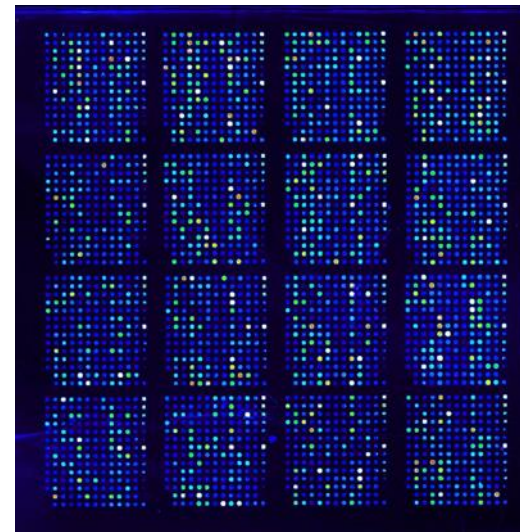
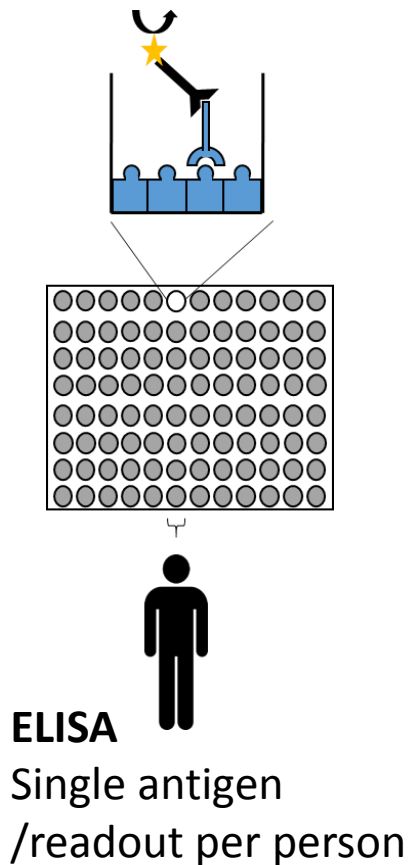
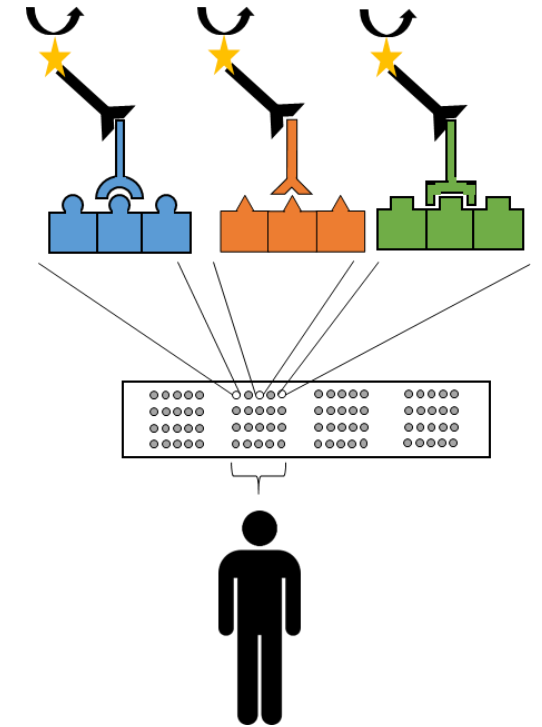


Antibodies to action: using multiplex serological data to guide malaria control programmes

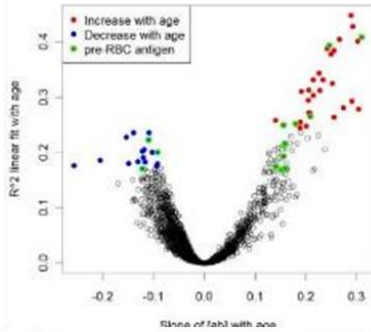
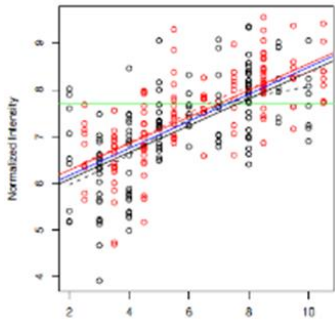
Chris Drakeley, IID,ITD



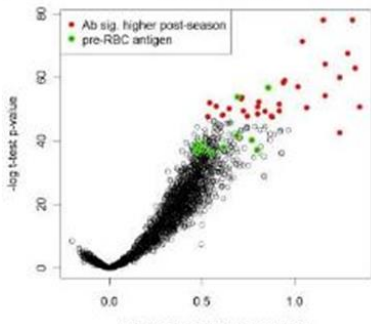
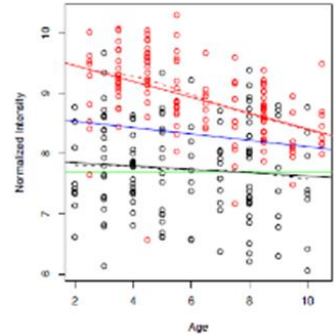
Multiplex platforms
Antibody responses to
multiple antigens(families)
>500 proteins



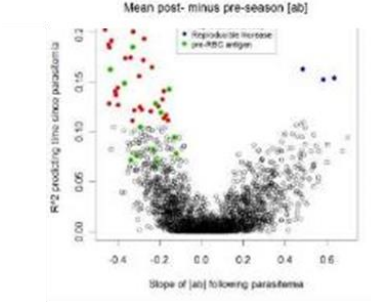
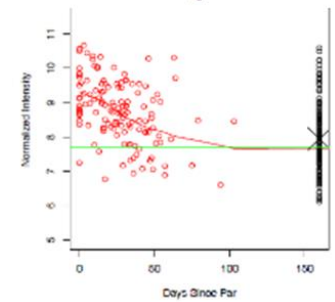
Antigens with varying associations with exposure



Cumulative exposure
Change with age



Recent exposure
Mean drop over season

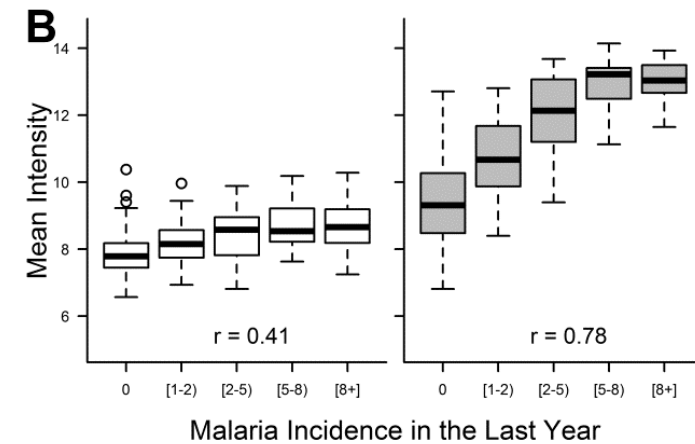
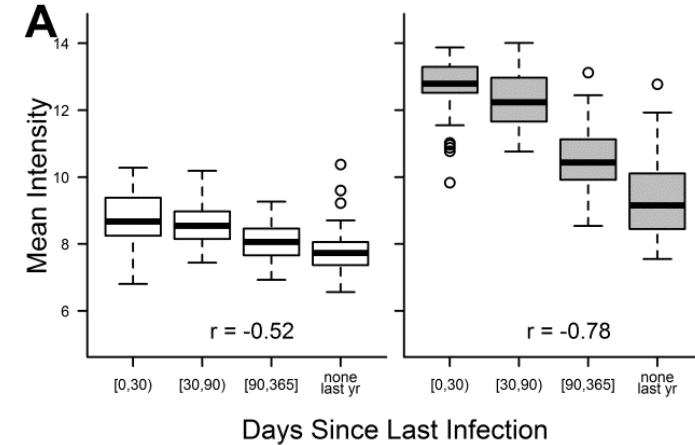


Sero-incidence
Time since parasitaemia

Helb, et al PNAS

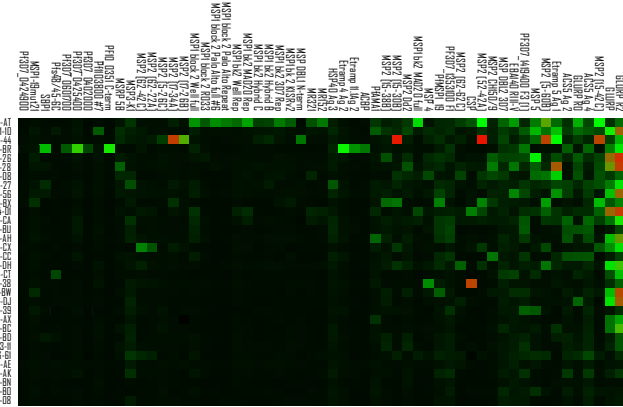
655 Antigens

Top 10 Antigens



~30 antigens associated with recent exposure
Combined top 10 hits accurately predict both
days since last infection & incidence

Data interpretation for action



#1
#2
#3

Historical exposure					Recent exposure				
A	B	C	D	E	Q	R	S	T	U
1	1	0	1	1	0	0	0	0	0
1	1	1	1	1	1	0	1	0	1
1	0	0	0	0	1	0	0	0	0

#1
#2
#3

Historical exposure	Recent exposure
Yes	No
Yes	Yes
no	no

↓
Age Group

Area	1 to 5	6 to 15	>15
A	0	0	25
B	1	10	40
C	5	15	50
D	0	0	10

