



# University of Virginia School of Medicine Lawrence G. Lum, MD, DSc

presentation to

## Senate Finance Committee

November 16, 2017





# **“BATs”: An Army of Serial Killers that Target Cancers Based at UVA**

and

## **Update on Center for Human Therapeutics**

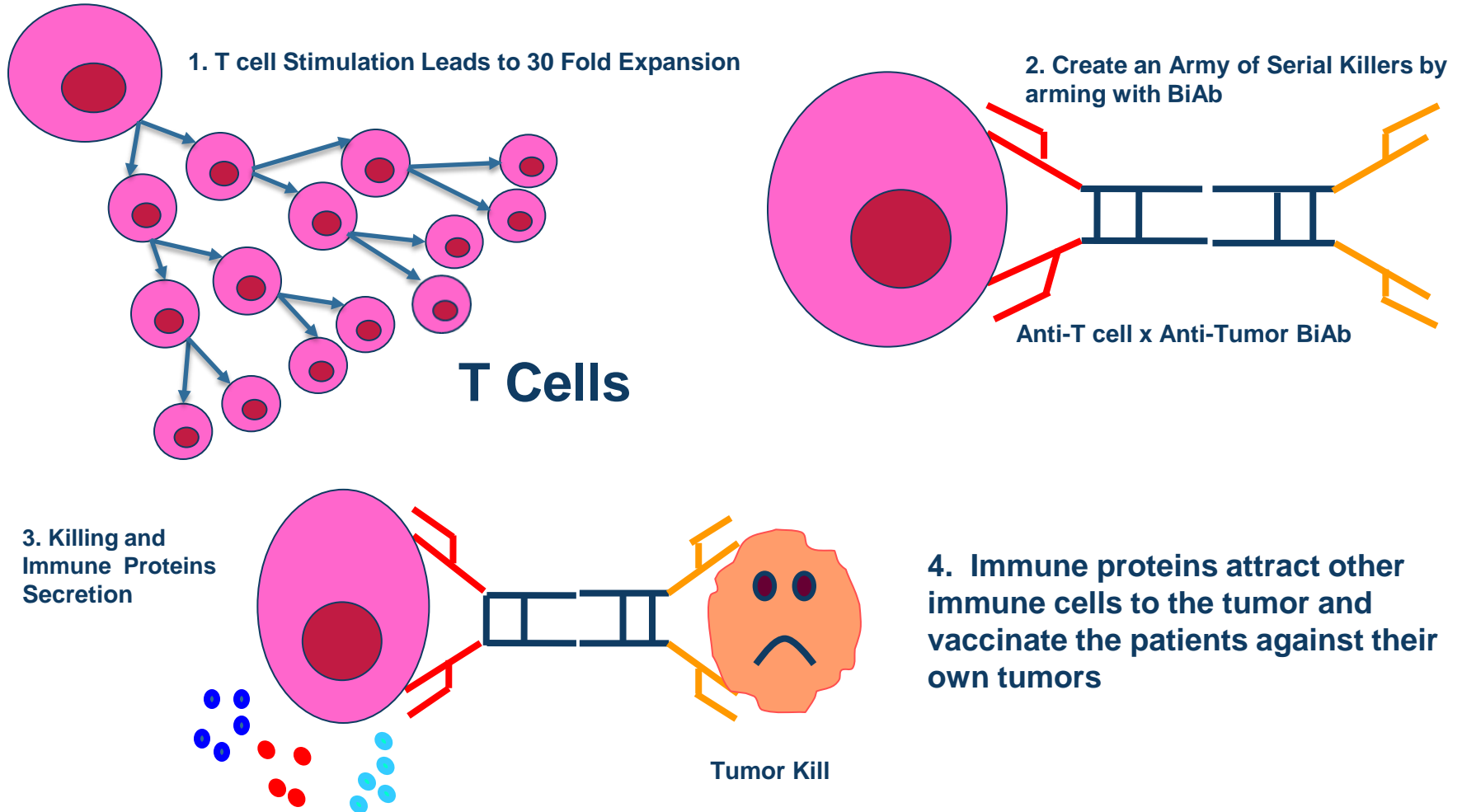


## *T Cells*

**A subpopulation of white blood cells that kill tumors and viruses**



## Platform Technology: Bispecific Antibody (BiAb) Armed T cells (BATs)





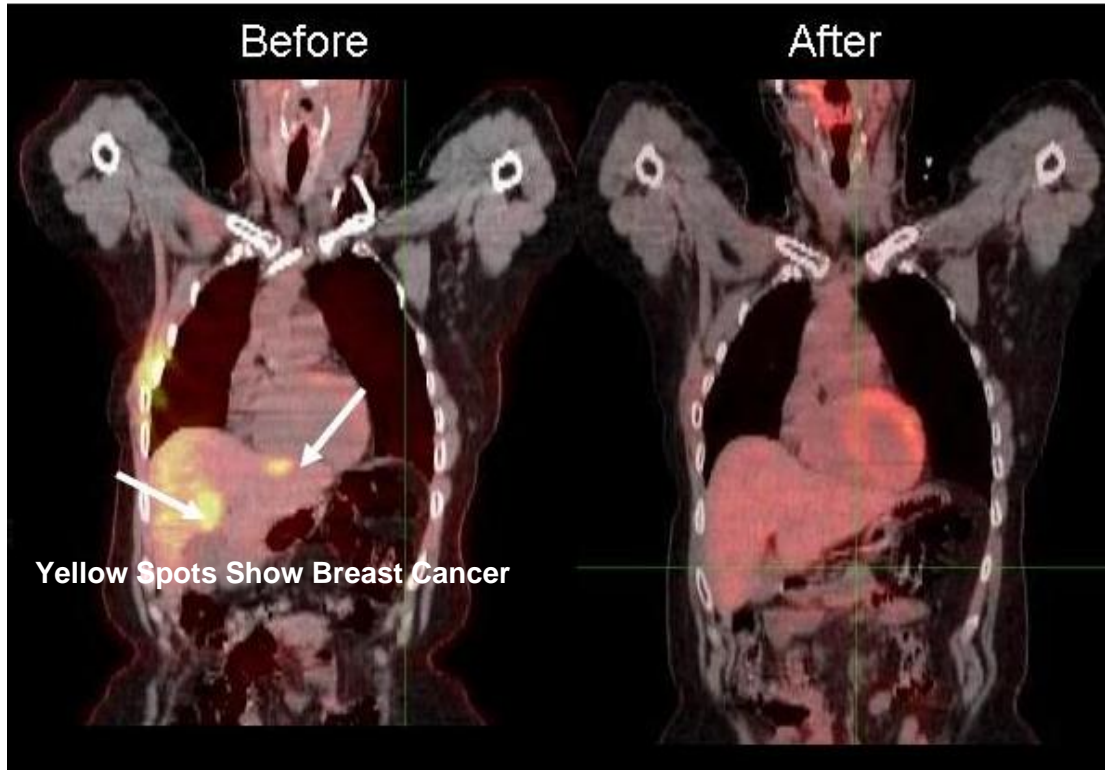
## Targeting Metastatic Breast and Pancreatic Cancer with BATs

Breast Cancer

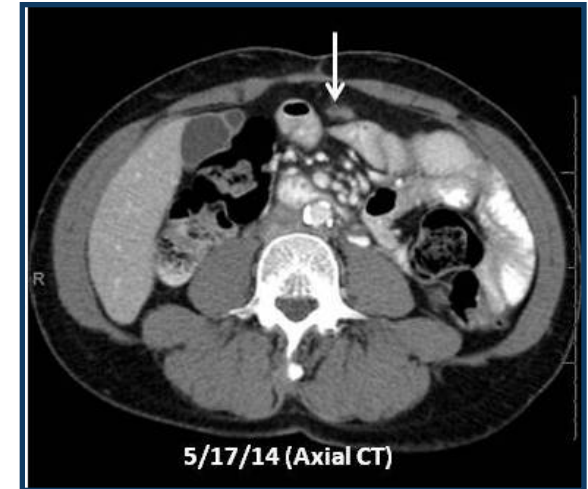
7 months later

Before

After

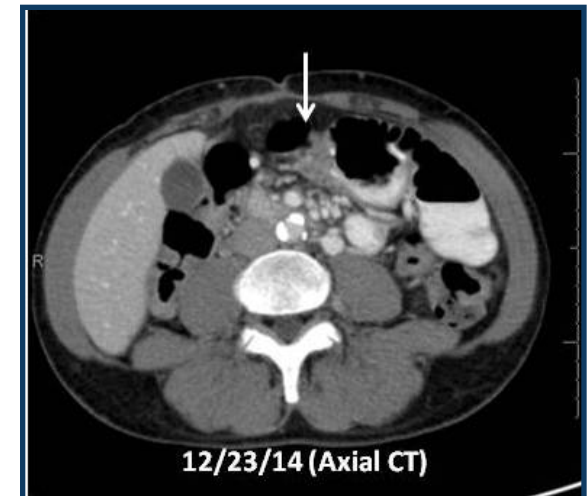


Yellow Spots Show Breast Cancer



5/17/14 (Axial CT)

Pancreatic Cancer



12/23/14 (Axial CT)

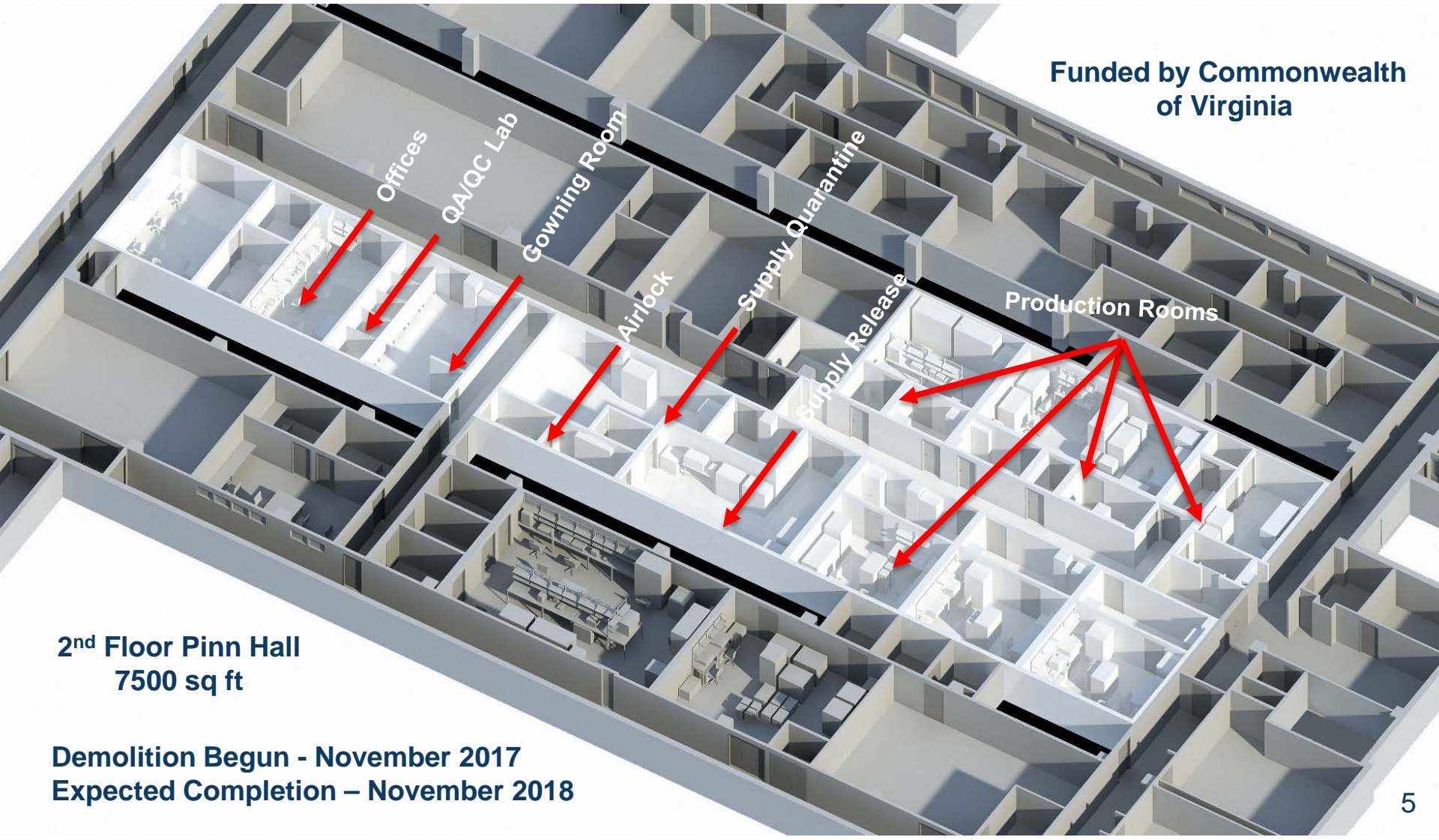
Doubled Survival in Women with Metastatic Breast Cancer (18 → 36 mos)

Tripled Survival in Patients with Metastatic Pancreatic Cancer (6 → 31 mos)



## Six cGMP Manufacturing Rooms with Support Facilities

Funded by Commonwealth  
of Virginia



2<sup>nd</sup> Floor Pinn Hall  
7500 sq ft

Demolition Begun - November 2017  
Expected Completion – November 2018



## cGMP Clean Room





## Investments in Cellular Therapy Will Pay Dividends

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1. **Only cGMP facility for producing clinical grade cell products for patients in Virginia (\$8.1 M).**
2. First-in-class Center for Human Therapeutics in Virginia that will serve the region and the US.
3. UVA is the only place in the world producing BATs.
4. Treatment protocols **open at UVA for pancreatic, breast, brain, and neuroblastoma** tumors (3 patients treated).
5. Academic Job creation - R&D and Manufacturing in cGMP and clinical trials (4 faculty, 13 staff, 2 post-docs, 6 clinical staff) - 25 new hires.





## Funding and Opportunities

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### Funding:

- **Virginia Commonwealth for cGMP Facility**
- EVP, Dean, and Cancer Center Research Funds
- NCI R01 (**\$2.2M**) for Neuroblastoma Trial (MSK,KCI, & UVA) (3 hires)
- Gateway Cancer Foundation Grant for Prostate Cancer at KCI (2 hires)
- UVA Brain Institute Grant for Glioblastoma (2 hires)
- **Pharmacyclics** grant for Hodgkin's Disease (multi-institutional) (1 hire)
- **Dendreon** grant for Prostate Cancer (multi-institutional) (1 hire)
- Strategic Investment Fund (SIF) Grant from UVA (**\$17M**) for T1D with contracts to **Rapa Therapeutics (RT)** and Medical College of Wisconsin to create Tregs (10 hires)

### Opportunities:

- **Transtarget, Inc** - **\$17 M** startup (Lum-Founder) funding BATs production and trials at UVA -establishing biotech environment will attract other pharma to UVA (10 hires)
- **Lentigen** (a lead producer of CAR-T gene vectors) – will provide vectors for new CARs
- **RT** and **TTI** partnership to create more potent BATs

Estimated Total of 55 hires and Return of ~37 M.