



# HVTN Protocol 065

**“HIV-1 DNA prime followed by recombinant MVA boost is well tolerated and immunogenic when administered to healthy seronegative adults”**

**Paul Goepfert**

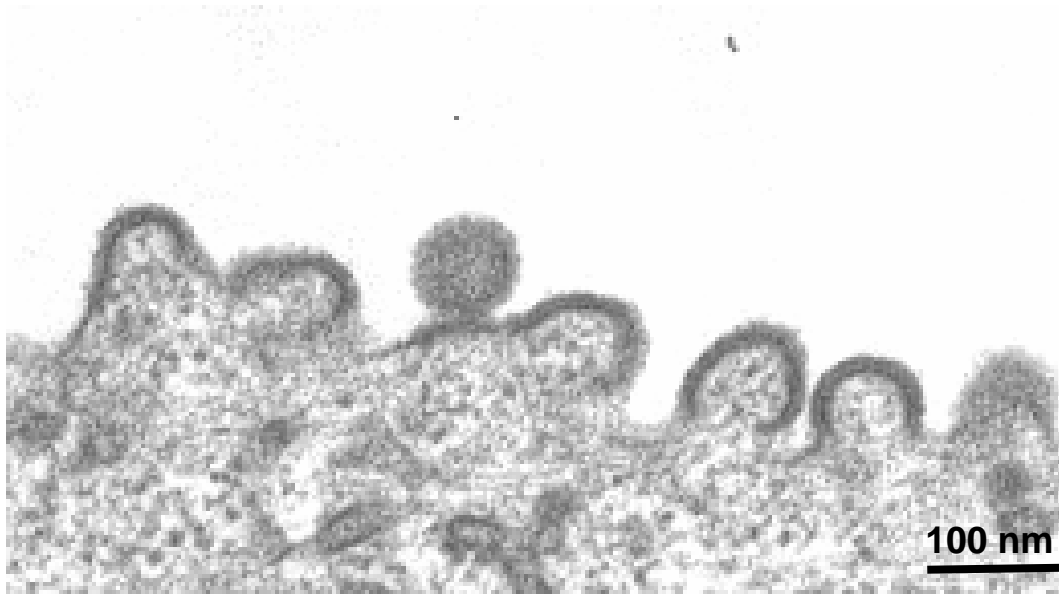
**University of Alabama at Birmingham**



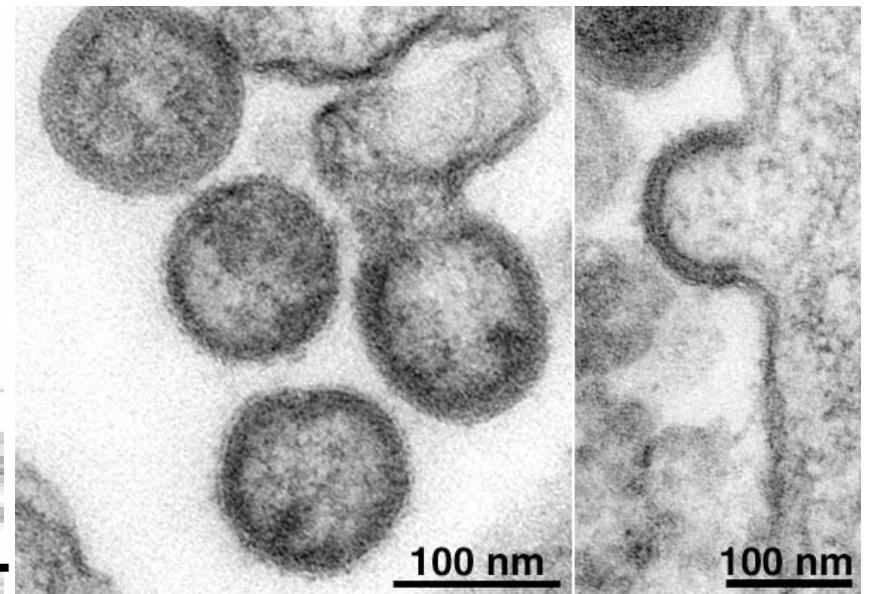
# GeoVax Clade B DNA/MVA Vaccine

- Both the JS7 DNA and MVA/HIV62 express Gag, Pol, and Env
- Both express virus-like-particles (VLPs)
- Both provide broad targets for T cell responses,
  - DNA expresses 2343 aa of HIV-1
  - MVA expresses 1965 aa of HIV-1

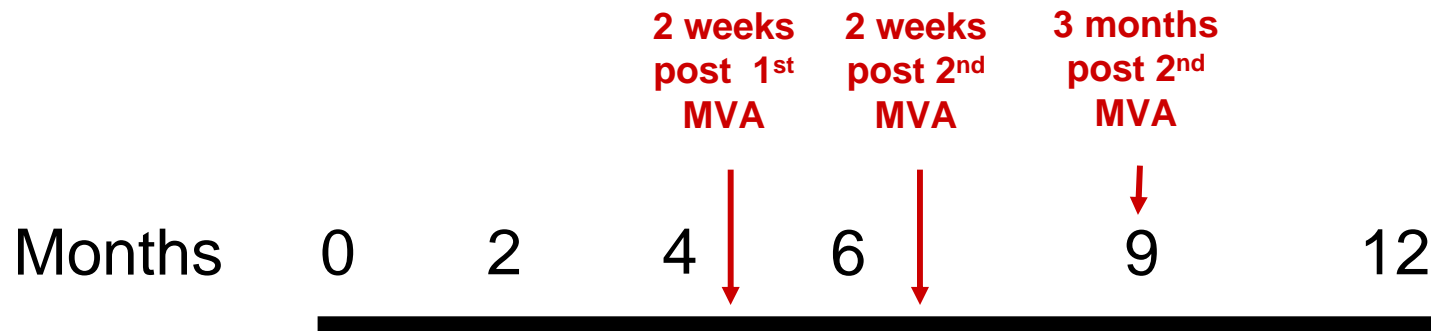
JS7 DNA



MVA/HIV62



# Trial Schema and Doses



**1/10<sup>th</sup> dose (n=10/2):**    **0.3mg DNA**    **1x10<sup>7</sup>TCID<sub>50</sub> MVA**

**full dose (n=30/6):**    **3mg DNA**    **1x10<sup>8</sup>TCID<sub>50</sub> MVA**



HIV VACCINE  
TRIALS NETWORK



# HVTN Protocol 065

## Safety

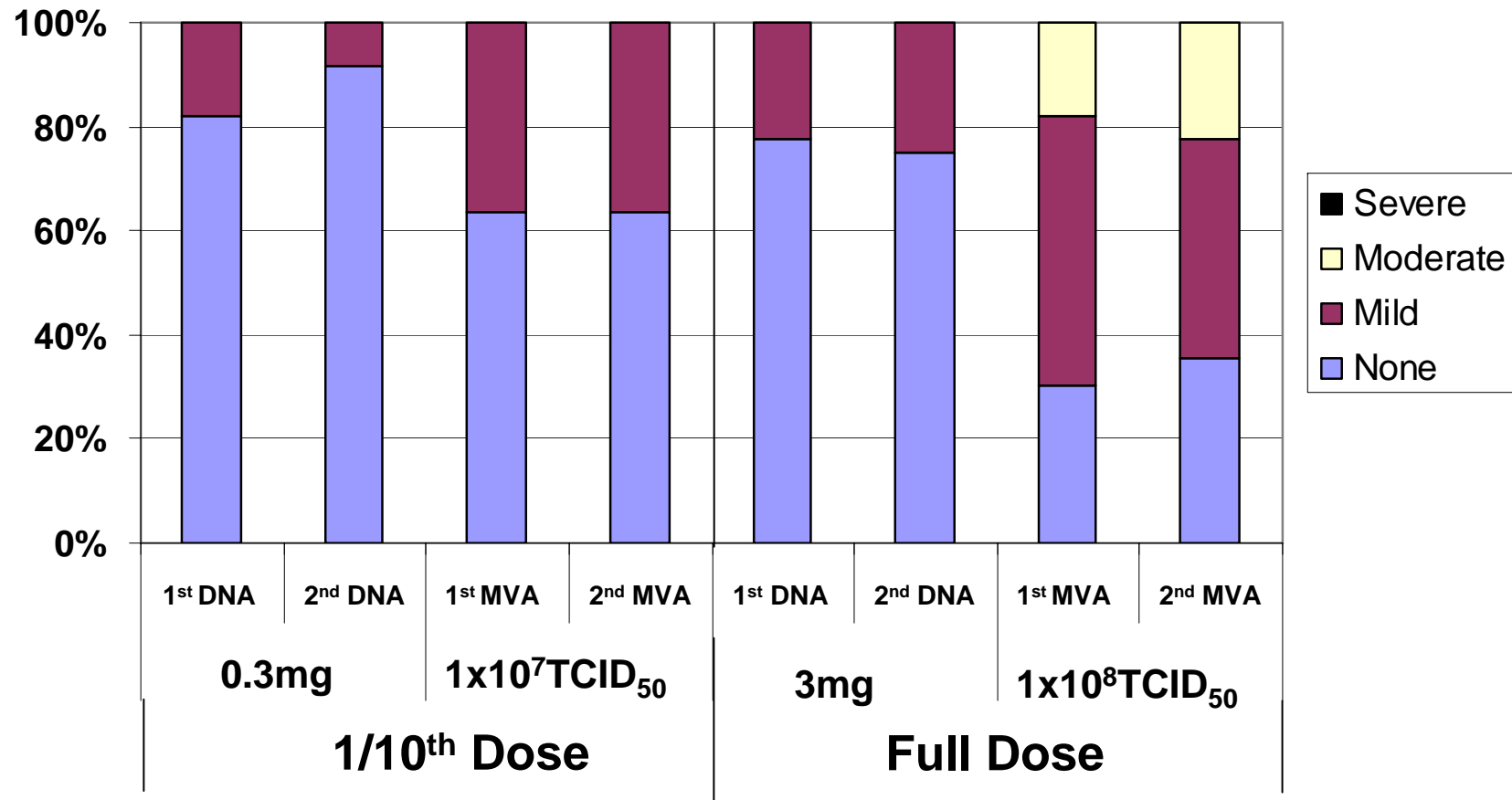
# Adverse events



- Group 1
  - AEs possibly related to vaccine: 3 mild
- Group 2
  - AEs possibly related to vaccine: 6 mild
  - AEs probably related to vaccine: 1 moderate
- No significant cardiac events

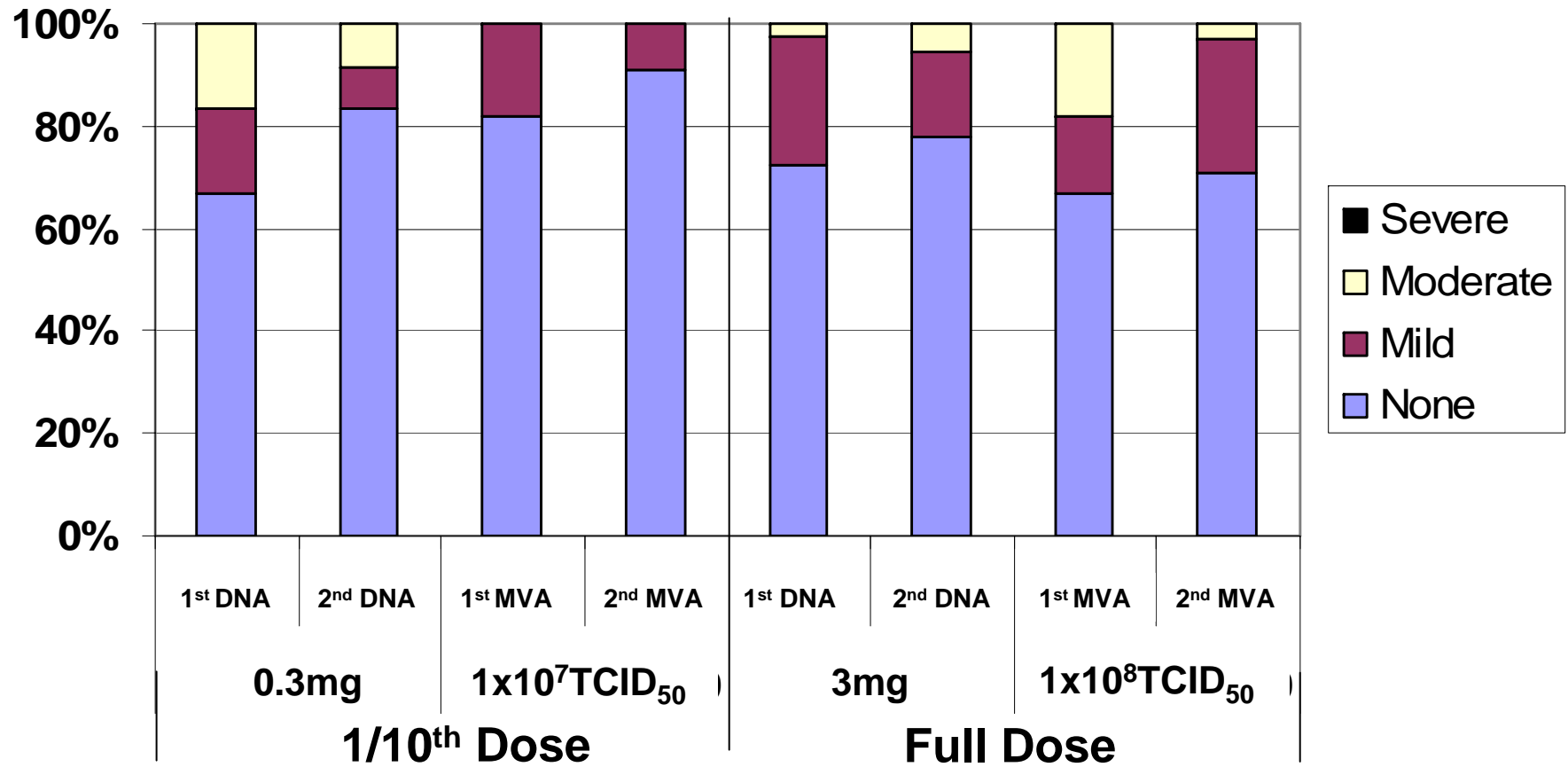


# Safety: Pain and/or Tenderness





# Safety: maximum systemic symptoms





HIV VACCINE  
TRIALS NETWORK

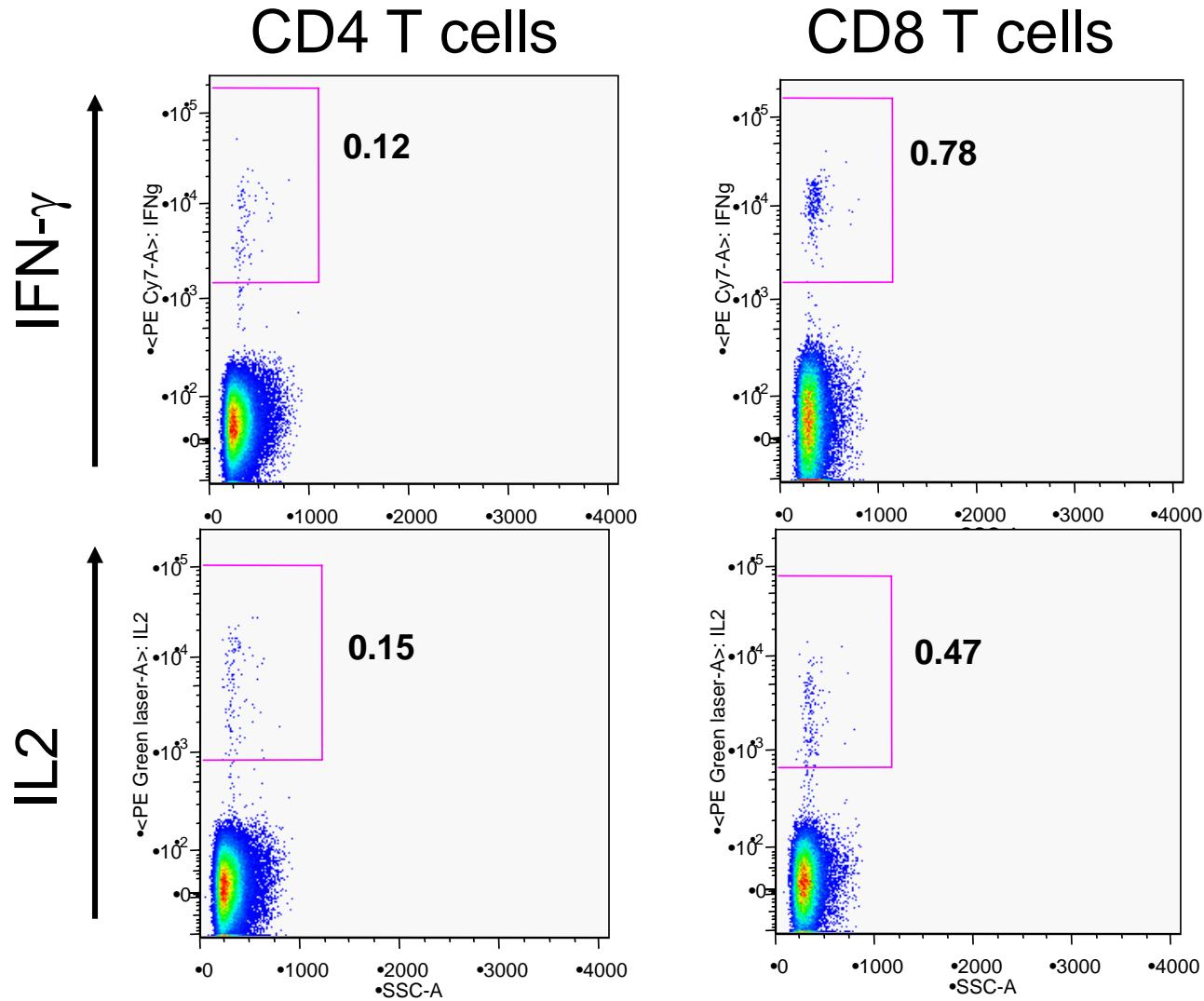


# HVTN Protocol 065

## T cell and Ab Responses



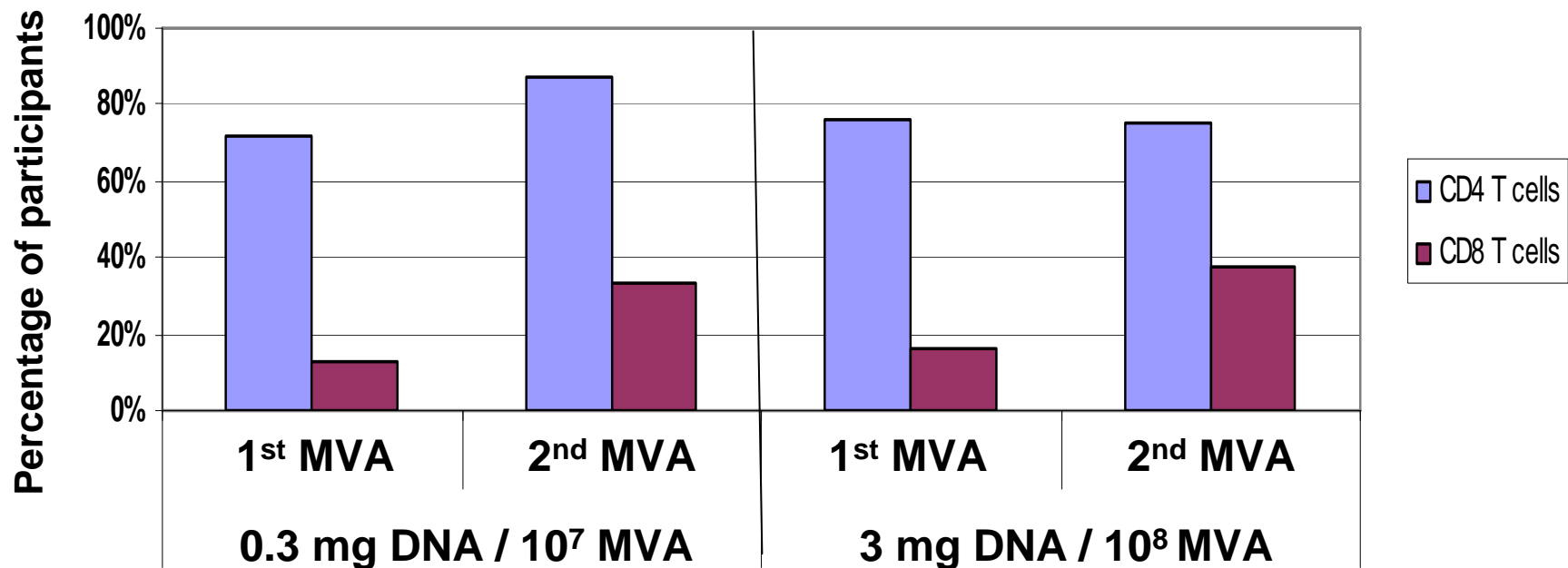
# Representative CD4 and CD8 T cells at 2 weeks post 1<sup>st</sup> MVA Boost





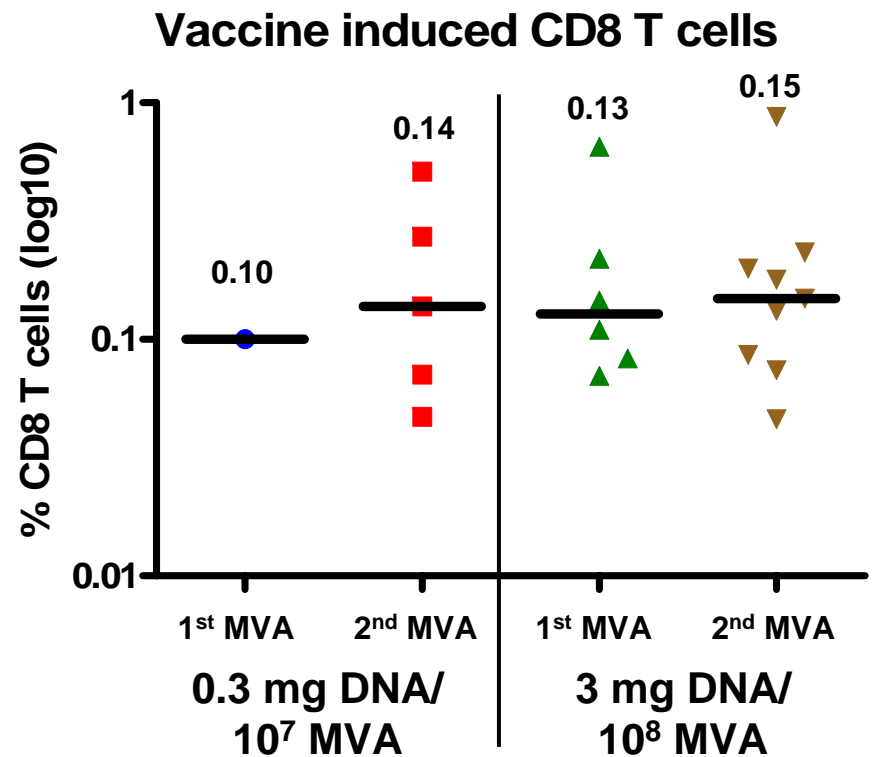
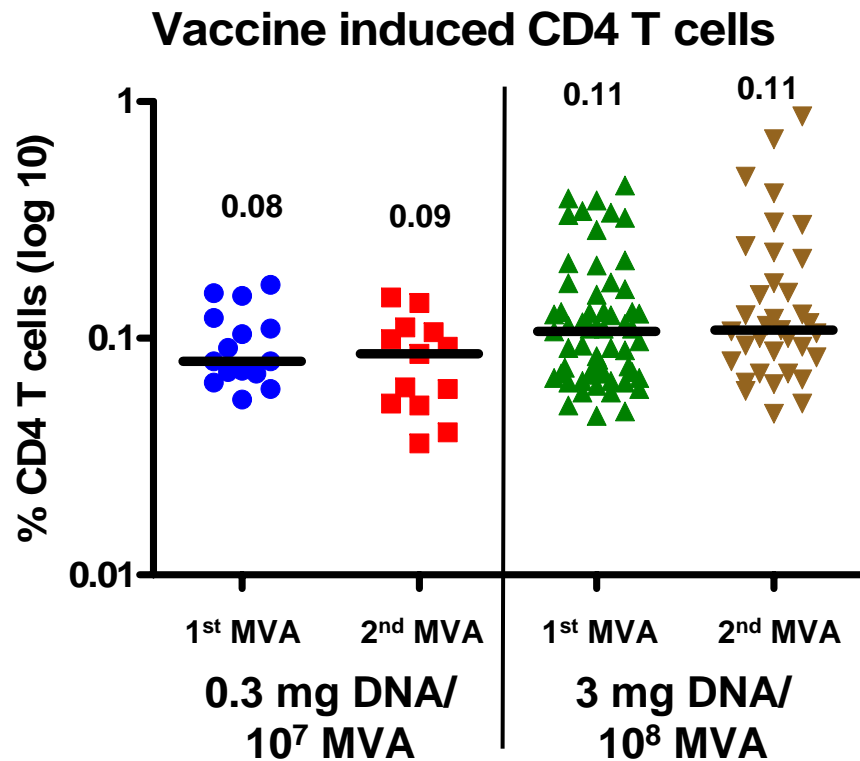
# 1/10<sup>th</sup> and Full Dose Groups, Similar Frequencies of Responders

% Participants with T cell responses at 2 weeks post:





# 1/10<sup>th</sup> and Full Dose Groups, Similar Median T cell Responses



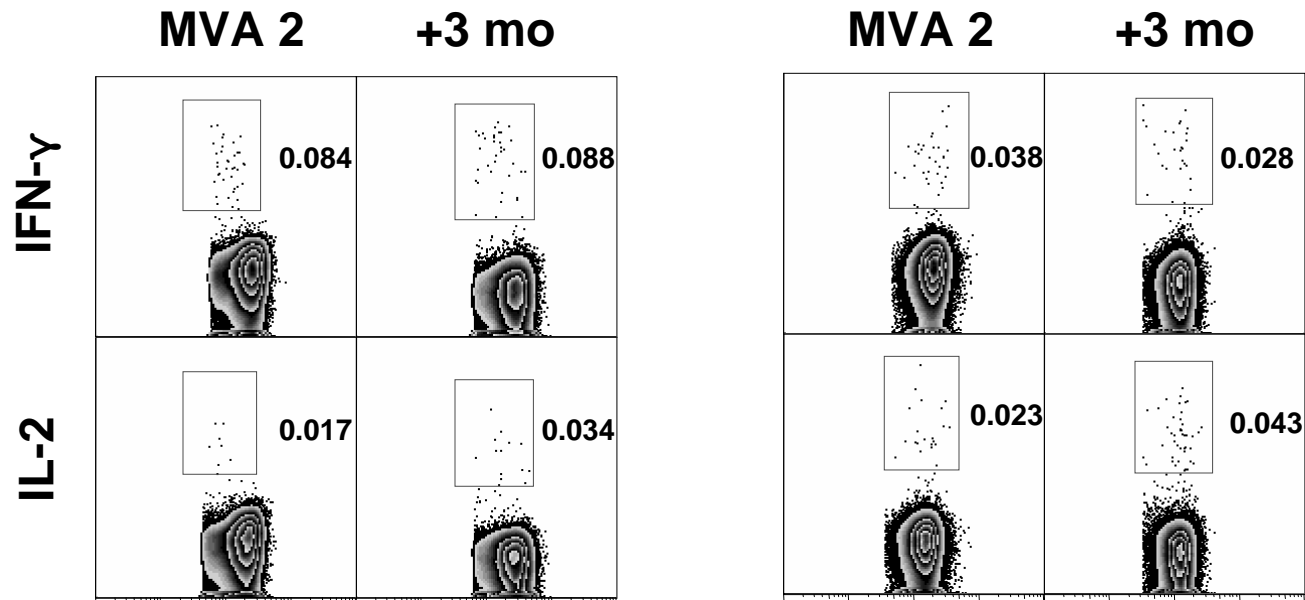
Data represent positive responses



# Good Longevity of Responses at 3 Months post 2<sup>nd</sup> MVA boost

## CD8 Gag response

## CD4 Gag response



Ancillary Assays



## Balanced T Cell Response between Gag and Env

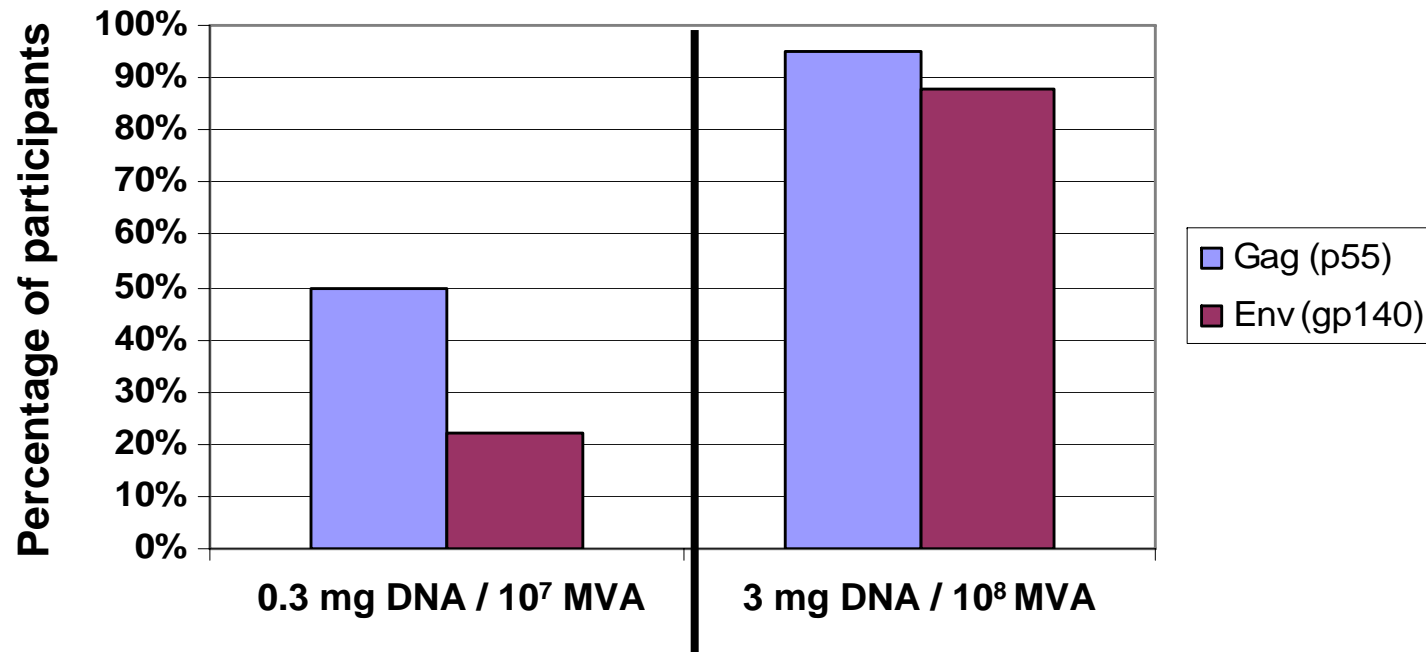
Number of Vaccinees with Responses for:			
	Gag	Env	Pol
CD4 T cells	23	22	4
CD8 T cells	9	7	1

Combining 1/10 Dose and Full Dose Groups post 1<sup>st</sup> and 2<sup>nd</sup> MVA (n= 33 vaccinees)



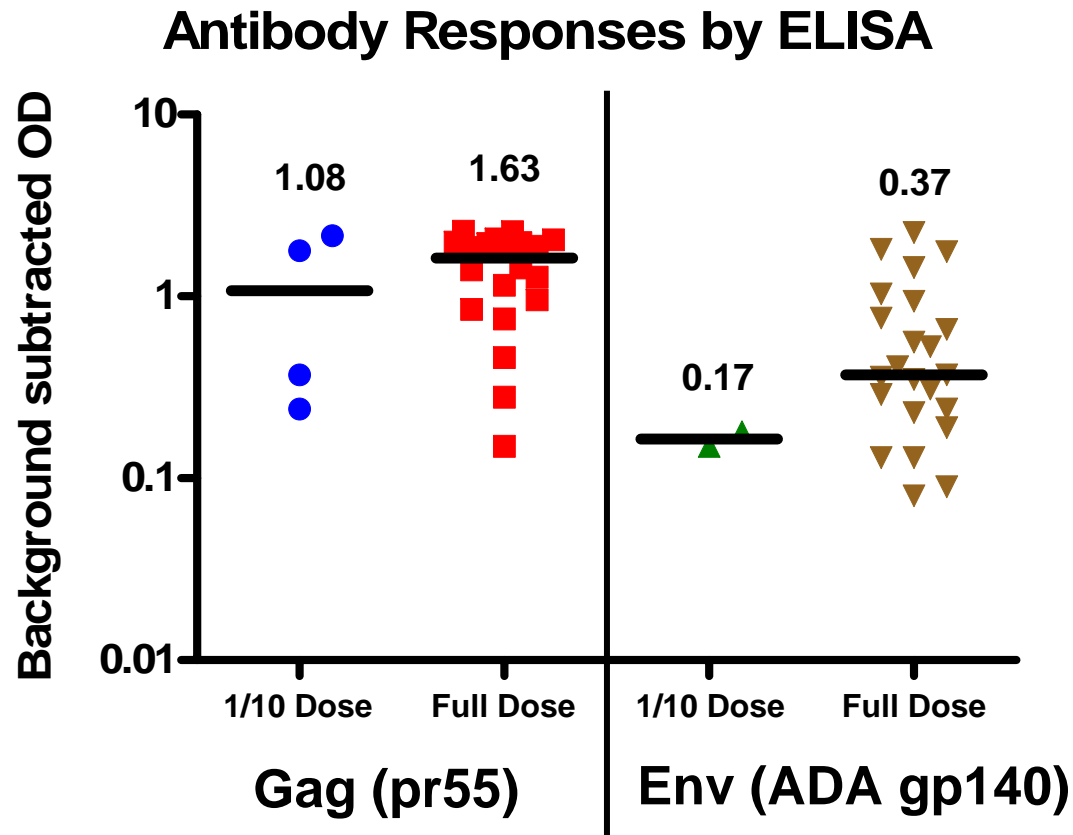
## Increased Frequency of Gag and Env Ab Responders in Full Dose Group

**% Participants with ELISA Ab responses at 2 weeks post 2<sup>nd</sup> MVA:**





# 1/10th and Full Dose Groups, Median Ab Responses



Data represent positive responses

See Poster P10-20

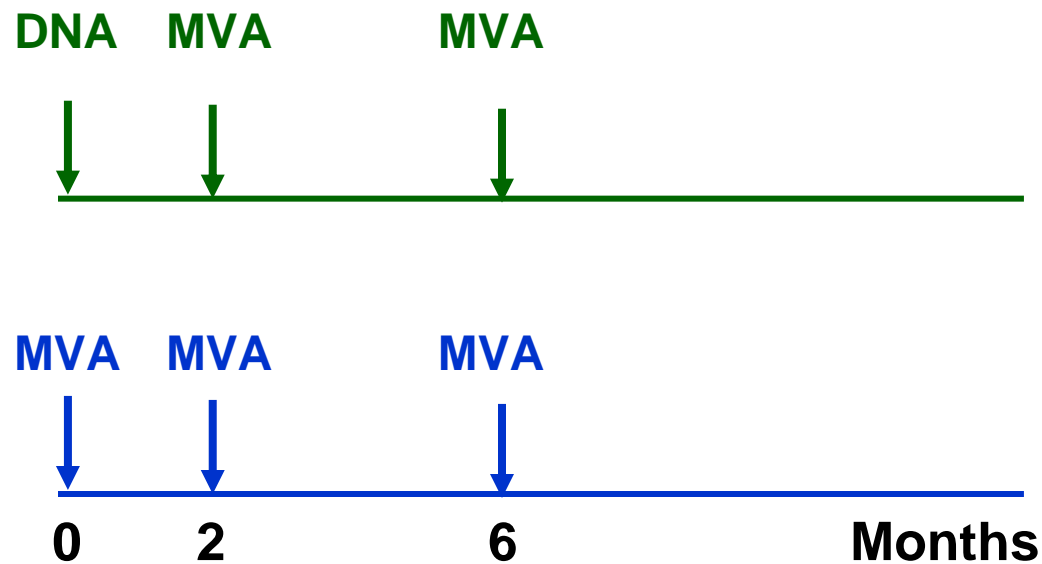


## Conclusions

- JS7 DNA prime with MVA/HIV62 boost is safe and immunogenic
- Well tolerated with no, or mild, local and systemic symptoms in the majority
- Gag, Env and Pol-specific CD4 and CD8 T cells, Gag and Env Ab, 100% of vaccinees in full dose group responded
- Overall similar T cell responses in 1/10<sup>th</sup> and full dose groups, but higher number of Ab responders in full dose group
- 2<sup>nd</sup> MVA increased number of CD8 and Ab responders, but not number of CD4 responders



## HVTN-065 - Next 2 Groups – Simpler Schedules



- Both high dose: 3 mg DNA /  $10^8$  MVA
- Both: 30 volunteers / 6 placebos



# Acknowledgements

- **HVTN Participating sites**

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- Duke: Georgia Tomaras

- **HVTN Core**

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- **DAIDS**

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- Scharla Estep
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## Balanced T Cell Response between Gag and Env

Number of Responses for:			
	Gag	Env	Pol
CD4 T cells	16	20	1
CD8 T cells	9	7	1



## Balanced T Cell Response between Gag and Env

Number of Responses in Vaccinees for:			
	<b>Gag</b>	<b>Env</b>	<b>Pol</b>
<b>CD4 T cells</b>	39	45	5
<b>CD8 T cells</b>	10	9	1

Combining 1/10 Dose and Full Dose Groups post 1<sup>st</sup> and 2<sup>nd</sup> MVA (n= 56 vaccinees)



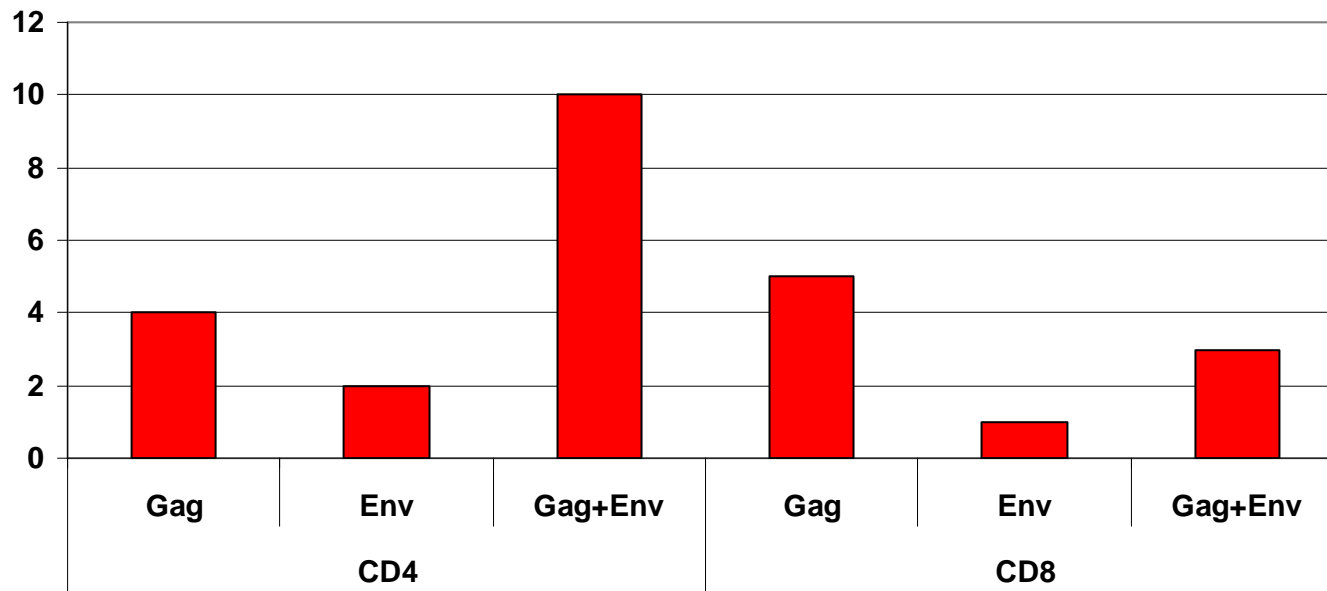
## Balanced T Cell Response between Gag and Env

Total Number of Responses for:			
	Gag	Env	Pol
CD4 T cells	23	23	2
CD8 T cells	9	5	0

Combining 1/10 Dose and Full Dose Groups post 2<sup>nd</sup> MVA (n= 24 vaccinees)



# Balanced T Cell Response between Gag and Env



Combining 1/10 Dose and Full Dose Groups post 2<sup>nd</sup> MVA (n= 24 vaccinees)