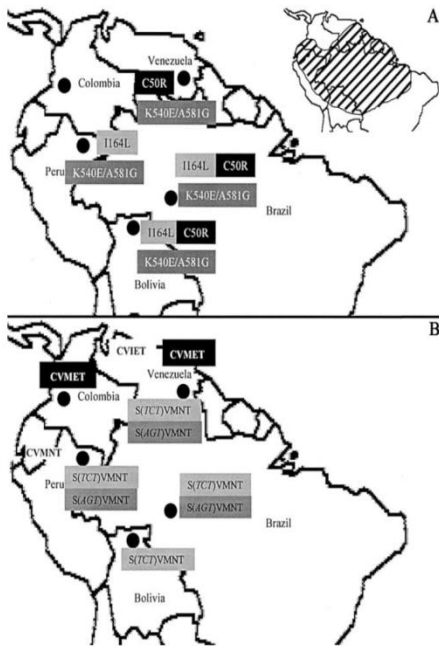




# Mapping malaria in support of elimination

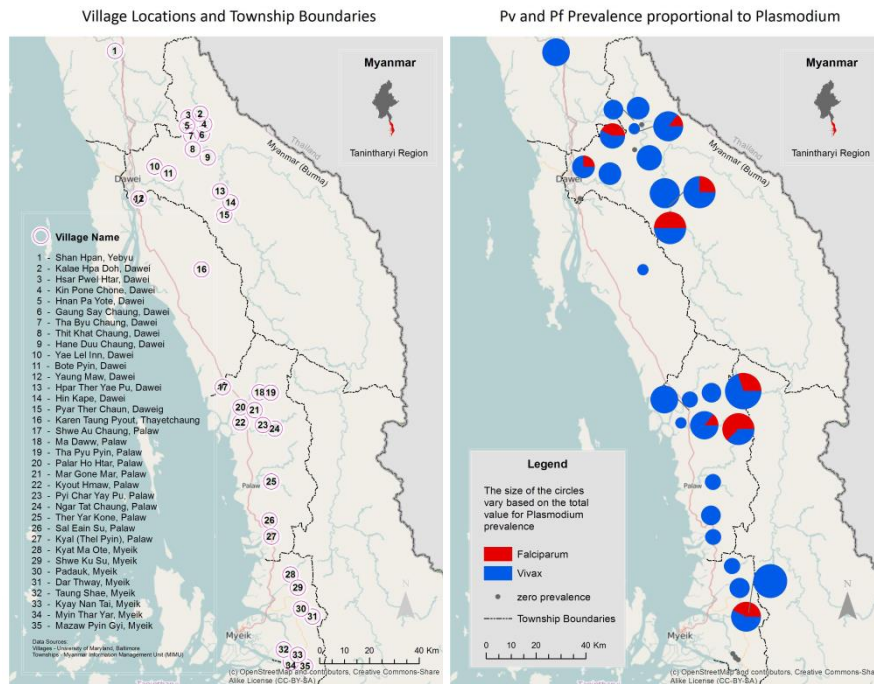
- Malaria elimination is a major focus for the new Institute for Global Health
- Mapping malaria:
  - Prevalence of infection with *P. falciparum*, *P. vivax*
  - Prevalence of drug resistant genotypes
  - Parasite migration patterns based on gene flow
  - Parasite population structure
  - Exposure history based on serological surveys
  - “Sources” and “sinks” for malaria transmission
- Gates Foundation grant for malaria elimination in Myanmar
  - 2 years, \$4.6M; strong growth potential
  - Provides platform for NIH, NSF, other grants
  - Need both simple maps for health officials and sophisticated research tool including modeling

## Haplotype distribution



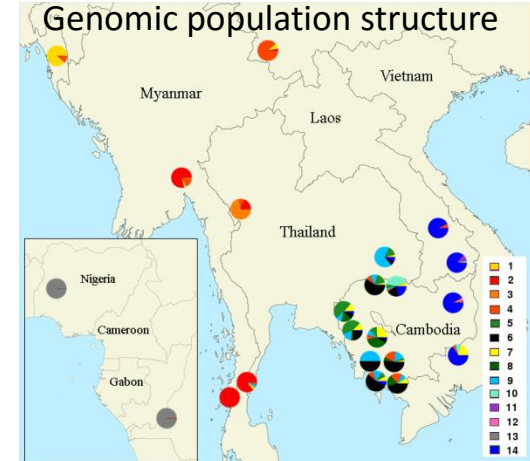
Cortese *J Inf Dis* 2002

## Prevalence of infection

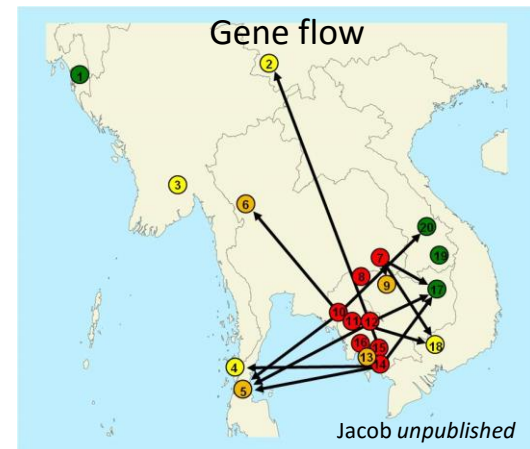


Ryback *unpublished*

## Genomic population structure

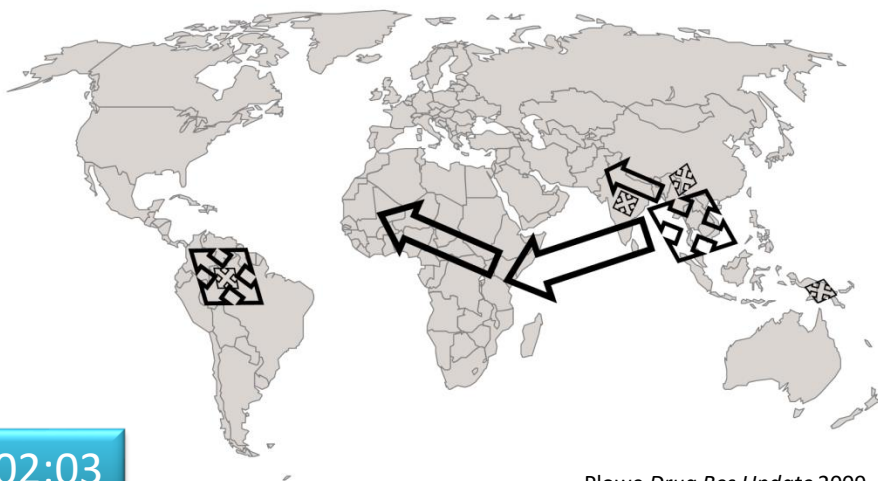


## Gene flow



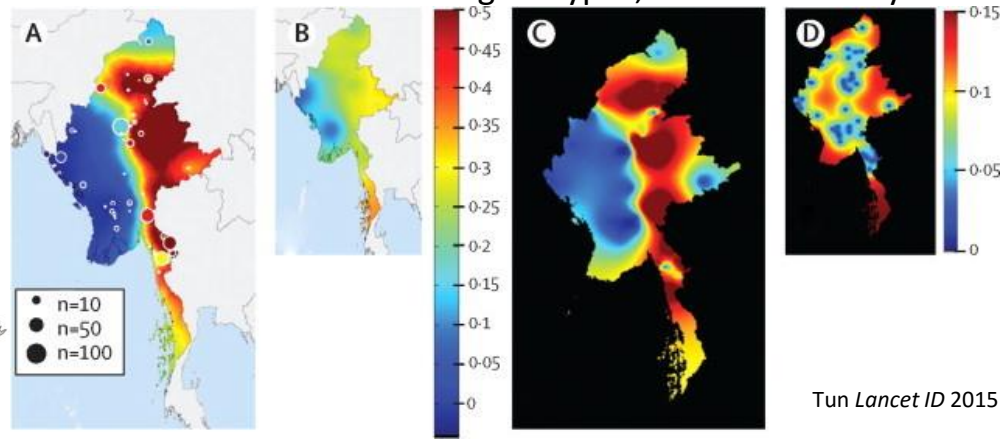
Jacob *unpublished*

## Haplotype distribution



Plowe *Drug Res Update* 2009

## Prevalence of resistant genotypes, with uncertainty



Tun *Lancet ID* 2015