



Wake Forest University  
School of Medicine



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**Levine Cancer**

**NCI**

Comprehensive  
Cancer Center

# Breaking Barriers: Bridging Disparities in Clinical Trials for Health Equity

10/6/2023

**Jimmy Ruiz, MD**

*Professor of Medicine*

*Assistant Director for Clinical Research*

Section of Hematology and Oncology

Winston-Salem, NC

# Disclosures

Consulting/Honoraria

Sanofi / BMS / Genzyme

Importance of Clinical Trials & Inclusivity

Disparities in Clinical Trials & Impact

Factors Contributing to Disparities

Addressing the Barriers in Clinical Trials

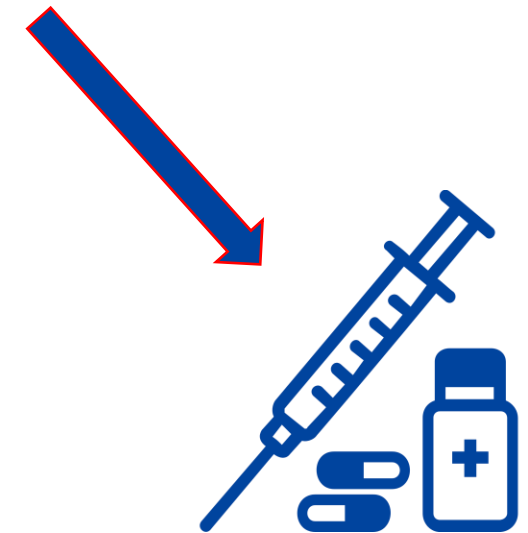
# War on Cancer



The 1971 Cancer Act established the first NCI-Designated Cancer Centers

# 1971 Cancer Act

- Strengthened Cancer Research
- Centralized Leadership
- Expanded Cancer Control Programs
- Established the Cancer Registry (SEER Program)
- Increased Collaboration
- Organized coordination and information gathering





Clinical Trials



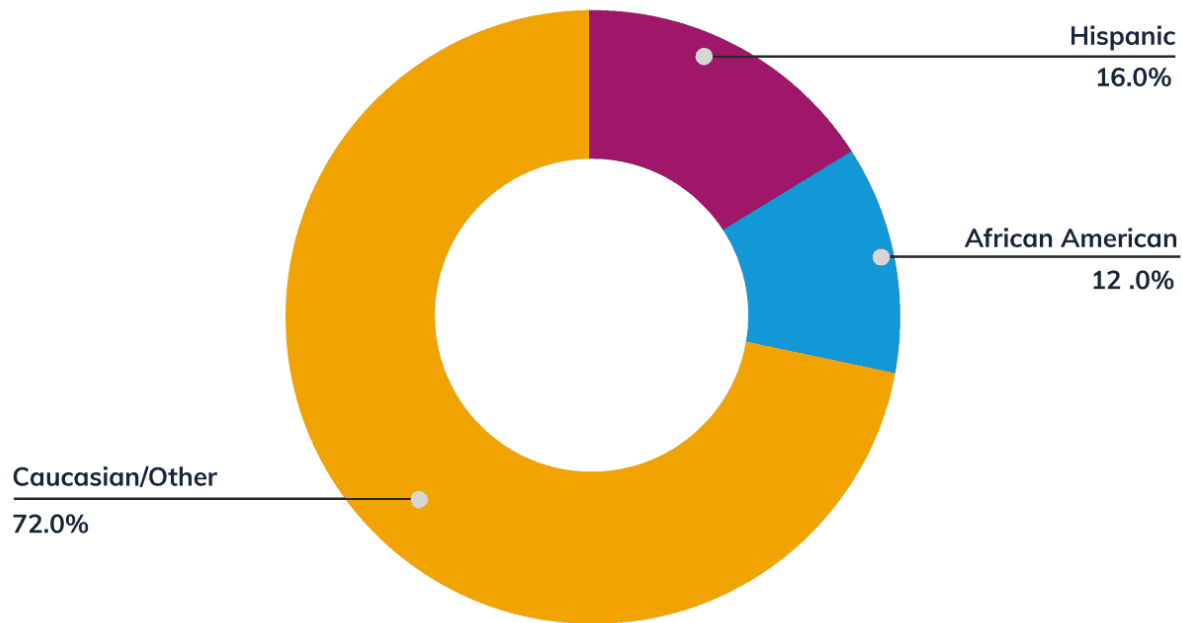
Innovation and Discovery

## Clinical Trials that have Improved Cancer Care and Outcomes

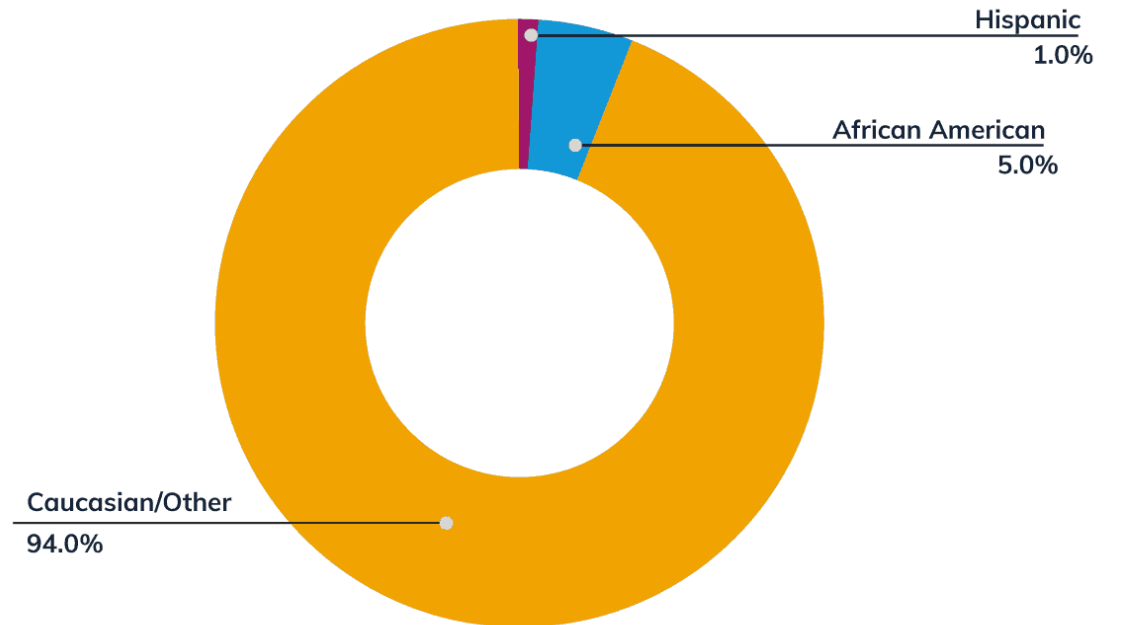
- Precision oncology
- Surgical Interventions
- Radiation Therapy
- Immunotherapy

# Clinical Trial Representation by Race and Ethnicity

United States Population



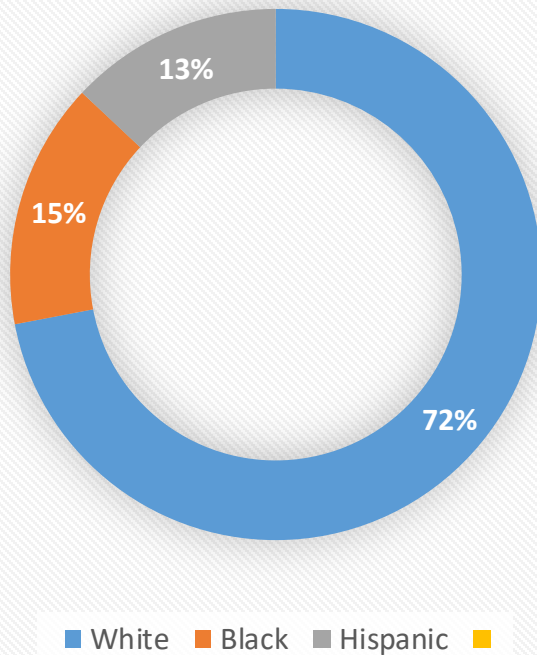
Clinical Trial Participants



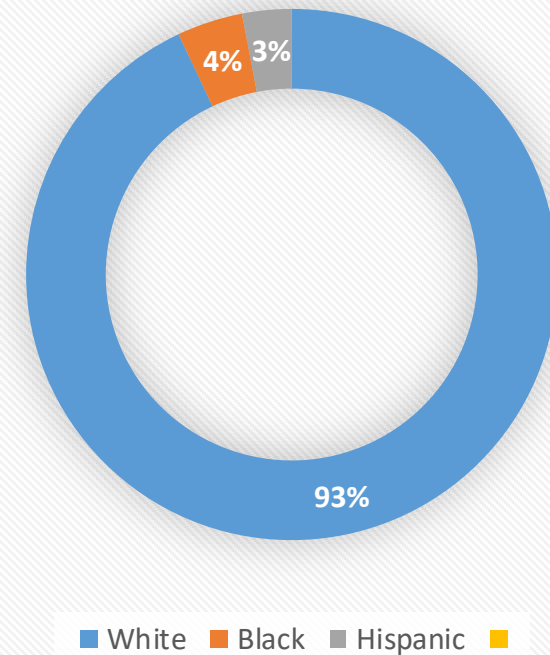
*\*Sourced from <https://www.sciencedirect.com/science/article/pii/S0146280618301889>*

# Cancer Therapeutic Trials

## Cancer Population



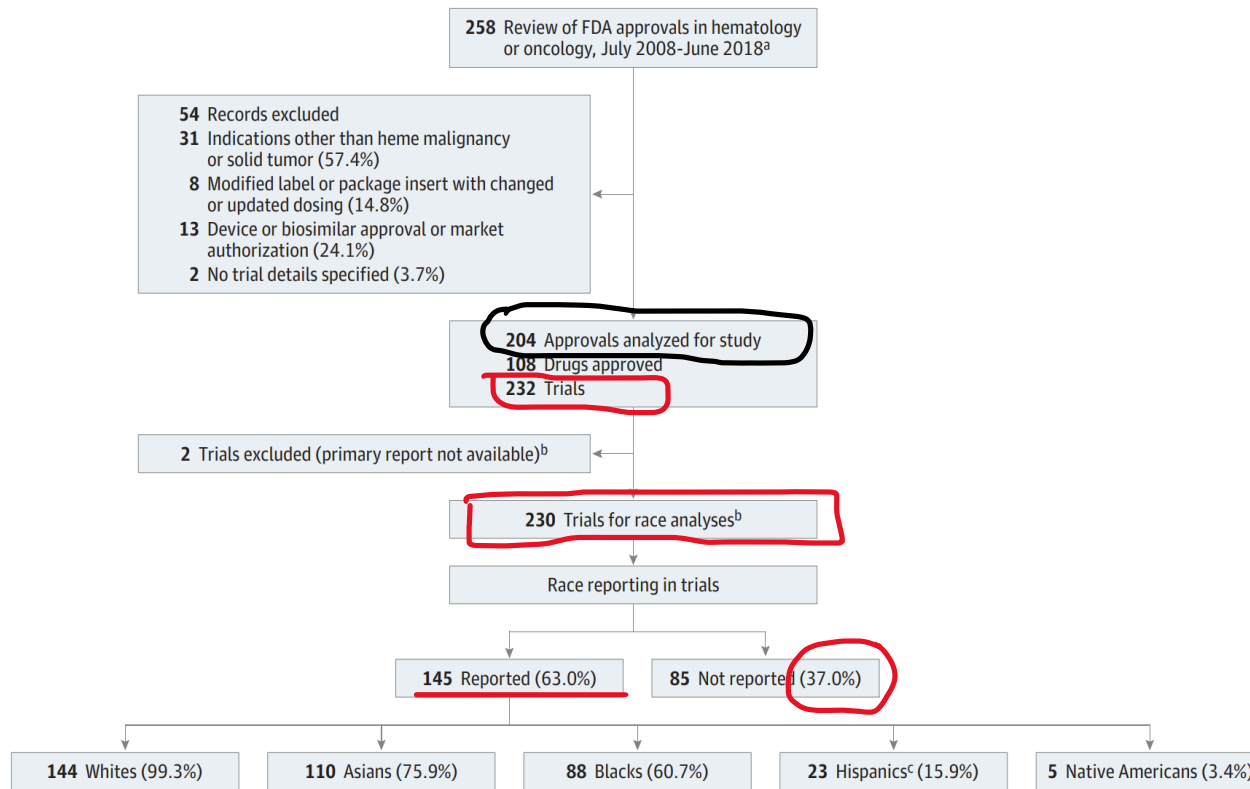
## Cancer Clinical Trial Enrollment



*Duma N, et al. JCO Oncol Pract 14: e1-e10, 2018  
Unger JM, et al. J Natl Cancer Inst 111:245-255, 2019*

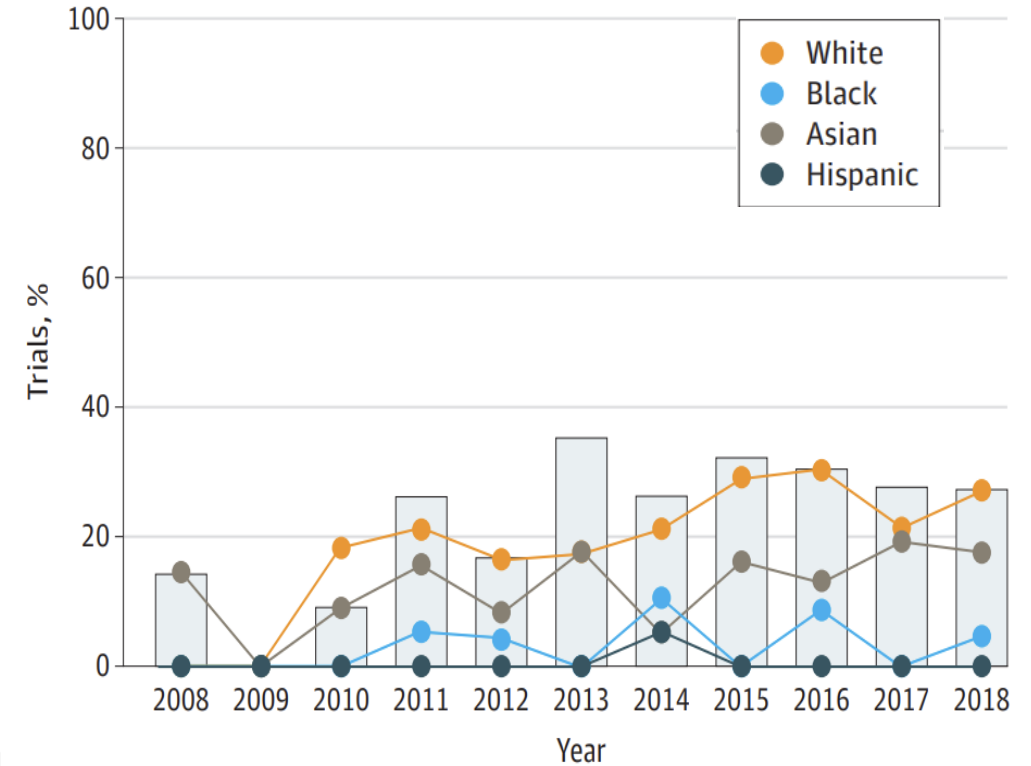


# Race Reporting



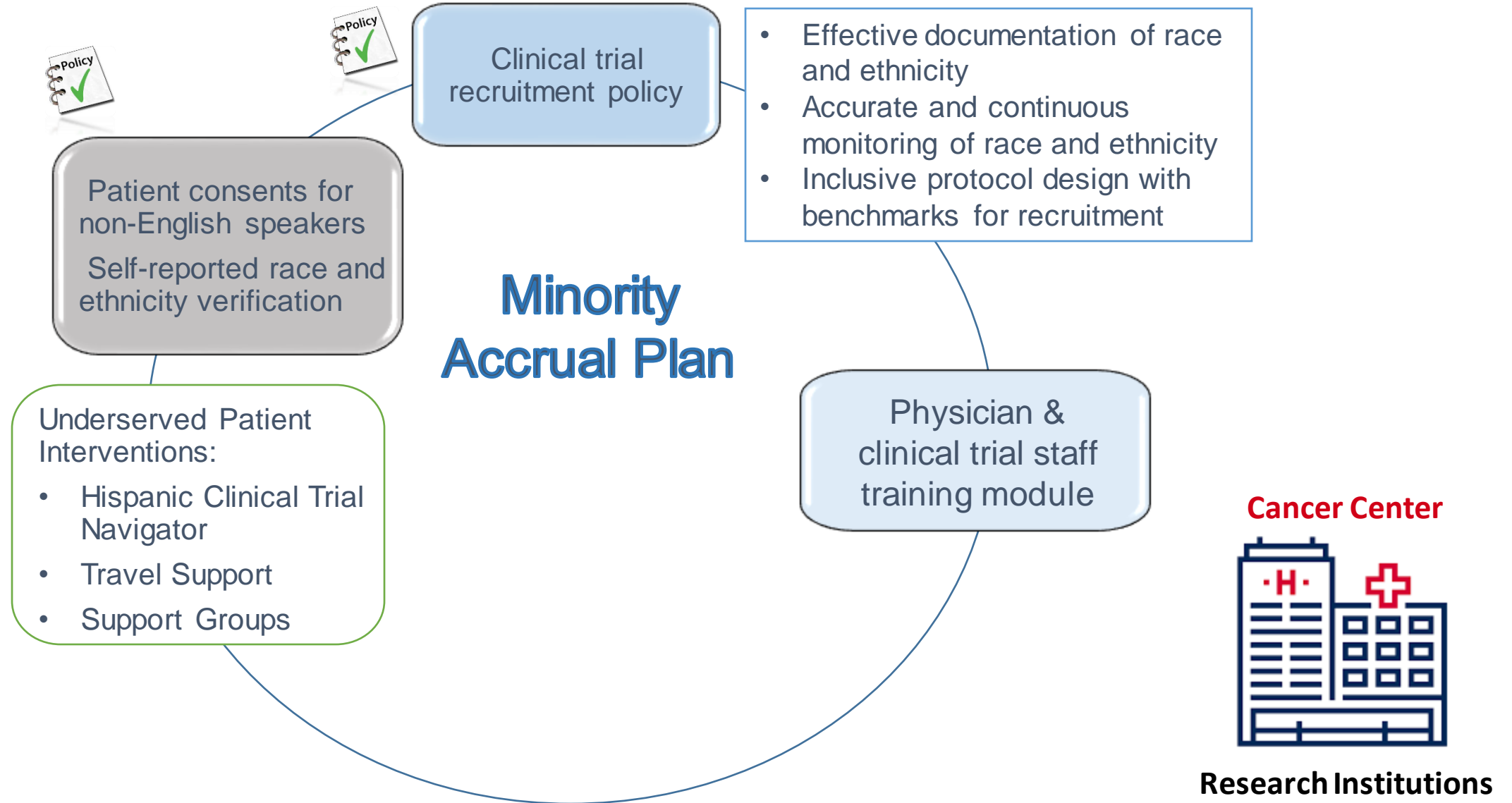
Reporting of race and diversity of race representation was poor in oncology trials that led to FDA oncology drug approvals.

Trials reporting on race subgroup analyses, 2008 to 2018



The overall reporting of race and race subgroup analyses remains low even in 2018

# Clinical Trial Initiatives



# Diversity in clinical trials: Why is this important?

- Drug safety and efficacy can vary across demographic sub-groups
- Trials that are less diverse raise questions about the generalizability of results for clinical decision making
- Contribute to persistent racial disparities in cancer outcomes
- Minorities have historically been underrepresented in clinical trials
- Racial/ethnic sub-group populations are growing
  - Black Americans represent 12% of the U.S. population
  - Hispanics make up 16% of the population

*Multiple race. 2010 US census. Overview of Race and Hispanic Origin. Feb 15, 2016  
FDA. Clinical Trials Light on Minority Health. Feb 17, 2017*

# Diversity in clinical trials: Why is this important?

- Paucity of information on multi-ethnic patient bases
- Segments of the population are not included in clinical trials and do not meet statistical significance

*Question: Possible to determine if the therapy in question will work?*

- Pharmacogenetic research in the past few decades has uncovered significant differences among racial and ethnic groups
  - Metabolism
  - Clinical effectiveness
  - Side-effect profiles

Burroughs VJ et al. J Natl Med Assoc. 2002 Oct;94  
Pirmohamed, M. *Nat Rev Genet* **24**, 350–362 (2023)

# Diversity in clinical trials: Why is this important?

- We are treating patients based on data derived from patients that are not like them
  - Cancer is a leading cause of death for Asian-Americans, but represent less than 3% of clinical trial participants
  - Black men are twice as likely to die from prostate cancer as whites, but represent only 4% of prostate cancer trials
- Diversity gap in clinical trials lead to sub-optimal development of new medicines
- Gap further exacerbate health disparities in outcomes among racial and cultural groups

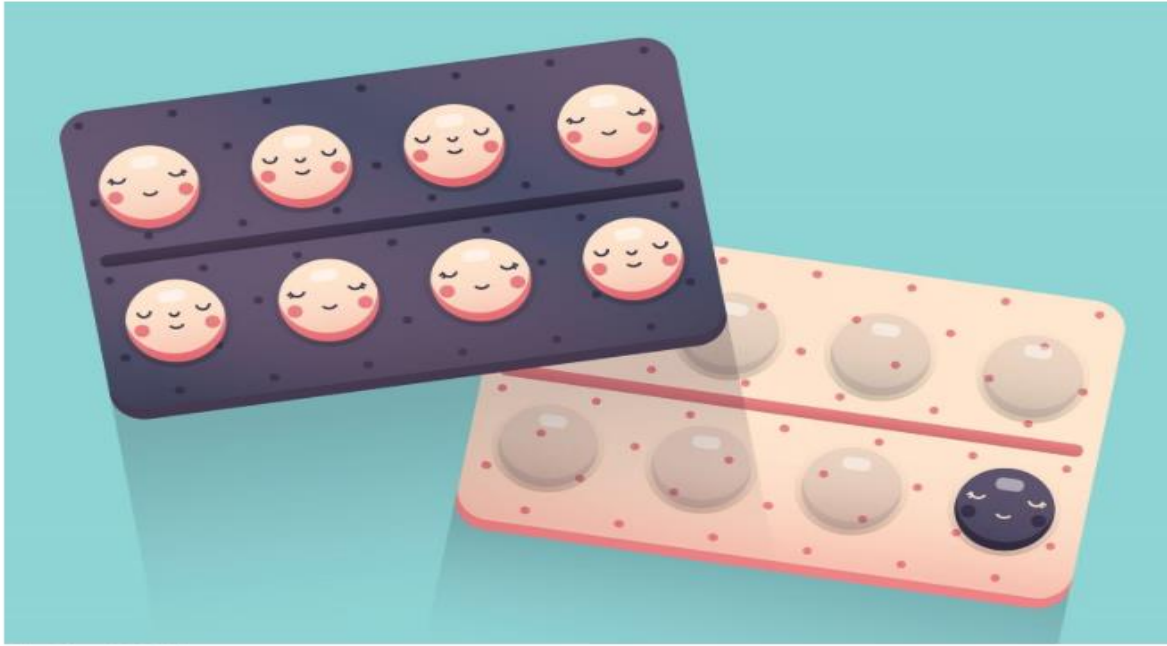
# Diversity in clinical trials: Why is this important?

- Only 2 % of cancer studies have sufficient minorities to provide useful information in these populations
- Less than 5% of pulmonary studies have studied enough minorities to provide useful information
- Black patients made up less than 5% of the trials for 24 of the 31 cancer drugs approved since 2015
- Asians only accounted for less than 2 percent of the U.S.-based trials
- Native American participants weren't reported in nearly two-thirds of the trials
- Hispanics have limited involvement in the majority of large treatment studies

Diversifying clinical trials. Nat Med 24, 1779 (2018)

Oh SS, et al. (2015) Diversity in Clinical and Biomedical Research: A Promise Yet to Be Fulfilled. PLoS Med 12(12): e1001918.

Clinical Trials Still Don't Reflect the Diversity of America. Posted December 16, 2015. Available at: <http://www.npr.org/sections/health-shots/2015/12/16/459666750>



Chiara Morra for ProPublica

## Black Patients Miss Out On Promising Cancer Drugs

A ProPublica analysis found that black people and Native Americans are under-represented in clinical trials of new drugs, even when the treatment is aimed at a type of cancer that disproportionately affects them.

by Caroline Chen and Riley Wong, Sept. 19, 2018, 5 a.m. EDT

*This story was co-published with [Stat](#).*

It's a promising new drug for multiple myeloma, one of the most savage blood cancers. Called Ninlaro, it can be taken as a pill, sparing patients painful injections or cumbersome IV treatments. In a video sponsored by the manufacturer, Takeda

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“Stark under-representation of Black patients is widespread in clinical trials for cancer drugs, even when the type of cancer disproportionately affects them.”

# Diversity in clinical trials: Why is this important?

- FDA wrote that *“meaningful differences may exist in multiple myeloma disease biology, presentation, and response to treatment in blacks compared to whites.”*
- Black patients make up **20 %** of U.S. multiple myeloma diagnosis and are twice as likely as white Americans to be diagnosed
- Account for **4.5 %** of participants in multiple myeloma trials since 2003.



# Diversity in clinical trials: Why is this important?

## Impact on Scientific Innovation and Progress

“Population disparities always increase when there is scientific progress”

- Screening & treatment of breast cancer
- Screening & treatment of colorectal cancer
- Now we are seeing it again
  - Precision Medicine (Oncology)
  - Immunotherapy
  - Lung cancer screening



**Dr. Otis Brawley**

Delayed Medical Advances in Rural and Communities of Color

Unequal Access to Innovative Treatments

Aldrighetti CM, et al. *JAMA Netw Open*. 2021

Gupta, et al. *Sci Rep* 13, 8190 (2023)

Haddad DN, et al. *Ann Am Thorac Soc*. 2020

# Factors Contributing to Disparities

- Socioeconomic
- Racial and Ethnic
- Geographic
- Barriers to Participation

# Clinical Trial Participation

**Site selection**

**Structural  
barriers**

**Racism**

**Medical/psychiatric  
conditions**

**Knowledge  
& attitudes**

**Social determinants  
of health**

**Trial  
operations**

**Eligibility criteria**

**Systematic biases**

**Other**

**Discrimination**



# Barriers to Enrollment into Clinical Trials



**Patients**

- **Mistrust**
- **Lack of information**
  - **Comfort with CT process**
  - **CT awareness**
- **No local availability**
- **Trial dose not match disease**
- **Financial Costs**
- **Language and/or Communication**

- **Strict Eligibility**
  - **Performance status**
  - **Comorbidities**
- **Numerous trial visits**
- **Additional tests**



**Clinical Trial Protocol**



**Physicians**

- **Clinician Biases**
- **Logistical Reasoning**
- **Limited Time**
- **Limited Resources**
- **Lack of automation**

- **Trial Locations**
- **Types of Trials**
- **Diversity of Research and Support Staff**

**Cancer Center**



**Research Institutions**



Patients

Mistrust

## Tuskegee Syphilis study





Patients  
Mistrust

# Parallels with COVID-19

The San Diego Union-Tribune

Subscribe  
\$4 for 4

## San Diego Blacks and Latinos most likely to lose jobs and live in COVID hot spots, data shows

# Los Angeles Times

CALIFORNIA

## California fails to protect Latino workers as coronavirus ravages communities of color



INSIDER

## Black and brown people make up two-thirds of US coronavirus deaths below age 65, a new study found

Aria Bendix Jul 11, 2020, 8:51 AM



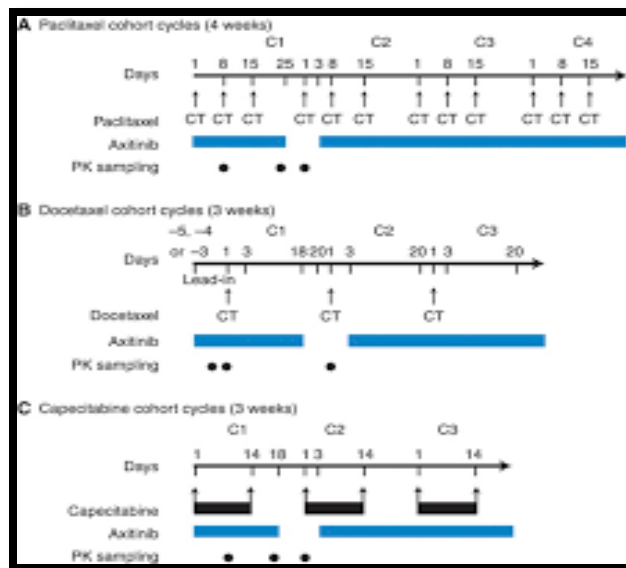


Patients

# Language and/or Communication

## Meaning of “Trial”

## Meaning of Treatment “Cycle”



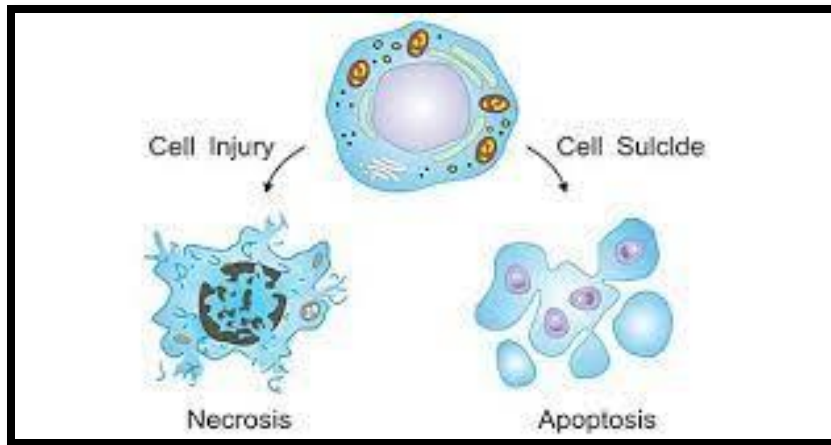


## Language and/or Communication

Patients

Meaning of “Cell”

Meaning of “Study or Experiment”





# Addressing Disparities in Clinical Trials



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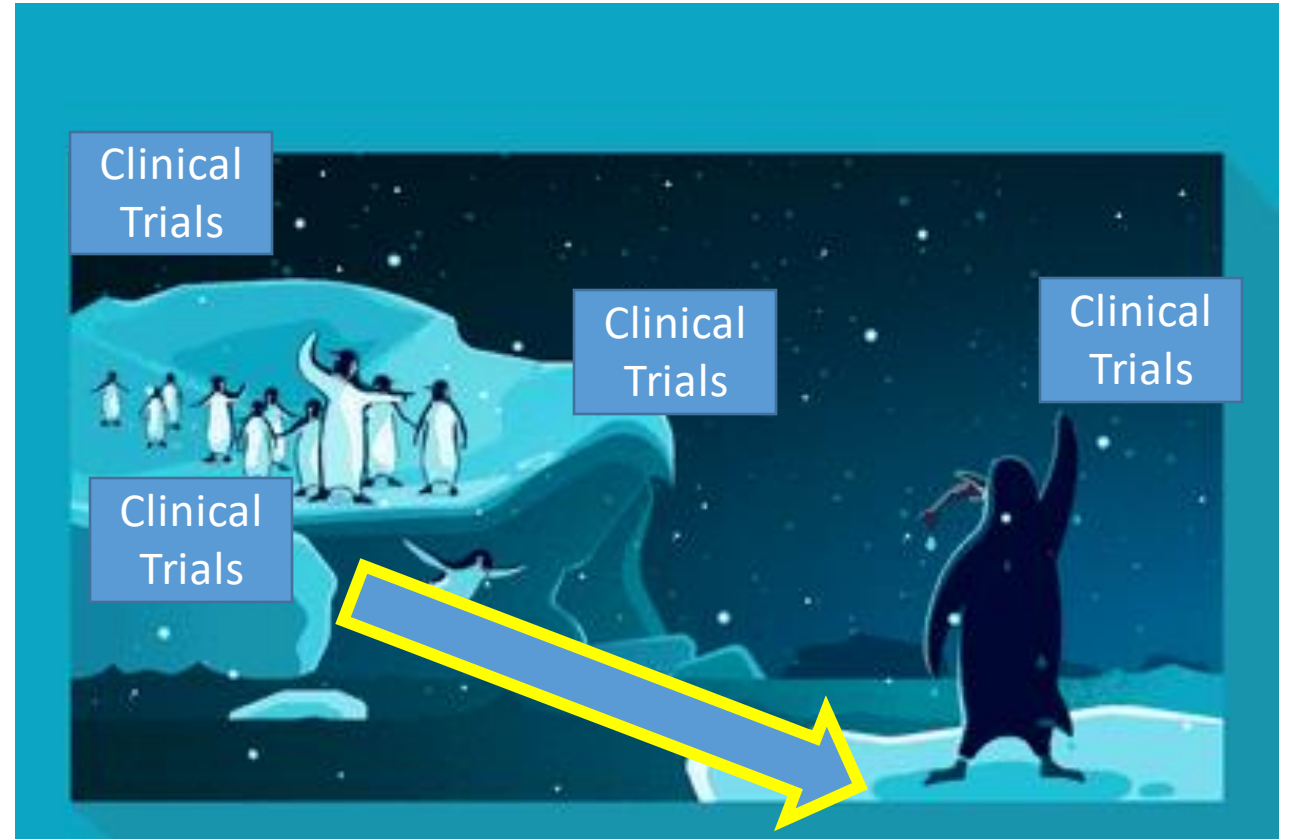
## Cancer Center



## Research Institutions

# Addressing Disparities in Clinical Trials

- Distance
- Centralized Approach to Clinical Trials



# Addressing Disparities in Clinical Trials

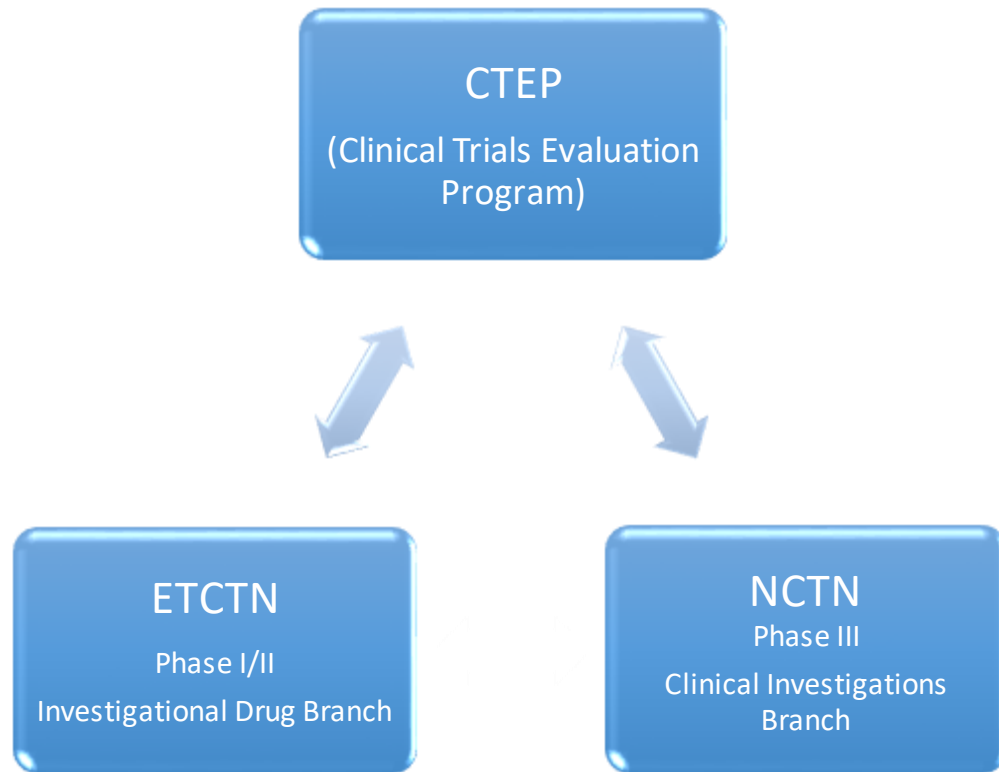
## CATCH-UP.2020 Overview (*Create Access to Targeted Cancer Therapy for Underserved Populations*)

- **AIMS:**
  - Offer and enroll patients to Experimental Therapeutics Clinical Trials Network Studies
  - Specific goals
    - 24 patients
    - 12 from underserved populations
  - Focus on minority/underserved populations (includes rural populations)
  - Develop earlier career faculty



# Addressing Disparities in Clinical Trials

## Experimental Therapeutics Clinical Trial Network (ETCTN)



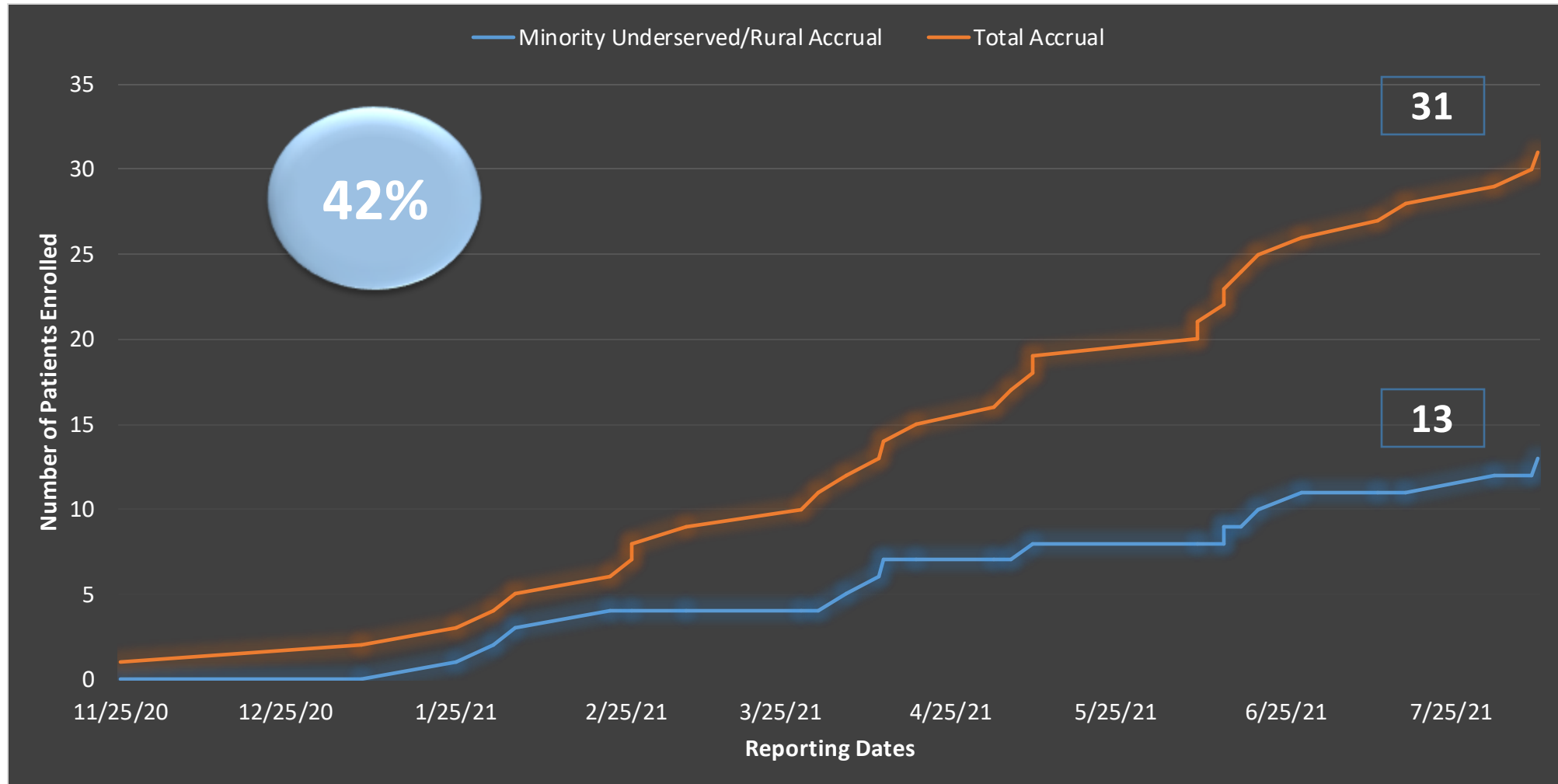
# WFBCCC: CATCH-UP.2020 Activation

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- WFBCCC has opened 19 ETCTN trials
  - Activated in 3 waves
  - Average time to opening **44** **days**
  - 5 trials opened by mid-December
- First patient on study: November 25, 2020



# WFBCCC: CATCH-UP ACCRUAL





Wilkes



Statesville



Clemmons

*and beyond.*

## CATCH-UP.2020: Expanding network accrual tools

- ETCTN trials open at Clemmons, Wilkes, and Statesville
- Co-management of trial patients with outreach providers (10302)
- On-going:
  - Population Health Navigation
  - Weekly Newsletter to Outreach sites and local providers
  - Schedule “screening” of Outreach Clinics
  - Systematic identification with Wake Forest Precision Oncology Initiative

# What about the VA? <https://www.census.gov>

United States  
**Census**  
Bureau

Search

BROWSE BY TOPIC

EXPLORE DATA

LIBRARY

SURVEYS/ PROGRAMS

INFORMATION FOR...

FIND A CODE

ABOUT US

// Census.gov / America Counts: Stories Behind the Numbers / Veterans Who Have Served Since 9/11 Are More Diverse



## Veterans Who Have Served Since 9/11 Are More Diverse

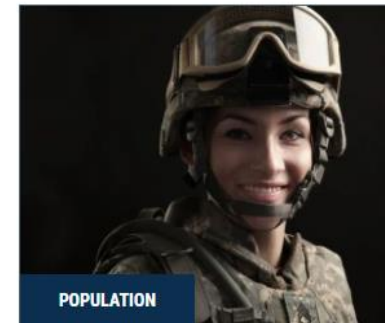


### They Are Half the Size of the Living Vietnam Veteran Population

KELLY ANN HOLDER  
APRIL 11, 2018

The 3.3 million veterans who have served since September 11, 2001, now are roughly half the size of the largest living veteran population: Those who served in the Vietnam era.

As this year marks the 15<sup>th</sup> and 17<sup>th</sup> anniversaries of the onset of wars in Iraq and Afghanistan, the U.S. Census Bureau highlights post-9/11 veterans. They are more diverse than their predecessors. About 17 percent are women, 15.3 percent are black,



POPULATION

#### Three-fourths of Female Veterans Served During Wartime

Nearly all of female veterans under the age of 45 have served in a time of war. The

- 17 percent are women
- 15.3 percent are black
- 12.1 percent are Hispanic
- Almost half (47.6%) are still under the age of 35

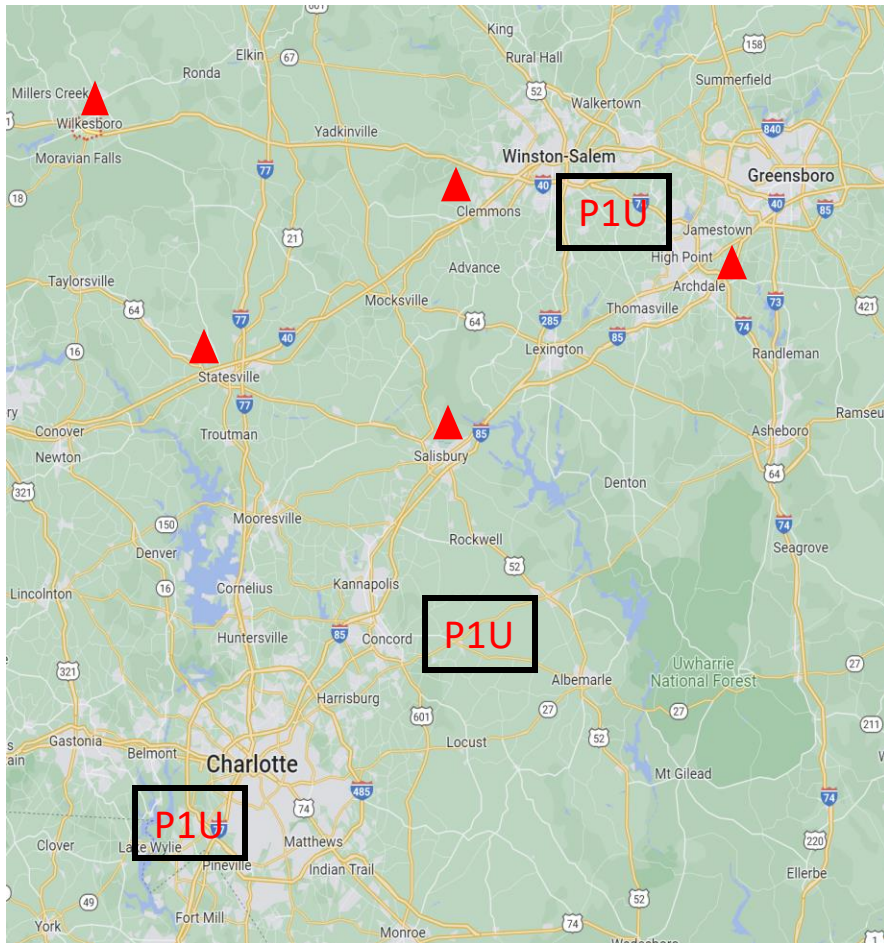




Experimental Therapeutics Clinical Trials Network  
*Team Driven. Cancer Therapy Focused.*

National Cancer Institute at the National Institutes of Health

Accrual to early phase trials and expanded access to this therapeutic option for underserved populations



Phase 1 Unit



Charlotte

Phase 1 Unit



Concord

Phase 1 Unit



Winston-Salem

# Addressing Disparities in Clinical Trials



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## Clinical Trial Protocol



## Physicians

- Clinician Biases
- Logistical Reasoning
- Limited Time
- Limited Resources
- Lack of automation

- Trial Locations
- Types of Trials
- Diversity of Research and Support Staff
- Accountability

## Cancer Center



## Research Institutions

# Patient Health Navigators

Population Health Navigators included in:

- Research team meetings
- Patient workflow both at Main Campus and Outreach sites

Alexis Daniels, MS

**African-American Patient Navigator**

[aadaniel@wakehealth.edu](mailto:aadaniel@wakehealth.edu)



Maria Combs, JD, OPN-CG

**Hispanic Patient Navigator**

[marcombs@wakehealth.edu](mailto:marcombs@wakehealth.edu)



Emily Copus, MSW, OPN-CG

**Rural Patient Navigator**

[eabritt@wakehealth.edu](mailto:eabritt@wakehealth.edu)



**Patients**

Lack of information: Provide comfort with CT process through education, provide CT awareness, pull resources for financial costs, and provide the needed cultural touch (diversity of research staff).

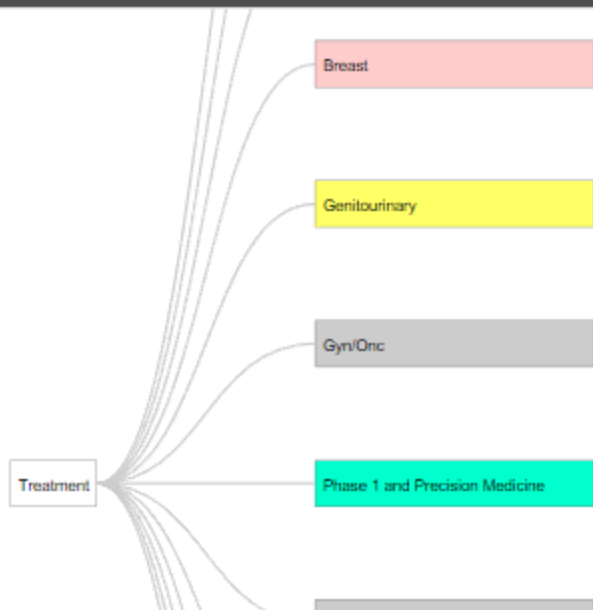
# CTSGUIDE: Clinical Trial Selector GUIDE

Wake Forest Baptist Health School of Medicine Innovations Explore Our System



This site is intended for health care providers to identify open clinical trials. If you are a patient or a member of the community, please visit BeInvolved for clinical trial information and search options.

Treatment Interventional Non-Interventional Search How to



Physicians

Address Limited Time and Lack of automation

Sarcoma

**IRB Number:** IRB00053194

**OnCore No:** CTSUEA6134

**NCT Number:** NCT02224781

**Title:** A Randomized Phase III trial of Dabrafenib + Trametinib followed by Ipilimumab + Nivolumab at Progression vs. Ipilimumab + Nivolumab followed by Dabrafenib + Trametinib at Progression in Patients With Advanced BRAFV600 Mutant Melanoma

**Therapeutic Level:** interventional

Email

Principal Investigator

Pierre Triozzi  
ptriozzi@wakehealth.edu

Study Contact

**Angela Howell** anhowell@wakehealth.edu  
**Rebecca Dellinger-Johnston** radellin@wakehealth.edu  
**Matthew Eber** meber@wakehealth.edu

Co-Investigator(s)

Treatment

Description

#### Primary Objective

To determine whether initial treatment with either combination ipilimumab + nivolumab (with subsequent dabrafenib in combination with trametinib) or dabrafenib in combination with trametinib (with subsequent ipilimumab + nivolumab) significantly improves 2 year overall survival (OS) in patients with unresectable stage III or stage IV BRAFV600 mutant melanoma

#### 2.2 Secondary Clinical Objectives

2.2.1 To evaluate the impact of initial treatment on median OS and Hazard Ratio for death.

2.2.2 To determine whether initial treatment choice significantly improves 3 year OS.

2.2.3 To evaluate the anti-tumor activities (RECIST-defined response rate, median PFS) and safety profiles of ipilimumab + nivolumab and dabrafenib-trametinib in a Cooperative Group trial of patients with V600 mutant melanoma.

To evaluate the activity (RECIST-defined response rate, median PFS) and safety of dabrafenib + trametinib in patients who have had disease progression on ipilimumab + nivolumab and in comparison to its activity and safety in ipilimumab + nivolumab naive patients.

Brain

Melanoma

Treatment

Sarcoma

Lung

Hematologic

Gastrointestinal

Breast

Genitourinary

Gyn/Onc

Phase 1 and Precision Medicine

Cancer Control and Survivorship

Pediatric

Brain

Melanoma

Stage IV

Neuropathy following Taxane or Pt  
atinum...

[ CCCWFU98116 ] Nicotinamide Riboside (NR) in  
Paclitaxel-Induced Peripheral Neuropathy

[ CCCWFU98116 ] Nicotinamide Riboside (NR) in  
Paclitaxel-Induced Peripheral Neuropathy

ER/PR+/ Her2- 1st line and 2nd li  
ne...

[ WFBCCC74219 ] A Phase III, Rand  
omized, Double-Blind, Placebo-Co...

[ WFBCCC74120 ] A randomized, mul  
ticenter, double-blind phase 3 s...

Stage I-III

Residual disease after Neo Adjuv  
nt 1st line...

[ NRG-BR00551418 ] A Randomized,  
Phase III Trial to Evaluate the...

Neo Adjuvant 1st line

[ CCCWFU74218 ] I-SPY 2 TRIAL: In  
vestigation of Serial Studies to...

Neuropathy following Taxane or Pt  
atinum...

High Risk Adjuvant/Neoadjuvant

DCIS

1st Line

[ CCCWFU04116 ] COMPARING AN OPER  
ATION TO MONITORING, WITH OR WIT...

IRB Number: IRB00053194

OnCore No: CTSUEA6134

NCT Number: NCT02224781

Title: A Randomized Phase III trial of Dabrafenib + Trametinib followed by ipilimumab + nivolumab vs. ipilimumab + nivolumab followed by dabrafenib + trametinib at Progression in BRAFV600 Mutant Melanoma

Therapeutic Level: interventional

Email Sent to Patient Health Navigator



vs. ipilimumab + nivolumab followed by dabrafenib + trametinib at Progression in BRAFV600 Mutant Melanoma With Advanced

Email

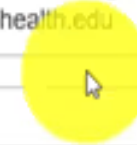
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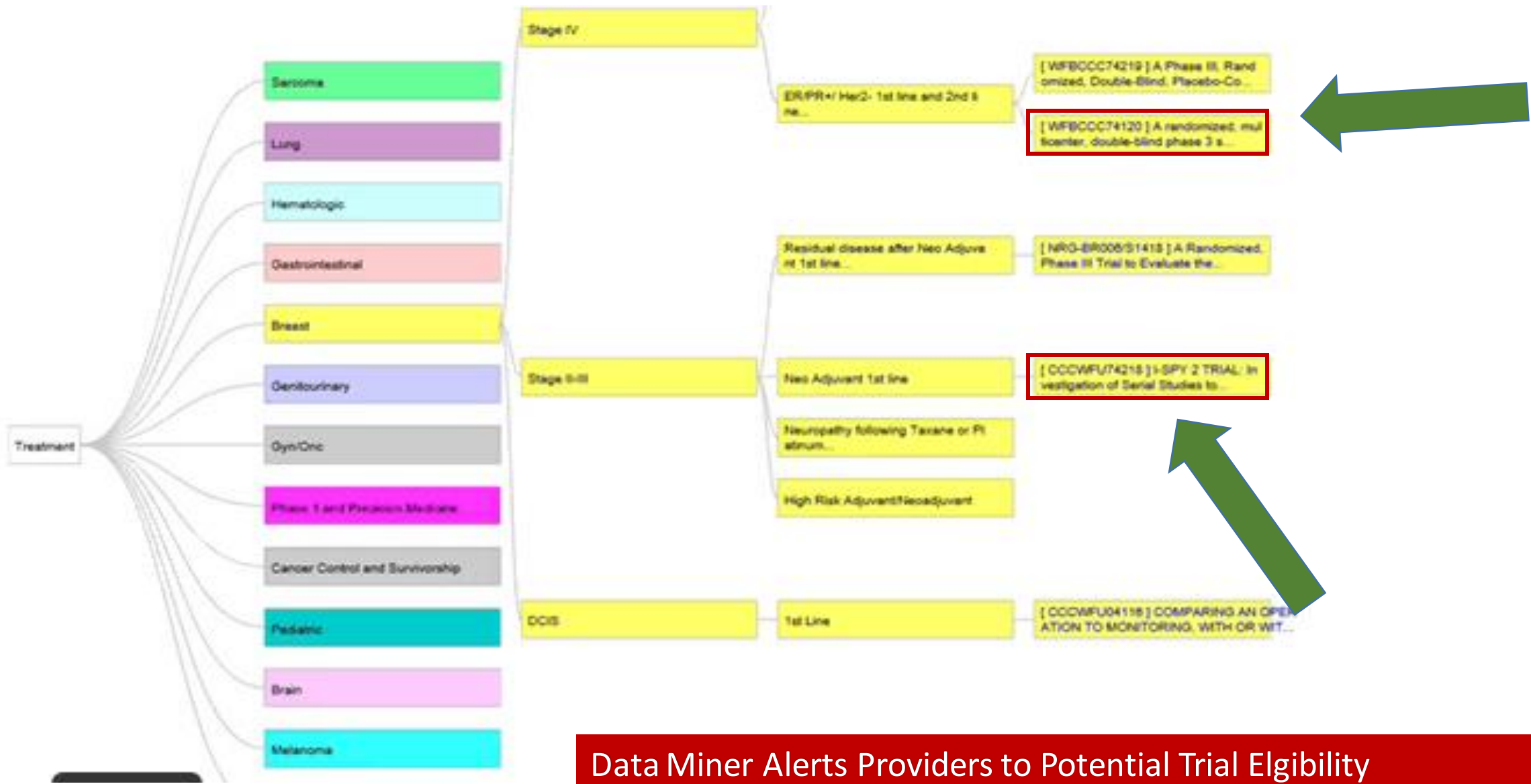
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Email Sent to Study Coordinator Pool

# Automation is KEY !



Data Miner Alerts Providers to Potential Trial Eligibility



# Addressing Disparities in Clinical Trials



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**Clinical Trial Protocol**



**Physicians**

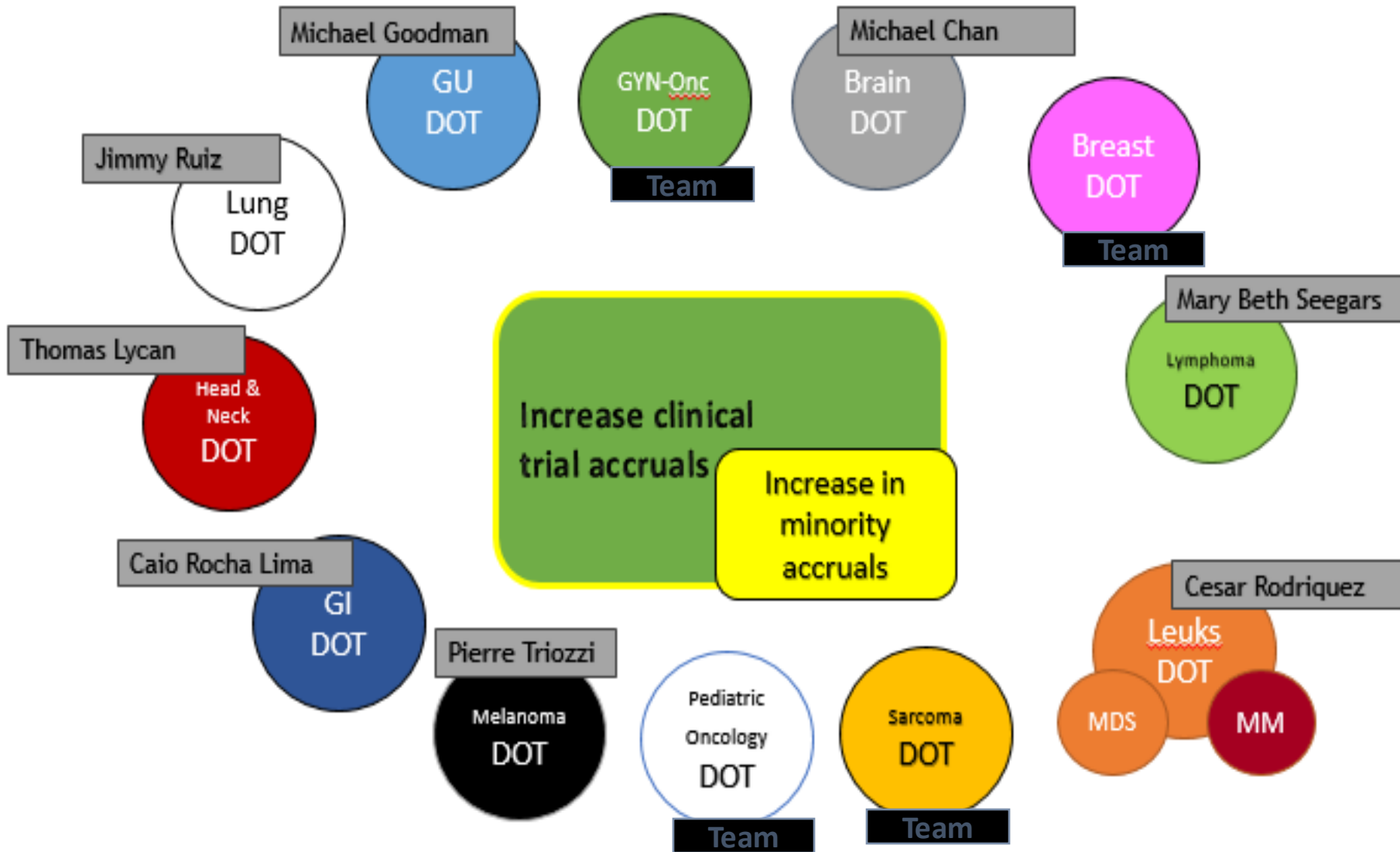
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**Cancer Center**



**Research Institutions**



- Review clinical trial accruals
- Expectations for minority, women, and rural enrolled subjects
- Barriers to enrollment

Cancer Center



Research Institutions

Champions for Diversity for Clinical Trial Participation

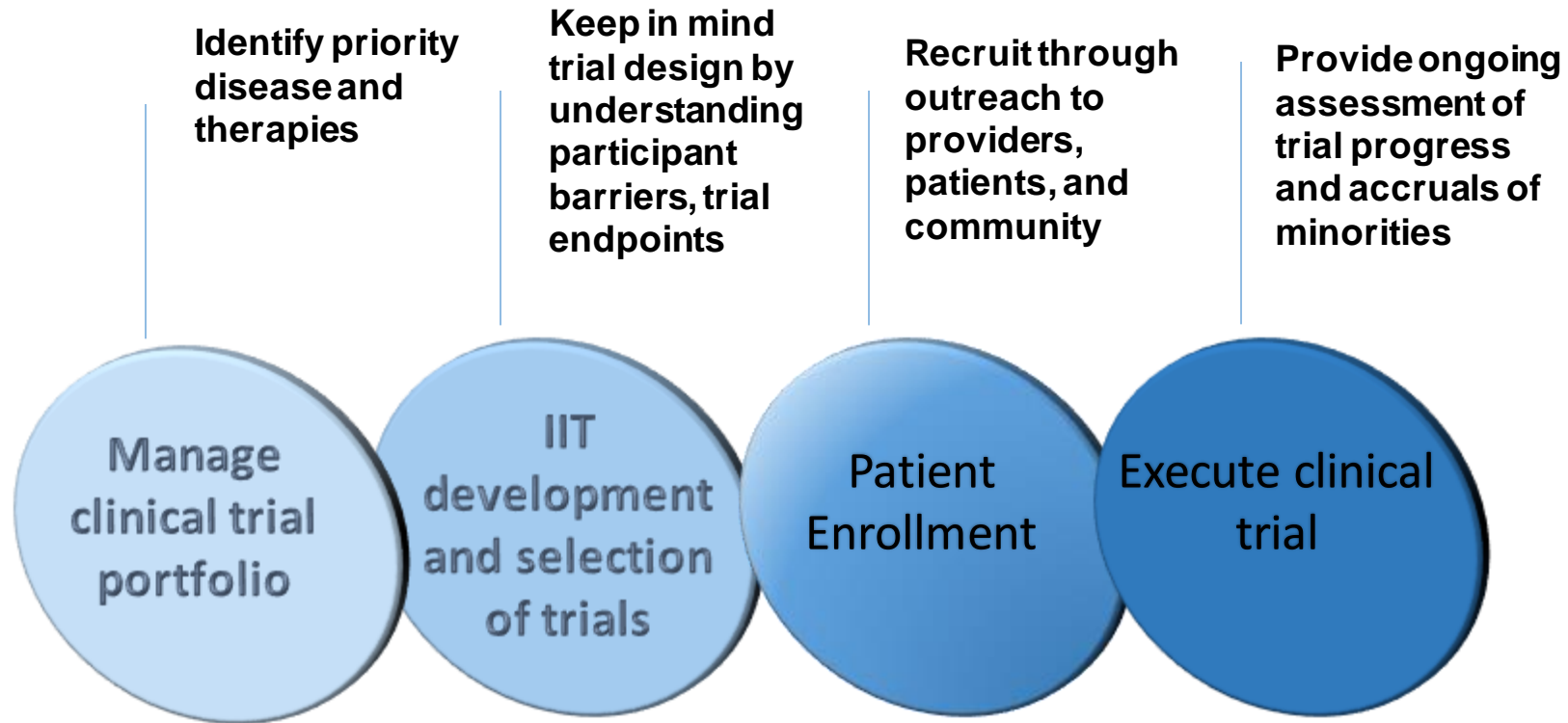
## DOT - Champion for Diversity

- One member of DOT assigned to role of Champion for Diversity (CD)
- Each DOT CD invited to participate in the OCHE Advisory Group
- Dr. Micheal Chan

**Neuro-Onc DOT  
Champion for Diversity**



# DOT - Champion for Diversity



- Improve completeness and quality of subgroup data collection, reporting, and analysis
- Make demographic subgroup data more available and transparent
- Identify barriers to subgroup enrollment in clinical trials and employ strategies to encourage greater participation



# Office of Cancer Health Equity

Cancer can affect anyone, at any time. We believe that everyone should have an equal chance of surviving cancer.

## Collaborating in the Hispanic Community

The Office of Cancer Health Equity partners with Cancer Services, Inc. to support the Hispanic community. Maria Combs, our Hispanic Patient Navigator, works closely with Gloria Galeano Hall, bilingual Patient Advocate at Cancer Services. They attend Hispanic community outreach events and serve as facilitators of the Hispanic cancer support group as well as the Cancer Transitions survivorship program.



Gloria Galeano Hall and the entire Hispanic Support Group



Dr. Jimmy Ruiz, Assistant Director of OCHE, leading the discussion at Cancer Transitions.



# Goals for improved access and minority enrollment to clinical trials

- CTs are accessible, affordable, and equitable for patients
- Design efficient CTs that are integrated into clinical care
- Simplify, streamline, and standardized protocol requirements
- Recruit, retain, and support a well trained diverse clinical trial team
- Institute oversight and review clinical trial results

