

# PASCC

## Research in Progress

FY18

### ASSESSING THE DUAL USE RISKS OF GENETICALLY MODIFIED MOSQUITOS

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#### ABSTRACT:

Vector-borne diseases pose considerable health risks to global populations, both civilian and military. Recent advances in genetic engineering technologies have provided new opportunities to modify important vectors such as mosquitoes to reduce the risk of spread of vector-borne diseases. Many of the concerns historically raised regarding the use of engineered mosquitoes have focused on the potential for unintended environmental consequences. However, these genetic engineering approaches could potentially be exploited for malicious use, to develop mosquitoes with enhanced capacities to transmit disease. Outbreaks sparked by the intentional release of such mosquitoes could be more difficult to detect and control than natural outbreaks, and therefore have potential to cause significant human health harm. No detailed analysis of the biosecurity risks of genetically engineered mosquitoes has been conducted.

Gryphon Scientific, a small business with significant expertise in infectious diseases, vector biology, synthetic biology, and risk assessment proposes to assess the dual use risks of genetically modified mosquitoes, including: the nature, time horizon, and technical and scientific knowledge advancements required for realization of the risks. The outcomes of the proposed study will enable the DoD and civilian agencies to prepare for the release of such mosquitoes, including bolstering their detection and response capabilities.

*Research in Progress* describes ongoing PASCC research. For more information please contact [INSS@usafa.edu](mailto:INSS@usafa.edu).