**Sample Undergraduate Paper Abstracts**

Without a doubt, here is the most helpful site for developing an abstract (from The Writing Center at University of WI – Madison):

https://writing.wisc.edu/handbook/assignments/writing-an-abstract-for-your-research-paper/

SAMPLE ABSTRACT - ENVIRONMENTAL AND NATURAL RESOURCES

**Recycling in Michigan**

Erin Seavoy Jennifer Copus Erik Jonasson
Under the direction of Mark Largent, James Madison

Within our culture, recycling is seen as an important way in which we can help preserve our wildlife and protect the earth for our children’s future. With this positive reputation and strong public interest it would be reasonable to believe that recycling programs are widely supported and funded throughout the state of Michigan. However, this is not the reality. Within our research we plan on investigating three prominent Michigan cities, Lansing, Detroit and Ann Arbor. Each city has its own recycling history and we are delving into the legislation and statics surrounding the emergence, or absence of a recycling program in each city. We hope to discover trends which point to why some cities have become more involved in the recycling phenomenon. We seek to determine what types of economic, social and political conditions are necessary in order for a city to introduce and fund a comprehensive recycling program.

SAMPLE ABSTRACT - PERFORMING AND VISUAL ARTS

**Embodying Social Advocacy**

Samantha Mitchell Megan Brumbill Christine Mccullough Mary McGorey Janelle Orser
Under the direction of Sherrie Barr, Theatre

Whether on or offstage or in or out of the classroom, social advocacy is integral to dance. Choreographers often engage elements of social advocacy in order to empower dancers in their learning and understanding of dances. This notion is critical for students as their education enhances awareness of the art form. Such empowerment invites them to have ownership – in movement vocabulary and choreographic intent. Dancers’ voices, visually and audibly, become active agents of the creative process. We are investigating ideas concerning humanity and humanitarians. A unique research model is evolving as we investigate, creatively and through scholarship on socio-political issues. An overarching question is how, if at all, do our attitudes reflect in our dancing? As we interface physical and cognitive research, we have the opportunity to arrive at new ways of embodied knowing.

**Sample Physical and Life Sciences Abstract**

**Do Voles Select Dense Vegetation for Movement Pathways at the Microhabitat Level?**

*Biological Sciences*

The relationship between habitat use by voles (Rodentia: Microtus) and the density of vegetative cover was studied to determine if voles select forage areas at the microhabitat level. Using live traps, I trapped, powdered, and released voles at 10 sites. At each trap site, I analyzed the type and height of the vegetation in the immediate area. Using a black light, I followed the trails left by powdered voles through the vegetation. I mapped the trails using a compass to ascertain the tortuosity or amount the trail twisted and turned, and visually checked the trails to determine the obstruction of the movement path by vegetation. I also checked vegetative obstruction on 4 random paths near the actual trail, to compare the cover on the trail with other nearby alternative pathways. There was not a statistically significant difference between the amount of cover on a vole trail and the cover off to the sides of the trail when completely covered; there was a significant difference between on and off the trail when the path was completely open. These results indicate that voles are selectively avoiding bare areas, while not choosing among dense patches at a fine microhabitat scale.

**Mathematics**

Title: Vortex Solitons Interactions

Author Information: Shan Guruvadoo, and AJAY RAGHAVENDRA

Faculty Mentor Name: Stefan C. Mancas

Utilizing a rotational actuator with different paddle configurations in the Nonlinear Wave Lab at Embry-Riddle Aeronautical University, the velocity and vorticity fields of vortex solitons are obtained. Using a powerful HD camera for a wide range of paddles and angular velocities, formation of ring vortices that travel in the water tank will be analyzed. The vortex ring propagation is useful for sending information across an optical fiber for long distances without the need for amplification. Since such fibers capable of sending information for very long distances don't exist yet, we will experiment with the propagation of spatiotemporal structures along the water tank. As a partial differential equation (PDE) model we will use the complex cubic-quintic Ginzburg-Landau Equation (CCQGLE), which for particular parameters can be simplified to a fifth order nonlinear Schrodinger equation.

**Engineering**

Title: Development of ERAU Minion Autonomous Surface Vehicle

Author Information: Eric DeMaso and Will Shaler

Faculty Mentor Name: Eric Coyle

Embry-Riddle Aeronautical University has been selected as one of three schools to represent the United States in the inaugural Maritime RobotX Challenge. This challenge requires teams to develop a fully-autonomous surface vehicle using a 16-foot high-performance Wave Adaptive Modular Vessel. The platform must accomplish multiple complex tasks autonomously, including buoy channel navigation, debris avoidance, docking, target identification and sonar localization. The system architecture consists of software nodes running in parallel to produce the complex behaviors required by the RobotX Challenge. These nodes include state estimation, health monitoring, object classification, map creation and trajectory planning. This method offers a robust and dynamic navigation solution capable of being applied to autonomous systems operating in multiple domains and not just those limited to maritime operations. This presentation discusses the development of the ERAU RobotX platform with a focus on addressing the challenges of autonomy, navigation, and propulsion in a maritime environment.

**Business**

Title: San Diego County Regional Airport Authority: Strategic Analysis and Recommendations

Author Information: Eric Harmatz, Joseph Ancona, Joshua Begin, and Rogelio Soto

Faculty Mentor Name: Dr. Janet Tinoco

This project entails an in-depth analysis and inventory of the current strategic issues facing the San Diego County Regional Airport Authority (SDCRAA), the owner/operator of the nation's 28th largest airport, serving 8.6 million passengers in 2012. Analytical frameworks used include Porter's Five Forces, SWOT/TOWS, as well as an analysis of various standard Airport Benchmarking metrics. As a landlocked facility on 661 acres, the airport faces a disadvantage compared to its peers of comparable size in available space to expand capacity to meet future demand. Due to the site's geographic location – in the middle of the downtown area in the nation's 18th largest metropolitan area, the airport faces various political, economic, social, technological, and environmental issues that need to be addressed for long term sustainability. This analysis provides recommendations based off of identifiable future travel trends to ensure SDCRAA's long term success in meeting the transportation needs of the region.

**Humanities**

Title: Journalism and Social Media

Author Information: Erin K. Washington

Faculty Mentor Name: Steve Master

This paper examines the values and dangers of the use of Twitter for modern day journalists in gathering and reporting the news. As my research will suggest, Twitter has been a highly useful tool for journalists in gathering and disseminating the news. As opposed to the traditional news cycles, journalists use Twitter to disseminate stories in real time, often as they are happening. Twitter is an effective news gathering tool as it allows them to communicate instantly with sources, or witnesses to news events. However, this same pull toward expediency has drawbacks, particularly in the area of accuracy, the most vital component of a journalist's credibility. The "rush to Tweet" pressures journalists to the extent that, in some cases, sources are not appropriately vetted, resulting in inaccurate reporting. However, my research suggests that journalists will continue to use Twitter as it serves multiple purposes for both journalists and their audience.

**Effects of Video Games as Stress Reliever Between College Majors**

Video games have been a hotly debated issue in psychology since their introduction as a mainstream recreational activity. Questions have arisen as to whether they are detrimental or beneficial to the human psyche. In exploring the research, we found that there can be a positive relationship between video games, stress relief, and emotional effect. For example, studies range in topics from the effects of video gameplay and stress on military veterans (Carras et al., 2018), to recover from stressful situations in day-to-day activities (Reinecke, 2009). Our study examined a previously unexplored relationship between academic major and video games used as a stress reliever. Our results showed that 52% of college students found video games as an effective stress reliever, however, only 19% of college students believed video games was a beneficial use of time. In addition, undeclared students reported the highest video game usage whereas the students majoring in business reported the lowest video games usage.

**Communication Through the Arts for People Living with Dementia**

With the number of older adults rising in the United States, the number of people living with dementia is rising as well. As dementia progresses, many clients experience reduced communication and language skills, among other symptoms. As a result of this loss of function, loved ones, friends, caregivers, and others face challenges when trying to communicate with people with dementia, and innovative strategies are needed. This poster will discuss current communication strategies used with people with Alzheimer’s or dementia, with a particular focus on art as a communication strategy. Communication strategies identified will include those used between people with Alzheimer’s or dementia and either the families of people with Alzheimer’s or dementia or their assisting social workers. Further discussion will include best practices for the use of arts communication.