SURF Abstract Guidelines

Please follow the outlined instructions for abstract preparation. All submissions must follow these instructions. Any abstract that does not conform to the guidelines will not be accepted. Example abstracts can be found at the end of this document and in the archived past SURF Programs at the bottom of [the SURF webpage.](#)

1. All abstracts MUST:
- Have been reviewed by two Elon faculty (other than your mentor) with disciplinary expertise
- Be the revised version, having taken into account the reviewers' comments
- Be submitted with prior approval by your faculty mentor
- Be less than 350 words, excluding title and author information
- Include all information in one paragraph (no extra spaces)
- Not include references or acknowledgements at the end
- Minimize the use of special characters (e.g., characters other than English letters, numbers, or punctuations), special formatting (e.g., italicization), and special notation (e.g., mathematical expressions) unless absolutely necessary

2. Content components to be included in your abstract:
a) Background/rationale for your scholarship
- What is the essential question addressed by your research?
- Why is the question important?
- What are the implications of your research or how is the question situated in a given academic discipline?

a) Methods/processes employed in your scholarship
- How did you seek an answer to the question (i.e., methodology or approach)?

b) Findings/results and discussion
- What did your scholarship find?
- What is the major conclusion of your research?

* Any citations within the abstract should follow APA style.

(We understand that disciplines vary with respect to the above questions and that abstracts for creative work may well be quite different from those for scientific studies. But within those disciplinary differences, the fundamental questions posed above can still be addressed. The Undergraduate Research Program requests that you make every effort to include sufficient information so that your abstract will be understood by a ***general audience***. When possible, avoid technical language or provide explanations of appropriate terminology.)

3. Submitting your abstract
a) If your abstract does NOT include any special characters (e.g., characters other than English letters, numbers, or punctuation), special formatting (e.g., italicization), or special notations (e.g., mathematical expressions), you will be able to directly copy and paste your abstract to the online submission form.

b) If your abstract needs to include any special characters (e.g., characters other than English letters, numbers, or punctuation), special formatting (e.g., italicization), or special notations (e.g., mathematical expressions), please format it following the detailed guidelines below and then upload it as a word document. Any abstract that does not conform to these guidelines will not be accepted.

- o Overall format:
    - Be in Microsoft Word (.doc or .docx) format
    - Use Times New Roman 12 pt font, single-spaced
    - Use 1" margin on all sides
    - Be left justified
    - Be a clean version with no tracked changes or comments

- o Components to be included in this word document:
    - *Title & author information*:
        - Begin with the title of the presentation in **bold** and in **upper and lower case**
        - Following the title, skip a line and provide **first name, middle initial, and last name** of all student authors (**bold** the student author names)
        - In parentheses (not bolded), give the faculty mentor(s) name. Please use Dr. for faculty with a Ph.D. and Professor for faculty with other degrees.
        - After the parentheses, list the mentor's academic department. Always use "Department of".
    - *Abstract body*:
        - Following the author information, skip a line and begin the abstract in regular text.
        - Do not indent the first line of a paragraph. Keep the body of your abstract left justified.

- o Name your file using the following format:
    Department-1st author's last name (1st mentor's last name)
    Example: **STC- Doe (Hall)**

* Example abstracts are provided on the next two pages.

Example abstracts

Mathematical Learning in Early Childhood: Parental Guidance during Virtual and Physical Games

Kaitlin R. Sands (Dr. Maureen Vandermaas-Peeler) Department of Psychology

Research conducted in preschool settings has shown that when young children practice predicting and evaluating difficult mathematical concepts, they are more likely to have increased numeracy performance by evaluating their own predictions in the future (Gelman & Brenneman, 2004; Gelman, 2006). However, no known research has examined this in the context of numeracy activities at home. There is also very little research examining parent guidance of preschoolers' math learning in virtual and physical games. Therefore, this study investigated the effect of training parents to employ a predicting and evaluating method of guidance on children's numeracy abilities; the influence of parent-child engagement in experiences related to the mathematical skills over a one-month period; and the nature of the activities (physical versus virtual). It was expected that with parent guidance for predicting and evaluating math skills, children would be more likely to spontaneously evaluate their predictions and demonstrate increased accuracy. Furthermore, it was expected that parents across all conditions would be more likely to guide numeracy during physical games in comparison to virtual games. Twenty-eight families with a 4- or 5-year-old (11 girls, 23 mothers, 2 fathers, 3 families with mothers and fathers) were randomly assigned to a guidance or control group. After a short assessment of the child's mathematical abilities, families in both conditions were left with games and other activities to do together over a four-week period. After four weeks, a post-test was conducted where families in both conditions played a new set of physical and virtual games focused on counting, fractions and measurement, and the math assessment was repeated. Preliminary results suggest that parents provided more guidance in physical activity contexts as opposed to virtual contexts. Parents who received training were more likely to ask their children to make and evaluate predictions, but this varied across activity contexts. Further analyses are in progress. Results of this project will provide evidence of the importance of the social environment for young children's learning, particularly regarding the support parents provide as they engage in various activities with their preschoolers.

Measurement of the Efficiency of Ruthenium and Osmium Compounds toward the Catalytic Synthesis of Benzimidazole

Alyssa K. Romano (Dr. Karl D. Sienerth) Department of Chemistry

Chemical reactions that involve catalysts require less energy and/or generate more product than uncatalyzed reactions. The aim of this research is to convert basic carbon compounds into benzimidazole more efficiently using catalysts. Benzimidazole is an increasingly important component in many medicines including anti-hypertensives and HIV- inhibitors. In recent literature investigating organometallic catalysts, which are organic compounds connected to a metal center, a ruthenium-centered (Ru-centered) compound was found to significantly catalyze the reaction of formaldehyde and diaminobenzene to form benzimidazole. Our research investigates additional Ru-centered organometallic complexes as potential catalysts for the same reaction. The first part of this multiple year project was the synthesis of three

ruthenium complexes $[Ru(tptz)_2]^{2+}$, $Ru(DMSO)_4$ and $Ru(dpk)Cl_3$. However, further purification of these compounds is necessary. Also, the efficiency of $[Ru(bpy)_3]^{2+}$, a known photocatalyst for benzimidazole, was measured to set parameters such as wavelength of light and duration of photocatalysis. The newly synthesized catalysts ($[Ru(tptz)_2]^{2+}$ and $Ru(dpk)Cl_3$ will be tested to see if they will serve as catalysts in the benzimidazole reaction, and their efficiencies as catalysts will be compared to the efficiency of the known catalyst, $[Ru(bpy)_3]^{2+}$.

Exploring Rhetorical Agency in University Dance Students

Rachel A. Mehaffey (Professor Lauren Kearns) Department of Performing Arts

This study explores the ways in which dance students demonstrate rhetorical agency when verbally articulating their experiences in a university dance program. Rhetorical agency is a process by which individuals create meanings through engaging with the world and adapting, learning, and developing in response to the consequences of their actions (Cooper, 2011); in this study, rhetorical agency served as a previously-untapped theoretical framework for conceiving dancers as responsive, active agents. Importantly, this research brought dancers' discussions of their own agency to the center of the study. This approach emphasizes the ways in which dancers talk about the experiences of dancing and learning to dance. Such a focus directs academic attention to dancers' perceptions of their pedagogical, artistic, and developmental practices. Thus, this research projects the dance students' voices into academic conversations about dance education, performance studies, and the scholarship of teaching and learning. In order to investigate how dance students describe themselves as agents, this study employed a series of extracurricular dance labs for a group of six first- and second-year BFA Dance Performance & Choreography majors. Over the course of two semesters, the student researcher worked with the participants on movement-based prompts and debriefs designed to emphasize the dancers' agency and engagement with dance situations. Throughout the academic year, each student participated in four individual interviews, and the content of these interviews was then analyzed using qualitative coding. As a deeply exploratory process, this research has yielded a breadth of insights that can motivate future research. Such insights concern how dancers situate themselves within the dance field, how meaning and power are negotiated in class and choreographic processes, and how dancers learn and change, set goals, and engage with challenges. The overarching conclusion to this study is that when dance students talk about their experiences, they may navigate between describing themselves as active agents, describing a diffuse system of intersubjective agency, and assigning agency to discrete others – such as choreographers, music, or even their own bodies. This conclusion sheds light on what it means to be a dancer and what it means to talk like a dancer.

Campaigning on Twitter: A Content Analysis of the 2020 Georgia U.S. Senate Candidates' Twitter Feeds

Christian W. Harrison (Dr. Jane O'Boyle) Department of Strategic Communications

This study examines the topics and tones of Twitter messages in the two Georgia 2020 U.S. Senate races to expand knowledge about political campaign strategies and how candidates' agendas shift during a campaign. Notably, each of these races was undetermined after election

day on November 3, 2020, sending each into a run-off election between the top two vote-getters. In each race, the two candidates were a Republican incumbent and a Democratic challenger. The results of the November 3 election revealed that control of the U.S. Senate hinged on these two runoff races, making both closely followed contests. This study uses content analysis to examine the Twitter comments of the four candidates from September 5 to January 5, 2021, the day of the runoff election, to expand knowledge of how political candidates use Twitter. A random sample of 600 tweets was analyzed using qualitative content analysis. The topics coded for include those based on previous literature and topics unique to 2020, such as COVID-19. The results revealed several themes. First, all four candidates frequently used Twitter to request donations and provide updates on campaign events. Second, more than a quarter of all tweets had a negative tone, and Republican candidates used negative tones more frequently than their Democratic counterparts. Most negative tweets were aimed at the candidate's opponent, but the Republicans also frequently took aim at the opposing party at large. Other dominant topics for the Republicans included support for Donald Trump, voting, the dangers of socialism, and the Supreme Court. Frequent topics for Democrats included voting, health care, COVID, and civil rights. After the general election on November 3, the issue of the U.S. Senate majority control became a dominant topic across both races. Lastly, the Republican candidates mentioned their counterpart in the other race significantly more than the Democrats did. The Republicans also connected their two campaigns by framing the elections as having existential consequences. After the general election, the two Republicans referred to themselves as the last line of defense against radical change in America, specifically the implementation of socialism. Other findings and their implications are discussed.

The Success of Soap-Making: How Entrepreneurial Training in Ugandan Refugees Impacts Their Outcomes in Village Savings and Loan Associations

Aniyah S. Adams (Dr. Steve Deloach) Department of Economics

While microfinance gives refugees the opportunity to create businesses, generate wealth, and escape poverty, Village Savings and Loan Associations (VSLAs) offer access to credit in environments with low banking availability at lower interest rates, making them more accessible to refugees. VSLAs rely on interpersonal accountability as they are peer-funded groups and often have withdrawal commitments. Literature suggests that VSLAs are generally successful in increasing income for participants, but they struggle with loan defaults and are still impoverished. This study will examine if improving financial education in members would allow for better outcomes. Using panel data from 4 cycles of Seed Effect's microfinance programs, I analyze the impact of business training on the VSLA group members. These self-selected groups of refugees work together to save and distribute loans, which are repaid with interest. I will use a difference-in-differences model to analyze the treatment group, the individuals who received business training after the first period, versus the control group, the VSLA members who did not yet receive the training. The results show that there was no clear impact on the amount of business loans, animal assets, or average weekly income. However, the business training improved share-out by about 355,523 UGX more per year and savings by about 83,031 UGX more per year. Other improved aspects were land ownership and health variables for the participants.

Examining Elementary Educators' Awareness and Perceptions of Trauma-Informed Teaching Approaches

Lucy Callicott (Dr. Katherine Baker) Department of Education & Wellness

A current topic in education is that of embedding trauma awareness and sensitivity into teaching practices. The greater movement around trauma awareness is often referred to as trauma-informed care (Felitti et al., 1998). Past research has shown that trauma and toxic stress affect almost every aspect of a child's school experience (Carello & Butler, 2015; Perfect et al., 2016). Underlying trauma can inhibit students' cognitive functions and lower academic performance. Prior research reports that trauma-informed care can mitigate traumatic impacts (Udesky 2018, McInerney & McKlindon, 2014); however, the research base lacks teachers' insights about trauma-informed (TI) teaching approaches. Teachers' voices are needed in the research in order to ensure sustainable, effective, and equitable implementation of these transformative approaches. My qualitative study documented and examined elementary educators' awareness levels and perceptions of TI approaches through a two-phase data collection process: Phase 1, an open-ended survey of 75 elementary educators about trauma-informed teaching in their contexts, and Phase 2, semi-structured interviews to clarify participants' lived experiences with trauma-informed approaches. This presentation will provide an update to the research and overview pertinent findings. Survey respondents represented diverse geographical backgrounds and a variety of PreK-5 teaching and elementary support positions. While 64% noted awareness of trauma-informed approaches, findings revealed that participants' understanding of trauma-informed approaches ranged drastically. Educators also expressed limited access to trauma-informed support structures among the barriers to implementation. These themes bring up meaningful questions about how educators can best be supported in implementing approaches that center their students' best interests. Findings from this project will further the research base by highlighting educators' voices on the support needed to make trauma-informed implementation equity-minded and sustainable for all involved.