

2024_48_DoLS_AB: Population genetic engineering of disease vectors and other harmful populations

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Broad spectrum pesticide have been the mainstay for controlling disease vectors and other harmful species for decades. Recent advances in synthetic biology open up the possibility of an entirely new platform for pest control based on genetic manipulation.

The project will involve computational work that (i) models the impact of alternative genetic strategies; (ii) develops methods to parameterise such models by inferring demographic parameters (e.g., population sizes and movement patterns) from genomic data; and/or (iii) uses population genomic data to infer the phenotypic effect of knocking out different genes, and thereby guide the development of specific molecular design.

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