



Student Showcase

for

Projects, Research,
& Innovation

February 19th, 2016



Schedule of Events

**All events will be held in Selby Auditorium*

Check-in.....	8:00am - 8:30am
Welcome.....	8:30am - 8:45am
Poster Presentations (#1-11).....	8:45am - 10:00am
Coffee Break.....	10:00am - 10:15am
Oral Presentations - Group 1 (#1-4).....	10:15am - 11:15am
Coffee Break.....	11:15am - 11:30am
Oral Presentations - Group 2 (#5-7).....	11:30am - 12:15pm
Lunch.....	12:15pm - 1:15pm
Keynote Speaker.....	1:15pm - 1:45pm
Dr. Thomas Becker, USFSM College of Business	
Awards Ceremony.....	1:45pm - 3:00pm

Poster Session

8:45am - 10:00am - Selby Auditorium

#1: Technology-Aided Self-Capture Journaling Activities by Teacher Candidates

Presenter: Amber Lee (Major: Curriculum and Instruction)

Mentor: Dr. Brianne Reck

Category: Education

Abstract: A quote often incorrectly attributed to the field of education's founder John Dewey, it has been a long held belief in education that "teachers teach the way that they were taught". New research is now proposing an evolved idea that "teachers teach the way they themselves preferred to be taught," or the method that they think they preferred most (Cox, 2014). New teachers have to observe or have to have been the student of a method at some point to be able to model these newer, more effective instructional practices in their future careers. Pre-service teacher education is the opportune time to learn the best instructional methods from the examples modeled by the mentor teacher, the internship supervisor, and the school of education faculty. It is imperative that student teachers learn and be exposed to the technologies during their college experience if we want to encourage the use of technology and the development of 21st century skills in our K-12 classrooms of the future. This exploratory literature review and proposed mixed-methods study examines the whether the technology-aided self-capture journaling activities by teacher candidates during their internship affects the candidate's successful internship completion and the candidate's perception of their individual internship success. The findings expected from this proposed study are that students in the technology-aided self-capture journaling activity group will: 1. have greater success in their internships; 2. have greater comfortability with applying technology in their instruction, and; 3. have a more positive perception of individual success in their internship.

#2: Organization of Alcohol Expectancy Images in Memory

Presenters: Smith Doell, Delane Solana, Ahna Barefoot, Eric Chicca,
and Sarah Hitchcock (Majors: Psychology)

Mentor: Dr. Richard Reich

Category: Science and Math

Abstract: Identifying mechanisms that influence and predict alcohol consumption has been a decades-long investigation. Alcohol expectancies are the expected outcomes, positive or negative, resulting from alcohol consumption. Alcohol expectancy words have been shown to exert a causal influence on the decision to drink. Alcohol-related images, rather than words, may capture an additional component of that decision: images have been linked to the brain's capacity for prediction and prospection and these memory associations allow individuals to create scenarios of potential outcomes, which act as guides to behavioral decisions. It was hypothesized that heavier drinkers would rate alcohol related images more positively than those who consume little or no alcohol. To study alcohol expectancy images, 25 images of drinking behavior were presented to a sample of 224 USF undergraduate students as part of a card-sort task. The purpose of the study was: 1) to compare affective ratings of images between drinker types, 2) to compare affective ratings of images between genders, and 3) to test whether alcohol expectancy words and image ratings could be used, in combination, to predict alcohol consumption. Drinkers were separated into three groups: non-drinker, non-binge drinker, and binge drinker. Bivariate analysis demonstrated that binge drinkers rated images more positively than non-drinkers. Additionally, linear regression analysis demonstrated that a combination of alcohol expectancy word measures and image

#3: Identification of a metabotropic glutamate receptor in the tentacles of the Portuguese-Man-of-War, *Physalia physalis*

Presenter: Lauren Altomare (Major: Biology)

Mentor: Dr. Christelle Bouchard

Category: Science and Math

Abstract: The phylum Cnidaria includes animals such as hydra, sea anemone, coral and jellyfish. One important taxonomic characteristic of cnidarians is the presence of stinging cells, also named cnidocytes or nematocytes. The cnidocyte is a unique cell in that its cytoplasm houses the weaponry of the animal, presented as a coiled filament within a cyst. Upon discharge of the cyst, the filament punctures the derm of the prey and injects a venom. In the Portuguese-Man-of-War, *Physalia physalia*, cnidocytes are grouped into bulbous clusters (cnidosacs) distributed along the tentacle. The sensory information that regulates the cnidocyte discharge travels a variety of cellular pathways, and is communicated to the various cell types by chemical synapses. Functional and morphological studies have identified glutamate as an important player in the modulation of the cnidocyte discharge. Recently, a metabotropic glutamate receptor was cloned from the cnidocytes of *Physalia*. In addition, preliminary immunocytochemistry experiments using an antibody specific to the *Physalia* glutamate receptor localized the receptor in the basal area of the cnidocyte. In this study, the antibody specific to the *Physalia* glutamate receptor will be characterized by Western immunoblotting on protein homogenates from whole tentacles, as well as from isolated cnidocytes. Identification of a band of the expected molecular weight of the *Physalia* glutamate receptor on the blot will serve two goals. In the first instance, it will confirm the specificity of the novel antibody; secondly, it will provide additional evidence of the presence of the glutamate receptor in the tentacles of *Physalia*.

#4: Save Our Seabirds - USFSM Partnership to Research Avian Toxicology

Presenters: Jessica Giraldo, Moe Aye, and Lisa Kuhn (Majors: Biology)

Mentor: Dr. Aparna Telang

Category: Science and Math

Abstract: SOS routinely receives birds with neurological symptoms such as ataxia (head bobbing), loss of body function, lower body temperatures, and lethargy. These symptoms show a form of poisoning in the birds, and have been treated as such using activated charcoal to remove the toxins in the body. However, about only 50% of the birds are surviving. Students in the USFSM Biology Program, in collaboration with Dr. Aparna Telang, started work with SOS during fall 2015. We conducted extensive literature and other background research on possible causes for bird sickness. This spring 2016 we will develop a molecular method (using polymerase chain reaction or PCR) to amplify and detect DNA of *Karenia brevis* (causal bacterial agent of brevetoxicosis) or *Clostridium* (causal bacterial agent of botulism). As we will want to reduce stress on ill birds, we hope to use bird feces as a non-invasive method to obtain starting material for PCR analyses. We hope this collaboration between USFSM and community partner SOS leads to a reliable diagnostic tool that can eventually offer better treatment options and improve bird recovery success rates.

#5: The bugs inside the bug: uncovering potential symbionts of mosquitoes

Presenter: Robert Nemitz (Major: Biology)

Mentor: Dr. Aparna Telang

Category: Science and Math

Abstract: Female mosquitoes feed on blood to make yolk for their eggs. But, for the adult, blood is a deficient diet. A number of insects that live on a poor diet are known to rely on symbiotic bacteria to provide missing nutrients. However, we do not know if this is the case for mosquitoes. In this highly collaborative project, we are studying mosquitoes and their bacterial residents. It is our hope that we find a way to control the bacteria, on which mosquitoes depend, to ultimately help control mosquito populations.

#6: Comparison of hemocyte population among different mosquito species**Presenter:** Ruby Ramos (Major: Biology)**Mentor:** Dr. Aparna Telang**Category:** Science and Math

Abstract: Females of many species of mosquitoes feed on vertebrates to obtain blood that gets converted to yolk for their eggs. As a consequence of their blood feeding habit, mosquitoes can pick up pathogens or parasites from vertebrate hosts and in turn infect new hosts. A major arm of the mosquito immune system is their hemocyte population (the equivalent of our immune white blood cells). There are several different types of hemocytes that play different defense roles. Here we report on hemocyte profiles of different mosquito species: the yellow fever mosquito *Aedes aegypti*, malaria vector *Anopheles dirus*, the rock pool mosquito *Ochlerotatus atropalpus*, and the Southern House mosquito *Culex quinquefasciatus*.

#7: Behavioral Flexibility in the Adult Rat Following Concurrent Aripiprazole and Chronic Intermittent Ethanol Exposure**Presenter:** Samantha Vazquez (Major: Psychology)**Mentor:** Dr. Kimberly Badanich**Category:** Science and Math

Abstract: Alcohol rehabilitation programs provide pharmacological and behavioral treatment strategies for habitual drinkers. Often these rehabilitation programs teach alcoholics to use new coping skills when they have an urge to drink. However, alcoholics may have trouble learning new coping strategies given that long-term alcohol consumption in both humans and rodents leads to decreased cognitive performance and deficits in decision-making. Aripiprazole is an antipsychotic drug that is typically used to treat schizophrenia and major depressive disorder but has more recently been suggested to act as a cognitive enhancer. Therefore it was hypothesized that aripiprazole could be used as a treatment for cognitive deficits in alcohol dependent rats. Alcohol (4 g/kg ethanol) and aripiprazole (5 mg/kg) were administered by intraperitoneal injections either alone or in combination with each other. Placebo controls were administered saline injections. Treatments occurred every other day for a total of four weeks. Following a short abstinence period (4 days), flexible learning during decision-making processes were tested using an attention set-shifting and reversal learning odor discrimination task. Flexible learning occurs when a strategic response (i.e., digging to find a buried food reward) is shifted or reversed to a more beneficial strategy. Results found alcohol treated rats made more errors during the reversal learning task, however, aripiprazole was unable to treat these deficits in flexible learning. Together, these findings suggest further investigation is needed to determine if aripiprazole can alleviate cognitive deficits in alcohol dependent rats. These procedures should be tested again to compare to the original results in further investigations.

#8: Perceptions of Christianity among College Students: Viewpoints from Christians and Non-Christians

Presenter: Elizabeth Navarro (Major: Psychology)

Mentor: Dr. Melissa Sloan

Category: Social Sciences

Abstract: This cross-sectional, quantitative study analyzes a sample of 220 university students to compare how Christians assume they are perceived by non-Christians versus how Christians actually are perceived by non-Christians as well as examine a difference in the attitude toward 'Christians' and 'Christianity'. The individual traits of students such as age and gender were also collected to discern their impact on attitude toward Christianity. The students were recruited via secure emails and assessed by 24-multiple choice questions on a Likert scale and an open-ended question. Significant statistical results were predicted to indicate a difference between assumed and actual attitude toward Christians as well as different attitudes toward 'Christians' and 'Christianity', in accordance with the independent variables measured. Exploring supposed impressions and discovering how people and entities are actually perceived is crucial in a fast-paced age dominated by the social spectrum.

#9: Outcomes Associated with Parental Divorce: A Study of Personal Growth, Intimate Relationships, and Adjustment of Young Adults.

Presenter: Sanaz Dabiri (Major: Psychology)

Mentor: Dr. Melissa Sloan

Category: Social Sciences

Abstract: Current research examines different aspects of young adults' lives who had experienced parental divorce and compares these aspects to young adults with married parents over time. These aspects include psychological stress, socioeconomic achievement, interpersonal relationships, and perception of family structure. In addition, this research studies whether the gender of offspring plays any role in the effects of parental divorce by assessing the relationship between the gender of the participant and each variables being studied. Data were obtained from the National Longitudinal Study of Adolescent Health (Add Health). Results indicated that parental divorce and social support have significant effects on psychological well-being of offspring. The quality of romantic relationship was also significantly lower in individuals who experienced parental divorce. Additionally, male adults raised in intact families had significantly higher quality of father-son relationship compared with male adults with divorced parents. While, female adults with married parents had significantly higher quality of mother-daughter relationship compared with female adults with divorced parents. Male adults with married parents are more likely to marry their partners compared with male adults who experienced parental divorce. Male adults from divorced parents are also less satisfied with their role as parents. This research may ultimately be directed toward understanding the future of family structure for offspring, and improving the quality of interpersonal relationships among young adults and their partners.

#10: Beyond the Spectrum Internship**Presenter:** Jennifer Grennell (Major: Psychology)**Mentor:** Dr. Richard Reich**Category:** Social Sciences

Abstract: "Beyond The Spectrum is a non-profit therapeutic clinic and education center for children with autism in Sarasota, FL that services all surrounding counties" (About Us. Beyond the Spectrum 2013). Interning at Beyond the Spectrum opened my eyes to different aspects of a school like this one that works with special needs students. I learned a great deal from specialized staff including an on-site occupational therapist and a speech therapist. I was introduced to useful resources including technology used for communicative assistance and different connections in the community that aid in the therapy/treatment for these children. Several strategies were demonstrated to me by the staff at Beyond the Spectrum that they use with their students. Some of these included positive talk; using direct statements instead of hypothetical questions when directing and instructing a child; utilizing tools that provide order and routine for the children; physical exercises for fine & gross motor development; ways to understand and deal with stress; exercises to build on social skills; and activities used to improve on sensory issues. The teachers discussed disorders that are often found in combination and or correlated with autism and the concept of "stim behaviors". I also spoke briefly to one of the teachers about students' medications. A literature review I completed as part of this internship experience included topics such as the need for ASD children to be around other children for cognitive growth, using neuroscience as a basis for educating ASD students, a description of autism, special education practices, disorders classified under autism, prevalence and growth of autism, and possible causes of autism. Other topics included using music therapy with autistic children and a study regarding cerebral blood flow to certain parts of the brain and how they correlate with autism. I believe that places like Beyond the Spectrum could benefit a great deal from more funding (to go toward more space, more one-on-one time between therapeutic professionals and each child, etc.) – though they do an excellent job with the resources available to them. With more funding and more research in this field – I expect programs like Beyond the Spectrum to be even more effective in the future.

#11: Who's making the decision? Effects of pre-trial publicity on jury deliberations**Presenter:** Hayley Roberts (Major: Psychology)**Mentor:** Dr. Christine Ruva**Category:** Social Sciences

Abstract: To examine how pretrial publicity (PTP), in the form of negative defendant or negative victim, and type of jury (Mixed or Pure PTP exposure) affects the content of jury deliberations a content analyses of 39 mock jury deliberations were conducted. The results suggest that both PTP and jury type have an influential effects on jury verdicts and jury discussion and interpretation of trial evidence. Pure juries consisting of jurors exposed to negative defendant PTP (ND-PTP) spent the majority of their deliberation time discussing facts supporting the prosecution, and rarely used facts to support the defense. While Pure juries consisting of jurors exposed to negative victim PTP (NV-PTP) spent the majority of their deliberation time discussing facts supporting the defense, and rarely used facts to support the prosecution. However, Mixed juries, in which some jurors were exposed to unrelated PTP (U-PTP) while other were exposed to trial related PTP (NV-PTP or ND-PTP), appeared to be less influenced by PTP than those who deliberated on Pure ND or Pure NV juries. In addition, this study found that PTP exposed jurors were unsuccessful at following judicial instructions reproaching them not to discuss PTP or any information that was not given during the trial. To conclude, this research gives insight into how jury decision making may be biased through exposure to PTP and how jury composition can influence the deliberation process and verdict outcomes.

Oral Presentations—Group I

10:15am-11:15am Selby Auditorium

#1: *Mrs. Dalloway*: What's Hiding Beneath Doris Kilman's Mackintosh?

Presenter: Lisa Rossi (Major: English)

Mentor: Dr. Tim Turner

Category: Liberal Arts

Abstract: *Mrs. Dalloway*, Virginia Woolf's 1925 novel about a day in the life of Clarissa Dalloway, an English socialite in post-World War I England, employs a complex writing style focused on the intense inner psychological monologues of its characters. Scholarly research has concentrated extensively on sexuality. Most notably, critics have explored the homosexual nature of the relationship between Clarissa and Sally Seton, going so far as to examine it through the lens of the work of Joseph Conrad and Sigmund Freud's writings on antifoundationalism and pragmatism and how they relate to marriage and conflicting lesbian desire in the novel. However, this research has also expanded to include ideas on the related concepts of bisexuality and androgyny and how they apply not only to Clarissa and Sally, but also to Doris Kilman. Furthermore, queer theory points to the pivotal kiss shared by Clarissa and Sally not only as a moment in time, but as a non-temporal event affecting Clarissa throughout her life. Many critics have described the kiss as an atemporal moment; thinking of it in this way allows us to see that a similarly atemporal experience occurs between Clarissa's daughter, Elizabeth Dalloway, and her middle-aged companion Doris. While the alliance between Elizabeth and Doris can be construed as both antifoundational and pragmatic, more interestingly, it can be seen through the lenses of not only homosexuality, bisexuality and androgyny, but non-temporality.

#2: Social Media Responses to the Kim Davis Controversy

Presenter: Stewart Carrier (Major: History)

Mentor: Dr. Jody McBrien

Category: Social Sciences

Abstract: On June 26, 2015 the Supreme Court decision *Obergefell v. Hodges* decided the fate of gay marriage nationwide. The Supreme Court, considering the Due Process and Equal Protection Clauses of the Fourteenth Amendment to the U.S. Constitution, ruled that same-sex couples now have the right to marry in all fifty states. While most government employees tasked with issuing marriage licenses dutifully fulfilled their obligations to same-sex couples, one elected county clerk made national headlines for her refusal to do so. The purpose of this study is to examine what attitudes are indicated by Sarasota and Manatee County Facebook reader responses to media reports on the 2015 Kim Davis controversy. I used a qualitative approach to analyzing pre-existing Facebook data in an effort to understand user attitudes in the Facebook comment sections of Facebook stories from the ABC 7 television station in Sarasota and two from the Bradenton Herald newspaper. The results indicate that the majority of commenting Facebook users held an unfavorable opinion of Kim Davis' refusal to issue marriage licenses.

#3: Faculty, Staff, and Students' Perceptions of Students with Disabilities in Higher Education

Presenter: Gary Ernneus (Major: Criminology)

Mentor: Dr. Jessica Grosholz

Category: Social Sciences

Abstract: Today, because of the Americans with Disabilities Act (ADA) and the Individuals with Disabilities in Education ACT (IDEA), there are an increasing number of students with disabilities enrolled in postsecondary education (Newman et al. 2010; Snyder and Dillow 2010). Even with the ADA and the IDEA, students with disabilities are not in isolation on campus, they share their space with other non-disabled students, faculty, and staff. However, due to a limited amount of empirical research on disabled students in higher education, researchers do not know how faculty, staff, and non-disabled students perceive disabled students in postsecondary institutions. Using a comprehensive online survey, this study examines faculty, staff, and students' perceptions of students with disabilities in higher education. The results of this study will help institutions of higher education better serve disabled students while also educating non-disabled students, faculty, and staff on the everyday challenges faced by disabled students seeking to obtain postsecondary education.

#4: Acting Up: Potential Causes and Solutions for Classroom Discipline

Presenter: Jessyca Gibson (Major: Biology)

Mentor: Dr. Jody McBrien

Category: Education

Abstract: Dr. McBrien's Schools and Society course at USF presented with controversial topics regarding an individual's education experiences. Particularly interesting to me were the studies and correlations between class and culture pertaining to education and learning. Community engagement for this course was performed at Visible Men Academy. I was excited to discover the student population; male, majority minority and from low income background. I assumed the boys, because of cultural and class similarities, would behave exceptionally well with each other, without conflict or competition for representation. My assumption was disproved and I set out to explore disruptive behavior. Disruptive behavior interferes with teaching and learning and impacts the entire class. It is important to assess behavior and to identify root causes of undesired behavior in order to begin the healing process so that students may have a better education experience and future. Students "act up" for various reasons with infinite potential causes.

Potential causes for disruptive are as follows; Poverty is a major stressor contributing to misbehavior from many directions. Learning and education do not occur in a vacuum. That is to say environmental influence weighs heavy on our children. Many of these influences are not positive. Lack of motivation can be a factor for disruptive behavior, especially for our underrepresented classes and cultures. VMA, a non-traditional school, emolls a specific population and tailors the education experience to the individual's needs to potentially alleviate "acting up". I will discuss further details these root causes and potential solutions in my oral presentation.

Oral Presentations - Group 2

11:30am-12:30pm Selby Auditorium

#5: Behavior and Academic Response to Arts Integration

Presenters: Ashley Johnston and Paola Ramirez (Majors: Elementary Education)

Mentor: Dr. Helene Robertson & Dr. Marie Byrd

Category: Education

Abstract: Project EAGLE was an action-based research project with a goal to collect data from an arts integration intervention in which we were a participant observer. The setting focus was with students whose ages ranged from three to five. Students were one of four possible categories: English for Speakers of Other Language (ESOL), students with exceptionalities, students with both, and finally students who were general education. The focus school was in a downtown city in Florida, with failing scores for multiple repeated years. The school implemented a system of positive behavior support (PBS) to maintain and support positive attitudes in the students. Our research was a question of: Does arts integration improve students' academic success, and subdue inappropriate student behavior? EAGLE implemented the visual arts (painting, sculpting, drawing) as hands on activities; thus, hoping to change the students' focus and attitudes in a positive manner. There was improvement in their academic work and also within their behavioral struggles. Through the art medium the students were able to express their thoughts and understanding with visual representation rather than through words. This helped teachers know that students had a conceptual understanding and helped them to progress. We formally observed while participating in the art lessons that were designed with the help the art specialist with conjunction of the classroom teacher. Over the four months of the study we saw progress within all students but disproportionately more growth with the initially lowest achieving students. Our results were optioned from our notes each week, in which we used the Danielson's Framework for Effective Teaching criteria and the Arts Integration Implementation Fidelity Checklist (AIIF checklist). The Danielson's framework covered the learning environment and instructional design, while the AIIF checklist covered the creative process. Furthermore, the EAGLE Scholars role was to collect data with research methods which included participant observations, field notes, interview, and examining documents. The documents included the teachers' lesson plans, and the students' work. The teachers worked hand in hand with a teaching artist to learn how to accurately connect the arts with academic skills appropriately and to create a true arts integration lesson. Along with receiving help from the teaching artist they were required to attend a monthly professional development lead by a certified arts integration instructor and two qualified professors to help guide the process. Towards the end of the journey the teachers started taking the responsibilities of making and implementing their own arts integration lesson while the teaching artist helped with support. Both the teachers and students gained confidence in their respected capabilities, thus showing the arts to have a positive impact on both students and teachers. Though we saw improvements, there were limitations which included only being in the classroom once a week (twice for artists), and for only four months. Although we saw improvements there were limitations including various time constraints. Ideally further studies in these concepts would yield a better understanding in how true arts integration can help the classroom and student success.

#6: Factors of Unemployment

Presenter: Alexander McClure (Major: Undeclared)

Mentor: Dr. Michael Snipes

Category: Business

Abstract: Unemployment is a complex subject that has many potential causes and connections to other economic matters. This study aimed to determine what effect, if any, several potential factors have on unemployment. These factors are consumer price index, inflation, postsecondary graduation rates, percentage of the population between the ages of fifteen and sixty-four, and percentage of the population older than sixty-five. To test which of these potential factors actually affect unemployment, the Akaike Information Criteria, AIC, method was used. Yearly intervals proved to be too long of a gap between data entries to provide a set of factors with significant correlation. However, the intercept determined during the AIC examination was found to be equal to the natural rate of unemployment for each of the countries. The natural rate of unemployment was subtracted from the total unemployment for each data point and the AIC test was recalculated. This led to determining the statistically significant model that best fit as a factor of unemployment for Japan, the country with the smallest fluctuations in unemployment, was consumer price index.

#7: A simulation study on the influence of the cache size on the performance of the overall computer system

Presenters: Alexandrina Kostova, Christopher Dixon, Francis Pena, and Jayraj Graham (Majors: IT)

Mentor: Dr. Muburak Banisaker

Category: IT

Abstract: Simulation is a powerful and inexpensive tool that someone can use in order to test and generate valuable results. One of the major problems that the computer designers face is how to make the computer run fast. In order to accomplish that, the computer has to have a fast memory-we call it cache. The cache size, although small compared to the main memory (RAM), has a positive effect on the overall performance of a computer system. A cache has various levels - Level 1, 2, and 3, which are accessed faster by the CPU than the main memory. The purpose of this project is to test the Level 1 cache by evaluating the hit/miss rate of Level 1 cache and the subsequent effect of these occurrences on the performance of the computer system. To accomplish our goal, we use a simulator called SMPCache to assess cache size affect on the overall computer system performance. The simulation results were instrumental in providing concrete evidence of an increase in hit rate and the decrease of miss rate as the cache size increased. We employed only one processor and changed the cache protocols from MESI to DRAGON for all test results. Through a series of simulation runs certain variables and parameters were changed and a comprehensive set of results were obtained. These results were compared to show the upward trend in performance of the cache memory as its size increased. Our conclusion is that with the increase in cache size, the overall computer performance is improved because there exists a higher chance search for data is in the L1 cache due to its location with respect to the microprocessor. As cache size increases it is accompanied by a relatively high cost, so it is important to find the right balance between cost and optimal performance of the computer system.

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