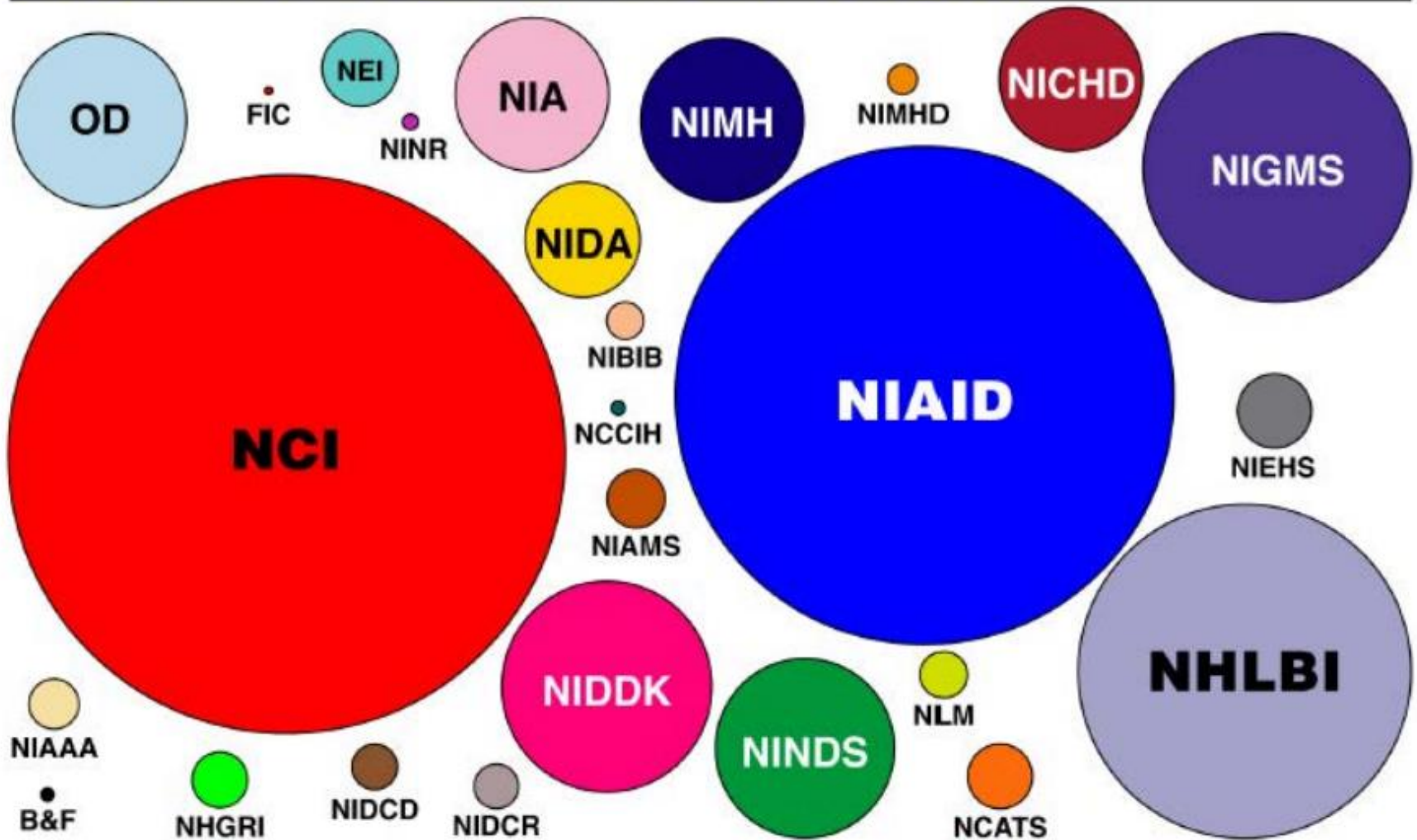


# Statisticians at the National Institute of Allergy and Infectious Disease

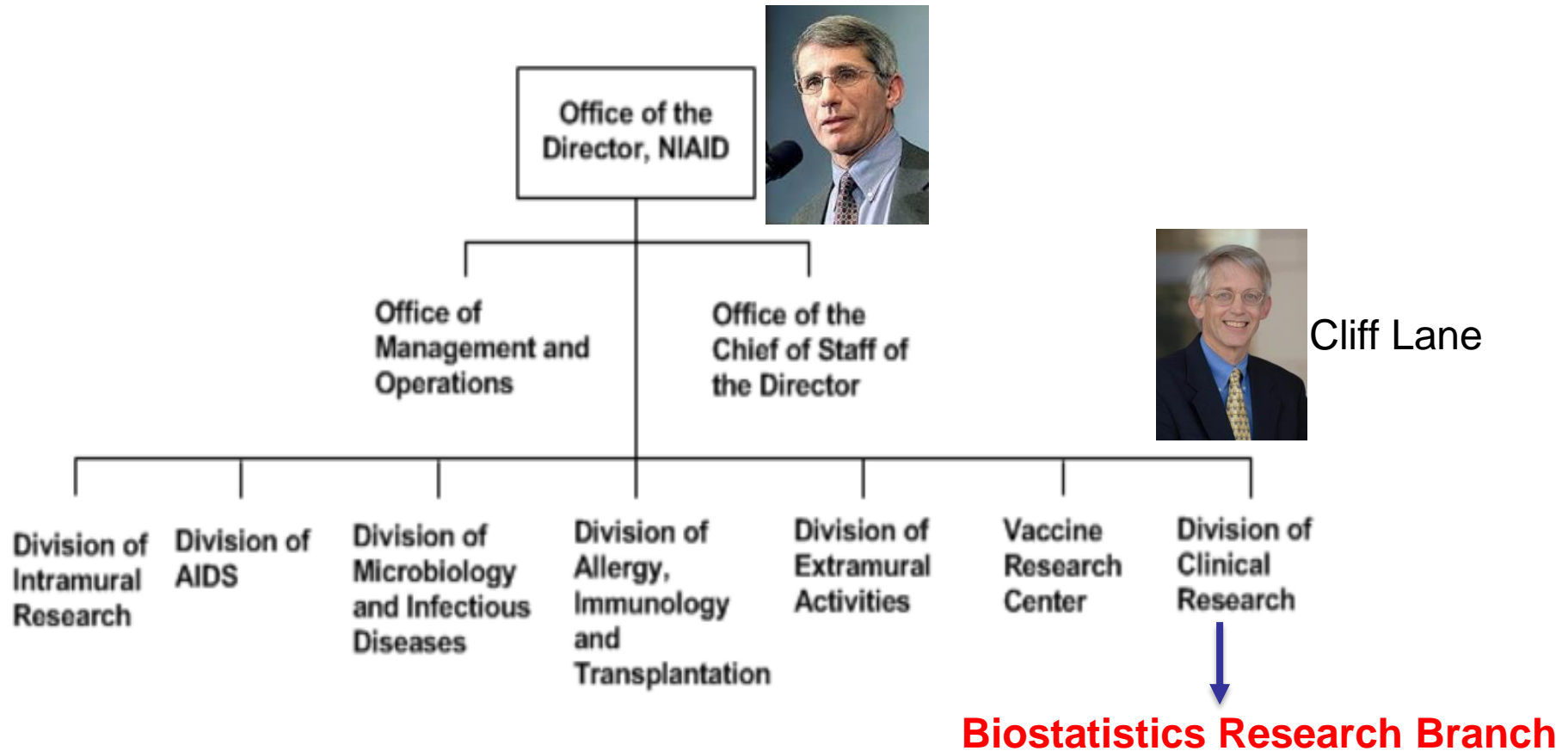
Dean Follmann

# National Institutes of Health

\$\$\$



# NIAID one of 27 NIH institutes



# NIAID Biostatistics Research Branch



Dean Follmann



Erica Brittain



Sally Hunsberger



Michael Fay



Lori Dodd



Micheal Proschan



Jing Qin



Bruce Swihart



Misrak Gezmu



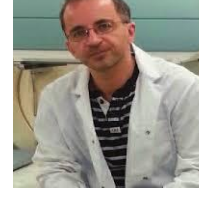
Zonghui Hu



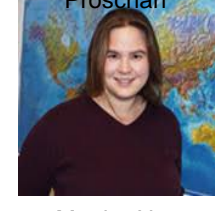
Jonathan Fintzi



Ana Villa - Ortega



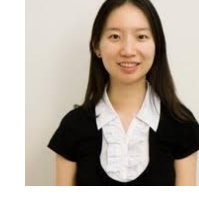
Michele Di



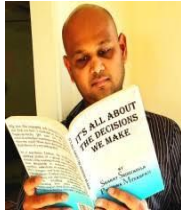
Martha Nason



C. Jason Liang



Jing Wang



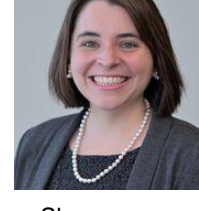
Sharat Srinivasan



Keith Bernard



Allyson Mateja



Shannon Gallagher



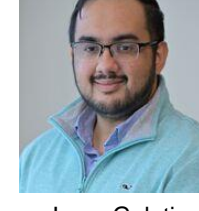
Alyhana Childs



Michael Duvenhage



Shera Weyers



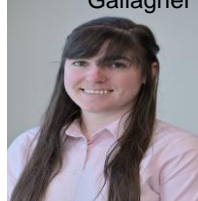
Iman Gulati



Victoria Bera



Tyler Bonnett



Alyson Francis



Yi Chi



Claudine Casimir



Aurélie Gouel



Erin Gabriel

# BRB Staffing

- 15 PhDs
- 5 Master's level statisticians
- 6 Data Managers
- 1 Post Doc
- PhDs work independently
  - Masters work with PhDs

# Work at NIAID

- Extramural === Outside, Large Projects
  - Help design a clinical trial: sample size, analysis methods, primary readout
  - Review protocols
- Intramural == Inside, Smaller Projects
  - Analyze data from an experiment, author paper
- Special Projects= stuff we do
  - Run trial of different treatments for Ebola in Congo

# BRB Philosophy



- Align statisticians with Branches/Labs/Pis.
- Establish a rapport
  - Attend talks, office hours, formal reviews, repeated collaborations.
- Ultimate Goal
  - Statistician viewed as a useful collaborator.
  - Medical papers, Statistical papers
- Support interests of staff
  - Causality, Ethics, Adaptive Designs, Capacity Building, Clinical Trials Science/Operation



# Treatment



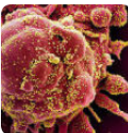
- Randomized Trial of Placebo vs Remdesivir
  - Required quick flexible thinking/action
- Principal statisticians + team in BRB
- Study well powered and well run
  - 31% faster recovery p-value = 0.001
  - Median recovery 11 days Remdesivir vs 15 days
- Now studying a new drug

PT pharmaceutical-technology.com

Gilead secures FDA's EUA for remdesivir to treat Covid-19

Credit: NIAID. Gilead Sciences has secured emergency use authorisation (EUA) from the US Food and Drug Administration (FDA) for remdesivir ...

8 hours ago





# Prevention: Planning for Vaccines

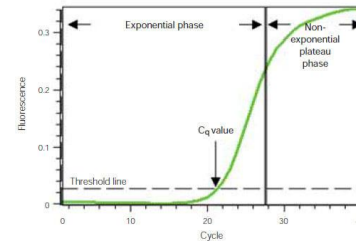
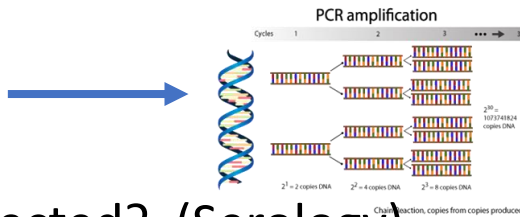
- Many vaccine candidates to be evaluated
- Possible Endpoints
  - Infection - PCR+ for virus
  - Disease - PCR+ for virus & symptomatic disease
- Which will be sensitive to vaccine effects? Help patient health?
- What if major effect of vaccine is to lessen disease severity?

Outcome	Placebo	Vaccine
Infection	1.0%	1.5%
Mild Disease	0.6%	0.4%
Hospitalized	0.3%	0.1%
Death	0.1%	0.0%

Vaccine “lift”

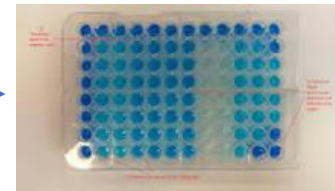
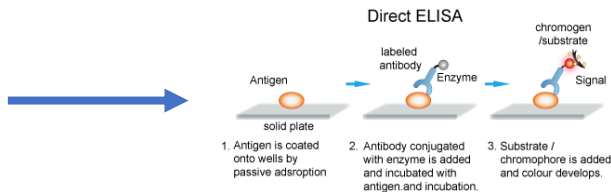
# Identify: Diagnostics

- Are you infected? (PCR tests)



Y = abundance of SARS-CoV2 RNA

- Were you infected? (Serology)



Y = abundance of antibodies that fought SARS-CoV2

# Skills needed

- Good training
- Excellent communication skills
- Ability to understand biology, infectious diseases
- Ability to see how to formulate
  - Decent answer in one hour
- Work independently
- Support, respect for others in group

# Career Path

- Our mission is to improve human health
  - Quite broad
- Tasks: Assigned projects & what you create
- Work independently, become recognized

# Other Institutes

- NCI, NHLBI have statistics groups
- Broadly similar projects
- Intramural Groups like Academic Department
  - Tenure, publications, post-docs
- Extramural Groups more collaborative
  - e.g. NIAID

# NIAID Opportunities

- Master's level statisticians in Fall
- PhDs in Winter
- Email Department Chairs
- Advertise on websites UFL, UCLA, Emory,
- Advertise in Amstat News

dean.follmann@nih.gov

# NIAID Biostatistics Research Branch



Dean Follmann



Erica Brittain



Sally Hunsberger



Michael Fay



Lori Dodd



Micheal Proschan



Jing Qin



Bruce Swihart



Misrak Gezmu



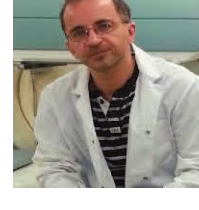
Zonghui Hu



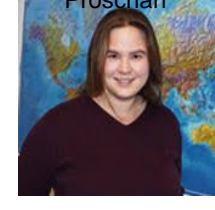
Jonathan Fintzi



Ana Villa - Ortega



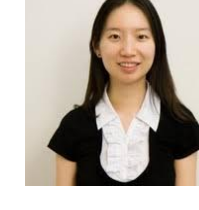
Michele Di



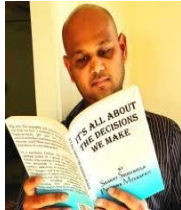
Martha Nason



C. Jason Liang



Jing Wang



Sharat Srinivasan



Keith Bernard



Allyson Mateja



Shannon Gallagher



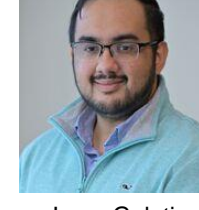
Alyhana Childs



Michael Duvenhage



Shera Weyers



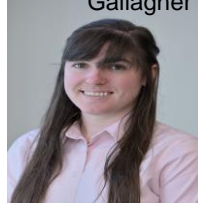
Iman Gulati



Victoria Bera



Tyler Bonnett



Alyson Francis



Yi Chi



Claudine Casimir



Aurélie Gouel



Erin Gabriel