UNDERGRADUATE RESEARCH

AND

CREATIVE ACTIVITY AWARD SYMPOSIUM

OCTOBER 2, 2012 | 5:30 PM - 7:30 PM
AUGUSTUS B. TURNBULL III
FLORIDA STATE CONFERENCE CENTER

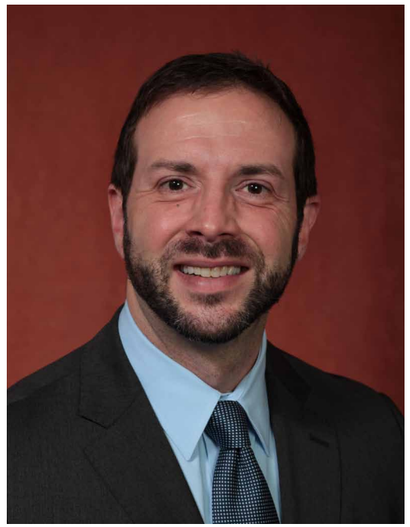
The Office of National Fellowships extends great appreciation and gratitude to ONF benefactor and former FSU Trustee, David Ford.

The Undergraduate Research and Creative Activity Awards (URCAA) and the Mentored Research and Creative Endeavors Awards (MRCE) award students the funding to conduct a summer research project or creative activity under the direction of a faculty mentor.

The Public Service Research Fellowship (PSRF) is partially funded through support from The Atlantic Coast Conference.

Special thanks to the FSU Student Government Association for their generous support of the symposium reception.

WELCOME TO THE 2012 UNDERGRADUATE RESEARCH AND CREATIVE ACTIVITY AWARDS (URCAA) SYMPOSIUM!



D. CRAIG FILAR, PH.D.
Director of the Office of
National Fellowships

JOSEPH O'SHEA, PH.D.
Director of the Office of
Undergraduate Research

We are delighted that you could join us tonight in celebrating outstanding undergraduate research. The students who will present their projects have enhanced their undergraduate experience by taking on directed research and creative activity under the supervision and mentorship of some of Florida State University's most distinguished faculty.

Co-sponsored by the Office of National Fellowships (ONF) and the Office of Undergraduate Research (OUR), this event serves as the culmination of the URCAA experience, but the work these students present tonight does not end here. Many of the awardees will continue their intellectual pursuits through honors theses, independent study projects, graduate research, and creative work, both here on our campus and beyond. Their Florida State University-funded research and creative activity will continue to flourish through academic conferences, scholarly journals, art showcases, festivals and competitions.

This evening's oral presentations are presented by students awarded the Undergraduate Research and Creative Activity Award, as well as our Atlantic Coast Conference Public Service Research Fellowship (PSRF) recipients—an award created to empower students to use research or creative endeavors to improve the lives of others in need. Throughout the atrium you will find posters showcasing the research endeavors of student recipients of the Mentored Research and Creative Endeavors Award.

Please also join us tonight in recognizing the generous gift of The Florida State University alumnus Dr. Jim Lee for his contribution to undergraduate research at the university. Tonight we honor Dr. Lee for his support that has led to the funding of a Mentored Research and Creative Endeavor Award that now bears the name of his mother: Helen Louise Lee Research Award.

Tonight we also welcome Dr. Joseph O'Shea, who has been named as the new Director of the Office of Undergraduate Research. Dr. O'Shea has served as the office's Associate Director for the past year and has been instrumental in initiating several new programs for our students, including the Public Service Research Fellowship.

If you're attending this event as a student, we hope you'll be inspired to develop your own research or creative projects. We are pleased to announce the launch of the Summer 2013 URCAA/MRCE application tonight. You can also find this online at **http://onf.fsu.edu**. The awards featured tonight have allowed their recipients a rich opportunity to investigate their academic interests while also providing inspiration for a new generation of young researchers to embark upon this journey.

ORNOB ALAM

A biology major from Tallahassee, FL, Ornob Alam is about to enter his senior year at FSU. His research in Dr. David Gilbert's lab explores the functional significance of replication timing by examining the relationship between late replication and G9a-methylation in mouse embryonic stem cells. Ornob plans to pursue a Ph.D. in Developmental Biology after graduation.

DESIREE AMADEO

New Orleans native, Desiree Amadeo is a junior at Florida State University pursuing her BFA in Dance, and is an intern at the Maggie Allesee National Center for Choreography. Her choreographic work has been shown multiple times in departmental concerts. Upon graduation, Desiree plans to relocate to New York City to pursue a career in dance performance and establish her own dance company.

JORDAN DEVINE

Jordan Devine, from Hendersonville, TN, is a senior pursuing a duel major in Studio Art and Biological Science. Jordan is exploring a combination of art and anatomy in her personal work with an emphasis on cultural narratives. After completing her undergraduate degrees, she plans on attending graduate school to join the field of Medical Illustration.

ERIN FABRIZIO

Erin Fabrizio is a senior from Tallahassee, FL, pursuing a dual degree in International Affairs and Political Science with minors in English and Criminology. Her research, under the direction of Professor Daniel Maier-Katkin, evaluates international justice to understand how best to protect human rights. She is also currently the President of Trafficked, a student organization that strives to fight human trafficking by raising awareness on the issue and supporting efforts to stop its practice.

MELISSA BEAUDRY

Melissa Beaudry, from Jacksonville, FL, is a senior completing bachelor degrees in International Affairs and Psychology with a minor in Urban and Regional Planning. She has cultivated a passion for international development and conflict management through her research on cooperative capacity building in Rwanda with Global Peace Exchange. After graduation she will begin a career at The University of North Carolina as the Carolina Leadership Development's Budget and Program Coordinator. She also plans to pursue a MA in Mediation and Conflict Resolution.

VLAD DANDU

Vlad Dandu is a junior completing a bachelor degree in International Affairs and Creative Writing. He has worked as a staff-volunteer for projects abroad with Maranatha International since 2004 and has recently become involved with Global Peace Exchange through which he has grown his knowledge of international development. After graduation he aspires to work as an international photojournalist documenting development success stories and methods. He also plans to write short fiction, poetry, and to teach English abroad. Vlad is from Jacksonville, FL.

SOFIA FERNANDEZ

Sofia Fernandez is a junior Biological Science major who hails from the city of Kissimmee, FL. Although her background was in violin performance before college, she has successfully contributed to research in dietary enzymes and in DNA damage detection strategies. Sofia's goal is to make contributions to medicinal science by pursuing a dual M.D. / Ph.D. program abroad. Before she graduates, Sofia plans on completing an Honors in the Major thesis focusing on a biochemical aspect of DNA damage.

MEGAN FRUGOLI

Megan Frugoli, inquisitive and passionate about science from a young age, is a junior Biology major from Clermont, FL. She has worked as an undergraduate research student with Dr. Mohamed Kabbaj for two semesters, focusing on individual responses to chronic stress and the epigenetic profiles associated with these phenotypes. She is broadly interested in the role of epigenetics in neuroscience, and hopes to continue research in this subject as a graduate student. She wants to use her success in research as a tool to inspire other young students to become more educated and involved in science.

JACOB GIBBONS

Jacob Gibbons, from Middleburg, FL, is a senior English major concentrating in Editing, Writing, and Media. His research interests concern how written, printed, and digital media shape the societies that use them and how those societies in turn shape their media, with an emphasis on the manuscript and print cultures of the Fifteenth Century Low Countries. After graduation he will pursue a Ph.D. in an interdisciplinary program that incorporates these new fields of study with traditional humanities methods.

COLIN JACOBSEN

Born and raised in Norway, Colin Jacobsen came to the U.S. in 2009. After receiving his Associate of Arts from the University of North Florida, he transferred to Florida State in Fall 2011. He is pursuing a BA in Criminology and a minor in Economics, while working on an Honors thesis on radical right-wing political violence in Norway under the guidance of Professor Daniel Maier-Katkin. He plans on seeking a Masters in Criminology in the UK. He is interested in crimes against humanity and hopes to have a career working on matters of organized crimes and political violence.

TAYLOR LEE

Taylor Lee is a senior triple majoring in History, Political Science, and International Affairs from Davie, FL. Her research focuses on transnational solidarity between Afro-Cubans and Angolans, and how this solidarity challenged racism, U.S. imperialism, and conventional notions of the state. Her other research interests include anarchism and social movements. After graduating, Taylor will pursue her Ph.D. in Latin American Studies.

DAN STRIBLING

Dan Stribling, from Woodville, FL, is a senior in Chemistry with a broad interest in the sciences. Dan has been conducting research in the lab of Dr. Wei Yang for three years. He is working on an Honors thesis studying the dynamics of protein interactions in biological systems. Dan is a 2011 recipient of the Goldwater Scholarship for students in the sciences.

JOSEPH LA BELLE

Joseph La Belle is a senior in the College of Criminology and Criminal Justice. He is interested and devoted to human rights in Central America focused in Guatemala. Joseph plans to move to Guatemala after finishing his studies at Florida State to do hands on work in the field of human trafficking. Joseph is from Tallahassee, FL.

CHELSEA LEACH

Chelsea Leach is a senior majoring in Classics and Religion from Coral Springs, FL. Her research has focused on the analysis of Latin manuscripts of the works of the Jewish historian Flavius Josephus, and she is currently working on an Honors thesis focusing on one important early manuscript. After graduation, she plans to enter a graduate program in Judaism and Christianity in the Graeco-Roman World.

MICHAEL SUAREZ

Michael Suarez is a senior from Orlando, FL seeking degrees in Political Science and International Affairs with a certificate in Emergency Management. While working with Global Peace Exchange to assess and work with cooperatives was his first experience in international development, Michael hopes to further his knowledge with practical experience abroad and follow a career in related international work. He plans to pursue graduate studies following graduation.

DAVID TIEGEN

David Tiegen is a senior in the Creative Writing program and comes from Jupiter, FL. He makes comics in belief that creativity is disorderly by nature and researches comics under the philosophy that all mediums are tools for learning. After graduation, David aspires to write his first book and earn a second degree in Physics to satisfy his interest in astronomy.

NORA WARYOBA

Nora Waryoba, originally from Tanzania, is a junior pursuing a degree in Biochemistry from Tallahassee, FL. She has been involved with research in Dr. Miller's Biochemistry group since this past year. After graduation, Nora plans to pursue a professional degree in Medicine.

SAMANTHA WOOD

Samantha Wood is a Senior from Gainesville, Florida, and is finishing her major in Social Sciences with a minor in Psychology. A lifelong traveler, she is intrigued by cultural diversity worldwide. She hopes to continue her education in the field of Anthropology, with a special interest in Latin America.

NOTES

PRESENTATION SCHEDULE

5:30 PM – 7:30 PM — ATRIUM

POSTER PRESENTATIONS

5:45 PM — ROOM 208

WELCOME
DR. ERIC J. BARRON, PRESIDENT
THE FLORIDA STATE UNIVERSITY
RUEBEN STOKES, PRESIDENT
STUDENT GOVERNMENT ASSOCIATION

RECOGNITIONS
DR. KAREN LAUGHLIN, DEAN
UNDERGRADUATE STUDIES
DR. D. CRAIG FILAR, DIRECTOR
OFFICE OF NATIONAL FELLOWSHIPS

6:00 PM — ROOM 114

EVOLUTION OF YUCHI CULTURE & ORIGIN MYTHS
JORDAN DEVINE

6:00 PM — ROOM 201

TRAFFICKED THROUGH THE CENTER: A LOOK AT HUMAN TRAFFICKING IN GUATEMALA
JOSEPH LABELLE

6:00 PM — ROOM 205

TEXTUAL REVOLUTION AND MULTIMODALITY
JACOB GIBBONS

6:00 PM — ROOM 214

ENVIRONMENTAL ENRICHMENT IN MICE: ITS POTENTIAL TO PREVENT EPIGENETIC TRANSMISSION OF EARLY LIFE
MEGAN FRUGOLI

6:25 PM — ROOM 114

A QUANTITATIVE UNDERSTANDING OF HUMAN T-CELL RECEPTOR RECOGNITION OF MHC-PEPTIDE COMPLEXES
DANIEL STRIBLING

6:25 PM — ROOM 201

EXTREME RIGHT WING IDEOLOGY AND CRIMES AGAINST HUMANITY IN NORWAY
COLIN JACOBSEN

6:25 PM — ROOM 205

IS LATE REPLICATION NECESSARY FOR G9A-MEDIATED METHYLATION TO OCCUR?
ORNOB ALAM

6:25 PM — ROOM 214

AN ASSESSMENT OF COOPERATIVE DEVELOPMENT AND CAPACITY BUILDING IN RWANDA
MELISSA BEAUDRY, VLAD DANDU & MICHAEL SUAREZ

6:50 PM — ROOM 114

FAIR TRADE TEA AND SUSTAINABLE DEVELOPMENT AMONG INDIGENOUS PEOPLES OF AMAZONIAN ECUADOR
SAMANTHA WOOD

6:50 PM — ROOM 201

DEVELOPING NOVEL WAYS TO DETECT POTENTIALLY MUTAGENIC NUCLEOSIDES IN GENETIC HOTSPOTS
SOFIA FERNANDEZ

6:50 PM — ROOM 205

"THE BLOOD OF AFRICA RUNS DEEP IN OUR VEINS." TRANSNATIONAL IDENTITY AND INTERNATIONAL SOLIDARITY IN CUBA
TAYLOR LEE

6:50 PM — ROOM 214

A TRANSCRIPTION AND PRELIMINARY ANALYSIS OF THE ANCIENT LATIN TRANSLATION OF BOOK SIX OF JOSEPHUS' THE JEWISH WAR
CHELSEA LEACH

7:15 PM — ROOM 114

BREAKING B.A.D.
NORA WARYOBA

7:15 PM — ROOM 201

UNLOCKING CHILDHOOD GENDER CODES THROUGH MOVEMENT
DESIREE AMADEO

7:15 PM — ROOM 205

"FRENCHTOWN, TALLAHASSEE - THE COMIC BOOK": JOURNALISTIC COMICS, VISUALIZING URBAN RENEWAL, "BLURRED AREAS" OF REPORTING, AND JOURNALISM IN CONTEXT OF THE JOURNALIST
DAVID TIEGEN

7:15 PM — ROOM 214

PROSECUTING ATROCITY CRIMES: COMPARING THE USE OF INTERNATIONAL AND DOMESTIC COURTS IN TRYING LEADERS FOR HUMAN RIGHTS VIOLATIONS
ERIN FABRIZIO

7:30 PM — ROOM 208

RECEPTION

PRESENTATION ABSTRACTS

IS LATE REPLICATION NECESSARY FOR G9A-MEDIATED METHYLATION TO OCCUR?

ORNOB ALAM
SUPERVISING PROFESSOR: DR. DAVID GILBERT

Segments of chromosomes replicate at specific times during S-phase. Transcriptionally active (euchromatin) domains, which are enriched in the nuclear interior, tend to replicate early in S-phase, while transcriptionally silent (heterochromatin) domains, which occur in the nuclear periphery, tend to replicate late. The composition of these domains vary between different cell types. Replication timings are developmentally significant because they undergo programmed changes during cell differentiation, and evolutionarily significant because they are conserved across similar cell types in different species. Although correlations have been made between replication timing and transcriptional competency of genes, the exact connection is not known, nor is the functional significance of replication timing. The action of G9a histone methyltransferase, which, as the name suggests, represses gene expression by histone methylation, provides some hints; it has been shown that loss of G9a-mediated methylation in mouse embryonic stem cells leads to the upregulation of 167 genes, and all of these genes are late-replicating. Since 75% of total genes are early replicating, this implies a biological significance to this observation. This project sought to see if residing in a late replicating region is necessary for the maintenance of G9a-mediated histone methylation on these genes; the results should shed new light on the functional significance of having different parts of the genome replicate at different times.

UNLOCKING CHILDHOOD GENDER CODES THROUGH MOVEMENT

DESIREE AMADEO
SUPERVISING PROFESSOR: DR. JENNIFER ATKINS

My research on gender in relation to children's artistic activities was conducted in five phases, beginning with observations of rehearsals and showings held by choreographers in residence at the Maggie Allesee National Center for Choreography (MANCC), which yielded pertinent information later utilized in my choreographic process. Next, I analyzed the gender-specific crafts, toys, and marketing tactics. I also examined various literary sources, one such being Harold and the Purple Crayon, a classic children's book about a boy creating his own reality through drawing. This research prompted me to ask questions about the resulting imposed predisposition of children as they draw conclusions about themselves, others, and their future due to qualitative differences found in gender-specific crafts and toys. Upon careful reflection of these questions and other research findings, I found consistent themes of transition, self-imposed standards, and the subliminal messages. From these themes I generated choreographic material, which I explored in multiple rehearsals with my dancers. My next phase was at the Bates Dance Festival, where I engaged in both choreographic research and showings from which I received feedback. Choreographic insight was also gained from the professional choreography I observed and performed. Bates served as a preparation for my final research phase, which will entail choreographing a dance to serve as a sophisticated commentary on gender-specification in children's artistic activities and how this impacts the standards children set up for themselves.

EVOLUTION OF YUCHI CULTURE AND ORIGIN MYTHS

JORDAN DEVINE
SUPERVISING PROFESSOR: CAROLYN HENNE, CHAIR, ART DEPARTMENT

The Yuchi, a Native American tribe from Tennessee, passed down origin stories through the oral tradition common among native tribes. This research project explored the way these stories have developed and changed through in the influence of European colonization and the cultural reconstruction the tribes had to undergo after devastation from disease. The Yuchi were well established before colonization and having been one of the earliest people to settle in the region, they influenced many later tribes. This resulted in a better preserved culture than the majority of Native American tribes, but the influence of the Lakota and the Europeans is still traceable in their cultural symbolism. Their myths are rich in imagery. Common motifs include references to blood and celestial bodies. Some of the stories used visual metaphors to describe the psychological states of humanity, which translate well into the graphic medium of painting. My research explores these blended symbols and stories in a series of paintings that feature both modern members of the tribe and characters from the origin myths. The project combined my developing skill in oil painting and a professional interest in anatomy.

PROSECUTING ATROCITY CRIMES: COMPARING THE USE OF INTERNATIONAL AND DOMESTIC COURTS IN TRYING LEADERS FOR HUMAN RIGHTS VIOLATIONS

ERIN FABRIZIO
SUPERVISING PROFESSOR: DANIEL MAIER-KATKIN, M.PHIL

From 1989 to 2003, Charles Taylor fueled conflict in Liberia - first as a warlord who led a bloody rebellion and then as a president determined to stay in power at all costs. His son, Chuckie Taylor, who was born in the United States, moved to Liberia in 1997 and became the head of his father's "Anti-Terrorist Unit," also known as the Demon Forces. His victims were often subjected to horrific torture and execution. The crimes of father and son arose out of the same conflict, but they were tried on separate continents, under completely different court systems. Charles Taylor's prosecution began in 2006 at the Special Court for Sierra Leone. Chuckie Taylor was tried in Miami under the 1994 Federal Extraterritorial Torture Statute. My research examines the cases of Charles Taylor and Chuckie Taylor to compare the relative effectiveness of contrasting theories of jurisdiction in cases involving crimes against humanity. These two similar cases tried in two different places, under two different legal theories provide a unique opportunity to evaluate the process of international justice. I traveled to the Hague in the Netherlands to attend hearings at the international courts and to speak with lawyers who worked on both sides of Charles Taylor's trial. My findings indicated that international courts play an essential role in finding justice for victims of mass human rights abuses, but domestic courts are necessary as well if it is to be made clear that impunity for atrocity crimes will not be given.

PRESENTATION ABSTRACTS

DEVELOPING NOVEL WAYS TO DETECT POTENTIALLY MUTAGENIC NUCLEOSIDES IN GENETIC HOTSPOTS

SOFIA FERNANDEZ
SUPERVISING PROFESSOR: DR. DAVID TYLER MCQUADE

When carcinogens come into contact with DNA, they can form adducts which lead to the mutations that cause cancer. With over 100,000 new cases of cancer in Florida in 2012 alone, the fight against cancer has become more imminent. Dr. Shana Sturla's lab of the Swiss Federal Institute of Technology has formulated a strategy to use synthetic nucleosides to detect damaged DNA molecules and a nanoparticle-based strategy for detecting DNA damage in genetic hotspots. The first is accomplished by creating specific oligonucleotides that correspond to genetic hotspots. We then create their complimentary oligonucleotide strand and conduct thermostability experiments on them. The nanoparticle-based aspect is made possible because of the nanoparticle's ability to change color based on when it is aggregated, or compacted closely together. We propose that inserting a specific modified base, dPer, opposite an O6-alkyl guanine of codon 12 and 13 on the proto-oncogene KRAS will provide greater duplex stability than a normal cytosine (which is its natural pair). If the synthetic base has a stronger bond to the damaged DNA molecule (O6-alkyl guanine), we utilize that increase in thermostability to detect the damage. We determined thermostability by using UV-Vis (ultraviolet visible spectroscopic) methods to calculate the melting temperature of the DNA duplex. In the future we plan on using nanoparticles in conjunction with the modified synthetic oligonucleotides to easily and effectively identify damaged DNA oligonucleotides. This work will contribute to developing better cancer detection and prevention strategies without harming the patient.

ENVIRONMENTAL ENRICHMENT IN MICE: ITS POTENTIAL TO PREVENT EPIGENETIC TRANSMISSION OF EARLY LIFE STRESS INDUCED BEHAVIORAL ALTERATIONS

MEGAN FRUGOLI
SUPERVISING PROFESSOR: DR. MOHAMED KABBAJ

Early life stress is a major risk factor for the development of neuropsychiatric diseases in humans later in life. Isabelle Mansuy's lab at the Swiss Federal Institute of Technology developed a mouse model that reproduces early life stressful experiences, using unpredictable maternal separation combined with unpredictable maternal stress (MSUS). Following this, male F1 offspring are mated to naïve females, and the subsequent F2 offspring are raised in normal conditions. The treatment leads to altered behavior in adulthood. These alterations are also seen in the non-stressed F2 generation, suggesting an epigenetic mode of transmission. Prior publications from the Mansuy lab indicate that housing mice in enriched environments can counteract the behavioral effects of early life stress on behavior. With this project, we propose that raising F1 offspring in enriched environments can also halt the transmission of behavioral alterations, such as depression, to the F2 generation. Several behavioral paradigms were used to assess the psychological phenotypes of offspring from MSUS and control sites housed in enriched environments versus that of MSUS and control sites housed in standard housing. Forthcoming molecular experiments will determine if gene expression alterations are reversed in the offspring of enriched sites, in addition to the reversal of behavioral alterations. If our hypothesis is correct, the results of this study could lead to more effective treatment of neuropsychiatric diseases in the future.

TEXTUAL REVOLUTION AND MULTIMODALITY

JACOB GIBBONS
SUPERVISING PROFESSOR: DR. MICHAEL NEAL

Despite the inescapable presence of digital media in everyday life, it is still far from well-understood how the digital or any other medium shapes society. This project focuses on how society values different modes of communication (such as written words, color, sound, layout, touch, etc.), how these values change during times of textual revolution (i.e. when a new medium such as the internet or the printing press is introduced), and what the repercussions are for the society using the new medium. The study is comparative-historical in method, thus the two periods of focus are the end of the 15th century and the present. The "incunable" period—the period of book history from the first printed book in Europe in the 1450s until 1500—is a time of technological and social innovation as medieval Europe developed and disseminated print technology, a time that greatly resembles the period from the 1990s to today in which society has constantly redeveloped and modified its use of digital media. My focus here will be on how these two textual revolutions reoriented and resocialized societies' privileging of particular communicative modes over others, what this says about the current trend to neglect physical modes of communication, and how this manifests itself in relevant societal issues today.

BREIVIK'S SANITY: HISTORICAL AND CONTEMPORARY RIGHT-WING POLITICAL VIOLENCE IN NORWAY

COLIN JACOBSEN
SUPERVISING PROFESSOR: DANIEL MAIER-KATKIN, M.PHIL

On July 22, 2011, Anders Behring Breivik bombed Regjeringskvartalet, the Government quarter in Oslo, killing eight people. Later that day he attacked a youth camp associated with the dominant liberal Labor Party killing 69 people, mostly teenagers. This act of mass murder captured world attention, as did Breivik's infamous electronic document entitled 2083-A European Declaration of Independence, proclaiming a right-wing worldview with unyielding hostility towards multiculturalism and the alleged "Islamization of Europe." While Norwegian right-wing extremist groups have been weak and insignificant in the decades since the defeat of German and Norwegian fascism, the populist far right party, the Progress Party, is currently the second largest party in the Norwegian Parliament. My research, drawing on archival research and interviews, examines continuities and discontinuities in the history of right-wing extremism and violence in Norwegian politics and society from the period of Norway's collaborationist Nasjonal Samling to the Breivik trial. The trial, concluded in August 2012, presented the Norwegian juridical system with the question of whether Breivik's actions and xenophobic belief system dominated by aggressive anti-immigrant and anti-Islamic sentiments can be classified as sane. The Court reluctantly concluded that you do not have to be insane to believe in and act upon Breivik's manifesto. My interviews with psychiatrists, legal scholars, journalists, political leaders, and experts on Nazism and radical-right movements in Norway, suggest that contemporary radical right's violence is rooted in conspiracy theories, profound dislike of political establishment and xenophobia, and is likely to be a continuing problem in Norwegian society.

PRESENTATION ABSTRACTS

A TRANSCRIPTION AND PRELIMINARY ANALYSIS OF THE ANCIENT LATIN TRANSLATION OF BOOK SIX OF JOSEPHUS' *THE JEWISH WAR*

CHELSEA LEACH
SUPERVISING PROFESSOR: DR. DAVID LEVENSON

The historian Flavius Josephus is the most important source for our knowledge of Jewish history from the end of the biblical time through the 1st century CE. His first work, The Jewish War, written in Greek around 80 CE, describes the war with the Romans, in which he participated, first as a commander on the Jewish side and then, after he was captured, as an advisor to the Romans. Scholars have long recognized the tremendous value of the Latin translation, produced in the fourth or fifth century, both as a guide to the underlying Greek text and as the vehicle through which the Christian West knew Josephus' works throughout the medieval period. The extraordinarily large number of Latin manuscripts of this work – around 140 - however, has frustrated attempts to produce a critical edition of the Jewish War. To address this problem, I have transcribed the sixth book of The Jewish War in one of the earliest manuscripts of the work, a 9th century Latin manuscript, currently located in the Abbey Library in St. Gall, Switzerland, and now available through high resolution online images. My carefully edited transcription of this manuscript, which includes notes on the many corrections in the manuscript made by medieval scribes, will make the Latin translation of book six, which describes the dramatic events connected with the destruction of the Jerusalem Temple in 70 CE, available to scholars. In addition to producing a transcription of the text, I have also made a preliminary analysis of the relationship of this manuscript to some of the 40 other medieval manuscripts of the work to which I have had access either through online images or through recently acquired microfilms and photographs.

"THE BLOOD OF AFRICA RUNS DEEP IN OUR VEINS." TRANSNATIONAL IDENTITY AND INTERNATIONAL SOLIDARITY IN CUBA

TAYLOR LEE
SUPERVISING PROFESSOR: DR. ALEX AVINA

This research project examines Cuba's military and humanitarian commitment to Angola throughout the 1970's and 1980's. I argue that central to Cuban internationalism lay a longer tradition of transnational connections and a Pan-African identity forged between Afro-Cubans and African descendants. By moving away from an institutional focus towards the lower echelons of society, my research seeks to uncover the role of Afro-Cubans as historical actors with agency in Cuba's process of state formation prior to and during Cuban intervention in Angola. I first focus on pre-revolutionary Cuba in order to explore the ways in which Afro-Cubans played a pivotal role in creating the necessary foundations for Cuba's military missions in Angola. This development embodied two main processes: the linking of Cuban nationalism, anti-racism, and anti-imperialism, a link which provided the ideological foundation for Cuba's internationalist campaigns in Africa, and the creation of a common transnational identity between Afro-Cubans and other African descendants. The second section examines the dialectical relationship between the revolutionary Cuban government and Afro-Cubans. Through an analysis on discourses of race and masculinity, this research seeks to explain the ways in which the revolutionary Cuban leadership engaged in conversation with Afro-Cubans. Through this conversation, Afro-Cubans continued to shape Cuba throughout the 1970's and 1980's. This project draws upon poetry, artwork, and recorded interviews in order to provide a bottom up history of Afro-Cubans' contribution to revolutionary internationalism. Gramsci's theory of cultural hegemony provides a theoretical framework for understanding Afro-Cuban participation and influence in Cuba's mission in Angola.

A QUANTITATIVE UNDERSTANDING OF HUMAN T-CELL RECEPTOR RECOGNITION OF MHC-PEPTIDE COMPLEXES

DANIEL STRIBLING, *THE DAVID B. FORD UNDERGRADUATE RESEARCH & CREATIVE ACTIVITY AWARD*
SUPERVISING PROFESSOR: DR. WEI YANG

One of the major topics of interest to the field of human immunology is the study of disease recognition by the body. The human immune system utilizes a complex system of identification and signaling to recognize foreign peptides. These peptides, known as antigens, are one of the body's major signals of infection. This recognition system operates through the interactions of the antigens with MHC proteins and T-Cell Lymphocytes. Antigens that are present in the human body encounter and bind to MHC. They are then presented to T-Cells for interrogation through the action of receptors on the T-Cell surface. If the peptide is identified as an antigen, the T-Cell signals an immune response that ideally culminates in the elimination of the identified threat. The mechanism by which T-Cells undergo selective MHC-complex recognition while also recognizing a wide number of peptides is still largely unknown. An Alanine-Scanning simulation has been performed on the A6-TCR peptide in both the complexed and uncomplexed states of a T-Cell/MHC system. The Orthogonal Space Random Walk technique has been employed to perform a series of alchemical simulations with mutations: L1A, L2A, F3A, G4A, Y5A, V7A, Y8A, V9A. This has provided further insight into the pattern behind the free-energy binding contributions of each residue, as well as the relationship between position and importance to binding affinity.

BREAKING B.A.D.

NORA WARYOBA
SUPERVISING PROFESSOR: DR. BRIAN MILLER

Bcl-2 associated death promoter (BAD) is a bifunctional enzyme that regulates insulin secretion and apoptosis. When dephosphorylated, BAD initiates apoptosis; and when phosphorylated, BAD assumes a metabolic role by binding to and activating glucokinase. BAD resides in a mitochondrial complex containing glucokinase, PP1, PKA, and WAVE1. Studies have shown that BAD is required to nucleate the 5-membered complex, but phosphorylation of BAD is not required; however, mitochondrial glucokinase activity is inhibited by the absence of phosphorylated BAD. Glucokinase is a 52 kDa hexokinase found in the liver, pancreas, gut and brain; it acts as the glucose sensor of the body by catalyzing the ATP-dependent phosphorylation of glucose to form glucose-6-phosphate. One of the key properties that distinguishes glucokinase from other hexokinases is its low affinity for glucose and thus, the enzyme is responsive to small glucose changes at physiological glucose concentrations. To investigate the role BAD plays in glucokinase activity, purified BAD was generated from a GST fusion protein using TEV protease to cleave the GST tag. BAD is highly unstable in its purified monomeric form, so buffer conditions were optimized to enable it to remain monomeric while allowing for maximum activity of glucokinase. With the attainment of cleaved BAD, the next step is to phosphorylate BAD using PKA. Mapping of BAD phosphorylation sites has revealed 3 serine residues, S112, S136, and S155, with the phosphorylation of S155 being the final step required for neutralizing the apoptotic function of BAD. MALDI-TOF of trypsin digested BAD is utilized to detect the phosphorylation status.

PRESENTATION ABSTRACTS

"FRENCHTOWN, TALLAHASSEE - THE COMIC BOOK": JOURNALISTIC COMICS, VISUALIZING URBAN RENEWAL, "BLURRED AREAS" OF REPORTING, AND JOURNALISM IN CONTEXT OF THE JOURNALIST

DAVID TIEGEN
SUPERVISING PROFESSOR: MAGGIE SIMON

I investigated Frenchtown's history, but little was recorded and little anyone could confirm. The most knowledgeable sources were still guessing at the whole truth and those guesses often conflicted. Focus turned from Frenchtown's truth to how anyone could understand it entirely. My story examines significance of place and how we understand it through the example of Frenchtown, in comparison with other examples of urban renewal, by showing the process of the journalist, and clarifying an intricate and confusing history. The comic mixes journalism, autobiography, and creative non-fiction to tell the story of how Frenchtown defies journalism and demands interpretation. Many FSU students share a single view of Frenchtown: dangerous, dilapidated, and poor. When pressed, students admit a lack of extensive knowledge about this place adjacent to our university. This stigma has been the final say on Frenchtown, Tallahassee's historic black district, since the 1960s when drug crime there became too large to ignore. Information on Frenchtown becomes rare shortly after a plan to renew the community was decided on in 1987. Opinions from that time mirror students'. In the last twenty years, the actual conditions of Frenchtown became unreported and unclear. Comics recently began reporting on "blurred areas," topics that aren't reported on fairly or enough, thus creating a blurry picture of the place or people. Comic creators have strived to fill that gap, publishing books about formative events including Hurricane Katrina, the Occupy Movement, and Palestine. But no one had applied this to a single neighborhood. This project explores a new possibility in the genre of comics journalism, striving to bring more focus and exploratory structure to its small canon.

AN ASSESSMENT OF COOPERATIVE DEVELOPMENT AND CAPACITY BUILDING IN RWANDA

MELISSA BEAUDRY*, VLAD DANDU & MICHAEL SUAREZ*
SUPERVISING PROFESSOR: DR. PETER GARRETSON

The purpose of this study was to assess the developmental strategies of cooperatives in the community of Gasharu, Rwanda with a focus on The Cooperative of Orphaned Families Intwari (COFI.) The goal was to evaluate the overall individual and collective capacity building activities of cooperative members and address how they have contributed to the socio-economic development of the community. Through income-generating initiatives developed by a partnership with the FSU organization, Global Peace Exchange (GPE), the members of COFI, were enabled to participate in individual and collective capacity building activities by starting a small business called, Kigali Express Cleaning Service, initiated in 2011. COFI was selected as a case study due to its relationship with the organization Global Peace Exchange at Florida State University and its unique approach to cooperative development in the area. The research was collected using various focus-group and interview method techniques as a way to monitoring and evaluate the effectiveness of the communities cooperatives. The research was also gathered from personal interviews with the cooperative members who have found jobs due to the training they received resulting from the GPE initiative. The assessment has informed GPE that KECS was unable to initiate profitable business due to various factors including low member-commitment and a lack of professional collateral. Through the focus group activities the members have expressed a want to continue to try and establish the cleaning service and have since begun the process of creating a strategic plan for implementation.

TRAFFICKED THROUGH THE CENTER: A LOOK AT HUMAN TRAFFICKING IN GUATEMALA

JOSEPH LABELLE
SUPERVISING PROFESSOR: TERRY CONAN, JD

The goal of my research project is to produce and disseminate an unbiased documentary on human trafficking in Guatemala. While my original intent was to work with a single NGO based in Antigua, I soon realized the problem was much bigger and needed to expand into Guatemala City. Every day I brought cutting edge film equipment on retired school busses into Guatemala City to interview and film at shelters, safe houses, legal aid offices, and government offices. The individuals I met ranged from individual young woman who had been rescued from trafficking to the U.N. Representative for Human Trafficking Inside of Organized Crime who was assisting the Guatemalan government. Many of those interviewed for the documentary included psychologists, legal advocates, NGO and safe house employees. The point of this documentary is to show what is happening in Guatemala right now regarding human trafficking and what that Country is doing to fight back. I wanted to document both the work on the ground and the efforts being made at the policy making level by both government agencies and non-governmental organizations. Conducting this research has helped me realize the need for long-term efforts in Guatemala to combat the many different forms of human rights violations taking place. After school I plan to move to Guatemala full-time to work.

FAIR TRADE TEA AND SUSTAINABLE DEVELOPMENT AMONG INDIGENOUS PEOPLES OF AMAZONIAN ECUADOR

SAMANTHA WOOD
SUPERVISING PROFESSOR: DR. MICHAEL UZENDOSKI

The research for this project was conducted during a four week study abroad program in the Amazonian community of Sapo Rumi, Ecuador, and a subsequent two-week stay in the nearby city of Tena, Ecuador. Its purpose was to examine the cultural significance of a traditional tea called guayusa (why-yoo-sah), and observe and participate in the implications of a project to cultivate and sell this tea through a company called Runa. For decades the indigenous Kichua people have been drinking guayusa tea ceremonially in the morning hours to energize their bodies and soul, but these customs are declining among younger people. We lived and worked in the community, and as company interns, and conducted interviews with various community members of differing genders, ages, and status to understand their different perspectives on these changes. Runa is a newly formed company which has begun working with local farmers to cultivate and sell guayusa in the United States and Canada. With both a non-profit and a for-profit side of the company, Runa hopes to increase local income and standard of living while making a profit. We both observed and participated as our host community embarked on the beginning stages of involvement with this company. We assesed the cultural and financial implications of this project within the community, where some community members were wary of selling a product of such cultural and spiritual importance, yet many others were interested in incorporating one more forest product into their diverse livelihoods.

MENTORED RESEARCH & CREATIVE ENDEAVORS AWARDS

CORRELATION OF BLOOD VESSEL WALL THICKNESS WITH IN VIVO NICOTINE ADMINISTRATION IN ADULT MALE ZEBRA FINCHES

JESSICA ANDREWS
SUPERVISING PROFESSOR: DR. SUSANNE CAPPENDIJK

Jessica Andrews is currently a senior majoring in Exercise Science from Niceville, Florida. She is in her third year of research in Dr. Susanne Cappendijk's lab. Upon graduation, Jessica plans to attend pharmacy school.

DEVELOPMENT OF A VASCULAR INJURY THERAPEUTIC AGENT

EFROSINI ARTIKIS
SUPERVISING PROFESSOR: DR. EWA BIENKIEWICZ

Efrosini Artikis, a senior from Tarpon Springs, is pursuing a double major in Chemistry and Biochemistry. Her research, under the support and guidance of Dr. Ewa Bienkiewicz, focuses on intrinsically disordered proteins and the development of therapeutic agents. In the future she hopes to gain more insight into this field by attending graduate school for biochemistry.

NUCLEAR STRUCTURE OF 31S STUDIED THROUGH THE SHELL MODEL

BRETT BOCHAK
SUPERVISING PROFESSOR: DR. INGO WIEDENHOVER

Brett Bochak is entering his third year studing Physics and Applied Mathematics, and has been conducting research under Dr. Ingo Wiedenhoever from the Nuclear Physics Group since his first year. He plans to pursue a Masters/Ph.D. in Physics to work in experimental nuclear research. Brett was raised in Parkland, FL.

WOMEN'S ARISTEIA AND MASCULINE ROLES IN ANCIENT EPIC

BETHANY CHASTEEN
SUPERVISING PROFESSOR: DR. FRANCIS CAIRNS

Bethany Chasteen, a Tallahassee resident, is a senior in Classics earning her dual degrees in Classical Civilizations and Latin with minors in Art History and Greek. After graduation, she plans on attending graduate school to earn both her MA and Ph.D. in Classics specializing in Gender Studies.

QUANTIFYING IRON IN THE BRAIN THROUGH MRI AND QUANTITATIVE SUSCEPTIBILITY MAPPING

ADAM CHIN
SUPERVISING PROFESSOR: DR. SAMUEL GRANT

Adam Chin is a senior from Pembroke Pines, FL and is currently working on his honors thesis. He has been conducting MRI research alongside Dr. Samuel Grant at FSU's National High Magnetic Field Laboratory since the beginning of the year. Upon graduating with a degree in Biomedical Engineering, he plans on attending graduate school to further his studies and pursue a Master's Degree.

STEM CELL ADIPOGENESIS

KELSIE DECKER-PULICE
SUPERVISING PROFESSOR: DR. AMY SANG

Having currently spent several semesters working in Dr. Sang's laboratory on a variety of projects, including matrix metalloproteinase inhibitor studies and exploring adipogenic differentiation of adult stem cells, Kelsie feels that she has matured as a young scientist. She has earned several awards for her efforts including the Women in Math, Science and Engineering (WIMSE) poster award and a scholarship from her sorority. After she graduates from Florida State University, Kelsie hopes to continue her academic endeavors by either pursuing graduate school to research anti-cancer agents or attending medical school in order to become a pediatric oncologist. Kelsie is from Palm Harbor, FL.

MENTORED RESEARCH & CREATIVE ENDEAVORS AWARDS

A DECISION-MAKING MODEL FOR AN AMERICAN-ISRAELI CONSUMER RELATIONSHIP

MICHELLE FAIDENGOLD,
THE PHI ETA SIGMA ENDOWED SCHOLARSHIP TO ENHANCE UNDERGRADUATE RESEARCH
SUPERVISING PROFESSOR: DR. JOHN PELOZA

Michelle is a junior at Florida State University studying Marketing and Management. Her goals are to become an influential figure in Israel awareness and intercultural research, to study in Israel, and to make an impact on society. She speaks Spanish, English, and Hebrew and is originally from Venezuela. Michelle comes to FSU from Weston, FL.

CATFISH PEARLS: STORIES OF THE NORTH FLORIDA COAST

JON THOMPSON
SUPERVISING PROFESSOR: DR. JONATHAN SHEPPARD

Jon Thompson, a Tallahassee native, is a senior History major. He seeks to introduce readers to the history and culture of North Florida's coastal towns through vignettes and stories about growing up and working in the area. He returned to college after a 37 year law enforcement career with the Florida Marine Patrol and the Fish and Wildlife Commission, retiring as a Lt. Colonel. His goal is to publish his book on his experiences of Florida's "Forgotten Coast."

THE ROLE OF THE ACETYLTRANSFERASE ECO1 IN CHROMOSOME SEGREGATION DURING MEIOSIS IN BUDDING YEAST

TORRIE REYNOLDS
SUPERVISING PROFESSOR: DR. HONG-GUO YU

Torrie Reynolds is a senior Biological Science major from Fort Myers, Florida. She is currently working on her honors thesis under the direction of Dr. Hong-Guo Yu. Her research interest in chromosome segregation at the molecular level stems from her drive to understand the mechanisms responsible for chromosomal abnormalities in humans. Upon graduation, Torrie plans to attend medical school.

A STUDY OF THE ENZYMATIC HYDROLYSIS OF CELLULOSE USING A QUARTZ CRYSTAL MICROBALANCE

ADAM QUINTANILLA
SUPERVISING PROFESSOR: DR. SAMUEL GRANT

Adam Chin is a senior from Pembroke Pines, FL and is currently working on his honors thesis. He has been conducting MRI research alongside Dr. Samuel Grant at FSU's National High Magnetic Field Laboratory since the beginning of the year. Upon graduating with a degree in Biomedical Engineering, he plans on attending graduate school to further his studies and pursue a Master's Degree.

PROBING THE MECHANISM OF SULFITE REDUCTASE HEMOPROTEIN

KYLE SMITH, *THE HELEN LOUISE LEE RESEARCH AWARD*
SUPERVISING PROFESSOR: DR. BETH STROUPE

Kyle Smith, a Tallahassee native majoring in Chemistry, has been working in the lab of Dr. Beth Stroupe since his first year. He is currently completing a honors thesis relating molecular structure to enzymatic function in the redox protein sulfite reductase. After graduation Kyle plans to go on to graduate school to pursue a PhD in chemistry to develop biologically inspired materials.

STEM CELL ADIPOGENESIS

KELSIE DECKER-PULICE
SUPERVISING PROFESSOR: DR. JOHN TELOTTE

Adam is a senior from Leesburg, FL majoring in Chemical Engineering. He is currently working on his honors thesis under the direction of Dr. John Tellote. Adam plans to attend graduate school with research interests in the alternative fuel or clean energy field.

MENTORED RESEARCH & CREATIVE ENDEAVORS AWARDS

FUNCTIONAL ANALYSIS OF KSHV TEGUMENT PROTEINS USING DNA RECOMBINANT TECHNOLOGY

AHMEND VALDES
SUPERVISING PROFESSOR: DR. FANXIU ZHU

Ahmed Valdes is a Biology, Chemistry and Biochemistry triple major from Miami, FL. He has been working under the supervision of Dr. Fanxiu Zhu for over a year and plans on completing his honors thesis elucidating the function of various tegument proteins in KSHV by analyzing the phenotypic differences of mutants created using DNA recombineering as compared to the their wild type counterparts. Upon graduation he plans on attending medical school, eventually focusing his medical career on the pathology of viruses.

DIS-TOPIA: A PORTRAIT OF AMERICA

BARRETT WHITE
SUPERVISING PROFESSOR: DR. ANDREW EPSTEIN

Barrett White is a poet and performance artist studying Creative Writing at Florida State University coming here from Pensacola, FL. He hosts a weekly reading series in the Williams Building on campus. His studies are directed in avant-garde/experimental writing, Viennese Actionism, ethnopoetics, and multimedia arts. Some of his work can be found at nyquilchug.blogspot.com.

SOCIAL REJECTION AND PERSON PERCEPTION

MARIANA VILLEGAS
SUPERVISING PROFESSOR: DR. JON MANER

Mariana Villegas is from Coral Springs, FL and is majoring in Psychology. Her primary research interest focuses on the biological factors that drive human social behavior. Her honors thesis explores the relationships among social rejection, hormones, and person perception. After graduation, she plans to pursue her Ph.D. in Social Psychology.

BLUEBEARDS AND BULLROARERS: AN INVESTIGATION INTO THE FOUNDATIONS OF GENDER CONSTRUCTION AND THE CROSS-CULTURAL TRANSMISSION OF KNOWLEDGE

REBEKKA WHITE
SUPERVISING PROFESSOR: DR. ALINA-DANA WEBER

Rebekka White, from Tallahassee, FL, is currently a senior at Florida State University, double-majoring in German and Philosophy, with plans to continue her studies at the graduate level. She is interested in the development and application of multi-disciplinary approaches to address issues related to inclusion and equality and will pursue a certificate in Critical Theory.

USING MOBILE DEVICE TECHNOLOGY TO PROVIDE IMPROVED SECURITY AND ADVANCED CAPABILITIES FOR EVENT-TICKETING

LAWRENCE WERU
SUPERVISING PROFESSOR: DR. ROBERT VAN ENGELEN

Lawrence Weru is a Kenya Rift Valley native raised in Jacksonville, FL. A senior studying Biological Science and Studio Art, Larry has served FSU as SGA Senator and Treasurer for the College of Visual Arts, Theatre and Dance Leadership Council. This year he is a Berlyn Arnett BA Award recipient and the inaugural Featured Student for FSU's Program in Interdisciplinary Computing. An event-ticketing application he programmed while directing the FSU Krispy Kreme Challenge earned Best in Show: Contribution at DigiTech 2012. Larry hopes to advance the field of medicine as a medical illustrator.

BIOMASS CONVERSION: ENZYMATIC HYDROLYSIS OF NMMO PRETREATED BAGASSE

CORY WILSON
SUPERVISING PROFESSOR: DR. SUBRAMANIAN RAMAKRISHNAN

Cory Wilson is a senior in Chemical Engineering with a strong interest in sustainability. Originally from Flagler Beach, FL, Cory chose to study Chemical Engineering at FSU in hopes of making a positive impact on the many problems we face, in the form of renewable energy sources and environmentally sustainable manufacturing processes. His future goals include pursuing an honors thesis with his current research in biomass conversion and a graduate degree in Chemical Engineering.

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ONF.FSU.EDU

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Melissa Meschler