Undergraduate Research Opportunities: Paving the Way for the Next Generation of Scientists

Students who have undergraduate research opportunities tend to have higher identification as a scientist, also known as science identity. Furthermore, students with higher science identity are better prepared for advanced science education, compared to students with lower science identity. The current studies seek to examine predictors of undergraduate students’ intentions to pursue graduate school. In the first study, underrepresented students in science, technology, engineering, and mathematics (STEM) fields who attended the Annual Biomedical Research Conference for Minority Students (ABRCMS) filled out a survey that assessed their research confidence and intentions to pursue graduate school. Students who attended ABRCMS more often and had higher research confidence from attending were more likely to intend to pursue a research degree in graduate school. In study two, undergraduate students completed a survey with items measuring research confidence, science identity, and academic self-efficacy. All variables significantly predicted students’ intentions of pursuing graduate education, with science identity being the strongest predictor. Results suggest that students’ undergraduate research experiences and ability to view themselves as scientists prepares them for further education and increases their intentions of pursuing graduate education. Exposure to undergraduate research opportunities, like ABRCMS, is especially important in providing underrepresented groups a sense of belonging in STEM fields. Greater sense of belonging and stronger identification with science can increase the number of underrepresented students who pursue STEM fields, which can lead to more advances in science.
Joshua Evans

Is Self-Imposed Alienation Among Veterans Real and What Does it Mean?

Ever since the military became an all-volunteer force there has been an ever-increasing amount of research on the growing differences between the military and civilian world. Both groups are becoming less and less knowledgeable of each other. As these two different cultures become more and more distinct consideration should be given to how we transition military members leaving the service back into the civilian world. We offer a lot in terms of transition assistance for military members to reintegrate them into the civilian world, but a question needs to be answered as we implement these programs. Do they want to be a part of the civilian world, or rather, are they willing to assimilate into civilian culture? This study is looking to answer that. By creating a scale to measure alienation among veterans, we also tailored the scale to measure how much of it is self-imposed. Additionally, we included measurements of several other mental health items to look at the relation they have with this self-imposed alienation scale. Many of the programs and treatment models offered to veterans attempt to integrate them into civilian culture. We believe that if they identify themselves first as veterans or they do not want to be a part of civilian culture this not only makes our current methods less effective, but can create more serious mental health issues in the long-term.
Individual Differences in Neural Rhyme Effects

Reading is complex, and requires us to connect letters and sounds. Studies have shown us humans read through two different processes, one using spelling to recognize whole words (orthography) and one using rules to sound out words letter-by-letter (phonology). Understanding how these processes interact is important for creating accurate models of how reading works in the brain and improving reading education. It is thought that there are differences between people in how these processes are used, with some people relying more heavily on orthography and others relying more heavily on phonology. When words look and sound similar (for example, ever and lever), the brain processes the information quickly. However, there are words that sound similar, but do not look alike, (for example, heard and word), and the brain responds differently to those pairs. This is called the “conflict effect.” We used an electroencephalogram (EEG) to pick up the electrical currents the brain makes when it is hearing word pairs. In this study, participants heard word pairs with matching spelling and sound and word pairs with a conflict. University students who struggle with reading show a conflict effect in the opposite direction from students who read well. Specifically, students who struggle to read show a stronger influence of orthography, or word spelling. This information tells us that readers of different ability process how word sound and look differently. When we better understand how the reading process works, we can work to find better ways to help people who struggle with reading.
Melissa Growney

Does how words sound influence judgments about how they are spelled?

Some researchers think that reading involves making automatic connections between letters and sounds. There is evidence that when words look different, it takes people longer to recognize that they rhyme. In this study, we investigated whether these connections are bi-directional. In other words, are people slower to recognize that pairs like "catch and watch" share word endings because they do not rhyme? We collected accuracy, reaction time, and EEG (brain wave) data to investigate this effect in people of different reading skill. This line of work has the potential to influence our understanding of how spoken and written language are processed.
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Stress in Student Leaders and its Potential Effect on Universities and Students

It is well-accepted that college students are under a tremendous amount of stress from academic, social, and work pressures. However, Residential Life Staff may be a particularly vulnerable population and has yet to be studied. Unlike other college students, the boundaries between home, work, and school are blurred for this student staff. The current study looks to examine potential differences in hopes of decreasing stress in these indispensable members of the campus community. A stress assessment was designed and will be administered to two student populations: Residential Life Staff and working students who live on-campus. The results will be compared to discover if Residential Life Staff are more stressed than students with similar responsibilities. If results show Residential Life Staff are more stressed, it is very likely because of specific factors pertaining to their leadership position on-campus. Residential Life Staff are vital to the success our state campuses. Stress in these students could potentially negatively influence other students on-campus and their living environments, ultimately limiting students from choosing to live on-campus. This could lead to dramatic outcomes that can impact public perceptions of state universities and ultimately potential income that universities receive from on-campus housing departments.