2020 Summer Undergraduate Research Experience Information Sheet
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Faculty Mentor:
Name: Corwin Senko
Department: Psychology
Email: senkoc@newpaltz.edu

Student:
Name: Sarah Pallone
Major (minor): Psychology
Expected graduation date: May 2021

Expected start date: June 1
Note: this information is needed for budgeting purposes (to enable funding of as many
proposals as possible). Provide the most accurate date possible. This information will not affect
proposal ranking!

1. Does this work involve human subject? **No**
                                   If yes, has the IRB been notified?
                            2. Does this work involve recombinant DNA? **No**

          If yes, has the IBC been notified?
3. Does this work involve non-human vertebrates? **No**

4. List the faculty mentor's other funding sources (approved and pending): **N/A**

5. Preliminary supply budget summary: (cannot exceed $1,000 including delivery fees)
Please provide a general, preliminary list of items and associated costs:

Total amount requested: $50
   ● 2 flash drives (16 GB), one apiece for each of us: ~ $30
   ● GoogleDrive storage capacity (100 GB, @ $20/year) for one year for Ms. Pallone: ~ $20

This study has minimal costs. We need (a) access to research articles, (b) the capacity to store
those articles digitally, and (c) software to analyze the data. The library provides (a) and we
already own (c). Thus, we request only funding to support (b). Of course, we are also submitting
this application for the stipend and the honor it bestows.

Does the requested budget cover all expenses related to the proposed work? **Yes**
If not, explain the sources of funding that will be used.

 __X__ I accept responsibility for the conduct of this project and assure that the information in this application is correct. Indicate your agreement with this statement with an 'X'.

Question 1: Please provide a short title for the proposed project (<u>less than 70 characters with spaces</u>). If you would like to include a long and short title, you may, but we need a short title for our records. A meta-analysis of achievement goal experiments.

Question 2: Provide a BRIEF review of the literature (citations <u>not</u> required- don't skip a clear explanation for citations) or previous work, appropriate for the diverse members of the RSCA advisory board, to provide the background information that led you to the proposed project. According to Achievement Goal Theory, students often pursue one of two broad goals. Those pursuing a *mastery goal* wish to improve or learn as much as they can. Those pursuing a *performance goal*, by contrast, wish to demonstrate their ability or outperform peers. The theory posits that mastery goals produce healthy effects (e.g., greater confidence, better learning strategies, higher achievement), and performance goals largely harmful effects.

Thousands of studies have tested this assumption. Their findings for performance goals have been surprisingly mixed, sometimes desirable and other times harmful. In recent years, we have discovered that this mixed pattern is due to inconsistencies in how researchers have defined the performance goal: some define it as striving to outperform others, others as striving to appear competent or to please onlookers. It turns out that the "competitive" type of performance goal has more positive effects than the "appearance" type. Our lab has demonstrated this in two published projects supported by the RSCA. One measured the two goals and compared their correlational effects (Senko & Tropiano, 2016). Another "meta-analyzed" prior studies: we coded studies for the type of performance goal they measured, and found that the basic pattern of our other study holds true in all studies using correlational methods (Senko & Dawson, 2017).

A smaller subset of experimental studies has been done in the lab. They teach participants a novel activity and then randomly assign them to pursue either a performance goal or a mastery goal (or a "no goal" control group). They typically find harmful effects (e.g., high anxiety, low performance) and rarely benefits of the performance goal – exactly as achievement goal theory posited. We are keen to see if that seemingly consistent pattern is due to most of them instilling the "appearance" type of performance goal.

Question 3: State the purpose of the overall research or creative project. Include the major hypotheses, research question(s) and/or the aims of your project. The proposed study is meant to bridge the findings from lab studies and classroom studies. This new meta-analysis will test if, as with the classroom studies, the effects in experiments depend on whether the prior studies assigned participants a "competitive" type of performance goal or an "appearance" type. We hypothesize that the former show relatively neutral or beneficial effects of performance goals, while the latter show harmful effects. We also expect that most studies use the "appearance" type, and that this explains the overall pattern of unhealthy effects in lab studies. Such a finding would unify the field's seemingly disparate patterns.

Question 4: State the methodology to be employed for the project (include number of trials/samples/subjects/etc., as appropriate). Explain the role of the student in the overall project as it will apply to the semester's work and the student's qualifications. Please indicate if the project is likely to continue past the award period. The meta-analysis involves several steps: (1) search the research literature to identify all relevant studies; (2) code each study for the key features (type of goal manipulation; the manipulation's effects on task performance) and secondary features (e.g., participants' characteristics, the type of control group used, whether the study is online or in-person); (3) manage the data in excel; (4) analyze the data to find the overall effect on task performance and, more importantly, see if this effect varies based on the type of goal manipulation used in the studies.

Ms. Pallone and I will work together on all phases. I will train her on the first 3 steps and then she will lead each; those steps will certainly finish during the award phase. I will lead on the 4th step, using it as an opportunity to teach her some of the advanced statistics; this final phase (data analysis) might extend into the Fall semester, depending on the complexity of the data set.

Ms. Pallone is doing an Independent Study with me this semester. She knows the guiding theories and is now developing a new experiment on a related topic to run next Fall. She also took my *Motivation* class (F19) and is now taking my *Research Methods* class. She was the top student in both. She is fantastic.

Question 5: Provide a brief description of the role of the requested budget items in the project. The RSCA Advisory Board may choose to partially fund a project if requested items do not clearly support the project goal. We request funding to allow digital storage (via flash drive & GoogleDrive) of the articles we code.

Question 6: State the expected outcomes of the project with regard to the advancement of knowledge in the field or the progress toward new creative works. The outcomes should be described in the context of the current state of the field of study. If the data cooperate, this project would unify the field's two methodologies (classroom studies that use self-reported goals; lab studies that manipulate goals) and explain why they often deliver different results. The added clarity would allow the field to move forward.

Question 7: Explain <u>how</u> this project provides a learning experience not available in the classroom/ regular programmatic activities/ major requirements. A meta-analysis is a complex undertaking. Few people know how to do one, and they typically learn it only in doctoral programs. More generally, this project will teach Ms. Pallone about the detail-oriented nature of research, as well as the complicated decisions required at most phases in a research project. All of those skills & insights extend well beyond our usual class offerings.

Question 8: Describe <u>how</u> the faculty mentor will guide the student. Inclusion of the arrangements for regular, in-person meetings is necessary but not sufficient. Mentoring plans to address safety issues (laboratory, studio, field, travel, etc.) or ethical issues must be included, as appropriate. We'll meet <u>at least</u> twice weekly during this 8-week period. Due to the COVID19 scare, we plan to meet virtually via WebEx. We will also email regularly, as needed, and collaborate and share our work on GoogleDrive.

<u>Training Phase (weeks 1-2)</u>: Ms. Pallone is already familiar with the ideas we will test. She needs to be trained on meta-analysis techniques, however. We will do so by reviewing three readings. Two are prior meta-analyses of achievement goals (Senko & Dawson, 2017; Van Yperen et al., 2015). The third is a guidebook on how to conduct meta-analyses (*Practical Meta-Analysis*, 2001). During this phase, we will also identify our article search strategy (I anticipate 75-100), develop our coding scheme, and train on how to use Excel to code data.

<u>Early Coding Phase (weeks 2-3)</u>: To get practice, we will both read and code a set of 10 articles. This will help refine Ms. Pallone's skill at reading and coding research achievement goal research articles. We'll use Excel to tag and summarize each article for coding & bibliographic purposes.

<u>Normal Coding Phase (weeks 4-6)</u>: Ms. Pallone will continue to identify, read, and code articles, now at a more rapid rate: assuming about 30-60 min/article, we will target 40-50 articles per week. I will separately read and code a selection (~25%) of those articles as well, for quality control purposes.

<u>Data Management & Analysis Phases (weeks 7-8)</u>. We will organize the data, test inter-rater reliability, and begin data analysis. More sophisticated parts of data analysis will continue during early Fall semester. Ms. Pallone will also prepare her SURE presentation early in Fall so that she can report her findings.

Question 9: (if applicable, include additional pages if needed) Provide a summary of the work accomplished with previous (past 3 years) SURE or AYURE funding, including funded work that does not directly relate to the proposed project. Information on the post-graduation placement of former AYURE and SURE students will be appreciated. My team has won one RSCA award in the past 3 years: Sergio Lopez (AYURE; Fall, 2019) was supported for a study on an altogether different topic (motivational obstacles facing first-generation college students). We are now analyzing that study's data.

My only prior SURE project was in 2013, with Blair Dawson. It was another meta-analysis that is the basis for the proposed one. It focused on classroom studies that measure students' self-reported goals. We eventually published that project in my field's top journal (Senko & Dawson, 2017), and Ms. Dawson shared the project, as lead presenter, at three separate conferences, including the top international conference in my field.

_____x___ I accept responsibility for the conduct of this project and assure that the information in this application is correct. Indicate your agreement with this statement with an 'X'.

_____x___ I will present my SURE project work in the Fall as required. Indicate your agreement with this statement with an 'X'.

Question 1: State your role in achieving the goal(s) of proposed project.
In order to complete the meta-analysis I will need to be trained on how to search for articles, read through for key details, code them, organize and then analyze the data. Once I am, I plan on working each day independently, as well as meeting twice per week with Dr. Senko for guidance and training on new skills.

Question 2: State the specific methodology you will employ in carrying out the proposed project.
I will need to search for articles relevant to achievement goal theory and organize them by importance and methods used. I will then read through them and code them appropriately, based on many factors, such as the manipulations and dependent variables. Dr. Senko will also walk me through data analysis so I may learn more about that side of things.

Question 3: Provide a description of your qualifications to participate in the proposed project.
I have been studying psychology for a year here at New Paltz, and I have taken many psychology classes at my previous institution. I have spent this entire semester doing an Independent Study with Dr. Senko, where I have read articles and learned more about Achievement Goal Theory. In addition, I have taken Psychological statistics, which has provided me with useful background for this project. I am also in Research Methods right now, which gives me experience reading articles.

Question 4: Describe your plans to meet with your mentor in person for guidance.
We will need to meet at least twice a week for training opportunities, which will likely take place using video chat. We can also communicate using email or other technology.

Question 5: Describe the expected outcome/ product of your work.
We will create an extensive meta-analysis of studies relating to Achievement Goals and the ways they are defined and how that has affected results found in those studies. This will be a contribution to the field because it will highlight how the ways that we define the Achievement Goals can change the findings, and carve a path for future research by providing support for those definitions.

Question 6: Describe your plans after graduation and how your involvement in the proposed work relates to these goals.
I plan to go on to Graduate School after obtaining my Bachelor's degree. Although I am not sure what I will want to do, I think I would like to continue studies in psychological research. Having this experience will provide future opportunities for me to prepare me for what Graduate school will be like as well as distinguishing my application from others.

Question 7: Describe your plans for presenting the results of your research, in addition to the Fall presentations that are required.
Hopefully, I will have the opportunity to present our research to other scholars on SUNY New Paltz campus in the Fall with guidance from Dr. Senko. I would be honored to also present our research at a conference if we were invited to do so, or possibly be a co-author on a paper.