

Giles T. Brown Student Project and Research Symposium



February 24, 2017

at the Doyle Arts Pavilion

Thank you

The Orange Coast College Student Project and Research Symposium provides an opportunity for OCC students to present their original research or creative activities in a professional forum. In providing this venue, the Symposium supports the mission of the College to "promote student learning and development by fostering a respectful, supportive and participatory campus climate of student engagement and academic inquiry."

The Symposium has sessions offering three district formats: Poster Sessions, Oral Presentations, and special project presentations or exhibitions of work. Awards for outstanding accomplishment in each presentation format will be offered, and all accepted abstracts will be published on the Orange Coast College Student Project and Research Symposium Website:

<http://orangecoastcollege.edu/academics/research-symposium/Pages/default.aspx>

Funding for this event was graciously provided by the Office of the Vice President of Instruction at Orange Coast College and the Giles T. Brown Foundation. In addition, we would like to thank Orange Coast College President Dennis Harkins for providing leadership as well as a campus climate that works to foster the type of innovation that will be presented today.

Deans Tara Giblin and Michael Sutliff conceived of this wonderful opportunity for our students in early 2016, and we thank them for guiding us all through to see it to fruition.

Hannah Kang and Rachel Ridnor took the lead on many of the logistics for today.

Other faculty members involved in the planning of the research symposium included Kelli Elliott, Gregory Russell, Jerome Fang, Erik Bender, Amy Hellman, Anna Hanlon, Guido Sendowsky, and Laura Behr.

Finally, we extend a huge thank you to the students and faculty sponsors who made today possible! Congratulations on your work and we appreciate you sharing it with the campus community.

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Doyle Arts Pavilion

9:45-10:30am

Continental breakfast
Set up of posters and other works

10:30-11:30am

Posters and other works open for viewing with
presenters available for questions

Posters

Erin Barney, *Achieving the Properly Exposed Image*
Faculty sponsor: Loren Sachs

Sabrina de Santiago, *The Effect of Music on Perception*
Faculty sponsor: Masako Ura

Jacqueline Olvera, *Overlap between blue whale location patterns
and busy shipping lanes may increase risk of ship strikes off the
coast of Southern California*
Faculty sponsor: Kelli Elliott

Katherine Conway, *The Cause and Effect Relationship Between
Exercise and Depression in Community College Students*
Faculty sponsor: Dr. Hannah Kang

Jessica Vieira *Utilizing Priming to Determine Cultural Effects on
Narcissism*
Faculty sponsor: Dr. Hannah Kang

Freddy Juarez *OCC Parking*;
Faculty sponsor: Michael Paulding

John Farah, *Greyscale Electrostatic Potential Maps*
Faculty sponsor: Dr. Donald Perry

Other Works

Long Truong, Nguyen Hoang, OCC Library Android App
Faculty sponsor: Michael Paulding

Roman Barron, Kevin Do, Danny Pham, Yarr Campus
Faculty sponsor: Michael Paulding

Travis Morrissey, Ian Schenck, Keegan Frederick; OCC Student Success Center App
Faculty sponsor: Michael Paulding

David Blanco, Re-Engineered: Internal Combustion Engine
Faculty sponsor: Syed Hussain

Danyelle Potter, From the Rubble;
Faculty sponsor: Micheal Lannom

Grant Byers, Donald Novasky, Wonseop Lee, OCC Parent Portal Abstract
Faculty sponsor: Michael Paulding

Horticulture Gardens

Lunch 11:45-12:30

Students, faculty sponsors and guests welcome

International Center

1:00-3:15pm

Oral Presentations

Concurrent sessions. Each oral presentation has a 20-minute time allotment; 15 minutes for the presentation, and 5 for questions

Session 1: 1:00- 2:00 pm

1 - 1 *International Center Room 1*

Thu Nam Hong *How urban runoff affects water quality along Newport Bay watershed*
Faculty sponsor: Kelli Elliott

Hannah Rodnunsky *Coral Growth Using Electrical Current*
Faculty sponsor: Robert Ellis

Rebecca L Higginbotham *A Study of Decomposition in Water*
Faculty sponsor: Kelli Elliott

1 - 2 *International Center Room 2*

Diana Pineda and Emily Hernandez *Quest for the best therapy for stress relief*
Faculty sponsor: Dr. Gregory Russell

Johnny Duong *The Biofeedback Effects of Yoga and Meditation*
Faculty sponsor: Dr. Gregory Russell

Aimee Pape *Hormone Therapy in Women and Olfaction Effects*
Faculty sponsor: Dr. Amy Hellman

Session 2: 2:15-3:15pm

2 – 1 International Center Room 1

Alison Butz *Destruction of New Workers Through Media: Negative Socioeconomic Effects of Media Narratives on Generations Y and Z*
Faculty sponsor: Benjamin Lohman

Jessica Feldmann *Females in Botox Advertisements*
Faculty sponsor: Rachel Ridnor

Hipolito Ruiz, Chris Le, Chris Wright, Adolfo Garduno, Nick Alonge *Social Media Effects on Social Relationships*
Faculty sponsor: Dr. Lien Pham

Sebastian Valadez *Fermentation and The Microbiome*
Faculty sponsor: Richard Pittman

2 – 2 International Center Room 2

Bijan Fazeli, Duy Nguyen, Alex Ho *The OCC Community Service Application*
Faculty sponsor: Dr. Michael Paulding

Abigail Staggemeier, Carolyn Brandt *Secret Heroes of the Civil War*
Faculty sponsor: Brent Rudmann

Ryan Banh *Affordable Housing and Housing Affordability in Orange County*
Faculty sponsor: Chris Quinn

Doyle Arts Pavilion

3:45

Presentation of awards

Abstracts (listed alphabetically by student)

Ryan Banh. *Affordable Housing and Housing Affordability in Orange County.* Mainstream media persists as one of the most egregious perpetrators of anti-Millennial generation narratives. Across traditional and modern platforms, journalists and other media personalities espouse a condescending tone toward persons born between the years of 1976-2001. Newspapers, online magazines, and television engage in infantile and profanely insulting language towards the millennial generation regarding their financial and workplace habits (Melchior). Showing contempt for Millennial labor, exhibits media blindness to actual public perception, creating a destructive employment landscape for Americans.

Current media depicts the majority social opinion of the millennial generation as 'lazy' and 'stupid.' A 2014 Reason/Rupe telephone poll reveals 55% of Americans surveyed describe millennials as 'responsible' and 'hard-working.' Mass-media communicates a conflicting message to the public, about millennials, who are coming of age as the dominant workforce with 81.0% of ages 25-34 and 81.2% of 35-44 employed in the job market (United States Bureau of Labor Statistics). A 2014 online survey conducted by human resource consultants David Maxfield and Joseph Grenny reveals that one-third of workers of all generations spend five or more hours per week occupied by generational conflict. Division between the narrative and public perception positions the media as conflict creators in the narrative. Positive intergenerational perceptions are vital to workplace productivity.

Counter to economic success, firms lose on the potential of new workers when a negative perception of millennial generational attitudes becomes routinely accepted. Demoning the millennial generation does not best serve traditional markets.

Works Cited

Barthel, Michael and Gottfried, Jeffrey. "How Millennials' Political News Habits Differ from Those of Gen Xers and Baby Boomers." PewResearchCenter. The Pew Charitable Trusts, 01 June 2015, pewresearch.org/fact-tank/2015/06/01/political-news-habits-by-generation/.

United States Bureau of Labor Statistics. "Employment status of the civilian noninstitutional population by age, sex, and race." Current Population Survey Annual Averages 2015. United States

Department of Labor, 24 March 2016, bls.gov/cps/tables.htm/.

Maxfield, David and Grenny Joseph. "The Great Generational Divide." *Strategic HR Review*, vol. 14, no. 4, 2015, emeraldinsight.com/doi/full/10.1108/SHR-05-2015-0039/.

Melchior, Jillian. "Hey Boomers – Look in the Mirror Before You Bash Millennials." *New York Post*, NYP Holdings INC., 04 June 2015, nypost.com/2015/06/04/hey-boomers-look-in-the-mirror-before-you-bash-millennials/.

Reason/Rupe. "August 2014 Topline Results." Reason-Rupe Public Opinion Survey, Reason Foundation, 14 August 2014, reason.com/poll/2014/08/19/august-2014-reason-rupe-national-survey/.

Erin Barney. *Achieving the Properly Exposed Image.* I am explaining how to get a properly exposed x-ray.

David Blanco. *Re-Engineered: Internal Combustion Engine.* Today's internal combustion engines utilize fuel injection to deliver fuel to the ignition chambers in liquid state; however, gasoline in liquid state is not fully burned which ultimately decreases fuel efficiency and increases hazardous emissions. If internal combustion engines could be engineered to run on high pressurized gasoline gas then engines could double their energy efficiency as shown by the deceased and unknown mechanic, Tom Ogle in the 1970s. By showing the current energy consumption of today's cars in physics terms and emphasizing how much energy could be obtained by an specific amount of gasoline, I will demonstrate how much internal combustion engines can improve through a different fuel delivery system such as fuel vaporization.

Alison Buti. *Destruction of New Workers Through Media: Negative Socioeconomic Effects of Media Narratives on Generations Y and Z.* Mainstream media persists as one of the most egregious perpetrators of anti-Millennial generation narratives. Across traditional and modern platforms, journalists and other media personalities espouse a condescending tone toward persons born between the years of 1976-2001. Newspapers, online magazines, and television engage in infantile and profanely insulting language towards the millennial generation regarding their financial and workplace habits (Melchior). Showing contempt for Millennial labor, exhibits media blindness to actual public perception, creating a destructive employment landscape for Americans.

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Counter to economic success, firms lose on the potential of new workers when a negative perception of millennial generational attitudes becomes routinely accepted. Demonizing the millennial generation does not best serve traditional markets.

Works Cited

Barthel, Michael and Gottfried, Jeffrey. "How Millennials' Political News Habits Differ from Those of Gen Xers and Baby Boomers." *PewResearchCenter.* The Pew Charitable Trusts, 01 June 2015, pewresearch.org/fact-tank/2015/06/01/political-news-habits-by-generation/.

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Grant Byers, Donald Novasky, Wenseop Lee. *OCC Parent Portal Abstract.* This is a group project that (in part with Mr. Paulding) will preview our group-made Android applications.

Katherine Conway. *The Cause and Effect Relationship Between Exercise and Depression in Community College Students.* An estimated 120 million people are affected by depression worldwide and researchers have begun to examine the different types of exercise in reducing depressive symptoms (World Health Organization, 2001). Extensive research suggests positive benefits of exercise on depression. For example, depressed adults who took part in an aerobic exercise treatment reported lower symptoms of depression post treatment (Danielsson, Kihlborn and Rosberg, 2016). While most studies have examined the effectiveness of aerobic exercise on depression, researchers have excluded anaerobic exercise, like yoga to which has not been examined. The current study used a within subjects design with two different types of exercise, yoga and Zumba, on depression. Twenty students in a Research Methods class at Orange Coast College engaged in both types of exercise and their depressive symptoms were self measured using the Beck's Depression Inventory. Findings indicate that participating in Zumba had significantly lower depressive symptoms compared to yoga, $t(19)=2.90, p=.05$. Health care providers may want to consider including aerobic exercise, like Zumba, in their programs. The research provided will help millions around the world suffering from depression.

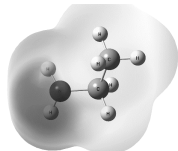
Sabrina de Santiago. *The Effect of Music on Perception.* A large body of research suggested that music can affect listeners' perceptions (e.g., Logeswaran, & Joydeep, 2009; Suess, Rabovsky, & Rahman, 2014; Vuoskoski & Eerola, 2011). Particularly, the current study examined whether the tones of music would influence listeners' perceptions using both quantitative and qualitative approaches. Twenty three students who enrolled in one psychology class at Orange Coast College were randomly assigned to one of two conditions: listening to a song with a dark tone or a song with an upbeat tone. They were asked to observe an emotionally neutral image while listening to the music, and then list adjectives describing the image. Participants were also asked to write a paragraph describing what was happening in the image. Through the process of independent t-tests, comparisons were drawn between the two groups from the amount of positive and negative adjectives. The results indicated that with negative adjectives, there was no significant difference between the participants in the dark tone condition and those in the upbeat tone condition, $t(20)=-1.08, p > .05$. However, the participants in

the upbeat tone condition reported a higher number of positive adjectives than those in the dark tone condition, $t(20) = 3.44, p < .05$. Interestingly, the qualitative analysis suggested that the participants in both conditions appeared to describe the image negatively (i.e., abandonment anxiety or interpersonal conflicts). The present study yielded an additional piece of evidence supporting previous studies on the effect of music on listeners' perceptions. However, when comparing the results from quantitative and qualitative analyses, mixed results were discovered. This suggests that future research should consider multidimensional approaches using different methodologies and examine this phenomenon in a comprehensive manner.

Johnny Duong. *The Biofeedback Effects of Yoga and Meditation.* Often spouted in California culture is how Yoga helps one relax through movement, or how monks can meditate themselves to a barely audible heartbeat through sitting still and focusing on a single thought. Similarly, relaxation can be taught through Biofeedback training, which trains an individual to stimulate the parasympathetic branch of the autonomic nervous system to lower the heart rate (HR). While at the same time, suppress the sympathetic branch, which is a major contributor to stress and stress-related disease. This study aimed to determine if meditation or yoga also acts as a form of biofeedback training. For this experiment I used 24 OCC students (8 male, 16 female) ranging from 19- to 39-years-old who self-identified their practice type as yoga practitioners, meditators, or neither. I measured their HR and electrodermal activity—EDA, which measures sympathetic nervous system activity via sweat gland activity using a finger transducer—while they went through self-induced relaxation and arousal (imagining stressful or angering thoughts). Next, I calculated their average HR and EDA during both phases as well as their delta HR—the difference between their relaxation and arousal HR measurements. There was no identifiable pattern to the results (i.e. neither meditation nor yoga reliably drove any variable in any one direction) and an ANOVA showed that practice type did not significantly play a role in determining an individual's ability to practice biofeedback ($p > 0.05$ for all variables). These data show that perhaps yoga and meditation confer health benefits other than the ability to control heart rate, and that a person's past practices may not play as large a role as previously thought when designing a biofeedback training program.

John Farah. *Greyscale Electrostatic Potential Maps.* The Heisenberg Uncertainty Principle states that the act of observing something changes it. Hence, in a molecule we can never know exactly where to find electrons. One can only determine the

probability of finding electron density in a certain region of a molecule. Normally, color maps are used where red represents a high probability of finding electrons, yellow and green signify a medium likelihood of finding electrons, and blue suggest low electron density. Such maps can be difficult for new students in chemistry to visualize. We believe that with greyscale maps, it easier to envision where to find electrons. Take the electrostatic potential map (EPM) below. Where are electrons likely to be found?



In this simple molecule intuition would suggest that the darker regions of the EPM represent a higher probability of finding electrons. We will show that greyscale diagrams are not just easier to visualize, but can be used to predict trends in chemistry such as polarity and chemical reactivity.

Bijan Fazeli, Duy Nguyen, Alex Ho. *The OCC Community Service Application.* The project is showcasing an app where students can rent/sell books from other students.

Jessica Feldmann. *Plastic Advertising: Females in Botox Advertisements.* Aesthetics are a controversial and dynamic part of American culture. However, millions of Americans pay a hefty price to cosmetic industries without realizing how or why they bought into it. The purpose of this research is to evaluate how women are used in Botox advertisements on the internet. Furthermore, I address why these advertisements are so effective. The research was done using a content analysis of endorsed or trademarked Botox advertisement images. The findings suggest that age and race are prominent factors in Botox advertisements. This intersectionality can be used by companies to persuade someone because youth as well as racial appearance can affect someone's life in the means of power, status, and attractiveness.

Gorune Geloian. *The Effects of Seed Density on Plant Growth.* To find how the density in terms of number of seeds in a plot affects plant growth and time it take to fully come to fruition. In

addition, to discover how seeds themselves have evolved to accommodate a higher density than before.

Olivia Hanson. To prove how athletics programs can disproportionately disadvantage minority students.

Rebecca L Higginbotham. *A Study of Decomposition in Water.* This research project was conducted to gain a better understanding of the decomposition process of a body submerged in water; to determine if water type or quality has an effect on the breakdown of tissues, thus extending the post-mortem timeline beyond what has been documented in above-ground, open-air case studies; the general rule of thumb of "one week in open air equals two weeks in water" is the basic parameter. This study involved submerging small dead adult rats in various water types. Observations of the rat's physical changes and measured changes of the water's dissolved oxygen, temperature, salinity and pH were recorded daily over a period of two weeks. An open-air control tank was set up to establish a base timeline for comparison of all aquatic data sets. The statistical analysis shows no correlation between data sets. However, there is a distinct trend in the time it takes for the dissolved oxygen to decline, as well as, the rat's physical changes that creates a consistent timeline and visual depiction of the daily deterioration process. Results of this study indicate that the 2:1 ratio as the general rule of thumb are inaccurate since the decomposition of a body in water far exceeds the time for full decay of a body in an open air environment. The resultant information from this study serve to further the available information in the field of forensic research to strengthen the use of this data in court cases involving time of death.

Thu Nam Hong. *How urban runoff affects water quality along Newport Bay watershed.* Coliform bacteria are often present along with other human pathogens in contaminated water supplies, hence their presence indicates that the water is unsafe for human use. Rain can cause runoffs (which are highly contaminated) to overflow from our drainage system into Newport Bay, thus endangering the health of beach-goers after rain. To learn how water quality is affected by urban runoff, water from five different sites along Newport Bay watershed were collected daily and filtered through membranes that trap bacteria. These membranes were then plated onto a nutrient agar specific to Coliform bacteria. By testing the water daily, we could therefore monitor changes in microbial population to find out the effect of urban runoff on water quality along these beaches. We discovered that water within 200 yards of a storm drain has twice the level of Coliform compared to water sampled elsewhere (daily

average: 9900 Colony-forming units/ 100mL vs. 4550 CFU/100 mL elsewhere); rain caused an average 4000-fold increase of Coliform present in water; it took up to 72 hours for water quality to recover to baseline level (0 CFU/100mL); there is a correlation between water clarity and bacterial content (cloudier water has more bacteria); and water from Big Canyon carpark were most polluted by urban runoff (up to 30925 CFU/ 100mL daily average during thunderstorm). This study identified sites where water users should avoid during and after rain, the time it took for water quality to recover, and the data provided a model of bacterial dispersion along Newport Bay.

Freddy Juarez. *OCC Parking.* App for nonprofit organization.

Travis Morrissey, Ian Schenck, Keegan Frederick. *OCC Student Success Center App.* Our team will be demonstrating a mobile application we built for the Student Success Center on the Android smartphone operating system in the CS A273 Mobile Application Development course. The application aims to help students find the right tutors for their classes quickly, by being able to search for tutors based on class and availability. Currently information about tutors and the center overall are stored locally on paper. We used the Android Studio development suite software to develop the application. The source code is written in a high level object oriented programming language called Java, and the user interface is programmed in XML. The persistent database is developed using SQLite, which is a widely used and open source database engine. The design is modeled to allow for the user interface to be separate from the code that runs the application, resulting in a more versatile and maintainable program. To determine the demand for our application, we asked students in different majors if they would be interested in it, how often they would use it, and what they liked about it. A majority of the students showed interest in the application and reported that if they had it, they would use it multiple times in a semester. The features that the students liked were searching for tutors remotely and the ability to save your course list for faster searching. The application would save students time by allowing for remote searching of tutors, and providing useful information about the Student Success Center.

Benjamin Nguyen. Showcasing an android app built for a nonprofit.

Jacqueline Olvera. *Overlap between blue whale location patterns and busy shipping lanes may increase risk of ship strikes off the*

coast of Southern California. The Southern California coastline is home to two of the busiest ports in the United States, the Long Beach and Los Angeles ports causing high ship traffic. Coincidentally, these are the same feeding grounds of hundreds of baleen whales making them more susceptible to ship strikes. Of all the whale species that inhabit the Southern California coastline, the most endangered is the blue whale (*Balaenoptera musculus*). The objective of this study was to gain a better understanding of blue whale locations off the coast of Long Beach in order to determine the likelihood of injury by ships. In this study we combined our data with data from Cascadia Research Marine Mammal Sighting Database over the past five years consisting of the total number of blue whale sightings and their locations off the coast of southern California. The results showed areas that had the highest concentration of blue whale sightings overlapping the shipping lanes. Past studies resulted in the successful move of the shipping lanes in 2013, however based on our recent data; we suggest that a change in shipping lanes may once again be necessary. We propose moving the shipping lanes away from areas with the highest frequency of blue whale sightings and expanding the precautionary area to cover the coordinates of this area. Our mission through all of this is to take steps toward protecting the whales that congregate near the continental shelf.

Aimee Pape. *Hormone Therapy in Women and Olfaction Effects.* Although there are well-documented gender differences in olfaction, few studies examine the link between specific types of hormones, like estrogen, and how it is related to olfaction. The relationship between estrogen levels and sense of smell in women has been shown to be correlated. To further study the effect of estrogen on the olfactory system in women, I conducted a literature review and found significant results suggesting there is a direct relationship for two main reasons. In this review I examined what is known about olfactory functions and its relationship to estrogen in women. First, women who are treated with estrogen hormonal therapy have improved olfactory function, as studied by Caruso et al., in, Olfactometric and rhinomanometric outcomes in post-menopausal women treated with hormone therapy: a prospective study. This longitudinal study discovered that estrogen and progesterone improve neuronal plasticity and neuronal conduction time in women's olfactory system. Second, a study by Sundermann et. al. titled The effect of hormone therapy on olfactory sensitivity is dependent on apolipoprotein e genotype revealed that women treated with estrogen hormonal therapy exhibit less deterioration in their olfactory system. Estrogen in women appears to have a

neuroprotective effect on areas of the brain involved in olfaction. In addition, estrogen receptors were discovered in the olfactory epithelium, the olfactory bulb, and the entorhinal cortex, which are all areas involved in olfaction. This may suggest why estrogen is correlated to women's sense of smell. Furthermore, if estrogen improves neural connectivity, it may impact overall cognitive function and lessen the likelihood of developing Alzheimer's disease.

Diana Pineda and Emily Hernandez. *Quest for the best therapy for stress relief.* Many students are exposed to acute stress caused by exams, homework, studying, extracurricular activities, jobs, and family. This repetitive short-term stress can have negative physiological effects, ranging from disease and depression to substance abuse or even suicide. In this study, 20 students enrolled in human physiology at Orange Coast College (a rigorous and stressful class) volunteered to have their blood pressure, heart rate, and respiration rate measured before and after taking part in either aromatherapy, music therapy, or puppy therapy in an effort to understand the role of these things in the reduction of stress. The results of an ANOVA showed that neither MAP nor heart rate were significant ($p > 0.05$); respiratory rate was also not significant (ANCOVA $p = 0.086$), but gender and age were both significant covariates, with females experiencing a larger change in respiratory rate than males for all therapy types. Although the variables we measured were not affected by these therapies, our data do suggest that men and women might respond differently to different therapies, and that should be taken into account when designing stress-reduction programs.

Danyelle Potter. *From the Rubble.* The inspiration behind this sculpture was for it to be a physical representation of the incredible journey through my education in Welding Technology. I have chosen to portray myself as a Phoenix rising from a pile of discarded welded metal joints. This piece will show the progression of my welding abilities from the start of my education through my current experience level. The "rubble" will show the hours of repetition and practice that it takes to conquer each joint design using the Gas Tungsten Inert (TIG) Welding process. I chose to use Stainless Steel, as it is one of the more temperamental metals to work with and because of the beautiful colors that the metal takes on from being heated to different temperatures. The materials used to create this piece were .045", 1/16", and 3/32" round stock, 1/4" and 1/2" tube, and 16 and 20 gauge sheet. The round stock and tube was used to create the frame of the bird's body, as well as, some of the feathers. The 16ga sheet was used to create all of the different joint designs used in the "rubble" and

the 20ga sheet was used to create a different texture of feathers. I had been playing around with different ways to make feathers using stainless steel when I was presented the opportunity to work on an art piece. I dreamt up the concept that night and woke up with my head full of ideas. I sketched out the design and started to price out the materials would be needed for the project. Over the next few days I obtained the stainless steel sheet and the round stock that I would be using. After rummaging through our scrap metal container and I was able to find the 16ga sheet and tube that would be used to create the "rubble" and for the stand for the bird. Once all of the materials were collected, I started work on the base by layering the different joint designs to form a platform for the bird to ascend from. From there, the round stock was used to create the frame of the bird's body and wingspan. The wire frame then had a length of tube welded to its underside and was then attached to the "rubble". Next, I started to work on the feathers, first using the 20g sheet to cut out the basic feather shapes with varying levels of detail and then made a fixture to create feathers using the .045" filler rod. This was done by cutting them into 10" lengths and laying them side by side in the fixture. They would then be clamped down and a weld bead would be run along the edge of one side to bind them altogether, which created the "wisps" of the feather. A few of these "wisps" would be lined up with a piece of 1/16th filler rod down the center to create the "spine" of the feather. Once the feathers were finished they were then welded onto the wire frame to build up the body of the bird. This sculpture has been an amazing journey, it has allowed me to utilize the practical welding skills that I have been taught so far, but it has also shown me the ways that welders must be creative in the field. You may not always find yourself in ideal welding positions or conditions and must be capable to think quickly and adapt to your surroundings. The thing I enjoyed most of all about this project was that it inspired some of my fellow students to step out of their comfort zones and have fun with the welding that they are working on. It showed them that TIG welding, as career choice, is not limited to just manufacturing, that it can be used for artistic endeavors as well.

Hannah Rodnunsky. *Coral Growth Using Electrical Current.* The small scale artificial growth and propagation of corals is increasing in popularity. The aquarium industry, pharmaceutical researchers, and coral reef conservationists all see an economic, biomedical and ecological benefit in raising fast-growing stony coral species. Past studies have shown that low-voltage electrical currents can increase calcium carbonate precipitation rates within the corals which in turn accelerates their growth. However, when these materials oxidize, they have the potential to produce harmful

gasses that could dissolve into the water and be detrimental to other marine organisms. This project intended to reproduce the accelerated growth rates seen in previous studies in a small scale aquarium environment by testing materials that do not produce harmful gasses. Using direct electrical current generated by a solar panel, the corals were mounted to an electrically conductive panel. Initial results indicate a substantial increase in the growth rates of the corals exposed to electric current as opposed to the corals in the control environment. While in the very early stage of development, this technique may have the potential to substantially reduce the time needed to grow and propagate reef corals in an environmentally-friendly manner. Further research will be conducted to see if other types of coral, not just stony coral, respond in the same way to the electric stimulation.

Cassandra Rogers. *Ineffectiveness of the International Whaling Commission.* To inform the audience of how ineffective and harmful the current regulations are for international whaling laws.

Hipolito Ruiz, Chris Le, Nick Alonge, Chris Wright, Alan Garduno. *The link between social media use and face-to-face interactions.* The overindulgences of social media in schools and colleges raise many questions pertaining to the health of students' social relationships and mental health. In the present study, a survey of two hundred and two college students assessed the significance of social media factors on their daily social lives, as well as other indications of change in their mental health. Ongoing analysis identified students who use the Social Media App 'Instagram' spent significantly more time interacting with friends face-to-face compared to those without an account, almost twice the amount of time. Social Psychologists may need to further look into online social relationships as they continue to evolve and change, considering the data that show students who limit their use correlate with higher solitude and lower social interaction.

Abigail Staggemeier and Carolyn Brandt. *Secret Heroes of the Civil War.* Wars are not won by weapons alone. Many women throughout the American Civil War were so compelled by this idea that they took it upon themselves to make a unique and unprecedented difference. We will show how women's involvement in espionage was the backbone of intelligence collection during the Civil War. According to our findings from the Smithsonian Institute, Civil War Saga and Civil War Trust, women contributed to the cause of intelligence gathering in ways that men could not. Women like Rose Greenhow uncannily obtained information by harming soldiers and throwing elaborate parties in which she entertained military personnel. In the same manner,

Belle Boyd charmed union suitors and gleaned information they shared with her during their romantic dalliances. Elizabeth Van Lew furthered Union efforts under the guise of volunteering at military hospitals. During her time spent there, she obtained battle plans and other valuable information, which she passed on to Union generals. Her efforts were appreciated, and she was recruited to be a Union spy by General Benjamin Butler. Pauline Cushman befriended rebels while maintaining a solid alibi, and Antonia Ford assisted in the capture of a Union General. Lastly, Harriet Tubman led 300 slaves to freedom. Despite living in an era when they were not even allowed the right to vote, these women loved their country enough to jeopardize their reputations, freedom and lives. Their involvement, courage and sacrifice made more of an impact in the field of espionage than that of their male counterparts.

Long Truong, Nguyen Hoang. *OCC Library Android App.* As we know, Orange Coast College (OCC) is in the list of top 10 community colleges in California. According to www.edsmart.org, our school is the highest ranked in transfers to University of California and California State schools. To support the best to students, OCC have a website, iOS and Android apps that provide many services such as campus maps, billing, check schedule, news, etc... However, there is no such apps have features for Library activities like reserving study rooms or looking for books. Discussions with an OCC librarian have indicated support for an online application to manage library room reservations. The app also has features for reserving books online and sending notifications for new books in which catalogue the student is interested in. By doing on-campus and online surveys, we know that most students are looking for more online services. They also provide their expectations about the app such as how many steps they want to finish a specific activity. Further, our demo app, which only has room reservation activity, can be easily finished the reserving process by sample students. So with the librarian's supports, I believe that it is possible to build a mobile app that covers most of activities in our library. For more convenience, this app can combine with other apps that cover on-campus activities to become an OCC "super" app that can be used by all students. Thank you for giving us a chance to contribute our abilities and knowledge to our school's future.

Sebastian Valadez. *Fermentation and The Microbiome.* The human microbiome consists roughly around 10-100 trillion symbiotic microbial cells, mostly consisting of bacteria that reside within the human gut. Research on the human microbiome is becoming more prominent as new findings are always being

updated with how these microbial cells interact and influence the human health. With that in mind, the food industry is always finding more ways to include more of these good bacteria in fermented foods such as: Kombucha, Wine, and Sauerkraut. Research on fermented foods has shown that the bacteria within these products are showing promising results with the interaction of the bacteria in the human microbiome. My objective is to determine the conditions in which these bacteria thrive in, as well as, the various nutrients they produce as they go through the fermentation process to be able to determine how this may affect the human microbiome. My research first begins by detailing both the fermentation process, as well as, discussing the human microbiome. The process of fermentation in regards to food is a way to help preserve foods. Fermentation in regards to science is when bacteria break down simple carbohydrates into gas, acid, and ethanol. Furthermore, I'll be looking into the types of fermentable acids that form during the fermentation process of Kombucha. Research has also shown that there was a connection between the gut and brain as the bio-availability of mood-stabilizing vitamins and minerals were able to help decrease chances of depression. Overall, when it came down to fermented foods such as Kombucha, fermentation helped to increase the bioavailability of several nutrients such as B-Vitamins, magnesium, and zinc. The results showed that while these foods might contain probiotics with in them; the probiotics themselves don't survive the processing long enough to warrant any benefits. However, it is the antioxidants and prebiotics that are inside the fermented foods that give beneficial properties to the bacteria within the gut. The impact that these fermented foods as both a prebiotic and probiotic is that they are able to provide nutrients for the human microbiota to be able to increase its growth stimulation of symbiotic microbial cells within the gut.

Jessica Vieira. *Utilizing Priming to Determine Cultural Effects on Narcissism.* The collectivistic culture centers around the concern for others and how ones actions affect people while individualism centers around maintaining focus on one's self and acquiring ones needs above the thought of others (Shin, Dovidio, & Napier 2013). Research has shown that cultural orientation may have an effect on personality traits. For example, Lo, Helwig, Chen, Ohashi, and Cheng (2011) found that Westerners, who are more individualistic, put more effort in maintaining and improving their positive attributes while Easterners, who are more collectivistic, put more effort into improving their negative attributes. While most studies examined the difference between general characteristics and personality traits, specific personality traits like narcissism in relation to culture has not been explored. The

present study used a sample of 117 community college students to explore whether cultural orientation influences narcissism. Participants were randomly selected to be in either the collectivistic group or the individualistic group and were shown a video encompassing the characteristics of that particular cultural group. Afterwards each group took a modified assessment survey of the Narcissistic Personality Index-40 (NPI-40). Results indicate that the group who were primed to think individualistically scored significantly higher on narcissism than the group who were primed to think with collectivistic characteristics ($t(115) = 0.02, p < 0.05$). Narcissism is difficult to treat thus mental health providers may want to consider using priming techniques to help those afflicted.

Tia-Marie Vo. *Mothers and Their Children At Risk.* To find commonalities among different cases and studies to see which groups are most at risk.

About the donor:

Giles T. Brown and his wife Beth were founding members of the faculty at OCC and met here at the college. Giles left OCC in 1959 to become a faculty member at Cal State Fullerton and eventually became the Dean of Graduate studies.

Giles T. Brown's gift to the college funds programs and activities that benefit instruction. The Forum Theater also bears his name.

