THE AUTHOR OF THE FOLLOWING DOCUMENT HAS KINDLY AGREED TO MAKE THEIR PROPOSAL AVAILABLE TO STUDENTS ENROLLED AT THE UNIVERSITY OF MINNESOTA

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**Introduction** – As President Barack Obama stated, “it [sexual assault] threatens our families, it threatens our communities; ultimately, it threatens the entire country.” Approximately 24% of undergraduate women reported sexual assault (i.e., nonconsensual sexual contact by physical force, threats of physical force, or incapacitation) and 63% of undergraduate women reported sexual harassment since enrolling at UMTC in a recent large survey \((N=8,033)\). This prevalence mirrored national rates found across 27 participating universities (total \(N=150,072\)). Among the myriad negative outcomes associated with sexual victimization (e.g., posttraumatic stress, depression), research in its nascent stages suggests that sexual victimization is also a risk factor for poorer college academic performance (e.g., GPA) and eventual drop out for women.³

Academic performance and persistence are of key importance to educators who are concerned about the underrepresentation of women pursuing degrees in the science, technology, engineering, and mathematics (STEM) fields. Research in this area has traditionally focused on self-confidence in STEM subjects, interest match, and workplace bias.⁴ However, the impact of past sexual victimization on college academic performance and persistence has not been examined in women in STEM fields. The compounded effect of stress unique to women students in STEM and stress from experiencing sexual victimization could prove especially deleterious to women’s academic performance for several reasons. First, women in this age group are particularly vulnerable to sexual victimization as indicated by the statistics provided above. Second, women with a history of male-perpetrated sexual victimization may find the challenges of studying in STEM fields especially distressing due to symptoms of posttraumatic stress or depression, including distrust of others, hypervigilance, or low self-esteem. These symptoms may, in turn, interfere with concentration and academic self-efficacy, which is the belief in one’s ability to succeed academically and is a robust predictor of college GPA.⁵ Third, women who are performing more poorly may face barriers in STEM classes structured to discourage and dismiss (or “weed out”) less-than-excellent students.⁶ Finally, survivors of sexual victimization may be drawn away from STEM to majors that facilitate exploration and meaning making of their experience (e.g., Women’s Studies), a pattern seen among ethnic minority students switching out of STEM to majors aligned with themes of ethnic identity and social justice.⁷

The nationwide agenda to recruit and retain women in STEM remains important as only 20% of physics, engineering, and computer science degrees were awarded to women nationally.⁴ Moreover, 32% of women who entered Bachelor’s STEM majors (excluding social sciences) and 43% of women who entered Associate’s left for non-STEM majors, compared to 26% and 29% of men, respectively.⁸ As women leak from the STEM pipeline, a comprehensive understanding of the factors that threaten the academic performance and persistence of women in STEM fields can inform interventions to improve performance and retention.

**Preliminary Research Already Completed** – Because research on the relation between sexual victimization and academic performance is limited, I examined this relation in two samples of college women \((Ns=192\) and 390\). In an article I recently revised and resubmitted to the *Journal of Counseling Psychology*,³ I found that sexual victimization predicted poorer cumulative end-of-semester GPA while controlling for well-established predictors of academic performance (i.e., ACT scores, high school rank, conscientiousness).³ Further, sexual victimization predicted poorer GPA in students’ final term and was the only significant predictor of dropout at four-year follow-up. The difference in GPA between students with and without a history of sexual victimization was Cohen’s \(d = .61\), which corresponds to a .27-point difference in GPA (e.g.,
Thus, small effect sizes could have practical significance for these students.

**Proposed Research During Fellowship** – My proposed research will focus on isolating the psychological factors (i.e., mechanisms) that explain why past sexual victimization is related to poorer performance and attrition for women in STEM and use that data to inform interventions. First, I will examine my research question by assessing the proposed predictors (i.e., sexual victimization, controlling for ACT scores and high school rank), the theoretical mechanisms (e.g., psychological distress, concentration, academic self-efficacy, meaning making), and the outcomes (i.e., GPA, major switch or dropout) in my model outlined above. I will recruit a diverse undergraduate sample of 200 women in STEM majors and 200 women in non-STEM majors at UMTC to conduct multiple group structural equation modeling. Comparing STEM majors to non-STEM majors will elucidate whether the proposed mediators uniquely predict academic performance and persistence in women in STEM. My recruitment strategies will include: Psychology course enrollment (on average 10% of students are STEM majors); advertising in buildings primarily devoted to STEM education on campus; and through email distributions for on-campus student organizations for women in STEM. I have already corresponded with five student organization presidents and they are open to collaboration. I will follow-up with students every four months over a 24-month period, allowing me to examine mediating factors that link sexual victimization to academic performance and leaving STEM.

Second, the psychological mechanisms I identify that link a history of sexual victimization to poorer academic performance will then be used to tailor a curriculum that targets these factors in an effort to enhance performance and retention of women in STEM. I will use my advisor’s web-based intervention framework that has shown efficacy in randomized control trials at reducing academic-related distress in college students with a history of sexual victimization. For example, if distress symptoms contribute to poorer concentration, lower self-efficacy, and eventual poorer academic performance and weed out, my intervention would target distress and academic self-efficacy.

**Intellectual Merit** – Retaining women in STEM fields is both a moral imperative and a consideration for intellectual merit, as a diversity of opinions and perspectives in science breeds a diversity of solutions. The effects of sexual victimization on academic performance and attrition for women in STEM fields has not been investigated, yet preliminary research suggests that sexual victimization could be especially deleterious to retaining women in college. Integrating sexual victimization into our understanding of STEM women’s college experience is imperative given its alarming frequency. My proposed model will extend my current research to more female STEM graduates.

**Broader Impact** – My intervention would be an online curriculum that could be easily disseminated to students across multiple universities and education settings (e.g., online classes and in-person classes). Results from these studies could help us address the growing need for

**References**