



Dale and Betty Bumpers  
**VACCINE RESEARCH CENTER**  
National Institute of Allergy and Infectious Diseases  
National Institutes of Health  
Department of Health and Human Services



National Institute of  
Allergy and  
Infectious Diseases

# **VRC/NIAID Pandemic Preparedness: VRC– Afrigen Research Collaboration**

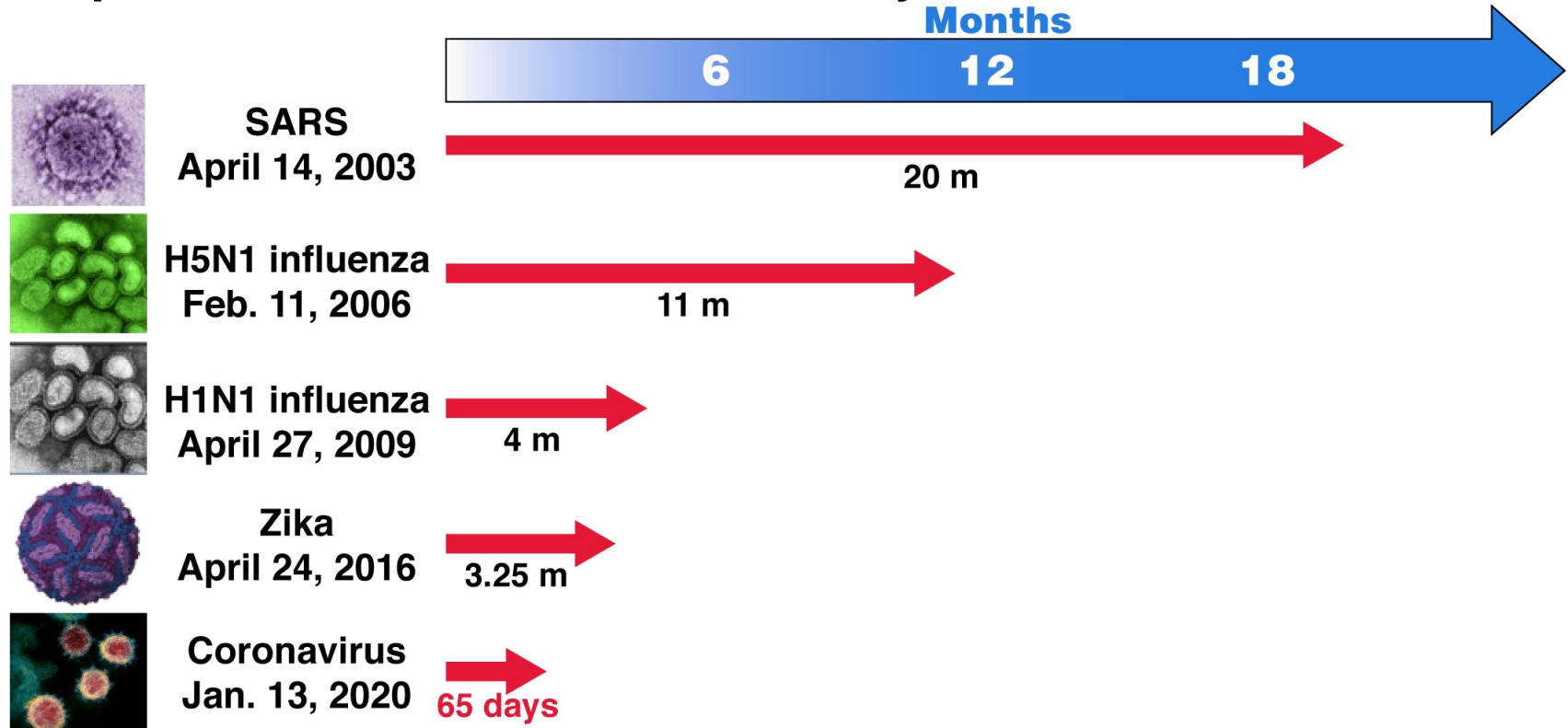
**Karin Bok, MS, PhD**

*Acting, Deputy Director, Director of Pandemic Preparedness and  
Emergency Response*

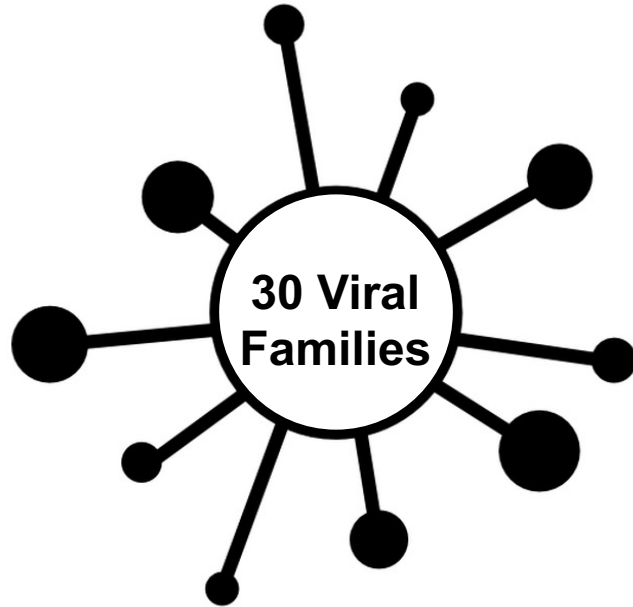
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# Prototype Pathogen Response: Pathogen X

## Sequence Selection to 1st Human Injection



# VRC's Approach: Prototype Pathogen Pandemic Preparedness



For each viral family prototype:



Understand viral characteristics



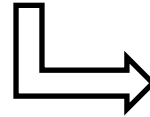
Design vaccine/mAb candidate



Manufacture vaccine/mAb



Conduct clinical studies through Phase 1



Transition to Pandemic Response

# Core Strengths of VRC Preparedness

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- *Epitope and immune profiling*
- *Antigen engineering*
- *Precision Host and Virus Genome Sequencing*
- *Monoclonal antibody discovery*
- *MCMs with broader protection*
- *MCMs with improved or updated TPP*
- *MCMs that address other types of immunity (mucosal)*
- *Early clinical development stockpiling*
- *NIAID and Stakeholder coordination*
- *Research team dedicated to product processing and formulation innovation*

# VRC Product Development Portfolio

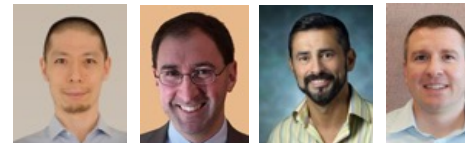
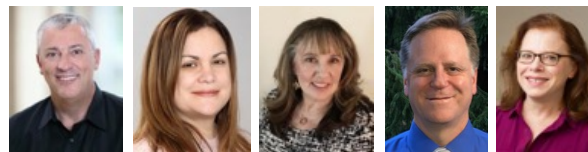
	Pre-clinical Research	GMP	Phase I	Phase II/IIb/III	CRADA	License (pharma)	Regulatory Registrations
<b>HIV Vaccines</b>	Trimers, Fusion peptide	FP6/7	FP8 T6931 T4571			●	
	HIV Ab (passive IgG)	Monoclonal Abs	T7678	CAP256V2LS N6LS VRC07-523LS VRC01		●	
	HIV Ab (vectored IgG)	AAV8-VRC07	VRC01.23LS				
<b>Influenza vaccines</b>	Full length HA-ferritin					●	
	Stabilized-stem ferritin	mRNA	H1 H10			●	
	Mosaic nanoparticles		FluMosV1			●	
<b>Ebola/Marburg vaccines</b>	ChAd3	SteMo	FluMosV2	Marburg Sudan	ChAd3 Zaire	●	
	Ebola Abs	Antibodies	Sudan mAbs	BiSp107	mAb 114	●	mAb114 BLA Approved Dec 2020
<b>Chikungunya</b>	VLP					●	
<b>VEE, EEE, WEE</b>	VLP					●	
<b>West Nile</b>	DNA						
<b>Zika</b>	DNA				DNA		
<b>RSV vaccine</b>	Stabilized F GP		DsCav1			●	
<b>Nipah</b>	Nipah mRNA					●	
<b>Measles/Mumps/Rubella</b>	Protein subunit					●	
<b>Malaria Vaccine</b>	Irrad. sporoz.			Irrad. sporoz.		●	
<b>Malaria Ab</b>	Monoclonal Ab			L9LS CIS43LS		●	
<b>SARS-CoV-2 Vaccine</b>	mRNA					●	mRNA-1273 BLA Approved Jan 2022
<b>SARS-CoV-2 Ab</b>	Monoclonal Ab					●	LY-CoV555 EUA LY-CoV1404 EUA
<b>EV-D68</b>	VLP						

# Acknowledgments (Entire VRC staff)

## Vaccine Research Center (VRC, NIAID)



## VRC Senior Staff



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Masaru Kanekiyo, Eli Boritz, Lucio Gama, Kevin Carlton**