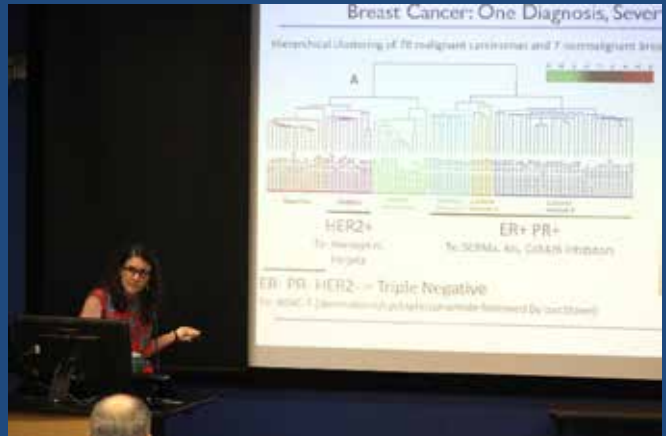
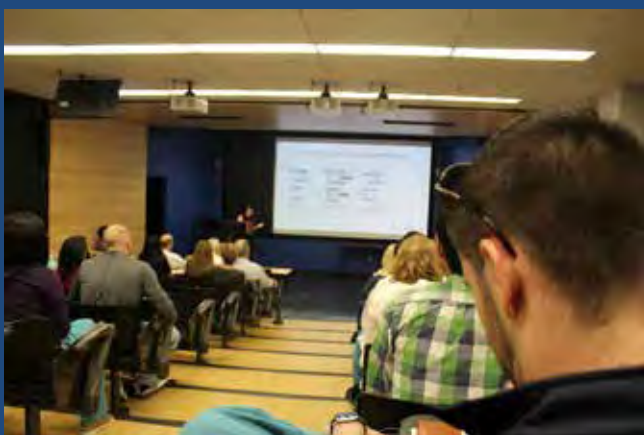


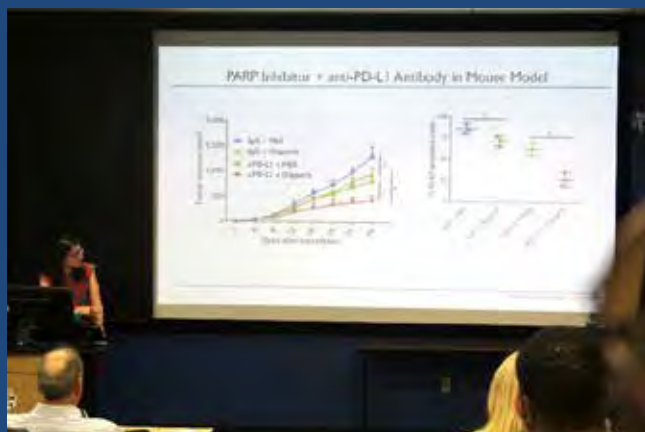
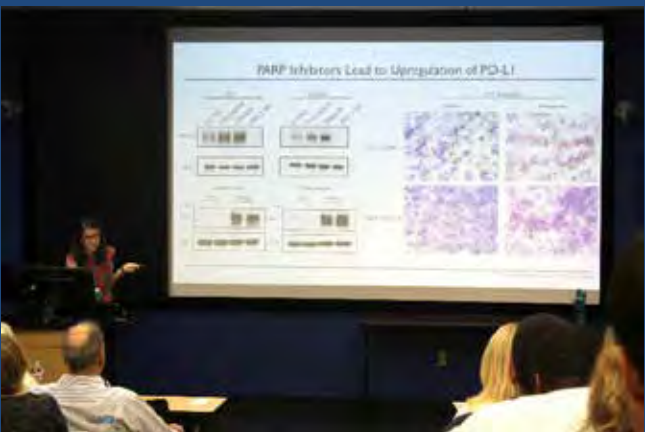
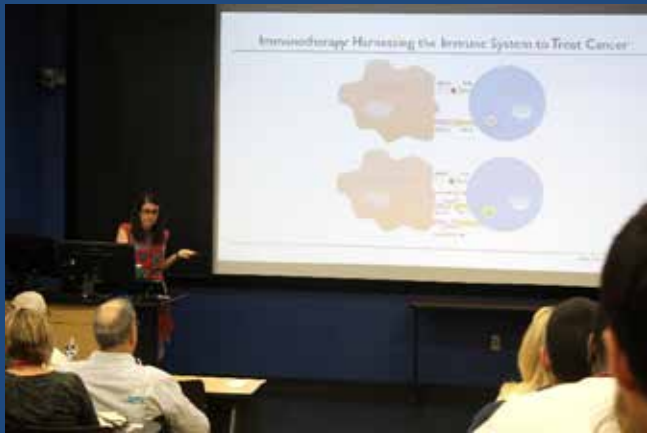


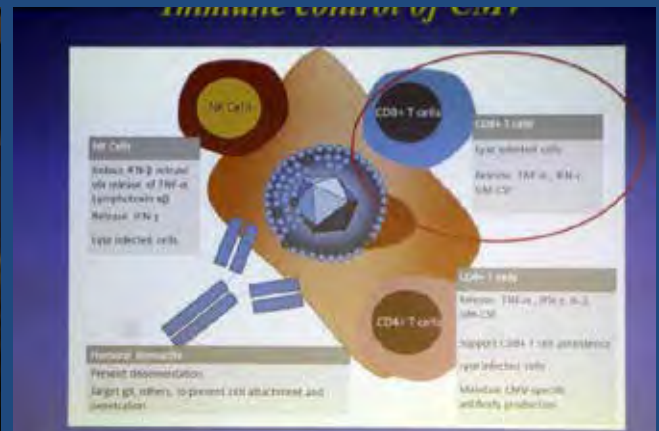
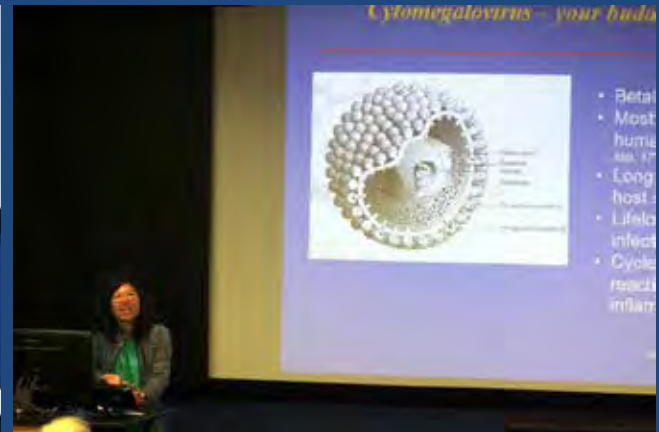
Research Academic Half Day Oral Vignettes at Medicine Grand Rounds – May 16, 2018



Tucson campus internal medicine residents and winners of the Research AHD poster contest, **Darien Reed, MD, PhD**, **Phan Saligrama, MD, PhD**, and **Ryan Buckley, MD**, present oral vignettes at the UA Department of Medicine Grand Rounds, with introductions by IM chief resident **Jawad Bilal, MBBS**. See the archived video [here](#).







Immune Response
 Immune (downregulation)
 Target CD4+ T cells, to prevent cell activation and proliferation

CD4+ T cells

Target Cells
 HIV-1 (M, W, T, R, S, Z, CR1, CR2)
 CD4, CXCR4

Support CMV T cell persistence
 CD4+ CD45RO+ CD28+

Maintain CMV IgG & gB titers
 gB titers

Do different people control CMV in different ways?
 Does this change with age? *Hansen Virology 2014 (WS) 2042 (WS) 10.3390/V1002*

The dance of a lifespan: Memory T cell inflation in CMV

CD4+ and CD8+ counts rise with age, but CD4+ counts are maintained by CMV. CD8+ counts rise with age, but CD8+ counts are maintained by CMV.

Does this "inflation" of immune resources increase the ability to fight other infections?

Human Immunodeficiency Virus

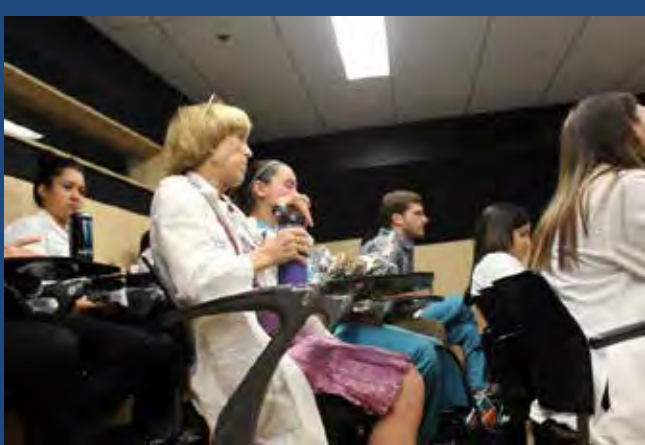
- More than 1.1 million people are HIV+ in the United States
- Combined Antiretroviral Therapy (ART) controls HIV, individuals live near-normal lifespans
- Estimated 800,000 HIV+ individuals in US are aged 50-70 years old

Questions:

- How does HIV & CD4 depletion impact immune aging, leading to "immunosenescence"?
- Do HIV+ subjects have poor control of CMV, and does this enhance other "immune" diseases of aging (e.g., HTLV, TB, cancer, etc.)?

HIV+ Cohort

Group	N	%
CD4 > 500	112	21.2
CD4 350-499	112	21.2
CD4 200-349	112	21.2
CD4 < 200	112	21.2



HIV+ CMV IgG

ABCMV IgG	Mean (SD)
ABCMV IgG	100 (10)
ABCMV IgG	100 (10)
HIV+ ABCMV IgG	110 (12)
HIV+ ABCMV IgG	110 (12)

HIV+ have higher CMV IgG

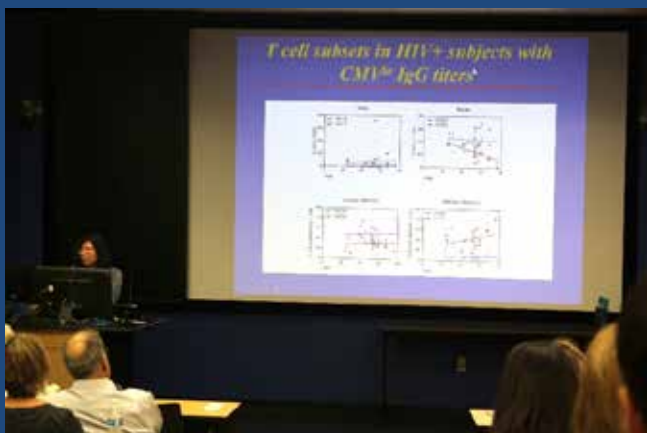
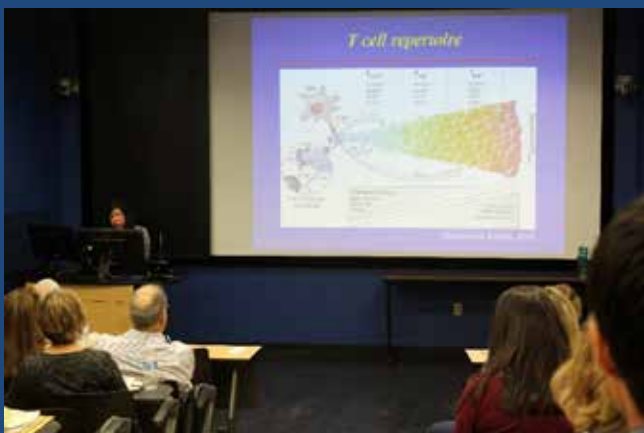
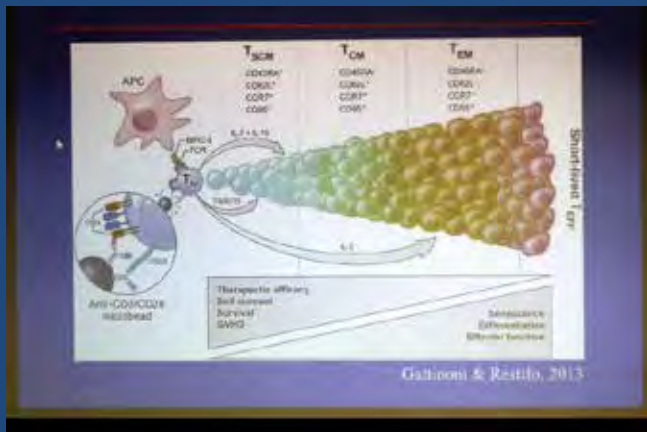
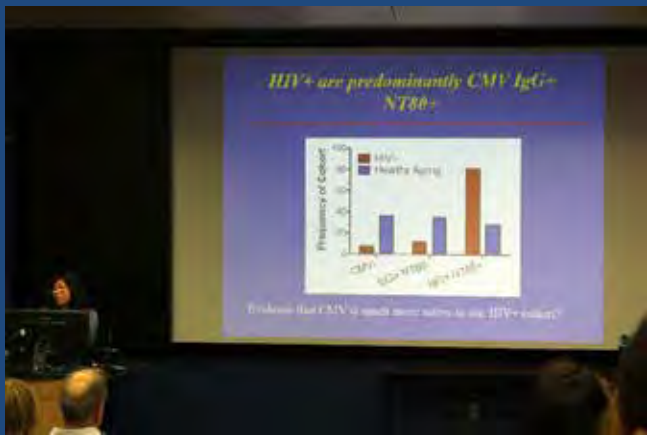
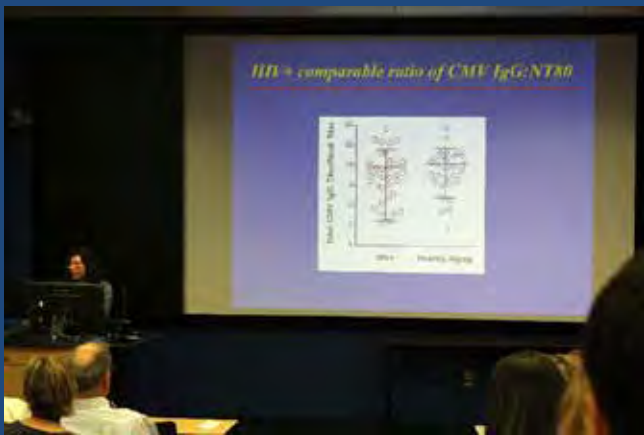
Mean CMV IgG (AU/ml)

HIV+ HIV-

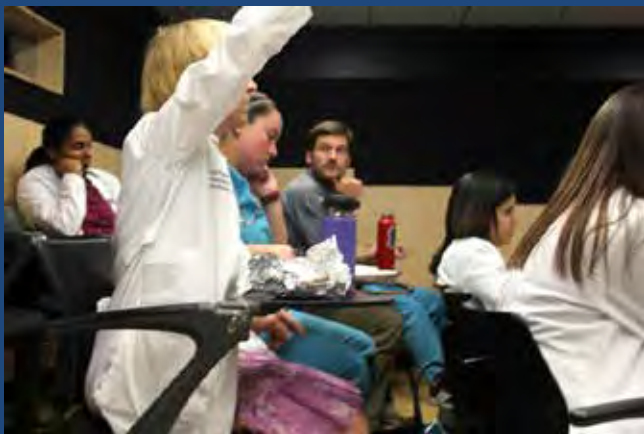
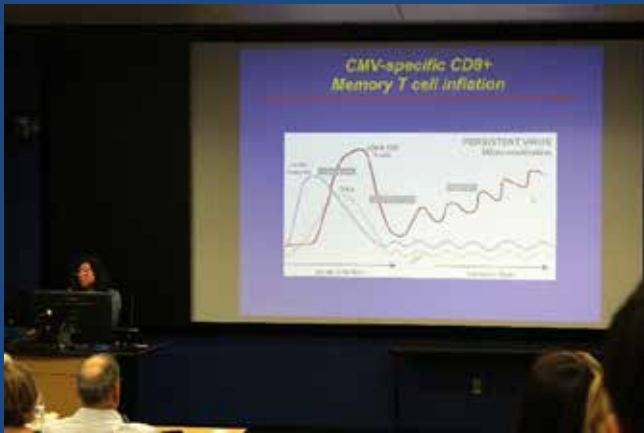
HIV+ have higher NT80, correlating with higher IgG

CMV IgG (AU/ml)

NT80 (log₁₀ copies/ml)



- ### Conclusions
- HIV+ CMV+ individuals, stimulated with ET and yield HCMV proteins, future.
 - lower naive T cell response with age.
 - increased TTB+ Central Memory and Active T cells with age.
 - increased levels of CD4+ Effector Memory T cells with age.









Archived video of the May 16, 2018, Medicine Grand Rounds can be viewed here:
<https://streaming.biocom.arizona.edu/event/index.cfm?id=27993>

For an archive of all Medicine Grand Rounds available for viewing, see [this link](#).

Photos courtesy of David Mogollón, Communications Coordinator, UA Department of
Medicine, (520) 626-1137 or dmogollon@deptofmed.arizona.edu