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# Impact of Section 381.915, Florida Statutes Florida NCI Cancer Centers Act

- Recruitment of outstanding cancer scientists
- Discovery of new cancer pathways and targets
- Translation of discoveries to patients in cancer therapeutic and prevention trials
- Infrastructure for large data and epidemiology studies
- Development of the cancer research workforce

# 57 External Recruits Supported by NCI Cancer Centers Act (§381.915)

## Example: Daohong Zhou, MD- New anticancer agents that degrade proteins



Daohong Zhou, MD

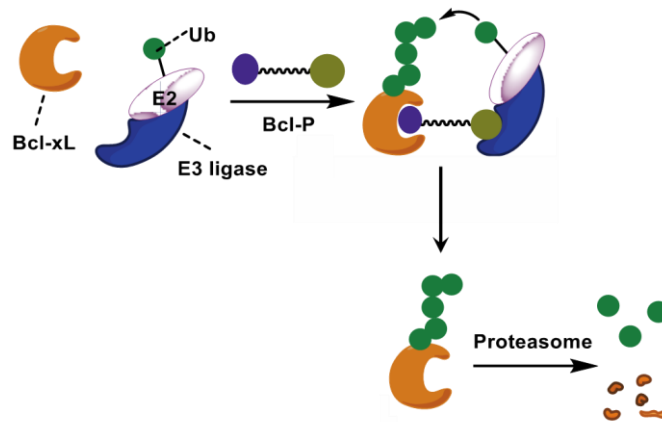
Recruited in 2018 from Univ of Arkansas

- Harry E. Innes Professor Associate Director for Translational Drug Development
- Radiation Therapeutics and Biology Study Section, NIH
- Councilor, Radiation Research Society
- Over **145** publications including *Nature Communications* and *JNCI* in 2021

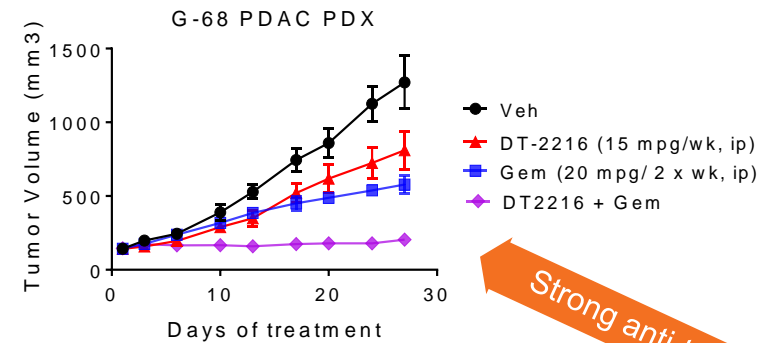
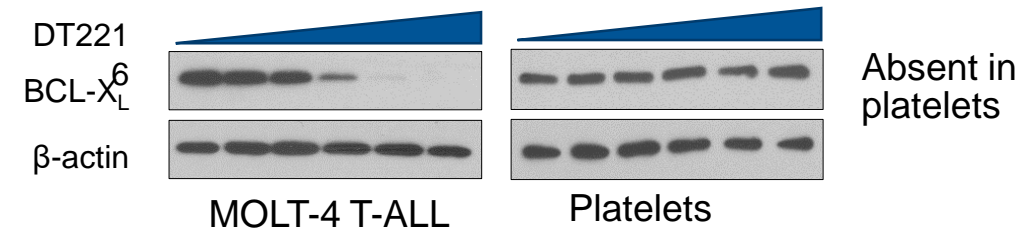
PI of Active NCI and NIH grants:  
 R01 CA211963  
 R01 CA219836  
 R01 CA242003 (MPI)  
 R01 CA241191 (MPI)  
 R01 CA260239  
 R01 AI132391  
 R01 AG063801 (MPI)

Navitoclax (anti-Bcl-xL) causes low levels of blood clotting platelet- a limiting toxicity

Solution:  
 PROTAC Degradator of Bcl-xL Oncoprotein



Degrades cancer causing protein in leukemia cells only



CD177 modulates the function and homeostasis of tumor-infiltrating regulatory T cells. (2021)12:5764. PMID: PMC8486774.



Therapy-Induced Senescence: Opportunities to Improve Anticancer Therapy. (2021)113(10): 1285-98. PMID: PMC8486333.

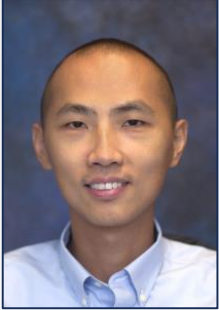
Compound licensed for development in leukemia, lung and pancreatic cancer (FDA IND 151351)

Phase I trial, UTHSC San Antonio (NCT04886622)



# UFHCC Recruits in RNA Biology in Cancer Supported by NCI Cancer Centers Act (§381.915)

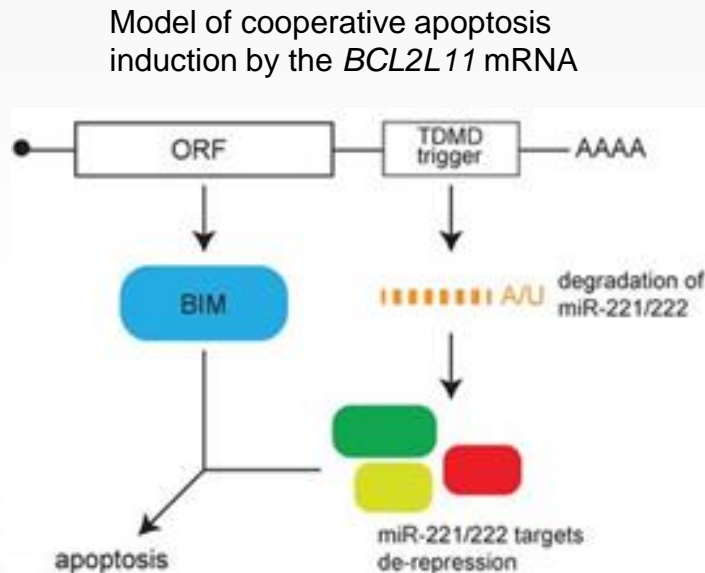
Examples: Mingyi Xie, PhD and Zhijian Qian, PhD



**Mingyi Xie, PhD**  
Assistant Professor,  
Department of  
Biochemistry &  
Molecular Biology

## Target RNA-directed miRNA degradation (TDMD):

- New mechanism of cross regulation of gene expression
- A regulatory mechanism in childhood leukemia

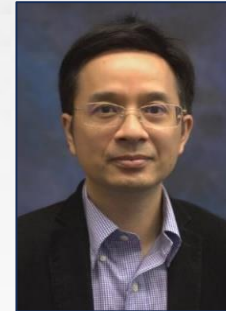


## Current Funding

R35 GM128753  
FBRP 21L03  
ACS - RSG-21-118-01-RMC

## Recent Publications

*PLoS Genet*, 2021  
*Nucleic Acids Res*, 2021  
*Genes Dev*, 2021  
*Front Bioeng Biotechnol*, 2020



**Zhijian Qian, PhD**  
Professor, Department of  
Medicine and Biochemistry  
& Molecular Biology

## RNA demethylase ALKBH5:

- Key regulator protecting from cells DNA damage and death during stress
- High level expression drives leukemia

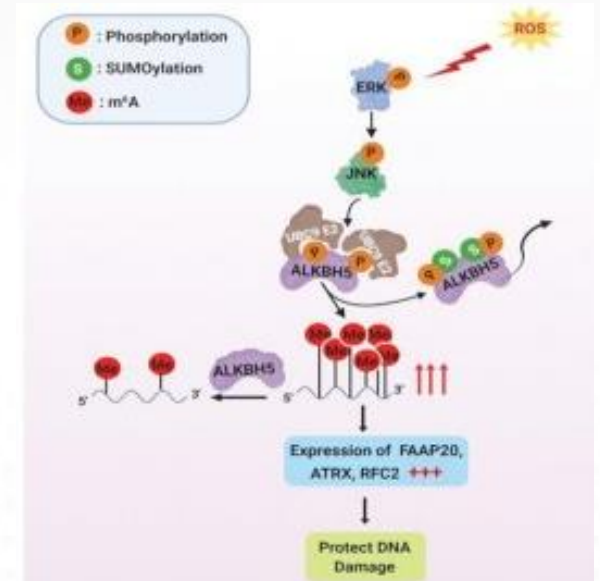
## Current Funding

FL DOH 9LA05  
FBRP 21B13  
LLS 1358-19  
R56 DK129489  
R01 HL157539

## Recent Publications

*Blood*, 2021  
*Nucleic Acids Res*, 2021  
*Cell Stem Cell*, 2020  
*Nat Commun*, 2020

Working model of ROS-mediated regulation of DNA repair genes.



**Key Investigators**



Renne



Tibbetts



Xie

# Support for Complex Multi-Investigator Grants

Example: P01 CA214091 (Renne, PI) \$6.5M, 5 year award

**Recent Discovery:** RNA molecule from Epstein Barr Virus allows latent, hidden infection, a prerequisite for viral generated cancer.

- EBER1, a EBV ncRNA, is highly expressed in human tumors
- EBER1 can substitute for a mouse gene to allow viral latency in a mouse

**External Collaborators**

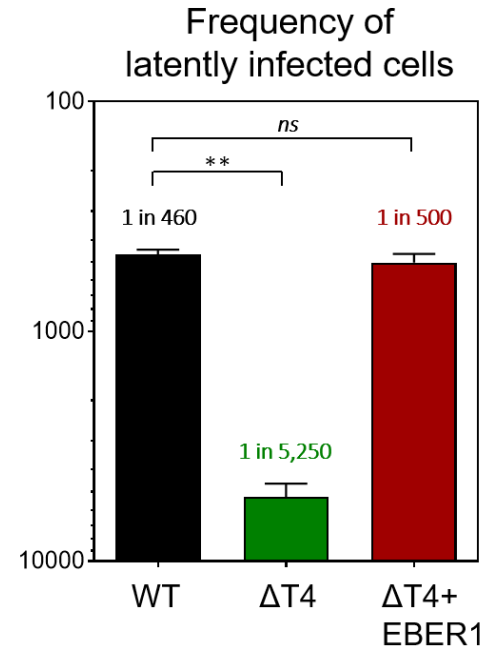
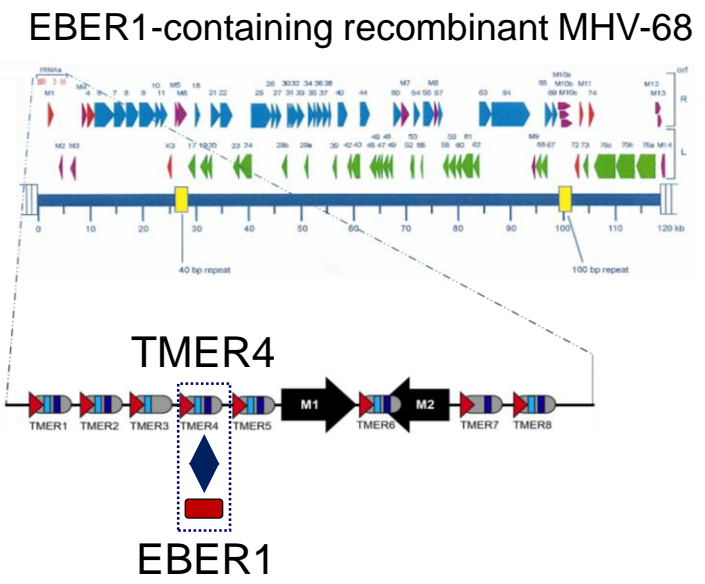
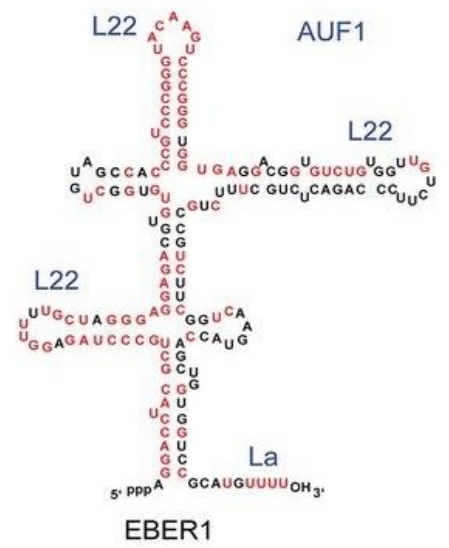
E Flemington (Tulane)  
L vanDyk (U. of Colorado)

**Publications**

PLoS Path, 2021  
RNA, 2021  
PNAS, 2019

**Funding**

UFHCC (Section 381.915, Florida Statutes, Florida NCI Cancer Centers Act)  
P01 CA214091  
R01 DE026707  
R01 AI108407



**IMPACT: EBER1 RNA represents a new target to interfere with viral infection and hence tumor formation**



# Translation of UF Discoveries into Clinical Trials

## New therapeutic Vaccines against brain tumors

### Key Investigators



Mitchell



Flores

### Publications

*Science Advances*, 2019

### Funding

UFHCC (Section 381.915

Florida Statutes, Florida

NCI Cancer Centers Act)

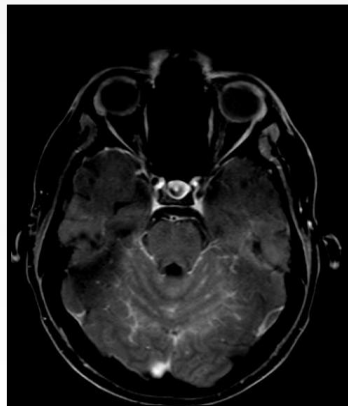
DoD W81XWH-10-1-0089

R01CA195563

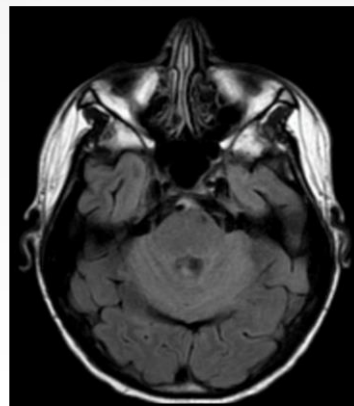
V Foundation

21yo Stage M4 Medulloblastoma

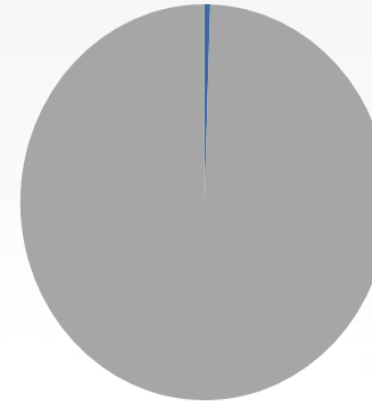
Pre Cell based  
vaccine



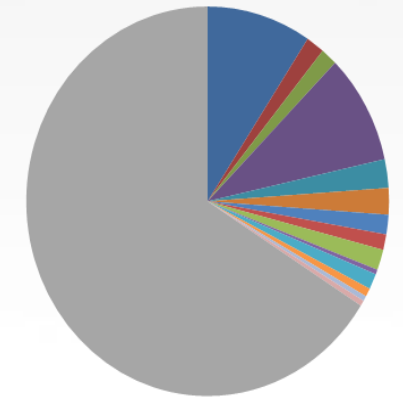
Post  
Vaccine



Before Vaccine  
Few immune cells  
directed against tumor



After Vaccine  
Expansion of immune cells  
directed against tumor



Wheelchair → work in 2 months  
Remission lasted 6 months

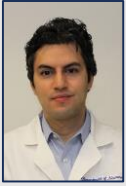
**UFHCC supported pharmaceutical grade production of T immune cells and tumor RNA-pulsed dendritic vaccine cells**

**FDA IND BB-14058**

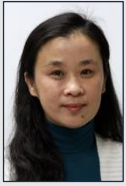
**NCT01326104 – First multi-site ACT trial for brain tumor patients (UF, CHLA, CNMC;  
Closed to Accrual; Total Accrual 28)- awaiting more follow up before publication**



## Key Investigators



Sayour

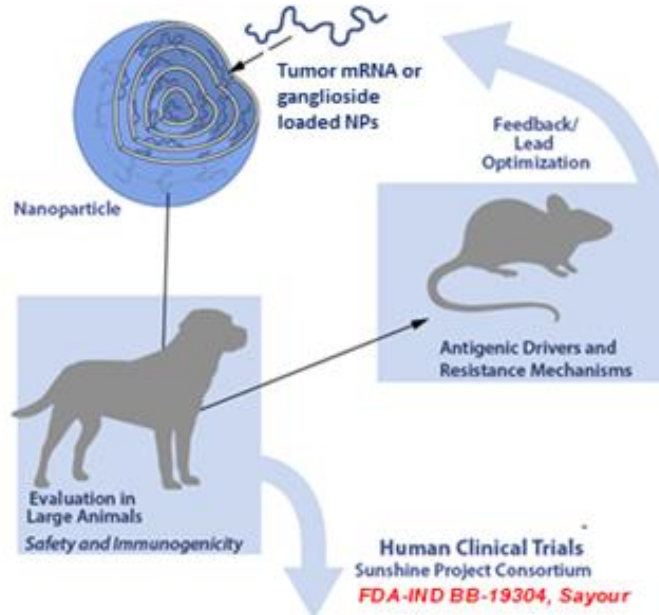


Huang



Milner

# Applying Immune Oncology Treatment Technologies Developed in Glioma Research to Other Solid Tumors



Joint pediatric cancer and large-animal cancer immunotherapy program, 6 clinical trials in animals to parallel human trials (Sayour/Milner)

RNA nanoparticle-based vaccine technology [similar to that used for COVID vaccines]

Engineered T cells against CD70 protein found on tumor surface developed for brain, now applied to multiple cancers (Sayour/Huang)

## Publications

*J. Neurooncology*, 2021  
*Vet Immun Immunopath*, 2021

*Neuromolecular Med*, 2021  
*Front Immunol*, 2021

## Funding

UFHCC (Section 381.915, Florida Statutes, Florida NCI Cancer Centers Act)

K08CA199224  
R01 CA195563  
R01 CA175517  
R37 CA251978  
DOD W81XWH-20-1-0726  
FBRP 20L07  
FBRP 20B11  
Curesearch for Children Cancers

Human trial development for:

- Melanoma
- Osteosarcoma
- Head and Neck
- Pancreatic
- Ovarian



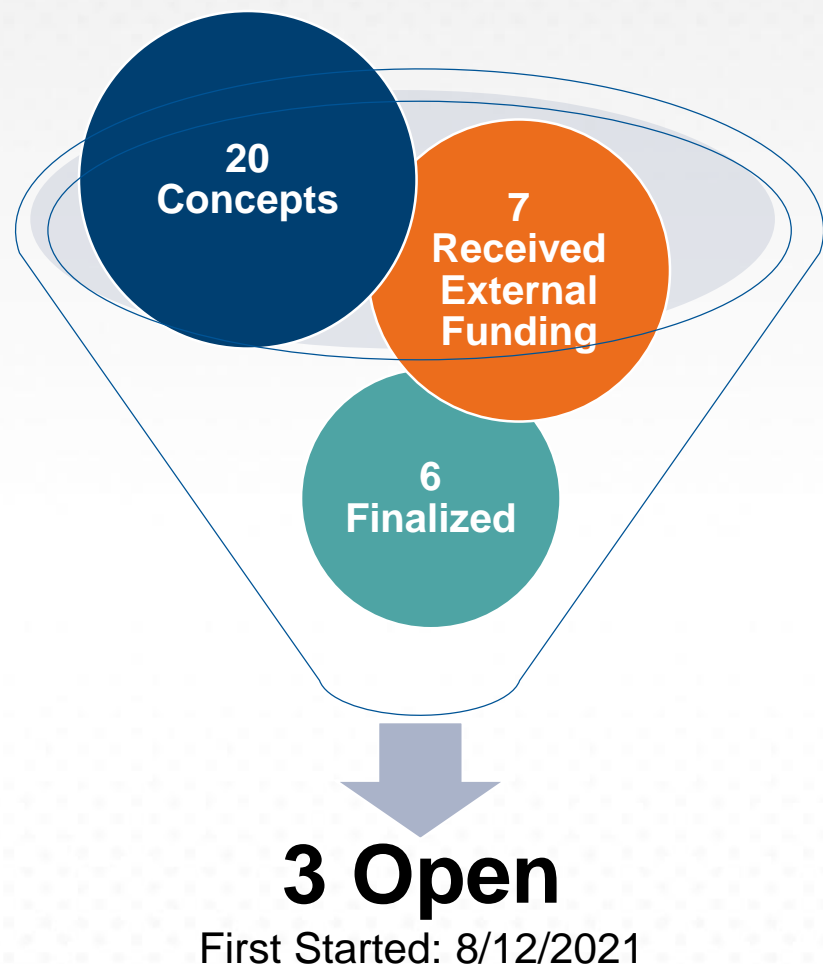
GLP Testing at UF for FDA IND #19304

2021  
First-in-human trial  
Open to Accrual  
(NCT04573140)

IND: FDA-BB-19304 (Sayour)

# Supporting Early Phase Clinical Trials with NCI Cancer Centers Act (§381.915)

## IIT Think Tank Stimulates Clinical Research



Monthly meeting to catalyze new concepts, facilitate translation of UFHCC science to the clinic, and support the career development of a growing cohort of clinical research ESIs (18 total)

***Phase II study using Tazemetostat in patients with recurrent/refractory and/or metastatic malignant peripheral nerve sheath tumors (NCT04917042)***

- Activated 8/12/2021
- PI: Lagmay

***A Phase II Randomized Therapeutic Optimization for Refractory Metastatic Cancers Using ctDNA (RAPID1 Trial; NCT04786600)***

- Activated 8/18/2021
- Co-PIs: Rogers and Allegra
- Utilizes Microbiome Cancer Biobank

***Atezolizumab Plus Tivozanib in Immunologically Cold Tumor Types (IMMCO-1 Trial; NCT05000294)***

- Activated: 10/6/2021
- Co-PIs: Chatzkel and Ramnaraign

Principal Investigator



Krieger

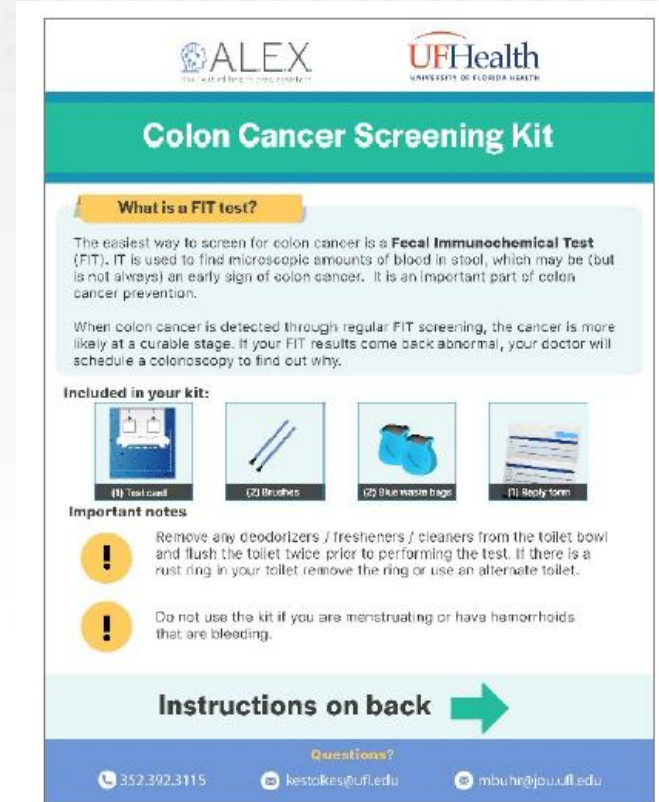
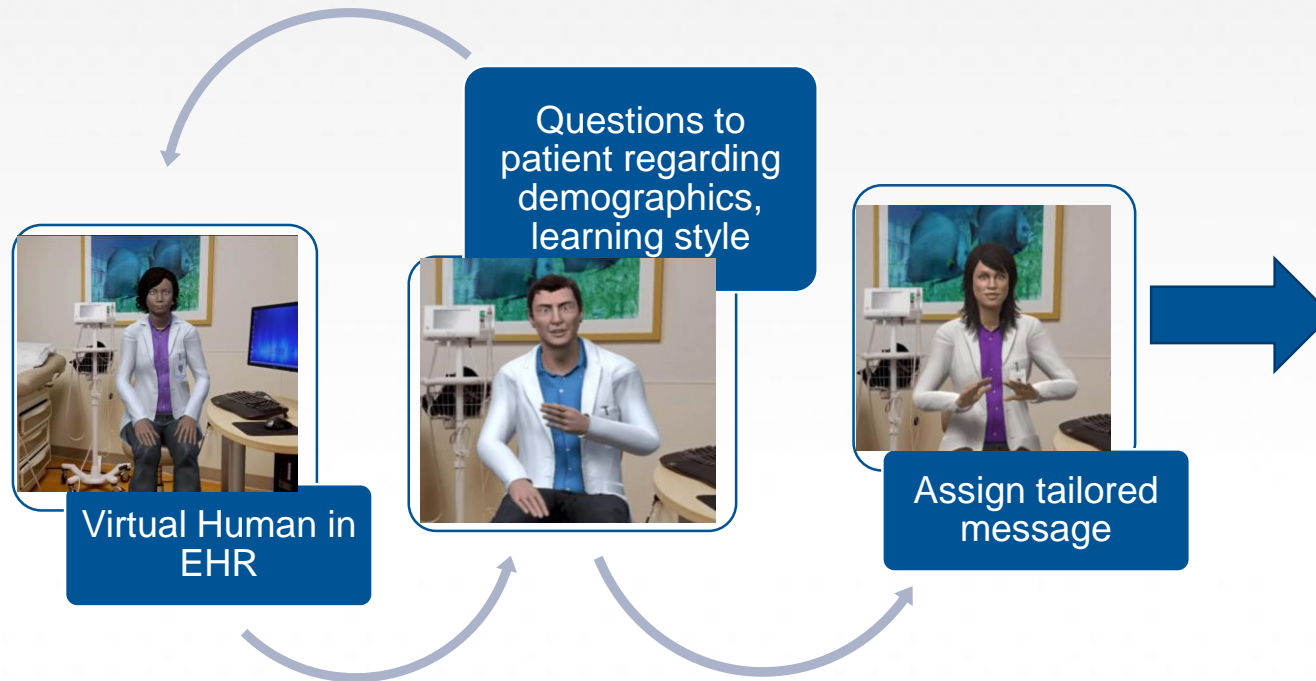
**Publications**

- Amer J of Prev Med, 2021
- Health Comm, 2021
- Psycho-Oncology, 2020
- BMC Medi Info and Decision Making 2021
- Journal on Multimodal User Interfaces 2021
- JMIR, 2019
- ACM, 2019
- Psycho-Oncology 2020

**Funding**

- UFHCC Pilot (Section 381.915, Florida Statutes, Florida NCI Cancer Centers Act)
- R01 CA207689
- R01 CA207689-04-S1
- R01 CA207689-02S1
- R24 AG074867

# Pilot Funding to Support Virtual Humans to Increase Colon Cancer Screening in Rural and Minority Patients



NCT03407417 - Randomization between minimal and intensive tailored messages; 381 Accruals to Date  
 NCT03867409 – United States Healthy Living Study; 2,218 Accruals to Date

Plan to incorporate these virtual humans in the patient facing electronic medical record





# Funding for OneFlorida+ RESEARCH CONSORTIUM

## Supporting 19 cancer-related studies

### Examples:

- Benefits of lung cancer screening – NIH Funded
- Health of gender non conforming individuals-NIH Funded
- Link between asthma and cancer

## Key Features

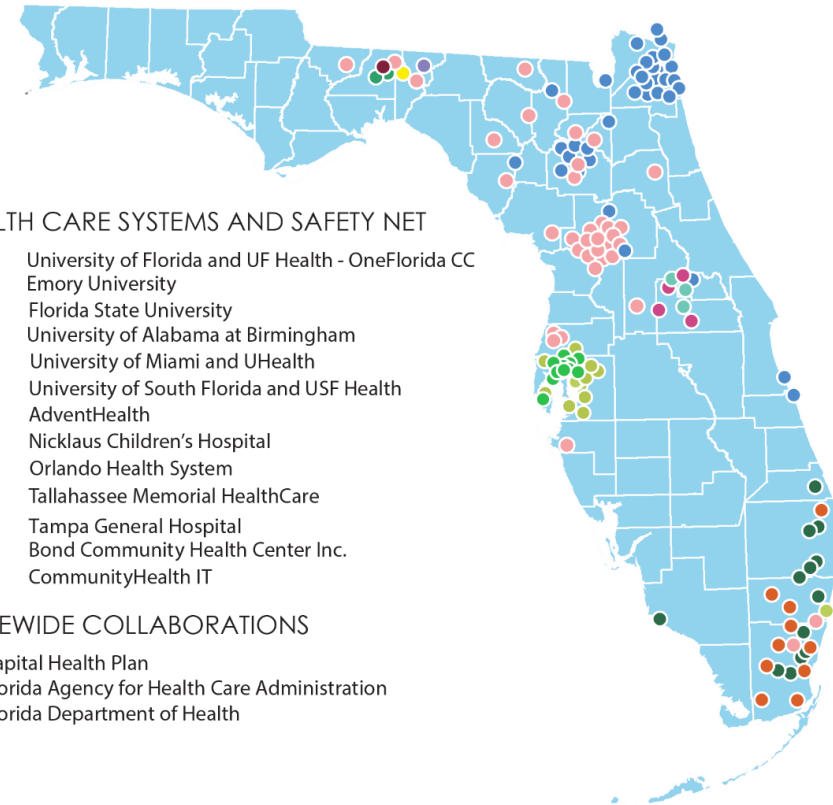
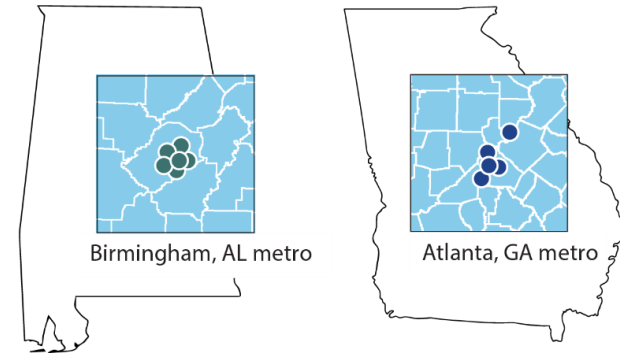
- Deidentified records of 17M Floridians (22M total)
- All patients can be reidentified
- Linked data:
  - Electronic health record data
  - Tumor registry
  - Medicare and Medicaid claims
  - All geocoded

### Infrastructure Funding:

UFHCC (Section 381.915, Florida Statutes,  
Florida NCI Cancer Centers Act)

PCORI RI-CRN-2020-005

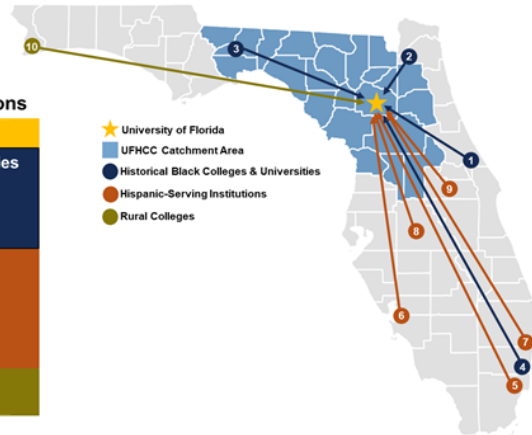
CTSI (NCATS) UL1 TR001472



# Supporting the Next Generation of Researchers in Florida

## Post Undergraduates

- Postbaccalaureate Research Education Program Year long – 5 Students
- Serves rural and economically disadvantaged areas



## Pre and Post-Doctorates



4/1/2021 - 3/31/2026  
Pre- and Postdoc  
Three 2-person teams

Team-based Interdisciplinary Cancer Research Training (TICaRT) Program (CA257923)



Siemann  
PI



Judge  
Co-PI



Wu  
Co-PI

## Early-Stage Investigators



ACS Institutional Research Grant

(IRG-21-139-01-IRG)

PI: Licht

Effective January 2022

4 Early Stage Investigator Pilot Awards (URM Supplement for 1 additional Award)

Funding available to all UF ESIs

- 6 years of first independent academic appointment
- Cancer-related basic, pre-clinical, clinical, and cancer population-based research studies