1154-34-915 **Enahoro A Iboi***, **Abba B Gumel**, **Steffen Eikenberry**, **Silvie Huijben** and **Krijn Paaijmans**. *Long-lasting Insecticidal Nets and the Quest for Malaria Eradication: A Mathematical Modeling Approach.*

Recent dramatic declines in global malaria burden and mortality can be largely attributed to the large-scale deployment of insecticidal-based measures, namely long-lasting insecticidal nets (LLINs) and indoor residual spraying (IRS). However, the sustainability of these gains, and the feasibility of global malaria eradication by 2040, may be affected by increasing insecticide resistance among the *Anopheles* malaria vector. We employ a new differential-equations based mathematical model, which incorporates the full, weather-dependent mosquito lifecycle, to assess the population-level impact of the large-scale use of LLINs, under different levels of *Anopheles* pyrethroid insecticide resistance, on malaria transmission dynamics and control in a community. (Received September 11, 2019)