

Approaches to Demonstrate Scientific Impact



Background of Session

- CCSG - Impact, Impact, Impact
- Such as ... Clinical practice, disparities, FDA approval, etc.
- How have centers successfully communicated impact in recent site visits?
- CCAF-IT workshop

Panelists

Marion S. Dorer

*Fred Hutchinson Cancer
Research Center*

(science and translation)

Sharon Mias

*Tisch Cancer Institute at Mount
Sinai*

(catchment area)

Ira S. Goodman

*UCSD Moores Comprehensive
Cancer Center*

(catchment area)

Christine Scarcello, MBA

*The James Ohio State University
Comprehensive Cancer Center*

(clinical practice/screening)

David M. Gosky

*University of Kentucky Markey
Cancer Center*

(catchment area)

Brian C. Springer, MHA

Moffitt Cancer Center

(moderation)

Fred Hutch/University of Washington Cancer Consortium

575 Consortium members

425 Therapeutic Clinical Trials

15% patients on trial

\$458M (direct)

FY15 project funding



Global Oncology

- Utilize our unique international partnerships in Africa, China and with the Institute of Health Metrics to reduce the global burden of cancer through translational research on infection- and HIV- related malignancies.

Original NCI field station at the Uganda Cancer Center



Global Oncology

- **Major Accomplishments:**

- ~\$10M FHCRC investment in Kampala site; new clinical and training facility
- Established Consortium Global Oncology Program (Casper)
- Global Burden of Disease Study (Murray, IHME)
- Ugandan Fellows Program

- **Goals:**

- Recruit pediatric oncologist and genomics faculty
- Establish Burkitt's Lymphoma Network
- Use Global Burden of Disease data to inform clinical and translational studies at international sites
- Apply insights in low-resource settings to problems in the catchment area, including virus associated cancers and breast cancer screening



Value of the Cancer Center

Shared Resources

Genomics
Biostatistics
Clinical Research Support

NWBioTrust

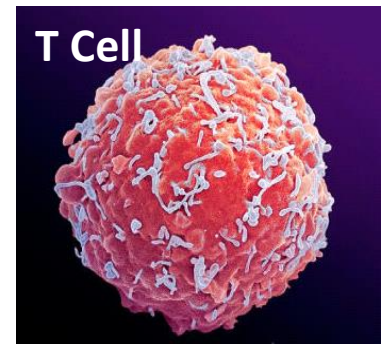
Immune Monitoring
Therapeutic Manufacturing

Pilot Grants

Warren/Casper/Matsen
Bhatia/Ngheim

Immunotherapy

Develop genetically engineered T cells into a licensed platform for the treatment of select hematologic as well as solid tumors (lung, ovarian, pancreatic cancer)



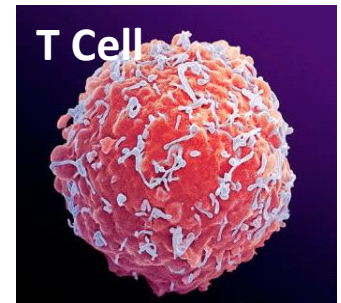
Immunotherapy

- **Major Accomplishments:**

- Promising Phase I results using T-cells engineered with CARs and high-affinity TCRs for hematologic cancers (Riddell, Greenberg, Jensen, *Immunology and Vaccine Development*)
- Novel methods to map entire T-cell repertoire; spin off Adaptive Technologies (Robins, *Biostatistics and Computational Biology*)
- New shared resources, faculty recruits; \$40M raised
- Launched Juno Therapeutics, Inc.

- **Goals:**

- Refine T cells to overcome checkpoint inhibition
- Build program in antigen target discovery
- Recruit clinical trialists and immunologists; pediatric oncologists



Value of the Cancer Center

Shared Resources

Therapeutic Manufacturing
Immune Monitoring

Comparative Medicine

Cellular Imaging

Biostatistics

Clinical Research Support

Pilot Grants

Hingorani/Greenberg

Scharenberg/Jensen

Press/Zhang

Recruits:

3 CCSG

Funded

Advancing Research Through the Translational Pipeline

Lead Investigators	Local Innovation	Translation
Fred Appelbaum, Ollie Press, John Pagel (Heme Malignancies)	anti-CD45, I-131 labeled radioantibody	Randomized Phase III study in older AML patients (licensure)
Jim Olson (Cancer Basic Biology)	Found that retinoids induce apoptosis in medulloblastoma	National Phase III trial (COG) of carboplatin radiosensitization or 13-cis retinoic acid with cisplatin-based chemotherapy
Jonathan Bricker (Cancer Epi, Prevention and Control)	Application of a novel behavioral intervention (Acceptance and Commitment Therapy - ACT) to smoking cessation to reduce incidence of lung cancer.	Randomized trial of 2500 participants comparing ACT website with Smokefree.gov to demonstrate that ACT has significantly higher smoking cessation rates
Irwin Bernstein, Colleen Delaney (Heme Malignancies)	Defined a potential role for Notch signaling in hematopoiesis	Randomized Phase II trial with 5 Cancer Centers of the universal cord blood donor product



Research Affecting the Catchment Area of the UC San Diego Moores Cancer Center

Ira S. Goodman

Associate Director for Administration

Where discoveries are delivered.SM

UC San Diego
MOORES CANCER CENTER

UC San Diego Moores Cancer Center

- Scott M. Lippman, MD, Cancer Center Director
Associate Vice Chancellor for Cancer Research and Care
Associate Dean
- NCI designated cancer center since 1978
- NCI designated comprehensive status since 2001
- NCI designated Consortium Center with San Diego State University since 2014
- Catchment area – San Diego and Imperial counties –
Population of ~3.3 million
High poverty (23%) and obesity rates
35% Hispanic or Latino



Imperial County

- 8th Largest city (1.33M)
- 5th Largest county (3.14M)
- Population = 175K
- Poverty Rate = 23%

Primary MCC Catchment Area

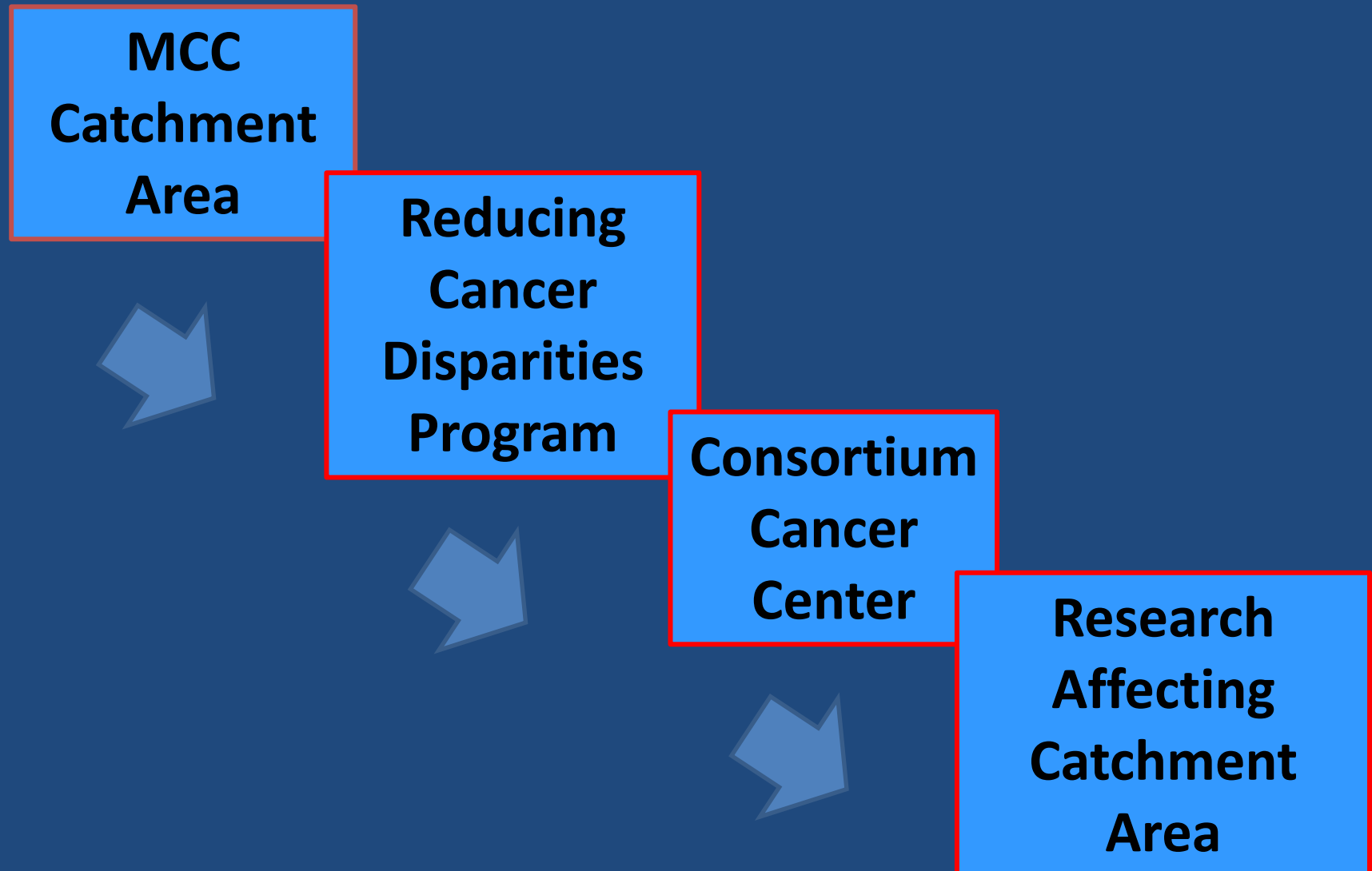
35% Hispanic
(NCI funded studies, e.g.,
diet, physical activity)

10,000
square miles

San Diego State University

Federal Hispanic-serving institution, 2012

Catchment Area Research Pipeline



UC San Diego Moores Cancer Center

Research Programs

- Cancer Genomes and Networks
- Cancer Biology and Signaling
- Cancer Prevention
- Reducing Cancer Disparities
- Hematologic Malignancies
- Solid Tumor Therapeutics

Research Impacting Catchment Area

Portfolio of cancer-disparities grants (UCSD and SDSU) including

- Obesity prevention in children in low-income communities.
- Smoking-cessation programs in minority populations.
- Obesity-related hepatocellular cancer (HCC) and its risk factors, nonalcoholic steatohepatitis (NASH).

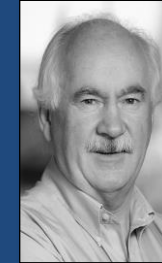
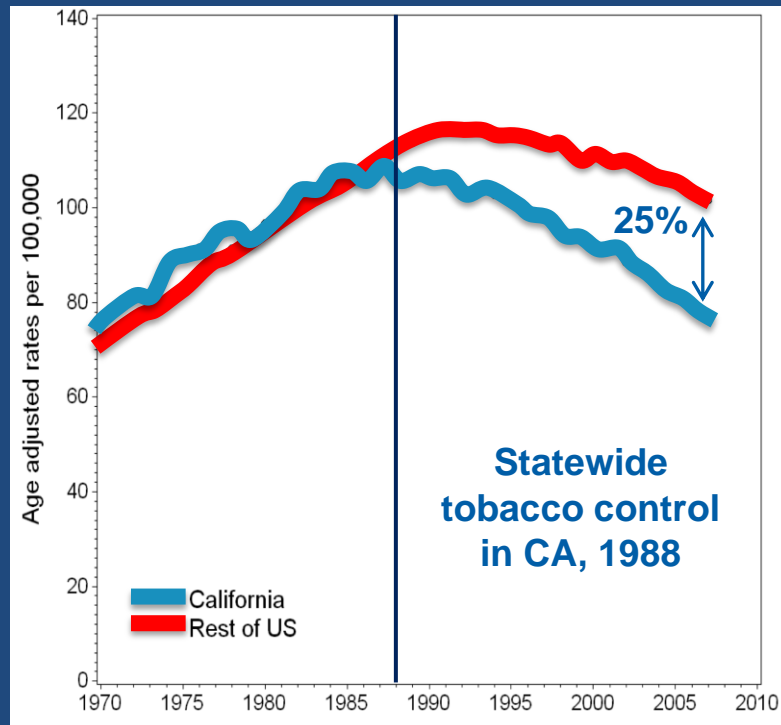
California has the highest incidence of HCC in the world, NASH is significantly more prevalent in Hispanics (than non-Hispanic Whites) in San Diego.

Lab to clinic studies in:

- obesity and inflammation (Park Cell 2010),
- epidemiology (Loomba AJE 2013),
- chemoprevention (e.g., with metformin; Loomba APT 2009),
- novel imaging, investigator-initiated trials and R01-funded NASH imaging.

Research Impacting Catchment Area

Comprehensive Tobacco Control reduces lung cancer mortality



John Pierce,
PhD



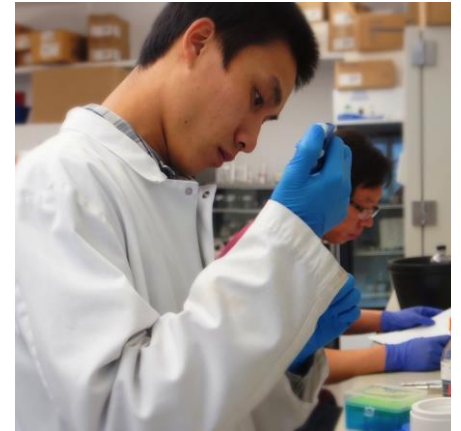
Karen Messer,
PhD

- **25% Reduced** lung cancer mortality
 - 1900 fewer lung cancer deaths in catchment area (during review period)
- US-CA gap in mortality parallels per capita consumption of cigarettes

2013 AACR Award for Cancer Prevention
(Oct 2013)

Pierce et al., *CEBP* 2010, *JAMA* 2011





U.K. HealthCare®
Markey Cancer Center



A Cancer Center Designated by the
National Cancer Institute

Catchment Area Impact

David M. Gosky, MA, MBA

**Cancer Centers Administrators Forum
April 4, 2016**

MCC Timeline

McDowell Cancer Network

NCI P30 awarded

Markey Cancer Center established

Roach Building opened

KCR established

Karpf recruited

Evers recruited

NCI Designation

1975 1985 1995 2000 2003 2006 2009 2013 2016



Lucille P. Markey



VP George H.W. Bush at Dedication

- Strategic planning
- Building leadership team
- Targeted recruitment
- New research facilities
- Major investments in scientific programs and shared resources

Significant Burden of Cancer in Kentucky

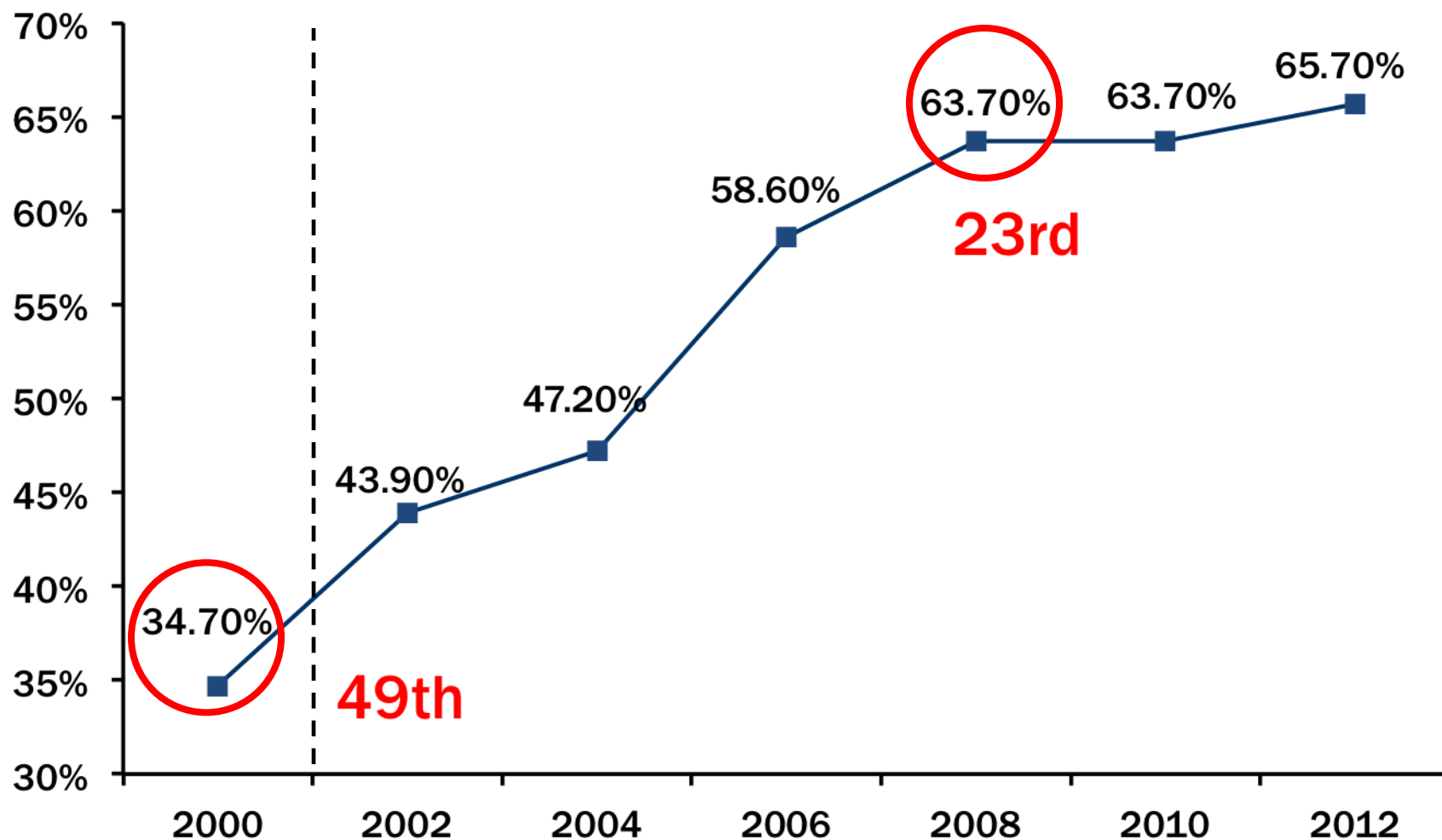
- **1st** in the nation in overall cancer mortality rate
- **1st** in the nation in incidence rate for all cancer sites
 - Lung and bronchus (1st); colon and rectum (1st); larynx (1st); oral cavity and pharynx (1st); kidney and pelvis (2nd); brain (4th); skin (8th); skin melanoma (9th) non-Hodgkin's lymphoma (10th); cervix (10th); leukemia (10th)
- Cancer incidence and mortality are highest in Appalachia

Age-adjusted cancer mortality rates, 2008-2012

	All Cancers	Lung	Colorectal	Larynx	Oral Cavity
U.S.	171.2	47.2	15.5	1.1	2.5
Kentucky [†]	204.4	70.9	18.1	1.5	2.8
Appalachian Kentucky*	225.8	82.7	20.6	1.7	2.9

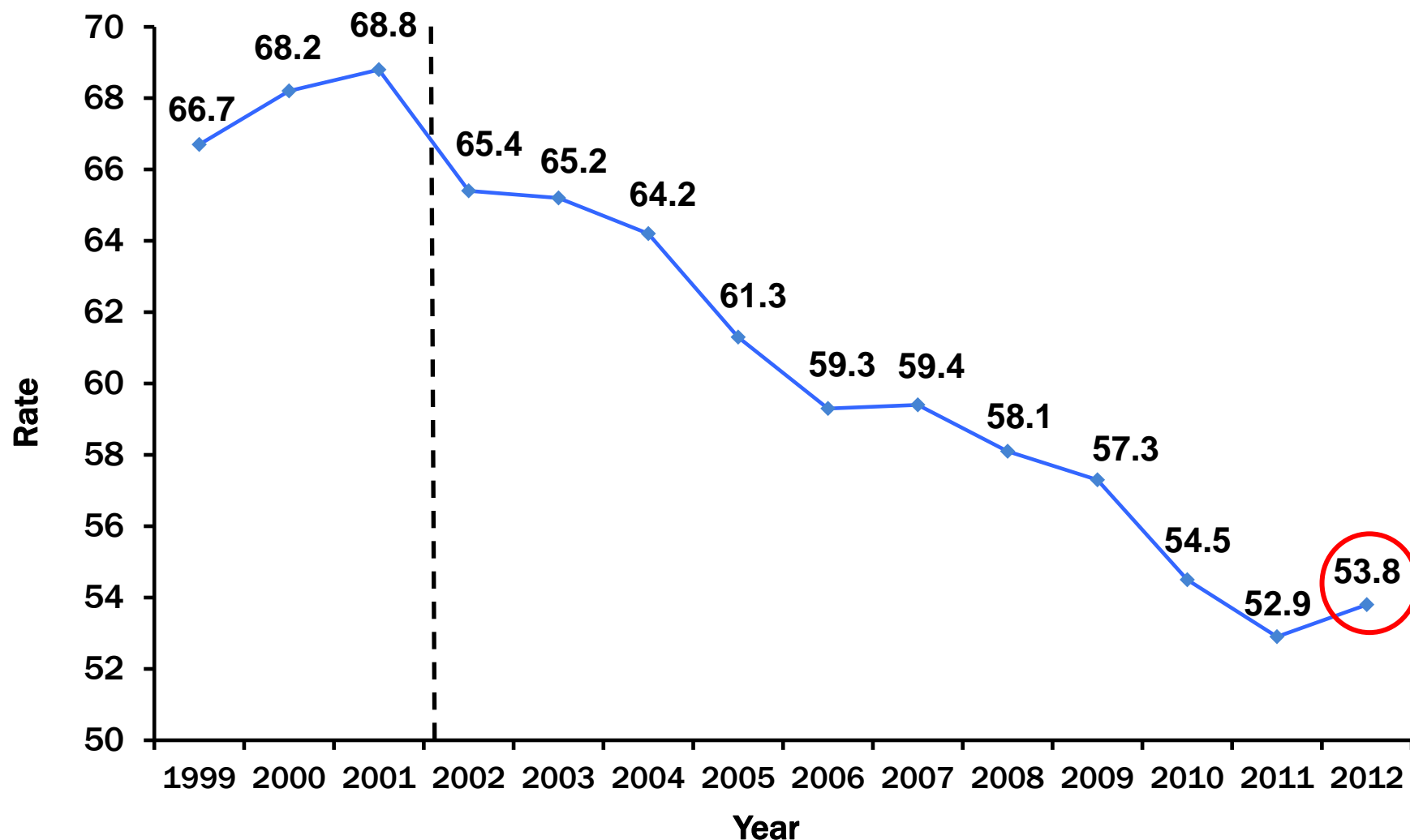
[†] p<0.0001 vs U.S. as a whole; * p<0.05 vs non-Appalachian Kentucky. SEER and Kentucky Cancer Registry.

Colorectal Cancer Screening in Kentucky



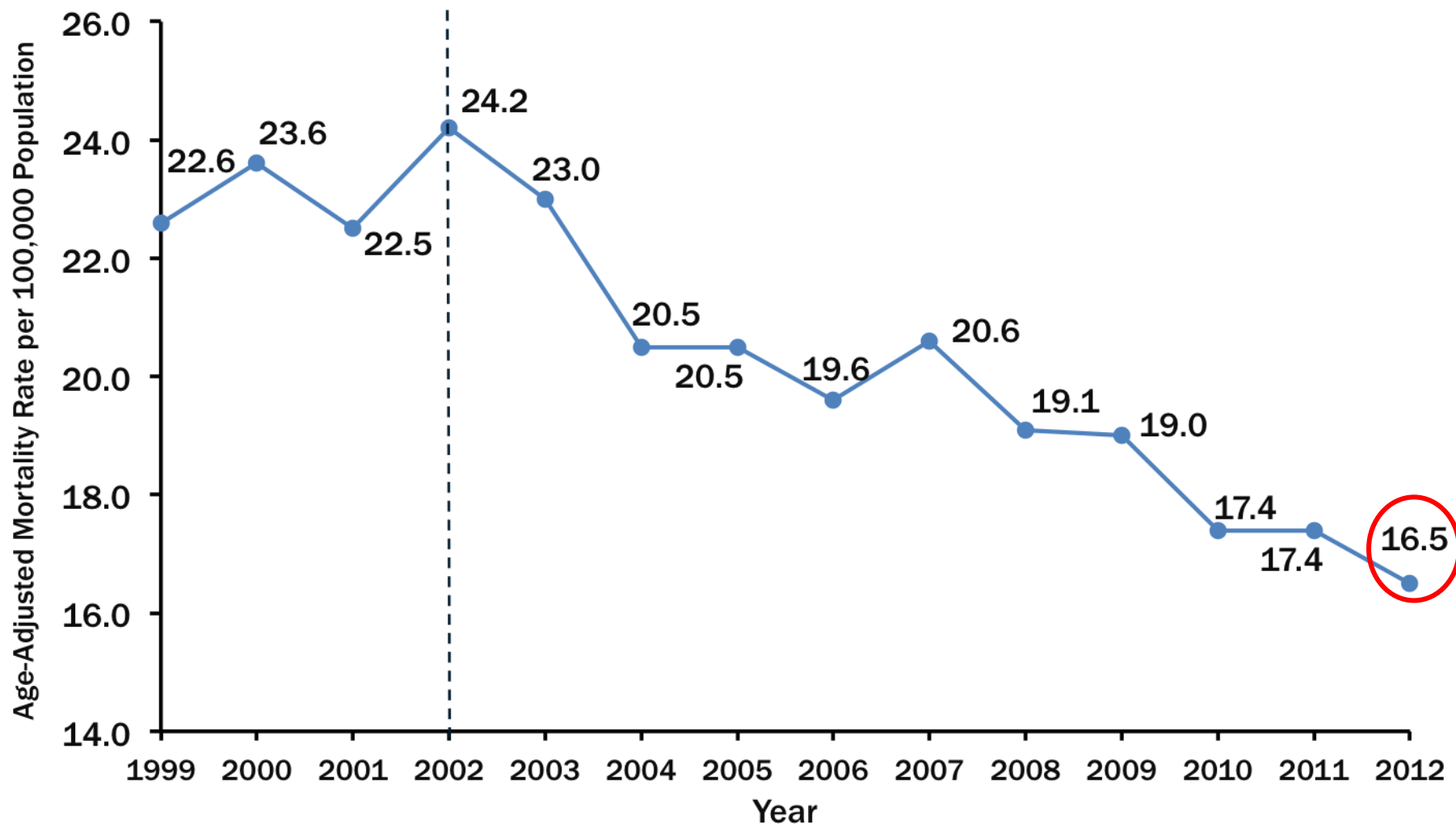
Source: <http://cdc.gov/brfss>, August 2015

Colorectal Cancer Incidence in Kentucky



$P < 0.05$; Source: <http://www.kcr.uky.edu>, January 2015

Colorectal Cancer Mortality in Kentucky



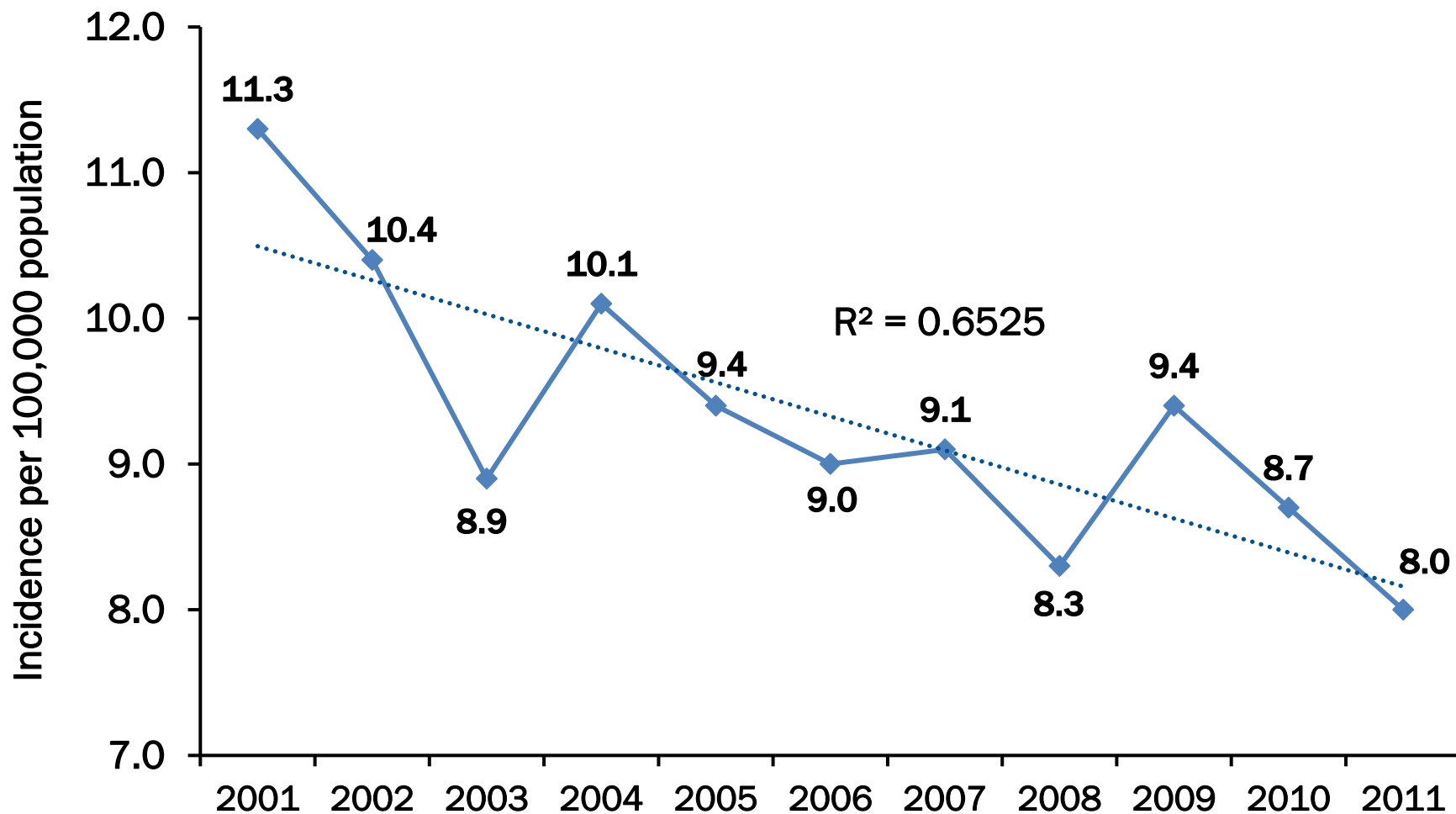
$P < 0.05$; Source: <http://www.kcr.uky.edu>, January 2015

Cancer Prevention and Control Efforts to Address the Cervical Cancer Burden in KY

- Dr. Schoenberg led a very successful research project testing a faith-based intervention that dramatically increased PAP testing among Appalachian women (R24 MD002757).
- Dr. Dignan has been studying how to improve cervical cancer screening and follow-up using patient navigators (Appalachian Regional Commission CO-17895-14).
- Dr. Tucker is conducting a study of HPV genotypes among women diagnosed with pre-invasive cervical cancer (CDC 200-2013-M-55678).
- Dr. Vanderpool conducted research testing a culturally sensitive intervention program designed to increase HPV vaccination among young women in Appalachian Kentucky (NIH – CCSG supplement).



Cervical Cancer Incidence Rates in Kentucky, 2001-2011

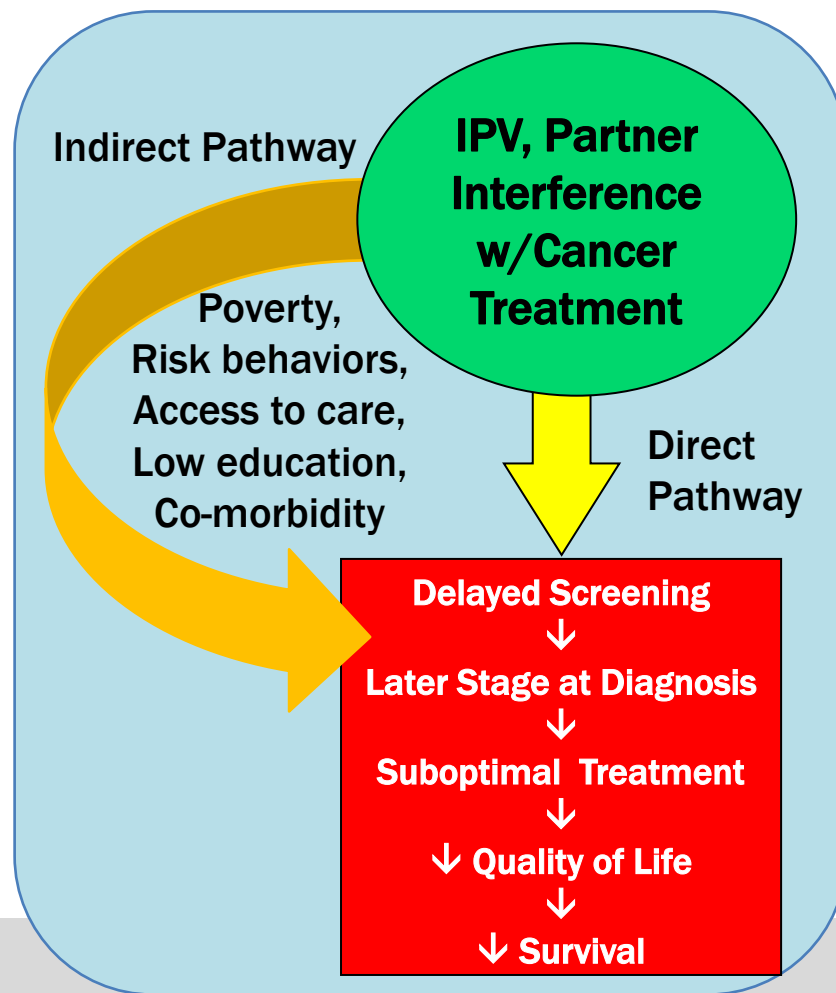


Source: Kentucky Cancer Registry. All rates age-adjusted to the U.S. 2000 Std. Pop.

Intimate Partner Violence (IPV) and Cancer Disparities

Intra-programmatic: Coker (CP), Tucker (CP)

- Research Question: Is IPV associated with delayed screening survival among women in Kentucky?
- Design: Population-based prospective cohort study
- Methods: KCR recruitment
- Current results: n=1,463 (to date)
 - Both IPV (37% lifetime) and Partner Interference w/treatment (13%) associated with lower Functional Assessment of Cancer Therapy; all domains



Catchment Area Impact

Sharon Mias
Executive Administrator
Tisch Cancer Institute at
Mount Sinai

April 4, 2016



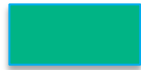
**Mount
Sinai**



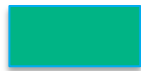
Tisch Cancer Institute: Located in Manhattan, New York City

New York State Cancer Centers

“Meet the Neighbors”



**Roswell Park Cancer Institute
(Buffalo, NY)**



**Cold Spring Harbor Laboratory
(Cold Spring Harbor, Long
Island, NY)**

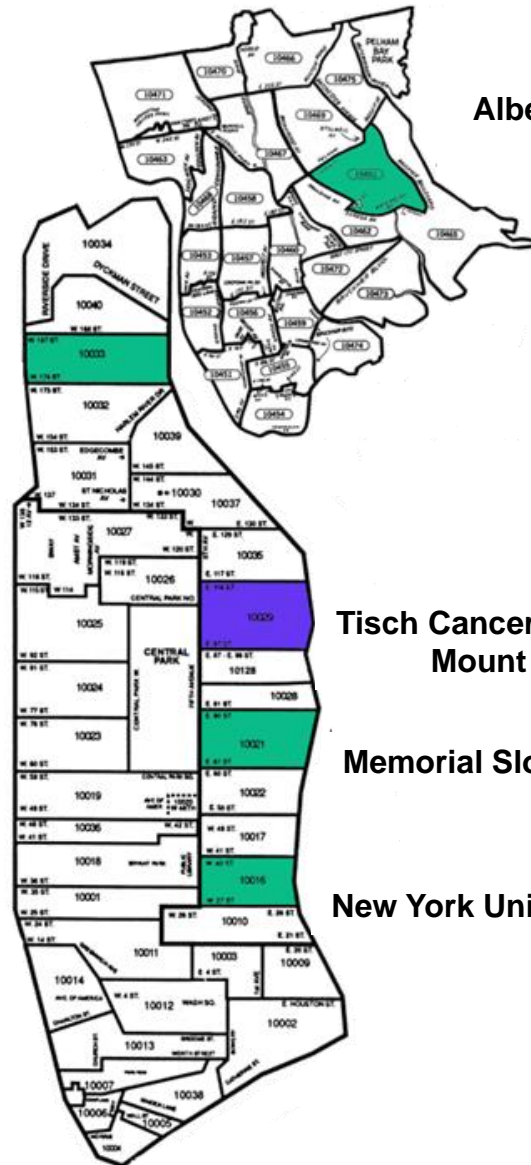
**Herbert Irving
(Columbia)**

Albert Einstein

**Tisch Cancer Institute at
Mount Sinai**

Memorial Sloan-Kettering

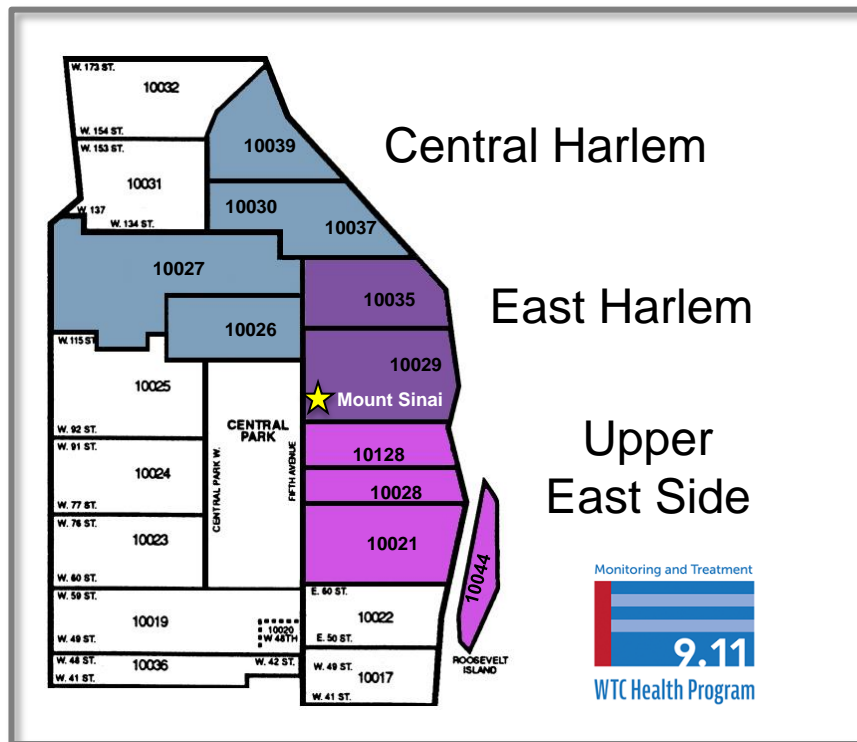
New York University



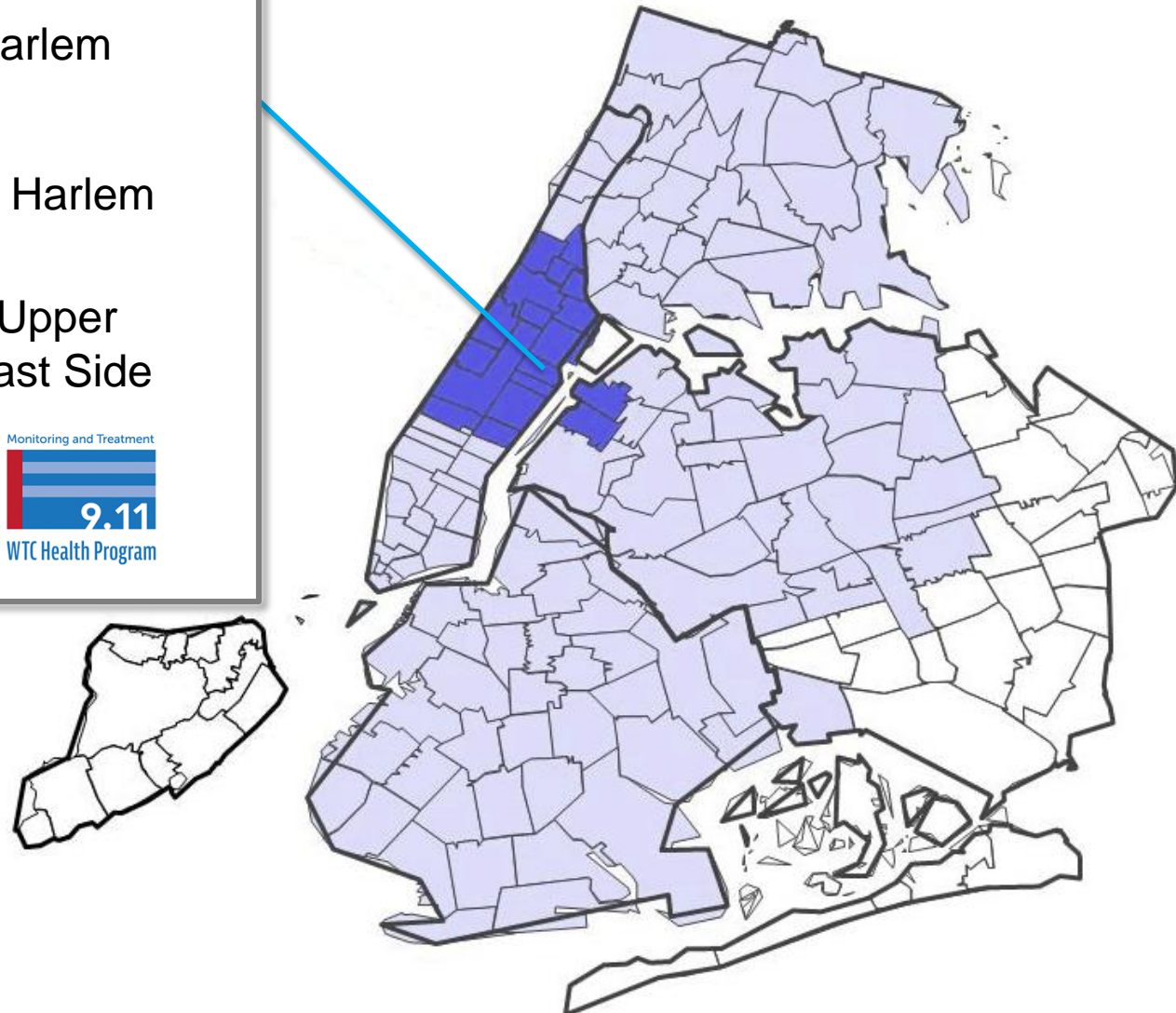
Tisch Cancer Institute (TCI) at Mount Sinai

- In 2014, CCSG application submitted to be **5th NCI-Designated Cancer Center in NYC**, and 7th in NY State
- Advised that it was critical to show how we were serving our own unique catchment area (***Why does NYC need another NCI cancer center?***)
- TCI commissioned **a special study** on the incidence and mortality of cancer in the specific neighborhoods of our catchment area.
- Special attention taken to incorporate catchment-related information **through out CCSG application and site visit.**
- NCI-Designation awarded as of **August 2015**

Unique Catchment Areas



- Primary Market
- Secondary Market



Strategy to highlight catchment area impact at 2015 site visit

Posters: Optional for site visit, but we displayed two posters that were related to our unique populations

Presentations: Wherever possible, incorporated a slide that spoke to **catchment-relevant** issues, such as:

- Directly relevant research

- Minority enrollment in trials

- Outreach to community

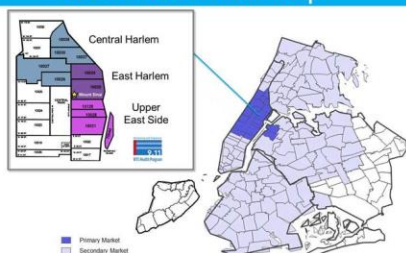
Some Examples: Will go through the following slides quickly. The focus is not on the content, as much as format and placement.

Catchment Area



Mission Statement: To advance the field of cancer research, treatment and prevention and to facilitate the availability of these advancements to our communities so as to extend and improve the lives of cancer patients and their families.

Catchment Area Map



SES & Cancer Incidence

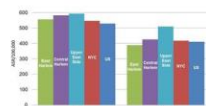
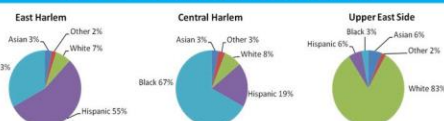
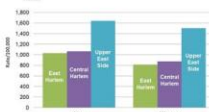


Figure 1.
Age-Standardized Rates
All Cancers
2007-2011



Outreach

Community Outreach & Screening Initiatives

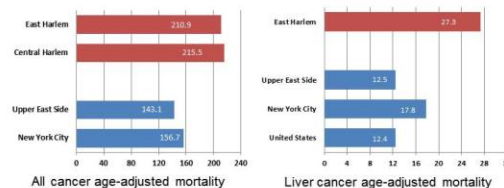
- Minority, Outreach, Recruitment and Education Program (MORE)
- Harlem Partnerships Community Action Board
- Hepatitis Outreach Network
- Witness Project of Harlem
- Esperanza y Vida
- Colorectal Cancer Screening Outreach Program



Cancers with Increased Incidence

East Harlem	Central Harlem
<ul style="list-style-type: none"> Hepatocellular cancer Lung cancer Laryngeal cancer Prostate cancer Colorectal cancer 	<ul style="list-style-type: none"> Hepatocellular cancer Lung cancer Laryngeal cancer Prostate cancer Triple negative breast cancer (3X increased incidence in Blacks)
Upper East Side	World Trade Center
<ul style="list-style-type: none"> Breast cancer Melanoma Oral cavity cancer Thyroid cancer Non-Hodgkin's lymphoma Myeloproliferative disorders 	<ul style="list-style-type: none"> All cancers Prostate cancer Thyroid cancer

Cancer Mortality



Community Advocacy Committee

Name	Organization	Role
Sherline James	Community member - Witness Project	Community
Liliana Melgar	Hispanic Federation	Community Based Organization
Marietta Palmer	Community member	NYCHA
Yulinda Lewis-Kelly	Community member - Witness Project	Cancer survivor, faith-based organization
Jacob Kelly	Community member, Church pastor	Faith-based organization, caregiver
Sarah Martin	General Grant Residents Association	NYCHA
Maria Rivera	Carver Senior Center, Casita Maria	Community based organization
Desire Walker	Community member - Witness Project	Cancer survivor and advocate
Susan Olivera Pepin	American Cancer Society	Advocacy group
Marisa Conderio	Carver Senior Center, Casita Maria	Community based organization

Examples of Catchment Area-Specific Research

Cancer Immunology

- Inflammatory signatures in HCC patients
- Novel targeted immunotherapies for HPV-associated oral-pharyngeal cancer
- Epigenetic biomarkers of melanoma progression
- Neoadjuvant intratumoral immune modulators for prostate cancer

Cancer Mechanisms

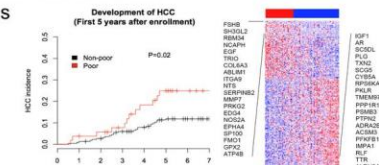
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- Phase I trials for myeloproliferative neoplasms

Liver Cancer

- Hepatic fibrosis as a risk factor for HCC
- Aberrant signaling pathways in HCC
- HCV taskforce
- Novel clinical trials for patients with HCC

Cancer Prevention & Control

- I-ELCAP: International consortium for spiral CT lung cancer screening
- Cancer risk among WTC responders
- Patient navigation for enhancing CRC screening adherence
- Contribution of insulin resistance to aggressive triple-negative breast cancer



Clinical Trials Accrual

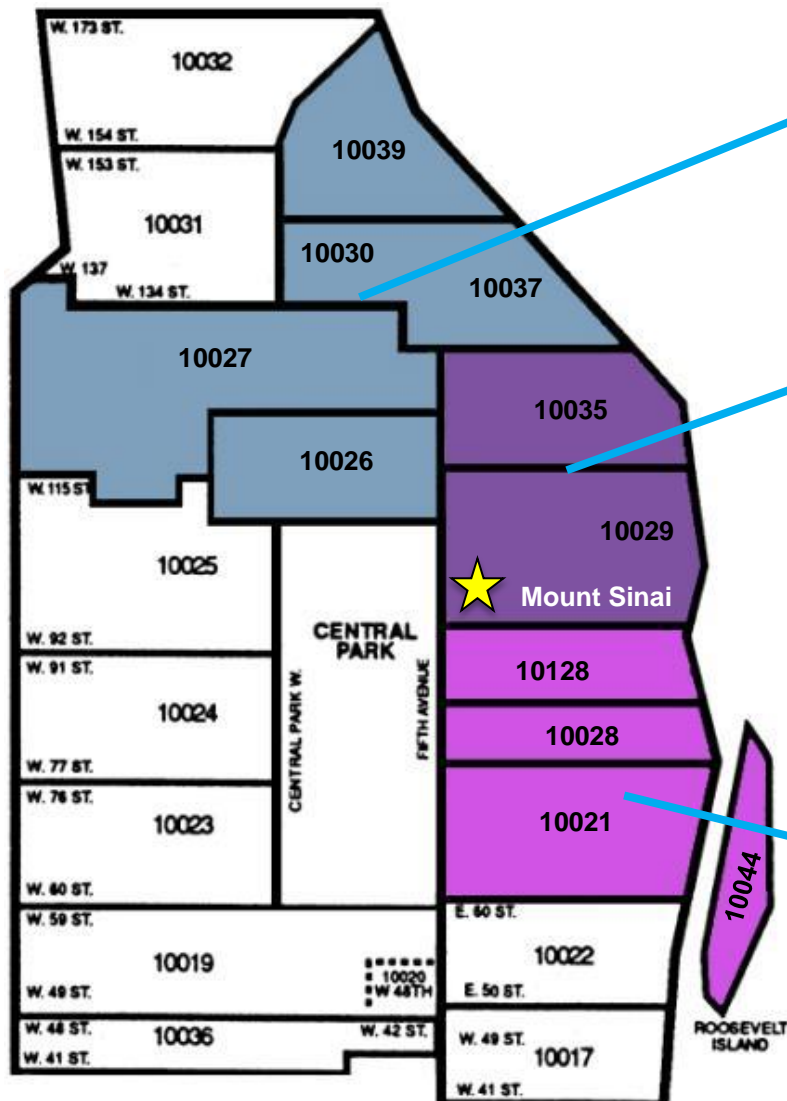
	Mount Sinai Primary Catchment Area*		Mount Sinai Cancer Patient Population**		Interventional Therapeutic		Interventional Non-Therapeutic		Non-Interventional (Obs. and Outcome Studies)	
	N	%	N	%	N	%	N	%	N	%
RACE										
White/Caucasian	536,325	58.0%	1,643	68.7%	233	66.3%	189	67.0%	1,086	75.1%
African American	381,070	40.9%	354	14.9%	62	18.8%	72	25.5%	276	18.1%
Asian/Pacific Islander	4,911	0.5%	5	0.2%	5	1.5%	10	3.5%	9	0.6%
Hispanic/Latino	75,353	8.0%	227	9.3%	44	13.4%	9	3.2%	88	5.8%
Other Race	86,761	9.2%	163	6.8%	0	0.0%	0	0.0%	0	0.0%
Two or More Races	33,703	3.6%	0	0.0%	0	0.0%	2	0.7%	9	0.6%
Unknown/Not Reported			396		2		175		517	
ETHNICITY										
Hispanic or Latino	207,485	22.0%	312	12.9%	57	17.2%	210	51.9%	231	18.1%
Non-Hispanic or Latino	716,470	77.5%	2,275	87.5%	274	82.8%	395	48.1%	1,842	80.9%
Unknown/Not Reported			311				31		490	
SEX										
Female	497,036	53.0%	1,593	56.8%	126	39.3%	244	53.6%	710	40.7%
Male	426,889	46.0%	1,276	43.2%	205	60.7%	213	46.6%	1,082	59.3%
Unknown/Not Reported			4						171	

BMT Minority Enrollment

	Total #	% African American	% Asian	% Hispanic
Autologous	208	23.6%	2.9%	21.2%
Allogeneic	65	7.7%	20.0%	23.1%
Total	273	19.4%	7.0%	21.6%

	Total #	% African American	% Asian	% Hispanic
Interventional Trial Enrollment	31	22.6%	6.5%	35.5%

Cancers with Increased Incidence in Catchment Area



Central Harlem

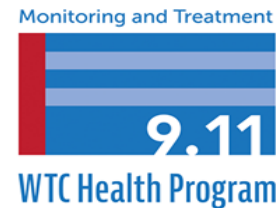
- HCC (Liver)
- Larynx
- Prostate
- TN Breast
- (Obesity/Diabetes)

East Harlem

- HCC (Liver)
- Larynx
- (Obesity/Diabetes)

World Trade Center Program

- All Cancers
- Prostate
- Thyroid

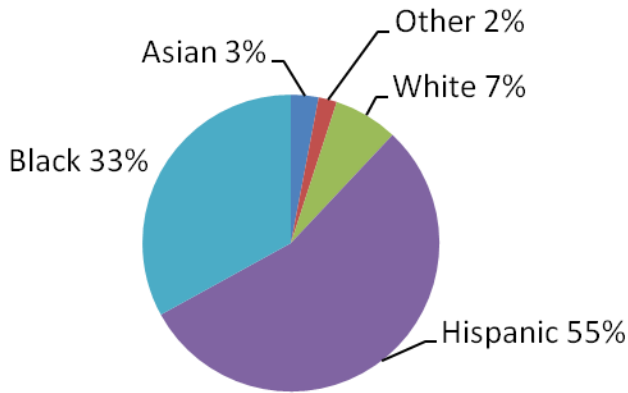


Upper East Side

- Melanoma
- Head & Neck
- NHL
- MPD

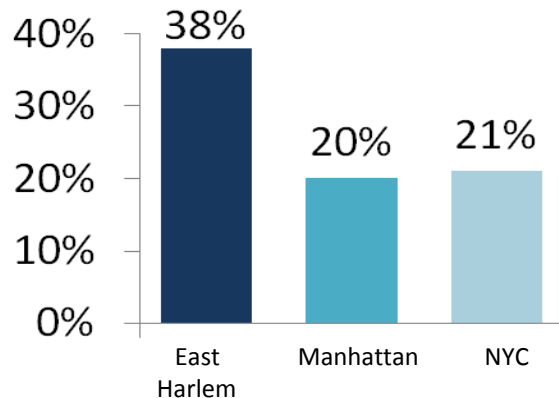
Demographics – East Harlem/Central Harlem

East Harlem

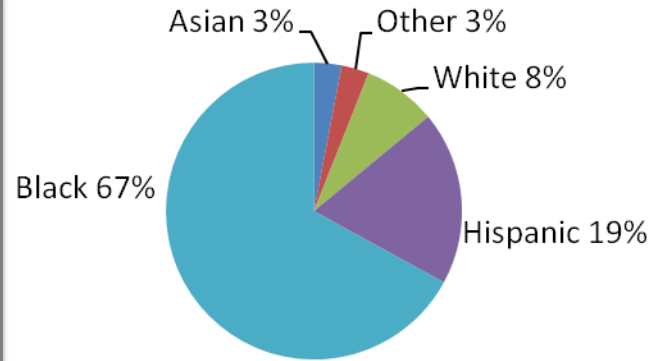


Poverty

Percent of residents living below the poverty level

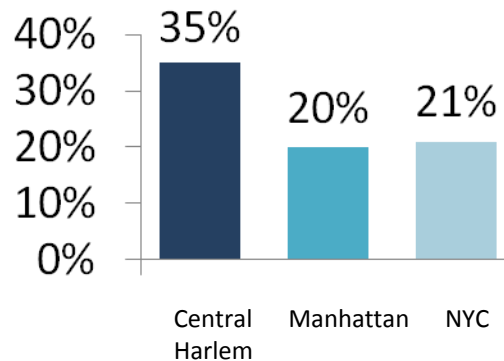


Central Harlem

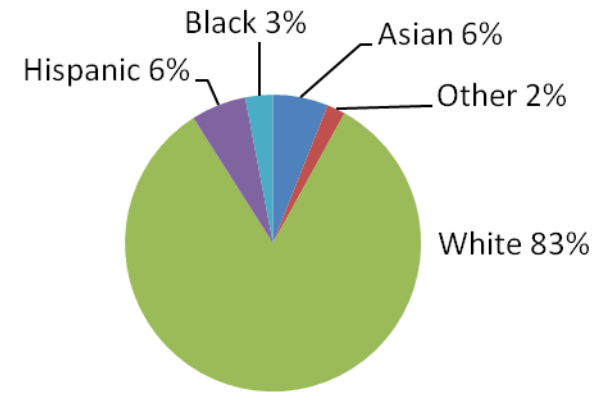


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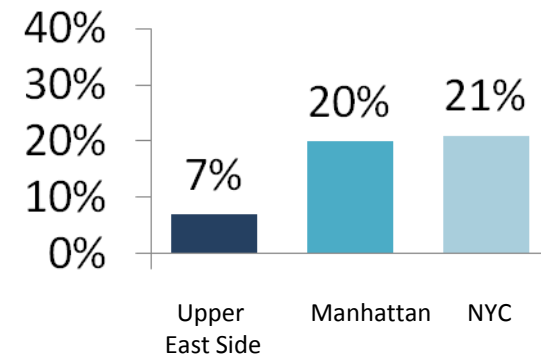


Upper East Side

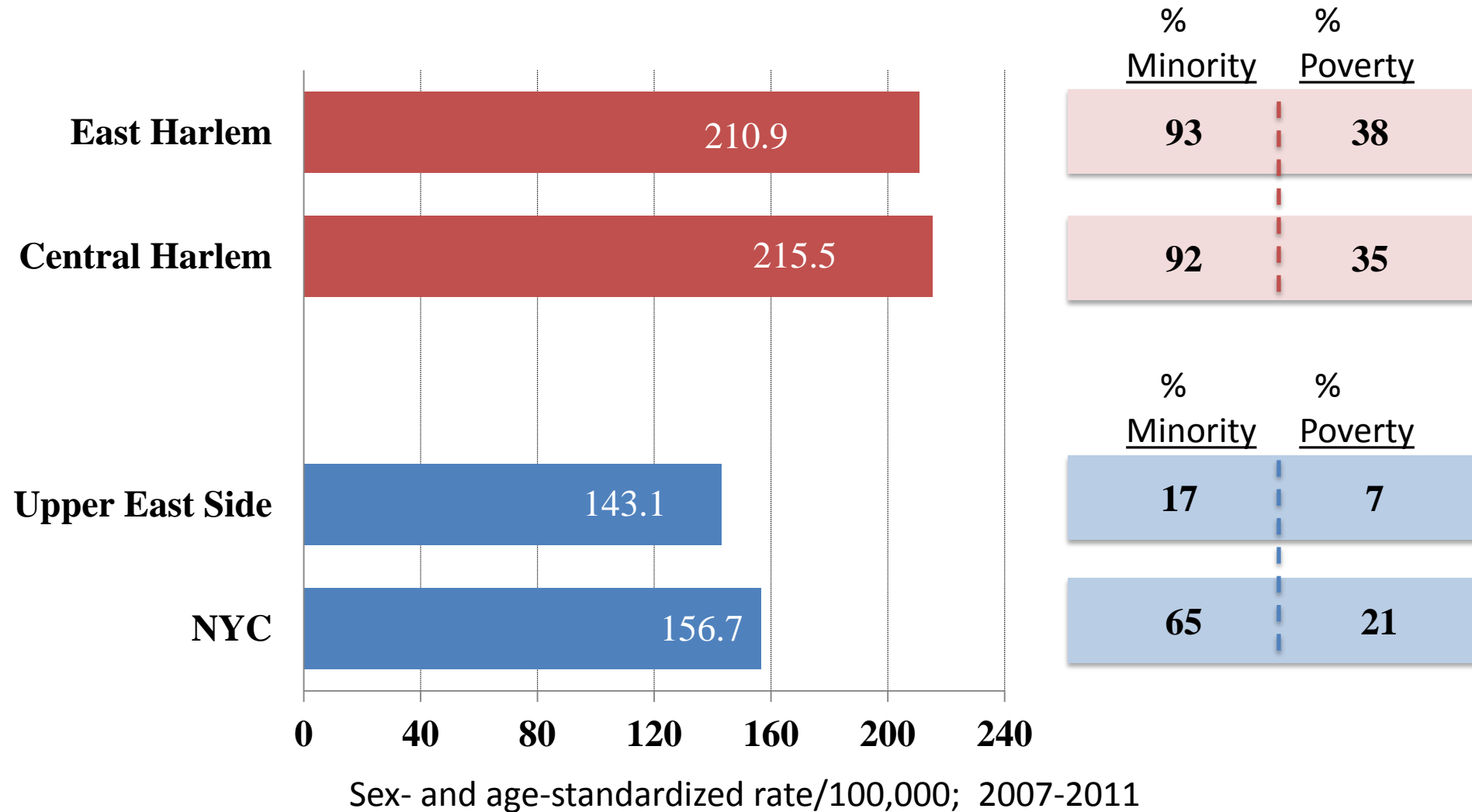


Poverty

Percent of residents living below the poverty level



Cancer Mortality Rates in Catchment Area



Research Relevant to Catchment Area

Cancer Immunology

- Inflammatory signatures in HCC patients
- Novel targeted immunotherapies for HPV-associated oral-pharyngeal cancer
- Epigenetic biomarkers of melanoma progression
- Neoadjuvant intratumoral immune modulators for prostate cancer

Cancer Mechanisms

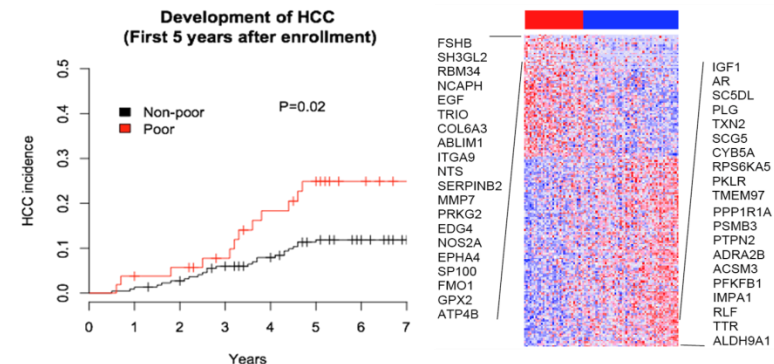
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Liver Cancer

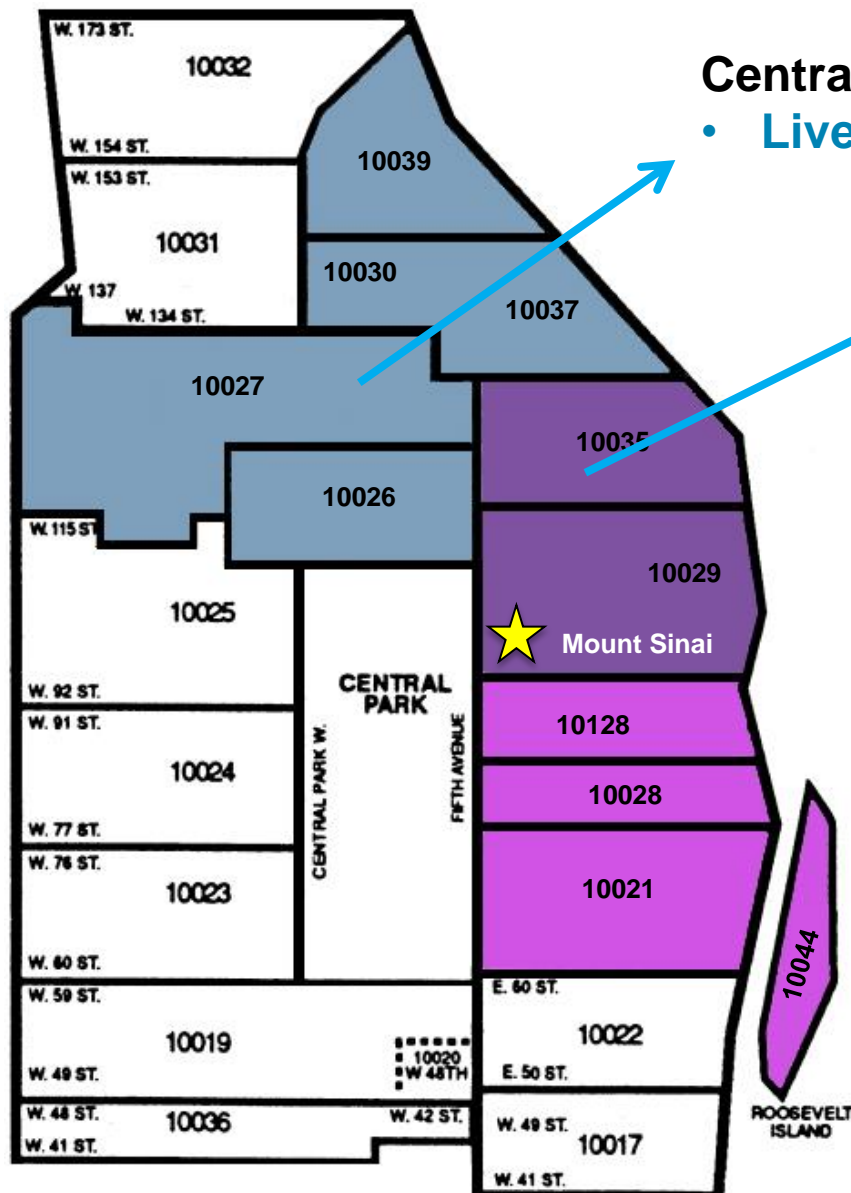
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Cancer Prevention & Control

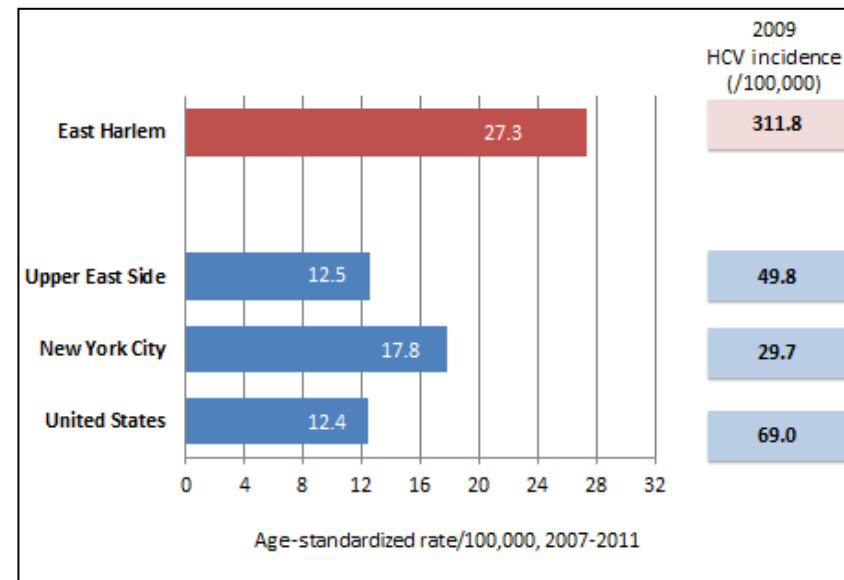
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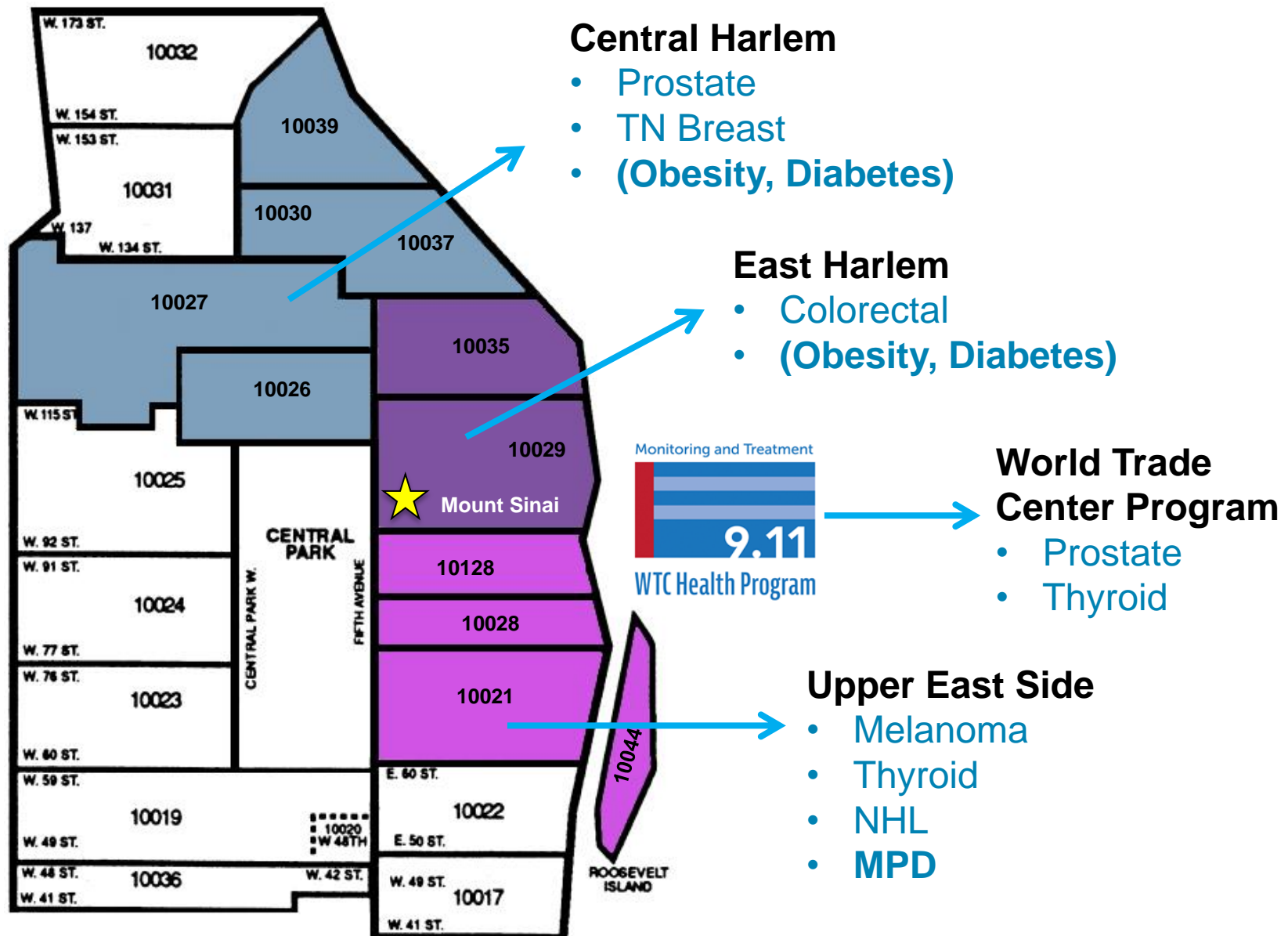
Liver Cancer - Catchment Area Related Research



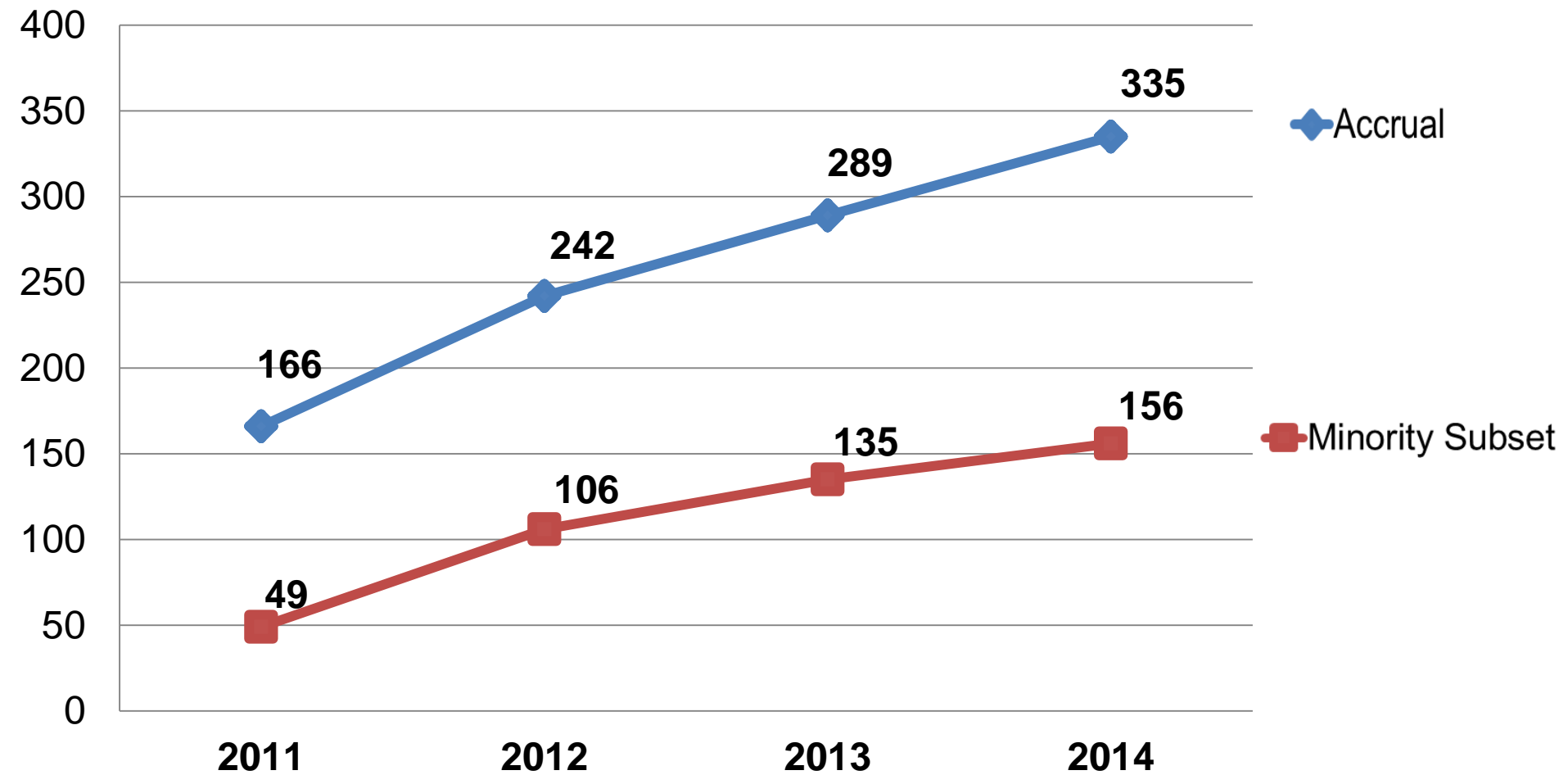
Liver Cancer Mortality Rates in Catchment Area



Cancer Mechanisms – Catchment Area Related Research



Cancer Treatment Trial Accruals



Overall Enrollment by Race, Ethnicity & Gender

	Mount Sinai Cancer Patient Population**	Interventional Therapeutic	Interventional Non-Therapeutic	Non-Interventional Epi, Obs, and Outcome Studies
	%	%	%	%
RACE				
African American	14.9%	18.8%	25.5%	19.1%
Asian/Native Hawaiian or Other Pacific Islander	9.5%	13.4%	3.2%	4.6%
ETHNICITY				
Hispanic or Latino	12.5%	17.2%	51.9%	19.1%
GENDER				
Female	56.8%	39.3%	53.4%	40.7%

Cancer Center Administrators Forum

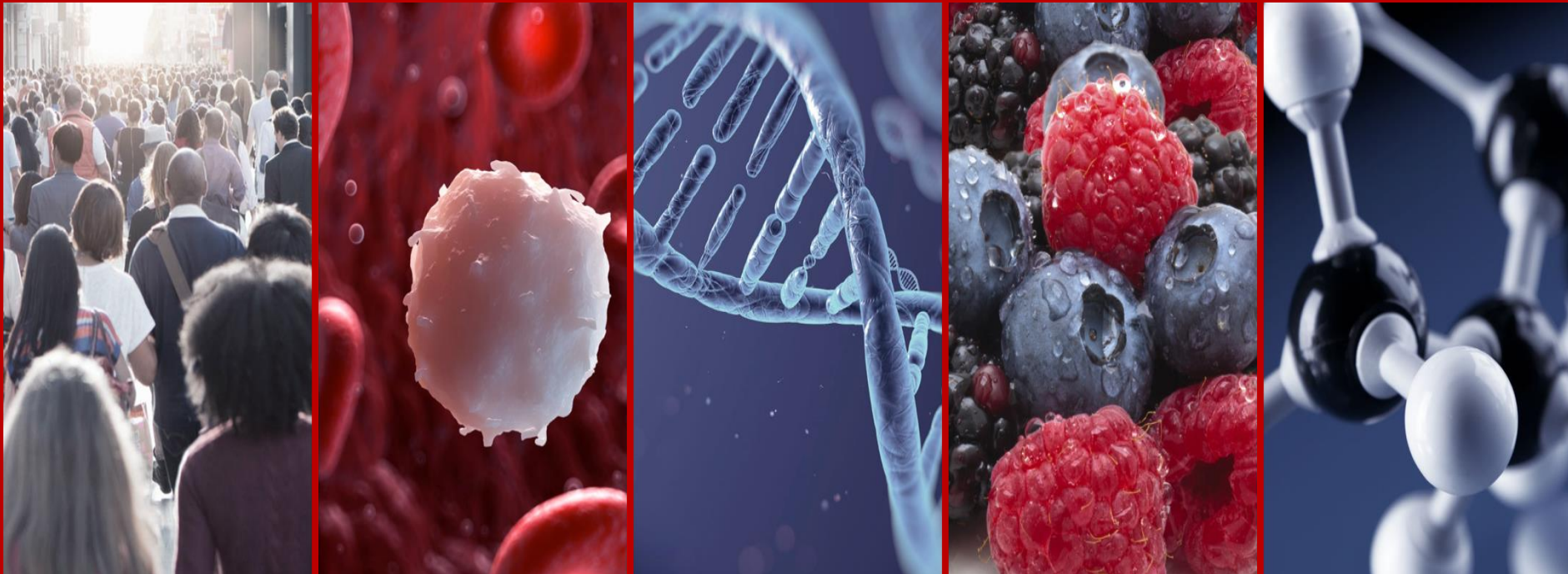
Christine Scarcello, MBA
April 4, 2016

The James

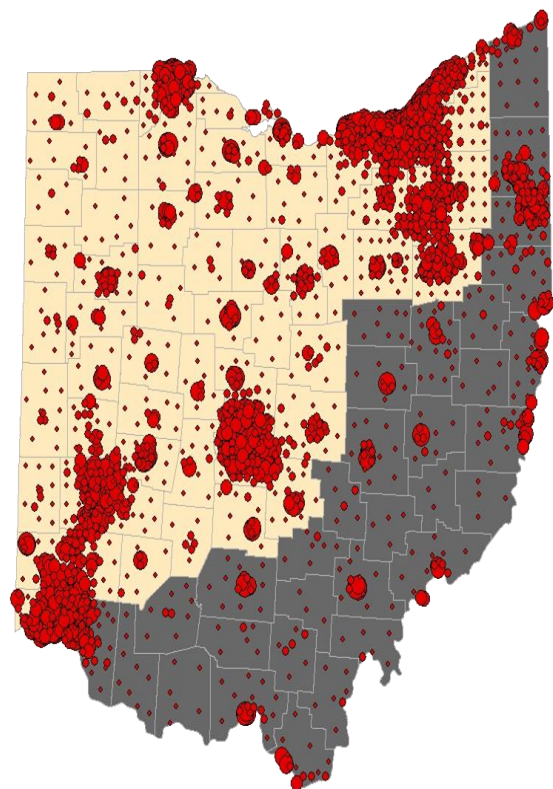


THE OHIO STATE UNIVERSITY

COMPREHENSIVE CANCER CENTER



Our responsibility...



Population Density

less  more

 Ohio Appalachia

2014 Ohio Population: 11.6 million

We are poorer, less educated, and less racially and ethnically diverse than the U.S., on average

Risk Factors in Ohio	White	Black	Appalachians	U.S.
Current Tobacco Use, Adults	23%	26%	31%	18%

Source: U.S. Census and QuickFacts ¹Source: Ohio Cancer Incidence Surveillance System, 2010 (based on 1996-2006 data)

The James

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C G G C A A T C
G C C G T T A G





→ PELOTONIA

Research Project 1

Universal Screening for Lynch Syndrome



Albert de la
Chapelle



Heather
Hampel



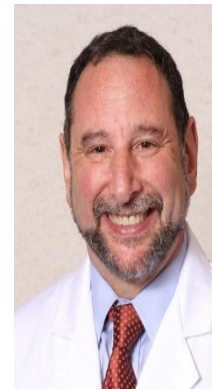
Wendy
Frankel



Richard
Goldberg

Research Project 2

Molecular Epidemiology of Colorectal Cancer



Peter
Shields

Research Project 3

Adherence to Colorectal Cancer Screening



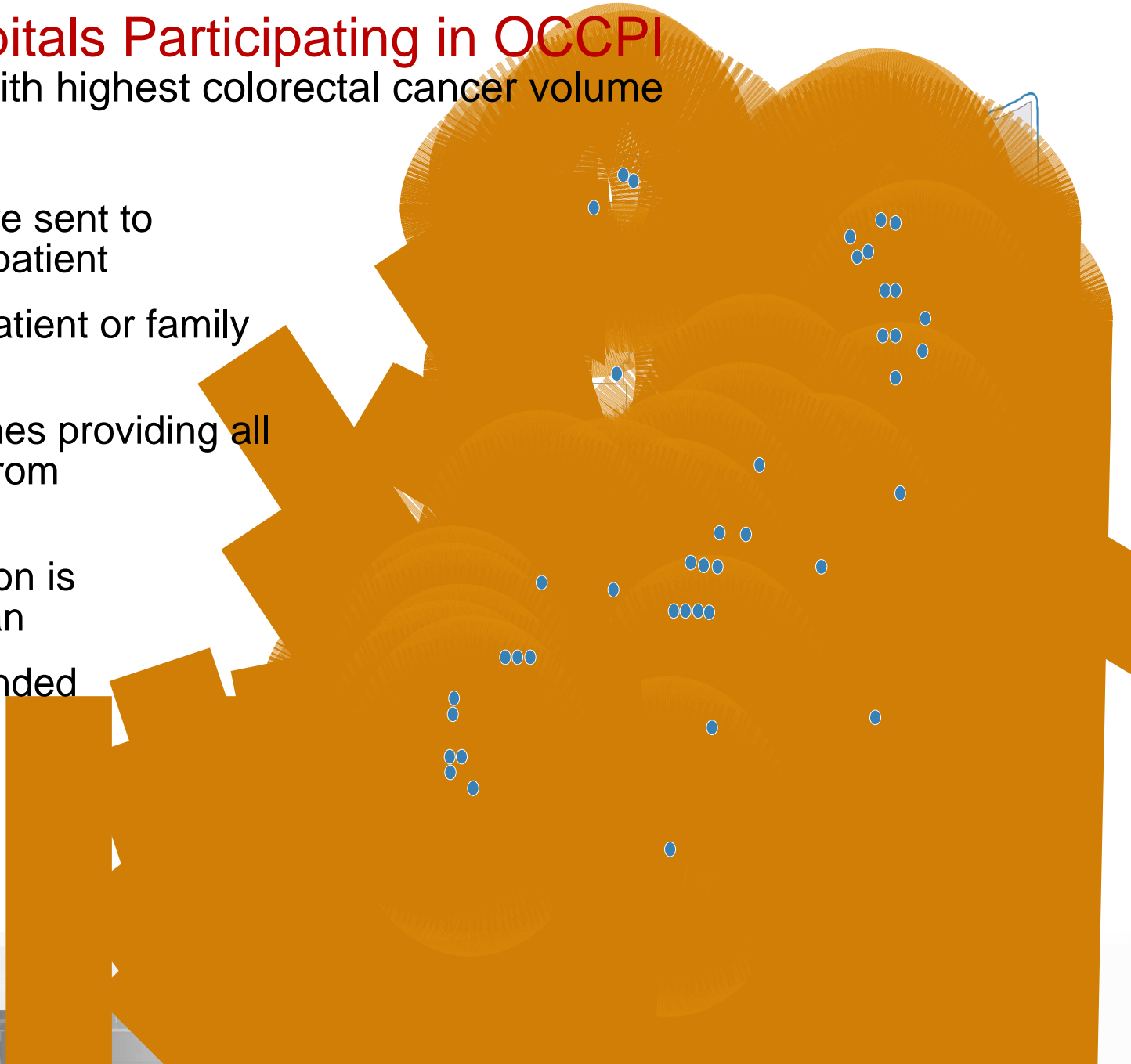
Electra
Paskett

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50 Ohio Hospitals Participating in OCCPI

Including those with highest colorectal cancer volume

- Only samples are sent to Ohio State, not patient
- No cost to the patient or family or hospital
- OSUCCC – James providing all funding (~\$4M from PELOTONIA)
- All communication is through physician
- Study is not branded OSU or James



CGGCAATC
GCCGTTAG

A Legacy of Cancer: The McDaniel Family



- Jay McDaniel was diagnosed at age 48 with colon cancer
- His father James (Mac), pictured left, died at age 63 of colon cancer
- His sister Ruth, pictured right, died at age 56 of brain cancer

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A Legacy of Cancer

Father James (Mac)



- **Grandfather Jim Ben (colon)**
- **Father Mac (colon)**
- **Uncle Jerry (colon)**
- **Aunt Reba (colon)**

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Offered Testing to Sister and Three Daughters



Left to Right:
Daughter Elizabeth,
Jay and Heather
Hampel

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Cascade Testing



- McDaniel Family Reunion in June 2014
- On Mississippi River in western Kentucky
- Tested 20 at-risk relatives from his dad's side of the family
- Found one additional branch of family with Lynch Syndrome
- They can now participate in life-saving cancer surveillance

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Not only will OCCPI project save lives....

- Both arms of OCCPI are projected to lead to **737** life years saved or a **\$36.9M** society benefit
- OCCPI will set the stage for changing national screening guidelines to require testing for Lynch Syndrome



The James



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A CANCER-FREE WORLD BEGINS HERE



Discussion

