):** Kyle Anderson

**Advisor(s):** Dr. Cyril Rakovski

In this study we analyze the effect of hippotherapy on the gait of children with mental disabilities that adversely affect their ability to walk. The data were collected via an implementation of a wii remote control attached to each participant's pelvis that recorded observations at approximately 100hz on rotational degrees of the pelvis during a walk of 25 feet before and after a 30 minute therapy session. We focused on investigating the following important characteristics of the complex motion of walking: minimum and maximum pitch, minimum and maximum roll and gait duration. These data were analyzed via mixed effects linear models to account for the correlations induced by both the repeated measurements on the same subjects. Our results show with respect to all of the mentioned characteristics of walking, there were no significant difference in the gaits before and after hippotherapy.

**Poster 3****Effect of Haplotype Phase Estimation on Type I Error of Exact Tests for Association****Presenter(s):** Louis Ehwerhemuepha, Alexandria Smith**Advisor(s):** Dr. Cyril Rakovski

Several works have shown the effect of resolving haplotype phase ambiguity on the type I error of case-control candidate gene tests in large samples. No such work in small samples (where exact tests of association are employed) has been carried out. Here we study the effect of resolving phase in small samples employing the EM algorithm that allows for population level haplotype frequency estimation from which a conditional distribution of subject-level haplotype information can be inferred. Our results indicate that in addition to small sample bias, ambiguity in phase reconstruction creates a unique problem not experienced in large sample tests. With ambiguity in phase, cells of contingency tables are not guaranteed to be integers (which is a fundamental requirement for exact tests of association) and therefore a method for "rounding" the cells of the resulting contingency table must be developed. In this work, we developed a heuristic for "rounding" the cells of the contingency table while keeping the type I error close to the nominal value. To assess the type I error rates under various null hypothesis and the power of the test under various alternative hypothesis, we performed extensive simulations using full genome data of people with African ancestry in Southwest USA.

**Poster 4****Novel Study on US Hybrid Vehicle Sales****Presenter(s):** Alex Leipf**Advisor(s):** Dr. Cyril Rakovski

**Abstract:** Studied the alternative-fuel vehicle segment in the automotive market in the United States in order to locate predictors of success, with initial hopes of constructing a predictive model. The basis of success was defined by vehicle sales and therefore focused the research on mass-market vehicles. Data was gathered on hybrid, electric-vehicle, natural-gas, diesel, and plug-in hybrid vehicle although greater emphasis revolves around the hybrid vehicle segment due to a higher proliferation of vehicles in the US market, starting with the first mass market hybrid in 1999. Research led to data on monthly sales of vehicles along with US average gas prices and variables of vehicle characteristics (price, sales, length, width, height, horsepower, torque, mpg, etc).

Due to the trends in the auto industry, the data was broken into shorter segments by use of a nonparametric model. From here, a statistical model of random slopes and random intercepts is applied as it is appropriate for staggered entry longitudinal studies. This model allows for analysis of vehicles enter the market at different periods and remain part of the same generation (same platform) for various lengths of time before the next generation is introduced and as there are multiple entries during a time period the model needed to account for a variety of data lines.

## **Poster 5**

### **Long Term Ground/Model Based Precipitation Wavelet Analysis**

**Presenter(s):** Luciano Rodriguez, Mohamed Allali

**Advisor(s):** Dr. Hesham El-Askary, Dr. Cyril Rakovski

California is an area of diverse topography and has what many scientists call a Mediterranean climate. Various precipitation patterns exist due to El Niño Southern Oscillation (ENSO) which can cause abnormal precipitation or droughts. As temperature increases mainly due to the increase of CO<sub>2</sub> in the atmosphere, it is rapidly changing the climate of not only California but the world. An increase in temperature is leading to droughts in certain areas as other areas are experiencing heavy rainfall/flooding. Droughts in return are providing a foundation for fires harming the ecosystem and nearby population. Various natural hazards can be induced due to the coupling effects from inconsistent precipitation patterns and vice versa. Using wavelets, we were able to identify anomalies of high precipitation and droughts within California's 7 climate divisions using NOAA's hourly precipitation data from rain gauges and compared the results with modeled data, SOI, and PDO. The identification of anomalies can be used to compare and correct remote sensing measurements of precipitation and droughts. Promising results show a possible connection with increasing tropical moisture activity.

## **Poster 6**

### **Hyperion Imaging Changes in Soil salinity in the San Joaquin Valley, CA acquired through**

**Presenter(s):** Kristen Whitney

**Advisor(s):** Dr. Hesham El-Askary

Central San Joaquin Valley in California has been chosen for this study as its history in agriculture begins in the late 19th century and continues today. Three sets of Hyperion hyper-spectral images acquired from satellite EO-1 over the last ten years have been obtained to calculate indices which can be used to show the changes in soil salinity and vegetation. Soil salinity has an impact on agriculture as it affects the amount of water required in irrigation. In addition to irrigation, drainage, drought and soil moisture also affect the density of soil salinity.

Hyperion data contains 220 spectral bands with wavelengths from 0.4 to 2.5 micrometers. Vegetation and salinity indices are calculated in Matlab with Hyperion image data. The Normalized Difference Vegetation Index (NDVI) uses bands in the near infrared (NIR) and visible (VIS) part of the electromagnetic spectrum where  $NDVI = (NIR - VIS) / (NIR + VIS)$ . A Salinity Index (SI) uses bands in the (NIR) and mid infrared (MIR) parts of the spectrum where  $SI = (NIR - MIR) / (NIR + MIR)$ . Histograms are calculated using Matlab to show peaks of NDVI and NDSI ratios at time of each acquired Hyperion data. These show the shift of maximum rates within the data samples during the ten years.

## SCHMID COLLEGE, COMPUTER SCIENCE

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### Poster 7

#### **Aerosols and Hurricane Sandy**

**Presenter(s):** Andrew Fontenot

**Advisor(s):** Dr. Hesham El-Askary

While the effects of aerosols on precipitation have been studied, their effects on more extreme precipitation events like Tropical Cyclones have only been questioned relatively recently. Because of the rarity of the intersection of significant quantities of aerosols and forming/formed tropical cyclones, as well as the possible destruction caused, most experiments about their effects take place in computer models that may not fully simulate the effects of the aerosols. Limitations in satellite sensing make it difficult to track processes and material distributions in hurricanes from afar as well. Hurricane Sandy, a devastating hurricane that formed in October of 2012, may have formed while influenced by relatively smaller but still significant amounts of dust from an African dust event. Since this quantity is different from most heavy polluting scenarios that are simulated, evaluating the extent of the presence, position, and activation of aerosols within this hurricane may give us insight into the potential influences of aerosols in tropical cyclones. MODIS, MISR, AIRS, and CALIPSO data, while having limitations, is analyzed. The extent and possible effects of additional Saharan dust aerosol loading is discussed.

## SCHMID COLLEGE, FOOD SCIENCE

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### Poster 8

#### **Experimental comparison of triangle and tetrad tests**

**Presenter(s):** Shweta Birwadkar, Shridhruti Abbaraju, Ann Enverga, Samantha Fredericks, Bill Hsu, Vikalp Joisar, Brendan Wong

**Advisor(s):** Dr. Fredric Caporaso, Dr. Criselda S. Toto

Project objectives were to first measure the performance (statistical power for product decision making) of the newly reintroduced tetrad discrimination test in comparison to the traditional triangle discrimination test. The tetrad test is reputed to have greater statistical power than the most commonly used triangle test for measuring differences in food products. Secondly, to conduct a hedonic rating test using the same products to determine whether a difference test outcome would result in a similar finding when measuring consumer liking. Coded commercial apple juice samples (full-strength and 90% of full-strength) were evaluated by panelists during two, 4-hour sessions over the course of two days. Panelists participating during the first session were asked to discern between the two apple juice samples using both the triangle and tetrad methods. During the second session, panelists were asked to rate their degree of liking of each sample using a 9-point hedonic scale. This study replicates the earlier work of Ishii and others (2013) at the University of California-Davis. We expect to verify the hypothesis that the tetrad test exhibits greater statistical power than the triangle test, making it a viable alternative. If verified, tetrad testing will save both time and money as it requires fewer panelists to conduct test. We also expect to determine that differences in test products do not always indicate that there will be a difference in consumer liking for one product over another. This will verify the importance of degree of liking hedonic testing to fully understand the consumer experience.



## **Poster 9**

### **Sensory evaluation of potato chips using tetrad, triangle and hedonic test methods**

**Presenter(s):** Sabrina Davis, Teresa Gomez, Alex Hoang, Maulik Pandya, Dhvani Patel, Karina Rodriguez, Amanda Shin

**Advisor(s):** Dr. Frederic Caporaso, Dr. Criselda Toto, Dr. Criselda S. Toto

Our research objectives included conducting a hedonic test to measure how much consumers liked each product, in addition to measuring the statistical power of the newly reintroduced tetrad test in comparison to the traditional triangle test. Recently, tetrad has received increasing attention from the food science community as an alternative to triangle, with supporters claiming the former has higher statistical power in determining non-specific differences between products. We investigated this statement by conducting both tests using two coded, commercial potato chip samples with slight differences in taste, texture, and flavor (reduced fat vs. original). These same two products were used for the hedonic rating test, and panelists were asked to rate their degree of liking of each sample based on a 9-point hedonic scale (from dislike extremely to like extremely). In a second session the following day, panelists differentiated between samples using triangle and tetrad methods. All panelists were untrained consumers of potato chips. The study was modeled after the work Ishii and others (2013) at the University of California, Davis. We expect to verify their claim, stating that tetrad is a superior alternative to triangle. If our hypothesis is confirmed, this study will be impactful for the food industry – companies could design more cost-effective tests, as fewer panelists would be required to base product decisions from more statistically sound results. Lastly, this study will verify whether differences in products have relevance in consumer liking, as variance does not always indicate there will be a disparity in consumer liking.

## **Poster 10**

### **Comparison of Tetrad and Degree of Difference Sensory Testing Methods in Evaluating the Quality of flower Tortillas**

**Presenter(s):** Kristine Futralan, Dr. Criselda Toto, Heather McDonald

**Advisor(s):** Dr. Fredric Caporaso

Mission foods in Rancho Cucamonga has two 10.25" heat pressed tortilla lines that are supplied from the same mixer and converge to the same packaging equipment. There are two lines, lines 3 and 4, which are identical, however, only line 4 is approved by Taco Bell. A test was requested in order to demonstrate there is parity in sensory characteristics of tortillas from line 3 and 4. The goal of this study is to compare the degree of difference and Tetrad discrimination testing methods when measuring tortilla quality in determining if a sensory difference exist between tortillas made from two different lines.

#### **Poster 11**

##### **Sensory evaluation of pork sausage patties with added freeze dried coffee using tetrad and hedonic methods**

**Presenter(s):** Tiffany Hashimoto, Katrina Jolly, Xiaoxuan Liu, Kelly Sparks, Jessica Thomas, Xueting Zhong

**Advisor(s):** Dr. Fredric Caporaso, Dr. Criselda S. Toto, Dr. Lilian Were

Sensory evaluation was conducted on pork sausage patties with added freeze dried coffee brew. Freeze dried coffee brew, a source of antioxidants that can extend product shelf-life, was added to pork sausage patties (0.01% w/w) and compared to a control (no added freeze dried coffee grounds). A hedonic test was used to determine the degree of liking among panelists for flavor, tenderness, juiciness, and overall product quality of each sausage sample using a 9 point hedonic scale. Tetrad testing was also used to determine if there was a significant difference between treatment and control; panelists were asked to correctly group 4 samples into 2 groups of 2 based on similarity. Panelists included Chapman University students, staff and faculty. For the hedonic test, it is expected degree of liking for pork sausage with and without coffee will not be significantly different ( $p < 0.05$ ) in any of the evaluation categories. For the Tetrad test, it is expected that consumer responses will show no significant difference between the treatment and control. If so, it will be concluded that freeze-dried coffee brew would be accepted by consumers if used as an ingredient to extend the shelf-life of pork.

#### **Poster 12**

##### **Comparative effects of low-dose irradiation and methyl bromide fumigation on microbiological quality of fresh strawberries and blueberries and effect of irradiation on survivability of *Salmonella Enterica* and *Listeria Monocytogenes*.**

**Presenter(s):** Vikalp Joisar,

**Advisor(s):** Dr. Anuradha Prakash, Dr. Cyril Rakovski

The objective of this study was to compare the effects of phytosanitary gamma irradiation (0.4 kGy) and methyl bromide fumigation on the naturally present micro-organisms on surface of blueberries and strawberries. The effect of irradiation was also tested on the survivability of a cocktail of five salmonella species (*S. muenchen*, *S. typhimurium*, *S. Newport*, *S. agona* and *S. saintpaul*) and two listeria species (*L. monocytogenes* T1 and T4). Separate mixtures of both types of microorganisms were surface inoculated on blueberries and strawberries. Aerobic plate counts and yeast and mold counts were monitored for 9 weeks for blueberries and were stored under refrigerated conditions (0°C). Strawberries were similarly inoculated and stored for four days under ambient conditions (25°C) and refrigerated conditions. Aerobic plate counts were not affected by either treatment but an increase yeast and molds was observed in fumigated samples. Irradiation resulted in an initial reduction of approximately one log CFU/g in *Salmonella* spp. and *Listeria* spp. counts and this difference was maintained during storage. Overall counts did not change during refrigerated storage. The results indicate that a dose higher than 400 Gy will be required to achieve a substantial reduction in spoilage-causing and pathogenic micro-organisms in order to extend shelf-life and food safety.

**Poster 13****The Effects of Commercial Irradiation or Fumigation on the Quality and Shelf Life of Blueberries Shipped from Georgia to California.****Presenter(s):** Karina Rodriguez,**Advisor(s):** Dr. Anuradha Prakash, Dr. Cyril Rakovski

Since the United States Clean Air Act has been amended to include the Montreal Protocol, irradiation has been at the forefront as an environmentally-safe potential alternative to methyl bromide fumigation. Therefore, the objective of this study was to determine and compare how phytosanitary treatments of irradiation and methyl bromide affect essential quality attributes of blueberries subjected to cross-country transportation from Georgia to California. Fresh *Vaccinium ashei*, Rabbiteye “Premier” blueberries (harvested in Alapaha, GA, U.S.A on June 9th, 2014) were provided by Naturipe. The blueberries in 12 oz clamshells, 12 clamshells per tray were fumigated for 3.5 hours at 15.56 °C; or irradiated at either 0.15 kGy or 0.4 kGy . Following the treatments, they were transported to California in a refrigerated truck, then stored at ambient conditions upon arrival at Chapman University to simulate retail display. Analytical tests were conducted to measure changes in quality attributes such as texture, soluble solids content, titratable acidity, damage, weight loss, moisture content, decay, and marketability. Affective sensory tests were conducted to gauge consumer liking of appearance, flavor, firmness, and overall liking on a 9-point hedonic scale. There were no significant differences ( $p>0.05$ ) across treatments for texture, soluble solids content, titratable acidity, weight loss, moisture content, and sensory attributes. Blueberries irradiated at 0.4 kGy had high levels of soft berries while fumigated blueberries had higher levels of decay. Blueberries treated 0.15 kGy seemed to have the highest number of undamaged berries after 5 days of ambient storage, although the numbers were not statistically significant. Therefore, overall, low dose irradiation can be used as a means to replace methyl bromide as an environmentally-safe postharvest treatment for commercial use while still providing a quality product for the consumer.

### Poster 14

#### **Design, Synthesis, and Biological Evaluation of a Cell-Penetrating Peptide-Curcumin Conjugate**

**Presenter(s):** Naglaa El-Sayed, Amir Shirazi

**Advisor(s):** Dr. Keykavous Parang, Dr. Rakesh Tiwari

Curcumin is a polyphenol-based compound that shows a wide range of biological properties, such as anti-inflammatory, antimicrobial, and anticancer activities. Although curcumin carries significant efficacy and safety, this compound has not yet been approved as a therapeutic agent due its relatively low bioavailability. Pharmacological potential of drugs such as their efficiency and toxicity can be utilized through using drug delivery systems. They enhance the lipophilicity, cellular uptake, and stability of drugs. Among various drug delivery systems, peptides-based systems showed to be effective tools because of their biocompatibility and low toxicity.

Here, we report the design and synthesis of a cyclic peptide-curcumin conjugate and evaluating its biological evaluation as an anticancer prodrug. Peptide [WR]5 contains amino acids carrying hydrophobic (tryptophan) and positively charged (arginine) residues. Arginine was used in the structure of the peptide to facilitate the interaction of the prodrug with the cell membrane. Furthermore, tryptophan was used to generate hydrophobic region and facilitate the cellular penetration.

The synthesis of the [WR]5 was carried out by using Fmoc solid-phase chemistry. The conjugation of the peptide with curcumin was performed through an ester linkage. Moreover,  $\beta$ -alanine was used in the structure of the linker to offer a higher degree of flexibility. The peptide was purified by using HPLC, and the chemical structure was confirmed using MALDI-TOF mass spectrometer. Additional biological evaluation will be used to compare the anticancer activity of the prodrug with that of curcumin alone.

MORNING POSTER SESSION  
SCIENCE AND TECHNOLOGY

ABSTRACTS

UNDERGRADUATE STUDENTS

POSTERS 15-52



**Poster 15**

**A Preliminary Study of Distracted Driving**

**Presenter(s):** Sarina Karwande, Ashley Nieto, Lauren Rhodes

**Advisor(s):** Dr. Roberta Lessor

The Centers for Disease Control (CDC) report distracted driving is a “problem on the rise” with increasing numbers injuries and deaths each year. More than 9 people are killed each day while more than 1,153 people are injured in crashes involving a distracted driver. Specifically, the number one killer of adolescents (ages 15-24) is automobile related deaths due to distracted driving. One of the most dangerous forms of distracted driving is texting while driving because it combines all three types of distraction: visual, manual, and cognitive. Texting and driving is a growing public safety hazard as seen through media and public service announcements. As health science students, we wanted to find out if college students text and drive along with their opinions behind the issue. Overall, the aim of the study was to examine if distracted driving is viewed as merely one manifestation of distracted living. After analyzing our results, it was concluded that this research needs to be continued in order to investigate the integrated pattern regarding the use of electronic devices, social media, and distraction.

**Poster 16**

**The Effect of Chronic Sleep deprivation on Tumor Necrosis Factor Alpha and Bone Health in Peri-Menopausal Rats**

**Presenter(s):** Megan Robertson, Cody Arbuckle, Derek Booth, Milton Greenberg, Eric Sternlicht, Dr. Kenneth D. Sumida, Erin Wainwright

**Advisor(s):** Dr. Frank Frisch; Dr. Milton Greenberg

Post-menopausal osteoporosis is a common syndrome in the United States. The cessation of estrogen signaling coupled with the production of pro-inflammatory cytokines from sleep deprivation leads to an even greater risk of post-menopausal osteoporosis by creating an imbalance between osteoblasts and osteoclasts. With estrogen no longer present to regulate the concentration of osteoclasts and pro-inflammatory cytokines increasing production of osteoclasts, bone is degraded at a faster rate than it is formed. One of the most common treatments for osteoporosis is Zolendronate (a nitrogenous bisphosphonate), which decreases the number of osteoclasts in bone. This preliminary study looked at the effects on the concentration of tumor necrosis factor alpha-type (TNF $\alpha$ ), a pro-inflammatory cytokine, and bone strength due to Zolendronate and sleep deprivation in thirty-two ovariectomized Wistar rats. After a five-week sleep deprivation protocol, TNF $\alpha$  concentrations were determined by enzyme-linked immunoassay and bone strengths were determined by a three point bending test. There were no significant differences in bone strength, and the only significant difference in serum concentrations of TNF $\alpha$  ( $P < .01$ ) was with the group that received Zolendronate. While we expected that the sleep deprived and sleep deprived with Zolendronate groups would have significantly higher TNF $\alpha$  concentrations we purpose an over-exhausted immune system is responsible our low concentrations. The reason the Zolendronate group had a significantly higher TNF $\alpha$  level could have been due to a transient fever caused by the drug. Further research measuring the changes in cytokine concentration throughout a longer sleep deprivation protocol needs to be done.

**Poster 17**

**Increasing Response Time and Response Evaluation Time Compensates for Learning Difficulties in Persons at Risk for Alcoholism**

**Presenter(s):** Yasmin Akbari

**Advisor(s):** Dr. Steven Schandler

Parental history of alcoholism is associated with increased alcoholism risk in their children. One factor increasing alcoholism risk is the presence of attention and information encoding disruptions in adult children of alcoholics (ACOA) compared to persons who are not ACOAs (NACOA). Alcohol ingestion reduces these disruptions in ACOAs. This study examined whether alterations of information processing parameters can function like alcohol and reduce processing disruptions experienced by the ACOA.

Participants were 80 ACOAs and 80 NACOA, partitioned into four groups of 20 participants. During learning, subjects studied presentations of stimulus items followed by the presentation of associated response items. The task was to learn which stimulus was associated with which response item. Based on information processing parameters, the study used short (2.5 s) and long (5.0 s) stimulus and response review periods. Within a completely crossed design, subjects in each group received either short stimulus/short response review periods; short stimulus/long response review periods; long stimulus/ short response review periods; or long stimulus/long response review periods. Learning performance consisted of trials to criterion, number of correct, error, and nonresponses, and speed of response.

Whereas the learning performance of the ACOAs during the short review periods was significantly below the performance of the NACOA, the groups did not significantly differ during long review period conditions. The findings support the implementation of “tuning” information processing parameters to compensate for processing disruptions related to ACOA-status. This outcome could allow development of focused preventive strategies for persons at higher risk for alcoholism.

**Poster 18**

**Social Support From Maternal Grandmother Increases Positive and Decrease Negative Maternal Behaviors**

**Presenter(s):** Mariel Barojas, Bonnie Truong

**Advisor(s):** Dr. Jennifer A. Hahn-Holbrook

Research suggests that the mother-infant relationship is shaped by broader family relationship dynamics. The majority of research to date has been done with teenage mothers, focusing on the benefits of family social support for reducing stress and family conflict, which strengthens the maternal-child bond. We aim to extend this research by studying the effects of family and partner support on the mother-infant relationship in adult mothers. We hypothesize that social support postpartum from the mothers’ family, the mothers’ biological mother, and the infant’s father will carry over into the mother-child relationship and result in benefits in maternal sensitivity and infant engagement. Eighteen mothers and their two to eight month old infants were recruited. Mothers reported the social support received from their family, mother, and infant’s father and participated in a play session with their infant in the laboratory. Videos of the maternal-child interaction were then coded for mother’s sensitivity to nondistress, intrusiveness, detachment, stimulation of development, positive regard, negative regard, and flatness of affect and the infant’s positive and negative mood, sustained attention with objects, and positive engagement with their mother. As hypothesized, mothers with more support from their mothers more likely to have increased positive regard and decreased negative regard for her infant. Contrary to our prediction, however, mothers with more social support from the infant’s father tended to be less sensitive to their nondistressed infant and used less stimulation of development during play. Infant outcomes were unrelated to the social support measures.



**Poster 19****Accommodating Hyperaroused Information Processing in Persons at Risk for Alcoholism****Presenter(s):** Kellianne Clark, Jaclyn Cutler**Advisor(s):** Dr. Steven Schandler

In the search for the factors related to the heightened alcoholism risk in adult children of alcoholics (ACOA), it has been reported that these persons possess a high incidence of attention deficit disorders (ADD) as determined by clinical assessment instruments. However, investigations of alcoholism risk and ADD indicate that, in contrast to the hypoarousal model of ADD, the ACOA's attention problems represent hyperarousal of attention mechanisms resulting in reduced ability to select and encode relevant information. If true, then unlike persons with ADD, clinical and cognitive assessments of ACOAs would benefit if the ACOA was provided with more time to encode and respond to the probe information.

The subjects were 188 healthy nonalcoholic volunteers. Ninety-four subjects were ACOA and 94 subjects were not adult children of alcoholics (NACOA). Visuospatial processing was assessed using the Brief Visuospatial Memory Test-Revised because previous research has found that visuospatial processing is particularly sensitive to ACOA/NACOA status. For both groups, one-half the subjects received a standard testing time interval while the other half received twice the testing time interval.

Compared to NACOA, ACOAs showed significantly reduced test performance in the standard test time condition. While increased test time resulted in slight NACOA performance gains, ACOAs showed significant performance gains. When provided the extended testing time, ACOA performance did not differ from NACOA.

The results show that ACOA's information processing is disrupted by hyperarousal in attention and orienting systems and demonstrates the utility of direct evaluations of these operations to understand the nature of the disruptions.

**Poster 20****Do Happy and Optimistic People Eat Healthier?****Presenter(s):** Karynna Okabe-Miyamoto, Alexandra Macias, Roxy Nouri, Olivia Silke, Bailey Waln, Jin Wen**Advisor(s):** Dr. Julia Boehm

This research seeks to investigate whether positive psychological well-being (e.g., positive emotions, optimism) motivates healthy behavior - namely, how nutritiously individuals eat. To investigate this question, we are conducting a 7-week study in which 150 middle aged men and women will be randomly assigned to one of three conditions: 1) positive emotion, in which participants write about a past happy event; 2) optimism, in which participants write about their future life goals; and 3) control, in which participants write about their day's activities. We hypothesize that participants in the positive emotion and optimism conditions will be more likely to eat healthier food than participants in the control condition. Food consumption will be assessed by asking participants to choose between healthy (i.e., fruit) and unhealthy (i.e., chocolate) snacks in the laboratory. Thus far, 20 individuals have participated in the study. Preliminary results suggest that participants in the positive emotion ( $M = 8.43$ ,  $SD = 1.51$ ) and optimism conditions ( $M = 8.33$ ,  $SD = 1.69$ ) report more positivity after the intervention than participants in the control condition ( $M = 7.13$ ,  $SD = 2.59$ ). However, initial food choices are not consistent with hypotheses. Eight individuals in the positive emotion and optimism conditions chose fruit and 4 chose dessert. Among individuals in the control condition, 7 chose fruit and 1 chose dessert. Firm conclusions cannot be made until additional participants are recruited. Once data collection is finished, we will have a greater understanding of the relationship between positive psychological well-being and food consumption.

## **Poster 21**

### **Increasing Learning Response Evaluation Time Allows More Effective Allocation of Information Processing Resources in Persons at Risk for Alcoholism**

**Presenter(s):** Brooke Snelgrove, Lilian Andrade, Taylor Stephens, Reyn Yoshiura

**Advisor(s):** Dr. Steven Schandler

Parental history of alcoholism is associated with increased alcoholism risk in their children. One factor increasing alcoholism risk is the presence of attention and information encoding disruptions in adult children of alcoholics (ACOA) compared to persons who are not ACOAs (NACOA). Alcohol ingestion reduces these disruptions in ACOAs. This study examined whether alterations of information processing parameters can function like alcohol and reduce processing disruptions experienced by the ACOA.

Participants were 80 ACOAs and 80 NACOA, partitioned into four groups of 20 participants. During learning, subjects studied presentations of stimulus items followed by the presentation of associated response items. The task was to learn which stimulus was associated with which response item. Based on information processing parameters, the study used a 2.5 second learning response period and either a short (3.0 second) or a long (5.0 second) period for evaluating whether the response was or was not correct. Within each group, one-half of the subjects received a short and one-half received a long response evaluation period. In addition to learning performance, information processing was evaluated using psychophysiological-indices of resource allocation in the central nervous system.

Whereas the learning performance of the ACOAs during the short review periods was significantly below the performance of the NACOA, the groups did not significantly differ during long review period conditions. The findings support the implementation of “tuning” information processing parameters to compensate for processing disruptions related to ACOA-status. This outcome could allow development of focused preventive strategies for persons at higher risk for alcoholism.

## **Poster 22**

### **Maternal Employment Predicts Maternal Stimulation of Development and Infant Mood in Play**

**Presenter(s):** Bonnie Truong, Mariel Barojas

**Advisor(s):** Dr. Jennifer A. Hahn-Holbrook

Despite how common it is for mothers to work shortly after giving birth, little is known about how maternal employment affects mother-infant interactions. Previous research on how maternal employment may affect maternal sensitivity and infant health has been inconclusive, and this study further examines it. We hypothesize that if a mother is employed, then she will be less sensitive to her infant in play than an unemployed mother. It is also predicted that if a mother is employed, then her infant will display a more negative mood and engage less with the mother. Fifteen mothers with infants between two and eight months old were recruited to participate and asked to indicate their employment status as employed or unemployed. In the laboratory, participants played with their infant for 12 minutes, first using a toy and then engaging in free play. The National Institute of Children's Health and Human Development's coding manual was used to assess maternal sensitivity by mothers' responsiveness towards nondistress, intrusiveness, detachment, stimulation of development, positive and negative regard for her infant, and flatness of affect, in addition to infants' positive and negative mood, engagement with the mother, and attention with novel objects during play. The results show that employed mothers used less stimulation of development, but only when using a toy during play. Infants of employed mothers were significantly less likely to be in a positive mood and tended to be in a more negative mood. Preliminary findings suggest that maternal employment might negatively impact mother-infant interactions.

**Poster 23****Self-Complexity and Personality Integration: An Examination of Fractal Distributions in MMPI-2 Reaction Times**

**Presenter(s):** Kathryn Wann, Catherine Asuncion, Otto Cadsky, Kyle Horst, Andrea Kavajian

**Advisor(s):** Dr. David Pincus

The connection between self-complexity and psychopathology has been studied for more than three decades, yet no conclusive results have been obtained. Researchers hope to understand the roles self complexity and the processes underlying resilience in terms of buffers against various stressors and psychopathologies. The aim of this study was to examine the question of whether or not flexibility and integrity in personality, which we used as the determinants for evaluating self-complexity, are related to psychopathology. Self-complexity was determined by producing an inverse fractal dimension score of frequency distribution, while psychopathology was determined via the scores and the distribution of response times of 296 participants within a forensic adult population on the 587 item MMPI-2.

Two hypotheses were confirmed through this study, the first being that there are significant fits to a fat tail distribution (log linear, inverse power law), and the second being that there are significant correlations between complexity of distribution and psychopathology scores. The results showed that 19 of the 38 expected correlations regarding rigidity were significant, while 16 of 38 were significant related to structural integrity. This may be a more effective method in measuring self-complexity, which in turn could lead to a simpler procedure for assessing risk for psychopathology, as it appears that the self is a complex system similar to other complex systems throughout the life sciences.

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**SCHMID COLLEGE, BIOCHEMISTRY & MOLECULAR BIOLOGY**

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**Poster 24****Mass distribution and surface area trends of size-fractionated arsenic-bearing mine tailings**

**Presenter(s):** Kory Cablay

**Advisor(s):** Dr. Christopher Kim

California has a well-documented history of mining activity. The processes associated with mining for precious metals has yielded an increase in toxic inorganic arsenic levels in the mine wastes. Due to the relatively arid climate, the mobility and bioaccessibility of arsenic in these wastes are controlled by the size of the particle and arsenic concentration. This experiment intended to establish size and surface area trends in order understand the impact various mine wastes have on local communities. Three samples from the Randsburg Historic Mining District in Southern CA were used: Marigold East tailings, Marigold East waste rock, and Calico Mine tailings. Tailing samples were crushed and treated with various chemicals to extract precious metals while waste rock samples were mined but not processed. Samples were sieved into 11 distinct size fractions then analyzed for reactive surface area. Results indicated that the waste rock sample had a direct trend between its size and mass distribution with a max distribution of mass in the >2830um range. There was a direct trend between particle size and surface area in which the surface area increased with increasing particle size. Both tailings samples exhibited a unimodal trend between size and mass distribution with the max distribution of mass in the 74-45um range, however tailing samples exhibited alternate trends with surface area. The results indicated that there is an adverse impact to local communities near tailing samples due to the increase in bioaccessibility of toxic arsenic.

**Poster 25****Novel immune-deficient transgenic AD model exhibits altered pathogenesis with increased amyloid pathology and neuroinflammation**

**Presenter(s):** Lauren Camargo, Dr. Mathew Blurton-Jones, Samuel Marsh

**Advisor(s):** Dr. Elaine Schwartz

Previous studies have determined the innate immune system's role in Alzheimer disease (AD), however there is a lack of data to assess how the adaptive immune system impacts AD pathogenesis.

Therefore, in order to examine the adaptive immune system's impact in AD a novel immune-deficient transgenic AD model was produced through breeding of 5xfAD mice with Rag2-/il2ry/- double knockouts. This new model referred to as Rag-5xfAD, lacks B-cells, T-cells, and Natural Killer (NK) cells and expressed the mutant forms of amyloid precursor protein and presenilin-1.

Examination of AD pathogenesis revealed a significant increase of soluble and insoluble beta-amyloid (A $\beta$ ) in Rag-5xfAD mice in comparison to strain-matched immune-intact AD mice. Additionally, Rag-5xfAD unexpectedly had an increase in pro-inflammatory cytokines versus the 5xfAD mice. Further analysis of the neuropathology and inflammatory state of the Rag-5xfAD mice is ongoing.

Conclusively, these results should help to further the understanding of the interplay between adaptive and innate immune system and pathogenesis of AD.

**Poster 26****Exploring Microbial Decomposition in Peatlands**

**Presenter(s):** Kristin Gabriel

**Advisor(s):** Dr. Jason Keller, Dr. Cassandra Medvedef

Peatlands are wetlands that store approximately one-third of the global soil carbon and are important sources of greenhouse gas methane. Despite their importance in the global carbon cycle, there are still fundamental gaps in our understanding of microbial decomposition in peatlands. In particular, the microbial processes that regulate the production of carbon dioxide and methane are not well understood. Here, we present results from two experiments exploring microbial decomposition in peatland soils.

In the first experiment, we investigated the microbial respiration of soil organic matter (in place of oxygen) in peatland microcosms that allowed us to manipulate water-table levels. Measurements of electron shuttling capacity demonstrated that SOM became progressively reduced during flooding and oxidized during periods of water-table drawdown. The transfer of electrons to and from SOM was reversible and sustainable over successive redox cycles, and mediated the production of methane.

In the second experiment, we traced the fate of carbon in peatland soils amended with three levels of glucose (0, 2 and 4 mM). Measurements of glucose, carbon dioxide production and methane production could not account for a substantial fraction of the carbon in the initial glucose amendments. We hypothesize that the missing carbon was likely pooling as fermentation intermediates, including acetate.

Taken together, these findings suggest that water-table level is an important control on anaerobic carbon cycling and that further examination of unaccounted for carbon might provide insights into the pathways of microbial decomposition in peatlands.

**Poster 27****Sensitization Within Species and Across Evolution****Presenter(s):** Jordan Gilmore**Advisor(s):** Dr. William Wright

Decades of intensive research on sensitization (an increase in defensive withdrawal responses to innocuous stimuli after application of a noxious stimulus) in *Aplysia californica*, have established specific neural mechanisms for learning. A key step in these processes is activation of a stimulatory ( $G_s$ ) G-protein. Once stimulated, the  $G_s$  protein leads to increases in the second messenger, cyclic adenosine monophosphate (cAMP). Increased cAMP increases transmitter release between sensory and motor neurons of withdrawal, thereby causing sensitization. Interestingly, there are no published accounts in *Aplysia* of any role of the inhibitory " $G_i$ " protein, a related G-protein that decreases cAMP.

The present research follows up on earlier work in the Wright lab demonstrating that a relative of *Aplysia*, *Dolabrifera dolabrifera*, has lost sensitization since it diverged from a common ancestor with *Aplysia*. Furthermore, *Dolabrifera*'s sensory neurons no longer respond to serotonin, even though the rest of the nervous system has equivalent serotonin concentration as *Aplysia*. We hypothesized that the  $G_i$  protein, conspicuously absent from research on *Aplysia* may be responsible for suppression of sensitization in *Dolabrifera*. We tested this hypothesis by administering Pertussis toxin (PTX), a highly selective  $G_i$  inhibitor. Such inhibition should cancel the inhibitory action of  $G_i$ , thereby rescuing the sensitization phenotype.

We found a non-significant trend that a low (2 ug/ml) PTX dose injected into individuals of *Dolabrifera* rescued sensitization after a noxious electrical shock. PTX did not increase sensitization in *Aplysia*. Although high concentrations and larger sample sizes have yet to be studied, our hypothesis was not strongly supported.

**Poster 28****Engineered PLGA Nanoparticles for Delivery of siRNA in Breast Cancer Cells****Presenter(s):** Sydney Pong, Dr. Samit Shah**Advisor(s):** Dr. Elaine Schwartz

Small interfering RNAs have been an emerging medical treatment for molecular based diseases as they are capable of gene-specific knockdown. Appropriate and efficient delivery remains one of the biggest challenges in the development of siRNA as an anti-cancer treatment. Nanoparticles containing siRNA were characterized and the efficacy of various peptides in the transfection of the nanoparticles were tested. A gene silencing assay was developed in order to determine the effect of siRNA therapeutics on gene functionality in breast cancer cells.

**Poster 29****Chromatographic and Mass Spectral****Identification of Discovered and Novel Cannabimimetic Indole Derivatives****Presenter(s):** Jonathan Redrico**Advisor(s):** Dr. John Krstenansky of KGI

Through combinatorial syntheses of various N-alkylated indole intermediates with several acyl chlorides, twenty different cannabimimetic compounds were prepared for characterization by gas chromatography – mass spectrometry. This data serves to contribute to chromatographic spectral libraries for discovered synthetic cannabinoids where lacking, which may be utilized further as a resource for identification in drug forensics. Of the twenty cannabinoids synthesized, six were novel compounds. Samples of these compounds are planned to be sent to Marshall University to determine affinities for the CB1 receptor by a cell-based assay. Prospective studies also include the development of forensic field test kits and Raman spectral libraries utilizing these spectral characterizations.

**Poster 30****Dancing Through Life: Allosteric Transitions and Structural Analysis of Hsp70 and Hsp10 Chaperone Proteins****Presenter(s):** Gabrielle Stetz**Advisor(s):** Dr. Gennady Verkhivker

The molecular chaperone protein Hsp70 is centrally involved in cellular homeostasis by assisting in the folding and degradation of protein substrates. Hsp70 is joined by co-chaperones, such as Hsp110, which contribute to specialized tasks of the Hsp70 complex. Imbalances of this heat shock protein system are believed to be involved with the deregulation of cancer pathways and other human diseases. Better understanding of how these heat shock proteins work at the molecular level, which has been investigated using molecular docking tools, will give more clues about biological function. Simulating the formation and function of Hsp70 based chaperone complexes could provide new information about the control and regulation of these processes and well as new areas of exploration for drug discovery.

**Poster 31****Quantified Collagen Fiber Orientation in Bovine Pericardium and its Implications in Bioprosthetic Heart Valve Construction****Presenter(s):** Jonathan Woo**Advisor(s):** Dr. Elaine Schwartz

The effectiveness of image processing techniques was examined for the purpose of quantifying collagen fiber orientation in Bovine pericardium. This tissue was selected for its widespread use in the production of bioprosthetic heart valves. Separate algorithms using Hough and Fourier transformations were used to detect and quantify a consensus angle of collagen fibers in an image file generated from a light microscope. This quantification method was aimed at circumventing polarized light microscopy techniques to obtain data. Sequential sections of bovine pericardial tissue were tangentially sectioned and stained in 30-micron increments using Hematoxylin and Eosin prior to microscopy. Slide images were captured for analysis, and subsequent computational analysis was conducted to determine a quantified rotation in collagen orientation using depth and angle parameters. The results showed a definite trend in fiber orientation detection for both algorithms. Further investigation of the tensile and structural properties of varying degrees of collagen rotation used in the construction of bioprosthetic heart valves has the potential to improve the current state of artificial heart valve technology. The characterization methodology presented in this study could also be applied to materials used in other fields of research.

### Poster 32

#### **How the Presence of Plastic in the North Pacific Gyre Affects the Growth of *Thalassiosira* through Remote Sensing and Laboratory Replication.**

**Presenter(s):** Jordynn Brennan

**Advisor(s):** Dr. Hesham El-Askary

Through the use of remote sensing, we are able to determine the approximate location of the garbage patch in the North Pacific Gyre. Though remote sensing does not penetrate the surface of the ocean, monthly satellite images can be analyzed to determine the rate of growth or rate of decrease of certain parameters, such as atmospheric gases, phytoplankton, and dissolved organic matter. Over the past decade, data from the Goddard Earth Sciences Data and Information Services Center (Giovanni program) has shown a significant increase in dissolved organic matter and chlorophyll a content in the area of the North Pacific Garbage Patch (180-110° W, 40-45°N) (Bograd, DiLorenzo). The areas with increased chlorophyll are likely to show the regional location of the subject area (Villareal). By using laboratory techniques, we will be able to determine whether the presence of plastic affects the growth of phytoplankton and diatoms in the area.

The research conducted will study the effects of plastic on algae growth, focusing on the diatoms, *Thalassiosira*, which are found in the North Pacific Gyre. The question is whether algae increase is due to plastic, or the visibility through remote sensing is increased due to the algae using plastic as a substrate. The focus on the effects of plastic on algae will be directed under normal Pacific Ocean conditions; however, without the upwelling and currents seen in the area.

### Poster 33

#### **Analysis of Markers for Prostate Field Cancerization**

**Presenter(s):** Emily Frisch, Kristin Gabriel

**Advisor(s):** Dr. Marco Bisoffi

The diagnosis of prostate cancer (adenocarcinoma) relies on screening for elevated prostate-specific antigen (PSA) in blood samples and on digital rectal examination (DRE). With high PSA levels and/or abnormal DRE, physicians recommend a biopsy, which often misses the location of the adenocarcinoma and results in false negatives. Previous studies have shown expression of the key transcription factor early growth response 1 (EGR-1), the pro-survival factor macrophage inhibitor cytokine 1 (MIC-1), and the growth stimulatory platelet derived growth factor A (PDGF-A) to be up-regulated in histologically normal tissues 1 centimeter adjacent to prostate adenocarcinomas. We hypothesize that tumors emerge from “field cancerized” tissues, and while such tissues appear normal under gross histological examination, further analysis reveals a molecular history that adds insight into development of oncogenesis. We aim to explore EGR-1, MIC-1, and PDGF-A as essential markers of field cancerization and prostate oncogenesis that may also provide an early detection of premalignant cells by biochemical and molecular biological methods. We present here data from our ongoing investigations into the effect of tissue microenvironmental factors involved in tumorigenesis, for example oxidative stress and telomere-mediated genomic instability in human prostate cancer cell models. We also present data on the regulation of expression of MIC-1 and PDGF-A by EGR-1 using human prostate cancer cell models.

**Poster 34****The non-lethal effects of climate change on the territoriality of *Lottia gigantea*****Presenter(s):** Tracey Gunanto, Christina Chavez, Jessica Martinez**Advisor(s):** Dr. William Wright

The intertidal zone has been described as ground zero for global warming. Here, the owl limpet, *Lottia gigantea*, adapted to the cool ocean temperatures, must withstand a few hours of baking sun during day-time low tides. This hardship is predicted to increase in frequency and severity in the future as the globe warms. Our research hypothesized that heat events compromise territorial behavior of *L. gigantea*. All observations and experiments were performed at Inspiration Point near Newport Beach, California. We measured the natural radiant temperature of tagged limpets during day-time low tides using a field-calibrated infrared “thermogun”. We also experimentally amplified radiant temperatures of limpets by 7-12°C using mirrors to reflect the sun’s heat. Control limpets were not heated. We then observed the behavior (Territorial, Retreat, or No Response) of the same limpets during high-low tide (0.5-0.6m ) when limpets were washed by the sea. Territorial encounters were staged by using “bait limpets” placed in the path of tested limpets to induce a response. We found that high radiant temperature is correlated with decreased movement, responsiveness, and aggressiveness of limpets. By contrast, experimental evidence of high temperatures reducing territoriality was weak, likely because of the short time span of heat amplification. *Lottia gigantea* is a bona fide “ecosystem engineer” whose territorial behavior shapes the rocky intertidal community of invertebrates. Our data show that local heat events compromise the territorial behavior of *L. gigantea*, which may consequently alter the rocky intertidal community.

**Poster 35****Assessment of the Effects of Caffeine, Gallic Acid, and Epigallocatechin-3-gallate on Cell Inhibition, PIM-3 and E. cadherin Protein Levels in Two Lines of Pancreatic Cancer Cells****Presenter(s):** Lena Haddad**Advisor(s):** Dr. Melissa Rowland-Goldsmith

According to the American Cancer Society, pancreatic cancer is currently the fourth leading cause of cancer related deaths in the United States. In addition to being an exceptionally aggressive form of cancer, it is particularly difficult to treat because it is usually diagnosed in late stages after the onset of metastasis (1). Consequently, the current treatments used, including chemotherapy and radiation, have been rendered ineffective (2). As a result, focus has been placed on using dietary alternatives which are known to possess chemopreventive properties (3). Previous studies have indicated that Gallic acid (an important phytochemical in pomegranates) and Epigallocatechin-3-Gallate (the primary catechin in Green Tea) have inhibited cancer cell growth in a variety of cancer cell types (4-9). Similarly, studies have shown that caffeine, the primary compound found in coffee beans, has been successful in stimulating apoptosis in endometrial, liver, skin, breast, prostate, colorectal, oral, and bone cancers (10-20). Although these compounds have individually demonstrated great positive effects there has, until now, never been a study done to compare the effects of these compounds both individually and in combination on pancreatic cancer cells. The purpose of this research project is to identify whether caffeine, Gallic Acid (GA), or Epigallocatechin-3-Gallate (EGC3G) is the most effective cancer fighting agent. Once we have ascertained the two most effective compounds, combination studies will be done to see what effect the combination treatments have on pancreatic cancer cell inhibition and the PIM-3 and E. cadherin protein levels, relative to the individual treatments.



**Poster 36**

**TOXICITY AND COSMESIS OUTCOMES FOR SINGLE FRACTION INTRA-OPERATIVE ELECTRON RADIOTHERAPY (IOERT) FOR BREAST CANCER**

**Presenter(s):** Monica Hanna, Robert B. Ash, MD, Wesley Babaran, MD, Michele M. Carpenter, MD, Afshin Forouzannia, MD, Jay K. Harness, MD, Brian Kaltenecker, Snehith Maddula, Lawrence D. Wagman, MD, and Venita L. Williams, MD

**Advisor(s):** Dr. Kenneth Sumida

Background: Adjuvant radiation therapy is proven to reduce local recurrence in patients with early stage breast cancer. To reduce toxicity, improve geographic accuracy, and reduce treatment time, IOERT can be utilized as an alternative to external beam radiation therapy. The study's objective was to determine the short term toxicity and cosmesis profile of single fraction IOERT given as definitive treatment in a community setting. Materials and Methods: From Mar 2012 to Jul 2014, 84 patients (3

bilateral), ages 45-91 y.o. with stage 0-II were treated with IOERT (Mobetron, IntraOp Medical, Sunnyvale, CA). A single 21 Gy fraction was administered to the tumor bed after resection. IOERT was delivered using 4.5 – 6 cm applicators with electron energies from 6-12 MeV. At 2w, 6mo and 12mo, toxicity was assessed according to CTCAE Version 4.0 (range 0-4) and cosmesis based on a scale derived for national trials. Results: The median pathologic tumor size was 13 mm (4 tumors > 25mm) with 34 tumors being IDC, 4 ILC, 20 DCIS, and 29 mixed histologies. After the initial resection with IOERT, 85 breasts had a negative margin. Two required re-excision due to positive margins. 65 SLN biopsies were completed, 61 were negative, 4 positive (1 completion ALND). Median follow up was 57.1 weeks.

Toxicity (Grade at 2 weeks, 6 months, and 12 months in %):

0: 49, 69, 62

1: 44, 29, 35

2: 7, 2, 3

Cosmesis(Appearance at 2 weeks, 6 months, 12 months in %):

Excellent: 71, 86, 79

Good: 28, 14, 21

Fair: 1, 0, 0

\*No patients had a toxicity of 3 or 4; or a cosmesis of poor.

Conclusion: Single fraction IOERT was well tolerated by all patients with no grade 3+ toxicity up to 12 months. At one year, 97% of patients had 0-1 grade toxicity and 100% of patients had excellent or good cosmesis. This treatment, consistent with current reports, meets critical criteria for incorporation into practice and reduces treatment by 3-6 weeks.

**Poster 37****Early growth response 1 expression in prostate tissues indicates field cancerization****Presenter(s):** Dor Shoshan**Advisor(s):** Dr. Marco Bisoffi

Prostate field cancerization (or field effect) is characterized by the presence of molecular alterations in histologically normal tissues adjacent to adenocarcinomas. Accordingly, our research indicates deregulated expression of several proteins that define this type of molecular pathology. The scope of the present study was to determine the expression of the key transcription factor and potential marker of field cancerization early growth response 1 (EGR-1) in human prostate tissues derived from prostatectomies and biopsy cores.

EGR-1 was detected by immunofluorescence using a polyclonal anti-human EGR-1 and Alexa Fluor 488-conjugated secondary antibodies. EGR-1 expression was quantitated by determining the pixel count per area (signal intensity) in digitized images using ImageJ software. In this proof-of-concept study, a total of 4 cases consisting each of prostatectomy and matched biopsy material, either containing or devoid of cancerous cells (malignant or benign) were analyzed.

Expression levels and data distribution of EGR-1 were similar by region of interest analysis between malignant and benign prostatectomies ( $p = 0.28$ ), but different between malignant and benign biopsies ( $p < 0.05$ ). EGR-1 protein expression is similar in cancerous (malignant) and in histologically normal adjacent (benign) tissues from both prostatectomy and biopsy specimens. This supports the concept of field cancerization and indicates a potential organ-wide molecular change, regardless of the presence or absence of cancer cells. Markers of field cancerization, such as EGR-1, could be exploited as pre-surgical disease indicators in false negative biopsies, identify areas of repeat biopsy, and add molecular information to surgical margins.

**Poster 38****Effect of exposure time on Cu(II) adsorption and retention to iron oxyhydroxide nanoparticles****Presenter(s):** Anthony Torossian, Jack Jacobs**Advisor(s):** Dr. Christopher Kim

Iron oxyhydroxides form naturally, often as nanoscale particles, in surface aquatic systems and represent both a powerful natural attenuation process and a potential remediation strategy for the retention and sequestration of dissolved metals in solution. This is of particular importance in mining environments due to elevated metal concentrations, acid mine drainage, and the health issues that may arise with exposure to potentially toxic metals. Such trace elements are readily transported in water supplies, increasing the geographical extent of their contamination. While metal adsorption processes to mineral surfaces have been extensively studied, desorption processes inform the long-term stability of sorbed metals but are considerably less well studied.

The adsorption, and subsequent desorption, of Cu(II) to/from unaggregated iron oxyhydroxide nanoparticles was measured in real time through the use of a copper ion selective electrode (ISE) at varying time intervals. Trials were conducted at 1 hour, 4 hour, 48 hour, 1 week, 2 week, and 4-week intervals in triplicate trials. Adsorption of Cu(II) was immediate and typically complete within one hour, with kinetic adsorption rates generally consistent at  $1597.72 \pm 302.67$  %/min. However, the kinetic desorption rate varied inversely with adsorption time, ranging from 534.45 to 1781.29 %/min. Therefore, the adsorption rate of trials are generally similar whereas the desorption rate decreases as a function of time. Additionally, the percent of Cu(II) retained by the iron oxyhydroxide nanoparticles increases as the adsorption time increases due to longer exposure. Extended X-ray adsorption fine structure (EXAFS) spectroscopy suggests the formation of more stable Cu(II) sorption complexes as the adsorption time increases. As a result, desorption rates of longer trials are noticeably slower than shorter trials because more strongly bound surface complexes are formed, and thus harder to desorb. This has implications for the fate and transport of Cu(II) and similar dissolved metals in aquatic systems.

**SCHMID COLLEGE, CHEMISTRY**

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**Poster 39****Analysis of carbon cycling and optical properties of dissolved organic matter in northern peatlands****Presenter(s):** Jenny Bowen, Cassandra Medvedeff**Advisor(s):** Dr. Jason Keller

Peatlands are important ecosystems in the global carbon cycle storing large quantities of terrestrial soil carbon and producing the greenhouse gases CO<sub>2</sub> and CH<sub>4</sub>. Dissolved organic matter is frequently a substrate for anaerobic microbial respiration resulting in CO<sub>2</sub> and CH<sub>4</sub> production. The objective of this study was to determine the relationship between microbial respiration and dissolved organic matter chemical properties. Peat from three sites varying in CO<sub>2</sub> and CH<sub>4</sub> dynamics (in order of increasing production: Zim Bog, S1 Bog, and Bog Lake Fen) was incubated anaerobically at 18°C and monitored for CO<sub>2</sub> and CH<sub>4</sub> production over a 56-day period. In addition, the optical properties of chromophoric dissolved organic matter (CDOM) were measured for each pore water sample to assess microbial decomposition and the degree of humification.

Production of CO<sub>2</sub> and CH<sub>4</sub> were greatest at Bog Lake, followed by S1 and Zim, suggesting a range in soil decomposition across sites. Positive correlations between CO<sub>2</sub> production and humic-like CDOM were observed at all sites. Decreasing humification correlated with increasing CO<sub>2</sub> production in S1 and Zim. Positive correlations between CH<sub>4</sub> production and protein-like CDOM were evident in S1 and Bog Lake; however, Zim showed a similar positive correlation with CO<sub>2</sub> production likely due to a 5-week lag phase of CH<sub>4</sub> production. These results suggest that dissolved organic matter chemical properties may provide important insights into the process of microbial decomposition in northern peatlands.

**Poster 40****WITHDRAWN**

### Poster 41

#### Full Adder Design and Analysis

**Presenter(s):** Garrett Isaacs, Josh Gotham, Earl Huskey

**Advisor(s):** Dr. Peiyi Zhao

Our goal is to measure the area, delay, power consumption, and capacitance of two separate designs for a full adder; an expanded and a compact layout (in terms of area). This is to determine if the industry standard of the compact design is really more beneficial than alternative designs.

### Poster 42

#### Smart Dresser

**Presenter(s):** Aneesha Prakash, Mirabel Rice, Justine Stewart, Jennifer Re

**Advisor(s):** Dr. Erik Linstead

Smart Dresser is an application designed to help young people with autism by making it easier to select their daily outfit. The app is designed for middle-schoolers to early high-schoolers. Smart Dresser empowers the user by helping them make their own fashion choices while also offering guidance regarding social norms. For example, the suggestions are sensitive to complementary colors and weather appropriate attire. The app provides the user with two options: they can shuffle through pre-built outfit selections or have the app construct an outfit around a specific item. The outfits are selected by an algorithm that takes into consideration the colors and styles of the various clothing items, when the outfit was last worn, the user's favorite items, and the current weather. Smart Dresser also allows users to view and edit the items in their closet, keep track of their favorite outfits, and view their outfit history. Because some individuals on the autism spectrum are prone to sensory overload symptoms, the app uses soft color palette. Complicated menus were avoided for the sake of simplicity and intuitiveness. These features in the UI design make the app pleasing to the eye and easily navigatable.

### Poster 43

#### Detecting, repairing and preventing mobile applications bugs

**Presenter(s):** Yoko Yamaguchi

**Advisor(s):** Dr. Adrian Nistor

As the use of mobile applications is gradually taking over desktop applications, the demand for the mobile applications is growing rapidly. In order to design effective techniques for developing mobile applications and to improve user experience, we need superior understanding of how bugs affect mobile applications. Unfortunately, because mobile applications are a new development, there is a lack of comprehension of how mobile application bugs appear and of what their characteristics are, especially compared to the well-understood bugs for desktop application. In this paper, we study how bugs are detected, repaired, and prevented in real-world mobile applications. We construct our study based on 10 popular Android code bases. We chose code bases that have substantially high numbers of bug reports. In order to identify bugs that were fixed in the source code, we first download the code-change log for each code base. Then, we obtain every bug ID number from the log files. We use the wget tool and the git system to automatically obtain the bug reports and the bug patches, respectively. Finally, we sort different bug patches that are submitted for each commit and compare the results with the previous version. Ultimately, we are able to identify what mobile application bugs look like and their similarities and differences compared to desktop bugs.

### Poster 44

#### **Irvine Ranch Water District Natural Treatment System**

**Presenter(s):** Luis Genis, Alfredo Alfaro, Casey Louis, Ian Swift

**Advisor(s):** Dr. Jason Keller

The Natural Treatment System is a tool used to complement ongoing County and City-led activities for TMDL and NPDES compliance. NTS are built to improve water quality in flows and runoff from smaller storms. We will be conducting research and determine if the NTS sites are actually serving there purpose in removing pollutants: pathogens, nitrogen and phosphorus.

### Poster 45

#### **The Effect of Arsenic Exposure on Feeding Habits of Hermit Crabs**

**Presenter(s):** Natalie Kobayashi

**Advisor(s):** Dr. Christopher Kim

Contaminants that affect marine ecosystems have origins from processes associated with mining and the burning of fossil fuels. This study examines the degree to which arsenic concentrations affect the feeding patterns of hermit crabs to suggest the extent of impact the substance has on a marine ecosystem. Exploring the relationship between the amounts of arsenic exposed to hermit crabs and the amount retained defines the bioavailability of arsenic. The study also aims to correlate the arsenic concentrations in the tissue and the mass of consumed pellet after two weeks of exposure. We hypothesize that when the hermit crabs are exposed to Arsenic, they will consume less pellet than before exposure and will retain a higher concentration of arsenic. We expect to see a linear relationship when plotting consumed pellet as a function of arsenic retention. The sixteen crabs are selected from a larger group on the criteria of completing continuous 30 minutes of feeding. All crabs are captured from the same tide pool. After completing the initial feeding test, crabs are placed in control or Arsenic jars. They are observed and left undisrupted for two weeks. After this, a final 10 min feeding test takes place, recording the mass of their meal. The crabs are frozen using liquid nitrogen until they are ready for digestion in 70% nitric acid solution. Although the experiment is still in process, a statistically significant difference in the mass of pellet consumed has been established between in an exposed crab (lower) than a control crab (higher). The experiment is still looking to perfect the feeding test and thus find a concrete difference between mass consumed in a feeding test and concentration of arsenic.

**Poster 46****The Importance of Methylophilic Methanogenesis in Northern Minnesota Peatlands****Presenter(s):** Nikole Meade, Cassandra Medvedeff**Advisor(s):** Dr. Jason Keller

Peatlands store one-third of the world's terrestrial soil carbon and are among the largest natural sources of the greenhouse gas methane (CH<sub>4</sub>) to the atmosphere. It is generally assumed that CH<sub>4</sub> in peatlands is produced only through the splitting of acetate or the reduction of CO<sub>2</sub> (using H<sub>2</sub>) through the acetoclastic and hydrogenotrophic methanogenic pathways, respectively. While the production of CH<sub>4</sub> using other substrates (e.g., methanol and other methylated compounds) is possible, these pathways are assumed to be unimportant in natural ecosystems; although, this assumption is rarely tested. Our study objective was to determine if methylophilic methanogenesis contributes to CH<sub>4</sub> production in three Northern Minnesota peatland soils (Bog Lake Fen, Zim Bog, and S1 Bog). Peat from each site was incubated anaerobically at 18°C with <sup>13</sup>C-labeled methylated (methanol, methylamine, and dimethyl sulfide) and traditional (acetate and sodium bicarbonate) methanogenic substrates. CH<sub>4</sub> and CO<sub>2</sub> production were monitored throughout the incubation and additional samples were analyzed by Florida State University for <sup>13</sup>C-CH<sub>4</sub> and <sup>13</sup>C-CO<sub>2</sub>. Substrate addition had no effect on total CH<sub>4</sub> production in Bog Lake Fen and Zim Bog; however, S1 Bog showed suppression of CH<sub>4</sub> in response to all substrate amendments. Isotopic data suggest that both methylated and traditional methanogenic substrates were utilized by methanogens in Bog Lake Fen, with the greatest enrichment from acetate and methanol. In Zim Bog, acetate and methanol also resulted in the greatest enrichment of measured <sup>13</sup>C-CH<sub>4</sub>. These data suggest, for the first time, that methylophilic methanogenesis is an important contributor to CH<sub>4</sub> production in peatland ecosystems.

**Poster 47****A Trend Analysis of Aerosol Related Parameters and their Relation to Precipitation Variability in Arizona****Presenter(s):** Krista Rasmussen**Advisor(s):** Dr. Hesham El-Askary

The Objective of our research was to investigate if there is a correlation between haboob outbreaks, resulting in large dust storms over Arizona, and the precipitation patterns over the region. We examined the extent of this correlation over the last ten years using satellite daily observations to highlight the possibility of better forecasts for precipitation events, such as monsoon thunderstorms. Our research indicates that haboobs increase precipitation in the Sonoran desert of Arizona because the dust particles are large enough to act as cloud condensation nuclei (CCN). Data was collected from five locations spread out over the state of Arizona for the years of 2002-2012. The method we utilized was data oriented and required a quantitative analytical approach, where aerosol optical depth (AOD) data from NASA's Moderate Resolution Imaging Spectroradiometer (MODIS) on the Terra satellite was collected and analyzed. Rainfall data from NASA's Tropical Rainfall Measuring Mission (TRMM) satellite was collected and analyzed in coherence with the aerosol data. By manipulating this data into a time-series form, we determined the direct correlation between dust and precipitation events. It was found that increased dusty events increased precipitation with an average of two months lag time. Each of the five locations indicated that a strong correlation does exist between the AOD, Angstrom exponent, and precipitation data, indicating that there are complex interactions occurring between dust and precipitation in Arizona at a microphysical level.

**Poster 48****Remote sensing analysis of 2009 California Station Fire aerosols****Presenter(s):** Christopher Thatcher**Advisor(s):** Dr. Hesham El-Askary

In recent years, Southern California has faced growing challenges in dealing with wildfires. The Los Angeles Basin and surrounding regions are classified as a Mediterranean climate, characterized by warm, wet winters and hot, dry summers with near-zero precipitation some years. Such conditions are conducive to regular wildfire events during the dry months- a problem further compounded by the Los Angeles metropolitan area's large population distributed over a broad area of terrain varying from coastal plain in the west to steep mountains along the eastern boundary. This geography forces some of the intermittent wildfires to burn for some time before containment is possible, allowing for greater fuel consumption and burn intensity, thereby producing more smoke and allowing for a greater quantity of aerosols to be released into the atmosphere per unit area of burned. Aerosols are capable of reducing local and global temperatures via scattering of solar radiation back into space, potentially offsetting global warming. This study aims to analyze the effects of the 2009 Station Fire on local aerosol optical depth conditions using daily values from Moderate Resolution Imaging Spectroradiometer (MODIS) aboard the NASA Terra and Aqua satellites during the period 15 days before ignition and after one hundred percent containment (11Aug-1Nov 2009).

**Poster 49****Geospatial Distribution and Characteristics of E-Cigarette Retailers: Are Youth at Risk?****Presenter(s):** Patsornkarn (Nate) Vorapharuek, Brett Galland, Clayton Heard, Katie Henderson**Advisor(s):** Dr. Georgiana Bostean

We use the social determinants of health perspective and geospatial methods to examine built environment aspects that may increase youth exposure to electronic cigarettes (e-cigarettes). Previous studies of tobacco retailers have found that built environment characteristics, including the density of tobacco retailers and proximity to schools, are associated with youth smoking. However, there is little evidence of this trend for e-cigarettes. This project, focusing on the city of Santa Ana, documents the density and proximity of retailers to schools and parks, and retailer characteristics known to attract youth. The broader study examines youth e-cigarette use and the policy environment in Orange County, an area lacking tobacco and e-cigarette regulations. We ask: What is the density of retailers that are in proximity to areas where youth are commonly present, such as schools and parks?; Are e-cigarette retailers employing advertising and marketing techniques to appeal to youth audiences?; What are the socio-demographic characteristics of the population in areas with greater density of e-cigarette retailers? Previous studies have shown that the majority of e-cigarette users are non-Hispanic Whites, with middle to high household income, thus we expect that e-cigarette retailers will be more common in middle class areas of Santa Ana. We compiled addresses of e-cigarette retailers in Santa Ana and conducted site visits to collect data on characteristics of retailers, including target advertising and e-cigarette promotions. We use ArcMap to analyze density of retailers, proximity to schools and parks, and socio-demographic characteristics of the population in areas with high retailer density.

**Poster 50****The Study of Arsenic Bioaccessibility as a function of number of days since rainfall and the concentration of Arsenic.****Presenter(s):** Katherine Whiteman**Advisor(s):** Dr. Christopher Kim

Mining activities mobilize undesired trace metal(oid)s during extraction processes, exposing sediment that is easily transported by wind and rain. The presence of dangerous metal tailings is of great concern because of the implications it can hold on human health. The Red Hill Mine in Tustin is inactive; its surrounding land is entirely residential, potentially exposing residents to traces of arsenic daily.

This experiment examines the effect that rainwater has on arsenic bioaccessibility of Red Hill sediment. Gastric bioaccessibility of arsenic is greatest during periods of extreme dryness, producing an increasing correlation between the number of days since last rain event and concentration of arsenic. Therefore, ingestion of sediment from the Red Hill Mine poses the greatest threat to human health during the consistent absence of rain over time.

Aliquots of a Red Hill sediment sample were rinsed weekly over the period of a month, and left to dry outside, avoiding contamination. Upon the conclusion of a month, all samples underwent a simulated gastric fluid extraction, producing data that shows the likely concentrations of As that can develop within the human body through ingestion of the fine particles. The highest As concentration, 0.1573% As, was present in the sample that remained un-rinsed, which was significantly higher than the sample rinsed on the day of extraction, 0.922% As. Data was analyzed to study both the effect that rinsing has on overall arsenic bioaccessibility, as well as the dangers that homeowners near the Red Hill Mine should be aware of.

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**SCHMID COLLEGE, PHYSICS AND COMPUTATIONAL SCIENCE**

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**Poster 51****Hearing the Shape of a Drum: Calculating Harmonic Overtones for Arbitrary Drum Shapes****Presenter(s):** William Johnston-Carter**Advisor(s):** Dr. Roman Buniy

Expanding upon Mark Kac's famous 1966 research into drum overtones, we have been studying the connection between a drum's shape and the harmonic frequencies it can vibrate at.

As part of our research, we have begun working on a computer program that can numerically find the eigenvalues for any arbitrarily shaped drum.

Our poster will present the results of our research and the methods of our computer program



**Poster 52**

**A Comparison Between Mobile and Desktop Bugs**

***Presenter(s):*** Michael Pollind

***Advisor(s):*** Dr. Adrian Nistor

Mobile applications are extremely popular: there are currently four times more mobile devices than there are PCs and the current mobile market contains over three million applications. Despite this popularity, there is little understanding of how effective tools for finding software bugs in desktop applications compare to find software bugs in mobile applications.

In this project, we study how software bugs in mobile applications compare to software bugs in desktop applications. The findings of this project will guide future research to build better tools for finding software bugs in mobile application. We investigate 12 popular code bases of mobile applications containing more than 10,000 real-world software bugs. We ask three research questions. First, are developers more likely to introduce new software bugs when fixing existing software bugs in mobile applications than when fixing existing software bugs in desktop applications? Second, are software bugs in mobile applications more difficult to fix than software bugs in desktop applications? Third, how do developers currently find software bugs in mobile applications compared to software bugs in desktop applications? Our initial results suggest that the number of developers required to fix a software bug in mobile applications is smaller than the number of developers required to fix a software bugs in desktop applications.



AFTERNOON POSTER SESSION  
ARTS, EDUCATION, HUMANITIES,  
AND SOCIAL SCIENCES

ABSTRACTS

GRADUATE STUDENTS

POSTERS 1-2



**Poster 1**

**There is no Post-Colonialism: Brian Friel and Translations**

***Presenter(s):*** Robin Wyatt Dunn

***Advisor(s):*** Dr. Justine Van Meter

Time moves in at least three directions according to experimental evidence. This evolution of our understanding of spacetime necessitates an evolution in our understanding of history, causality, intentionality and responsibility/ guilt. Brian Friel's *Translations* is a perfect example of the oft-noted but poorly understood phenomenon wherein artists predict more or less accurately the coming scientific zeitgeist decades early, seeing in the 19th Century evolution of Irish identity some of this same piquancy in this simultaneously shrinking and expanding 'now.'

**Poster 2**

**CHINA-BASED INDUSTRIAL ESPIONAGE AS AN EMERGING U.S. NATIONAL SECURITY ISSUE**

**Presenter(s):** Joel Savary,

**Advisor(s):** Dr. Lynn Horton,

The September 11th attacks in 2001 are attributed to cutting America's annual GDP growth by about 3 percent over the subsequent four months (Bloom). In addition, the financial crisis of 2007 has caused a loss of U.S. output of \$6 trillion to \$14 trillion (Luttrell et al.). However, the economic impact of these crises pales in comparison to the socioeconomic losses caused by industrial espionage. These acts undercut American businesses and U.S. foreign policy directly, causing catastrophic economic implications for America, its businesses, and its allies. The new wave of international cyber-attacks being implemented has caused great concern to the U.S. government as China is using these tactics to advance themselves as an emerging economic and political power. Although cyber hacking has existed for decades, there has been a recent shift from damaging infrastructure attacks (wiping out networks) to more passive activities of prolonged cyber-spying and information theft. In addition, cyber spying has also shifted from a focus on just government policies to that of American businesses. The U.S. is grappling with understanding the means and methods China is using and disseminating the information stolen from U.S. businesses to support China based industries. Due to the lack of transparency in China, it has been difficult to gather this information. We are able to understand the objectives of China's growing industrial espionage by reviewing the empirical history of the goals of China's 5-year plans—narrowly focusing on economic growth, development, and expanding industry. By conducting a regression analysis between the numbers of cyber-attacks on American companies by industry in relation to industry growth in China, this paper is able to find China's leading industry targets of espionage. The literature should show a positive relationship between the number of cyber-attacks on American companies and industry growth per sector attacked. This paper finds that China has utilized industrial espionage tactics on American companies to strengthen certain sectors of China's economy and political positions while crippling America's. As such, while this paper asks the U.S. government to reconfigure how we view industrial espionage as not just economic cheating but it should be regarded as economic terror and put at the epicenter of national security. This change of perception will engage Washington's financial agencies and the intelligence communities to collaborate more closely with American businesses on industrial espionage. This paper explains the importance of new financial policies, regulation and reporting needed to lead to better study of international espionage activities that will lead to better preparation of responding and abating the effects of these attacks. This paper also finds it important that the U.S. government work collaboratively with U.S. companies on counterespionage initiatives, as espionage behaviors from China demonstrates a comprehensive state-sponsored hacking.

AFTERNOON POSTER SESSION  
ARTS, EDUCATION, HUMANITIES,  
AND SOCIAL SCIENCES

ABSTRACTS

UNDERGRADUATE STUDENTS

POSTERS 3-91





## ARGYROS SCHOOL OF BUSINESS & ECONOMICS

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### Poster 3

#### **The Effect of ISIS on Family Structure Systems**

**Presenter(s):** Kelsey Ruegger, Kellie Langwell

**Advisor(s):** Dr. Patricia See

ISIS's influence is a pressing problem in regions of Syria and Iraq. It is an extremist group that is creating a brutal environment for women and children through its violent acts and punishments. The brutality being committed upon women and children is disrupting family systems and creating a state of chaos in Syria and Iraq. In the eyes of many, ISIS is violating human rights by committing heinous acts through explicit mistreatment of the Syrian and Iraqi people. Overall, ISIS's culture of authority and control is creating a wave of violence and inhumanity across the regions of Syria and Iraq. As a consequence, family structure is deteriorating. If ISIS's influence continues to reign terror over the people of Syria and Iraq, these Middle Eastern regions will struggle to return to a state of stability.

## COLLEGE OF EDUCATIONAL STUDIES

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### Poster 4

#### **Challenges That Constrain Computational Tool Development & Adoption**

**Presenter(s):** Ryan Farrell, Dominique Stewart

**Advisor(s):** Dr. Kerk Kee

Our research examines the challenges that create constraints on computational tool development and adoption. The preliminary findings focus on three prevalent barriers that hinder lead users, developers, and their virtual organizations, while considering the solutions that can help address these challenges in e-science. Data analysis showed that funding was one of the most pervasive hindrances to the successful development of computational tools. This challenge can be mitigated with an open source arrangement between the users and developers in the e-science community; creating a free-access platform for lead users and developers to share their computational tools and gain feedback from others. The second prevalent barrier is proximity. Lead users and developers who collaborate from different parts of the country are faced with significant barriers in communication due to geographic dispersion. The minimal face-to-face interaction can be bridged through the documentation of computational tools. Detailed documentation will provide ease-of-use for target users with the assistance of walk-through instructions, while decreasing confusion for users without prior knowledge. Lastly, analysis indicated that contrasting personalities impede the progression of development, becoming a detriment to the co-production of tools. Creating a cohesive environment and culture allows for collaboration among lead users and developers to maximize work efforts while persevering towards a common goal. These preliminary findings depict a crippling pattern of problems that constrain computational tool development and adoption. The findings also give way to solutions that can be applied by the e-science community to overcome the identified challenges of computational tool development and adoption.

## **Poster 5**

### **Exploring the connection between video games play and cheating among adolescents**

**Presenter(s):** Brandon Nease

**Advisor(s):** Dr. Michelle Samura

The purpose of the project is to explore the connection between video game play and cheating among adolescents. Research conducted by Hamlen (2013) found that there was a correlation between video game play and cheating. Examining interviews of three adolescent males, the study found that if the players utilized cheat codes, walk-throughs and other similar tools while playing video games, they were more likely to cheat in an academic setting. Opposing research, utilizing online surveys, found that “[the] tendency to cheat is not necessarily a function of video game play and misunderstanding, but results indicate that those same students who wish to bypass difficult tasks in academics are the students who seek to bypass the difficult practice of work required in a video game and use alternative methods to reach their goals” (Hamlen, 2012, p. 1150). Thus, the purpose of the research is to explore the relationship of cheating and video game play.

The project will consist of interviews with adolescents performed by the undergraduate researcher in which the participant will be asked which video games they play, use of player’s guides, cheat codes, or walk-throughs, and perspectives on cheating in academic settings. In order to understand their perspective, they will be asked what they believe cheating consists of as well as what they think is the point of video game play.

Hamlen, K. R. (2012). Academic Dishonesty and Video Game Play: Is New Media Use Changing Conceptions of Cheating?. *Computers & Education*, 59(4), 1145-1152.

Hamlen, K. R. (2013). Understanding children’s choices and cognition in video game play: A synthesis of three studies.

*Zeitschrift Für Psychologie*, 221(2), 107-114. doi:10.1027/2151-2604/a000136

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## **COLLEGE OF PERFORMING ARTS**

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## **Poster 6**

### **Theater Education through the Common Core**

**Presenter(s):** Brandon Nease

**Advisor(s):** Dr. Jocelyn Buckner

As school budgets have plummeted, one of the extra curriculums that has suffered by losing funding has been the theatre department (wheeler 2007). The common core of education focuses on the four subjects of math, science, English, and history. The subjects are traditionally separated from each other with separate specialized teachers. However, several instructors try to utilize various methods in order to teach individual subjects more effectively. Even though the arts as a separate subject have slowly been cut from school programs around the nation, they have become an integral part of many teacher's curriculum to aid students in understanding difficult material. Upon further analysis, the many aspects of theater could be applicable to all of the common core standards. In this project, I plan to design a curriculum that uses aspects of the theater in order to teach all of the common core standards of English as well as math, science, and history. I shall describe specific lesson plans for each subject and their implementation in a classroom environment during a single semester of the school year. The aspects of theater utilized shall be technical theater, including but not limited to sound, costume, stage, and lighting design. Also included will be theater history, play readings of various time periods, dance, and acting styles. After a semester of study using this proposed curriculum, the students will present a final project using the skills learned in the program.

**Poster 7****“Staging Style: A Director’s Quest through Style”****Presenter(s):** Peyton Ashby**Advisor(s):** Dr. Jocelyn Buckner

Style. The term itself is used in a plethora of mediums and subjects. When speaking of a painter's style, like Monet, it is describing the technique used and own individualized ways of creating his painting. But what does this term mean in Theatre? The first thing that comes to mind is less of a clear definition of what "style" is, but rather what springs to mind are examples of style. Abstract or Realism are all familiar terms when style is mentioned, but there are many others, and just what exactly is style and how does it affect a piece of theatre? Styles provide a lens to view the world of the play and creates a portal for all involved to immerse themselves into. Style is the “how” part. Through the lens of a director, I aim to explore and begin to create my own personal style doing so by digging into exactly how and why style contributes to the overall success or failure of a production. Through research, various techniques and application of acting theory, I aim to create a basic, almost formulaic version of three different styles: Naturalism, Elizabethan, and Absurdist styles, and layering them onto three open scene which will be worked through with actors. These actors will read through the scene itself, and will make discoveries before anything else is changed about the scene, and again after the changes from the style; this all to deepen an understanding and insight into working with particular styles.

**Poster 8****Birth By Sleep: An Immersive Adventure Through Wonderland****Presenter(s):** Edward Bass**Advisor(s):** Dr. Jocelyn L. Buckner

When Lewis Carroll wrote down Alice’s Adventure in Wonderland he never expected it to become a worldwide sensation. His work has gained a following as psychoanalysis has allowed people to dive deeper into Alice’s dream world. Many books and movies based on the Alice books have been released, such as Sucker Punch. On a seemingly unrelated topic, a company called Punchdrunk has created an immersive theatre piece known as Sleep No More in which the audience runs around a “hotel” following different actors and trying to unveil the story unfolding. Immersive Theatre allows for the audience to be swallowed up in the world the actors are creating. Another interesting facet of Immersive Theatre is the inability to see everything or ever experience the same thing as another audience member. Through the books the readers will get lost, have no clue what is up and what is down, and eventually find their way back with Alice, and the adventure always seems to be changing just as the experience while reading the book seems to change each time. I point out these similarities to show how well both an Immersive Theatre and Alice in Wonderland play together. The Alice books were meant to be experienced and I intend to bring them to a new level in which the audience is fully immersed in the. In this thesis, I will conceptualize an Immersive Theatre piece using the Alice books as well as other forms of Alice based media.

**Poster 9****Mirroring Reality: Music in Video Games****Presenter(s):** Allison Burr**Advisor(s):** Dr. Amy Graziano

This paper explores the effectiveness of music in video games in terms of mood setting and immersion. The effectiveness of the emotion evoked is studied through both personal and scholarly research. Four video games are explored from different game genres. In "Bioshock" and "Fallout 3", the music immerses the player into the environment of the video game, whether it is an underwater dystopia or the post apocalyptic Washington DC area. "Dead Space", a survival horror game set on an abandoned mining vessel in space, pushes the boundaries in terms of musical dissonance and terror by using innovative sound design. The final game is "Journey", a game unlike any other that destroys most video game conventions. "Journey" has no combat, dialog, or written back-story. The player must piece together his or her own ideas of purpose and what drives the story. Through an alternating two note musical chime, one of the few action commands, the player must learn how to express his or herself and communicate with a randomly assigned anonymous player who embarks on this journey with them. This paper explores how music plays a center role in the delivery of story and immersion of the player into the created world.

**Poster 10****Understanding Theatre in the Modern Moment Using Perspectives of the Past****Presenter(s):** Sara Curtis**Advisor(s):** Dr. Jocelyn L. Buckner

Theatre has been fighting for a proper place in society since its inception in Ancient Greece. Although the ancient civilizations of the western world adored theatre and incorporated it into their daily lives, in later years it struggled to find acceptance. Theaters and theatre professionals often received blame for the spread of disease and rises in miscreant behavior. This yoyo-like trend between acceptance and ostracism continued throughout the ages as theatre and the encompassing societies evolved and changed. Thusly, the theatre has always been a point of contention and discussion. Even to this day, critics and scholars alike theorize and philosophize over its intention and craft practices. Yet despite the continuous conversations about theatre, it is nearly impossible to describe what theatre is in the modern moment. To understand this concept, I analyze many perspectives on theatre, ranging from the philosophers of Ancient Greece to the famous Elizabethan writers to proponents of the Stanislavsky method and forward. I compare opinions collected from modern theatregoers, performers, and scholars to those aforementioned perspectives of the past, in order to find parallels and patterns, working under the assumption that the past informs the present. In this thesis, I aim to determine the greatest influencers of modern theatrical perspectives, and to understand, and ultimately define what theatre is to a modern audience.

**Poster 11****Time May Change Me, But Acting Styles Never Waiver****Presenter(s):** Joey De Felice**Advisor(s):** Michael Nehring

As we come closer to a millennium of acting styles and techniques raining from Stanislavsky, Uta Hugen, Misner etc. I wanted to examine their work through the performers themselves. While the techniques haven't changed since they were introduced. There has been a shift and definite change in the look and feel of actors from when these were applied to now. But why? If the material hasn't changed for nearly a hundred years, then why is the work so drastically different? It could be that through a short time the material has been misinterpreted, or perhaps the new innovations in technology change the outlook of everything? In any scenario there has been a progression that has arisen and I want to know what it is. I am looking at the styles and techniques of "Golden Age" vs. "Modern Day" acting, and pointing out the differences/ similarities between the two. Raising the questions, what are some of the direct causes that have influenced changes in the styles? And what are the results due to these interludes? I plan on using acting technique and history books, personal interviews with university trained actors, and online sources that speak to present and past, stage and film actors experiences and their ideas as to what outside influences affect their work. Comparing data I believe I can present a plausible theory as to why acting techniques have evolved even without the material changing.

**Poster 12****Self-Discovery and the "Bystander Approach" through Theatre for Development****Presenter(s):** Joshua Dominguez**Advisor(s):** Dr. Jocelyn Buckner

The college experience in American culture is a popular topic that is being questioned throughout the media It is being questioned on a weekly basis in today's media and brings too light issues that have not been questioned for decades. Some of the main issues such as diversity within institutions, the "Greek System", and sexual assault are all being spotlighted and widely advertised as problems that need focusing on putting an end to. This new era of college students are being challenged to recognize these heavy, yet important issues that are effecting campuses across the nation. Through Theatre for Development and three art forms: Spoken word, Hip-Hop, and Theatre; I plan on creating a show that both educates and stimulates an interest in self-reflection, emotional and mental growth, masculinity and feminist culture, methods of Interpretive Sociology, and methods of Evolutionary Psychology within the world of a college student. A few of these disciplines will be used as a way to portray the story and some of these disciplines stand as evidence that helps one define and build a self-identity. I will then go through an interdisciplinary studies process by which I will use scene work to express and portray real student experiences and highlight social issues through the art of Spoken Word, song or rap to help keep audiences engaged and entertained. Dr. Ananda Breed, co-director of the Centre for Performing Arts Development research centre, defines Theatre for Development as "...an egalitarian method to access and distill information, working with communities to create a self-sustaining tool for dialogue and from that dialogue to affect policy." (Breed 1).

**Poster 13****Lighting Design Proposal for Tom Stoppard's *Rosencrantz and Guildenstern are Dead* Chapman University  
Spring 2015****Presenter(s):** Nikolai Eiteneer**Advisor(s):** Dr. Jocelyn Buckner

Tom Stoppard's tragicomedy, *Rosencrantz and Guildenstern are Dead* (1964), earned the early popularity and the world-wide reputation that such a work deserved, booting Tom Stoppard into the limelight as an up-and-coming young writer. The play itself verges on an absurdist style, but due to the realistic nature of the title characters, the audience members find themselves sympathizing with their plight and lack of knowledge though any theatre goer acquainted with the works of Shakespeare, and *Hamlet* in particular, will know the final outcome of the play. For those not endowed with such knowledge, however, Stoppard gave the end away. *Rosencrantz and Guildenstern are dead* on the title page and on the program long before they first appear on the stage. A brilliantly written play, it balances a narrow line between a comedic absurdist representation of two characters who find themselves bereft of purpose and a deeply existential look at predetermination and fate--the forces that push *Rosencrantz and Guildenstern* inexorably towards their deaths without their knowledge. This upcoming spring, Chapman University will include *Rosencrantz and Guildenstern are Dead* in their season directly after *Hamlet*. It is my goal to create a lighting design that will reflect the precariously balanced mood of the play, highlighting *Rosencrantz and Guildenstern* as they share their witty banter. Through the subtle changes in mood brought on by the lighting, my design will leave the audience empathizing with the two faceless henchmen of Shakespeare's original work: the ultimate absurdity.

**Poster 14*****Walking in the Burnt Hole*****Presenter(s):** Sophia Friedman**Advisor(s):** Dr. Jocelyn Buckner

Holocaust stems from the Greek word "burnt hole," but when the word Holocaust is mentioned today it refers to the rise of Nazi Germany in 1933 until the fall in 1945 (Skloot). More specifically, the Holocaust refers to the 11 million persecutions through concentration camps. The Holocaust is widely studied for various reasons, but the biggest reason is that "we are seekers of understanding in the territory defined by those events" (Skloot 9). Through written work, such as poetry and plays, the Holocaust is brought to life in a more realistic way. Through art we are able to connect to the human experience and gain a deeper knowledge and understanding of each other through cathartic experiences. Theatre creates an outlet for artists and audiences to share together. Teaching the Holocaust through performance and art allows for a deeper understanding of the Holocaust and allows students and audiences to gain insight on the events. Through plays and poetry, I am creating a curriculum that is meant to be taught to high schoolers in community centers, synagogues and high schools about the Holocaust. The texts used to develop the curriculum are the plays *Throne of Straw* and *Who Will Carry the Word?* that are compiled into the book *The Theatre of the Holocaust*, the play *Bent*, and a compilation of poetry about every aspect of the Holocaust from the book *Holocaust Poetry*. The culmination of the course is a performance of scenes from the plays and selected poetry by the students.

## **Poster 15**

### **All for Art and Art for All: Examining the Benefits of Unified Arts Festivals for Independent Artists**

**Presenter(s):** Anton Gress

**Advisor(s):** Dr. Jocelyn Buckner

Artistic disciplines typically have two markets: corporate, and independent (mainstream and underground, if you will). The corporate market accounts for a small fraction of all artists and reaches the largest audience, while the independent market accounts for the vast majority of working artists, yet remains niche. The issue is marketing. Even the most successful independent artists cannot match the selling power of large companies. This project seeks to illustrate the potential of unified arts festivals to facilitate greater audience exposure for independent artists, and how this may benefit the artistic community.

The arts communities at Chapman University have a similar dynamic to that previously addressed. University produced concerts and plays draw the largest audiences, while student-produced work is showcased on a much smaller level. This project utilizes a variety of current arts festival models to demonstrate the potential of a unified arts festival to draw larger audiences for independent artists through the planning of a student arts festival at Chapman University.

Festivals have long been a tradition within artistic communities. This project will examine how arts and festivals have influenced each other in the present and throughout history, focusing primarily on music, theatre and the visual arts. In addition, this project seeks to study the differences between audience experiences within the festival environment and individual shows. All topics will be studied in the both the historical and contemporary context to prove the benefits of unified arts festivals for independent artists.

## **Poster 16**

### **The Psychology of Performance**

**Presenter(s):** Shaina Hammer

**Advisor(s):** Dr. Jocelyn Buckner

Somehow, though Chapman University is relatively small, there is a great deal of distance between each of its academic fields; the actors don't know what the music building looks like, the musicians have no idea what the dramatists are up to, and no one has any idea where the dance classes are held. But not only do the students of Chapman University's College of Performing Arts not know one another, they don't understand one another. More than once I have encountered a student with the same self-confidence issue as another. Without a doubt, performance majors have a lot to talk about. But who's initiating the conversation? In this thesis I will explore the benefits of community discussion, stress reduction, and communication among performing arts majors. Through the creation of Chapman University's first all COPA appreciation organization specifically designed for performance majors I will encourage discussion and listening amongst participants. Participants in this group will learn to see through one another's eyes and form relationships with students from different majors and performing arts focuses. Taking advice from Chapman's Student Psychological Counseling Services (SPCS), my leadership professor Dr. Mark Maier, and literary resources on the art therapies I will create a short weekly meeting curriculum that covers the music, theatre, and dance fields of study in a therapeutic way. I hope to foster a nurturing environment for COPA students, one that, when the going gets rough, they feel they can turn to for encouragement and guidance.

**Poster 17****Exploring Unusual Post-Grad Professions****Presenter(s):** Caroline Hawkins**Advisor(s):** Dr. Jocelyn L. Buckner

Post-graduation job searching arrives too quickly in most college seniors' lives, and many of us find ourselves unprepared when the time comes to actually find a career we want to commit to for an extended period of time. To commence this daunting quest, I have decided to explore a few alternative possibilities and options for professions that are related to my passions of theatre and music, but that are a bit more unorthodox, unexpected, and "outside the box." To aid me in my search, I will communicate with several professional experts in their fields, gaining skilled and experienced opinions. In this thesis, I will look into alternatives for potential careers that attract degrees in the arts, yet are more uncommon. Some examples of these types of jobs I will examine are a performer on a cruise line, a voice actor for animated movies, or an entertainer at a unique venue like Disneyland. Through this thesis, I also plan to create a physical tool that I will have at my disposal to assist me in obtaining one of these careers after graduation. An example of this would be a personal website or a portfolio - something that I can present to a cruise line company or a voice actor casting director that will showcase both my performance and my professional skills. By the end of this process, I will be able to successfully attempt to pin down an unconventional and exceptional job in a field that I love.

**Poster 18****"Arts for instigating social change: Truth behind the Sinking of the MV Sewol"****Presenter(s):** Hyeyeon Ivy**Advisor(s):** Dr. Jocelyn Buckner

Art appeals to the audience by delivering a message that results in a social change. Regardless of which form it is, it is the "means [by] which a society reminds itself of the stories it wants to remember." The year of 2014 has seen a series of unexpected accidents worldwide that used arts to incite an issue. For instance, there was a tragic accident in South Korea that resulted sinking a ferry that carried 476 people. Among them were 300 high school students that were on their way to the field trip. From this accident, there were nearly 300 lives lost and only 172 people rescued. The rest have not been found yet and are still in search. This tragic accident has enraged all citizens in South Korea whether they are related to the victims or not. In response, anonymous artists started to spread their own art works to help people better understand the accident. There were mostly visual art forms created to find the truth behind this tragedy and in remembrance of the victims. I believe this tactic was a success in rapidly progressing the people's interest and support that has accelerated a social change. I too, argue that the innocent lives have been taken due to the lax security of the country and the society we live in that is full of irresponsible adults. Thus, in this thesis, I will be creating a music video in remembrance of the victims and those that are responsible of this tragedy.



**Poster 19****“Devising: Improving a Perceived Glistening Community”****Presenter(s):** Katie Laner**Advisor(s):** Dr. Jocelyn Buckner

Theatre for social change has long relied on devising methods to create pieces reflecting current cultural and societal issues. Through exercises, games and workshops, theatre for social change devising practices are as distinct and numerous as the many different communities they work with. The leading pioneer, Augusto Boal, created Theatre of the Oppressed, which utilizes many kinds of practices meant to address local issues effecting a group of people who have suffered from repression or whose needs have been invisible from greater society. Since his initial groundbreaking theories and practices, many modern artists and groups have adapted and changed his methods to suit their unique local communities. Each has upheld the notion that theatre for social change must directly serve the needs of a specific community in order to affect any greater change. Theatre is utilized as a form of language to actively realize the humanity within all peoples and bring awareness. The Fringe Benefits Theatre guidelines for devising workshops will inform the parameters the group will function in to form scenes and improvised dialogue. After the Boal exercises and games where the troupe will realize their role as a member of Chapman and as an actor who must engage with these difficult subjects of oppression, we will build concrete aspects of performance: devised scenes and dialogue. I will construct and implement a devising methodology for the troupe in order to access critical social issues facing our immediate Chapman community; eventually leading to a performance piece. Employing effective devising practices will move the troupe towards focusing on an under-represented and mistreated population within our shared community; ultimately discovering a faction of our educational space that needs representation and disclosing it to our community through the devising process.

**Poster 20****HAIR: A History and Performance of American Masculinities****Presenter(s):** Adam Lee**Advisor(s):** Dr. Jocelyn Buckner

The presence of male facial and body hair is not a fad that has simply come to forefront of men's grooming standards in a few short years. Dating back to the beginnings of America hair has been cut, shaved, and plucked off the bodies of men. Hair has had the ability to connote power and presence, or poverty and homelessness. No matter the social, political, or economic status of the male, his identity can (and has) been expressed through hair. In “Hair: An Analysis of Masculine Aesthetics”, I examine the history of the performance of masculinity and the grooming standards that have grown to father the traditions of male beauty throughout several socio-economic eras of Westerners, specifically in the United States; as poverty levels rise and fall, so do fads and social trends with body hair. While showing ever-changing development of hair I propose a few questions to men of the twenty-first century: what purpose does hair serve for men today? What defines the line of transgressive hair? What does today's understanding of hair look like compared to its history? Through the use of contemporary men's magazines like GQ which publish body grooming tips and tricks, historical analysis of the physical aesthetics of former leaders in American society, and media that dictate male grooming standards, I construct a contemporary portrait of hair by creating faux beards that will be photographed on men as an iconically ironic blend of masculinity. These portraits will be artistic interpretations of hair throughout its history.

**Poster 21****Cross-Cultural Examination of Animal Personification in Live Performance****Presenter(s):** Hotaru Morita**Advisor(s):** Dr. Maiya Murphy

Across different cultures, live performance often involves performers playing creatures outside the human species. In this study, the human depiction of animals in American culture and in Japanese culture will be compared on basis of phonetic animal sounds and perceived movements. Live performances include kabuki, Broadway, opera, dance and ceremony.

**Poster 22****"I can Take an Empty Space and call it a Stage": Searching for a Through-Line in the Diverse Roles of the Theatre Director****Presenter(s):** Bettina Mueller-Tuescher**Advisor(s):** Dr. Jocelyn Buckner

While the director's role in theatre is longstanding and well established, it is a position that can be approached from a variety of different angles, depending on the nature of the project. In an effort to discover and articulate a directorial philosophy that spans across my work, the first section of this thesis is a literature review discussing and analyzing the directorial beliefs, practices, and philosophies of two revolutionary directors in English-speaking theatre: Anne Bogart and Peter Brook. The second segment will be a reflection and analysis of my own performance as a director on three diverse projects in scale, style, and range this semester: directing a staged reading of John Patrick Shanely's *Doubt: A Parable*; staging a piece devised by one of my peer theatre students entitled *Trojan Whores*; and assistant directing Nilo Cruz's *Anna in the Tropics* for the Chapman mainstage. In this second section, I will draw connections between the role of the director in such distinctly varied types of productions, discuss the differences in my approach, and relate my work to philosophies of Bogart and Brook. Finally, I will compose my own directing manifesto resulting from both my research and my practical experience as a director in these three contexts. Ultimately, my objective in pursuing this thesis is to discover whether there might be constant directorial truths that stand true over a range of different styles and types of theatre, and to identify and articulate these truths in a manifesto-style piece.

**Poster 23****Kinetic Sculpture in Living Art: The Mechanics of Kinetic Rain Explained, It's Many Places in Theatre, and the Integrated Rehearsal Process Technology Demands.**

**Presenter(s):** Francesca Muscolo

**Advisor(s):** Dr. Jocelyn L. Buckner

Technology dominates contemporary "theatre," but the theatre is often the last industry to see innovations. Instead, the technical field operates on leftovers from entertainment, visual art, or industrial settings. The technological differences between these areas begin to blur; the differences lay only in their execution and intention. Some companies such as Cirque du Soliel, Diavolo, and Chunky Move blend technology and performance until the two become indivisible. This technology is being developed in an effort to lessen boundaries and create new opportunities that could not otherwise happen onstage.

Through this thesis I will develop a basic understanding of the machinery and software platforms used to create kinetic rain sculpture, it's uses in visual art versus industrial settings, and how this can manifest in live theatre. A case study of Chunky Move's piece Connected examines what happens when machinery is subtracted and integrated with human artists; how it can elevate and transcend beyond the performer. I will also examine how these elements interact between performers, choreographers and technicians; and how each are educated, trained and integrated with technology throughout the rehearsal process. Then I will use my understanding of kinetic rain's mechanics to predict new ways this system can be used as a scenic element and for stage action.

**Poster 24****Inside the Boudoir: Designing the World of Lynn Nottage's Intimate Apparel**

**Presenter(s):** Megan Parish

**Advisor(s):** Dr. Jocelyn Buckner

Scenic artistry and set decorating help build the world of a production and reinforce the themes woven into the plot of a script. For my project, I will be exploring the world of Lynn Nottage's "Intimate Apparel." This will include researching the historical context of the piece, which in this case is New York City at the turn of the century, alongside the role of the seamstress in society, in order to accurately convey the environment of this piece. Lynn Nottage's piece is based in socioeconomic statuses, attitudes on race and femininity as well as women's rights movements. Therefore, I will also study these subjects to provide a significant foundation for themes that will be reflected in my designs. In addition, this thesis will investigate specific painting techniques and resources available for set decorating in a show that offers challenges in creating a rich environment on stage. Other productions will be utilized as research and inspiration, but ultimately I am seeking to create a new experience of the show that use silhouettes and shapes mirroring women's bodies or using patterns found in historical lingerie pieces to reflect the inherent sexuality of the show. My research is intended to reinforce the idea that scenic elements should build upon the themes and ideas already established within a text. Painting techniques should develop a set and solve challenges based on these rich environments. I will be practically applying real life design and decoration skills to an educational, research-based project.

**Poster 25****The Man Who Laughs At Himself:****A Look at Stand-Up Comedy and What Values It Has in Liberal Arts Education****Presenter(s):** David Patterson**Advisor(s):** Dr. Nina LeNoir Micheal Nehring

It is said that the most valuable tool an education at a liberal arts university is how it produces well rounded people with a better understanding of themselves and the world around them. To produce people not only aware of current issues, but with the toolbelt needed to assess them and shed new light. If this is true, then I propose that the goals of liberal arts university are synonymous with the goals of a comedian.

In this thesis, I mean to draw ties to the world of stand up comedy and within the world of liberal arts academia. I will draw parallels to both the comic and the liberal arts throughout history, the effects both have had on society, and ultimately will create a hypothetical class about stand up comedy to be taught within the university level.

**Poster 26****The Culture of Negativity****Presenter(s):** Jesse Pudles**Advisor(s):** Dr. Jocelyn Buckner

My research into the effects of the word “no,” led to the discovery that all economic strata in America are effected by a culture of negativity. No Child by Nilaja Sun, holds a magnifying lens to lower income community’s culture, through the use of a fictional story about a public school in the Bronx. Through experiencing the story, one realizes that “no” is an assumed inevitability in the lives of these characters. The play voice introduces to the reader, a world where one expects to simply hear a series of no’s until eventually, they get shot down, get lost to the system or get stuck in a decent job they hate. In “A Nation of Wimps,” Mara Estroff illuminates the fear that “no” instills in the hearts and minds of the current middle class generation. She argues that in a world, where parents are working to get their kids into the right pre-schools, so that they can get into Harvard, we are creating a culture of children that are not allowed to receive a “no.” So if this is the problem with the culture of negativity then what is the solution? Through the creation of a devised piece, I will illuminate the culture surrounding this culture, show how society can be reshaped through a culture of positivity, and lastly empower the individual so they have the understanding to appreciate the potential, opportunity, and improvement made possible by embracing one’s own positive intelligence.

**Poster 27****"In Defense of 'Liveness': The Changing Relationship between the Audience and the Theatre in American Culture"**

**Presenter(s):** Allison Reidy

**Advisor(s):** Dr. Jocelyn Buckner

In the early 1900s, live theatrical performances were in high demand. The live theatre provided these audiences with a great source of cultural enlightenment through entertainment. Both music and dance existed in their own field of storytelling, so there really was no other art form that could compare. That is, until Hollywood's motion pictures industry started rising in popularity around the early 1920s. From then on, as the demand for films continued to grow, a decline in the demand for live theatre became apparent. While there are several factors that contributed to this decline over the years, such as the changing styles of theatrical performance or the unstable post-World War II economy, the popularity of the film industry played a major role. In fact, ticket sales and attendance show that motion pictures still dominate the entertainment industry over live theatrical performances today. In this thesis, I use both media theory and audience reception theory to analyze the digital cinema's role in the weakening relationship between audience and live theatre, as well as what this means for the future of live theatre. I will not argue that one art form is better than the other, for that is a completely different project, and my focus is on the audience's relationship with the theatre. What I will argue is that the 'liveness' of theatre is essential to our cultural experience as a society, as well as provide a few suggestions on how live theatre can recapture audiences' attention in order to thrive.

**Poster 28****"The Dream of the Theatre is Alive In Portland: The Potential of a New Theatre Company to Succeed"**

**Presenter(s):** Amaya Santamaria

**Advisor(s):** Dr. Jocelyn Buckner

According to the 2013 census there are approximately 609,456 people living in Portland, Oregon. There is no demographic data tabulated for 2013, however a look at the 2010 statistics can help paint a picture of Portland and its racial and educational make up. That year, 76.1% of people identified as "white alone." The African American population constituted 6.3% and the Hispanic 9.4%. While it is true that, typically, Caucasian audiences make up the majority of theatre attendees, perhaps more telling are the statistics regarding education. In Portland, 43.1% of people hold a bachelor's degree or higher, compared to the 29.2% of the entire state. Studies have shown that theatre audiences are typically white, college or higher-educated, and 50 years or older. While Portland offers this ease of marketability within the typical demographic for live theatre, the 35% of its population between the ages of 18 and 30 provide a new market that is targeted much less frequently. There is far more market research to be done beyond a quick look at the demographics sections of the Census Bureau website to say definitively that a new theatre company would do well, however. In this thesis, I will examine the market more thoroughly to determine not only the potential success of a new theatre company within the city, but the methods I must employ in order to establish it thoroughly and have it succeed not only in those first few critical years following its inception, but beyond.

**Poster 29****Sensuality, Camels, and Islam: Disney Music and American Perception of the Middle Eastern Experience****Presenter(s):** Laura Schildbach**Advisor(s):** Dr. Amy Graziano

In a world that is constantly changing and becoming more open to diversity and equality, filmmakers are faced with the challenge of presenting films and characters that embrace the ever-evolving world around us. In particular, Disney has been presented with this challenge; as a cinema powerhouse with an audience primarily made up of children, there is a perception that Disney has a moral responsibility to present accurate and unbiased representations of all cultures. This paper will analyze how Disney musically represents the Middle East in two Disney feature films, *Aladdin* and *Prince of Persia*, and how the musical choices affect American perception of Middle Eastern culture and music. Furthermore, the paper will look at how the representation changes between *Aladdin*, which was presented as an animated musical, and *Prince of Persia*, which was presented as a cinematic action film. Finally, this paper will look at the representation of the Middle East prior to the events of 9/11, as seen in the 1992 film *Aladdin*, and after the events of 9/11, as seen in the 2010 film *Prince of Persia*, and how the political environment of the time affected the representation of Middle Eastern music and culture.

**Poster 30****Stage Management Jobs and Qualifications****Presenter(s):** Sarah Stavich**Advisor(s):** Dr. Jocelyn Buckner

As a theatre technology major with an emphasis in Stage Management I am interested in pursuing a career as a Stage Manager. However, I do not have a set company, place, or even type of production I would like to work for.

In this paper I will explore the qualifications and skills needed to be a professional Stage Manager for different types of productions. I will provide information about Stage Managers working on cruise ships, touring productions, music concerts, traditional theatrical productions, and non-traditional productions. I will research the certifications that are required and recommended for these positions, the experience I still need to acquire, and the positions I can pursue in order to currently build my resume for more ambitious jobs. I will also interview professionals currently working in some of these roles to learn the skills they use, the types of jobs they work, and how they were able to receive their current position. I will research the financial requirements of extra certifications or possible degrees I may need to gain before applying to specific jobs.

This will allow me to form realistic short-term and long-term goals about career options for when I graduate college. By the end of this process I will have a clear goal for after graduation about which jobs to apply for and what I may have to work on to become a more appealing candidate for them.

**Poster 31****Deconstructing Chaos: The Role of Tonal Hierarchy in Music Perception****Presenter(s):** Gabrielle Stetz**Advisor(s):** Dr. Amy Graziano

During the early twentieth century, art music composers pushed Western tonality to the limits and eventually abandoned tonality altogether, creating a system that treated every pitch equally. This atonal system broke down all keys and harmonic progressions that are cornerstones of Western musical pitch hierarchy. Through an extensive review of current literature, this research aims to show that the concept of hierarchy, present in tonal but not atonal music, is central to music perception. This presentation will explore the role hierarchy in music perception through several means: examining the physical nature of sound on a mathematical basis, determining innate structures of music perception and investigating the neurobiology of tonal perception. Research will also seek to understand structural aspects of atonal music and how these structures are perceived, with the final conclusion that atonal musical structures do not facilitate music perception to the same degree as tonal structures since they lack fundamental pitch hierarchy.

**Poster 32****Cultivating an Understanding of Talent****Presenter(s):** Ryan Stiffelman**Advisor(s):** Dr. Jocelyn Buckner

I personally believe that anyone can be a performer so long as they have the determination, dedication, and refuse to take no for an answer. There are all kinds of training out there designed to help turn hopeful wannabes into the “stars” that we know them as, however, not every “star” we see has had this kind of training. We often hear of young actors like Jennifer Lawrence hailed for their “natural talent”. Does this mean there’s some kind of birth-right, a specific natural inclination or ability that makes someone a potentially great actor from the start? I will refer to this phenomenon as “natural talent”. In contrast stands “cultivable talent” a talent which wasn’t necessarily a gift from the acting gods, but perhaps someone who started out with little promise and was able to acquire skills that could make them into a powerful actor. If the latter scenario exists, is there any kind of cap or ceiling to how much they can learn? My thesis will investigate the several different schools that I referenced above, a BA/BFA liberal arts program, an acting specific studio of one school of thought, an acting specific academy, and genre specific training (for my purposes I will investigate improvisational comedy training), investigating to what extent each of them is cultivating talent that didn’t come “natural” or merely honing natural talent that already existed on its own and as a result discover whether or not truly anyone can become a great actor.

**Poster 33****Examining Tennessee Williams with a Modern Feminist Lens****Presenter(s):** Audrey Thayer**Advisor(s):** Dr. Jocelyn Buckner

The first people to ever listen to the words of *A Streetcar Named Desire* were two women, Margo Jones and Joanna Albus. Tennessee Williams read them an uncompleted first draft of the play. Margo Jones was “supportive of the play but urged him to rewrite it and to soften Blanche's hysteria. He listened, and ignored her” (Rader 199). The very first people who were privy to the violent, sensual, chaotic world of Blanche and Stanley were two women who found fault in Stella's character. They saw her hysteria, no doubt an unbecoming trait, as “far out,” or perhaps unbelievable. Much later critics of the play, “[feel] so strongly about Blanche that they envision her death at the end of the play, even if the plot only allows us to see her carried off to the asylum” (Vlasopolos 324). In examining Tennessee Williams's *A Streetcar Named Desire*, I will explore the circumstances that lead to the way Williams's female characters were created and perceived, and use a modern feminist perspective to analyze how we should now view these characters as we move to a more equal society. In addition to this more scholarly work, I will be writing a short play featuring Blanche in the asylum. Unlike the aforementioned critics, I imagine a life for Blanche after *A Streetcar Named Desire*, and I intend to uncover the devastating effects of rape and blame on a victim, and discover why we discover fault with victims rather than aggressors.

**Poster 34****Mind+Body: Experiences of Young Adult Oncology****Presenter(s):** Jake Russell Thompson**Advisor(s):** Dr. Jocelyn Buckner

The first thing many people think of as a “cancer patient” tends to be an elderly person, or perhaps a child too young to understand what’s happening — pink ribbons and fundraising walks, weak and feeble bodies too sick and delicate to function. These notions of a “quintessential cancer patient” are both limiting in their scope of what the disease actually is, and isolating to younger people going through it. For people who don’t fit this predetermined idea of the psychological, physical, and emotional development of a cancer patient (specifically, the seventeen to thirty-five age range), isolation becomes another side effect of their illness. Frustration, anger, and depression erupt from being old enough to strive for independence, but stuck being completely dependent on the people around them. People who, unfortunately, tend to panic and disappear when needed the most. It suggests a disturbing trend towards willful ignorance of a society that’s become jaded and uninterested in stories of cancer. A society that pities the sick and views them as helpless victims while simultaneously not taking the time to listen, far too complacent in its understanding of cancer and what it does to the human mind and body. Through the intensely personal medium of ethnodrama, a style of playwriting based on interviews and testimonial, dialogue derived from the direct words of young adults with cancer will allow these stories of pain, dis-ease, success, and frustration to be heard in a personal, unique, and theatrical way.



**Poster 35****What's Cookin' Good Lookin': The Rise and Phenomena of the Female Celebrity Foodie and the Contribution of Social Media****Presenter(s):** Alison Weiss**Advisor(s):** Dr. Jocelyn Buckner

Once seen in black and white terms as human sustenance or luxury, eating has become not only a hobby, but an obsession. Whereas chefs and cooks were previously regarded as average, behind-the-scenes workers, they have now stepped out from the kitchen and into the spotlight, becoming celebrated public idols – and performers. With images tailored to different demographics right down to their clothing and hairstyles, chefs and cooks no longer merely prepare food: they put on a show. The foodie phenomena has been pioneered by females, largely in part to the parallel-running infatuation with health, fitness, and food trends that make waves primarily through the mediums of blogs and social media. In this thesis, I link the common characteristics between internet-made, blogger-gone-superstars such as Ella Woodward, creator of the Deliciously Ella brand with over 205,000 Instagram followers, The Pioneer Woman, the “accidental country girl and housewife,” and lifestyle guru Emily Schuman, the first food blogger to publish a popular book, to examine how and why the female foodie has become a new breed of celebrity. I argue that using social media, these women have established the ideal aspirational/inspirational image. The ‘ordinary’ masses are able to become familiar with exotic ingredients, preparation devices, and techniques that seem out of their reach, creating a sense of admiration; however, seeing the ‘Average Jo’ achieve fame on such media outlets gives them hope that anyone with a Smartphone and a love of food has the potential to become a star.

**Poster 36****K-Pop Or K-Death? The Mirrored Oppression From Hollywood In The 1930s****Presenter(s):** Molly Welsh**Advisor(s):** Dr. Jocelyn Buckner

In the 1930s, the film industry in Hollywood set the standard of “Hollywood filmmaking” with its development of star-contracts so oppressive, actors would be trapped for years within them. However, the implications of creating such a star-system have far surpassed what William Hays believed he was doing in the 1930s. In South Korea, a big star-system still exists and in many ways, mirrors what the United States did in the 1930s. What is informally known as “K-Pop” is a label for the music industry that seeks to emulate western ideals not only in looks, but in practice. This system allows the South Korean people to hold up their ideals as far as the traditionalism that is so deeply imbued in their society as well as create a huge following and profit. However, this unregulated system has negative side-effects that also mirror the negative side-effects that the Hollywood system caused by ways of oppressive and aggressive tactics to keep their film stars shining, even if it was artificially. By looking into the process in which these stars start out as children and grow up into a life where their single occupational knowledge is dance, how can they be expected to survive otherwise? In this thesis, I argue that there is a symbiotic relationship between the traditionalism that has existed in Korean society for centuries, and because of this mentality, many of the western ideals from decades ago are still in use today.

**Poster 37****"The Modern Performance Art vs. Traditional Theatre: The Division Between the Contemporary and the Conventional"****Presenter(s):** Sally Woo**Advisor(s):** Dr. Jocelyn L. Buckner

Performance art and theatre are both rooted in the same practices and ideas. Performance art is an art form that utilizes the human body as a tool for creating art. It has no boundaries and past performance pieces have proven that the options are limitless. The human body acts as a type of canvas in which the artist manipulates however they wish, whether it is on the body itself or the movement or placement. Theatre does the same thing, using people to tell stories that illuminate real life situations in a scripted and rehearsed manner. However, while theatre has become a commercialized and popular form of entertainment, performance art remains more taboo and outlandish. Both these practices ultimately have the same goal: to garner a response, a reaction, an emotion from the audience. However, if they have the same objective, why is it that they are so separated and isolated from each other? The world of performance art and theatre share numerous qualities and yet they exist in two different worlds. This thesis will examine and explore the deep rooted conflict between both types of performance by comparing their traditions and major pieces. I argue that although there are many differences between the two, there are also commonalities that can bring the two together. Both art forms employ a human body as instruments in conveying a point, but the ultimate goal is to have it received by an audience as neither can exist without one. I aim to utilize this research to compare the division between other art forms as well and why often people limit themselves within their field.

**DODGE COLLEGE OF FILM & MEDIA ARTS**

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**Poster 38****Nonbinary Gender Character Design****Presenter(s):** Natalie Ordway**Advisor(s):** Dr. Ian Barnard

For this project, I explored gender presentation by taking animated nonhuman characters with clear male/female visual cues and designing transgender human versions of them that don't adhere to that binary. I hope to use these images to show that you can venture beyond traditionally gendered aesthetics when creating characters and still retain effective design.

I redesigned an originally male and female character from each of WALL-E, Kung Fu Panda, and A Bug's Life.

## **WILKINSON COLLEGE, DEPARTMENT OF ART**

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### **Poster 39**

#### **Transphobia in College Greek Life**

**Presenter(s):** Emma Foss, Lusihi (Landyn) Pan

**Advisor(s):** Dr. Ian Barnard

In this project, we analyzed the Greek system and its efficacy in accepting transgender and nonbinary members of the college community. First, by looking at “traditional” Greek organizations, we found a lack of terminology of not only inclusiveness but also a lack of recognition of the existence of transgender or nonbinary people. As we looked further, we found that most queer-identified Greek organizations also failed to mention transgender students or a willingness to host diversity within their chapters. We discovered only one that was truly inclusive and cited transgender people within their initiation documents and on their website.

We both have had personal experience with the Greek system, and were able to speak of our involvement with the gender binary that exists within fraternities and sororities. After processing all of the data that we accumulated, we created a set of standards that sororities and fraternities should follow in order to be totally inclusive. We hope this project will shed light upon transgender issues and help bring more inclusiveness to not Chapman but Greek life as a whole.

## **WILKINSON COLLEGE, DEPARTMENT OF COMMUNICATION STUDIES**

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### **Poster 40**

#### **The Importance of Team Organization When Implementing Computational Tools**

**Presenter(s):** Arielle Berman, Clifford Davis, Lauren Henderson

**Advisor(s):** Dr. Kerk Kee

Cyberinfrastructure-Enabled Virtual Organizations bring together diverse scientists, technologists, computational tools, big data, and more throughout the process of an e-science project. In order for a computational tool to achieve success, there are multiple co-occurring activities during the virtual organization of the team and of the tool that need to be met. Our study began with coding thirty-three transcripts, which were analyzed using the Grounded Theory Approach. Our team identified key communication-oriented aspects involving the organization and implementation. Among the transcripts, there were liaisons whose purpose was to communicate with different levels of the software. From development to implementation, even with people working to prevent communications issues, some still arose. Issues stemmed from many roots and for many reasons; our findings, at the organization-level, stressed a need for understanding across all team members, especially when looking at the communication between different types of developers, and between the developers and the users of the tool(s). Our most frequently used nodes were: issues with hierarchy within the development team, how the integration team communicated with users, the various methods of communication, and the overall group communication. Many of the interviewees expressed concern that other types of scientists and/or the users did not understand certain aspects of the tool, how it functioned, or why it was significant. We believe that full understanding and clear communication between the users and developers and, internally, within the development team itself is the key to successful virtual organizing and implementation of the tools discussed and created.

**Poster 41****Jealousy and the Relationship Between Equity Restoration via Retaliation and Surveillance**

**Presenter(s):** Camille Burdge, Karen Gonzale, Launa Kressin, Olivia Martinez, Bora Song

**Advisor(s):** Dr. Jennifer Bevan

Jealousy in romantic relationships and its influence is explored in this study. Because of the digital age, new technologies in social media have allowed public access to reach anyone's personal page. Due to social media's advancements, surveillance methods as a retaliation goal have become more accessible. Previous research reflects surveillance methods have damaging effects on the relationship and causes relational dissatisfaction. Due to this, we will explore if there is an association between how jealous a person becomes with the goal of equity restoration via retaliation and surveillance behavior. Measures of romantic jealousy, equity restoration, and surveillance were given to a sample of 604 participants. The study's results reflects that there is a positive correlation between both variables; the more a person has the goal of equity restoration, the more they will result in surveillance on their romantic partner. These results suggest that people are likely to express jealousy depending on their equity in the relationship, and this will lead to surveillance and overall dissatisfaction. Keywords: romantic jealousy, equity restoration, surveillance

**Poster 42****Unwanted Electronic Communication: Cyber-stalking and Cyber-Harassment**

**Presenter(s):** Jacqueline Clark, Al-Leigh Roden

**Advisor(s):** Dr. Elaine L. Davies

According to a report issued by the U.S. Center for Disease Control (2010) an estimated 7.1 million Americans had been cyber-harassed or cyber-stalked within the 12-months prior to the survey. For example, within this population, 78.8% reported unwanted phone calls/messages and 30.7% received unwanted email/letters. Despite growing evidence that incidents of cyber-harassment and cyber-stalking are growing in scope and severity as the variety of technological platforms increase, researchers have yet to fully examine the differences between cyber-harassment and cyber-stalking. Therefore, this study examines if differences exist in victims reports of: (a) how victims describe their experiences (b) how victims cope (c) how these incidents impact victims' physical, emotional, and psychological health. The current study conducted focus group sessions with 49 participants who reported a broad range on unwanted electronic communication experiences. The results reveal that minimal differences despite the fact that cyber-stalking is a criminal activity and cyber-harassment is not covered by legal statutes. Thus, current criteria used to aid victims of unwanted communication may be ineffectual.

**Poster 43****Ongoing/Unresolved conflicts: Serial Arguments Between K-12 Parents and Teachers**

**Presenter(s):** Jacob Decker, Jordan Batti, Kevin Chang, Charles Evans, Jamie Mark

**Advisor(s):** Dr. Jennifer Bevan Dr. Roxanne Greitz Miller

Education is a time for students to learn. For many parents and teachers, however, it can be a time of struggle. Teachers and parents are sometimes unable to resolve a disagreement due to opposing ideas. Often this results in ongoing arguments that can lead to feelings of dominance, control, and eventually more anger. In order for an argument to be considered a serial argument, the two parties must confront the issue more than once. The results from this online survey of K-12 teachers and parents will indicate the individual's serial argument-related goal and emotion. This discovered way of dealing with conflict will better our understanding in analyzing the individual's anger expression and goal importance with the integration of the communication accommodation theory.

H1 predicted a positive correlation between goal dominance and control and the rise of anger. A bivariate, one-tailed Pearson correlation was conducted to test this hypothesis. The relationship between the goal dominance and control, and anger was significant and in the predicted direction ( $r = .327$ ,  $p < .001$ ).

**Poster 44****Time-Related Issues Surrounding Computational Tool Development in e-Science Projects**

**Presenter(s):** Joanna Diaz, Mona Sleiman

**Advisor(s):** Dr. Kerk Kee

The big data movement is gaining increasing attention and big datasets are growing exponentially, providing more potential for analysis and information. Therefore, there is an urgent need to understand the virtual implementation of computational tools needed to process and analyze big data for e-science. This study examines the most prevalent and critical time-related issues that affect the success of an e-science project and its computational tool development. Various domain scientists, computational technologists, and supercomputer center administrators were interviewed about a range of experimental computational tools across different scientific domains. Based on grounded theory analysis of 33 interviews, we identified that the turnover rate of staff often leads to a significant set-back for a project, the short-term cycle of federal grants is not conducive to creating tools, and the technological evolution is never ending and requires longer-term commitment beyond a project cycle for upkeep and improvements to a tool. We found that time zones were not an issue.

**Poster 45****Communication strategies for computational tool development, adoption, and diffusion****Presenter(s):** Isabel Dimaranan, Tyler Bice, Susan Chen**Advisor(s):** Dr. Kerk Kee

Based on grounded theory analysis, four phases of development, adoption, and diffusion emerged through our data analysis. Defined by the relationship of two dimensions, media richness and relationship type, we identified four types of distinct interactions that use specific communication strategies to promote tool development, implementation, and diffusion. The two types of individuals that developers of a tool interact with during diffusion and development are collaborators with existing relationships and potential users who are mainly strangers. Collaborators usually have a close relationship with developers and are often directly involved with the development of the tool or belong to the developers' professional networks. The purpose of communication between developers and collaborators is to virtually organize and further develop the tool. Potential users who are mainly strangers share a low-level relationship with developers and primarily interact with the tool solely during diffusion. "Strangers" include users in the open e-science community who are interested in learning or using the tool once it is developed. These interactions help diffuse and promote the tool. Two types of communication methods are used for interaction: computer mediated communication and face-to-face interactions. By identifying specific strategies that are used to facilitate communication between these groups, we are interested in finding out how each of the four types of interactions use specific communication tactics to promote development, implementation and diffusion of the tool.

**Poster 46****Instructor Responses to Student's Evaluations on RateMyProfessors.com****Presenter(s):** Andrea Frisina, Susan Weinstein**Advisor(s):** Dr. Jake Liang

Students often write negative evaluations of teachers online via RateMyProfessors.com. Previous research shows that negative evaluations affect student learning. Teachers often do not respond to the negative evaluations concerning their teaching. We are interested if teacher responses would impact student learning. We employed a 2 (Instructor Statement of Competence: Present/Absent) x 2 (Instructor Statement of Trustworthiness: Present/Absent) x 2 (Instructor Statement of Caring: Present/Absent) experiment to test if teacher responses would affect learning. The results showed that when trustworthiness statements were used, students learned more. The implication of the study suggests that teachers should respond to the negative student evaluations.

**Poster 47****A Preliminary Model for Diffusing an Experimental Tool Beyond Its Inception Group****Presenter(s):** Lucas Halopoff, Jake Schmidt, Brian Quatch**Advisor(s):** Dr. Kerk Kee

This poster describes a diffusion model of the pathways and mechanisms that spread an experimental computational tool from the inception group to new user groups that continue to re-develop and/or adapt the tool to new problems and contexts. The research begins with the assumption that federal funding initiates many academic computing projects aimed at developing open source and experimental tools for computational and big data science, also known as e-science. The diffusion model describes the two general inception groups that develop the experimental tools either out of a specific research problem that require big data for modeling or a pioneering effort to create a generalizable tool across multiple scientific domains. Regardless of their initial motivation, there are multiple pathways and mechanisms that move an experimental tool beyond its inception group to new user groups that carry the tool forward through adaptations and re-developments, resulting in an emerging community around the tools. These pathways and mechanisms include word of mouth, publications, a community-driven website for the tool, etc.

**Poster 48****Examining Avoidance Conflict Strategy in Unresolved Serial Arguments Between Parents and K-12 Teachers****Presenter(s):** Casey Hamilton, Melanie Au-Yeung, Sarah Clevenger, Kate DeSalvo, Reily Ford**Advisor(s):** Dr. Jennifer Bevan, Dr. Roxanne Greitz Miller

This study takes a close look at ongoing, unresolved serial arguments between teachers and parents of K-12 students. We examined three variables including parent-teacher relationship, conflict management styles and serial arguments. Communication occurs most efficiently when there is open communication especially when involving parents and teachers of grades K-12. This current study predicts that in ongoing, unresolved conflict between parents and K-12 teachers, the participant who did not initiate the serial argument is more likely to use avoidance conflict strategy than the participant who initiated the serial argument. We measured our variables through an anonymous survey using the Likert scale. We had 251 participants who completed our anonymous survey, with 100 participants who have experienced a serial argument. 12% of the participants were males and 65% were females. The Variables looked at in this study have been researched and looked at in similar studies discussed throughout. In conclusion our hypothesis was not supported by the results of this study.

**Poster 49****The role of jealousy in romantic relationships: The effect of surveillance on relationship satisfaction****Presenter(s):** Jamie Hlavacek, Sarah Gilbert, Scott Metts, Cesarina Moretti, Taylor Sellers**Advisor(s):** Dr. Jennifer Bevan

Romantic jealousy expression has been studied over the years as it is a prime component to understanding and improving interpersonal relationships. In this study, we aim to look at the expression of romantic jealousy in relation to surveillance of partners and the level of relationship satisfaction achieved. Previous research supports that the surveillance of a partner often leads to dissatisfaction of a relationship, and the act of surveying is dependent on outside factors, such as attachment styles. We hypothesize that in romantic relationships, both parties involved will experience a decrease in relationship satisfaction when surveillance due to jealousy increases. Our results yield a significant finding, coinciding with past literature, to support our hypothesis.

**Poster 50****The Key Principles of Virtual Organizational Structures for Effective & Productive Experimental Tool Development in e-Science**

**Presenter(s):** Christian Keroles, Len Hamilton

**Advisor(s):** Dr. Kerk Kee

Due to a diverse range of challenges and existing constraints within the academic computing community, there is a very high failure rate among experimental computational technologies and e-science projects. Based on grounded theory analysis of more than 30 qualitative interviews with a diverse range of lead users, developers, and administrators of cyberinfrastructure projects, this poster explores the research question, “What are the principles of virtual organizational structure(s) that promote effective & productive tool/technology development in e-science?” The purpose of this study is to describe the management, administrative, and facilitating styles and the organizational structures that better promote the productive development of computational tools to process big data for scientific research. This poster elaborates on 3 key managerial and organizational factors that affect the ultimate success of new computational tools: (1) managing a diverse and often conflicting group of users and developers, (2) establishing an incentive structure, and (3) establishing long-term continuity of personnel and knowledge.

**Poster 51**

**WITHDRAWN**

**Poster 52****The Proteus Effect - Priming vs. Motivated Preparation Explanations**

**Presenter(s):** Sarah Miller, Mike Schwartz, Miranda Wall

**Advisor(s):** Dr. Jake Liang

The Proteus Effect is when individuals enter a virtual environment and follow characteristics from their digital self representations. The purpose of this study is to examine the mechanisms behind the proteus effect. Two possibilities include priming and motivated preparation. The current study employs a lab experiment along with instructions to test which mechanism is responsible for this effect. The preliminary data points to priming. We include a discussion of the implications.

**Poster 53****How to Compose Engaging Content on Chapman Blogs: Concepts that Reflect Blog Views, Number of Comments, and Social Score**

**Presenter(s):** Angelina Riccio, Tatiana Broukhim, Shelby Ticsay

**Advisor(s):** Dr. Jake Liang

The Chapman University Strategic Marketing and Communications Department aim to increase engagement with students via blog content. Engagement can be conceptualized as how many individuals view and share the content, and add comments. To understand the message content we conducted a linguistic inquiry and word count (LIWC) analysis. This analysis highlighted specific terms and phrases which exhibited the language used within the blog content. Applying the results from the analysis, we produced fourteen original concepts (e.g. achievements and inclusion of details) related to the engagement. Three coders analyzed randomly selected blogs using the definitions of the concepts. The data correlated with the views, comments, and social scores. Using the results, we composed instructions to improve blog engagement. We propose to experiment with the instructions.



**Poster 54****Persuasion and Sharing****Presenter(s):** Shelby Stanton, Christina Lopez, Tim Seavey**Advisor(s):** Dr. Jake Liang

Online marketing efforts usually focus on the persuasiveness or sharability of a message. However, research has not established where these two concepts overlap. The current study explores this overlap. Web 2.0 platforms facilitate the delivery of different content and statistics to convey the persuasiveness and the sharability. An original experiment varied message quality (high argument strength, direct message, and emotional message) and web cues (i.e., ratio of views, likes, and shares) to signal self-presentation (favorable and unfavorable). Prospective participants will view mock webpages for internet news and donation collection, followed by measures of the content persuasiveness and sharability.

**Poster 55****K-12 Teachers and Parents: How Do Length and Frequency of Serial Arguments Affect Perceived Resolvability in the Teacher-Parent Relationship?****Presenter(s):** Justin Villasenor, Jimena Galvan, Selena Pang, Paula Pearl, Miranda Wall**Advisor(s):** Dr. Jennifer Bevan

This paper aimed to study the relationship between length of serial arguments and perceived resolvability and number of serial arguments and perceived resolvability in the K-12 setting. Role theory explains people's predictable behaviors based on the roles they take on; thus, it explains the role of parents and teachers in their unique relationships and how roles play into the level of involvement teachers and parents have in the education of children, which can inadvertently result in serial arguments. Role theory was chosen for this study because it works hand-in-hand with identifying predictable behaviors teachers and parents have that contribute to the formation of serial arguments in terms of length and frequency and it can help explain how length and frequency are related to the perceived resolvability of serial arguments among teachers and parents. The hypotheses tested in this study were H1) The length of serial arguments is negatively associated with perceived resolvability in the K-12 education context and H2) K-12 teachers who engage in serial arguments more frequently have lower perceived resolvability.

The study included 100 participants who were either parents of K-12 students or who were K-12 teachers themselves. Participants were asked to fill out an anonymous survey. The study found that as the length of serial arguments rose, perceived resolvability fell. Likewise, as the number of serial arguments rose, perceived resolvability fell. Thus, both hypotheses were supported by our findings. Future research should study serial arguments in the K-12 area further, as there was no prior research.

**Poster 56****Communication strategy involved in creating successful co-production between computational technologists and domain scientists**

**Presenter(s):** Travis Watkins, Michelle Williams, Duncan Wilson

**Advisor(s):** Dr. Kerk Kee

Although the big data phenomenon is growing at an exponential rate, little is known about the processes involved with the creation, adoption, and evolution of computational tools for big data processing. Methodologically, the research team systematically coded 33 interviews with domain scientists, computational technologists, and project administrators, through the use of the grounded theory approach in order to gain insight on this matter. Analysis indicated that in order for the developers and the users to engage in successful co-production, there must be fluid communication between both parties as well as an agreement as to how they define a successful tool. Successful co-production involves a shared understanding of users' needs and technical possibilities of potential tools, and the use of a mediator to aid in generating the shared understanding at a high level. Communication is the catalyst to creating successful tool production and adoption. Experts interviewed frequently describe a tool as being successful when it fulfills the users needs, it is accessible, and it is easy to use. Moreover, a successful tool may ultimately be adopted by professionals in other fields for uses that are distinct from its original purpose. The implications of this theory are widespread and will lead to the streamlining of tool creation, adoption and evolution of early tools in a plethora of disciplines and data science.

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**WILKINSON COLLEGE, DEPARTMENT OF HISTORY**

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**Poster 57****The Relationship between the American Government and Society: Congressman John O'Connor and New York's 16th District during the Great Depression**

**Presenter(s):** Kristine Avena

**Advisor(s):** Dr. Jennifer Keene

This research focuses on the interaction between a Congressman and his constituents and how this interaction reflects the larger conversation between the American government and its people. By examining the interrelationship between a political representative and New York's 16th District between 1931 and 1951, I clarify the role and efforts policy makers made in response to urban societies' concerns. The two decades studied in this dissertation consists of the post-Prohibition phase, Great Depression, and New Deal programming. The collection I analyze is the "John J. O'Connor Collection" from the Frank Mt. Pleasant Library of Special Collections at Chapman University, which consists of five scrapbooks containing political memoranda, newspaper clippings, and constituent correspondence. I also analyze material related to John O'Connor from the Library of Congress. These sources primarily consist of manuscripts, letters, political cartoons, photographs, magazines, and newspaper clippings. This research evaluates the concerns of this urban community by focusing on constituent correspondence with O'Connor, newspapers demonstrating public concerns, and letters exemplifying O'Connor's efforts, or lack thereof, in addressing these concerns. This research therefore aims to discover the responsiveness of political representatives in addressing the necessities and concerns of an urban community in New York. While prior scholars have analyzed rural areas during the Great Depression (i.e. American Southwest), the scholarship has not yet evaluated the issues relating to urban communities. In turn, this research provides insight into the implementation of policy, prominent issues of concern, and underlying social and economic pressures that plagued urban communities.

**Poster 58****The Image of Bobby Sands****Presenter(s):** Reed Burke**Advisor(s):** Dr. Leland Estes

This research is going to focus on the 1981 Hunger Strikes during the period of the Troubles in Northern Ireland. The focus of this peaceful protest in the media was on Provisional Irish Republican Army volunteer Bobby Sands. He was the first protestor of the hunger strike that started on March 1st, 1981. The focal point of my research is going to be focused on analyzing newspapers from different areas of Ireland and Great Britain to comprehend the differences in sentiments towards Sands and the hunger strike. I will be analyzing Pro-Republican newspapers from Northern Ireland and comparing them to newspapers in Ireland, while simultaneously looking at Loyalist newspapers from Belfast and comparing them to newspapers from England. This will show the differences in the opinions of both sides of the argument, whether it be on the Republican or Loyalist side. The research will pay special attention to major events that occurred during the hunger strike, such as the first day, the election of Bobby Sands to Parliament, and his death sixty six days after the start of the strike. The research will also take into account the public opinions of politicians in the various governments of the United Kingdom, most importantly former Prime Minister Margaret Thatcher. Hopefully this project can illuminate the views towards Bobby Sands and his protest against the English Government, as portrayed in various newspapers.

**Poster 59****Prizefighting a New Culture****Presenter(s):** Logan Dale**Advisor(s):** Dr. Vanessa Gunther

This research will investigate the varying ways that the working/lower class and immigrants along with African Americans used prizefighting, later known as boxing, as a way to escape the cruel Bachelor-subculture and the subjectification by the American bourgeois class to eventually create their own truly working class culture that exists to even today. It is believed that by focusing on the iconic boxers of 19th to the 20th century along with the gambling aspect that spectators took part in, we will be directed to how the American bourgeois class tried to reform the sport of prizefighting to reflect more of their own values while distancing itself from the working class and immigrants, but ultimately the sport of boxing helped overcome this resistance. By using aspects of Foucault and Retamar's ideologies along with Geertz definition of culture and symbols we will be able to see and identify how prizefighting started the shift and break down of the American bourgeois culture and the construction of this new culture that reflected the working class and immigrants that are considered to be the true representation of the United States culture.

**Poster 60****Making First Contact: Early US-Muslim Exchange and Interaction****Presenter(s):** Alfredo Gonzalez**Advisor(s):** Dr. William Cumiford

In a post 911 world the idea of US-Muslim relations most likely will trigger images of conflict and ever rising tensions; however the first nation to acknowledge the US was predominantly Muslim. The first country to recognize the United States of America as an independent nation was Morocco in 1777. This research will attempt to identify how the initial diplomatic relations between the United States and the Muslim world were established, and what elements of these nations contributed most significantly toward the burgeoning dialogue between these two civilizations. These early interactions will be limited to the 19th century, with an emphasis on relations with the Barbary States, such as Morocco, but focusing significantly on the relations with the Ottoman Empire. While focusing largely on formal diplomatic relations carried out by ambassadors such as David Porter, it will also acknowledge the significance of informal interactions between United States citizens and the Muslim population of the Ottoman Empire. Upon initial research, protestant missionaries have been identified as heavily active in the Ottoman Empire throughout the 19th century in dissertations and books, and will be incorporated into this research as well. The primary sources consulted for this project will be diplomatic and personal correspondence by US and Ottoman diplomats, protestant missionaries, and Muslim citizens. These will be employed to analyze these interactions, and what ultimately affected the political, social, ideological, and economic exchange between the United States and the Muslim world, and how the perspectives of one another were impacted as a result.

**Poster 61****The Qualities of Fact: A History of Information in Mexico's Church-State Conflicts****Presenter(s):** Alexander Odicino**Advisor(s):** Dr. Carolyn Vieira-Martinez

The personal papers of American Jesuit priest, Wilfrid Parsons, evince an international information war concerned with the praxis of "facts" pertaining to Mexico's Church and state conflicts of 1925 to 1939. While editor-in-chief of the Jesuit weekly magazine, "America", (1925-1936) Parsons transformed the publication into the pre-eminent Catholic source of information about the "Mexican situation", consequently enabling him to coordinate the publication of "facts" with several other New York based Catholic publications. However, rather than speaking to strictly Catholic interests in the Mexican conflict, research has shown that, when analyzed as a focal point of information processing, the sources in the Rev. Wilfrid Parsons, SJ Papers and the America Magazine Archives define a matrix of the information war as a whole.

As the object of that war transitioned from the Mexican "situation" to the Mexican "question", the appraisal of information quality in terms of its practical application and philosophical premise became increasingly important. Rallying broad public support behind what seemed to be a fundamentally Catholic problem remained a challenge in the United States for most of aforementioned time frame, but the purview of sources reporting persecution of Catholics in Mexico began a drastic change in 1939 with Parsons' own proposition that the situation in Mexico was not merely a Catholic conflict or a Mexican conflict, but an issue of international human rights.

**Poster 62****The Origins of the Great War: British Parliament and Belgian Neutrality****Presenter(s):** Maci Reed**Advisor(s):** Dr. Jennifer Keene, Dr. Carolyn Vieira-Martinez

The complicated political agendas surrounding the various nations' decisions to enter World War I have led to an ongoing debate about the war's actual cause. This research project will investigate the effect that Germany's invasion of Belgium had on Great Britain's decision to enter the war. I will use the Hansard transcripts of debates in the British Parliament to investigate the extent to which the defense of Belgian neutrality was involved in the pre-war deliberations. A comparison between the transcripts from 28 June to 3 August and those from 4 August will illustrate the change, if one exists, or the continuity in the war declaration debate among the members of Parliament in response to the German invasion. These findings will either verify or disprove the claim, made by Prime Minister Herbert Asquith in his address to Parliament on 6 August 1914 and perpetuated in wartime propaganda, that the British entered the war on behalf of Belgian defense.

**Poster 63****Impact of the Tank in World War I****Presenter(s):** Alec Shumate**Advisor(s):** Dr. Carolyn Vieira-Martinez

The goal of this research is to investigate the extent to which tanks in World War I were used as effective weapons of war versus powerful tools for propaganda. When tanks first appeared on the Western front they were hailed by some as invincible death machines and as temperamental liabilities by others. Regardless, the tank soon became famous world-round. By examining first hand accounts of tank crewman and juxtaposing their experiences with sensational articles printed in American newspapers, I hope to learn the true nature of their wartime contribution. In particular, I will focus on how such a secret weapon became so widely publicized and the extent to which such publicity might have influenced American intervention in the war. The result will be a new understanding of different modes of political propaganda, the nature and value of secret weapons, and the extent to which new technologies can influence international relations.

**Poster 64****After the Famine: Return Migrants in Nineteenth Century Ireland****Presenter(s):** Brittany Walsh**Advisor(s):** Dr. Carolyn Vieira-Martinez

The Irish census records from 1841 and 1851 demonstrated a nearly 20% drop in population over the course of the Great Famine, accounting for both death and emigration during that period. Among this drop was the community of nearly 1.5 million emigrants who left during the decade, a number accounting for half of the citizens leaving Ireland in the nineteenth century. While most of this community were permanent migrants, an estimated 10% of those who emigrated to the United States returned to Ireland during the second half of the century. This research will analyze the construction of Irish emigrant identity amongst return migrants and their descendants. While the motivations for emigration during this period were widely varied across the entire class of emigrants, the motivations for return migrants seem clearer. It is this community of return migrants who, while remaining explicitly tied to their national identities, chose to return despite the social, political and economic factors that had prompted the exodus of their fellow emigrants. These migrants, while still tied to their roots as Irish citizens, faced the cultural exchange that is a critical part of the transnational emigrant experience. This research will determine how, facing their identities as both immigrants and Irish citizens, this community bridged the gap between the two communities which receive the greatest focus in famine migration study, those who stayed and those who fled.

**Poster 65**

**The Gender Gap, The Democratic Party, and War**

**Presenter(s):** Madeline Robinson

**Advisor(s):** Dr. Ann Gordon

This research explores the gender gap amongst female and male voters and its correlation with the Democratic Party's platform on foreign policy. The political orientation of women during the 1980's reversed and shifted towards the left, and this research will investigate if this was caused by female voters' opinions of the parties on their foreign policy platforms. The theory of conflict avoidance states females are more likely than males to avoid conflict, and this theory can be used to determine whether females feel more represented by the Democratic Party compared to the Republican Party. The foreign policy platform of the Democratic Party is typically more skeptical of the military and the use of armed forces and has a greater concern for diplomatic solutions and human rights, which could be more appealing to the female voter population if the conflict avoidance theory is considered. This research will examine if indeed females do tend to avoid conflict more than males and if so why, and if females are voting increasingly more as Democrats as a result of the Democratic Party's foreign policy platform being less aggressive and geared more towards diplomacy than war.

**Poster 66**

**Class Contributions: How Attitudes on Welfare are Shaped in the U.S.**

**Presenter(s):** Julia White

**Advisor(s):** Dr. Richard Ruppel, Dr. Nubar Hovsepain

For a country with an ever increasing wealth gap, attitudes about welfare and public assistance programs continually fail to attain popular support. Based on factors mostly focusing on racial biases and misconceptions, much of the literature surrounding public opinion on welfare spending lacks a significant emphasis on the manner in which socioeconomic status also contributes to the formation of negative attitudes. Considering such a lack of an intersection in the previous literature, the following research explores the relationship between socioeconomic status, race, and attitudes about federal welfare spending utilizing data collected by the 2012 ANES Survey. Socioeconomic status—explained by American Psychological Association as a measurement of education level, income level, and occupation which indicates social standing—will be operationalized by the following parameters included in the survey: highest education level, employment status, and social class. These factors will additionally be analyzed with the respondents' racial identities in order to achieve a distinct intersectional perspective. Since common discourse over welfare spending focuses heavily on race and fails to incorporate other comprehensive factors, the subsequent work aims to build upon the existing literature in order to achieve more acute understandings of public opinion.

**Poster 67**

**Marijuana Legalization: who's in favor?**

**Presenter(s):** Haifa Alomair

**Advisor(s):** Dr. Ann Gordon

In the United States, marijuana is the most commonly used illicit drug. However, in 2012, voters in Colorado and Washington State passed laws to abolish the prohibition of producing, distributing and possessing marijuana. This paper addresses the future status of marijuana legalization in the United States through social and political acceptance, and public policy initiatives that play crucial roles in the direction marijuana legalization takes. Legalization most likely resonates with people beyond the users, who view marijuana as a harmless substance whose prohibition has stowed millions of people in jail and cost taxpayers billions of dollars to enforce its prohibition. Despite the concern about the negative effect on public health, it ultimately depends on regulatory laws and how they are implemented. The prevalence of marijuana is unmistakably popular among young adults, as well as the speculation around libertarian approval of marijuana legalization. It is the aim of this paper to categorize through the demographics of age, gender, education level, and political affiliation, those most likely in favor of marijuana legalization and why might they favor legalization against prohibition.

**Poster 68**

**Analysis of Recent Voter Turnout Rate for Young Adults**

**Presenter(s):** Shaia Araghi, Christine Lathrop

**Advisor(s):** Dr. Andrea Molle

The turnout rate for young adults in elections succeeding 1964 has significantly diminished. This derives as a result of the methods that the candidates use to reach out to young voters, the agenda being debated or the political climate at the time accompanied by the feeling of political efficacy. This research project delves into the major reasons behind why there has been a low voter turnout rate, that being under fifty percent of those in this age category, for young adults, those being 18 – 24, in presidential elections. This particularly investigates the reasoning for the 2012 election being such a variation from the norm. This theme is extremely important because voter turn out of certain demographics can drastically shift the outcome of an election, as seen in 2012 where the participation of this demographic was pivotal. The research analyzes data and charts of the voting trends for the last four presidential elections of 2000, 2004, 2008, and 2012, against historical trends as well as analyzes peer-reviewed articles and resources that interpret the information.

**Poster 69****American: American Identification and U.S. Party Affiliation****Presenter(s):** Erika Aranda**Advisor(s):** Dr. Ann Gordon

The face of the United States is changing. In a nation where the majority of the population belongs to a minority group, defining the national American identity has become a complex task. This essay focuses on the correlation between the degree of attachment to the American identity and how it plays a large role in dictating party affiliation. Political culture (defined here as the shared beliefs and values as to how citizens and the government relate to one another) in the United States is extremely varied throughout the nation due to demographic diversity. A person's identity is socially and politically constructed. Various factors, such as ethnicity, gender, ideology, values, and socio-economic status, play a vital role in molding individual identity. As a result of these factors, some individuals have a stronger sense of attachment to the American identity than others. American identity is determined by race, gender, religion, and ideals. A stronger attachment to the American identity tends to correlate with an affiliation with the Republican Party whereas a weaker attachment to the American identity tends to correlate with an affiliation with the Democratic Party. The goal of political parties is to identify with the masses in order to gain their support. By looking at empirical research, such as self identified party affiliation, voting behavior, and political participation, trends between American identity and party affiliation become more evident.

**Poster 70****Iranian Nuclear Proliferation and News Outlets****Presenter(s):** Bailey Burlingame**Advisor(s):** Dr. Andrea Molle

This project will involve the current problem of nuclear development in the nation of Iran. The question involved in the election studies was, "Should we try to stop Iranian Nuclear Development by increasing sanctions, yes or no?" According to the US Department of State website, they are attempting to increase these sanctions against individuals or cooperations who can be proven to have provided aid, information, or mechanical aspects to assist the goal of Iranian nuclear proliferation. The website provides identifying information for the individuals involved. The answer to this question I believe will be determined the amount of news information the individual has access to each day, whether it be from the news television, news paper, or online. Another aspect to be considered is what kind of sources they are receiving their news from, certain programs may place less importance on this issue than others, thereby making this appear as though it is not as large an issue while retrospectively certain programs may be placing extreme amounts of focus on this topic. Ultimately, I believe hypothesis to be, "If an individual receives news from some type of source daily, then they will vote yes on this topic."



**Poster 71****The Election of Obama and its Effect on Racism in the United States****Presenter(s):** Mackenzie Carl**Advisor(s):** Dr. Ann Gordon

This paper explores the issue of racial views within the United States, particularly after the election and reelection of Barack Obama in 2008 and 2012. The goal of this project is to determine if racial tension and resentment has either increased or decreased due to the election of a black President as well as determining if party identification is a predictor of racial resentment. By delving into the scholarly literature as well as looking into the public's opinion, it is revealed that racial tension and resentment has actually increased within America, especially within the white population. Different forms of racism have been found to emerge as well since the election of Obama, ranging from either old fashioned racism or modern/symbolic racism. Old fashioned racism that deals with the attitude that the black population is biologically inferior to the white population while modern racism is more subtle and an underlying feeling from the white population that shows signs of discrimination towards the black population. Also, data is collected from the 2012 American National Election Studies provides information such as discovering the correlation between party identification and racial negative attitudes in the United States. Overall, contrary to popular belief, Obama's Presidency did not bring about racial peace within the country, but brought about a divided America instead. Based upon the literature review as well as data collected from the ANES, it is found that America still struggles with the problem of racism regardless of having a minority within the Presidential Office.

**Poster 72****Trust in Government: An Analytical Approach to Public Perception****Presenter(s):** Pilar Fabregas**Advisor(s):** Dr. Ann Gordon

This paper will discuss how the American people's trust in their government can vary depending on different sociopolitical factors, and how the government could take advantage of this information. Through extensive research of literature reviews on previous findings as well as analysis of 2012 ANES data, I discover that the American public responds negatively to their government with an increased perception of corruption and overall disregard to the needs of the people. I will also add to the common literature by utilizing other scholarly works that demonstrate how these explanations behind distrust in government can be used to potentially improve its standing. Such factors frequently discussed by scholars on the subject include, but are not limited to, controversial political events throughout U.S. history that affect trust in government to varying degrees, race, gender, level of education, and age. Gathering data from these sources will explain how the previously mentioned factors influence levels of trust in the government. I hypothesize that the data and literature reviews will show a negative correlation between these factors and how likely the public is to trust the government. Thus, this research will give a more cohesive account on public opinion of the federal government and how correctly understanding and using such information could potentially change the public's views.

**Poster 73****Impact of Religiosity on Support for Gay Rights****Presenter(s):** Nick Fernandes**Advisor(s):** Dr. Ann Gordon

There has been a lot of discussion in news media about religious opposition to gay rights. To test these claims, I set out to compare religiosity (as defined by how frequently a given respondent attends religious services) with support for gay rights (in this case, defined as support for gay marriage or civil unions). I also sought to compare the effects of religious denomination on support for gay marriage. In comparing all these variables, I found that religiosity does have a strong impact on support for gay marriage. However, I found that religious denomination (with the exception of moderate Protestants and unaffiliated persons) had a statistically insignificant impact on support for gay marriage.

**Poster 74****Who is the Absentee Voter?****Presenter(s):** Alyse Frederick**Advisor(s):** Dr. Ann Gordon

If liberalization of absentee voting has the ability to increase voter turnout, then it is significant to distinguish what demographics an absentee voter is most likely to be a part of. In the United States an individuals' right to vote absentee is regulated by the state. Therefore, not every state in the United States grants their residents the choice to vote absentee. Initially, absentee voting was established as a means to allow soldiers displaced by war to participate in voting. Over time disabled citizens were granted the right to apply to vote absentee. Eventually, many states began to liberalize eligibility requirements in hopes of stimulating participation. Presently, voter participation in the U.S is very low, and therefore is not an accurate representation of American citizens. Voting is essential in democratic governance. Thus, it is important to determine whether liberalization of absentee voting has the potential to expand the electorate. Currently in the United States 20 states require an excuse for voters to be eligible for an absentee ballot. Conversely, a few states such as Oregon have switched to absentee only elections. With states such as California allowing individuals to choose to vote absentee permanently, questions of demographics come into play. What makes the individuals living in states such as California more attracted to voting absentee? Through utilizing information provided by the 2012 ANES Time Series Study, this research will seek to identify similarity between individuals who vote absentee, focusing on the female electorate.

**Poster 75****Religion's effect on Public Opinion Toward the Middle East****Presenter(s):** Mavrick Gaunt**Advisor(s):** Dr. Ann Gordon

This study takes the question of what influence religion and religiosity has on public opinion toward conflicts in the Middle East. Using questions from the National Election Survey of 2012 such as a person's interpretation of the bible and the importance of religion in one's life and correlating the results with questions about the issues in Israel, Afghanistan and Iran, the answer to this question is answered. Findings from all studies examined on this topic would suggest that a person's religion, their interpretation of the bible, the opinion of religious leaders, and a person's participation in church all influence one's public opinion. Upon examining the impact of one's religion on foreign policy public opinion, it was found that certain religions are in favor of certain policies in the Middle East, and others that oppose said policies. It has been found that a person from an Evangelical Christian background is more in favor of an aggressive policy in the Middle East. In addition, it has been found that religious leaders opinions affects those of their followers, and a persons interpretation of the Bible plays a prominent role in the public opinion of a religious individual (like a stance on the Israel-Palestine conflict). This study aims to provide a clear and concrete interpretation of the findings, further enhancing the knowledge of the multiple factors that have an affect on public opinion in the United States.

**Poster 76****Challenging the Common Wisdom of Voter Mobilization: A discussion on the effectiveness of various Voter Mobilization Techniques****Presenter(s):** Brad Joyner**Advisor(s):** Dr. Ann Gordon

The common wisdom in political campaigns is that the most effective way to get people to vote is by sending people out into neighborhoods and going to people's doors, personally encouraging them to vote. This method, canvassing, is undoubtedly effective in getting people to feel like their vote matters, and then getting them to actually vote. It is also incredibly expensive. While other methods may be less effective by percentage, they maybe more cost-effective and allow campaigns to reach a broader base. Further, the ineffectiveness of these campaign strategies may be mitigated by multiple means of voter outreach, such as a phone call and a letter, an email and a face-to-face interaction, or any combination of these. By tracking these methods and finding the most effective way of getting potential voters to become actual voters, campaign managers could make the most out of ever-scarce campaign funds. Many different approaches have been studied in this field, ranging from different styles of outreach, positive versus negative ads, or partisan versus non-partisan outreach. Through research and data analysis of the American National Election Survey, different campaign methods and their effect on voter efficacy and voting statistics can be compared, with the end goal to find the most effective method in reference to its Cost per Vote. Much of the research done in this field compares simply within one method of outreach, and this paper spans the width of voter outreach styles to find the most effective means of voter outreach.

**Poster 77****Voting Turnout in Young Voters**

**Presenter(s):** Christine Lathrop Araghi, Shaia.

**Advisor(s):** Dr. Andrea Molle

The turnout rate for young adults in elections succeeding 1964 has significantly diminished. This derives as a result of the methods that the candidates use to reach out to young voters, the agenda being debated or the political climate at the time accompanied by the feeling of political efficacy. This research project delves into the major reasons behind why there has been a low voter turnout rate, that being under fifty percent of those in this age category, for young adults, those being 18 – 24, in presidential elections. This particularly investigates the reasoning for the 2012 election being such a variation from the norm. This theme is extremely important because voter turn out of certain demographics can drastically shift the outcome of an election, as seen in 2012 where the participation of this demographic was pivotal. The research analyzes data and charts of the voting trends for the last four presidential elections of 2000, 2004, 2008, and 2012, against historical trends as well as analyzes peer-reviewed articles and resources that interpret the information

**Poster 78****Political Mobilization and Technology**

**Presenter(s):** Chris Molina

**Advisor(s):** Dr. Ann Gordon

The most efficient way to get people to take action has always been a big topic of discussion when it comes to political mobilization. Technology has greatly affected the way that people mobilize; it has created a platform for people to have easier access to those of like minds. With social networks such as Facebook, LinkedIn, and Twitter it is very easy in today's era to get your point across to thousands of people and if need be mobilize them into a political rally or protest. It is important to see if technology has actually had an impact in the speed and effectiveness of political mobilization and that is what this paper intends to investigate. In addition to this what it is important to look at what would be the best platform or social media medium for political mobilization? Using past studies as well as articles on recent current events such as the Arab Spring and the Tunisia women's protest I hope to answer this question. Technology in regards to using social media for political mobilization has only been around for less than a decade now and there is much room for it to evolve in upcoming years.

**Poster 79****Biases in the Supreme Court****Presenter(s):** Riley Munks**Advisor(s):** Dr. Ann Gordon

This paper investigates whether Republicans or Democrats support a strong Supreme Court and why. Furthermore, by analyzing data from the 2012 American National Election Survey, I will study support of the court based on gender, age, and race. Since the early 1980's the court has taken a strong conservative direction, to the dismay of many liberals. Republicans feel comfortable sending a congressional dispute to the courts while Democrats may feel disenfranchised with the judicial process. I also believe that younger people believe the court is an outdated method of making laws and interpreting the constitution. Originally the Supreme Court was supposed to be an unbiased part of the government, insulated from political parties and interest groups, but today it is hardly close to its original intent. The Supreme Court was first created by the Founding Fathers in Article III of the Constitution, but its role in American society has shifted greatly. Initially, the court focused mainly on constitutional ambiguities interpreting federal law and resolving disputes with the federal government. Today, the court is much more politically driven, being essentially a rubber-stamp for the party that they were nominated by. Presidents care less about how fair a judge is, but whether he will vote consistently with his or her party. Currently there are 5 justices appointed by Republican presidents, and 4 appointed by Democratic presidents. Controversial decisions are consistently ruled on a 5-4 basis along party lines. I believe that there is a correlation between which party holds more seats on the court and how much they support a strong supreme court. Through analysis of other journal articles and the study of unanimous rulings, this paper will determine if the Supreme Court is still viewed as a legitimate institution and which kinds of people respect its authority.

**Poster 80****Shaping Factors of U.S. Public Opinion on Foreign Policy****Presenter(s):** Julianne O'Connor**Advisor(s):** Dr. Ann Gordon

Measuring public opinion is an undertaking requiring precise methods and a clear vision, and even then results can be inconclusive. Yet, understanding how and why a democratic public thinks the way it does, and to what extent those thoughts influence policymakers, is essential to a democracy. This paper will use data from the American National Election Survey to discuss the relationship between level of support for the war on terror and level of perceived effectiveness. Values, political sophistication, knowledge, and self-efficacy can each be used to predict the level of support an individual has for the war on terror, and therefore if they perceive the threat of terrorism to be reduced or increased since the start of the war.

The role of U.S. public opinion in the formation of foreign policy has been increasing in importance since the Vietnam War era; however the literature on what shapes public opinion toward foreign policy remains divided. Public opinion is complex and dynamic, and there is not one magic variable that will perfectly predict an individual's views on foreign policy. As such, any consideration of public opinion must be sensitive to nuances and resist the temptation for oversimplification. In keeping with a nuanced understanding of public opinion, equal significance will be placed on variables that do not have a significant influence as on those that do, and there is a general understanding that public opinion exists on a continuum.

**Poster 81****The Effects of Social Media and the Internet on Political Participation****Presenter(s):** Leslie Orozco**Advisor(s):** Dr. Andrea Molle

The 21st century has been a century of many changes and technological advancements. Arguably the most important and influential technological advancement of this century has been the internet. With the internet came other branches of the internet such as social media that have now become extremely prominent in American daily life and culture. In the last few Presidential elections, candidates have used the internet and social media as an important part of their political campaigns.

This research project looks at the effects that social media and the internet has had on political participation during the most recent Presidential elections using the data found in the American National Election Study and in other surveys. This project not only looks whether or not it has had an impact but how it has impacted political participation during the elections and if the internet and social media has made people more educated and interested in politics. Although similar studies have been done on this topic, this one is different in that it looks at various areas of the effects of social media and internet on political participation instead of focusing on one sole area. This research project carries great importance in that the results show the increasing role that technology is playing on our society in even non-related areas such as politics.

**Poster 82****The Effects of News Media Exposure on Public Decisions****Presenter(s):** Jackson Scott**Advisor(s):** Dr. Andrea Molle

At 9:03am, on September 11th, 2001, United flight 175 struck the south tower of the World Trade Center. By this time, the news media nationwide was covering the impact of the first plane, and millions across the nation watched in horror as the second plane disintegrated on the the south face of tower two. The media coverage on September 11th was instrumental in uniting the nation despite the events that occurred. As expected, the citizens of the United States sought justice, which ultimately transpired into a decade long conflict. The media was a key agent in inspiring the public to take action. With information available at an instant, the media is able to provide the public with up to date information which subsequently places pressure on those in power. This paper will seek to reveal the various relationships media exposure can have regarding an individual's political engagement. Datasets concerning media exposure, voting trends, and various facets of political engagement will be used to support these claims.

**Poster 83****Testing Duverger's Law in Large Scale Simulation Aided Experiments****Presenter(s):** Caleb Sturges**Advisor(s):** Dr. Andrea Molle

Abstract. After Felsenthal DS, Rapoport A, Maoz Z (1988) experimental research on Duverger's Law and Strategic Voting has become commonplace, but the research lacks saliency on one particular metric: Voter Number. We test both of these hypotheses in an environments with "large" numbers of simulated voting participants starting from the standard 24 human subject election and going to the average number of voters in the US 2014 election- 230,000. To protect against the effects of priming the subject's strategies with the votes of the machine, the behavior of the simulated voters (represented by the voting behavior's Sincere, Strategic or Dominated) is learned from the participants. We then test the polls and votes of the subject voters in the large scale voting experiments against both the all human subject experiments and the theoretical benchmarks of Duverger's Law and Strategic Voting. We find that while negligible pivot probabilities drastically reduce the effort and strategic behavior of the voters, there is still a robust relationship between their party preferences, polls and votes.

**Poster 84****How to Make South Sudan's Currency Relevant****Presenter(s):** Ajay Swaminathan**Advisor(s):** Dr. Crystal Murphy

South Sudan possesses an active black market currency exchange for USD due to the lack of dollars in circulation. Additionally, the Bank of South Sudan devalued the SSP, from 2.96 SSP-1 dollar to 4.50 SSP-1 dollar in October 2014 to equalize the official and black market rate. The devaluation benefits the government because it results in increased oil exports, but it hurts consumers because devaluation raises the prices of consumer goods. Consumers pay a higher rate to acquire dollars from the black market and they don't exchange them for uncertainty of dual rates. The government loses money from corrupt officials selling dollars to the black market. The 5 solutions explored are keeping the status quo, rolling back the devaluation policy, firing up sectors of the economy besides oil, contracting the supply of SSP in circulation, sterilized intervention against currency depreciation and the Bank of South Sudan instituting a currency basket consisting of USD, SGD and Reminibi. Secondhand research from online journals and Bank of South Sudan/Government of South Sudan statements, economic solutions from countries that faced similar situations and Dr. Murphy's firsthand interviews with South Sudanese people and government/NGO officials will be utilized.

The best solution to these problems for South Sudanese citizens would be scaling back the devaluation of currency, getting the government to grow other sectors of the economy such as agriculture and implementing the currency basket of the above listed currency.

Hence, the dual problems of black market currency exchange for USD and currency devaluation are solved.

**Poster 85****Obama 2012: A Yield for Post-Racial America?****Presenter(s):** Calah Vargas**Advisor(s):** Dr. Ann Gordon

This study explores the opinions of minorities regarding discrimination after the Obama Election of 2012; did the level of it heighten, remain static, or lower. When Obama was elected in 2008 he became a symbol for equality and like many social patterns, a change in viewpoint was bound to happen. After viewing public perception, children's perception, and analyzing even some legal matters, I hoped to measure the change in discrimination through emotions, opinion, and occurrences. I hypothesized that public opinion regarding racial issues would stay the same and that the social change in government during this time would start conjuring up progressive views. Relying on the 2012 ANES, I investigated through public opinion that minorities felt discrimination around the same amount regardless of the election and that people who felt discriminated against either voted very minimally or refused to vote entirely in the 2012 election. Based on this research, my hypotheses were correct in the sense that public opinion remained the same, however my goals for progressiveness were not exactly met, and more steps are required to attain a post-racial America.

**Poster 86****Public Opinion on Economic Inequality****Presenter(s):** Christina Vetter**Advisor(s):** Dr. Ann Gordon

The rising economic inequality in the United States has become a significant problem within the last few decades. Although there may be public knowledge regarding economic inequality today, it is imperative for citizens to understand its severity and vote in favor of programs that reduce the extreme inequality. This paper explores public opinion of economic inequality in America and analyzes what determines levels of concern among citizens. Here, inequality will be expressed as unequal distribution of the goods and wealth among the population of the nation. Relying on the 2012 ANES survey regarding a respondent's opinion on economic inequality, this paper takes into consideration their political ideology in order to determine whether or not there is a relationship between the two. This paper's main contribution is to highlight how national public opinion can sway in one direction, yet the people do not tend to support policies that alleviate the issue.

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**Poster 87****Iran's Plan to Reverse a Declining Population****Presenter(s):** Ashley Broderick**Advisor(s):** Dr. Patricia See

Iran has a declining population and is taking steps to reverse this problem. This declining population is due to family planning laws being introduced and the population has been shifting into more urban areas. The steps being taken to reverse this problem include: banning vasectomies and other forms of permanent sterilization, banning advertisements that promote decreasing the birth rate, creating more strict abortion laws, and launching a campaign to encourage citizens to have more children. These changes will effect citizens by increasing the number of illegal and unsafe medical procedures and force women back into domestic situations and out of the workforce, impacting Iran's economy in a negative way.



**Poster 88****Women As Objects: The International Bride Trade****Presenter(s):** Penelope Burner**Advisor(s):** Dr. Patricia See

The international bride market has generated more than 2 billion dollars in 2010 in the United States alone. The concept of a “mail-order bride” is one that dates back to the founding of the United States. Many people believe this practice to be antiquated, but with the addition of technology, this industry has become very prevalent in modern society. I will examine the effects the mail order bride industry has had on views regarding women in the United States, Asia and Europe and show how this industry still has relevance today. I will track the way this industry has shaped the economy as well as attitudes towards women. In Europe and Asia, poverty and war play large roles in recruiting women for the international bride trade. The United States has a large market of men seeking brides from other countries to fill more traditional gender roles. In both cases, women are valued as commodities. These findings have interesting implications for the structure of the American family and the way in which women are viewed around the world.

**Poster 89****Can you hear me? Do you care?: The Police as Agents of Social Control Against Black Women in the United States****Presenter(s):** Desiree Greenhouse**Advisor(s):** Dr. Lynn Horton, Dr. Tekle Woldemikael

This study centered around determining if law enforcement is a new mechanism of social control which targets Black women in a distinct way. Social control are those processes that work in society through various mechanisms in order to regulate groups into certain conformity. Social control against Black Americans has taken violent form through the institutions of slavery, lynching and police brutality. However, a significantly gendered pattern of social control, which has its history in racialized narratives, has made Black women’s experience with police distinct in America. Theory was grounded in a general Marxian principium through Joseph Gusfield as well as an essential incorporation of racial and gender analysis by Angela Davis and Patricia Hill Collins. Theorists provided the framework for the particular racial myths that aggregate the ability for law enforcement to commit heinous crimes against a marginalized group, specifically because of a social disenfranchisement. Research was conducted through a content analysis of news articles from the past five years where reports of sexual abuse state that police officers are the perpetrators. The purpose of this study is to provide a greater awareness of the violent and particular oppression of Black women through the sanctioned force of social control in this country.

**Poster 90****"I am not like them": Teen mothers identity work and deviance disavow****Presenter(s):** Amy Mckelvey**Advisor(s):** Dr. Lynn Horton

This study examines the stigma management techniques adopted by teen mothers, who as a branded deviant group, attempt to negotiate their stigmatized status with a positive personal identity. The marginalized status of teen mothers, as a result of being socially chastised for their violation of conventional sexual norms, has been documented. However, the ways in which young mothers manage the tension produced during social interactions as a result of their deviant label has been scarcely examined.

The aim of this study is to examine the strategies used by teen mothers to manage interactions, counter attributions of deviance and assert personal identity. Erving Goffman proposed the idea that in order to fully understand the stigma attached to an individual labeled "deviant" by society, it is essential to concentrate on the relationship between those who are identified as "deviants" and those identified as "normals" (Goffman 1963). In an effort to alleviate the tension from social interactions between the two groups, the so-called "deviants" developed a series of identity management techniques, which the group utilizes in an attempt to diminish the strain felt from their highly stigmatized status.

This study consisted of a participant observation field study of teen mothers in a continuation school in Southern California. Along with a second site, an out-of-state-teen-parenting program where formal style interviews were administered. The study employed hours of field observation, informal interviewing, formal interviewing of teen mothers, interviews with counseling and teaching staff.

**Poster 91****The Nescience of Prospective Parents Adopting Children with Prenatal Substance Exposure****Presenter(s):** Michaela Torrie**Advisor(s):** Dr. Patricia See

Children who have been prenatally exposed to substances face unique challenges of which adoptive parents need to be prepared. The goal of this research is to provide an overview of the specialized information which should be provided to adoptive parents in order to promote stable placements. Training is required of perspective parents, however, there is inadequate information about the consequences of prenatal substance exposure. Between one third and two thirds of newborns in the foster system fall into the category of prenatally drug or alcohol exposed. In order to reduce the levels of disruption and dissolution, additional information is being proposed to supplement the current training curricula's that will better support family well-being.