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How is *Sarracenia alata* affected by Fire and Prey Capture?

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Summary:

Overview: My name is Jalen Holloway, and I am working toward the completion of my Master's degree in Biological Science. Since my time as an undergraduate, I have been interested in plant life, and I seek to further that curiosity in an academic setting. I am a first-year graduate student, and my project is focused on understanding how nutrient limitation of growth, survival, or reproduction in a carnivorous plant is affected by prey capture and fire.

2.) Intellectual Merit: The findings of this project will be crucial in understanding if nitrogen and/or phosphorus reduces nutrient limitations for *Sarracenia alata*. Also, the result of this project will help to elucidate why many carnivorous plants are found in fire-prone areas, and increase their carnivorous investment after fires. To uncover these results, we plan to utilize a 2 x 2 x 2 x 2 factorial design of four treatment factors (light, prey, nitrogen, and phosphorous). Furthermore, 160 total plants will be included in this study, 80 from two sites. Fire will be simulated by clipping surrounding vegetation, and clearing it away. Prey capture will be halted by inserting cotton batting into young pitchers so that they don't have access to prey. Finally, nitrogen and phosphorous will be included by adding urea and/or a phosphate fertilizer to the base of the plants.

3.) External Opportunity: The external opportunity that I will apply for is the Sigma Xi grant. The Grants in Aid of Research aid will offer up to \$1000, and it is due by March 15th. This grant will benefit my academic career because it will assist in my desire to uncover the dynamics that allow for carnivorous investment. Moreover, it will give me the ability to further develop my research skills, and enhance my understanding of carnivorous plants.