



**GORDON**  
**COLLEGE**

2022

Undergraduate  
Research Symposium

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Wednesday, May 4, 2022  
Ken Olsen Science Center



# Program Content and Schedule

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**Title**  
**Lead Author, Team Participants**  
**Faculty Advisor**  
Abstract

## Poster Display

Posters will be displayed in the Loggia in the Ken Olsen Science Center.

Students will staff their entries for a minimum of one hour on Wednesday, May 4 between 1:00 p.m. and 4:00 p.m.

Posters must be taken down immediately after the event.

Please enjoy refreshments during the event.





# **GORDON**

## **COLLEGE**

Poster Entries

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Natural Sciences,  
Mathematics,  
and Computer Science

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## ***Separation of Microparticles in Fluids Using Optical Whispering Gallery Mode Resonant Forces***

***Rona Ganthier, Benjamin Martin, Alexander King, Nathan Jordon***

***Faculty Advisor: Dr. Oleksiy Svitelskiy***

Phenomenon of WGM resonances has been known for millennia from acoustics; domes of many cathedrals are famous for it, where silent sound can travel multiple times around the circumference. In optical WGM resonators (e.g. microspheres) light in resonance may travel around the resonator for more than a million of times. One of the properties of such a resonance is giant amplification of the light propelling forces that can move microparticles 5 to 50 microns in diameter microparticles by distances up to 0.2-0.4 mm. We report on the progress in our attempt to harness this phenomenon for selecting and separating microparticles. Our goal is to develop an optical microfluidic cell, where evanescent light from the tapered down to 1 micron in diameter optical fiber would capture and transport to a separate chamber suspended in water microspheres whose WGM resonance is matching the light wavelength. Such method may find applications in photonics, biomechanics, and medicine.

This work was partially supported by NSF award CMMI 1661700

## ***Isolation of Bacteriophage Specific to Human Opportunistic Infections***

***Callum Owen, Ginny Vienneau***

***Faculty Advisor: Dr. Evangeline Cornwell***

The purpose of the study was to develop a simple, repeatable protocol for the isolation of bacteriophages from sewage water. Utilizing equipment available to the average undergraduate student, bacteriophages specific to *Escherichia coli* and *Staphylococcus epidermidis* were successfully isolated and amplified. This simple method can easily be used for other species of bacteria by adapting media, filtration, and sampling methods to the bacteria of choice. Bacteriophages provide ample opportunities as a model organism for genetic experimentation, as well as a means for instruction of basic lab techniques such as filtration, centrifugation, serial dilutions, titrating, plate pouring, colony isolation and fundamental aseptic technique. This proof of concept provides a starting point for future projects and teaching labs in high school or undergraduate teaching settings.

## ***Effect of Mesenchymal Stem Cells Delivered in Synthetic Biomatrices on Full-thickness Skin Wound Closure Using a Diabetic Mouse Model in Infected Wounds.***

***Naomi Young, Isabelle Eldridge***

***Faculty Advisor: Dr. Evangeline Cornwell***

***Collaborators: Eliza Hoobler, Gel4Med – Lowell MA***

Diabetic patients often struggle with delayed wound healing due to elevated blood glucose and increased rates of infection in diabetic wounds. Mesenchymal stem cells have been used successfully in regenerative therapies but delivery and retention of cells at an injury site needs optimization. We tested two anti-microbial synthetic biomatrices, G4Cell1 and G4Cell2, for the delivery of mesenchymal stem cells to optimize contaminated full-thickness skin wound healing in diabetic mice using an STZ-induced hyperglycemia mouse model. Controls of PBS and *S. aureus* contamination only were used. We measured wound closure rates through digital imaging and analysis by ImageJ software. Wound healing was also analyzed through histology of H&E-stained skin sections. On the day of first wound closure, day 22, we observed that G4Cell2 + MSC treated wounds were significantly smaller than untreated wounds. Certified histopathology scores of H&E images revealed significantly reduced inflammation in the G4Cell treated tissues compared to controls.

## ***Characterization of Tumor-induced Cachexia in BALB/c WT Mice***

***Matthew Ravichandran, Maggie Anderson, Leah Brubaker, Natalie Chan, Danielle Dyer,***

***Jean-Edward Moise***

***Faculty Advisor: Dr. Evangeline Cornwell***

Cancer cachexia, the progressive loss of skeletal muscle and adipose tissue, affects 80% of cancer patients worldwide and is responsible for 30% of all cancer deaths, but the molecular signaling pathways leading to total body wasting and triggered by tumor growth are not well understood. A common model used to study cancer cachexia in mice is the Colon-26 (C-26) carcinoma tumor model. We implanted female BALB/c mice, ages 10-13 months, with C-26 carcinoma cells or vehicle only. We harvested cardiac blood, spleen, tibialis anterior muscle, and renal fat pads from tumor-bearing mice or their controls when tumor mice were anticipated to reach a moderate level of cachexia (21 days post tumor-implantation) and we confirmed the development of cachexia using this model. We studied differential gene expression in tumor-bearing and control mice by investigating CXCL13, a B lymphocyte chemoattractant known to be upregulated in spleen, lymph nodes and Peyer's patches and upregulated in pancreatic cancer. Genes



differentially expressed during the progression of cachexia may be therapeutic targets for inhibiting or blocking cachexia in the hopes of increasing the quality of life for those with cancer.

### ***Nanomechanical Displacement Detection Using Fiber Optic Interferometry***

***Anna Rathbun***

***Faculty Advisor: Dr. Oleksiy Svitelskiy***

Nanoelectromechanical (NEMS) resonators with their small masses, high frequencies, and low energy dissipation, show potential for sensitive and precise applications in detecting mass, force, and other physical quantities. Optical interferometry is an important tool for NEMS. Most NEMS instruments utilize costly and hard-to-tune free-space design, whereas fiber-optic methods have the potential to be more stable, compact, and cost-effective. We present an interferometer based on a fiber-optic circulator and a 635 nm laser. Having passed through the fiber, light is reflected back from the NEMS surface and from the tip of the fiber. The circulator directs reflected light to the detector, where the interference from the combination of the reflected beams occurs. Excited using an ultrasound transducer, NEMS oscillations cause oscillations of the interference signal that are recorded, for example, with a spectrum analyzer. Results of testing the interferometer are presented. The authors are thankful for the support of Atakan B. Ari and M. Selim Hanay in providing our sample, and to Kamil Ekinci for continuous help.

This work was partially supported by the NSF award CMMI 1934370.

### ***Effects of Preanalytical Storage Variation on Human Plasma Metabolite Content & Establishing an LCM-based Method for Paneth Cell Collection***

***Mattie Schoenfeld***

***Faculty Advisor: Dr. Craig Story***

From the moment blood samples are drawn, their metabolites begin to degrade. Understanding how plasma storage temperature and time changes metabolite content is vital to performing accurate metabolomic studies. This experiment incubated plasma at 4°C or room temperature for 2, 4, 8, or 16 hours before chemical isotope labeling (CIL) derivatization and analysis using HPLC-MS. Results include downregulation of the top 25 metabolites in the control group and upregulation in the 4°C/2-hour group. Future studies could perform a pathway analysis to grant further insight into the impact of metabolomic degradation patterns.

Paneth cells reside in small-intestine crypts and secrete antimicrobial peptides to protect against intestinal bacteria. This experiment developed a method to isolate and collect Paneth cells. I optimized a TBO staining protocol for *Mus musculus* intestinal tissue, then developed a laser capture microdissection (LCM) method for tissue capture and solubilization. The samples were later used for antimicrobial proteomic analysis.



Poster Entries

**GORDON**  
**COLLEGE**

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Social Sciences,  
Behavioral Sciences,  
and Education

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## ***EEG Synchrony During Mental Attention Tasks Reflects Differences in Cognitive Processing***

***Aaron Wright, Rebecca Niles, Sungin Lee***

***Faculty Advisor: Dr. Susan C. Bobb***

Previous research discussing alpha EEG waves – associated with periods of restful wakefulness – has shown that alpha-band oscillations (concentrations in the frequency of alpha waves) “increase during internal tasks.” The current trend in research is to observe how this activity changes in varying conditions (Magosso et al., 2019). We argue that EEG oscillatory desynchronization as a result of cognitive tasking may reflect task-related impositions on wave pattern regularity. The present study employs a within-groups measure to investigate EEG frequency in three different eyes-closed conditions: restful wakefulness, mental arithmetic, and mental drawing task. EEG data were collected from four psychology majors (N = 4) using a BIOPAC MP36 system L04 and explored using analysis of variance and conditional contrasts. Results of this project provide insight into how alpha wave electrical activity synchronizes in response to differing stimuli during cognitive exercise.

Keywords: mental math, mental imagery, EEG, alpha waves

## ***Post mTBI and Contrast Sensitivity***

***Haley Smith, Christa Vordenberg, Austin Leggett, Tommy Yoon***

***Faculty Advisor: Dr. Daniel Norton***

A known problem for people when they have concussions is their vision. No matter the severity of the concussion we see people oftentimes have visual complications. While there are few studies done about vision and concussions, we took a different route and wanted to understand and conduct a study for contrast sensitivity. Contrast sensitivity is a measure of the ability of the visual system to distinguish an object against its background. We took an approach to observe whether the more concussions an individual has will impact their contrast sensitivity. We recorded this data by using the Freiburg Vision Test, the test gave us a number based on the percentage that the individual could handle and see a difference between.

## ***Factors Associated with Rule-Breaking at a Christian College***

***Rebekah Johnson, Aria Heil, Emily Ward, Kendra Wentling***

***Faculty Advisor: Dr. Daniel Norton***

This research is designed to address a number of factors that may be associated with the tendency to break rules within a Christian college setting. The present study will investigate whether parenting types and personality traits are a predictor for rule-breaking tendencies on campus. Participants will be 50 Gordon college students, all over the age of 18, and all from various academic years. Participating students will complete a comprehensive survey which consists of three separate questionnaires, each of which explores a different covariate of the study. Each section of the survey will either score parenting styles, personality traits, or attitude towards Gordon's rules. The proposed research will provide insight as to whether parenting types and personality traits influence individuals' tendencies to break rules. This is important because if there is a correlation between parenting types, personality traits, and rule-breaking tendencies, actions can be taken in order to prevent those rule-breaking tendencies.

## ***Social Relationships: The Correlation Between Belongingness and Tolerance***

***Mariam Kamate, Christian Griffith, Yewon Jo, Teddymax Talanoa***

***Faculty Advisor: Dr. Kaye Cook***

The existing literature on the topic of belonging operates on the basic theory that every human is born with an innate need to belong. The gap this study serves to fill is the way in which our belonging to or membership in a group affects our tolerance of those who are different from us. To investigate this, thirty-one students across various disciplines participated in the research which investigated potential correlations between belonging and tolerance. Belonging was assessed by the Need to Belong Scale (NTB) as well as the Psychological Sense of School Membership Scale (PSSM). The Interpersonal Tolerance Scale (IPTS) had three subscales known as the cold tolerance scale, the warm tolerance scale, and the limit of tolerance scale. After data collection, we ran a Linear Regression test. The results revealed significant correlations between the cold tolerance scale in IPTS and PSSM. No significant correlation was found between other scales.

## ***Interpersonal Styles and Racial Diversity in Relationships***

***Niomi Ayoyina Speight, Daniel Frederick, Victoria Paine***

***Faculty Advisor: Dr. Daniel Norton***

This study examines whether implicit racial bias is related to the frequency with which an individual interacts with people from another race. Participants (n=49) completed the implicit association test (IAT) and a survey measuring the frequency and type of interactions they've had with Black individuals. We also measured participants' interpersonal skill levels. Our results have shown that although meaningful interactions with Black individuals were associated with decreased implicit racial bias against them, this relationship was not statistically significant. Likewise, interpersonal skill levels were not an indicator of implicit racial bias. Stronger methods for decreasing implicit racial bias in society should be a focus for future research endeavors.

## ***Houseplants; Their Intrinsic Meaning and Depression Symptoms in College Students***

***Molly Forget, Caroline Kelley, Amelia Searfoss, Elizabeth Galatis***

***Faculty Advisor: Dr. Daniel Norton***

The beneficial effects of caring for plants has been implemented therapeutically in geriatric care. While integrated therapies are helpful, many college students do not have access to guided therapy with plants but have access to houseplants. We put thirty-two participants through a two-week trial to see if these same mood-boosting effects are found when college students are asked to care for a plant. Thirty-two participants were split into two twenty-person experimental groups, one group receiving a YouTube video every other day sharing a piece of scripture or reading, the other receiving the YouTube video every other day alongside a plant to care for and assessed weekly using the depression axis of the DASS-21. We did not see a significant difference between the two groups, though the average DASS-21 depression axis score did decrease slightly in the plant group.

## ***The Relationship Between Education and Tolerance Towards Islamic Beliefs***

***Daniel McDonough, Pamela Melo, Sophia Offerdahl***

***Faculty Advisor: Dr. Kaye Cook***

It has been widely found that Muslims in the United States are a group that is often discriminated against and treated with little if any respect. In our study, we investigated if being educated in the Islamic religion will increase participants' tolerance towards Muslims as compared to our comparison of Judaism, a religion that our participants have a greater understanding of. We gathered data from a sample of college students from the population of Gordon College. We used a pre-post-style study to test levels of tolerance and knowledge before and after viewing an educational video. Based on the research, we have found that participants did not have a higher tolerance towards Muslims with more knowledge of Islam because the data of the results is not significant. There was no significant change in tolerance throughout the study.

## ***Pre-existing Social Anxiety as a Predictor of Anxiety When Separated from Personal Device***

***Abigail Dundore, Molly Gedney, Miheret Asegid, Justin Choi***

***Faculty Advisor: Dr. Daniel Norton***

Previous research indicates that individuals feel more anxiety when they are separated from their phones, and that addictive usage of technological devices may function as a strategy of self-regulation when faced with negative stimuli. Our 60 participants completed the Liebowitz Social Anxiety (LSAS) questionnaire before sitting at a table with 5-8 other participants. The control subgroups were encouraged to use their phones, while the experimental subgroups either had their phones removed or chose not to use their phones. After the experiment, we measured participants' anxiety levels using the Spielberg state-trait anxiety inventory (STAI). Twenty-seven percent of the variance in state anxiety scores was explained by LSAS scores. There was no notable difference in state anxiety between groups. Pre-existing social anxiety appears to be correlated to heightened anxiety in social situations, but these scores are entirely unaffected by the presence or absence of the phones.



## ***Religiosity, Faith Maturity, and Virtual Church Attendance.***

***Allison Subat, Misha Williams, Isaac Sweet, Emily Nielsen***

***Faculty Advisor: Dr. Daniel Norton***

In 2020, churches were forced to close as the Covid pandemic necessitated lockdowns and shelter-in-place warnings. Many lost access to worship services as churches struggled to accommodate these rapid changes, despite the escalating need. Although previous studies have explored the interactions between worship service attendance and levels of psychological distress, we were particularly interested in exploring how this adjustment to virtual church services affected a group already experiencing a deeply transitional stage of life: college students. Our study investigates the correlations between faith maturity, religiosity, and church attendance among current students enrolled at Gordon College. We hoped that this research would provide possible improvements in the quality and effectiveness of future online worship services. Despite finding no significant correlation between a specific method of church attendance with an individual's faith maturity and type of religious orientation, a correlation between faith maturity and general church attendance was identified.

## ***Social Media Use & Human Flourishing***

***Holly Desjardins, Naomi Frisch, Becca Harper, Lisi Price***

***Faculty Advisor: Dr. Daniel Norton***

Is an individual's flourishing negatively or positively affected by the amount of time spent on social media? Many people use social media. There are a number of studies that show that social media use can have negative impacts on one's well-being. Most research focuses on the correlation between social media usage and one's life satisfaction. Our goal was to dive deeper into how social media impacts human flourishing, which encompasses aspects of well-being beyond psychological factors such as one's physical and mental health, happiness, sense of meaning and purpose, character strength, and social relationships. We used a human flourishing questionnaire alongside screenshots of each individual's screen time on their phone. These were used together to help characterize the correlation between social media use and an individual's flourishing.

## ***Depression and Short-Term Memory***

***Hannah Gallagher, Abigail Vaccaro, Hallie Nee, Haram Cho***

***Faculty Advisor: Dr. Kaye Cook***

Thirty Gordon College students participated in a study that explored possible correlations between depression and short-term memory. Severity of depression, anxiety, and stress was measured with the DASS-21. Then, each participant took two scales from the Wechsler Memory Scale 3rd ed, which provided three measures: memory recall, learning slope, digit span forward. After data collection, we ran a Linear Regression test, as well as a Pearson Correlation test. Once performed, the analysis showed that there were no significant correlations between the independent and dependent variables. There were, however, correlations between age and anxiety scores, age and depression scores, and age and stress scores, as well as between depression, anxiety, and stress. Therefore, the null hypothesis was not rejected, showing that short term memory is not affected by depression severity. Relationships were not significant, perhaps because of sample size or the memory tests that were used. Further research is needed.

Key Words: Depression, Short-Term Memory, DASS-21, Weshcler, Linear Regression, Pearson Correlation, Anxiety, Stress

## ***How Does Belonging Impact Intolerance Among College Students?***

***Teddymax Talanoa, Christian Griffith, Yewon Jo, Mariam Kamate***

***Faculty Advisor: Dr. Kaye Cook***

The existing literature on the topic of belonging operates on the basic theory that every human is born with an innate need to belong. The gap this study serves to fill is the way in which our belonging to or membership in a group affects our tolerance of those who are different from us. To investigate this, thirty-one students across various disciplines participated in the research which investigated potential correlations between belonging and tolerance. Belonging was assessed by the Need to Belong Scale (NTB) as well as the Psychological Sense of School Membership Scale (PSSM). The Interpersonal Tolerance Scale (IPTS) had three subscales known as the cold tolerance scale, the warm tolerance scale, and the limit of tolerance scale. After data collection, we ran a Linear Regression test. The results revealed significant correlations between the cold tolerance scale in IPTS and PSSM. No significant correlation was found between other scales.

## ***Factors Contributing to Decision Making in College Students Who Have Declared a Major***

***Savannah Butka, Grace Willett, Jason Hwang***

***Faculty Advisor: Dr. Kaye Cook***

As college students declare their major, they are faced with many factors that can influence their decisions and change how they view certain ideas. We have found, through previous research, that people experience many emotions when making large decisions such as major declarations. Although emotions aren't the only thing that plays a role, there are also many gender stereotypes and stigmas associated with certain majors. We are using the big five personality test, and a list of skills to compare both psychology and music majors. We hypothesized that based on factors such as gender, personality, academic skills, and parental and peer relationships students are more likely to stay in their major than they declared when entering college. Our results show that there is no significant difference between gender and majors. We do however see the correlation between skills in psychology and music majors.

## ***The Relationship Between Belongingness and Mental Health in College Students***

***Grace Utter, Grace Powell, Patrick Pires***

***Faculty Advisor: Dr. Kaye Cook***

We explored the effects of belongingness as defined by general belongingness and loneliness on mental health in college students. We defined mental health in terms of anxiety and depression. Because we hypothesized that social media affects mental health, we included it as a covariate. The type of belongingness that was measured was general belongingness. Participants were 31 students from Gordon College. Participating students took several surveys that included scales relating to belongingness (General Belongingness Scale, Loneliness Scale), mental health (DASS-9), and social media usage (using a scale created for the study). Linear regression indicated that belongingness and loneliness were each significantly associated with better mental health. Social media usage did not moderate the results. The proposed research supports our hypothesis that social belongingness impacts mental health, a relationship that is not affected by use of social media. This suggests that increasing student belongingness in the larger community is one way to address mental health issues in the community.

## ***The Impact of Short-Term Exercise on Personality***

***Emma Toevs, Kiana Lewis, Charlotte Cummings, Jolene Amoah***

***Faculty Advisor: Dr. Daniel Norton***

Many studies have argued that one's inclination to exercise regularly can be connected to that person's personality; in short, personality impacts exercise. However, the goal of the present study was to identify whether or not *exercise* impacted *personality*. Can a short workout affect one's personality perception, specifically how well they believe they embody a personality trait like neuroticism? The present study involved 31 Gordon College students. While half of the participants engaged in a short workout, the other half did not. The entire sample was given a TIPI test. Our research had a specific interest in neuroticism, a trait oftentimes recognized through having a negative, pessimistic, and irritable presentation. Data related to the participants who engaged in short-term exercise were insignificant but trended towards the lower end of neuroticism. This suggests that exercise *may* lead to positive emotions and possibly an improved outlook on life.

## ***Influence of Interactive Social Dynamic Roles on the Use of Accommodative Speech***

***Aaron Wright, Abigail Williams, Ye Eun Cho, Michelle Dominguez***

***Faculty Advisor: Dr. Susan Bobb***

Speech accommodation (Bernhold & Giles, 2019) is an important aspect of communication, especially between interlocutors of varying language backgrounds. This study examines the role that social dynamics play in the elicitation of speech accommodation from L1 (first language) to L2 (non-native) interlocutors. The research design involves a dyadic model of interactions in a naturalistic setting with L1-L2 and L2-L1 conditions. Participants play a collaborative online game in which one participant observes the role of "bomb expert," giving instructions to the other participant on how to defuse the virtual bomb (Mello, 2018). The present study hypothesizes that differences will arise when an L1 speaker is dependent upon insight from a second language (L2) speaker (L2 > L1 paradigm) versus when holding the "authority." Results will be discussed in light of communication accommodation theory and may elucidate the effect(s) of one's language background intersecting with their speech context.

Keywords: Speech accommodation, communication accommodation theory, L1, L2, authority

## ***Transfer Rates in Christian and Secular Universities***

***Zachariah (Ri) Smith, Janelle Maxwell, Bella Gibson, Seth Larson, Ri Smith***

***Faculty Advisor: Dr. Daniel Norton***

The relationship between students' college experience and the rate of student transfers has been researched in many ways, primarily focusing on the needs of the student, academic investment, and community on a college campus. However, while Christian communities have been studied from the perspective of community psychology, no current literature exists on the impact a Christian university has on student transfer rates. The proposed study seeks to gather admissions data from both secular and religious institutions to establish a foundation of research and hopes to investigate the possible correlation between the type of university and the number of students making the decision to transfer. We hypothesize that religious institutions will have a lower rate of student transference than secular universities. Establishing this foundation will provide a stepping-stone for future research to investigate belongingness, academic investment, or student needs met along the religious/secular axis.

## ***Routine and Flourishing: How Spiritual, Social, and Physical Habits Correlate to Flourishing***

***Rebecca Manley, Ann Griffith, Ellie Whiting, Sophia Carpentier***

***Faculty Advisor: Dr. Daniel Norton***

The topic of flourishing has become increasingly popular within positive psychology in the past couple of years. Tyler VanderWheele's research paper titled, "On Promotion of Human Flourishing" laid out which domains of a person's life are determinants of flourishing and subsequently created a human flourishing measure. Since then, various studies have been done to see what types of things affect human flourishing levels. Our study asks specifically if social, physical, and spiritual habits have an effect on flourishing scores. To test this, we created a two-part survey, the first questionnaire being VanderWheele's human flourishing measure, and the second being our own original questionnaire measuring the habits of Gordon College students. We found that there was a slight positive correlation between positive social habits and human flourishing scores.

## ***Second Language Learner Responses to Speech Accommodation***

***Jaeyoung Kum, Jennifer Deckert, Jocabed Munoz Edwards, Teddymax Talanoa***

***Faculty Advisor: Dr. Susan Bobb***

Speech accommodation is a strategy utilized by L1 English speakers to facilitate easy communication with L2 English second language learners. However, while the acoustic parameters of speech accommodation have been researched extensively, L2 speakers' perceptions of speech accommodation have been largely ignored. To bridge this gap in the literature, we asked participants to listen to four different types of speech accommodation (casual, clear, infant-directed, and foreigner-directed) from four different speakers, and asked them to rate the speakers on five measures: ease of understanding, condescension, respectfulness, friendliness, and competency. Participants in the experimental group were told to imagine that the speakers in the audio recordings were talking directly to them, while participants in the control group were not given additional instructions. The results of this study corroborated the finding from Bobb et al. 2019 that L2 speakers generally perceive speech accommodation positively, and further shed light on the impact of imagined interactions on perceptions of accommodation.

## ***The Correlation Between the Level of English Language Proficiency in Second Language Users and the Perception of Accommodation***

***Megan Gordon, Gin Y. Oh, Luckson Dambo***

***Faculty Advisor: Dr. Susan Bobb***

This paper looks at the correlation between the perception of speech accommodation and the level of English language proficiency in second language speakers (L2 speakers). This experiment addresses a lack of research on the effect of speech accommodation on L2 speakers. Additionally, this research tests for the differences in perception between speech accommodation characteristics such as intensity (how loudly the L1 speaker talks), clarity (the extent to which the L1 speaker enunciates), and speech rate (how quickly the L1 speaker talks). Speech accommodation is divided into individual characteristics to see if perception of accommodation changes depending upon which characteristic is being used by the L1 speaker in L1-L2 interactions. Participants include 16 college students who consider English to be their second language. Results indicated that participants with a lower English proficiency score had a more positive perception of speech accommodation characteristics of speech clarity and a higher speech intensity. However, participants with a lower English proficiency score had a more negative perception of a slower speech rate. The opposite trends were seen in participants who scored a higher English

proficiency score. Additionally, a strong correlation was seen between age of English language acquisition and the English proficiency scores. The younger the participant was when they began speaking English, the better they scored on the LexTALE proficiency test. These results are an important first step in understanding how L1 speakers can either aid in the understanding of L2 speakers or create a poor conversational environment for L1-L2 speaker interactions.

