Joseph Bozich, *The DJ and the Orchestra: Fusing DJ and Popular Music*

Faculty Advisor: Robert Hutchinson

This project focused on the technique of integrating aspects of modern electronic DJ music into the traditional, acoustic-instrument dominated symphony orchestra. In particular, it looked at the work of the current composer-in-residence with the Chicago Symphony Orchestra, Mason Bates. The resulting technical and stylistic discoveries were then integrated, by myself, into an original composition using this fusion of old and new: a Concerto for Baritone Saxophone, Orchestra, and DJ. It should be noted, however, that I omitted the actual use of turntables from the DJ setup, instead focusing more on DJs use of sampling and recalling audio files in real time. For this piece, that capacity is achieved by use of the Maschine controller from Native Instruments, as well as Ableton Live 8 software.

Joan Hua *(Re)constructing National Identity: The Case of Xiqu Culture in Taiwan*

Faculty Advisor: Monica DeHart

To most Westerners, a more familiar term for *xiqu* 戲曲 is perhaps Chinese opera, or Peking (Beijing) opera. However, Peking opera is only one of the numerous forms of “opera” in the performing traditions of Chinese-speaking societies. *Xiqu*, frequently translated as “opera,” is, in fact, very different from the opera of Western classical music in many ways; it is a traditional Chinese performing art that combines music, theater, literature, and even acrobatics. Historically, each area in China has developed its own unique *xiqu* form that is performed in the local dialect and embodies the local music and dance traditions. For this reason, a *xiqu* form is seen as a representation of the aesthetics of the certain area and the temperament and demeanor of the local people.

Taiwan, however, is unique in that multitude of *xiqu* traditions assembles on the island. The assortment of *xiqu* forms is only a miniature of the cultural composition of Taiwan, which includes that of the aboriginals, the large groups of Hans 漢人 that emigrated from across the strait from mainland China during various stages in history, and their descendants. Consequently, the identities of the inhabitants of this island are constantly being reshaped by fusions of different traditions, confrontation, conflict, and reconciliation. This process of identity construction is evident in the various *xiqu* forms in Taiwan.

Through an ethnographic study of *xiqu* traditions in Taiwan, I hoped to understand the music and art forms in immigrant society and their contribution to nation-building, search for identity, and national culture construction. My research investigates how the art of *xiqu* constitutes a mechanism of culture construction which reflects the metamorphosis of “Taiwanese identity”. I draw on my qualitative field research of *xiqu* in Taiwan this summer to provide three different frames for “Taiwanese identity” : against the Western culture, against mainland China, and within Taiwan against different cultural backgrounds. My interviews and informal conversations
with performers, *xiqu* scholars, and audience members from the capital city Taipei and its surrounding area, as well as my attendance at performances and other *xiqu* activities, demonstrated how the contrast between different *xiqu* forms and their former social connotations seem to be dwindling; what surfaces now is a collective “Taiwanese identity”. In today’s Taiwan, where a definite national status remain lacking, the people continue to orient themselves, and *xiqu* serves as an excellent vehicle in the construction of a new national narrative.

Elizabeth Kirsch  *The Gothic Unspeakable*

Project Advisor: Alison Tracy Hale

This project aimed to investigate the unspeakable and the limits of language in American Gothic literature, examining the implications of such unspeakability for the American narrative, identity, and individual. Having completed previous coursework that provided background in both American Gothic literature in general and the notion of “unspeakability” specifically, I aimed to use my understanding of the inexpressible as a baseline for a larger study, and will eventually use my summer research as the groundwork for my Honors thesis. I have defined the unspeakable as the things that defy articulation—often things so traumatic that they persistently haunt us but refuse to be identified, described, articulated, or explained. In my previous work, I observed that in Poe’s short stories and Faulkner’s *Absalom, Absalom!*, the inexpressible is manifested in an excess of language that is paradoxically insufficient to contain the meaning towards which it strives, signaling a cultural trauma that becomes the “unspeakable” for each text. In Poe’s “William Wilson,” the inexpressible appears in moments of anxiety over the uniqueness of the self, implicating a larger cultural insecurity of individual and national selfhood in a 19th century, recently independent America. In Faulkner’s novel, the grammatically insistent simultaneity of history and present time within excessively long sentences suggests a profound anxiety over the impossibility of escaping history. This anxiety would be especially troubling for a region (the South) and a nation implicated in the immorality of slavery. Both authors, then, have a characteristic use of inexpressibility that suggests the limits of semantics and the existence of something that is, for that text or author, outside of expression.

For my summer research project, then, I broadened my study to include texts from different historical periods and literary sub-genres; then, once I had a clearer understanding of the uses and effects of unspeakability, to narrow my focus and direct my project toward an increased understanding of the inexpressible—how it functions and what its broader cultural, political, or psychological implications are for individual and national identity. I focused on primary texts of different genres, decades, and styles within the scope of the Gothic in order to conduct a kind of survey of the unspeakable throughout differing texts. I read some of Edgar Allan Poe’s short stories, Truman Capote’s *In Cold Blood*, Ken Kesey’s *One Flew Over the Cuckoo’s Nest*, and Toni Morrison’s *Beloved*. As my research progressed, I realized that Poe and Morrison deal most
directly with the syntax and themes of inexpressibility, and that Capote’s and Kesey’s novels, while literary masterpieces relevant to the study of the Gothic, are outside of the primary scope of my project on the limits of language. After working closely with each work, I chose to focus on what Morrison adds to what Poe is doing in his 19th century stories.

While Poe’s texts comment on the insufficiency of language in general to articulate certain anxieties or experiences, Morrison’s novel highlights the black experience and notes the limited and biased nature of what we see as “traditional” (English) language. My project focused on Morrison’s treatment of the limits of language and the alternatives to conventional language that she offers in Beloved. I then investigated the effect and implications of the new kind of narrative Morrison creates.

My next step towards my Honors thesis will be to closely examine Absalom, Absalom! again in light of what I have seen in Beloved, looking at how Morrison seems to respond to Faulkner, the linguistic treatment of racial issues, and the importance of what lies outside the realm of the definitive.

Kelsey Mahler Reclaiming Aztlan: The Visual Rhetoric of Pre-Columbian Imagery in Chicano Murals

Faculty Advisor: Linda Williams

The goal of this project was to explore the ways in which Chicano muralists of the 1970s and 80s used pre-Columbian imagery in their work in order to express the political consciousness of the Chicano movement. The project was initially inspired by research I did in a Mexican-Mesoamerican Art course, specifically investigating Emilio Aguayo’s mural, “Somos Aztlán”, located on the University of Washington campus. I was intrigued by the concept of “Aztlán”, the mythical homeland of the Aztecs, and its integral role in defining the Chicano identity. For the expanded project, I decided to contextualize this idea by examining other imagery that indicated the tie between Chicanas/os and their indigenous ancestors. In addition to the specific images used, I also explored the implications of the mural as a medium, as I found that it had specific characteristics, connotations and historical precedents that made it a natural choice for these artists.

Having already seen the Chicano murals in Seattle that I would include in my study, I began my research by traveling to southern California to observe the remainder of the murals I wanted to include. These were all located in Los Angeles or in San Diego’s Chicano Park. It was important to me to view the murals in person because one of the characteristics of muralism is its site-specificity, as it often seeks to interact with and transform its environment. This also gave me the opportunity to see how the murals related to one another, as many were located in close proximity to other murals, particularly in the housing complexes of Ramona Gardens and Estrada
Courts, as well as Chicano Park. After observing and documenting these murals, I returned to Tacoma, where I began researching the murals themselves, the muralist movement, and the Chicano movement as a whole, in order to gain insight into the use of Indigenist imagery. I found that the artists’ use of such imagery, rather than being a simple appropriation based on aesthetic appreciation of the culture of their ancestors, formed a coded visual language that was used to express the political and cultural consciousness of the movement. The images functioned in specific ways, affirming their belonging to the American continent (contesting their categorization as an immigrant population) and differentiating themselves from dominant Anglo culture.

**Westrey Page** *Art Museums in the Digital Revolution: Considerations of Technology’s influence on Aesthetic Appreciation*

Faculty Advisor: Kent Hooper

Walter Benjamin’s theory of the original artwork’s “aura” originated in the 1930’s, yet has persisted as a highly influential and frequently discussed philosophical concept within Media Studies. The “aura,” in Benjamin’s view, is a property of an original artwork inherently elitist in its sheer tie to tradition, authority, and its limitation within time and space. This essence is depleted as digital reproductions disperse copies to wider audiences, of more diverse backgrounds and socio-economic statuses. As our society further entrenches itself in Web 2.0 technologies, further replacing unmediated contact with perception of alternating internet codes, it seems important to speculate how recent online museum catalogues or websites like the GoogleArtProject might influence the “aura” (or what is left of it) within the original. A large portion of this project therefore studied writings of Walter Benjamin, his contemporary Theodor Adorno, and modern commentators on such German philosophers of the mid twentieth century.

Another large component of summer research, however, entailed investigating empirically the aesthetic appreciation of visitors within the Tacoma Art Museum to original art pieces in the gallery after being exposed to digital reproductions. This took shape in a psychological experiment with two experimental conditions and one control group: two groups viewing a PowerPoint slideshow before entering the exhibit to assess original artworks and one group walking straight into the exhibit to answer the same questions assessing appreciation. Although the experiment failed to produce statistically significant results, my data was not surprising. Aside from potential explanations such as participants needing previous exposure under different circumstances, or needing to view a more varied sample of artworks, the proposed model for the aesthetic emotion is highly complex, with many streams of various biases and uncontrollable variables feeding into it. The complexity of the aesthetic emotion is why there are relatively few studies attempting to examine it.
The results of this psychological experiment are taken alongside philosophical considerations of “aura” to assess how aesthetic engagement within the art museum is changing with the adoption of new technology. Thus, not only is this research attempting to identify the status of “aura,” or the potential differences web technology is creating in the aesthetic appreciation of visitors in museums, but this appraisal also will be contextualized within the trajectory of the museum field itself as an institution that enacts, as Carol Duncan argues, a “civilizing ritual.” On this broad level, it is questioned whether modern art museums, employing democratizing technologies, enact ritual in the same sense.

Daniel Parecki  
*Experiences with the Indian Health Care System*

Faculty Advisor-Pierre Ly

What characterizes the Indian health care system and what do Indians experience when they use the system? These two questions framed my adventure this summer to India. After doing several weeks of background research and preparations back home, I took a non-stop flight from Newark to New Delhi. After traveling in India for a week to get the feel of the place, I settled down in Dharamsala and began my primary research. It took some time to make contacts, but I made friends with a young shoe repairman, and he was my “key informant” as anthropologists would call him. This young man showed me to the local hospital and took me down to his village where he arranged interviews for me with his family and neighbors. I had several conversations with a couple of doctors who worked for the Indian military. I also visited a medical college where a medical student showed me around and answered my questions. In all, I gained an insider’s perspective on the Indian health care system both from the patients’ point of view and from the point of view of doctors.

Along with gaining valuable travel experience, I learned three main things from this summer. First, research takes investigating beyond face value. The first health worker I spoke to told me that the government system is entirely free for patients. Later, I learned that although a doctor’s visit is free, patients have to pay for medicine and surgical materials. Second, the infrastructure of the health care system, while strong in comparison to other sectors, still lacks some essentials. Medical equipment needed in hospitals is extremely hard to come by. Third, there is a disconnect between patients and doctors. Doctors typically come from more affluent homes, and do not fully understand the needs of India’s poorest. Patients sometimes fear hospitals and doctors because they come from a lower social class. India as a whole is making substantial improvements in health care and health outcomes, but the infrastructure still lags far behind the west. India needs more doctors, and more money devoted to the health system if additional advances are going to be made.

Lukas Perry  
*From Modality to Tonality: The Reformulation of Harmony and Structure in Seventeenth-Century Music*
The bulk of Western art music rests on “common practice tonality.” In the most general sense, tonality is the organization of music around a specific pitch or tone. More specifically, common practice tonality, prominent from the eighteenth century through the early twentieth century, achieves this organization through the hierarchical structuring of diatonic triads—three note chords built from the major or minor scales—towards the central pitch. The syntax of common practice tonality creates the potential for expansive musical works, with almost guaranteed gratification for the listener through a harmonic interplay between tension and resolution. Bach fugues, Haydn symphonies, Chopin ballades, and Wagner operas all, in one way or another, utilize the tonal system.

By the early eighteenth century, composers were consistently working in the tonal idiom and had for the most part phased out the older system of the modes. The modal system arose between the eighth and ninth centuries to organize the corpus of liturgical chant in the Roman Catholic Church. Melodic in orientation, modality scaffolded the vocal art music of the Middle Ages and Renaissance.

The seventeenth century, a period seen by some historians as an elusive transition between the modal and tonal systems, stands as the focus of my research. I seek to clarify how and when the monumental transfer between modality and tonality occurred. I first examine crucial differences between modality and tonality—mainly the melodic basis of the modes versus the harmonic basis of the tonal major and minor scales. Second, I trace music theorists’ increasing acknowledgement of tonality and assess the implications of figured bass practice, a form of improvised chordal accompaniment, on developing a standardized tonal vocabulary in performers and composers. Third and finally, an analysis of music highlights sixteenth-century tonal seeds, shows how Claudio Monteverdi (1567-1643) created powerful, nearly tonal structures in his operas, and reaffirms a widely held view that Arcangelo Corelli (1653-1713) originated a consistent and unequivocal tonal language. My goal is to have crafted a study that does justice both to the breadth and specificity required of this topic and serves either as an extended study for a music survey course or as a springboard for further focused research.

Melanie Reiff  
The Power to Resist: A Study of Dissidence Movements in Eastern Europe

Faculty Advisor: Alisa Kessel
For my Summer Research project, I examined the possibility of resistance to the totalitarian regimes of Eastern Europe through analyzing the theories of Hannah Arendt and Vaclav Havel and using Adam Michnik’s activism as an example of possible resistance. I found that Arendt and Havel, while both discussing totalitarian regimes, have fundamentally different conceptions of totalitarianism. Because of this, their perceptions of the ability to resist the regime are drastically different. Arendt views a single leader as a central figure in a totalitarian regime, as seen in the regimes of Adolf Hitler and Joseph Stalin. This leader arbitrarily determines the laws
of the government, making it difficult for others to understand his program or resist his actions. The ideology that is the focus of the regime is based on the Leader’s whims and desires, making everyone else vulnerable to his actions. Resistance is limited because it is difficult to predict the ways in which a leader will act and the laws that will be made. Havel, on the other hand, describes a totalitarian regime as one which is governed by a group of “faceless bureaucrats” who run the regime on the basis of an entrenched ideology. This ideology is what dictates the course and action of the government. According to Havel, everyone, including those in power, are controlled by the ideology. This embedded ideology makes resistance possible because one can effectively predict ways in which to react to the government’s control. As a successful activist in Poland, Adam Michnik is a prime example of someone who resisted the totalitarian government. Michnik knew the consequences for his actions, yet because he knew how to challenge the government and the prevailing ideology, he was successful in helping to lead a movement to challenge the totalitarian regime.

My research process this summer consisted of reading texts from the three primary thinkers of my project as well as researching background historical information. Synthesizing these sources, I outlined and wrote a paper using the research I found. I spent most days researching taking notes and organizing those notes into a cohesive structure from which to write a paper. I found the process to be both exciting and challenging. The isolating nature of individual research was challenging because I did not have anyone to directly bounce ideas off of. However, the research I conducted was fascinating. I learned a lot about my subject and feel as though I have put together a paper which demonstrates my interest in the subject. I am so glad that I was afforded the opportunity to conduct this research project.

Peter Russell  The Tunisian Push for Democracy
Faculty Advisor: Patrick O’Neil
What I found in Tunis was a country that was constantly shifting, a society in flux. A revolution, an economic crisis, and an extensive political reform process had thrown the country into a state of change and uncertainty. It was fascinating. Unfortunately for the academic, however, it did not present a clear academic puzzle for study. Elections had not yet occurred, and even major political and economic actors were still attempting to puzzle out the country’s path toward political/democratic change. That being said, the political climate in Tunisia offered a unique opportunity to document and analyze the real time events and motivations of the Tunisian people as they work toward a democratic Tunisia.

I began my work with an attempt to parse out the relevant actors in Tunisia's post-revolutionary political arena. Drawing on previous democracy literature, I looked to civil society, political parties, government organizations, and popular protests as a means to measure the state of “democracy” in the Tunisian transition. Each of these sectors were active throughout the summer, with thousands of new civil society organizations created, over a hundred political
parties registered, and numerous anti-government demonstrations in multiple cities around the country. Fortunately for me, the general political hubbub was a new experience for most Tunisians, and most of the “heavy-hitting” researchers had not yet arrived. As a result, I found that Tunisians were eager to explain their revolution to me, and I was granted interviews with a number of important political actors who I had not expected to have access to. By using those contacts and others I felt that I was able to get a clear picture of post-revolutionary Tunisia.

I found that Tunisia was still mired in the paradigm of their previous political system. Of course, they had ousted Ben Ali and his ruling party, but much of the political focus seemed to remain in the past, rather than looking toward the future. Any political actor was first judged on his/her pre-revolutionary track record, rather than post-revolutionary actions. While this attitude was justified to an extent, it played an important role in shifting the debate of the post-revolutionary Tunisia, as well as the decisions of political actors that were used to the “old” system of politics. Previous opposition groups remained staunchly oppositional, fighting each new policy tooth and nail. Furthermore, the age-old debate over the place of Islam in the new government raged on. In fact, the secularists have used much of the same rhetoric as the Ben Ali regime in response to increasing Islamist related violence, and Islamist parties continue to cast themselves as victims of an unjust political system. As a result, the political debate in Tunisia has shifted away from pressing issues such as economic reform and anti-corruption law, and the political process has effectively ground to a halt amid the political name-calling and infighting. Unlike many of the more successful revolutions in Eastern Europe, the Tunisian revolution currently lacks cohesive purpose and direction, which has fractured the transition process and sacrificed a significant amount of legitimacy in the eyes of the population.

That is not to say that there is no hope. What I also saw in Tunisia was a significant portion of the population that was committed to democratic change, even though they did not always know how to go about promoting that change. Of course there were pessimists, but if a large number remains committed to the cause, then they may be able to provide a solid base for democratic reform, preventing authoritarian backsliding and promoting improvement. My experience this summer has led me to believe that Tunisia’s toughest challenges lie ahead, and that years and years of stagnant, ineffective governance is a real possibility for the Tunisian people. However, I also saw a fair amount of hope in the Tunisian people, as well as commitment to change, which is at least a beginning.

Jessica Spevak  *The Problems of Treason and Tyranny: The Effect of the Gunpowder Plot on Artistic Expression*

**Faculty Advisor: Denise Despres**

Most people today probably recognize the term “Gunpowder Plot”. They may know it was some sort of assassination plot against the King of England; they might also have heard that there are
bonfires in England every November the 5\textsuperscript{th}. They may have seen the movie V for Vendetta and have probably seen someone wearing a Guy Fawkes mask on Halloween. However, many don’t know how the Plot was perceived in the years immediately following the failed 1605 attempt to blow up Parliament building with King James I inside. How was the Plot perceived by the English people compared to how we perceive it today? Did the propaganda put out by the Crown—poems, plays, and brochures—work effectively to completely unify national consciousness against the Catholic religion? How did creative works of the time—plays, poems and carvings—reflect an anxiety with the idea of one unified “nation”?

In the course of my summer research I have attempted to delve into the extraordinarily complicated nature of English national identity following the most infamous assassination plot in English history. Through the use of Arizona State University’s extensive library of Early Modern texts, I hope to have shed light on how three masters of the creative arts—Claus Nicholaes Visscher, William Shakespeare, and John Donne—reflected in their various pictures, plays, and sermons their anxiety with the ability of the Crown to create one nation united against Catholicism.

More than anything else, my summer research was an attempt to search beyond the myth of the Gunpowder Plot that we know today and to acquaint myself with the mentalities of people who were living during this most tumultuous period in English history.

\textbf{Olivia Weitz} \textit{The Impacts of Individualism on Women’s Literacy}

\textbf{Faculty Advisor: Julie Nelson Christoph}

In literacy studies Tanzania is oftentimes studied and admired for the dramatic success of its adult literacy campaigns during the 1970’s up until 1985. During this period Tanzania went from an adult literacy rate of 25\% in 1971 to became one of the most literate African nations in 1985 with literacy rates at 85\% (Nyerere 1978). Despite the initial success of the literacy campaigns literacy rates have not maintained, but rather the literacy rates among Tanzanian women and men have dropped in the past couple of decades and continue to decline today. My research project entitled \textit{The Impacts of Individualism on Women’s Literacy} argues that one of the reasons literacy rates among Tanzanian women are declining is due to the excessive individualism rooting in liberal development rhetoric and incorporated in literacy campaigns endorsed by the UN and the Revolutionary Government of Zanzibar. More specifically my paper challenges the concept that the best way to lead to larger scale processes of socioeconomic development is to empower individuals with literacy skills that lead individuals to become authors of their own learning, developers of their own knowledge and partners in dialogue about situations in their lives.

Although a certain degree of autonomy and self-reliance is necessary in developing literacy skills that might lead individuals to participate in individual and larger scale national development, my
paper will argue that the rhetoric concerning literacy for development focusing on individualism may be leading to excessive attitudes of self-reliance and autonomy among women literacy learners. To explore women’s attitudes concerning literacy my paper examines 38 female responses from Julie Nelson Christoph’s recent survey conducted in Zanzibar (2010) that is designed to represent Tanzanian women more generally. To examine women’s perceptions regarding literacy sponsorship and the powers of literacy in leading to development on an individual level I consulted the section containing Lickert Scale questions with language from UNESCO’s rational autonomous literacy model and a section containing open-ended questions revealing Tanzanian women’s definition of literacy and further thoughts on the current status of literacy in Tanzania. Besides discussing reasons why excessive individualism might be problematic for women’s literacy learners in Tanzania my paper also discusses some other reasons why the focus on individualism might be problematic for women’s literacy in other contexts. A solution my paper suggests for future literacy campaigns is a resurgence of the conception of literacy in Tanzania’s original literacy campaign, which holds literacy for community empowerment in higher regards than literacy for individual development.

In terms of the research process, deciding to spend six weeks on campus to use the library resources and to meet regularly with Professor Christoph helped in grounding the construction of my paper and in planning how I wanted to spend my time in Zanzibar. After I had an idea of the outlook of my paper, a strong understanding of the history of literacy campaigns in Tanzania, and some reasons why I thought literacy rates were decreasing I was able to narrow down and refocus the questions I intended to ask on the surveys I conducted during my visit to Zanzibar. Besides affording me the opportunity to ask more questions based on the parts of Julie’s survey that interested me most the survey conducting process gave me more of an idea of the resources, time, and knowledge base required to conduct a larger scale survey on women’s literacy. In my paper I decided to use some excerpts of answers I obtained from my survey, but more generally insight and observations concerning the obstacles women face to becoming literate or in furthering their education in Tanzania. Additionally, travelling to Tanzania not only allowed me the opportunity of conducting the surveys, but also insight into other stages of education in Tanzania and how women’s literacy fits in and enhances other educational stages. While I was there I was able to visit the State University of Zanzibar and a middle school.

Madeline Werhane  
**EEG Measures of Facial Expression Recognition**

*Faculty Advisor: David Andresen*

Our lives are rich with emotional information. A mother embraces her child as he cries about his swollen and scraped knee. A basketball player glares into the eyes of his opponent, preparing for the opening tip of the game. Companies use emotions to help sell their products, while politicians manipulate them to persuade crowds. Emotions even penetrate the cyber realm, frequenting our emails and messages as emoticons. As a social species, the ability to process and...
understand these emotional signals is central to our daily function. Without it, we would be incapable of deciphering the intentions or motivations of those around us.

The focus of this project was to explore the neural basis of our ability to recognize emotions in others. Specifically, it sought to explore the role of the human mirror neuron system (hMNS) in the accurate identification of emotional expressions. Mirror neurons are neurons that are activated when performing motor actions (e.g., reaching for a ball), as well as when observing another person perform the same motor action. Thus, the name “mirror neuron” refers to the literal mirroring of an observed behavior as if the observer preformed it themselves. Similar to bodily movements, facial expressions involve very complex and specific muscle actions, and recent studies have begun investigating the role of mirror neurons in recognizing facial expressions. These studies have found that when mirror neuron activity is inhibited, participants are unable to effectively discriminate between different types of facial expressions (Pitcher, Garrido, Walsh, & Duchaine, 2008). To examine the role of the hMNS in facial expression recognition, we had participants performed a video-matching task involving people making various facial expressions while brain activity was measured using electroencephalography (EEG). While viewing these videos, the participants were to complete two different types of matching tasks. During the identity-matching task, participants determined whether two faces are of the same person, ignoring changes in facial expression. During the emotion-matching task, participants determined whether two faces displayed the same emotional expression, ignoring changes in face identity. This face-matching task served as a measure for the overall ability to recognize emotions in others.

The EEG data was analyzed by comparing the Mu frequency activity, a brain wave that suppresses during periods of increased mirror neuron activity, between the two face-matching conditions. Reduced Mu activity was measured during the emotion-matching task compared to the identity-matching task, suggesting increased Mu wave suppression during the emotion-matching task. This finding suggests that a greater degree of mirror neuron activity occurred as participants matched faces by emotion, compared to the matching them by identity. These results suggest that recognizing emotions in others’ faces relies on the human mirror neuron system, whereas recognizing face identity does not.

This research is particularly relevant to theories regarding the social deficit in Autism Spectrum Disorder, as individuals with ASD often show a deficit in the ability to appropriately read facial expressions during social interactions. Characterizing the relationship between observing others facial movements, motor neuron activity, and facial mimicry may help clarify some of the underlying mechanisms involved in empathy and perspective taking—both of which are important topics in research regarding the characteristic social deficits in Autism Spectrum Disorder (ASD).
The main focus of my research is on the connection between philosophy and musical language. Specifically, my project explores the link between philosopher Arthur Schopenhauer (1788 - 1860) and late romantic composer Richard Wagner (1813 - 1883). Wagner’s musical language in his later operas, particularly Tristan und Isolde, aurally communicates the philosophical ideas he learned and adapted from Schopenhauer’s magnum opus, The World as Will and Representation. I used this as a starting point to compose my own piece of music utilizing similar philosophical ideas, also attempting to incorporate 20th century developments in musical language not available to Wagner.

My research process was divided into two basic parts. The first I spent researching the ideas of Schopenhauer and related philosophical systems, particularly Buddhism. I also read more in depth about the connections between Wagner and Schopenhauer, as well as between philosophy and other late romantic composers, such as Richard Strauss and Gustav Mahler. The second part I spent composing my own piece, trying to incorporate and communicate specific philosophical ideas. In addition, I wrote an analysis paper detailing the various stages, insights, and problems that came up during my entire summer of research.