Fall 2013 Oswald Winners

Received over 70 submissions

**Biological Sciences:**

**2nd Place:** Requel Hegge, Senior, AG Bio Technology major  
Title: *Alteration of Pituitary Genomic Expression Profiles in Cattle Grazing Endophyte-Infected Tall Fescue*  
Pituitary genomic expression profiles of steers are altered by grazing of high (E+) vs low (E-) endophyte-infected pastures. Consumption of endophyte-infected tall fescue by cattle induces a distinct set of deleterious physiological parameters collectively known as “fescue toxicosis”. This study was conducted to test the overall hypothesis that grazing E+ vs E- endophyte-infected pastures would alter pituitary genomic expression profiles in growing steers.

**1st Place:** Manasi Malik, Senior, Biology major  
Title: *Alternative Splicing of CD33 Associates with Alzheimer’s Disease Protective Polymorphism*  
Recent genome-wide association studies have identified the single nucleotide polymorphism as a modulator of Alzheimer’s disease (AD) susceptibility. In this paper, we seek to illustrate the mechanism of rs3865444 action on CD33 splicing and expression in human brain.

**Design:**

**2nd Place:** Thompson Burry, Junior, Architecture major  
Title: *tri_synthesis*  
Hanging two 36"x48" sheets / / This project was created to explore specific architectural ideas and elaborate on them rapidly with an emphasis on the formal characteristics of structure. The building explores formal and structural characteristics from several precedents throughout history in an attempt to understand the differences between these styles and the tensions between them.

**1st Place:** Brittany Holian, Junior, Interior Design major  
Title: *Flare Sunglasses*  
Flare Sunglasses redefines the retail experience. Known for name brand style and affordable price tags, what makes Flare unique is it's in-store custom sunglass design service. "myFlare" is a digital and kinesthetic experience. Customers can hand-pick their frames and lenses in the back of the store, or utilize the touch screens to build designs and virtually try them on. The myFlare software additionally provides the option to select from inventory or order that special pair from a neighboring store and customize cases and other products. Flare's new-age technology, personalization, and modern, clean atmosphere make this retail store the biggest thing to hit 5th Avenue!
**Fine Arts:**

2nd Place: **Benjamin Norton**, Senior, Topical Studies, Film, Television, Digital Media and Spanish major  
Title: "White Walls" (and "Skinner Box Mortgage")  
White Walls is a bleak look at our potentially bleak future. It is a world in which the consumer within one of us is the consumer within all of us... is the consumer within one of us, the only one of us who truly matters.

1st Place: **Roya Ramezankhani**, Senior, Art Studio major  
Title: **Exhale**  
This ongoing project explores the movement of breath and its affect on the body and state of mind. Changes in mental states are first reflected in breath and then the body. When the movement of breath is in sync with the movement of the body, we have the ability to feel at peace. I have chosen silk and images of moving figures to represent the ephemerality of breath and the movement of the mind and body.

**Humanities: Creative**

Honorable Mention: **Emily Furnish**, Senior, Vocal Music and Chemistry major  
Title: **Patio is a Fancy Word for Deck (Short Story)**  
This is a story about family eccentricities.

Honorable Mention: **Autumn Murphy**, Junior, English & History major  
Title: **Room 87**  
This story follows a granddaughter on her way to meet her grandmother for the first time. It incorporates the concepts of identity, family, loss, and hope in a concise vignette.

2nd Place: **Kathlyn Dare Fisher**, Freshman, Pre-Nursing major  
Title: **Curls Just Want to Have Fun**  
This essay creatively defines what a "curl" is. It looks at many different spiral-shaped objects in our everyday lives which are fun, whimsical, and lighthearted, and compares them to other straight-lined, controlled, more serious objects lacking the spunk of a curl. This piece ponders why when we grow up, we lose the adventurous spirit of a curl which we had as a child and conform to the rigid, lackluster life of a straight line. The piece challenges us to drop the fears and insecurities that hold us captive and transform into people who embrace life in a bold and fearless way.

1st Place: **Heather Sims**, Senior, Studio Art major  
Title: **Healing**  
Healing is a short vignette of a damaged girl escaping her father.
**Humanities: Critical Research**

**Honorable Mention:** Talia Rose Henkle, Junior, Biology major  
**Title:** *Mel Brook’s “The Producers”: A Comment on the Johnson Administration?*  
This work analyzes the possible political commentary on the Johnson Administration of the 1960's in Mel Brook's film turned broadway show, "The Producers".

**2nd Place:** Emily Furnish, Senior, Vocal Music and Chemistry major  
**Title:** *Felon Disenfranchisement: Rousseau and the U.S. Criminal Justice System*  
The political writings of Jean-Jacques Rousseau heavily influenced the founding fathers of the United States of America and helped form many of the core principles found in the Constitution. Rousseau, an advocate of the social contract theory, proposed that political authority comes into existence through transference of rights between the people that comprise the sovereign. However, what happens when a sector of the population has its right to vote taken away? Rousseau’s social contract theory is often used to support former felon disenfranchisement. Rousseau assumes that the basis for disenfranchisement has impartial universal rules that do not exclude any group in particular and that the criminal justice system is for punishment and not rehabilitation. Therefore, if the U.S. criminal justice system were to adopt more rehabilitative programs and focus less on the punitive aspect of prison, then the application of Rousseau’s theories and the basis of our Constitution and contractarianism must be reevaluated.

**1st Place:** Autumn Murphy, Junior, English & History major  
**Title:** *Operatic Interactions: Comparing Characterization Methods in Moby-Dick*  
As one of the most famous American novels of the nineteenth century, Moby-Dick has received significant attention. Its spirit and didactic intent engender the feeling of timelessness, and many contemporary thinkers have felt similarly. As a result, many adaptations re-imagine the world Melville created in 1851. One such adaptation takes the form of an opera; this essay will explain how the opera entitled Moby-Dick arose, how it addresses the novel, and how it characterizes the novel’s principal figures. Utilizing opera as a medium of dramatic expression, the essay argues that the interactions in the opera enhance the overall characterization techniques of Melville's original masterpiece.

**Physical and Engineering Sciences**

**2nd Place:** Matthew Fahrbach, Junior, Computer Science & Mathematics major  
**Title:** *Properties of Peak Set Polynomials*  
This paper is a product of the University of Washington 2013 Mathematics REU. Our objective was to count the number of permutations with a given peak set so that we could accurately and efficiently compute the probability of spikes in random sets of data that are modeled by permutations, and our techniques for enumeration involve studying the roots of the unique polynomials associated with a given peak set.

**1st Place:** Tyler Jake Flynn, Senior, Mechanical Engineering/Physics major  
**Title:** *Novel Photopatternable Polymer Micromagnets for Microfluidics and Microrobotics Applications*  
The application of microscale devices and sensors is ever increasing as the length scales observed in many research areas decreases. The contact-free nature of magnetic actuation is an attractive quality for many devices, however, the integration of magnetically responsive materials in microscale systems is currently difficult to achieve and not well examined. In this work, a novel and affordable photolithographic fabrication process for composite micromagnets is presented and characterized. Additionally, "hybrid" magnetic microstructures with controlled magnetic heterogeneity are examined and discussed.
Social Sciences

Honorable Mention: Emily VanMeter, Junior, Political Science & French major
Title: Après le Coup: The Impact of Coups D'état on Interstate Relationships
Due to the recent coup d'état in Mali and its overwhelming condemnation from the United States, France, and much of the international community, there is new interest in why states become involved and actively concerned with some coups while adamantly supporting or even ignoring others. In attempting to discover why external states are likely to signal the way they do, this paper explores potential factors such as natural resources, regime type, and level of domestic support. An external state will be more likely to become involved in another state’s internal affairs if there is a high level of potential gain from either the economy or the government, and less likely to become involved in a post-coup state if there is a high level of risk, such as high levels of disapproval voiced by the people. These “high risk” coups seem to external states likely to lead to civil war or revolution, which is more cost than potential benefit would be worth. External actors try to avoid being on the losing side of post-coup transitions within the coup state, and will choose to support either the new government or push toward reinstatement of the old regime depending on which is more likely to support the external state’s own foreign policy interests.

2nd Place: Sarah Hayden, Senior, Political Science and History Classics major
Title: Calling in the Big Guns: Desire for Military Intervention in Politics
Previous studies have explored the meaning of legitimacy, the causes of military intervention, and how these concepts relate at the extreme. However, previous research has failed to measure individual-level mechanisms that link the perception of government legitimacy to the desire for military intervention. This study argues that when the individual’s perception of government legitimacy is lower, the desire for military intervention into politics should be higher. Of the five established dimensions of legitimacy, two confirmed this expected relationship. However, three other three dimensions of legitimacy did not support this relationship. These findings are contrary to prior conceptions of the relationship between legitimacy and military involvement.

1st Place: Olivia Smith, Senior, Psychology major
Title: Earlier School Start Times as a Risk Factor for Poor School Performance
This study examines the potential implications of early school start times for standardized test scores in public schools in Kentucky. We were looking for the associations between early school start time and poorer school performance were observed primarily for elementary schools serving few students who qualify for free or reduced cost lunches. The associations controlled for teacher/student ratio, racial composition, and whether the school was in the Appalachian region.