

## Table of Contents

Session	Title	Page
---------	-------	------

### Wednesday 9:00-10:30am

<b>CHEMISTRY MEETS KEY WEST: MODIFYING A SCIENCE AND CULTURE BASED GPS TOUR OF AMERICA'S SOUTHERN MOST CITY .....</b>	<b>1</b>
<i>Megan D. Slater, Domonique S. Arrington, Shannon M. Pendleton, and Joanna H.Thomas, Department of Chemistry</i>	
<b>WITTGENSTEIN'S 1929 LECTURE ON ETHICS: DOES WITTGENSTEIN CLAIM ETHICAL JUDGEMENTS ARE MEANINGLESS? .....</b>	<b>1</b>
<i>Dan Thomas Nix, Department of Philosophy and Religious Studies</i>	
<b>CAN WE ADOPT ETHNOBOTANY FROM LATIN AMERICA? .....</b>	<b>2</b>
<i>Alexis Le'Crease Rumph, Department of Modern and Classical Languages</i>	

### Wednesday 11:00am-12:30pm

<b>BREXIT: THE DRIVING FACTORS BEHIND THE VOTE TO LEAVE THE EUROPEAN UNION .....</b>	<b>2</b>
<i>Connor McCarthy, Department of Political Science</i>	
<b>THE INFRASTRUCTURE OF THE INFORMATION SOCIETY .....</b>	<b>3</b>
<i>Kyle Bragg, Victoria Chambless, and Charles Felts, Department of Computer Science</i>	
<b>SOCIAL MEDIA GIVES BLACK EYE TO BLACK LIVES MATTER MOVEMENT .....</b>	<b>3</b>
<i>Kendra Danielle Wilson, Department of English</i>	
<b>DONALD TRUMP: A RACIALLY DISCRIMINATORY PAST AND POSSIBLY FUTURE .....</b>	<b>4</b>
<i>Kianna Thompson, Department of Management and Healthcare Administration</i>	

Session	Title	Page
---------	-------	------

**Wednesday 1:30-3:30pm**

**DOES SHARING THE SAME NATIVE LANGUAGE MEAN SHARING THE SAME ERRORS IN A NEW LANGUAGE? A CASE STUDY OF A JAPANESE ENGLISH LANGUAGE LEARNER.....4**

*Liesa Marie Stangenberg, Department of Modern and Classical Languages*

**DUCK AND COVER! ATOMIC ENERGY, CIVIL DEFENSE EDUCATION, AND NEOLIBERALISM .....5**

*Audrey Whittle, Department of Philosophy and Religious Studies*

**THE EFFECTS OF A NATIVE LANGUAGE ON TROMBONISTS’ PLAYING ABILITIES .....5**

*Melissa Wilcox, Department of Music*

**EUGENICS AS GENOCIDE: AN UNTOLD SECRET IN THE UNITED STATES....6**

*Destiny N. Wilkinson, Department of Native American Studies*

**Wednesday 3:30-5:00pm**

**“FIRST IN FREEDOM STATE” PASSES BILL TO SIDELINE TRANSGENDER FREEDOM: AN ANALYSIS OF LEGISLATIVE VOTING BEHAVIOR ON HOUSE BILL 2.....6**

*Kelah M. Hendon, Department of Political Science*

**TECHNOLOGY OR INTERPRETERS? .....7**

*Susanna Peonia, Department of Modern and Classical Languages*

**THE IMPACT OF TRANSGENDER PEOPLE IN THE MEDIA.....7**

*Kameri Jamille Johnson, Department of Communication Arts*

**SOR JUANA’S DEFENSE OF INDIGENOUS PEOPLES OF NEW SPAIN, MEXICO, AND WOMEN.....8**

*Jalene Rosetta Snowden, Department of Modern and Classical Languages*

Session	Title	Page
---------	-------	------

**Thursday 9:00-10:30am**

**ANALYZING THE RESCUE DRONE MANEUVERING IN THE WINDY ENVIRONMENT .....8**  
*Dongwook Gweon and Jongmin Park, Department of Physics, Astronomy, Geosciences, and Engineering Studies*

**DIVERSITY IN CHILDREN’S TOYS.....9**  
*Dahnea Finkley, Department of Communication Arts*

**A COMPARATIVE ANALYSIS OF THE LIVES OF ANDREI CHIKATILO, TSUTOMU MIYAZAKI, AND DENNIS RADER.....9**  
*Nicholas A. Anderson, Department of Sociology, Anthropology, and Criminal Justice*

**LEGALIZING PROSTITUTION .....10**  
*Lauren Horne, Department of Philosophy and Religious Studies*

**Thursday 11:00am-12:30pm**

**NEUSTADT’S ANALYTICAL FRAMEWORK AND LYNDON B. JOHNSON’S PRESIDENTIAL POWER – “THE POWER TO PERSUADE” .....10**  
*Stone Sirmans, Department of Political Science*

**CORAL RESTORATION IN THE FLORIDA KEYS: A NOVEL SOLUTION TO A WORLD WIDE PROBLEM.....11**  
*Sarah E. Godfrey, Pavan D. Patel, and Laquetta Wysong, Department of Chemistry*

**PREDICTION AND ESTIMATION OF POPULATION SIZE USING INTERPOLATION AND LAGRANGE POLYNOMIAL.....12**  
*Walter Hufstetler and Sean Heeney, Department of Mathematics*

**INDUSTRY 4.0: CURRENT PRACTICES OF LEADING COUNTRIES .....12**  
*Jeepil Jang, Department of Management and Healthcare Administration*

Session	Title	Page
---------	-------	------

**Thursday 1:30-3:00pm**

**DIVERSITY IN DISNEY: THE PORTRAYAL OF MINORITIES IN DISNEY FILMS.....13**

*Tiandra Mundy, Department of Communication Arts*

**EXPLORING FALSE POSITIVES/NEGATIVES ON CLASSIFYING AFRICAN AMERICANS AND CAUCASIANS USING THE STATIC-99.....13**

*Rebecca Bingham, Department of Sociology, Anthropology, and Criminal Justice*

**BREAKING THE BINARY: INDIGENOUS UNDERSTANDINGS OF GENDER AND THEIR IMPORTANCE TODAY.....14**

*Audrey Whittle, Department of Native American Studies*

**BUILDING A ROBOT AND AN ELECTRONIC CONTROL SYSTEM.....14**

*Steven Remington, Robert Atnip, Tyler Zeigler, and Thomas Lebsekal, Department of Physics, Astronomy, Geosciences, and Engineering Studies*

**Thursday 3:30-5:00pm**

**TROUBLED SEAS AND SCATTERED BLOSSOMS: NATURE IMAGES IN ELEGIAC ANGLO-SAXON AND JAPANESE POETRY OF THE MEDIEVAL PERIOD... ..15**

*Audrey Whittle, Department of English*

**THE EMERGENCE OF SYMBOLIC REASONING AND SYMBOLIC NOTATION FROM ANCIENT TIMES TO THE 17TH CENTURY .....15**

*Patsy Kirkland, Margarita Bustos Gonzalez, James Henderson, Roxi Berkley, and Callie Ragan, Department of Mathematics*

**THE MEXICAN REVOLUTION AND THE LITERATURE OF RICARDO FLORES MAGÓN.....16**

*Roberto Carrillo, Department of Modern and Classical Languages*

**AN IDEOLOGICAL ANALYSIS OF *MODERN FAMILY*'S REPRESENTATION OF HOMOSEXUALITY.....16**

*Chris Elkins and Will De Lorenzo, Department of Communication Arts*

Session	Title	Page
---------	-------	------

**Art Poster:**

**WOMEN AT THE BATH.....17**  
*Casey Lynn Daniel, Department of Art*

**Biology Posters:**

**ANALYSIS OF GUNNISON’S PRAIRIE DOG ALARM CALLS .....17**  
*Carson Bartley, Summer Bryant, and Mariah Oeser, Department of Biology*

**CONSOLIDATION OF HAGFISH RESEARCH IN AN INTERACTIVE,  
VIRTUAL LIBRARY .....18**  
*Daniel W. Pinyan III, Department of Biology*

**DISTRIBUTION OF GABA-LIKE IMMUNOREACTIVITY IN THE CENTRAL  
NERVOUS SYSTEM OF THE BLUE CRAB .....18**  
*Angela Bass and Hannah Nettles, Department of Biology and Department of  
Computer Science*

**DO PINE STANDS ACT AS A BARRIER TO SPANISH MOSS DISPERSION? .....19**  
*Nia Keyes and Abigail Schwartz, Department of Biology*

**LIGHT FILTERS AND IRREGULAR LEAF SPOT OF PEANUT .....19**  
*Ariel Sharia Roddy, Department of Biology*

**SURVEY OF LICHENS AT VALDOSTA STATE UNIVERSITY .....20**  
*Jason Webster, Department of Biology*

**THE EFFECTS OF CLEARING AGENTS ON PEANUT LEAFLETS .....20**  
*Ariel Sharia Roddy, Department of Biology*

**VARIATION OF ALARM CALLS OF GUNNISON’S PRAIRIE DOGS .....21**  
*Summer Bryant, Carson Bartley, and Mariah Oeser, Department of Biology*

**Chemistry Posters:**

**A 24 HOUR LAB: A HANDS ON ELONGATED VIEW OF THE OCEAN .....21**  
*Domonique S. Arrington, Matthew L. Cowan, Sarah E. Godfrey, Drew A. Johnson,  
Jeremiah K. Jones, Amber R. Lowery, Robert S. Murphy, Paven D. Patel, Shannon M.  
Pendleton, Daniel W. Pinyan, Joanna H. Thomas, Devante D. Smedley, Laquetta Wysong,  
Garrett C. Crook, Richard D. Williams, Shannon M. Pendleton, and Schuyler D. Vickers,  
Department of Chemistry*

Session	Title	Page
---------	-------	------

	<b>A SIMPLE APPROACH TO IMMOBILIZATION OF INTERCALATED DYE ON COTTON FABRIC FOR ACID RECOGNITION.....</b>	<b>22</b>
--	---	-----------

*Cera T. Hsu and LaTarsha Taylor, Department of Chemistry*

	<b>BUILDING A REMOTE OPERATED VEHICLE TO CARRY A GOPRO FOR UNDERWATER EXPLORATION .....</b>	<b>22</b>
--	---	-----------

*Megan D. Slater, Weldon C. Lane, Garrett Crooks, and Richard D. Williams, Department of Chemistry*

	<b>CANCER DRUGS AND DRUG DELIVERY SYSTEMS .....</b>	<b>23</b>
--	---	-----------

*Andrew Harvin, Ashley Pitts, Jordan Harrell, Ryan Green, Aaron A. Ford, and Kahdeja Patrick, Department of Chemistry*

	<b>CANCER DRUGS AND POTENTIAL CARRIERS.....</b>	<b>23</b>
--	---	-----------

*Cheyenne Ervin, Weldon C. Lane, Sterling Serfoss, and Megan D. Slater, Department of Chemistry*

	<b>CARBON GRAPHENE SHEETS AND NANOTUBULES AS DRUG CARRIERS FOR CIS-PLATIN AND PARAPLATIN.....</b>	<b>24</b>
--	---	-----------

*Waleed Al-harby, Tiffany Brown, Ashley Butts, Chelsea Jackson, Briceton McNair, and Rechelle Woods, Department of Chemistry*

	<b>CARBON STRUCTURES AS DRUG CARRIERS FOR CISPLATIN, LOMUSTINE, AND MUSTARGEN .....</b>	<b>24</b>
--	---	-----------

*Ashley Frazier, Zach Crews, Mitchell Wheeler, Garrett Cook, Shannon Pendleton, and Ja'marrius Thomas, Department of Chemistry*

	<b>CARBON STRUCTURES AS DRUG CARRIERS FOR TEMOZOLOMIDE AND LOMUSTINE.....</b>	<b>25</b>
--	---	-----------

*Ariana Cooper, Carson Bartley, Faatihah Meunier, and Kory Burns, Department of Chemistry*

	<b>EASILY IONIZABLE ELEMENT AND CHEMICAL EQUILIBRIUM IN A FLAME.....</b>	<b>25</b>
--	--	-----------

*Alexander J. Burch, Kory D. Burns, Andres Contreras, Ian D. Dyson, Cera T. Hsu, Sumin Kim, Weldon C. Lane, Ashley E. Pitts, Megan D. Slater, Devante D. Smedley, Joanna H. Thomas, Bernabe Tucker, and Ann K. Williams, Department of Chemistry*

	<b>GRAPHENE AND CARBON NANOTUBES AS DRUG CARRIERS FOR BUSULFAN, CHLORAMBUCIL, AND CYTOXAN .....</b>	<b>26</b>
--	---	-----------

*Michelle Bentivegna, Andres Contreras, Ian Dyson, Brittney Gatewood, Derek Hathaway, and Kyle Wilkerson, Department of Chemistry*

Session	Title	Page
---------	-------	------

	<b>QUANTIFICATION OF ACETAMINOPHEN IN OVER-THE-COUNTER MEDICATION WITH CYCLIC VOLTAMMETRY.....</b>	<b>26</b>
--	--	-----------

*Weldon C. Lane, Department of Chemistry*

	<b>REACTION OF PEROXYNITRITE WITH SUGAR COMPLEXES OF COUMARIN BORONIC ACID .....</b>	<b>27</b>
--	--	-----------

*Weldon C. Lane, Department of Chemistry*

	<b>SPECTROELECTROCHEMICAL CHARACTERIZATION OF IRON(III) OXIDE NANOPARTICULATE FILMS .....</b>	<b>27</b>
--	---	-----------

*Ann K. Williams, Department of Chemistry*

	<b>STRATEGIC EXERCISES IN VOCABULARY: TURNING A PUZZLE INTO A PATENT .....</b>	<b>28</b>
--	--	-----------

*Ashley D. Butts, Jordan P. Harrell, Ann K. Williams, Sterling A. Serfoss, Bernabe Tucker, Megan D. Slater, and Kory D. Burns, Department of Chemistry*

	<b>SYNTHESIS OF CHIRAL AMINES ON SILICA SURFACES.....</b>	<b>28</b>
--	---	-----------

*Alexander Burch, Department of Chemistry*

	<b>SYNTHESIS OF HEMATITE NANOCRYSTALLINE COLLOIDAL SOLUTIONS FROM RUST FOR USE IN PHOTOELECTROCHEMICAL CELLS .....</b>	<b>29</b>
--	--	-----------

*Allison B. Taylor, Department of Chemistry*

	<b>USING CARBON NANOTUBES TO EFFECTIVELY DELIVER MRI CONTRAST AGENTS USING DIFFERENT R-GROUPS .....</b>	<b>29</b>
--	---	-----------

*Kory D. Burns, Candicee B. Childs, Gregory Davis, Kevin L. Golden, Jordan E. Greene, Karen S. Herring, GiHun Hong, Cera T. Hsu, Sumin Kim, Isaac C. Moore, Parrish L. Nelson, Coral N. Radney, Sterling A. Serfoss, Ashilee T. Thomas, Joanna H. Thomas, Bernabe Tucker, Mitchell B. Wheeler, Richard D. Williams, Alexander J. Burch, Porschea R. Clark, Jacie N. Davenport, Ian D. Dyson, Taylor Holder, Staci A. MacKey, Keanna M. McCrary, Paven D. Patel, Samantha J. Powell, Shabri I. Simpson, Devante D. Smedley, Khanh-toan T. Tran, Cierra D. Wiggins, and Zachary C. Youngblood, Department of Chemistry*

#### **Communication Arts Posters:**

	<b>A GENDER STUDIES ANALYSIS OF HOW GENDER ROLES ARE PRESENTED IN STEVEN UNIVERSE.....</b>	<b>30</b>
--	--	-----------

*Kyle Breaux and Marcia Miles, Department of Communication Arts*

Session	Title	Page
---------	-------	------

**A SEMIOTIC ANALYSIS OF *THE GREAT GATSBY*.....30**  
*John Bickel and Hunter Howel, Department of Communication Arts*

**GENDER STUDY OF *THINK LIKE A MAN*.....31**  
*Raven Poole and Tiandra Mundy, Department of Communication Arts*

**HARRY POTTER AND THE SIGNS OF MORAL UNCERTAINTY.....31**  
*Avery Stephen and Tyler Singleton, Department of Communication Arts*

**WHERE YOU LEAD I WILL FOLLOW: A SEMIOTIC ANALYSIS OF  
*GILMORE GIRLS*.....32**  
*Kyle Dawson, Department of Communication Arts*

**Communication Sciences and Disorders Posters:**

**CLASSIFICATION OF TASTE USING 6-N-PROPYLTHIOURACIL STRIPS.....32**  
*Anne N. Baldwin and Reagan E. Plymale, Department of Communication Sciences and Disorders*

**INTERPROFESSIONAL COLLABORATION OF STUDENTS IN  
COMMUNICATION SCIENCES AND DISORDERS (CSD) AND NURSING  
PROVIDING COMMUNICATION AND VITAL SIGN SCREENINGS.....33**  
*Laura Bennett, Kammi Blackwelder, Katie Childers, Jordan Dowd, S. Jaye Hilliard,  
Brandy Morgan, and Kirsten Williams, Department of Communication Sciences and Disorders*

**THE EFFECT OF EGOCENTRISM ON VOCABULARY DEVELOPMENT.....33**  
*Patrick Elliott, Department of Communication Sciences and Disorders*

**THE EFFECT OF TASTE AND TEMPERATURE ON LINGUAL  
SWALLOWING PRESSURE.....34**  
*Victoria Sandefur, Department of Communication Sciences and Disorders*

**THE TEXTBOOK CONUNDRUM: CSD STUDENTS' TEXTBOOK  
PREFERENCES.....34**  
*Julie Tapp, Department of Communication Sciences and Disorders*

**Computer Science Posters:**

**AUTOMATIC SEGMENTATION OF SPANISH MOSS IN OUTDOOR  
IMAGERY.....35**  
*Wesley Cook, Department of Computer Science*

Session	Title	Page
---------	-------	------

	<b>COUNTING LEAVES WITH AVL TREE.....</b>	<b>35</b>
	<i>Deryck Black and John Anthony Dobson, Department of Computer Science</i>	

	<b>LEARNING SKY APPEARANCES: DISCRIMINATIVE MODELS FOR SKY SEGMENTATION .....</b>	<b>36</b>
	<i>Marco Tupaz Colasito, Department of Computer Science</i>	

	<b>MALICIOUS VECTORS OF NETWORKING IN STANDARD COMPUTING ENVIRONMENTS.....</b>	<b>36</b>
	<i>Charles Felts, Jeff Haineault, Chloe Kimble, and Rene Perez, Department of Computer Science</i>	

**Early Childhood and Special Education Posters:**

	<b>LITERACY AND CULTURE: A PERSPECTIVE FROM A CROSS-CULTURAL CROSS SECTION.....</b>	<b>37</b>
	<i>Ansley R. Watson, Department of Early Childhood and Special Education</i>	

	<b>LITERACY AND CULTURE: A PERSPECTIVE FROM ETHIOPIA.....</b>	<b>37</b>
	<i>Willie Slaughter, Department of Early Childhood and Special Education</i>	

	<b>LITERACY AND CULTURE: A PERSPECTIVE FROM FINLAND.....</b>	<b>37</b>
	<i>Kaylee Brown, Department of Early Childhood and Special Education</i>	

	<b>LITERACY AND CULTURE: A PERSPECTIVE FROM GERMANY.....</b>	<b>38</b>
	<i>Shelby Cardin, Department of Early Childhood and Special Education</i>	

	<b>LITERACY AND CULTURE: A PERSPECTIVE FROM HONDURAS.....</b>	<b>38</b>
	<i>Gabriel Virgil, Department of Early Childhood and Special Education</i>	

	<b>LITERACY AND CULTURE: A PERSPECTIVE FROM KOREA.....</b>	<b>39</b>
	<i>Justin Adcock, Department of Early Childhood and Special Education</i>	

	<b>LITERACY AND CULTURE: A PERSPECTIVE FROM MEXICO.....</b>	<b>39</b>
	<i>Ricki M. Hardy, Department of Early Childhood and Special Education</i>	

	<b>LITERACY AND CULTURE: A PERSPECTIVE FROM PUERTO RICO.....</b>	<b>40</b>
	<i>Markesia Barron, Department of Early Childhood and Special Education</i>	

	<b>LITERACY AND CULTURE: A PERSPECTIVE FROM THE BAHAMAS.....</b>	<b>40</b>
	<i>Madison Tew, Department of Early Childhood and Special Education</i>	

	<b>LITERACY AND CULTURE: A PERSPECTIVE FROM VIETNAM.....</b>	<b>40</b>
	<i>Kerri Cheek, Department of Early Childhood and Special Education</i>	

Session	Title	Page
---------	-------	------

**USING CHARLOTTE’S WEB TO TEACH THE LIFE CYCLE OF SPIDERS.....41**  
*Alexandra K. Smith, Department of Early Childhood and Special Education*

**USING MY FAIR LADY TO TEACH ELA AND SOCIAL STUDIES.....41**  
*Leslie A. Platt, Department of Early Childhood and Special Education*

**USING PRIDE AND PREJUDICE TO DEMONSTRATE SOCIAL INSTITUTIONS IN FAMILY, ECONOMICS, POLITICS, RELIGION, MARRIAGE, AND SOCIAL STATUS .....41**  
*Vanessa Benitez and Leanna Stuckey, Department of Early Childhood and Special Education*

**USING THE AFRICAN AMERICAN MAID’S POINT OF VIEW FROM THE HELP TO INFORM THE SOCIAL RACISM OF THE US IN THE 1960’S.....41**  
*Lisa Taylor, Connor Holton, Christiana Ellington, Department of Early Childhood and Special Education*

**USING THE LION KING TO TEACH THE LIFE CYCLE OF THE ANIMALS IN AFRICA.....42**  
*Hannah Brooks, Katie Mueller, and Asia Foster, Department of Early Childhood and Special Education*

**USING THE PIANO TO DEMONSTRATE THE BEAUTY AND EFFORT OF SIGN LANGUAGE.....42**  
*Sarah E. Dorsey and Janice M. Kayse, Department of Early Childhood and Special Education*

**English Poster:**

**LEWDNESS IN THE COUNTRY WIFE .....42**  
*Kimberly Eva Cannon, Department of English*

**Health Sciences Posters:**

**EFFECTS OF HIGH-INTENSITY INTERVAL TRAINING ON AMBULATORY BLOOD PRESSURE IN PREHYPERTENSIVE ADULTS.....43**  
*Kristopher D. Dawson and Aubrey M. Sweeney, College of Nursing and Health Sciences*

**UTILITY OF VERIFICATION TESTING FOR VALIDATING MAXIMAL OXYGEN UPTAKE MEASUREMENT.....43**  
*Bradley K. Collins and Kristopher D. Dawson, College of Nursing and Health Sciences*

Session	Title	Page
---------	-------	------

**Mathematics Posters:**

**STATE OF GEORGIA POPULATION ESTIMATIONS AND PROJECTIONS USING NATURAL POLYNOMIAL SPLINES CONSTRUCTED USING EXISTING DATA.....44**  
*Walter Hufstetler and Sean Heeney, Department of Mathematics*

**Modern and Classical Languages Posters:**

**SECOND LANGUAGE ACQUISITION AND THE CRITICAL PERIOD HYPOTHESIS.....44**  
*Hannah Farmer, Department of Modern and Classical Languages*

**THE EFFECT OF PROCESSING INSTRUCTION ON THE ACQUISITION OF JAPANESE PASSIVES AND HONORIFICS BY NATIVE ENGLISH SPEAKERS .....45**  
*Amber York, Department of Modern and Classical Languages*

**Native American Studies Program Posters:**

**THE DEBATE REGARDING THE FOUNDERS OF THE “NEW WORLD” .....45**  
*Erin Taylor Shaw, Native American Studies Program*

**THE END OF THE MAYAN EMPIRE: NOT THE END OF THE MAYA.....46**  
*Geena Cherisse Hollis, Native American Studies Program*

**THE HISTORY OF DIABETES IN NATIVE AMERICAN COMMUNITIES.....46**  
*Manuela Francesca Gugliotta, Native American Studies Program*

**Nursing Posters:**

**BEHAVIORAL EFFECTS ON FETAL AND INFANT MORTALITY.....47**  
*Miranda Bullard, Darbi Hilliard, Taylour Mason, Jian Li Wu, and Timyia Smith, College of Nursing and Health Sciences*

Session	Title	Page
---------	-------	------

**EFFECTS OF OBESITY AND BREAST CANCER: A LITERATURE REVIEW** .....47  
*Joseph Crotty, Abigail Johnson, Angel Moss, and Juawana Stringer, College of Nursing and Health Sciences*

**FOCUSING ON PATIENT EDUCATION TO REDUCE READMISSION RATES RELATED TO CONGESTIVE HEART FAILURE** .....48  
*Kara Crotty, Hope Summers, Jodi-Ann Johnson, and Janyne Musso, College of Nursing and Health Sciences*

**IMPACT OF HEALTHCARE ACCESS ON COMPLICATIONS RELATED TO TYPE 2 DIABETES IN AFRICAN AMERICANS** .....48  
*Alex Horton III, Courtney Merrion, Katrina Solomon, and Shelby Cannon, College of Nursing and Health Sciences*

**IMPROVING SEXUAL EDUCATION IN ADOLESCENCE AND YOUNG ADULTS TO PREVENT THE SPREAD OF HIV/STDS**.....49  
*Kristie Dixon, Breonna Walker, Gabrielle Ash, Nicole Lee, and Ashley Pritchett, College of Nursing and Health Sciences*

**INTERVENTIONS TO PREVENT NECROTIZING ENTEROCOLITIS IN PRETERM INFANTS** .....49  
*Wesley Alston, Karen DeLeon, Jetta Kimachinde, and Mariah Tucker, College of Nursing and Health Sciences*

**MAJOR RISK FACTORS AFFECTING CARDIOVASCULAR HEALTH IN THE UNITED STATES** .....50  
*Heather Streichert, Chelsea Coneway, Linda Jimenez, and Kenyatta Miller, College of Nursing and Health Sciences*

**SEXUAL HEALTH EDUCATION AND TEENAGE PREGNANCY AND STI RATES** .....50  
*Stephanie Barritt, Kylie Fischer, Jessica Londono, Devon Simmons, and Savannah Ward, College of Nursing and Health Sciences*

**THE EFFECT OF FINANCIAL STABILITY ON PREGNANCY, CHILDBIRTH, AND NEONATAL HEALTH CARE**.....51  
*Jeffrey Behrman, Jared Galbreath, Madeline Marsh, Lovell Simpkins, and Haley Wheeler, College of Nursing and Health Sciences*

**THE IMPORTANCE OF MATERNAL PRE-CONCEPTUAL HEALTH**.....51  
*Jayla Abbott, Shannon Thompson, Brienna Daly, Ryan Pearson, and Savannah Jones, College of Nursing and Health Sciences*

Session	Title	Page
---------	-------	------

**Philosophy and Religious Studies Posters:**

**LAND OF THE FREE: STANDARDIZED TESTING AND DEMOCRACY IN THE UNITED STATES .....52**  
*Alisa Marie Pappas Department of Philosophy and Religious Studies*

**LAW ENFORCEMENT: THE USE OF FORCE .....52**  
*Harry Campbell, Department of Philosophy and Religious Studies*

**PLAYING BY THE RULES: WITTGENSTEIN’S PHILOSOPHY AND LITERARY CRITICISM.....53**  
*Audrey Whittle, Department of Philosophy and Religious Studies*

**REVIEWING LUCE IRIGARAY’S WORKS IN PHILOSOPHY.....53**  
*Maya Angeline Mapp, Department of Philosophy and Religious Studies*

**THE 14<sup>TH</sup> DALAI LAMA AND THE U.S. PRESIDENTS: THE STRUGGLE FOR TIBETAN INDEPENDENCE IN THE 1960S .....54**  
*Katherine Yancey, Department of Philosophy and Religious Studies*

**Physics, Astronomy, Geosciences, and Engineering Studies Posters:**

**A PETROLOGIC AND PETROGRAPHIC ANALYSIS OF SANDSTONES FROM THE BROXTON ROCKS EXPOSURE, BROXTON, GA .....54**  
*Eric Lee Parrish, Department of Physics, Astronomy, Geosciences, and Engineering Studies*

**ADVANCES IN 4-D PRINTING.....55**  
*Steven Remington, Department of Physics, Astronomy, Geosciences, and Engineering Studies*

**AN ANALYSIS OF FRACTURE SYSTEMS IN THE UPPER SUWANNE RIVER, NORTH FLORIDA .....55**  
*Kendall Brown, Department of Physics, Astronomy, Geosciences, and Engineering Studies*

**AN ASSESSMENT OF CARBON DIOXIDE EMISSIONS AMONG CONTRASTING URBAN DEVELOPMENT PATTERNS IN POPULATED AREAS.....56**  
*Evan Rentz, Department of Physics, Astronomy, Geosciences, and Engineering Studies*

Session	Title	Page
---------	-------	------

**ANALYSIS OF MODERN AND HISTORIC SEISMIC ACTIVITY WITHIN AND SURROUNDING BELIZE.....56**  
*Selene C. Lisbey, Department of Physics, Astronomy, Geosciences, and Engineering Studies*

**ANALYSIS OF STREET VENDORS IN SOUTH KOREA .....57**  
*Junhyuk Moon, Department of Physics, Astronomy, Geosciences, and Engineering Studies*

**ANALYSIS OF THE USE OF SCALE BARS IN PROFESSIONAL GEOGRAPHY JOURNALS, 1985-2014.....57**  
*Hunter Auld, Department of Physics, Astronomy, Geosciences, and Engineering Studies*

**COMPARISON OF NOAA LIDAR DATA FOR TIFT COUNTY AT 1.5 AND 3 METER RESOLUTIONS FOR ADEQUATE WATERSHED DELINEATION AND OPTIMAL DATA MANAGEMENT IN THE SOUTHEAST WATERSHED RESEARCH AREA .....58**  
*Dylan Ellzey, Department of Physics, Astronomy, Geosciences, and Engineering Studies*

**EFFECTS OF HURRICANE MATTHEW ON BARRIER ISLAND EROSION.....58**  
*William James Jeffers, Department of Physics, Astronomy, Geosciences, and Engineering Studies*

**EFFICIENCY ANALYSIS OF VAPOR COMPRESSION REFRIGERATION SYSTEM .....59**  
*Mohammed Shahabuddin and Abdulrahman Shuraym, Department of Physics, Astronomy, Geosciences, and Engineering Studies*

**EMERGENCY PLANNING IN LOWNDES COUNTY, GEORGIA .....59**  
*Russell G. Aldis, Siqing Gao, Antrenique N. Jones, Roscoe J. Koebble, Chenyu Li, Ruvarashe H. Nasaisai, Cory D. Reeves, Devin J. Russell, Devin G. Smith, Yufei Song, Allison B. Taylor, and Zhipeng Zhou, Department of Physics, Astronomy, Geosciences, and Engineering Studies*

**ENVIRONMENTAL RACISM IN FLORIDA .....60**  
*Rachel E. Wilkerson and Kristen E. Varney, Department of Physics, Astronomy, Geosciences, and Engineering Studies*

**MEASUREMENTS OF TEMPERATURE IN A COMMERCIAL PLASMA GENERATOR .....60**  
*Eric W. Burns and Ashley E. Hardy, Department of Physics, Astronomy, Geosciences, and Engineering Studies*

Session	Title	Page
---------	-------	------

	<b>MOISTURE SOURCE FOR DRIP WATER IN RACCOON MOUNTAIN CAVERNS, TN, AND ITS IMPLICATIONS FOR INTERPRETATION OF SPELEOTHEM ISOTOPE RECORDS.....</b>	<b>61</b>
--	---	-----------

*Aaron Dixon, Department of Physics, Astronomy, Geosciences, and Engineering Studies*

	<b>NATIONAL ELECTRIC VEHICLE CHARGING NETWORK BEGINNING IN AND CONNECTING AMERICA’S PARKS.....</b>	<b>61</b>
--	--	-----------

*Sean Michael Bolan, Department of Physics, Astronomy, Geosciences, and Engineering Studies*

	<b>STRUCTURAL ANALYSIS OF FRACTURES AND LINEAMENTS ALONG A SEGMENT OF THE SUWANNEE RIVER IN NORTH FLORIDA .....</b>	<b>62</b>
--	---	-----------

*Phillip Trussell, Department of Physics, Astronomy, Geosciences, and Engineering Studies*

	<b>STRUCTURAL ANALYSIS OF FRACTURES IN THE OLIGOCENE SUWANNE RIVER LIMESTONE, NORTH FLORIDA.....</b>	<b>62</b>
--	--	-----------

*Melanie Eileen Blanton, Department of Physics, Astronomy, Geosciences, and Engineering Studies*

	<b>STUDY OF MAP SCALE FREQUENCY AND USE IN MAPS IN PROFESSIONAL GEOGRAPHY JOURNALS.....</b>	<b>63</b>
--	---	-----------

*Juan Antonio Deen, Department of Physics, Astronomy, Geosciences, and Engineering Studies*

	<b>USING THE HILBERT-HWANG TRANSFORMATION TO REMOVE NOISE FROM A MEASURED SIGNAL .....</b>	<b>63</b>
--	--	-----------

*James E. Henderson, Department of Physics, Astronomy, Geosciences, and Engineering Studies*

	<b>VAPOR COMPRESSION REFRIDGERATION SYSTEM: CHEMICAL BIOLOGICAL ASPECTS OF VARIOUS REFRIGERANTS .....</b>	<b>64</b>
--	---	-----------

*Abdulrahman Shuraym and Mohammed Shahabuddin, Department of Physics, Astronomy, Geosciences, and Engineering Studies*

**Political Science Posters:**

	<b>“TRUMPED” UP ELECTION, A LOOK INTO THE TRUMP VOTE IN THE 2016 PRESIDENTIAL RACE .....</b>	<b>64</b>
--	--	-----------

*Aaron McMillan, Department of Political Science*

Session	Title	Page
---------	-------	------

	<b>VOTER TURNOUT IN THE 2016 PRESIDENTIAL ELECTION .....</b>	<b>65</b>
	<i>Joanna K. Smith, Department of Political Science</i>	

**Psychology and Counseling Posters:**

	<b>ASMR: AN UNEXPLAINED PHENOMENON.....</b>	<b>65</b>
	<i>Alina S. Lopez and Elaina R. Walker, Department of Psychology and Counseling</i>	

	<b>THE EFFECT OF CELL PHONE PRESENCE AND PARTICIPANT SEX ON READING COMPREHENSION TEST SCORES AND ANXIETY .....</b>	<b>66</b>
	<i>Jazmin Garza, Department of Psychology and Counseling</i>	

	<b>THE PERCEPTION OF ACCENTS .....</b>	<b>66</b>
	<i>Sandra Marek, Department of Psychology and Counseling</i>	

	<b>USING SELF-DETERMINATION THEORY TO EXAMINE ACADEMIC MOTIVATION AMONG COLLEGE MILITARY DEPENDENTS .....</b>	<b>67</b>
	<i>Breanna M. Drummond, Department of Psychology and Counseling</i>	

**Sociology, Anthropology, and Criminal Justice Poster:**

	<b>NAMING PRACTICES AROUND THE WORLD.....</b>	<b>67</b>
	<i>Rennique Clough-Rodriques, Department of Sociology, Anthropology, and Criminal Justice</i>	

**Women’s and Gender Studies Poster:**

	<b>FACTORS AFFECTING ENROLLMENT IN WOMEN’S AND GENDER STUDIES PROGRAMS .....</b>	<b>68</b>
	<i>Walker Lee, Department of Women’s and Gender Studies</i>	

## **CHEMISTRY MEETS KEY WEST: MODIFYING A SCIENCE AND CULTURE BASED GPS TOUR OF AMERICA'S SOUTHERN MOST CITY**

**Domonique S. Arrington, Matthew L. Cowan, Sarah E. Godfrey, Drew A. Johnson, Jeremiah K. Jones, Amber R. Lowery, Robert S. Murphy, Pavan D. Patel, Shannon M. Pendleton, Daniel W. Pinyan, Joanna H. Thomas, Devante D. Smedley, Laquetta Wysong, Garrett C. Crook, Richard D. Williams, Shannon M. Pendleton, Megan D. Slater, Weldon C. Lane, and Schuyler D. Vickers, Department of Chemistry**

**Faculty Sponsor: Dr. Thomas Manning, Department of Chemistry**

The use of GPS and other geographic systems is used recreationally, throughout science, and with educational exercises. This paper describes three exercises using GPS that were applied at the college teaching level at Valdosta State University and Key West Florida assessing a variety of disciplines. The first involves a code that students must decipher to find the individual pages of a test in their building. Once students locate these pages, they answer the questions and turn in the test. The second involves using the university campus as a classroom. It utilizes a number of locations, including a coffee shop, a creek ecosystem, and an astronomy observatory. The third level is conducted in Key West and is a full day exercise. Students use GPS coordinates to find a general location. The twelve locations include a public aquarium, National Oceanic and Atmospheric Administration (NOAA) EcoDiscovery Center, the Hemingway house and a butterfly garden. While the students tour many of the attractions of Key West, they also learn scientific, historical and cultural points. The paper serves as an outline of examples in which GPS exercises can be applied in science education, and amended depending on the student and environment in which the exercises take place. We have called the approaches outlined Indoor-Outdoor Active Interdisciplinary Learning (IOAIL).

## **WITTGENSTEIN'S 1929 LECTURE ON ETHICS: DOES WITTGENSTEIN CLAIM ETHICAL JUDGEMENTS ARE MEANINGLESS?**

**Dan Thomas Nix, Department of Philosophy and Religious Studies**

**Faculty Sponsor: Lavonna Lovern, Department of Philosophy and Religious Studies**

Wittgenstein's 1929 Lecture on Ethics, presented to the Heretics Society at Cambridge University, prompted a philosophical debate as to whether the early Wittgenstein believed ethical statements to be logically meaningful. The general disagreement exists between those who believe he held all ethical statements to be meaningless and those who believe he considered only absolute ethical statements to be meaningless. This paper will examine the debate beginning with an overview of cognitivism and non-cognitivism. The paper will define "Ethics" and articulate the distinction between capitalizing the "e" as opposed to not capitalizing the "e." The paper concludes that Wittgenstein held a non-cognitivist position regarding Ethics, and therefore, that Wittgenstein understood only absolute ethical judgements to be meaningless.

## **CAN WE ADOPT ETHNOBOTANY FROM LATIN AMERICA?**

**Alexis Le'Crease Rumph, Department of Modern and Classical Languages**

**Faculty Sponsors: Dr. Grażyna Walczak, Department of Modern and Classical Languages  
and Dr. Michael Savoie, Honors College**

This paper deliberates on the concept and production of ethnobotanical practices used in Latin America and how they can be applied in the United States. As pharmaceutical practices continue to develop moral and ethical concerns, this paper evaluates the efficiency and the necessity of turning back towards the study of using traditional applications. Along with reviewing the harms of select pharmaceuticals, and various Food and Drug Administration warnings, this analysis also considers the social organization of including diverse crops within the established agricultural systems. In this exploration, showing that with the collaboration of social and biological disciplines in the United States as well as with those using similar methods in neighboring countries, there is a propensity to progress in health and stability of the nation.

## **BREXIT: THE DRIVING FACTORS BEHIND THE VOTE TO LEAVE THE EUROPEAN UNION**

**Connor McCarthy, Department of Political Science**

**Faculty Sponsor: Dr. James T. LaPlant, Department of Political Science**

This quantitative study attempts to define and answer the research question “what factors best influenced the vote in the United Kingdom to leave the European Union?” The independent variables of this study are percentage foreign born population, percentage of those with and without a university degree, home ownership, percentage Muslim population, turnout, unemployment rate, region, median age and percentage retired. The percent vote to “Leave the European Union” will serve as the dependent variable. Correlation and scatterplot analysis as well as an ANOVA between Northern Ireland, England, Scotland and Wales and a multivariate regression analysis will help illustrate the relationship between the dependent and independent variables. The ANOVA revealed statistically significant differences by country and region with the highest levels of support to exit the European Union evident in England and Wales, while Northern Ireland and Scotland were much less likely to support the referendum. In the multivariate analysis, all of the variables were statistically significant (turnout, unemployment rate, university degree, home ownership, and percent foreign born population) with the exception of percent retired which actually had a strong relationship in the bivariate analysis. The results for percentage foreign born population are intriguing with a negative relationship at the bivariate level but a positive relationship to the leave vote in the multivariate model.

## **THE INFRASTRUCTURE OF THE INFORMATION SOCIETY**

**Kyle Bragg, Victoria Chambless, and Charles Felts, Department of Computer Science**

**Faculty Sponsor: Dr. Chenlei Liu, Department of Computer Science**

The Internet of Things is an emerging topic of social, economic, and technical significance which aims to transform the way we live, work, and play by taking everyday objects and combining them with Internet connectivity and powerful data analytic capabilities. The impact of this new realm of technology means that in the coming years, billions of devices will be connected to the Internet, raising significant challenges and changing the way we collect and use data. Surveillance concerns, legal and development policies, hacking, and privacy are all issues emerging from the creation of such an interconnected world. Once the Internet of Things begins to fully evolve, it may force a shift in thinking about the true implications of a society where the most common interaction with the Internet comes from passive engagement with connected objects rather than active engagement with content.

## **SOCIAL MEDIA GIVES BLACK EYE TO BLACK LIVES MATTER MOVEMENT**

**Kendra Danielle Wilson, Department of English**

**Faculty Sponsor: Ms. Barbara Ann Warren, Department of English**

This essay will research the misconceptions of the Black Lives Matter movement that are often brought to the public eye by posts on social media. Today, most people gather their information from social media in the belief that it is legitimate news. However, the portrayal of violence on social media has caused many people to be afraid to support the Black Lives Matter movement. Through my research of the movement's history, purpose, and some primary research I did in the form of a survey conducted on VSU campus, I find the perception that students see on social media about the movement to be false since the social media is an unreliable source. The Black Lives Movement, although portrayed as a negative movement on social media, is in fact, peaceful and non-violent.

## **DONALD TRUMP: A RACIALLY DISCRIMINATORY PAST AND POSSIBLY FUTURE**

**Kianna Thompson, Department of Management and Healthcare Administration**

**Faculty Sponsor: Professor Tony Thomas, Department of Management and Healthcare Administration**

When the name Donald Trump was mentioned we use to know him as a business man and the guy who had the show called *The Apprentice*. Now we know him as the President of the United States. They often say, "Your past doesn't determine your future," but if issues are still relevant today, it's time to research. This paper will discuss one of President Trump's first major legal disputes involving racial discrimination that took place back in the 70's within one of his major corporations. This paper will then look at the actions President Trump has taken using his new authority as President of the United States. Including cutting funds from the Civil Rights Division of the Justice Department, selecting a new "qualified cabinet" which is filled with individuals with racially discriminatory pasts, and even appointing an unqualified candidate to be over The Housing and Urban Development Department.

## **DOES SHARING THE SAME NATIVE LANGUAGE MEAN SHARING THE SAME ERRORS IN A NEW LANGUAGE? A CASE STUDY OF A JAPANESE ENGLISH LANGUAGE LEARNER**

**Liesa Marie Stangenberg, Modern and Classical Languages**

**Faculty Sponsor: Dr. Michelle Ocasio, Modern and Classical Languages**

The goal of this study is to demonstrate the possibility that native speakers of Japanese follow a similar linguistic path while acquiring English as a second language. I interviewed one English language learner whose native language is Japanese and compared her errors to what the experts have claimed are common errors for Japanese speakers when learning English. Starting out with the thesis that English language learners share common errors when they approach the acquisition of the same language, the study analyzes the validity of this assertion. The paper applies the material about common errors, native language, educational and personal background learned through research to the specific errors made by the interviewee. Areas of analysis are sentence structure, word choice, grammatical errors, pronunciation, linguistic analysis and suprasegmental effects in the learner's speech.

**DUCK AND COVER!  
ATOMIC ENERGY, CIVIL DEFENSE EDUCATION, AND NEOLIBERALISM**

**Audrey Whittle, Department of Philosophy and Religious Studies**

**Faculty Sponsor: Dr. Lavonna Lovern, Department of Philosophy and Religious Studies**

The investigation of the early atomic era in the United States reveals advanced levels of fear and anxiety focused on human annihilation. Attempts at resolving and relieving these fears manifested in many aspects of American society, specifically those relating to the education system. This paper will begin with an introduction to the nuclear problem as it manifested in the greater American consciousness. The paper will then discuss the American education system and civil defense films during the early atomic era. Finally, neoliberal ideology will be addressed in relation to civil defense education. From these investigations a distinct pattern emerges regarding the rhetoric employed in civil defense education involving the principles of neoliberalism.

**THE EFFECTS OF A NATIVE LANGUAGE ON TROMBONISTS'  
PLAYING ABILITIES**

**Melissa Wilcox, Honors College**

**Faculty Sponsor: Dr. Christine James, Department of Philosophy and Religious Studies**

This research looks at how trombonists' first language affects their playing abilities. This topic will strictly only look at the playing abilities of classical tenor trombone playing. First it will go into articulation, and how notes are tongued differently according to the first language. Next it will discuss about how vowels between languages affect players. Finally, style and phrasing is another topic looked at. Most of this research was from gatherings of other sources and putting it all together into one big collaborative paper. This research is important because it could be used in any type of trombone pedagogy setting, and some of this research could even be used for other brass instruments. This research will have a better understanding of trombone playing in general, and also how to create a more universal trombone sound.

## **EUGENICS AS GENOCIDE: AN UNTOLD SECRET IN THE UNITED STATES**

**Destiny N. Wilkinson, Native American Studies**

**Faculty Sponsor: Dr. Lavonna Lovern, Native American Studies**

The term eugenics can be traced back to Ancient Greece, *Eu* meaning good and *genos* meaning birth (Anđelković, 2015). As the director of the American Eugenics Society (1969-1975), Gottesman defined eugenics as “the replacement of natural selection by conscious, premeditated, or artificial selection in the hope of speeding up the evolution of desirable characteristics and the elimination of undesirable ones” (Anđelković, 2015 p. 1484). While potentially useful in reducing birth defects along with the possible elimination of certain negative health concerns, eugenic techniques have been employed for racist ends including genocide. This paper will discuss the use of eugenics as a method of genocide to control the Native American population and obtain land for colonization. The paper will focus on the examination of sterilization procedures, violations of informed consent, and governmental support for eugenics practices as demonstrated by the Government Accounting Office and Indian Health Services documents.

## **“FIRST IN FREEDOM STATE” PASSES BILL TO SIDELINE TRANSGENDER FREEDOM: AN ANALYSIS OF LEGISLATIVE VOTING BEHAVIOR ON HOUSE BILL 2**

**Kelah M. Hendon, Department of Political Science**

**Faculty Sponsor: Dr. James T. LaPlant, Department of Political Science**

This paper will examine the factors that predicted voting behavior on House Bill 2 in the North Carolina State Legislature on March 23, 2016. It will begin with an exploration of the anatomy of the bill, the economic impact, federalism, and southern politics. The independent variables are based on characteristics of each member of the North Carolina legislature, which included party identification, race, gender, religiosity, location of district, chamber, percentage of vote in the last election, and total number of terms in the state legislature. The dependent variable is the yes/no vote on the bill. The independent variables with significant levels of correlation to the vote on House Bill 2 are party identification, race, gender, religiosity, and percentage of vote in the last election. The independent variables that did not have significant levels of correlation to the vote on House Bill 2 are location of district, chamber, and total number of terms in the state legislature. This study utilizes correlation and crosstabulation analysis to test the hypotheses.

## **TECHNOLOGY OR INTERPRETERS?**

**Susanna Peonia, Modern and Classical Languages**

**Faculty Sponsor: Dr. Ericka H. Parra, Modern and Classical Languages**

The purpose of the research in Spanish is to discuss the advantages and disadvantages of substitutionary technology for interpreters, and the pros and cons of interpreters to demonstrate that human-interpreters are better than the technological interpreters. Additionally, I am going to explain the functions and duties of the interpreters based on the analysis of informative articles from the United Nations' website and my personal experience in the Practicum. To support my thesis, I discuss experts' points of view about the new headphone set that can offer instant translation and the latest Skype translator. Furthermore, I compare those arguments with the importance of studying foreign languages. The results of this research prove that human-interpreters are better than the technological interpreters thanks to their precision, flexibility, and cultural knowledge.

## **THE IMPACT OF TRANSGENDER PEOPLE IN THE MEDIA**

**Kameri Jamille Johnson, Department of Communication Arts**

**Faculty Sponsor: Dr. Nicole B. Cox, Department of Communication Arts**

Could you imagine everyone being a part of all one cultural lifestyle and sharing the same traditions? There would be no diversity or exposure to anything new in the media at all. The media allows people who may not have personal interactions with or knowledge of cultures, lifestyles, and mindsets different from their own to have access and exposure to new things and thusly be informed of these new ideas. The power of the media is that the presentation of these people and lifestyles influences the audience's perception of them and subsequently the acceptance of these ideas. All transgender people are not going to have the same experiences, but their experience is important and needs to be shown in the media. Representation of transgender people in television and film is impactful to the awareness and understanding of this group of people which can subsequently have an impact on how others perceive them.

## **SOR JUANA'S DEFENSE OF INDIGENOUS PEOPLES OF NEW SPAIN, MEXICO, AND WOMEN**

**Jalene Rosetta Snowden, Modern and Classical Languages**

**Faculty Sponsor: Dr. Ericka H. Parra, Modern and Classical Languages**

Sor Juana is one of the most influential Hispanic female writers' literary history from the Seventeenth Century. In 1669, Sor Juana joined the convent of San Geronimo in Mexico city, to write and study a mass of works that serve as an example of how true power is knowledge. Sor Juana's education was exemplified and displayed in many different ways. Sor Juana's various themes explored in her literary works address issues that are still very relevant today, over 300 years ago. Through her literary works such as her carols, her gusty reply to the Bishop "Carta Atenagórica" who dared challenge her right to intelligence and her famous poems, such as "Hombres necios" Sor Juana uplifted, tested and educated the masses about the indigenous people and their significance in society. This research in Spanish will explore how Sor Juana's literary works boldly spoke against the rights of those who were forcibly silenced.

## **ANALYZING THE RESCUE DRONE MANEUVERING IN THE WINDY ENVIRONMENT**

**Dongwook Gweon and Jongmin Park, Department of Physics, Astronomy, Geosciences and  
Engineering Studies**

**Faculty Sponsor: Dr. Barry Hojjatie and Mr. George Mellors, Department of Physics,  
Astronomy, Geosciences & Engineering Studies**

Unmanned Aerial Vehicle or drone could eliminate the risk of the rescuer during the rescue missions. Drone allows the rescuer to find and analyze the scene where typical helicopter could have no access. However, drones are vulnerable to the variable wind conditions. It is difficult for the drone operator to rely only on video and stabilize or maneuver drone in the windy conditions. This project is to build the APM based quadcopter, compare drone behavior in the normal and windy conditions and to provide data for the future work into the development of self-stabilizing algorithm for drone in the extreme conditions. This study was supported by the VSU Innovation Grant.

## **DIVERSITY IN CHILDREN'S TOYS**

**Dahnea Finkley, Department of Communication Arts**

**Faculty Sponsor: Dr. Nicole B. Cox, Department of Communication Arts**

This paper analyzes the depths of children toys that have been deemed as acceptable to manufactures, but later proved unfit for children. We will explore the types of impressions and lessons children learn from their simple object of entertainment in terms of diversity and the effects it may have into adulthood. These simple objects do much more than entertain and they need to be taken seriously when evaluating the future of our youth.

## **A COMPARATIVE ANALYSIS OF THE LIVES OF ANDREI CHIKATILO, TSUTOMU MIYAZAKI, AND DENNIS RADER**

**Nicholas A. Anderson, Department of Sociology, Anthropology, and Criminal Justice**

**Faculty Sponsor: Professor Brandon Atkins, Department of Sociology, Anthropology, and Criminal Justice**

This study is an analysis and comparison of the lives of serial killers Andrei Chikatilo, Tsutomu Miyazaki, and Dennis Rader, to understand why they committed their crimes and discover warning signs that could have been used to prevent such crimes from happening. Techniques similar to those of criminal investigative analysis were used in an attempt to analyze the crimes committed. Special attention was given to their childhoods in order to discover what risk factors may have driven them to commit their heinous crimes. There was also an investigation into how Chikatilo, Miyazaki, and Rader's vastly different cultures and societies affected their psychological states in order to put them on the path that would eventually lead to their criminal activities. The analysis of their cultures included an examination of collectivistic versus individualistic tendencies as well as an emphasis on intelligence or strength as desired traits in an individual.

## **LEGALIZING PROSTITUTION**

**Lauren Horne, Department of Philosophy and Religious Studies**

**Faculty Sponsor: Dr. Christine James, Department of Philosophy and Religious Studies**

This paper examines public policies that legalize and regulate prostitution. Prostitution can be defined as the exchange of sex for money or other items of value. Political values and political affiliations in the United States frequently disagree on whether prostitution should be legalized. For example, conservative and libertarian value systems frequently agree on a reduction in government intervention, but conservatives argue in favor of legislating moral behavior in the context of social issues. I will address the definition of conservative and libertarian, then discuss how prostitution can be legalized and regulated in the form of public policies. I will discuss conservative arguments against the legalization of prostitution, and give the counterarguments for why prostitution should still be legalized as a means to limit sexually transmitted diseases and to uncover and prosecute those engaged in human trafficking with children or with those who have been forced into prostitution against their will.

## **NEUSTADT’S ANALYTICAL FRAMEWORK AND LYNDON B. JOHNSON’S PRESIDENTIAL POWER—“THE POWER TO PERSUADE”**

**Stone Sirmans, Department of Political Science**

**Faculty Sponsor: Dr. Marc G. Pufong, Department of Political Science**

Lyndon B. Johnson was a towering political gladiator from Texas who possessed an encompassing persuasive personality. When Johnson became the President of the United States, he had been in politics for over thirty years. His persuasive skills and power to its exercise developed throughout his years in Congress were carried into the Executive. This paper aims is to use Richard Neustadt’s claim that “presidential power is the power to persuade” to analyze Johnson’s presidential actions to assess the validity of that claim in light of its analytical framework. We find unequivocal confirmation that Lyndon Johnson presidential actions are consistent with Neustadt analytical framework which asserts that “presidential power is the power to persuade.” This framework, for example, sustain the view that Johnson’s success on passing and implementing the sweeping Civil Rights Act signed into law on July 2, 1964 and the Voting Right Act of 1965 signed into law on August 6, 1965 can be attributed to his political character and power to persuade.

## **CORAL RESTORATION IN THE FLORIDA KEYS: A NOVEL SOLUTION TO A WORLD WIDE PROBLEM**

**Domonique S. Arrington, Matthew L. Cowan, Sarah E. Godfrey, Drew A. Johnson, Jeremiah K. Jones, Amber R. Lowery, Robert S. Murphy, Pavan D. Patel, Shannon M. Pendleton, Daniel W. Pinyan, Joanna H. Thomas, Devante D. Smedley, Laquetta Wysong, Garrett C. Crook, Richard D. Williams, Shannon M. Pendleton, Megan D. Slater, Weldon C. Lane, and Schuyler D. Vickers, Department of Chemistry**

**Faculty Sponsor: Dr. Thomas Manning, Department of Chemistry**

Our group has developed a material described as biodegradable concrete. It has been incorporated into several studies in the Gulf of Mexico, including oyster restoration and the production of new pharmaceutical agents. This study is focused on testing the material for applications in coral restoration and reef creation. The matrix is approximately forty percent limestone, forty percent sand, eighteen percent binder and two percent nutrients (m/m %). The nutrients include vitamins, amino acids, proteins, sugars, starch, cellulose, urea, citric acid and chitin. These nutrients serve two general purposes in the structure. First, they allow a bacterial film to form quickly (hours to days) on the surface of the material, which is critical for coral larvae settlement (1). Second, the inclusion of organic species weakens the concrete structure and allows marine creatures to attach to or bore into it. The biodegradable concrete will also contain trace levels of tetrabromopyrrole, which has been proposed as a chemical cue for coral larvae (2). The goal of the project is to place the biodegradable pieces of concrete on a hard bottom near Pigeon Key, where they can be monitored on a regular basis. The nutrients in the material will give rise to the biofilm needed for colonization and the tetrabromopyrrole will serve as a chemical cue to attract larvae. If successful, this novel material could be utilized for coral restoration in the Florida Keys National Marine Sanctuary as well as other locations worldwide. In addition, the concentration of coral larvae in the location we have chosen is low due to its distance from the reefs. Variations with the composition for the fifty test structures proposed will be correlated with the colonization rates and densities, species present as well as the growth rates of the corals.

(1) K. H. SHARP, J. M. SNEED, K. B. RITCHIE, L. MCDANIEL, AND V. J. PAUL, Induction of Larval Settlement in the Reef Coral *Porites astreoides* by a Cultivated Marine *Roseobacter* Strain, *Biol. Bull.* 228: 98–107. (April 2015)

(2) J.M. Sneed, K.H. Sharp, K.B. Ritchie, V.J. Paul, *Proc. R. Soc. B* 2014 281 20133086  
Published 21 May 2014; <http://rspb.royalsocietypublishing.org/content/281/1786/20133086>

## **PREDICTION AND ESTIMATION OF POPULATION SIZE USING INTERPOLATION AND LAGRANGE POLYNOMIAL**

**Walter Hufstetler and Sean Heeney, Department of Computer Science**

**Faculty Sponsor: Dr. Jemal Mohammed-Awel, Department of Mathematics**

Functions are used to model relationships between quantities. In most application problems our knowledge of these functions consists of a set of discrete data points, where the data is obtained from measurements. Thus, we need to be able to construct a continuous function that fits a given discrete data. The problem of constructing such continuous function is called data fitting. We will discuss an algorithm for constructing Lagrange interpolating polynomial that fits a given data. In particular, we will construct a Lagrange polynomial for existing USA population data and we will use the polynomial to make estimations, for years not included in the data, and to make predictions. Finally, we will discuss the error involved in approximating the population using the interpolating polynomial.

## **INDUSTRY 4.0: CURRENT PRACTICES OF LEADING COUNTRIES**

**Jeepil Jang, Department of Management and Healthcare Administration**

**Faculty Sponsor: Dr. Taewon Hwang, Department of Management and Healthcare Administration**

Industrial revolutions are major turning points in history. The first was triggered in the 1700s with the mechanization of the textile industry. The second was sparked by the expansion of electricity, petroleum and steel. The third began after World War II with the development of computers. Now the fourth industrial revolution is upon us. The fourth industrial revolution, also called Industry 4.0, was first coined by the German Government. It represents the implementation of RFID, artificial intelligence, big data, and the Internet of Things (IoT) in the factories. Industry 4.0 has become a global trend and the German concept of Industry 4.0 is serving as a guideline for many leading countries. This study is a broad review of current practices and future plans of Industry 4.0 initiatives in leading countries.

## **DIVERSITY IN DISNEY: THE PORTARYAL OF MINORITIES IN DISNEY FILMS**

**Tiandra Mundy, Department of Communication Arts**

**Faculty Sponsor: Dr. Nicole Cox, Department of Communication Arts**

The portrayal of minorities in Disney, such as women and diverse ethnic groups, remained at a certain level of representation, in early films and television shows. However, Disney has made great strides throughout time to represent various minority groups through popular films. The purpose of this study is to discuss whether or not the portrayal of these particular minority groups feed into the stereotypes that were created by society. Though the time span of 2014 to 2016 is the focus of this research, earlier works created by Disney will be used to show the progression of representations of the mentioned minority groups through time.

## **EXPLORING FALSE POSITIVES/NEGATIVES ON CLASSIFYING AFRICAN AMERICANS AND CAUCASIANS USING THE STATIC-99**

**Rebecca Bingham, Department of Sociology, Anthropology, and Criminal Justice**

**Faculty Sponsor: Dr. Bobbi Ticknor, Department of Sociology, Anthropology, and Criminal Justice**

The validity of the Static-99 has been found to be moderately accurate for generalized populations across multiple countries and is one of the most widely used assessment tools for sexual recidivism prediction. It has been evaluated for its use among female populations as well as across multiple subgroups of offenders (e.g. rapists, child molesters, etc.). It has been revised as the Static-99R to better accommodate aging offenders and the decline in recidivism risk with age. However, few studies have assessed the tool's validity in regards to ethnicity, specifically the African American population. This study aims to add to the research regarding the validity of the Static-99 and its use among African American populations.

## **BREAKING THE BINARY: INDIGENOUS UNDERSTANDINGS OF GENDER AND THEIR IMPORTANCE TODAY**

**Audrey Whittle, Native American Studies**

**Faculty Sponsor: Dr. Lavonna Lovern, Native American Studies**

The Western construction of gender has been historically based in a dichotomous system involving male and female positioning. This duality has created opposition and biases when individuals identify outside of “assigned” or “expected” places in the gender binary. While many in Western cultures believe this duality to be universal, cultures around the world offer workable alternatives to the duality model of gender that eliminate the biases and discrimination perpetuated by such a model. This paper will examine a few of the Native American constructions of gender focusing on gender fluidity. The paper will begin with a historical examination of Native American gender diversity and move to the modern designation of “Two-Spirit” and berdache. Finally, the paper will conclude that gender discrimination and violence in Western cultures could be significantly reduced or eliminated with the adoption and acceptance of gender fluidity as represented by the Native American cultures.

## **BUILDING A ROBOT AND AN ELECTRONIC CONTROL SYSTEM**

**Steven Remington, Robert Atnip, Tyler Zeigler, and Thomas Lebsekal, Department of Physics, Astronomy, Geosciences and Engineering Studies**

**Faculty Sponsor: Dr. Barry Hojjatie and Mr. George Mellors, Department of Physics, Astronomy, Geosciences and Engineering Studies**

A simple and affordable robot kits were purchased to develop a robot and associated software that is capable of moving within a convex two dimensional space. The controlled motion of the robot simulates the motion of a carpet cleaner robot. Also, an affordable and portable laboratory kit for an engineering control course was developed based on the Ph.D dissertation of R. M. Reck’s at the University of Illinois, Urbana-Champaign. These laboratory projects are intended to boost the students’ interest in learning about control systems and robotics as well as creating an opportunity for collaboration and interaction among students. This study describes various components of the two systems and methods associated with programming and interfacing the electronics with a computer for performing the tasks of motion control and data acquisition. This study was supported by the VSU Innovation Grant.

## **TROUBLED SEAS AND SCATTERED BLOSSOMS: NATURE IMAGES IN ELEGIAC ANGLO-SAXON AND JAPANESE POETRY OF THE MEDIEVAL PERIOD**

**Audrey Whittle, Department of English**

**Faculty Sponsor: Dr. Maren Clegg-Hyer, Department of English**

Certain parts of the human experience transcend all cultural boundaries and distinctions. Though seemingly universal, however, the expression of the various human emotional impressions can manifest in particular ways across different groups of people. One such impression appears both universally and individually among various cultures: loss. Perhaps one of the most important components of the human experience when conducting comparative cultural studies, the study of “loss” highlights what particular cultures found especially important. Many medieval writers looked to the natural world as a mirror of the internal and emotional world when attempting to convey the feeling of loss. This relationship created a variety of distinct nature images in elegiac poetry, especially poetic works appearing in medieval Anglo-Saxon and Japanese collections. When these works are studied alongside their respective cultural backgrounds, the emphasized similarities between the two cultures reveal something very important about man’s relationship with nature and with each other.

## **THE EMERGENCE OF SYMBOLIC REASONING AND SYMBOLIC NOTATION FROM ANCIENT TIMES TO THE 17<sup>TH</sup> CENTURY**

**Patsy Kirkland, Margarita Bustos Gonzalez, James Henderson, Roxi Berkley, and Callie Ragan, Department of Mathematics**

**Faculty Sponsor: Dr. Iwan Elstak, Department of Mathematics**

This paper examines the trajectory of the development of symbolic reasoning and of the emergence of symbolic algebra. We will use the model proposed by Albrecht Heffer to argue for a shift from rhetorical algebra to symbolic algebra based on new Models of Reasoning. The algebra is placed in its historical context. The role of certain activities during the renaissance is shown, including Italian abacus mathematicians, their influence on mathematical Reasoning and others. Symbolic thinking from equations to decimal numerals, finding solutions for the cubic polynomial equations, and Descartes’ algebraic geometry will be explained slowly opening the door to more symbolic styles of Reasoning. The struggle to explain and accept negative numbers and complex numbers is sketched. A summary is given of the ideas around this issue so far.

## **THE MEXICAN REVOLUTION AND THE LITERATURE OF RICARDO FLORES MAGÓN**

**Roberto Carrillo, Modern and Classical Languages**

**Faculty Sponsor: Dr. Grazyna Walczak, Modern and Classical Languages**

During the Mexican revolution, there were many reformers who motivated people to fight for their rights. Photos and other sources can give us a representation of what happened, but literature makes us feel what people felt in key historical moments. While historians do not finish documenting all the facts, several writers capture in their works situations and characters that reveal the tendencies of their time. This analysis focuses on two works written by Ricardo Flores Magón: "Dos Revolucionarios" and "La Esclavitud Voluntaria" and observes the confusions and manipulations of the people during a time of oppression, violence, and injustice. The analysis points to the use of literature by the author who was a social reformer of the time. An investigation of Flores Magón's reception by the readership suggests that literature has been and continues to be one of the most powerful tools for educating and inspiring people.

## **AN IDEOLOGICAL ANALYSIS OF *MODERN FAMILY*'S REPRESENTATION OF HOMOSEXUALITY**

**Chris Elkins and Will De Lorenzo, Department of Communication Arts**

**Faculty Sponsor: Dr. Nicole Cox, Department of Communication Arts**

This paper is an overview of the modern sitcom *Modern Family* and its presentation of homosexuality and will be using hegemonic ideologies coupled with a feminist perspective of the western gender binary. In it, the premise of sexuality and the implications of its presentation within the context of the show are researched and discussed. By analyzing the representation of the show's homosexual couple Mitchell and Cameron, it is possible to see the potential positive and negative effects of media representations of minority groups such as homosexuals. These characters are the featured portrayal of homosexuality and homosexual identity within the context of the series, and accordingly, are the method through which the writers deliver commentary on this topic. Overall *Modern Family* demonstrates both the potential benefits and risks of such inclusion and allows us to reflect on the deeper implications of media in contemporary society.

## **WOMEN AT THE BATH**

**Casey Lynn Daniel, Department of Art**

**Faculty Sponsor: Dr. Glenda Swan, Department of Art**

There is a well-established convention of women being depicted in the act of bathing in art history. Because of this tradition, modern images of women at the bath cannot be viewed as figural studies, but as art whose content carries larger associations with ritual, sexuality, wealth, and the power of the gaze. This research project examines images of bathing women in art and how this subject has been utilized, referenced, and adapted by contemporary artists – particularly female painters.

## **ANALYSIS OF GUNNISON'S PRAIRIE DOG ALARM CALLS**

**Carson Bartley, Summer Bryant and Mariah Oeser, Department of Biology**

**Faculty Sponsor: Dr. William Loughry, Department of Biology**

Previous work has suggested that Gunnison's prairie dogs (*Cynomys gunnisoni*) may use distinctive alarm calls when faced with different terrestrial predators. We tested this hypothesis by presenting adult female prairie dogs with taxidermy mounts of a bobcat, coyote, badger, and a cardboard box (as a control). The analyses reported here examined patterns of calling across all bouts of calling emitted during a 5 min trial (n = 24 females that produced 14,861 calls contained in 2,585 bouts). Using repeated measures ANOVAs we found multiple instances of significant differences between females, but none between stimuli. Thus, females appear to have individually unique styles of calling but do not vary their pattern of calling in response to different types of terrestrial threats. These results do not support the hypothesis that Gunnison's prairie dogs have predator-specific alarm calls.

## **CONSOLIDATION OF HAGFISH RESEARCH IN AN INTERACTIVE, VIRTUAL LIBRARY**

**Daniel W. Pinyan III, Department of Biology**

**Faculty Sponsor: Dr. Ted Uyeno, Biology and Mr. Michael Holt, Odum Library**

Scholarly research that accesses primary literature enables the scientist to characterize the limits of knowledge. While digital searches using Google scholar or Galileo are possible, significant works are often overlooked because they may not be readily accessible; indeed many crucial early publications still need digitization and translations. The classic solution is to bother an old researcher to identify literary gems that he or she has painstakingly uncovered. A more efficient solution is to develop a searchable digital library to which all end users may contribute. The goal of this study is to build an annotated virtual library and records database for use by faculty and student members of a national consortium that is focused on hagfish research. The online database is implemented using vtext, a virtual interactive text program hosted at VSU, and allows users to improve a shared library database by collecting important citations, summaries, links, and supplemental data.

## **DISTRIBUTION OF GABA-LIKE IMMUNOREACTIVITY IN THE CENTRAL NERVOUS SYSTEM OF THE BLUE CRAB**

**Angela Bass and Hannah Nettles, Department of Biology**

**Faculty Sponsor: Dr. Timothy J. Fort, Department of Biology**

The heart of the blue crab is a simple central pattern generator-effector system whose activity can be modulated both by neuronal and hormonal signaling. Gamma aminobutyric acid (GABA), is the major inhibitory neurotransmitter in the central nervous systems of many organisms. In this study, we examine the distribution of GABA-like immunoreactivity (GABA-li) in the central nervous system of the blue crab, *Callinectes sapidus*. Multiple cells in the brain and thoracic ganglion expressed GABA-li. Cells in the thoracic ganglion appear to project axons through the pericardial organs (neurohormonal structures) to the cardiac ganglion (central pattern generator) within the heart. The pericardial organs exhibited GABA-li varicosities. This suggests that GABA could have both a neural and hormonal role in the cardiac system of the blue crab and that GABA could be the neurotransmitter of one of three cardioregulatory fibers leading from the central nervous system to the heart.

## **DO PINE STANDS ACT AS A BARRIER TO SPANISH MOSS DISPERSION?**

**Nia Keyes and Abigail Schwartz, Department of Biology**

**Faculty Sponsor: Dr. Corey Devin Anderson, Department of Biology**

Some authors have hypothesized that pine stands may act as a barrier to Spanish moss dispersion. However, no study has formally examined the spatial distribution of Spanish moss in a pine stand to determine what factors are most predictive of where it is found. The present study used logistic regression to examine predictors of the occurrence of Spanish moss in a burn-managed pine stand at the Lake Louise Research Center. Results based on 128 circular quadrats (representing 880 trees) revealed that the distance to hardwood source populations along the edge of the stand was most predictive of Spanish moss occurrence, followed by the average age of the hardwoods, and the presence/absence of live oak. Our results support the hypothesis that pine stands may be acting as a dispersal barrier, as Spanish moss was most commonly found in ecotonal areas along the edges and rarely in the center of the stand.

## **LIGHT FILTERS AND IRREGULAR LEAF SPOT OF PEANUT**

**Ariel Sharia Roddy, Department of Biology**

**Faculty Sponsor: Dr. Emily Cantonwine, Department of Biology**

Irregular leaf spot (ILS) occurs in peanut plants. It looks analogous to late leaf spot caused by *Cercosporidium personatum*, but does not appear to be a fungus because it does not have any fungal signs (spores, etc.). Prior research suggests that ILS is caused by an abiotic factor such as sunlight. The purpose of this experiment was to see if different light filters had any effect on the frequency of ILS for three peanut cultivars. Peanut seed were grown in a dew chamber until they sprouted. Plants were then moved to a greenhouse and placed under five light filter treatments, unfiltered, plastic, green, red, or blue. The plastic and green filters were significantly different, with more ILS in the plastic treatment. All other filters showed similar frequencies of irregular leaf spot. This could abet agriculturalist in the preliminary stages of growing peanuts under a light filter to decrease disease.

## **SURVEY OF LICHENS AT VALDOSTA STATE UNIVERSITY**

**Jason Webster, Department of Biology**

**Faculty Sponsor: Dr. Emily G. Cantonwine, Department of Biology**

This research provides an initial survey of corticolous (bark inhabiting) lichens found on the Valdosta State University campus. Lichens are composite organisms that thrive off symbiotic relationships between a fungus and cyanobacteria or algae. They come in many different shapes, colors, and textures, and are common on nutrient-poor substrates. Using the *Lichens of North America* book, among other helpful guides, specimens were identified based on physical appearance, chemical tests, and fungal spore dimensions. The survey identified multiple genera including *Parmotrema*, *Trypethelium*, *Leparia*, and *Haematomma*. Each specimen was photographed and documented with the tree it was attached to, along with other features that can initially be seen with the naked eye. The lichen observations will be reported to mushroomobserver.org, and some of the collected specimens will be donated to the Valdosta State herbarium. This survey will provide better insight on the lichens growing in South Georgia.

## **THE EFFECTS OF CLEARING AGENTS ON PEANUT LEAFLETS**

**Ariel Sharia Roddy, Department of Biology**

**Faculty Sponsor: Dr. Emily Cantonwine, Department of Biology**

This research compared the efficacy of two clearing agents to remove pigments from peanut with *Cercosporidium personatum*, the cause of late leaf spot. The clearing agents tested were FAA (formalin/acetic acid/alcohol, a standard clearing agent, and Visikol, a new product, used fresh, straight from the bottle, or recycled.). Peanut leaflets were infected with *C. personatum* by inoculating with spores of the fungus and incubated under high relative humidity and 12 hour photoperiod for two weeks. Leaflets were then placed in each of the clearing agents and stored in darkness for at least four days. Microscopy was used to evaluate clearing efficacy. Fresh and recycled Visikol cleared the leaflets faster and more efficiently than FAA, allowing germination tubes of *C. personatum* to be more easily observed. Necrotic disease symptoms were visible with all clearing agents tested. Visikol was found to be a superior clearing agent to FAA for this pathosystem.

## **VARIATION OF ALARM CALLS OF GUNNISON'S PRAIRIE DOGS**

**Summer Bryant, Carson Bartley and Mariah Oeser, Department of Biology**

**Faculty Sponsor: Dr. William Loughry, Department of Biology**

We compared the alarm calls of female Gunnison's prairie dogs in response to four different stimuli to determine whether they altered their calls in response to different terrestrial threats. For the analysis, we measured 21 features of the first, middle, and last call of each bout of calling, and used a repeated measures ANOVA to examine variation between stimuli and individual callers. We found few instances of significant differences in call structure between stimuli (6/63 possible comparisons), but substantial variation between females (45/63 comparisons). Thus, our data support the hypothesis that the alarm calls of female Gunnison's prairie dogs are individually distinctive but that they do not alter their calls in response to different types of mammalian predators. However, these results must be considered preliminary because we have not yet measured all the calls from all tested females.

## **A 24 HOUR LAB: A HANDS ON ELONGATED VIEW OF THE OCEAN**

**Domonique S. Arrington, Matthew L. Cowan, Sarah E. Godfrey, Drew A. Johnson, Jeremiah K. Jones, Amber R. Lowery, Robert S. Murphy, Pavan D. Patel, Shannon M. Pendleton, Daniel W. Pinyan, Joanna H. Thomas, Devante D. Smedley, Laquetta Wysong, Garrett C. Crook, Richard D. Williams, Shannon M. Pendleton, and Schuyler D. Vickers, Department of Chemistry**

**Faculty Sponsor: Dr. Thomas Manning, Department of Chemistry**

This presentation will focus on hundreds of measurements involving carbon dioxide levels, dissolved oxygen, nitrate, phosphate, pH, specific gravity, conductivity, TDS, chloride, hardness, refractive index, silicates, temperature and tide height. The measurements will take place over 24 hours at location in the Florida Keys. Observations will also be made concerning the marine life present. It will provide insight about the natural cycles that take place in the ocean as the tide comes and goes and the temperature rises and falls.

## **A SIMPLE APPROACH TO IMMOBILIZATION OF INTERCALATED DYE ON COTTON FABRIC FOR ACID RECOGNITION**

**Cera T. Hsu and LaTarsha Taylor**

**Faculty Sponsor: Dr. Tolulope O. Salami, Department of Chemistry**

The immobilization of a dye (crystal violet,  $C_{25}H_{30}N_3Cl$ ) into a layered material (alpha zirconium phosphate) and bound to a cotton fabric as secondary support has been achieved. The Zirconium phosphate –crystal violet cotton sensor hereon referred to as ZrPCV-Cotton sensor was tested for acid-base recognition and the color change and acid recognition was shown to be reversible over 140 cycles. The poster will discuss some of our results and the characterization of the ZrPCV-cotton sensor by various techniques such X-ray powder diffraction (XRD), Diffuse reflectance IR( DRIFT-IR), Scanning electron microscopy (SEM)and UV-visible spectroscopy. This work shows a simple way layered materials can be utilized in sensor dye immobilization on fabrics.

## **BUILDING A REMOTE OPERATED VEHICLE TO CARRY A GOPRO FOR UNDERWATER EXPLORATION**

**Megan D. Slater, Weldon C. Lane, Garett Crooks, and Richard D. Williams, Department of Chemistry**

**Faculty Sponsor: Dr. Thomas Manning, Department of Chemistry**

Remote Operated Vehicles are widely used as a tool in the marine environment. In this project, students will mount multiple pieces of analytical equipment on a home built ROV and use it to monitor a number of chemical parameters. These include dissolved oxygen, pH, conductivity, and temperature. The ROV/Analytical module will be built in a remote location in the Florida Keys. It will be tested in an area that is defined by shallow muddy bottoms and lined by a mangrove swamp.

## **CANCER DRUGS AND DRUG DELIVERY SYSTEMS**

**Andrew Harvin, Ashley Pitts, Jordan Harrell, Ryan Green, Aaron A. Ford,  
and Kahdeja Patrick, Department of Chemistry**

**Faculty Sponsor: Dr. Thomas Manning, Department of Chemistry**

This project focuses on the use of graphene (a single sheet of graphite) and two forms of carbon nanotubes as carriers for the cancer drugs Alprolozom, Dacarbazine, and Streptozotocin. These drugs are part of a class of drugs known as alkylating agents. This project uses computational methods to achieve two results; first was to simulate geometric factors such as surface area, geometries and volumes. The second is to calculate some important parameters such as dipole moments, energies and TPSA. The aim of the project is to determine what density of the pharmaceutical agents can be attached and transported to a diseased area such as a tumor.

## **CANCER DRUGS AND POTENTIAL CARRIERS**

**Cheyenne Ervin, Weldon C. Lane, Sterling Serfoss, and Megan D. Slater, Department of  
Chemistry**

**Faculty Sponsor: Dr. Thomas Manning, Department of Chemistry**

The use of graphene and carbon nanotubes can be used as carriers for the cancer drugs Alkeran/Evomela and Gliadel. These drugs are part of a class of drugs known as alkylating agents. This project uses computational methods to simulate geometric factors such as surface area and geometries. Some important parameters such as dipole moments, energies and TPSA were also calculated. The aim of the project is to determine what density of the pharmaceutical agents can be attached and transported to a diseased area such as a tumor.

## **CARBON GRAPHENE SHEETS AND NANOTUBULES AS DRUG CARRIERS FOR CIS-PLATIN AND PARAPLATIN**

**Waleed Al-harby, Tiffany Brown, Ashley Butts, Chelsea Jackson, Briceton McNair, and  
Rechelle Woods, Department of Chemistry**

**Faculty Sponsor: Dr. Thomas Manning, Department of Chemistry**

This study focused on the use of Carbon Graphene sheets and two specific types of carbon nanotubes as carriers for the cancer drugs Cis-Platin and Paraplatin (Carboplatin). These drug belong to the category Alkylating Agents. This project uses computational methods to achieve two results; 1. Simulate geometric factors such as surface area, geometries and volumes and 2. Calculate some important parameters such as dipole moments, energies and TPSA. The aim of the project is to determine what density of the pharmaceutical agents can be attached and transported to a diseased area such as a tumor.

## **CARBON STRUCTURES AS DRUG CARRIERS FOR CISPLATIN, LOMUSTINE, AND MUSTARGEN**

**Ashley Frazier, Zach Crews, Mitchell Wheeler, Garrett Cook, Shannon Pendleton,  
and Ja'marrius Thomas, Department of Chemistry**

**Faculty Sponsor: Dr. Thomas Manning, Department of Chemistry**

This project focuses on the use of graphene (a single sheet of graphite) and two forms of carbon nanotubes as carriers for the cancer drugs Cisplatin, Lomustine and Mustargen. These drugs are in the class known as alkylating agents. This project uses computational methods to achieve two results; first was to simulate mathematical factors such as surface area, geometries and volumes. The second is to compute parameters such as dipole moments, energies and HBD count. The aim of the project is to determine what density of the pharmaceutical agents can be attached and transported to a diseased area such as a tumor or rare disease.

## **CARBON STRUCTURES AS DRUG CARRIERS FOR TEMOZOLOMIDE AND LOMUSTINE**

**Ariana Cooper, Carson Bartley, Faatihah Meunier, and Kory Burns, Department of Chemistry**

**Faculty Sponsor: Dr. Thomas Manning, Department of Chemistry**

Temozolomide and Lomustine. These drugs are part of a class of drugs known as alkylating agents. This project uses computational methods to achieve two results; first was to simulate geometric factors such as surface area, geometries and volumes. The second is to calculate some important parameters such as dipole moments, energies and TPSA. The aim of the project is to determine what density of the pharmaceutical agents can be attached and transported to a diseased area such as a tumor.

## **EASILY IONIZABLE ELEMENTS AND CHEMICAL EQUILIBRIUM IN A FLAME**

**Alexander J. Burch, Kory D. Burns, Andres Contreras, Ian D. Dyson, Cera T. Hsu, Sumin Kim, Weldon C. Lane, Ashley E. Pitts, Megan D. Slater, Devante D. Smedley, Joanna H. Thomas, Bernabe Tucker, and Ann K Williams, Department of Chemistry**

**Faculty Sponsor: Dr. Thomas Manning, Department of Chemistry**

The concepts of chemical equilibrium can be applied in all areas of science, from DNA technology to the chemistry of soils. Typically, few scientists think of chemical equilibrium, or the ratio of products and reactants in a chemical reaction, in a high temperature gas such as a flame. This presentation will focus on shifting the equilibrium of an atom and an ion (i.e.  $\text{Cu}(\text{flame}) \rightleftharpoons \text{Cu}^+(\text{flame}) + \text{electron}$ ) by adding an easily ionizable element (EIE) or an element with a low ionization potential, such as sodium. The EIE donates electrons to the Cu/CU(I) equilibrium and can shift the atom/ion ratio impacting the analytical measurement.

## **GRAPHENE AND CARBON NANOTUBES AS DRUG CARRIERS FOR BUSULFAN, CHLORAMBUCIL, AND CYTOXAN**

**Michelle Bentivegna, Andres Contreras, Ian Dyson, Brittney Gatewood, Derek Hathaway, and Kyle Wilkerson, Department of Chemistry**

**Faculty Sponsor: Dr. Thomas Manning, Department of Chemistry**

This project focuses on the use of graphene (a single sheet of graphite) and two forms of carbon nanotubes as carriers for the cancer drugs chlorambucil, busulfan, and cytoxan. These drugs are part of a class of drugs known as alkylating agents. This project uses computational methods to achieve two results; first was to simulate geometric factors such as surface area, geometries and volumes. The second is to calculate some important parameters such as dipole moments, energies and TPSA. The aim of the project is to determine what density of the pharmaceutical agents can be attached and transported to a diseased area such as a tumor.

## **QUANTIFICATION OF ACETAMINOPHEN IN OVER-THE-COUNTER MEDICATION WITH CYCLIC VOLTAMMETRY**

**Weldon C. Lane, Department of Chemistry**

**Faculty Sponsor: Dr. Linda de la Garza, Department of Chemistry**

Cyclic voltammetry was chosen as a technique in order to demonstrate how electrochemistry could be utilized in analytical chemistry for the Quantitative Analysis course. An experiment was proposed where students perform cyclic voltammetry on a sample of crushed Extra Strength Tylenol® and use the data collected to determine the amount of acetaminophen (APAP) present in the tablet. In order to accomplish this, a calibration curve was created using known solutions of 98% acetaminophen dissolved in pH 2.42 McIlvaine buffer and scanned in the range of 0-1,000 mV at a rate of 40 mV/s. The students used their data and the calibration curve to calculate the amount of APAP in terms of mg of APAP per tablet. Three groups of students performed the experiment and found the amount of APAP per tablet of Tylenol to be on average  $430.6 \pm 29.2$  mg/tablet.

## **REACTION OF PEROXYNITRITE WITH SUGAR COMPLEXES OF COUMARIN BORONIC ACID**

**Weldon C. Lane, Department of Chemistry**

**Faculty Sponsor: Dr. Yakov Woldman, Department of Chemistry**

Peroxynitrite is a very reactive oxidant produced in biological tissues under oxidative stress. It is formed from superoxide and nitric oxide and is able to damage different cellular components. Peroxynitrite can be detected by its reaction with coumarin boronic acid (CBA), leading to formation of fluorescent product, 7-oxycoumarin. However, detection of peroxynitrite formation in cell culture is hampered by own fluorescence of CBA. In attempt to quench this fluorescence, we studied the reversible formation of CBA complexes with sugars and its effect on the reaction of peroxynitrite with CBA. Two different sugars, glucose and fructose, and sugar alcohol mannitol were studied. The reaction was observed by fluorescence of 7-oxycoumarin, using stop-flow equipment. The dependence of the kinetic constant on sugar concentration allows to estimate sugar-CBA complexation constants; they found to be close to the literature values for related compounds. The kinetic constants for the reaction of sugar-CBA complexes with peroxynitrite were about  $10^5 \text{ s}^{-1}$ , making them potentially useful for peroxynitrite detection.

## **SPECTROELECTROCHEMICAL CHARACTERIZATION OF IRON(III) OXIDE NANOPARTICULATE FILMS**

**Ann K. Williams, Department of Chemistry**

**Faculty Sponsor: Dr. Linda de la Garza, Department of Chemistry**

As part of clean energy research, nanoparticle photoanodes are being studied as a viable option for solar energy conversion. Iron(III) oxide ( $\text{Fe}_2\text{O}_3$ ) nanoparticles are of interest due to the material ready availability and electrochemical properties. This research involves the characterization of the photoelectrochemical properties of the electrodes and of the surface states of iron oxide nanoparticles through potentiometric spectrophotometry. Electrodes fabricated with a colloidal solution of  $\text{Fe}_2\text{O}_3$  with and without Pluronic polymer are compared. Electrodes are also modified with 3,4-dihydroxyphenylacetic acid (DOPAC) in order to remove trap sites, increase the photocurrent, and further characterize the surface states.

## **STRATEGIC EXERCISES IN VOCABULARY: TURNING A PUZZLE INTO A PATENT**

**Ashley D. Butts, Jordan P. Harrell, Ann K. Williams, Sterling A. Serfoss, Bernabe Tucker, Megan D. Slater, and Kory D. Burns, Department of Chemistry**

**Faculty Sponsor: Dr. Thomas Manning, Department of Chemistry**

This invention is an educational word exercise that requires strategy to complete and to maximize the score. The exercise can be utilized by a single participant or by thousands of participants at different locations at different times. The strategic vocabulary exercise is designed to help participants become familiar with a number of vocabulary words. A two dimensional grid with at least one letter is provided along with a word list. All of the designated letters in the grid provided to the participants must be connected using some or all of the words provided. The words can be added in horizontal or vertical orientations, spelled forward or backwards, but not diagonal. Different locations on the grid can be worth different points, so the connection of the words requires strategy in order to maximize point totals. Consequently, as participants connect the letters provided, there are many words combinations and routes possible, resulting in different point totals. In an educational setting, surveying and utilizing a word list of new or complex terms can serve as a familiarization tool.

## **SYNTHESIS OF CHIRAL AMINES ON SILICA SURFACES**

**Alexander Burch, Department of Chemistry**

**Faculty Sponsor: John T. Barbas, Department of Chemistry**

We have devised simple, facile, and green methods for the synthesis of many new chiral amines on silica surfaces. The reactions were done between  $2.0 \times 10^{-3}$  mole of aldehydes and an equimolar amount of (R) or (S)  $\alpha$ -methylbenzylamine. The chiral amines retain their chirality under the conditions of our reactions, thus giving larger secondary chiral amines. The aldehydes selected included simple benzaldehyde and aromatic aldehydes with ortho and para substituents and with aldehydes with electron withdrawing and electron donating groups. In all cases the reactions proceeded smoothly at room temperature when dry silica was added to a solution of the two reactants in dry diethyl ether. The first product, the chiral imine, was obtained in about half an hour quantitatively. Completion of this stage of the reaction was monitored by GC-MS. The reduction step was achieved in the same pot by adding 0.15 g of sodium borohydride, followed by the addition of a few drops of water periodically. Progress of the reaction was again followed by GC-MS. The chiral amines were obtained quantitatively and extracted from silica by stirring with small aliquots of diethyl ether. Purification of the product for spectra were done using column chromatography. The products were analyzed by IR, GC, GC-MS, proton and C-13 NMR and the optical activity was obtained by polarimetry.

## **SYNTHESIS OF HEMATITE NANOCRYSTALLINE COLLOIDAL SOLUTIONS FROM RUST FOR USE IN PHOTOELECTROCHEMICAL CELLS**

**Allison B. Taylor, Department of Chemistry**

**Faculty Sponsor: Dr. Linda de la Garza, Department of Chemistry**

Hematite,  $\alpha$ -Fe<sub>2</sub>O<sub>3</sub>, nanocrystalline films have become a covetable material for use in photoelectrochemical cells because of energy conversion in the visible electromagnetic spectrum and water splitting abilities to produce hydrogen gas. Two nanoparticulate  $\alpha$ -Fe<sub>2</sub>O<sub>3</sub> solutions were synthesized. The first solution was obtained from laboratory-grade FeCl<sub>3</sub> and converted into  $\alpha$ -Fe<sub>2</sub>O<sub>3</sub> nanoparticles by hydrolysis. The second solution, which will be referred to as contaminated rust, was collected from woven steel cable. The contaminated rust was dissolved in a heated HCl acidic solution, which allowed FeCl<sub>3</sub> to be synthesized. This solution was then converted into  $\alpha$ -Fe<sub>2</sub>O<sub>3</sub> nanoparticles by the same method as above. The solutions were deposited by a dip-coat method onto conductive glass and characterized by UV/ VIS, IR spectroscopy, and photoelectrochemistry. The efficiency of photocurrent production was evaluated to compare the different films.

## **USING CARBON NANOTUBES TO EFFECTIVELY DELIVER MRI CONTRAST AGENTS USING DIFFERENT R-GROUPS. HOW TO DEVELOP AND FILE A UNITED STATES PROVISIONAL UTILITY PATENT APPLICATION**

**Kory D. Burns, Candicee B. Childs, Gregory Davis, Kevin L. Golden, Jordan E. Greene, Karen S. Herring, GiHun Hong, Cera T. Hsu, Sumin Kim, Isaac C. Moore, Parrish L. Nelson, Coral N. Radney, Sterling A. Serfoss, Ashilee T. Thomas, Joanna H. Thomas, Bernabe Tucker, Mitchell B. Wheeler, Richard D. Williams, Alexander J. Burch, Porschea R. Clark, Jacie N. Davenport, Ian D. Dyson, Taylor Holder, Staci A. MacKey, Keanna M. McCrary, Pavan D. Patel, Samantha J. Powell, Shabri I. Simpson, Devante D. Smedley, Khanh-toan T. Tran, Cierra D. Wiggins, and Zachary C. Youngblood, Department of Chemistry**

**Faculty Sponsor: Dr. Thomas Manning, Department of Chemistry**

This invention/patent utilizes the increased surface area of carbon nanotubes (CNT's) to effectively deliver greater amounts of therapeutic agents to specific sites within the body. The nanoparticles help reduce the possibility of drug resistance for cancer drugs and have also been shown to reduce cytotoxicity of the attached drug. CNT's that have been functionalized with various cancer-fighting drugs have shown to cause a more rapid regression in the growth of cancer cells than when compared to administration of the drug not attached to the nanotube. In studies using functionalized CNT's for MRI purposes, the nanotubes exhibited excellent results in enhancement after intravenous administration in mammals.

## **A GENDER STUDIES ANALYSIS ON HOW GENDER ROLES ARE PRESENTED ON *STEVEN UNIVERSE***

**Kyle Breaux and Marcia Miles, Department of Communication Arts**

**Faculty Sponsor: Dr. Nicole Cox, Department of Communication Arts**

Media reinforces gender roles by perpetuating and showcasing stereotypical portrayals of women and ideas of men that perpetuate the idea of a hegemonic masculinity. Men are expected to be tough, aggressive, and smart, while being able to maintain and control their emotions. Women on the other hand are expected to be attractive, emotional, not too smart, and gentle. Children learn how to portray their gender through children's television. Rebecca Sugar's *Steven Universe* challenges traditional gender roles through its presentation of gender. Children's programming traditionally teaches young boys and girls how to conform to gender roles. Sugar uses her characters to convey the message that children do not have to conform to gender roles, and they do not have to conform to male nor female gender roles either. By using non-conforming characters Sugar teaches children that they do not have to conform to their respective role, while also teaching them to be accepting of those who chose to live outside of the norm.

## **A SEMIOTIC ANALYSIS OF *THE GREAT GATSBY***

**John Bickel and Hunter Howle, Department of Communication Arts**

**Faculty Sponsor: Dr. Nicole Cox, Department of Communication Arts**

This paper examines Baz Luhrmann's 2013 remake of *The Great Gatsby* and explores the semiotics of the film. The purpose of this research is to analyze the signs that are spread throughout the film that give the audience a deeper understanding of who the characters are and what makes them tick. This paper covers the meanings of colors, objects, attire, emotions, interactions, and character attributes such as their names, dreams, and mindset, and explores the idea that each detail, no matter how big or small, within the film was chosen during its production for a very specific reason.

## **GENDER STUDY OF *THINK LIKE A MAN***

**Raven Poole and Tiandra Mundy, Department of Communication Arts**

**Faculty Sponsor: Dr. Nicole Cox, Department of Communication Arts**

Gender roles have developed through the years to help individuals make sense of this very complex world however, they have created a gender binary by only limiting the gender roles to either masculine or feminine. Hegemonic masculinity plays a major part in society as well, as it distinguishes what certain portrayals of masculinity are accepted and rejected by society. The purpose of this study is to analyze if gender roles, as well as characteristics of hegemonic masculinity, are prevalent within the very popular movie entitled *Think Like a Man* (2012). In the movie, the main characters submit to and challenge some of the main gender roles that society deems masculine or feminine while each character goes through an evolution that alters their role at some significant point in the plot.

## **HARRY POTTER AND THE SIGNS OF MORAL UNCERTAINTY**

**Avery Stephen and Tyler Singleton, Department of Communication Arts**

**Faculty Sponsor: Dr. Nicole Cox, Department of Communication Arts**

Postmodern thought elevated the plane of moral uncertainty to a new height, and is now based more so on circumstantial decision-making rather than on ethical principles. The final two films in the “Harry Potter” Series- Harry Potter and the Deathly Hallows, Parts I and II- promote the idea of morality being most well defined in a situational context by way of symbolic representation of character morality. The films use signs to signify deeper relationships among characters and the moral “good” and “bad” that they commit with one another. In this paper, it will be shown how several key symbolic factors present throughout the films affect the messages that the audience receives from the films, and will seek to explain why audiences have responded to these symbolic representations of morality in certain ways.

## **WHERE YOU LEAD, I WILL FOLLOW: A SEMIOTIC ANALYSIS OF *GILMORE GIRLS***

**Kyle Dawson, Department of Communication Arts**

**Faculty Sponsor: Dr. Nicole Cox, Department of Communication Arts**

This research paper analyzes the television show, *Gilmore Girls*, by using a semiotic analysis of five of the show's main characters. The paper identifies signs and symbols that have deeper meanings and stand for various societal themes and issues. A sign is an inseparable combination of a sound image and a concept associated with the sound image. Some of the issues addressed in the paper include intrusive parents, overly strict parents, feminism, jealousy, masculinity and the downfalls of a strict, religious upbringing. Each character exhibits at least one of these themes throughout the show, and the viewer knows by the signs and symbols encoded in the plot. The paper also talks about the importance of analyzing mediated texts, and the fact that any movie, song, book, newspaper or other form of media can be analyzed using semiotics as long as there is evidence within the text to back it up.

## **CLASSIFICATION OF TASTE USING 6-n-PROPYLTHIOURACIL STRIPS**

**Anne N. Baldwin and Reagan E. Plymale, Department of Communication Sciences and Disorders**

**Faculty Sponsors: Drs. Ruth Renee Hannibal and Crystal Randolph, Department of Communication Sciences and Disorders**

Taste is one of the most important factors that play a role in a person's likes and dislikes of food and guides their food selection choices which can be important for speech-language pathologists who work with children who have food aversions and feeding and swallowing problems as well as the elderly whose appetite declines with aging. Research has shown that the 'bitter' trait is present in young children, present in more women than men, and that it declines with age. 6-n-propylthiouracil (PROP) is a derivative of the bitter compound thiourea and is used to classify tasters and nontasters. This study will examine whether "taste" classification using PROP strips correlates to food selection of students majoring in communication sciences and disorders at Valdosta State University. The anticipated outcome of the study is that the tasters will be less likely to choose foods that are cruciferous or contain bitter-tasting compounds.

## **INTERPROFESSIONAL COLLABORATION OF STUDENTS IN COMMUNICATION SCIENCES AND DISORDERS (CSD) AND NURSING PROVIDING COMMUNICATION AND VITAL SIGN SCREENINGS**

**Laura Bennett, Kammi Blackwelder, Katie Childers, Jordan Dowd, S. Jaye Hilliard, Brandy Morgan, Erica Morris, and Kirsten Williams,  
Department of Communication Sciences and Disorders**

**Faculty Sponsors: Drs. Ruth Renee Hannibal and Crystal Randolph, Department of Communication Sciences and Disorders, and Laura Carter, College of Nursing and Health Sciences**

Interprofessional education and interprofessional collaboration consist of a partnership between two or more health care professions that come together for the sole purpose of learning from each other's professions. Together, the professionals blend cultures and share knowledge and skills to communicate with each other about the outcomes of patient care. This is a student-centered interprofessional collaboration project between students in CSD and nursing programs to provide speech, hearing, swallowing and vital sign screenings to university students and plant operations staff. The anticipated outcome of the study is that students will gain valuable skills in providing screenings in their respective areas that will prepare them for their chosen profession. Additionally, the study will provide results of speech, hearing, swallowing and vital sign screenings for each level of participants.

## **THE EFFECT OF EGOCENTRISM ON VOCABULARY DEVELOPMENT**

**Patrick Elliott, Department of Communication Sciences and Disorders**

**Faculty Sponsors: Drs. Crystal Randolph and Ruth Renee Hannibal, Department of Communication Sciences and Disorders**

The current study examines the effect of egocentrism on vocabulary development. When learning new information and skills, a common strategy is to make the information relatable to one's self. Thus, this study uses portraits (i.e., vocabulary self-portraits) as a tool to facilitate vocabulary development. Vocabulary flash cards, which typically contain a word and a related picture, are a common tool used to build a child's vocabulary. In this study, vocabulary self-portraits, which depict novel words and photos of the child taken in a way that reveals word-meaning are compared with line drawings that depict novel words. The anticipated outcome of this study is that children who are taught vocabulary using vocabulary self-portraits will develop more vocabulary. The results of this study may provide implications for vocabulary interventions implemented by speech-language pathologists.

## **THE EFFECT OF TASTE AND TEMPERATURE ON LINGUAL SWALLOWING PRESSURE**

**Victoria Sandefur, Department of Communication Sciences and Disorders**

**Faculty Sponsor: Mrs. Melissa Carter, Department of Communication Sciences and Disorders**

Swallowing is a complex sensorineural process affected by many components, one of which being the capabilities of the tongue. The tongue plays a crucial role in swallowing because it prepares a bolus and subsequently propels the bolus into the pharynx, initiating a swallow. It was hypothesized that the taste of a liquid would affect the lingual pressure used in swallowing. This study used the IOPI to measure lingual pressure while the participant swallowed many different liquids. The lingual pressure in these trials was then compared to the participant's baseline measures to determine the effectiveness of using different tasting liquids to elicit a more forceful swallow. The results showed that there were significant differences in lingual pressure when comparing sweet, salty, and sour liquids with water. These results replicate findings of a previous study that found that chemesthesis, an irritation of the trigeminal nerve caused by chemical stimulation, influences swallowing physiology.

## **THE TEXTBOOK CONUNDRUM: CSD STUDENTS' TEXTBOOK PREFERENCES**

**Julie Tapp, Department of Communication Sciences and Disorders**

**Faculty Sponsors: Drs. Crystal Randolph and Ruth Renee Hannibal, Department of Communication Sciences and Disorders**

How do most students describe their textbooks? Expensive, confusing, and let's be honest, boring, but are there certain characteristics that make a student prefer one textbook over another? Based on current research, students have shown to equally recall information read from an e-textbook and print text. The difference is in the duration a student can focus on the information. Due to eyestrain associated with computers, students cannot stay focused on e-text as long as paper text. Another factor is chapters tend to be extended for e-textbooks. Students have also been shown to use textbooks more when given assigned reading versus whole chapter reading. Lacking in the literature is information related to preferences for particular textbooks by students in Communication Sciences & Disorders (CSD). Typically, professors choose texts for courses with little regard for student preferences. The current study investigated if CSD students preferred one speech sound disorders textbook to others.

## **AUTOMATIC SEGMENTATION OF SPANISH MOSS IN OUTDOOR IMAGERY**

**Wesley Cook, Department of Computer Science**

**Faculty Sponsor: Dr. Radu P. Mihail, Department of Computer Science**

Automatically detecting Spanish moss in digital images presents a difficult computer vision problem because of the plant's many variable characteristics such as color, density, and texture as well as its propensity to hang from trees and form within close proximity to other foliage with similar characteristics. This research aims to accurately identify and label individual pixels within images that contain Spanish moss through the use of deep learning architectures, more specifically, convolutional neural networks (CNNs). This problem is called "semantic segmentation", where semantically identical pixels are assigned a label in an image. In our work, the semantic labels are moss and background. Our research extends a recent CNN architecture named "PixelNet" which we use as a baseline to evaluate our method. Preliminary results are encouraging, but further research is required to apply this method on arbitrary plants in outdoor imagery.

## **COUNTING LEAVES WITH AVL TREE**

**Deryck Black and John Anthony Dobson, Department of Computer Science**

**Faculty Sponsor: Dr. Anurag Dasgupta, Department of Computer Science**

Modern CPUs are extremely fast—being able to complete jobs within the scale of nanoseconds. When processing a relatively small group of data, the time of completion is of no visible concern to the user. However, if scaled to something much larger, the delay due to processing becomes more and more noticeable. When retrieving data, it is important to optimize the fundamental data retrieval method in order to minimize the time required for increasingly larger jobs. For our poster, the retrieval method we chose to implement is called the Adelson-Velskii and Landis(AVL) Tree. The large job we utilized the AVL tree for is the retrieval and comparison of all unique words within a few chosen works of literature. We used this method and this task in order to practically compare the efficiency of the AVL Tree to two other basic Tree structures.

## **LEARNING SKY APPEARANCE: DISCRIMINATIVE MODELS FOR SKY SEGMENTATION**

**Marco Tupaz Colasito, Department of Computer Science**

**Faculty Sponsor: Dr. Radu Mihail, Department of Computer Science**

In this poster, we explore machine learning models on outdoor imagery to distinguish pixels that belong to the sky. This interdisciplinary research is important in autonomous systems for navigation, vehicle operation, and preprocessing steps for higher-level computer vision algorithms. The work involved will use an existing database of images collected from static webcams, and we will explore various discriminative models in computer vision by testing them with pictures taken under different weather and lighting conditions. The effectiveness of each model will be determined by comparing the results to human annotations of the webcams. The results of each model, along with their respected ground truths for comparison, will be displayed on the poster.

## **MALICIOUS VECTORS OF NETWORKING IN STANDARD COMPUTING ENVIRONMENTS**

**Charles Felts, Jeff Haineault, Chloe Kimble, and Rene Perez,  
Department of Computer Science**

**Faculty Sponsor: Dr. Sudip Chakraborty, Department of Computer Science**

This paper surveys several methods that hackers could use to obtain personal information and gain unauthorized access to private networks. It outlines details and prevention techniques that can be used to protect networks and private information while using the Internet. The paper demonstrates examples of network penetration and information collection. In particular, it shows how an attacker may use the Wireshark tool to retrieve data that being sent across a network. The paper also demonstrates techniques of gaining access to a wireless network including the use of, but not limited to, dictionary attacks. It discusses how the issues can be mitigated after an attacker finds and exploits the weakness of the network. The objective of this work is to better inform the average computer users of the risks they can be susceptible to while online and connected to a network and how to protect themselves better.

## **LITERACY AND CULTURE: A PERSPECTIVE FROM A CROSS-CULTURAL CROSS SECTION**

**Ansley R. Watson, Department of Early Childhood and Special Education**

**Faculty Sponsor: Dr. Lucia Lu, Department of Early Childhood and Special Education**

Ansley interviewed four adults from diverse cultural backgrounds. She asked 23 questions regarding their cultural, religious, and ethnic backgrounds and how they have had an impact on them today. She interviewed two men and two women, all of which were from different cultures. The results from the qualitative study shows that even though each student came from a different cultural background, they all made it to college, have experienced less racism as they have grown up, and have overcome any obstacles they have faced regarding discrimination. This shows that racism in the United States could be decreasing, and it does not matter a student's background, they can still be successful, and students are not as different on the inside as they may appear on the outside.

## **LITERACY AND CULTURE: A PERSPECTIVE FROM ETHIOPIA**

**Willie Slaughter, Department of Early Childhood and Special Education**

**Faculty Sponsor: Dr. Lucia Lu, Department of Early Childhood and Special Education**

Willie interviewed a lady from Ethiopia, Africa where there is a lack of democracy and freedom. She came to the US for better education and better life.

## **LITERACY AND CULTURE: A PERSPECTIVE FROM FINLAND**

**Kaylee Brown, Department of Early Childhood and Special Education**

**Faculty Sponsor: Dr. Lucia Lu, Department of Early Childhood and Special Education**

Kaylee interviewed a lady from Finland where the education system is better than US when she compared the standardized tests in the US and the assessments in Finland.

## **LITERACY AND CULTURE: A PERSPECTIVE FROM GERMANY**

**Shelby Cardin, Department of Early Childhood and Special Education**

**Faculty Sponsor: Dr. Lucia Lu, Department of Early Childhood and Special Education**

Shelby interviewed Mary, a woman from Prum, Germany. When Mary arrived in the US with a different environment, language, and people, she realized that the transition was going to have huge impact on her life. Especially the new language of English. Mary describes the language of English as different and complex. She remembers going to school and taking the mandatory classes. “The instructors were nice; some were patient but some were not”, Mary says. “It was time consuming, but it was worth it since I was going to be living here.” Even though she didn't have a hard time learning English, she took note of how different the sentence structure was. For example, in Germany they would say, “what are you making today?” whereas we say “what are you doing today?” She says that she had to pay attention to how she talked to other people because of the sentence structure, making sure that it matched up to English. With time though, Mary got the hang of English and communicated with others without any problems. For her family, though it was the complete opposite. They didn't learn the entire language but only the basics to get by. She explained how she now sometimes will teach them, but it's hard to since they're stubborn as well as getting older. As advice, I told her to teach her parents what she learned, listen more, don't be afraid to make mistakes, and see it as a fun opportunity to learn something new rather than looking at it as a chore.

## **LITERACY AND CULTURE: A PERSPECTIVE FROM HONDURAS**

**Gabriel Virgil, Department of Early Childhood and Special Education**

**Faculty Sponsor: Dr. Lucia Lu, Department of Early Childhood and Special Education**

Gabriel interviewed a woman from Honduras a beautiful country with beaches, jungles and the famous Maya Ruins. But the country is going through the hard time due to the corruption of the government. The woman enjoys cultural anthropology and learns English through immersing herself in the language by watching TV. She experienced “racism” very often. She was invited to a party, and was called, “Hey, you, a Mexican, Good, you can clean my toilet.” Actually she is Hispanic, not Mexican.

## **LITERACY AND CULTURE: A PERSPECTIVE FROM KOREA**

**Justin Adcock, Department of Early Childhood and Special Education**

**Faculty Sponsor: Dr. Lucia Lu, Department of Early Childhood and Special Education**

Justin interviewed his boss, a very successful Korean businessman - the CEO of Pak's Karate Academy. Justin has known him since he was ten and that boss has played a major role in shaping him into the person he is today. The boss is in his late 70's. His business has done very well over the years, he also founded the United Tang Soo do Federation, which is the federation that can be joined by other karate school owners who want to teach the style of Tang Soo Do. He said that he hasn't ever wanted to do anything else with his life or any other hobbies. Karate is who he is and his future. His plan is to grow the federation. He said that currently the federation is at 27000 students all over the US with 3008 black belt. Justin admires him.

## **LITERACY AND CULTURE: A PERSPECTIVE FROM MEXICO**

**Ricki M. Hardy, Department of Early Childhood and Special Education**

**Faculty Sponsor: Dr. Lucia Lu, Department of Early Childhood and Special Education**

Ricki interviewed her lovely grandma Eloisa Arreola who moved from Mexico when she was young. She is a part of a very religious Catholic family who had different shrines in the house to worship different saints. When her great-grandpa passed away, the priest came to perform the Catholic ritual of Last Rites where the priest prays for the dead person to be forgiven of sins and granted access to heaven. She mentioned her fears since Trump became the president. She worries about Trump presidency will affect her family and her Latina community.

## **LITERACY AND CULTURE: A PERSPECTIVE FROM PUERTO RICO**

**Markesia Barron, Department of Early Childhood and Special Education**

**Faculty Sponsor: Dr. Lucia Lu, Department of Early Childhood and Special Education**

Markesia interviewed Abdiel, a 25-year-old male born in Puerto Rico. His mom moved his family to the US in Massachusetts. Abdiel began learning English there. During the time, he had an English-speaking teacher and Spanish-speaking teacher in the same classroom, speaking at the same time. He believes that this arrangement hindered his learning abilities greatly. Abdiel is speaking English very well, but not writing English. He speaks English to his mother, but his mother speaks Spanish back to him. Abdiel has experienced a lot of racism, particularly at schools in the south and from police officers. Abdiel faced with teachers was being constantly picked on as the bad one out of the class, when in fact he was not misbehaving any more than the other students. He also explained how people would call him “Mexican” instead of Puerto Rican, which is an insult to his culture. He has also experienced racial profiling with law enforcement during his time in America.

## **LITERACY AND CULTURE: A PERSPECTIVE FROM THE BAHAMAS**

**Madison Tew, Department of Early Childhood and Special Education**

**Faculty Sponsor: Dr. Lucia Lu, Department of Early Childhood and Special Education**

Madison interviewed an interesting young man from a small island in Bahamas where the price of all life necessities are double expensive than the US.

## **LITERACY AND CULTURE: A PERSPECTIVE FROM VIETNAM**

**Kerri Cheek, Department of Early Childhood and Special Education**

**Faculty Sponsor: Dr. Lucia Lu, Department of Early Childhood and Special Education**

Kerri interviewed a lady from Vietnam who immigrated to the US but still practices her family tradition and religion in Buddhism. She has been struggling in learning English language in reading and writing. She is confused in the sign language that the American use for communication. She did not experience anything like “racism.”

## **MOVIES ENHANCE TEACHING INTERDISCIPLINARY CONTENTS**

Social Media can be used in almost any discipline to enhance teaching and learning. In this movie lesson, students as teacher candidates conceptualize aesthetics, pragmatics, and semiotics into the course of “Exploring sociocultural perspectives on diversity” by inviting learners from PreK-12 to watch movies, discuss movies, write movies and explore themes of movies. The aim of this lesson is to develop the multisensory acquisition of the five literacy skills in thinking, listening, speaking, writing, and reading for academic success. The contents include Arts, ELA, Math, Music, PE, Science, Social Studies, etc. (Sources: [www.teachwithmovies.org](http://www.teachwithmovies.org)).

## **USING *CHARLOTTE’S WEB* TO TEACH THE LIFE CYCLE OF SPIDERS**

**Alexandra K. Smith**

**Faculty Sponsor: Dr. Lucia Lu, Department of Early Childhood and Special Education**

## **USING *MY FAIR LADY* TO TEACH ELA (SPEECH) AND SOCIAL STUDIES (SOCIAL STATUS)**

**Leslie A. Platt**

**Faculty Sponsor: Dr. Lucia Lu, Department of Early Childhood and Special Education**

## **USING *PRIDE & PREJUDICE* TO DEMONSTRATE SOCIAL INSTITUTIONS IN FAMILY, ECONOMICS, POLITICS, RELIGION, MARRIAGE, AND SOCIAL STATUS**

**Vanessa Benitez and Leanna Stuckey**

**Faculty Sponsor: Dr. Lucia Lu, Department of Early Childhood and Special Education**

## **USING THE AFRICAN AMERICAN MAID’S POINT OF VIEW FROM *THE HELP* TO INFORM THE SOCIAL RACISM OF THE US IN THE 1960’S**

**Lisa Taylor, Connor Holton, and Christiana Ellington**

**Faculty Sponsor: Dr. Lucia Lu, Department of Early Childhood and Special Education**

**USING *THE LION KING* TO TEACH THE LIFE CYCLE OF THE ANIMALS IN AFRICA**

**Hannah Brooks, Katie Mueller, and Asia Foster**

**Faculty Sponsor: Dr. Lucia Lu, Department of Early Childhood and Special Education**

**USING *THE PIANO* TO DEMONSTRATE THE BEAUTY AND EFFECT OF SIGN LANGUAGE**

**Sarah E. Dorsey and Janice M. Kayse**

**Faculty Sponsor: Dr. Lucia Lu, Department of Early Childhood and Special Education**

**LEWDNESS IN *THE COUNTRY WIFE***

**Kimberly Eva Cannon, Department of English**

**Faculty Sponsor: Dr. Anne Greenfield, Department of English**

This paper analyzes William Wycherly's play *The Country Wife*, which centers on the character of Horner, a man who claims impotence as a con to avoid suspicion, so he may seduce married women. The actions of many of the characters were socially unacceptable, dishonorable even, during the Restoration Era, and so this paper draws on research to answer the question of how the play accumulated popularity. This was done by looking at the government of the time, a government going through change and having just witnessed a great divide and turmoil, as well as by looking at the King over the people, the relationships among the classes, the actions of the typical libertine, and even the defense of Restoration comedies by the playwrights themselves. The examination of these areas allows for an understanding of how the audience of the time was able to appreciate the content of *The Country Wife*.

## **EFFECTS OF HIGH-INTENSITY INTERVAL TRAINING ON AMBULATORY BLOOD PRESSURE IN PREHYPERTENSIVE ADULTS**

**Kristopher D. Dawson and Aubrey M. Sweeney, School of Health Sciences**

**Faculty Sponsor: Dr. Dharini M. Bhammar, School of Health Sciences**

This study examined the effects of high-intensity interval training (HIIT) on ambulatory blood pressure (ABP) in prehypertensive adults. Six participants (4 women; Age:23±3yr; Height:166±8cm;Weight:65±7kg) underwent 24h ABP monitoring after three trials performed in a random order: 1) HIIT: Ten 1-min bouts of exercise at 90-95% of HRmax; 2) SSE: 30min of moderate-intensity steady-state exercise; and 3) Control. There was a trend for a 4mmHg decrease in systolic blood pressure (SBP) 3h post-exercise for HIIT and SSE compared with Control (135±13mmHg; P=0.090). Diastolic blood pressure (DBP) and mean arterial pressure (MAP) 3h post-exercise were 4mmHg lower during SSE compared with Control (P=0.051 and P=0.036, respectively). 24h DBP (70±12mmHg) and MAP (89±12mmHg) during SSE were lower than HIIT (73±12mmHg and 91±12mmHg; P=0.005 and P=0.013, respectively), primarily due to differences during the daytime. These preliminary results suggest that SSE may be superior to HIIT for reducing DBP and MAP in prehypertensive adults.

## **UTILITY OF VERIFICATION TESTING FOR VALIDATING MAXIMAL OXYGEN UPTAKE MEASUREMENT**

**Bradley K. Collins and Kristopher D. Dawson, School of Health Sciences**

**Faculty Sponsor: Dr. Dharini M. Bhammar, School of Health Sciences**

The purpose of this study was to determine the utility of supramaximal constant-load verification testing (VERIF) for validating  $\dot{V}O_{2max}$  attainment during an incremental exercise test (INCR). Ten prehypertensive adults (4 women; 22.5±3.1yr; height:170.4±8.8cm; weight:72.2±13.2kg) underwent INCR followed 15 min later by VERIF at 105% of maximal work-rate on a cycle ergometer. There was no difference in  $\dot{V}O_2$  between INCR (2.18±0.54L/min) and VERIF (2.23±0.54L/min; P=0.205). 17% of participants that achieved a  $\dot{V}O_2$  plateau (i.e., less than 50% increase in  $\dot{V}O_2$  with increasing work-rate) and 50% that did not achieve a  $\dot{V}O_2$  plateau during INCR, had a substantially higher  $\dot{V}O_2$  during VERIF. 30% of participants that met at least two secondary criteria for validating  $\dot{V}O_{2max}$  (i.e., respiratory exchange ratio≥1.10, maximal heart rate≥85% age predicted, ratings of perceived exertion≥17) had a substantially higher  $\dot{V}O_2$  during VERIF. Our data confirms that verification testing may be the best approach for validating attainment of  $\dot{V}O_{2max}$ .

## **STATE OF GEORGIA POPULATION ESTIMATIONS AND PROJECTIONS USING NATURAL POLYNOMIAL SPLINES CONSTRUCTED USING EXISTING DATA**

**Walter Hufstetler and Sean Heeney, Department of Computer Science**

**Faculty Sponsor: Dr. Jemal Mohammed-Awel, Department of Mathematics**

Data fitting is a problem of constructing a continuous function that fits a given discrete data. Spline interpolation is a form of interpolation where the interpolant is a special type of piecewise polynomial of lower degree called splines. Spline interpolation is preferred over polynomial interpolation because it avoids the oscillation problem occurred in higher degree polynomials. We will construct a special type of spline called natural cubic spline using existing state of Georgia population data. We will use the cubic polynomial to make estimations and projections of Georgia population. We will compare our results with the estimations and projections given by state office of planning and budget, estimates: 2001-2011, projections: 2015-2030.

## **SECOND LANGUAGE ACQUISITION AND THE CRITICAL PERIOD HYPOTHESIS**

**Hannah Farmer, Modern and Classical Languages**

**Faculty Sponsor: Dr. Victoria Russell, Modern and Classical Languages**

Within the field of second language acquisition, there are many theories and hypotheses. The Critical Period Hypothesis has stemmed from Chomsky's (1959) theory of Universal Grammar. According to this hypothesis (Lenneberg, 1967), age plays a major role in a learner's ability to acquire second language phonology, morphology, grammar, syntax, and pragmatics. This hypothesis has garnered much controversy since its proposal and continues to be a popular topic of debate in the field of linguistics. The research studies that are explored on this poster pose the following questions: (1) What is The Critical Period Hypothesis? and (2) Is there valid evidence supporting or disproving it?

## **THE EFFECT OF PROCESSING INSTRUCTION ON THE ACQUISITION OF JAPANESE PASSIVES AND HONORIFICS BY NATIVE ENGLISH SPEAKERS**

**Amber York, Modern and Classical Languages**

**Faculty Sponsor: Dr. Victoria Russell, Modern and Classical Languages**

The purpose of the research poster is to examine the benefits of Processing Instruction (PI) on Japanese passive and Japanese honorifics by native English speakers who are learning Japanese as a foreign language. PI is an input-based pedagogical technique that helps second language learners build their implicit linguistic systems (or their internal grammar). Few studies have been conducted with PI on non-Indo-European languages, making Japanese second language research particularly interesting. The results indicate that PI is beneficial for the acquisition of Japanese, but more research is needed in this area.

## **THE DEBATE REGARDING THE FOUNDERS OF THE “NEW WORLD”**

**Erin Taylor Shaw, Native American Studies**

**Faculty Sponsor: Dr. Lavonna Lovern, Native American Studies**

This paper examines the debate involving the “truth” as to who first settled the land now called America. Western cultures use the Bering Strait theory to trace the migration of people into the “New World”. Indigenous traditions counter this theory with claims of original and constant inhabitation of Turtle Island. This paper will examine the Bering Strait theory looking specifically at the origins, evidence and tradition of the theory. The paper will then examine several Indigenous traditions that counter the Bering Strait tradition. Finally, the paper will conclude with a discussion of archeological evidence that supports the Indigenous claim while noting the lack of similar evidence to support the Bering Strait tradition.

## **THE END OF THE MAYAN EMPIRE: NOT THE END OF THE MAYA**

**Geena Cherisse Hollis, Department of Native American Studies**

**Faculty Sponsor: Dr. Lavonna Lovern, Department of Native American Studies**

Despite the existence of Mayan cultures in Central America, many history books continue to claim that the Maya civilization began around 2000 BCE and ended by 900 CE. While the evidence reveals that the civilization peaked and declined during those documented dates, the Maya civilization did not cease to exist nor did the traditions become “unstable”. This paper will address the theories depicting the collapse of the Golden Age. The paper will briefly discuss Maya culture, but will focus on the impact of the loss of the Golden Age on traditions and spirituality. The paper’s final section will examine the erroneous material found in history books regarding “the end of Mayan” civilization.

## **THE HISTORY OF DIABETES IN NATIVE AMERICAN COMMUNITIES**

**Manuela Francesca Gugliotta, Native American Studies**

**Faculty Sponsor: Dr. Lavonna L. Lovern, Native American Studies**

The following paper will discuss diabetes in Native American communities. With high rates of diabetes and diabetes related health issues, Indian Health Services (IHS) has labeled the situation “a diabetic crisis”. This paper will examine how American colonization and post-colonization practices have impacted Native American diets and access to healthcare. The paper will emphasize poverty rates related to colonization efforts in Native American communities as a primary contributor to the diabetic crisis. The paper will conclude with a discussion of Native Americans efforts to eliminate diabetes within their communities.

## **BEHAVIORAL EFFECTS ON FETAL AND INFANT MORTALITY**

**Miranda Bullard, Darbi Hilliard, Taylour Mason, Jian Li Wu, and  
Timyia Smith, School of Nursing**

**Faculty Sponsor: Ms. Paige Krispin, MSN, NP-C, School of Nursing**

For this paper, the clinical question is: In women of childbearing age, what behavioral factors effect infant and fetal mortality in comparison to women who do not exhibit these behaviors? Maternal behaviors have a direct influence on the health and survival rates of both the fetus and infant. This paper will analyze the effects of maternal smoking, alcohol use, and substance abuse. The analysis will also focus on the effects of nutrition, knowledge base, and maternal stress on the fetus and infant. The purpose of this paper is to examine the significance of multiple behavioral factors that may contribute to fetal and infant death and to develop evidence-based practice guideline recommendations with the aim of decreasing mortality rates.

## **EFFECTS OF OBESITY AND BREAST CANCER: A LITERATURE REVIEW**

**Joseph Crotty, Abigail Johnson, Angel Moss, and Juawana Stringer, School of Nursing**

**Faculty Sponsor: Laura Carter, MSN, RN, School of Nursing**

The purpose of this paper is to answer the question: In adult American women ages 30-65, what is the effect of obesity/overweight in the development, survival and recurrence of breast cancer? Through a review of literature we have found a significant link between overall health and breast cancer. Obesity, specifically seems to have an overwhelming effect on the prognosis, survival and recurrence of breast cancer. Through our research we have determined that at the nursing level, certain interventions and guidelines based on EBP should be implemented. Guidelines such as dietary practices, diet and exercise education and implementation, and collaboration with Registered Dietitians, as well as, physical therapist may be necessary for patients who are obese or overweight at the time of diagnosis. Furthermore, recommended clinical practice guidelines will be developed to ensure the maintenance of health for those who are within a normal BMI at time of diagnosis.

## **FOCUSING ON PATIENT EDUCATION TO REDUCE READMISSION RATES RELATED TO CONGESTIVE HEART FAILURE**

**Kara Crotty, Hope Summers, Jodi-Ann Johnson, and Janyne Musso, School of Nursing**

**Faculty Sponsor: Dr. James Holland, School of Nursing**

According to the American Heart Association, nearly 5.7 million adults in the U.S. have heart failure. Readmission rates increase due to common preventable causes: uncontrolled diet, drug non-compliance, pulmonary infections and decreased follow-up care. In 2010, 20% of Medicare recipients were readmitted due to HF, and in 2013 there were about 1 million hospitalizations. Interventions, such as maintaining patient contact weekly post discharge or transmitting physiological data utilizing home cardiac devices, have reduced readmission rates. In CHF patients discharged from the hospital, what is the effect of introducing a home health nurse for continuous patient education in comparison to primarily receiving patient education from acute care nurses on decreasing readmission rates of these patients and improving their quality of life? After reviewing the literature, evidence-based guidelines will be developed with the primary goal of providing uninterrupted patient education to increase adherence to CHF treatment plan.

## **IMPACT OF HEALTHCARE ACCESS ON COMPLICATIONS RELATED TO TYPE 2 DIABETES IN AFRICAN AMERICANS**

**Alex Horton III, Courtney Merrion, Katrina Solomon, and Shelby Cannon, School of  
Nursing**

**Faculty Sponsor: Dr. James Holland, School of Nursing**

The purpose of this paper is to examine blacks 25-65 with type two diabetes, to see do those with access to healthcare, as compared to those without access have fewer complications. As of 2010, 13.5% of blacks were uninsured as compared to 9.7% of whites (1). In contrast diabetes, only effects 7.6% of whites, while effecting 13.2% of blacks (1). There are many different factors that influence the development of type 2 diabetes and the client's ability to properly manage the chronic condition. We look to create a guideline to help with the access and management for blacks that currently do not have access to healthcare to reduce complications associated with the disease.

## **IMPROVING SEXUAL EDUCATION IN ADOLESCENCE AND YOUNG ADULTS TO PREVENT THE SPREAD OF HIV/STDs**

**Kristie Dixon, Breonna Walker, Gabrielle Ash, Nicole Lee, and Ashley Pritchett, School of Nursing**

**Faculty Sponsor: Ms. Pinckney McGhin, School of Nursing**

This paper examines the occurrence of HIV and STD infection disease processes among adolescent and young adult ages 13 -25, and the efficiency of sexual education prior to diagnosis of a STD or HIV. Among the US population ages 13-25 years old, does the implementation of sexual education compared to no education lead to a decrease number of HIV/STD cases? Per the Center for Disease Control and Prevention, 85.3% of students nationwide are taught about AIDs and HIV in school, yet out of the 34% of the students that are currently sexually active, only 59.1% use condoms. Also, just 12.9% of students nationwide have been tested for HIV. The analysis looks at the education of teachers instructing students on sexual education correctly, effective intervention programs for the population, and parental, familial, and medical prevention and instruction of sexual education as a multi-tiered approach.

## **INTERVENTIONS TO PREVENT NECROTIZING ENTEROCOLITIS IN PRETERM INFANTS**

**Wesley Alston, Karen DeLeon, Jetta Kimachinde, and Mariah Tucker, School of Nursing**

**Faculty Sponsor: Mr. Scott O'Quinn, School of Nursing**

Necrotizing enterocolitis (NEC) is a condition that occurs when the tissue of the inner lining of the intestines dies. This is known to be the most common cause of morbidity in preterm infants. The question this review seeks to answer is if in the population of preterm infants before 36 weeks gestational age, would providing probiotics with human breast milk decrease the incidence of NEC from developing when compared to preterm infants who are only fed formula? Research suggests the use of probiotics is beneficial to the GI tract combined with human breast milk which contains many natural immune-protection factors. These interventions have the potential to reduce the chances of harmful bacteria growing and causing NEC. The current literature review will examine interventions that have been successful in decreasing the rates of NEC in preterm infants and will serve to educate HCP and pregnant women in prevention of this disease.

## **MAJOR RISK FACTORS AFFECTING CARDIOVASCULAR HEALTH IN THE UNITED STATES**

**Heather Streichert, Chelsea Coneway, Linda Jimenez, and Kenyatta Miller, School of  
Nursing**

**Faculty Sponsor: Donna Corbitt, MSN, RN, School of Nursing**

This paper examines the following clinical question: How does diet affect cardiovascular health of individuals under 18 years of age within the United States? This research is imperative to examine because identifying risk factors earlier makes it easier to improve cardiovascular health and work from a preventative standpoint, as opposed to a diagnostic and treatment standpoint. We found articles that looked at how foods or drinks containing added sugars and added flavorings contributed to increased risk of cardiovascular disease and arterial thickening. We also found articles that observed how consumption of yogurt, protein, and quality of serum fatty acids could weigh in on cardiovascular health. As a result of this research, we will develop Evidence-Based Practice guidelines and recommendations with a goal of improving cardiovascular health at a younger age to lessen chances of cardiovascular disease later in life.

## **SEXUAL HEALTH EDUCATION AND TEENAGE PREGNANCY AND STI RATES**

**Stephanie Barritt, Kylie Fischer, Jessica Londono, Devon Simmons, and Savannah Ward,  
School of Nursing**

**Faculty Sponsor: Ms. S. Michele Blankenship, School of Nursing**

This paper examines the effectiveness of both comprehensive sexuality education (CSE) and abstinence only health education. This paper looks at how the use of comprehensive sexuality education, as compared to abstinence only reproductive health education, reduces the risk of STI's and teenage pregnancies in adolescents. In this analysis of eight different articles and reports, we have found that CSE drastically decreases the risk of STI's and teenage pregnancy in both sexually active and inactive adolescents. In addition, this analysis also found that CSE does not increase the risk of adolescent sexual activity, if they were not previously sexually active.

## **THE EFFECT OF FINANCIAL STABILITY ON PREGNANCY, CHILDBIRTH, AND NEONATAL HEALTH CARE**

**Jeffrey Behrman, Jared Galbreath, Madeline Marsh, Lovell Simpkins, and Haley Wheeler,  
School of Nursing**

**Faculty Sponsor: Ms. Jennifer Lawson, School of Nursing**

This paper examines the effect that poverty poses on expecting women before, during, and after birth. This topic is of importance to understand as a nurse while caring for women of child-bearing age. Among the United States female population, what effect does financial stability, in comparison to an absence of financial stability, have on pregnancy, childbirth, and neonatal health care? By evaluating a variety of systematic reviews of the topic, our quantitative research findings indicated that a low socioeconomic status does in fact significantly affect the care and well-being of a pregnant mother as well as her child. These findings are significant considering the prevalence of this issue and proven alternatives to this financial hardship include subsidized income, stress management, and support systems.

## **THE IMPORTANCE OF MATERNAL PRE-CONCEPTUAL HEALTH**

**Jayla Abbott, Shannon Thompson, Brienna Daly, Ryan Pearson, and Savannah Jones,  
School of Nursing**

**Faculty Sponsor: Ms. Deborah Sauls, School of Nursing**

This paper examines if the implementation of a healthy lifestyle at preconception leads to better outcomes in the infants of women aged 18-35 years old, as opposed to mothers who do not live a healthy lifestyle preconception. Although it is known that maternal nutrition is important during pregnancy, studies show that the health of the mother at conception also influences the health status of the fetus. There are several vitamins and minerals the mother should focus on before her pregnancy, but one of the most important nutrition needs in preconception is folic acid. Additionally, an expectant mother should avoid tobacco and alcohol use before conception. Maternal smoking causes birth defects specifically related to the fetal liver. Prenatal exposure to alcohol can also have adverse effects on the infant, ranging from psychological deficits, behavioral issues, and physically affecting the fetus's brain structure.

## **LAND OF THE FREE: STANDARDIZED TESTING AND DEMOCRACY IN THE UNITED STATES**

**Alisa Marie Pappas, Department of Philosophy and Religious Studies**

**Faculty Sponsor: Dr. Lavonna Lovern, Department of Philosophy and Religious Studies**

The philosophy of Henry Giroux is known as critical pedagogy and focuses on democratic education. Democratic education is an education based on diversity in thought and diversity in students. Giroux argues that this type of education promotes critical citizenship by educating students to think critically about multiple perspectives. Giroux argues that the desire of corporations to compete with foreign nations has led to the suppression of critical thinking in favor of education curricula that uses techniques such as standardized testing, teaching a single knowledge system, and reliance on rote memory practices involving that single knowledge system. Giroux argues that this focus hampers the abilities of students to meaningfully engage in government and instead encourages them to become passive participants.

## **LAW ENFORCEMENT: THE USE OF FORCE**

**Harry Campbell, Philosophy and Religious Studies**

**Faculty Sponsor: Dr. L. Lovern, Philosophy and Religious Studies**

Within law enforcement, general duty is conducted in accordance with The Police Act and local police department policy. Detailed duty is covered by Department Regulations which establishes the amount of force necessary according to the behavior or condition of the person being arrested. This paper will examine the use of force in law enforcement within the United States. The paper will examine the claims of systemic excessive force as well as Pinizzotto Anthony's statement that excessive force claims are overstated. The discussion will then turn to the examination of moral issues involving the use of force. The paper will conclude with an examination of officer training and the idea of "levels of force" as a moral model involving the use of force.

## **PLAYING BY THE RULES: WITTGENSTEIN'S PHILOSOPHY AND LITERARY CRITICISM**

**Audrey Whittle, Department of Philosophy and Religious Studies**

**Faculty Sponsor: Dr. Lavonna Lovern, Department of Philosophy and Religious Studies**

Evaluations concerning literary merit were once considered to be deeply rooted in social contexts. However, analytic philosophers including Ludwig Wittgenstein brought profound changes to literary aesthetics and criticism by looking at language itself. This paper will begin with an examination of “practice” as it pertains to literary theory. There will then be an investigation of how Wittgenstein’s philosophy pertains to this notion of practice. Finally, criticism of Wittgenstein’s philosophy as applied to literature will be discussed. The goal of this research is to demonstrate that Wittgenstein had a profound impact on literary theory as well as practice, if only to make practitioners more aware of the nature of literary criticism itself.

## **REVIEWING LUCE IRIGARAY'S WORKS IN PHILOSOPHY**

**Maya Angeline Mapp, Department of Philosophy and Religious Studies**

**Faculty Sponsor: Dr. Lavonna Lovern, Department of Philosophy and Religious Studies**

Luce Irigaray’s was a French philosopher and feminist dedicated to pushing the limits on post-modern theories involving a woman’s physical, emotional, and mental characteristics. After studying under Jacques Lacan, Irigaray became an advocate for the inclusion of women in philosophy and psychoanalytic theory. Throughout Irigaray’s work in philosophy, she has encouraged controversial discussions about femininity and sexual difference. This paper will discuss Irigaray’s analysis of female philosophical exclusion as a form of essentialism. Irigaray uses linguistics to detail biases against women in general and specifically in the area of philosophy. Finally, this paper will examine her contributions to the overall idea of feminist theory and continental philosophy.

## **THE 14<sup>TH</sup> DALAI LAMA AND THE U.S. PRESIDENTS: THE STRUGGLE FOR TIBETAN INDEPENDENCE IN THE 1960S**

**Katherine Yancey, Department of History**

**Faculty Sponsor: Dr. Cristóbal Serrán-Pagán y Fuentes, Department of Religious Studies**

This paper analyzes the religious and political nature of the interactions between Tibet and its leader, the 14<sup>th</sup> Dalai Lama and three North American presidents during the late 1950s and 1960s (Eisenhower, Kennedy, and Johnson). The U.S. became more involved in Tibetan sovereignty during the early 1960s due to the Cold War, fear of the spread of communism and its inherent restraint on religious freedom. By the later part of the 1960s, however, the pressure from other countries to trade and ally themselves with the major powers of Taiwan and China, led the American presidents to find it more pragmatic to side with China, despite China's desire to invade and gain control of Tibet and with it, destroy the fragile Tibetan culture.

## **A PETROLOGIC AND PETROGRAPHIC ANALYSIS OF SANDSTONES FROM THE BROXTON ROCKS EXPOSURE, BROXTON, GA**

**Eric Lee Parrish, Department of Physics, Astronomy, Geosciences, and Engineering Studies**

**Faculty Sponsor: Dr. Mark Groszos, Department of Physics, Astronomy, Geosciences, and Engineering Studies**

The Broxton Rocks are a prominent exposure of well-indurated sandstone assigned to the Miocene Altamaha Formation of the Georgia Coastal Plain. Petrographic examination reveals these sandstones to be composed primarily of very poorly sorted, highly angular fractured quartz grains with a significant clay matrix (>10%?). Minor quartz overgrowths and some microcline grains were also observed. All of the samples and thin sections display at least some secondary iron-oxide staining. The iron-oxide is locally well-developed and in some places overprints and obscures the original material. A total of ten samples were collected from the Broxton Rocks Preserve north of Broxton, Georgia. These samples have been analyzed petrographically and the results are presented here. The Broxton Rocks Preserve is owned and managed by The Nature Conservancy. We are grateful for their permission to visit the preserve and their assistance with this project.

## **ADVANCES IN 4-D PRINTING**

**Steven Remington, Department of Physics, Astronomy, Geosciences and Engineering Studies**

**Faculty Sponsor: Dr. Barry Hojjatie, Department Physics, Astronomy, Geosciences and Engineering Studies**

Recent advancements in 3-D printing filament have allowed for the prototyping of more complex parts and now these revolutionary filaments have advanced the technology into that of a completely different one, 4-D printing that has arrived as a result of a futuristic thermoplastic filament. The filament comes in a few varieties that each expand or contract in response to different stimuli, the most popular of which is expansion in the presence of water. However, filaments that respond to magnetic fields and temperature are also being developed. The technology is still in its infancy and the full scope of its applications is not well defined, but it has been proposed that 4-D printing could be applied for undulating pipes, medical implants, or self-assembling structures. However, this is a promising engineering and manufacturing technique and many more future applications of 4-D printing are possible.

## **AN ANALYSIS OF FRACTURE SYSTEMS IN THE UPPER SUWANNEE RIVER, NORTH FLORIDA**

**Kendall Brown, Department of Physics, Astronomy, Geosciences, and Engineering Studies**

**Faculty Sponsor: Dr. Mark Groszos, Department of Physics, Astronomy, Geosciences, and Engineering Studies**

The purpose of this study is to examine and analyze fractures in exposed Oligocene limestone along the banks of the upper Suwannee River. Fractures were observed and measured over a 12-mile segment of the river via canoe traverse. Measurements taken using a Brunton compass and locations were determined using a Garmin GPS unit. A total of 187 measurements were taken. Data will be analyzed using stereographic projections and maps created using ArcGIS software. This work will be compared to regional studies of fracture trends and cave system trends to determine if any patterns exist. The results of this study will be paired with those of past students who measured fractures along other portions of the Suwannee to form a comprehensive analysis of the region's fracture systems and possibly find evidence as to how these fracture systems formed.

## **AN ASSESSMENT OF CARBON DIOXIDE EMISSIONS AMONG CONTRASTING URBAN DEVELOPMENT PATTERNS IN POPULATED AREAS**

**Evan Rentz, Department of Physics, Astronomy, Geosciences, and Engineering Studies**

**Faculty Sponsor: Dr. Weimin Feng, Department of Physics, Astronomy, Geosciences, and Engineering Studies**

To assess possible differences in CO<sub>2</sub> emission between contrasting patterns of development, CO<sub>2</sub> concentrations were measured for air samples collected from urban and suburban of 3 metropolitan areas. Samples were collected in five liter sealed plastic bags from five sites in urban centers and eight sites in suburbs from Atlanta, Tallahassee and Jacksonville, and were analyzed at Valdosta State University. Results showed greater averages, ranges, and variances of CO<sub>2</sub> concentration in suburban areas than in their respective urban centers, suggesting that characteristics of suburbs, such as high automobile traffic volume and irregular density, lead to slightly greater and significantly more variable CO<sub>2</sub> emissions than do those of urban centers.

## **ANALYSIS OF MODERN AND HISTORIC SEISMIC ACTIVITY WITHIN AND SURROUNDING BELIZE**

**Selene C. Lisbey, Department of Physics, Astronomy, Geosciences, and Engineering Studies**

**Faculty Sponsor: Dr. Mark Groszos, Department of Physics, Astronomy, Geosciences, and Engineering Studies**

Belize, a country in Central America, is located near the seismically active boundaries between the North American plate, the Caribbean plate, and the Pacific plate. Belize is therefore surrounded by regions of very high seismic activity. Additionally, the country is cut by many fault systems on both its mainland and its waters. Despite this, Belize sits in a relatively quiet seismic zone. The purpose of this study is to examine the possible causes of this anomalously low seismic activity. Accordingly, this study reviews the history of seismic activity data within Belize and its surrounding countries in an effort to examine the frequency and intensity of these seismic events. These data were obtained from the United States Geological Survey world seismic database, and from articles and other studies carried out by institutions and individuals on Belize. The results are presented as maps and tables showing the magnitudes and locations of earthquakes.

## **ANALYSIS OF STREET VENDORS IN SOUTH KOREA**

**Junhyuk Moon, Department of Physics, Astronomy, Geosciences, and Engineering Studies**

**Faculty Sponsor: Dr. Jia Lu, Department of Physics, Astronomy, Geosciences, and Engineering Studies**

There are two types of street vendors in South Korea: street vendors for living, and enterprise street vendors. The analysis of the paper focuses on the enterprise street vendors and how they became a problem in South Korea. The and literature review and surveys conducted in this paper show how serious problems caused by the enterprise street vendors in South Korea. This paper explains the policies about street vendors in South Korea and how they work. Enterprise street vendors can be anywhere if they have a non-enforced policy and this paper suggests it is better to prevent them early and enforce them with stronger penalty. In addition, this paper suggests a few more public policies to better manage the enterprise street vendors.

## **ANALYSIS OF THE USE OF SCALE BARS IN PROFESSIONAL GEOGRAPHY JOURNALS, 1985-2014**

**Hunter Auld, Department of Physics, Astronomy, Geosciences, and Engineering Studies**

**Faculty Sponsor: Dr. Paul C. Vincent, Department of Physics, Astronomy, Geosciences, and Engineering Studies**

When a cartographer or map-reader wants, or needs, a representation of the ground distance or scale of a map, they will often refer to a map's scale. Map scale is a common tool that allows the reader to better understand a map. Map scale has three forms. Map scale may be graphic, verbal, or representative fraction. The graphic representation of map scale is commonly referred to as a scale bar. The purpose of this study is to examine the use of scale bars in professional geography journals from 1985-2014. While there has been consistent use of scale bars during the past 30 years, not all map-makers include one on their maps. This could be due to what information the mapmaker is attempting to get across to the reader.

## **COMPARISON OF NOAA LIDAR DATA FOR TIFT COUNTY AT 1.5 AND 3 METER RESOLUTIONS, FOR ADEQUATE WATERSHED DELINEATION, AND OPTIMAL DATA MANAGEMENT IN THE SOUTHEAST WATERSHED RESEARCH AREA**

**Dylan Ellzey, Department of Physics, Astronomy, Geosciences and Engineering Studies**

**Faculty Sponsors: Dr. Can Denizman, Department of Physics, Astronomy, Geosciences and Engineering Studies**

The Southeast Watershed Research Laboratory is located in Tifton, Ga, and performs ongoing watershed research for the Tift county area, as well as surrounding counties. Current watershed delineations are based on 1972-1977 7.5 minute USGS Quadrangle sheets, and require updating. LiDAR data is an appropriate update as precision and accuracy are very high, on the order of several meters. This study includes processing LiDAR data in ArcMap 10.4.1 at multiple resolutions with and without water control structures such as under-road culverts and drainage ways, then comparing the data with hand drawn delineations based on USGS quadrangle sheets. The data will be analyzed for larger scale applications in terms of best data management practices in parallel.

## **EFFECTS OF HURRICANE MATTHEW ON BARRIER ISLAND EROSION**

**William James Jeffers, Department of Physics, Astronomy, Geosciences and Engineering Studies**

**Faculty Sponsor: Dr. Donald Thieme, Department of Physics, Astronomy, and Geosciences**

Hurricane Matthew tracked north along the Georgia coast on October 8-9, 2016. Through multiple field visits as well as examination of aerial photographs and satellite images taken before and after the storm, we identified areas of storm erosion and deposition on both St. Simons Island and Jekyll Island. Three specific areas of overwash deposition (NB-2, NB-11, NB-21) were mapped in the field at the north end of Jekyll. We took two cores from NB-21 (Cores A and B). Analyses of bulk density, water content, particle size, and percent organic matter demonstrate that the uppermost sand layers represent beach or dune sand washed on top of marsh mud. Estimates of the area covered and volume of sand are in progress using ArcGIS.

## **EFFICIENCY ANALYSIS OF VAPOR COMPRESSION REFRIGERATION SYSTEM**

**Mohammed Shahabuddin and Abdulrahman Shuraym, Department of Physics,  
Astronomy, Geosciences and Engineering Studies**

**Faculty Sponsors: Dr. Barry Hojjatie and Mr. George Mellors, Department of Physics,  
Astronomy, Geosciences and Engineering Studies**

The basic principal of operation of commonly used refrigeration systems is based on vapor compression refrigeration cycle. At our VSU engineering laboratory, we have a computer controlled vapor compression refrigeration unit with automatic recording of different process variables. The purpose of this study is to determine the performance of the system as a function of process parameters such as pressures temperatures conditions at various locations of the system. We have modified operation of various parts such as compressor, condenser, evaporator, and expansion valve and recorded the data for each operating condition. This study was supported by the VSU Innovation Grant.

## **EMERGENCY PLANNING IN LOWNDES COUNTY, GEORGIA**

**Russell G. Aldis, Siqing Gao, Antrenique N. Jones, Roscoe J. Kightlinger, Caleb M. Koebble, Chenyu Li, Ruvarashe H. Masaisai, Cory D. Reeves, Devin J. Russell, Devin G. Smith, Yufei Song, Allison B. Taylor, Zhipeng Zhou,  
Department of Physics, Astronomy, Geosciences, and Engineering Studies**

**Faculty Advisor: Dr. Jia Lu, Department of Physics, Astronomy, Geosciences,  
and Engineering Studies**

Emergency planning is important to everyone in the community, due to the recent disasters in our area. Studies have shown that planning for emergency is important to reduce the impact of the disaster, and lack of planning may be an underlying cause in some cases for loss of properties and human lives. However, no such study has been conducted for Lowndes County, Georgia. The objective of this project is to involve our undergraduate students in the analysis of emergency planning in Lowndes County. We surveyed hundreds of VSU students and local residents in the county regarding their emergency planning. Through our analysis, we conclude that there is a lack of planning for some residents in case of emergency, and many of them are not aware of the need for emergency planning. We suggest our government officials to increase the education of emergency planning and provide more assistance for our residents in their emergency planning.

## **ENVIRONMENTAL RACISM IN FLORIDA**

**Rachel E. Wilkerson and Kristen E. Varney, Department of Physics, Astronomy,  
Geosciences and Engineering Studies**

**Faculty Sponsor: Dr. Can Denizman, Department of Physics, Astronomy,  
Geosciences and Engineering Studies**

Environmental Racism is the notion that there is a spatial relationship between waste disposal sites and areas with a high demographic of minorities. However, it is important to note the difference between correlation and causation. Skin pigmentation does not necessarily affect the placement of waste disposal sites, but there is a correlation. Therefore, it is important to look at other factors such as household income and education. It is universally understood that minorities generally have not had the same opportunities for higher education as their white counterparts, and thus have (historically) made less money. It is the endeavor of this paper to determine what kind of correlation there is between waste disposal sites and the areas in which they are located in conjecture with such factors as race, education level, and household income. In this research, a regression curve is applied using ArcGIS in order to determine if inequality (in fact) exists in certain regions of Florida. The regression curve uses geologic data and Florida census data to find points at which there are strong correlations between the two sets of data.

## **MEASUREMENTS OF TEMPERATURE IN A COMMERCIAL PLASMA GENERATOR**

**Eric W. Burns and Ashley E. Hardy, Department of Physics, Astronomy, Geosciences, and  
Engineering Studies**

**Faculty Sponsor: Dr. Dereth J. Drake, Department of Physics, Astronomy, Geosciences,  
and Engineering Studies**

The use of plasma for etching and cleaning of many types of metal surfaces is becoming more prominent in industry. This is primarily due to the fact that plasma etching can reduce the amount of time necessary to clean/etch the surface and does not require large amounts of environmentally hazardous chemicals. Most plasma etching systems are designed and built in academic institutions. These systems provide reasonable etching rates and easy accessibility for monitoring plasma parameters. The downside is that the cost is typically high. Recently a number of commercial grade plasma etchers have been introduced on the market. These etching systems cost near a fraction of the price, making them a more economical choice for researchers in the field. However, very few academics use these devices because their effectiveness has not yet been adequately verified in the current literature. I will present the results of optical emission spectroscopy measurements in a commercial grade plasma etching system and demonstrate how those measurements can be used to determine the excitation temperature for argon plasmas and rotational temperature for nitrogen plasmas.

## **MOISTURE SOURCE FOR DRIP WATER IN RACCOON MOUNTAIN CAVERNS, TN, AND ITS IMPLICATIONS FOR INTERPRETATION OF SPELEOTHEM ISOTOPE RECORDS**

**Aaron Dixon, Department of Physics, Astronomy, Geosciences, and Engineering Studies**

**Faculty Sponsor: Dr. Weimin Feng, Department of Physics, Astronomy, Geosciences, and  
Engineering Studies**

Paleoclimate conditions can be inferred from cave speleothem isotope records. From 2014 to 2016, regular trips were made to collect drip water samples and record cave micro-climate conditions at Raccoon Mountain Caverns in Chattanooga, TN. To assess the potential impact of moisture source on the isotope record, HySPLIT models were ran monthly for the period of Dec 2013 to Dec 2016 to trace moisture sources for the area. Model results indicate a seasonal difference in moisture sources. Summer months' rainfall contains elevated contribution of moisture from the northern Gulf of Mexico, while winter rainfall is predominantly sourced from mid-west United States, the Great Lakes, and portions of Canada, carried to the area by the polar Jetstream. This result suggests the variations in speleothem isotope record could be impacted by changing moisture sources to the area along with usual factors of rainfall amount and temperature.

## **NATIONAL ELECTRIC VEHICLE CHARGING NETWORK BEGINNING IN AND CONNECTING AMERICA'S NATIONAL PARKS**

**Sean Michael Bolan, Department of Physics, Astronomy, Geosciences, and Engineering  
Studies**

**Faculty Sponsor: Dr. Paul C. Vincent, Department of Physics, Astronomy, Geosciences,  
and Engineering Studies**

The electric vehicle industry is continuing to expand, with over one hundred thousand vehicles purchased in both 2014 and 2015. Projections indicate as many as four million could be on the road in the United States by 2024. There are currently many public charging stations available, whether set up locally by government, business, or available publically from private citizens. Presented here will be a potential national network of electric vehicle charging stations, designed to allow travel between the 59 National Parks of the United States. Charging stations will be distanced from each other based on the Department of Energy's EV Everywhere Challenge that aims to produce an affordable electric vehicle with a 280 mile range within the next five years. The goal of this project is to not only show a potential network of charging stations, but also be a foundation for a larger, affiliated national network.

## **STRUCTURAL ANALYSIS OF FRACTURES AND LINEAMENTS ALONG A SEGMENT OF THE SUWANNEE RIVER IN NORTH FLORIDA**

**Phillip Trussell, Department of Physics, Astronomy, Geosciences, and Engineering Studies**

**Faculty Sponsor: Dr. Mark Groszos, Department of Physics, Astronomy, Geosciences, and  
Engineering Studies**

This study focuses on the origin of fractures and lineaments in exposures of the Oligocene Suwannee Limestone along a 12-mile segment of the Suwannee River in North Florida. The Suwannee Limestone was buried to shallow depths and did not experience sufficient fluid pressures to create these fractures. Data collection occurred in January 2017 via canoe traverse from Suwannee River State Park to Lafayette Blue Springs State Park. Structural data, consisting of strike and dip measurements of fractures, were taken using a Brunton compass and station locations were recorded using a Garmin Montana GPS unit. A total of 187 readings were taken during the traverse, these will be plotted using stereographic projections and ArcGIS to determine any trends in the orientation of these fractures and how they relate to regional fracture trends, the orientation of regional cave systems and other previous studies done in the region.

## **STRUCTURAL ANALYSIS OF FRACTURES IN THE OLIGOCENE SUWANNEE RIVER LIMESTONE, NORTH FLORIDA**

**Melanie Eileen Blanton, Department of Physics, Astronomy, Geosciences, and Engineering  
Studies**

**Faculty Sponsor: Dr. Mark Groszos, Department of Physics, Astronomy, Geosciences, and  
Engineering Studies**

The Suwannee River of North Florida shows abundant outcrops of fracture-bearing Suwannee Limestone. A twelve mile segment of the river was studied in January 2017. Structural data was collected from fractures using a Brunton compass. The strike and dip of the fractures was measured and a GPS unit was used to determine location. Sixty two readings were recorded along the twelve mile segment of the river from twelve separate GPS locations. Preliminary analysis shows that most fractures exhibit a northwest orientation, with a small percentage showing northeast orientation. Other segments of the river have been analyzed by previous VSU students as part of a larger ongoing study of the Suwannee River. This work will be used in efforts to understand the origin of these fractures and how they relate to regional cave trends.

## **STUDY OF MAP SCALE FREQUENCY AND USE IN MAPS IN PROFESSIONAL GEOGRAPHY JOURNALS**

**Juan Antonio Deen, Department of Physics, Astronomy, Geosciences, and Engineering Studies**

**Faculty Sponsor: Dr. Paul Vincent, Department of Physics, Astronomy, Geosciences, and Engineering Studies**

A map scale is a tool of measurement that is commonly found on maps and provides readers with a visual indication of the size of mapped features and distances on a map. There are three kinds of scale: verbal, graphic, and representative fraction. The graphic scale is used more frequent than the rest. This study examines two different journals for professional geographers from 1985 to 2014 to identify which type of scale is being used as well as changes in style and frequency of scale bars. Findings from this research show that the number of maps being published in these journals has increased, new kinds of maps are emerging, and the design of scale bars has become more variable with new mapping software has become more widely available.

## **USING THE HILBERT-HWANG TRANSFORMATION TO REMOVE NOISE FROM A MEASURED SIGNAL**

**James E. Henderson, Department of Physics, Astronomy, Geosciences, and Engineering Studies**

**Faculty Advisor: Dr. Dereth J. Drake, Department of Physics, Astronomy, Geosciences, and Engineering Studies**

The Hilbert-Huang Transform uses the method of empirical mode decomposition in which a signal is decomposed into multiple signals called intrinsic mode functions (IMFs). A Hilbert Transform is then applied to these functions in order to obtain instantaneous frequency data. This results in a time dependent distribution of signal amplitudes, known as the Hilbert Spectrum. By applying this transform to a complex or noisy signal, the noise can be isolated and removed from the signal source. This allows for a much cleaner, easier to study signal. In this poster, I will show the theory behind this technique and demonstrate how it can be used to study the plasma pulse form a commercial plasma system.

## **VAPOR COMPRESSION REFRIGERATION SYSTEM: CHEMICAL AND BIOLOGICAL ASPECTS OF VARIOUS REFRIGERANTS**

**Abdulrahman Shuraym and Mohammed Shahabuddin, Department of Physics, Astronomy, Geosciences and Engineering Studies**

**Faculty Sponsors: Drs.: B. Hojjatie, Lynn Wood, and Mark Blackmore, Departments of PAGE, Chemistry, and Biology**

VSU engineering studies program is equipped with a computer controlled vapor compression refrigeration unit that uses R134A as its cooling agent. This type of refrigerant is used in many applications in place of R12 and R22 refrigerants that have been proven to be harmful to the environment especially stratospheric ozone. In this study, R134A is compared to other possible refrigerants (propane and ammonia). The relative efficiencies as a coolant and toxicity (human and environmental) are described and compared in the presentation. This study was supported by the VSU Innovation Grant.

## **“TRUMPED” UP ELECTION, A LOOK INTO THE TRUMP VOTE IN THE 2016 PRESIDENTIAL RACE**

**Aaron McMillan, Department of Political Science**

**Faculty Sponsor: Dr. James T. LaPlant, Department of Political Science**

This quantitative study endeavors to explore and examine some of the potential factors that influenced the vote for Donald Trump in the 2016 Presidential Race. Donald Trump was certainly the underdog in the race, with Hilary Clinton as the expected victor, yet Trump was able to push ahead to victory. This very fact warrants inquiry. This study analyzes six independent variables based on their correlation to the vote for Donald Trump. The variables are the percentage of the population that is African American in a state, the percentage of the population that is Latino in a state, the percentage of the population with a bachelor's degree or higher in a state, the population per square mile, percentage of vote for Mitt Romney in 2012, and the region of the country the state is in. Correlation and scatterplot analysis are used along with an ANOVA in this study to illustrate the relationship between the independent variables and the vote for Donald Trump. All independent variables but the percent African American were found to be statistically significant. The ANOVA revealed that Trump received the highest percentage of the vote in the South and the lowest percentage in the Northeast.

## **VOTER TURNOUT IN THE 2016 PRESIDENTIAL ELECTION**

**Joanna K. Smith, Department of Political Science**

**Faculty Sponsor: Dr. James T. LaPlant, Department of Political Science**

This study aims to answer the question “what factors affected voter turnout in the 2016 presidential election?” The unit of analysis is all fifty states. The independent variables are percent African Americans in the population, percent Hispanics in the population, percent of the population with at least a bachelor’s degree, whether or not it is a swing state, region, and whether or not there is same day registration. The dependent variable is voter turnout. Through the use of correlation and scatterplot analysis as well as ANOVA (analysis of variance), this study analyzes the relationship between the independent variables in relation to voter turnout. The correlation analysis shows that percent of the population below the poverty line, percent of the population with at least a bachelor’s degree, whether or not they have same day registration, and whether or not the state is a swing state are significant at  $p < .01$ . The correlation analysis also shows that the percent of the population that is Hispanic is statistically significant at  $p < .05$ , while the percent of the population that is African American is not statistically significant. Finally, the ANOVA reveals statistically significant differences by region with turnout highest in the North Central and lowest in the South.

## **ASMR: AN UNEXPLAINED PHENOMENON**

**Alina S. Lopez and Elaina R. Walker, Department of Psychology**

**Faculty Sponsor: Dr. Jeremy Tost, Department of Psychology**

This research was conducted to create a scale assessing Autonomous Sensory Meridian Response (ASMR), a phenomena characterized by both physical sensations (i.e., tingling, chills) and emotional sentiments (i.e., relaxation, elevated mood). Common triggers for ASMR include whispers, close personal attention, and repetitive sounds. A seven-point Likert scale ranging from *strongly agree* to *strongly disagree* was used to assess participant experiences with ASMR triggers and responses. To identify those items that best assess the ASMR phenomenon, a factor analysis was performed forcing a one factor solution. Items correlating with the ASMR factor at .40 or higher were examined with redundant items removed, resulting in a 24-item scale. Because no ASMR scale currently exists, creating one facilitates the ability to recognize those individuals susceptible to ASMR and therefore can assist in determining whether ASMR can be used as therapy for individuals suffering from anxiety, PTSD, or insomnia.

## **THE EFFECT OF CELL PHONE PRESENCE AND PARTICIPANT SEX ON READING COMPREHENSION TEST SCORES AND ANXIETY**

**Jazmin Garza, Department of Psychology and Counseling**

**Faculty Sponsor: Dr. Jeremy R. Tost, Department of Psychology and Counseling**

Cell phones are vital in the lives of the modern-day individual, but how well does an individual respond when they do not have their cell phone? In the present study, a 2 x 2 mixed-model ANOVA design examined the effects of presence of cell phone and participant sex on reading comprehension test scores and anxiety. Participants were given a reading comprehension test and then asked to answer an anxiety questionnaire with their cell phone in their presence and then later retested with their cell phones in the presence of the researcher. Findings revealed no effect of cell phone presence on either test scores or anxiety. A significant main effect of participant sex on anxiety was detected such that females scored higher on the anxiety questionnaire than males. Future research may assess the impact that cell phones have across a wide array of variables.

## **THE PERCEPTION OF ACCENTS**

**Sandra Marek, Department of Psychology**

**Faculty Sponsor: Dr. Jeremy Tost, Department of Psychology**

The study examined the effect of foreign accents versus non-foreign accents as well as participant gender on intelligence and trustworthiness ratings using college students at Valdosta State University. The objective was to determine whether foreign accents are perceived differently, in comparison to non-foreign accents and to examine whether these perceptions have a negative impact on intelligence and trustworthiness ratings. Two different audio recordings (foreign and native speech) were presented to each participant, with participants providing ratings of the speaker's intelligence and trustworthiness. The foreign accent received lower intelligence ratings than the native accent, however, the different accents did not have an impact on participant's ratings for trustworthiness. Examining from a social-psychological standpoint how society perceives foreign accents can be an important factor concerning the growing multiculturalism in the workplace.

## **USING SELF-DETERMINATION THEORY TO EXAMINE ACADEMIC MOTIVATION AMONG COLLEGE MILITARY DEPENDENTS**

**Breanna M. Drummond, Department of Psychology, Counseling, and Family Therapy**

**Faculty Sponsor: Dr. Meagan C. Arrastia, Department of Psychology, Counseling, and  
Family Therapy**

This study examines the academic motivation and unique challenges experienced by military dependents in college. Critical sampling was used to identify extreme cases of motivation along the continuum of Ryan and Deci's (2000) Self-determination Theory: one represents external regulation and the other represents integrated regulation. Two undergraduate students were first surveyed on their academic and childhood experiences, motivations, and future plans using the Motivated Strategies for Learning Questionnaire (Pintrich, 1993). Follow-up interviews were conducted with the participants about their experiences, including schooling, parental deployment, support from family, and family dynamics. Interviews were transcribed and coded for evidence of self-determination theory, as well as other unique challenges for military dependents. Lack of campus-based support emerged as a theme across the cases despite the differences in motivation, as well as high levels of perceived socio-emotional awareness and differences across military branches (i.e., Army vs. Air Force).

## **NAMING PRACTICES AROUND THE WORLD**

**Rennique Clough-Rodriques, Department of Sociology, Anthropology, and Criminal  
Justice**

**Faculty Sponsor: Dr. Matthew J. Richard, Department of Sociology, Anthropology, and  
Criminal Justice**

This poster documents the various cultural naming practices around the world. The anthropology of names and naming is referred to as anthroponymy. There is a great deal of socio-political and culturally specific information entailed in the names of individuals across cultures. My poster will enumerate and explain the cultural rationales of naming in multiple societies. One example is from Java where naming is diverse and malleable; Javanese parents rename their children upon their entering adulthood. Javanese children may be given up to three random names based on flowers, animals, and/or days of the week. This project reflects my interest in cultural anthropology and offers a glimpse into the diverse ways of knowing and being around the world.

# **FACTORS AFFECTING ENROLLMENT IN WOMEN'S AND GENDER STUDIES PROGRAMS**

**Walker Lee, Women's and Gender Studies**

**Faculty Sponsor: Catherine Olgesby, Department of History**

There are many factors that contribute to the enrollment of Women's and Gender Studies Programs. Since the amount of research on the factors that affect enrollment in Women's and Gender Studies is inadequate, it is imperative to see what elements of Women's and Gender Studies Programs are successful and the role they play on college campuses. This study focuses on building a successful Women's and Gender Studies program that can impact college campuses. By looking in archives, collecting survey data, and conducting semi-structured interview research, I outline what can make a successful program. The goals are to demonstrate to departments how to build a successful program.