

Division of Cancer Control and Population Sciences

# NEW GRANTEE WORKSHOP

January 6-7, 2014

NCI Shady Grove, 9609 Medical Center Dr., Rockville, MD

Robert T. Croyle, Ph.D.

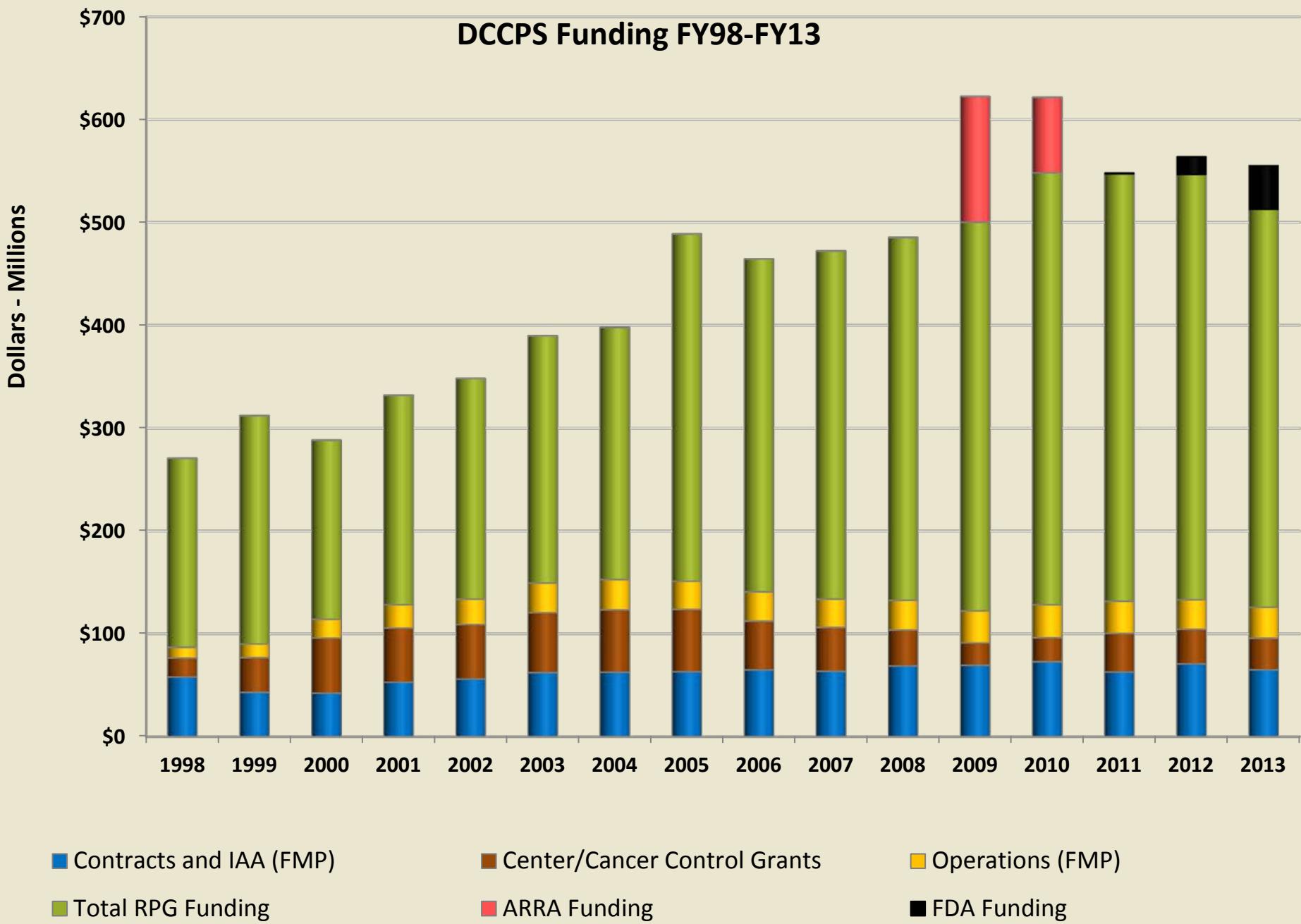
Director DCCPS



NCI's bridge to public health research, practice,  
and policy

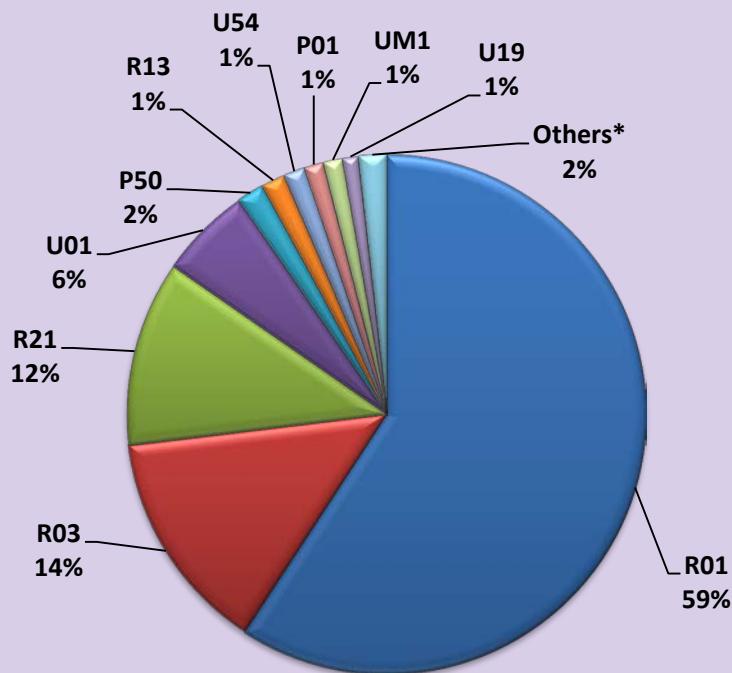
# Leadership at a Glance



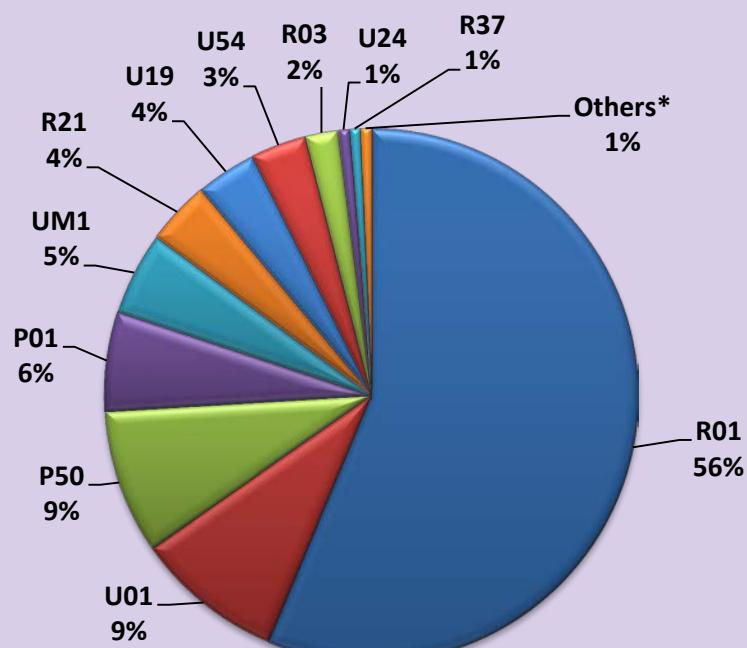


# FY13 Distribution of Grants and Funding by Mechanism

Distribution of FY13 Grants by Mechanism  
(n=821)



Distribution of DCCPS FY13 Funding by Mechanism  
(Total Dollars=\$443.6M)



*Others= mechanisms with less than 1% total dollars and number of grants*

# DCCPS FY13 Highlights

METRIC	DESCRIPTION
\$450 M	The DCCPS grant portfolio included approximately 800 grants valued at nearly \$450 million, with work in the US and more than 40 countries aimed to reduce risk, incidence, and deaths from cancer, and to enhance the quality of life for cancer survivors.
239	DCCPS funded 239 new grants -- an increase in awards from the previous fiscal year. The breadth of research supported by DCCPS includes surveillance, epidemiology, health services, behavioral science, and cancer survivorship
37	The division provided funding support to 37 new investigators. DCCPS provides information, tools, and resources to help new grantees successfully manage their grants and advance their careers
13	In addition to encouraging the best scientific ideas through investigator-initiated grant applications, DCCPS led and contributed to 13 trans-NIH funding announcements in FY13 to encourage research projects in emerging or priority areas
18,500	The NCI CancerCtrl Twitter channel gathered more than 18,500 followers in 2013, who scan our tweets to stay informed about cancer control news from NCI. The channel is one of the top 3 most followed of NCI's 23 Twitter accounts.
50	In addition to the nearly 1,000 valued investigators whose research the division funds, DCCPS collaborates with nearly 50 collaborators and partners.

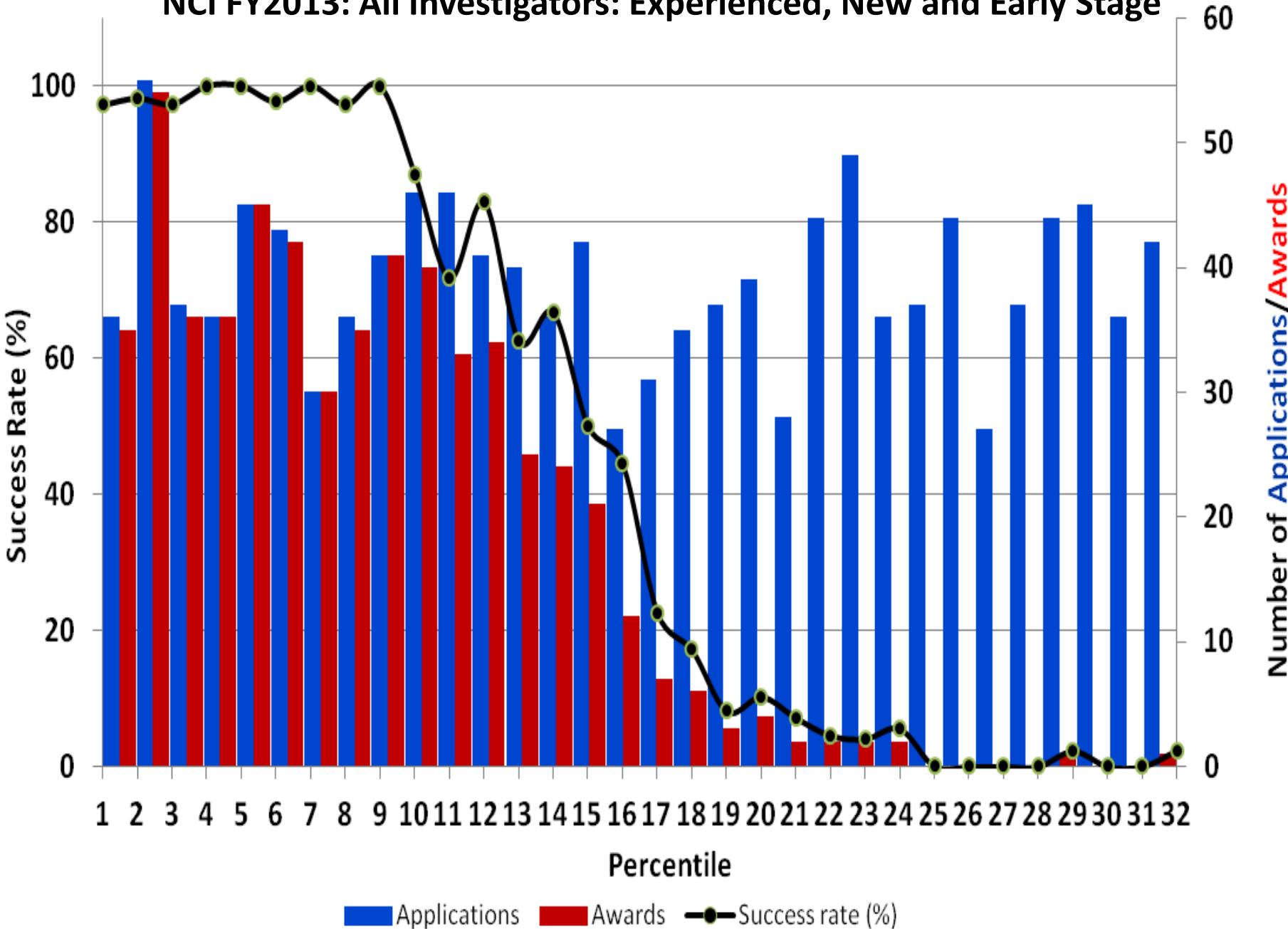
# NCI Scientific Program Leadership Group (SPL)

- Rigorous stewardship of limited resources
- Complement peer review to select the best research
- Minimize duplication and overlap (esp. vs. other recently approved grants)
- Ensure appropriate mechanism to achieve goals
- Facilitate coordination of research across NCI divisions
- Enables the senior leaders to maintain a fuller understanding of the entire NCI portfolio
- Ensure that all levels of program leadership are engaged in scientifically informed funding decisions

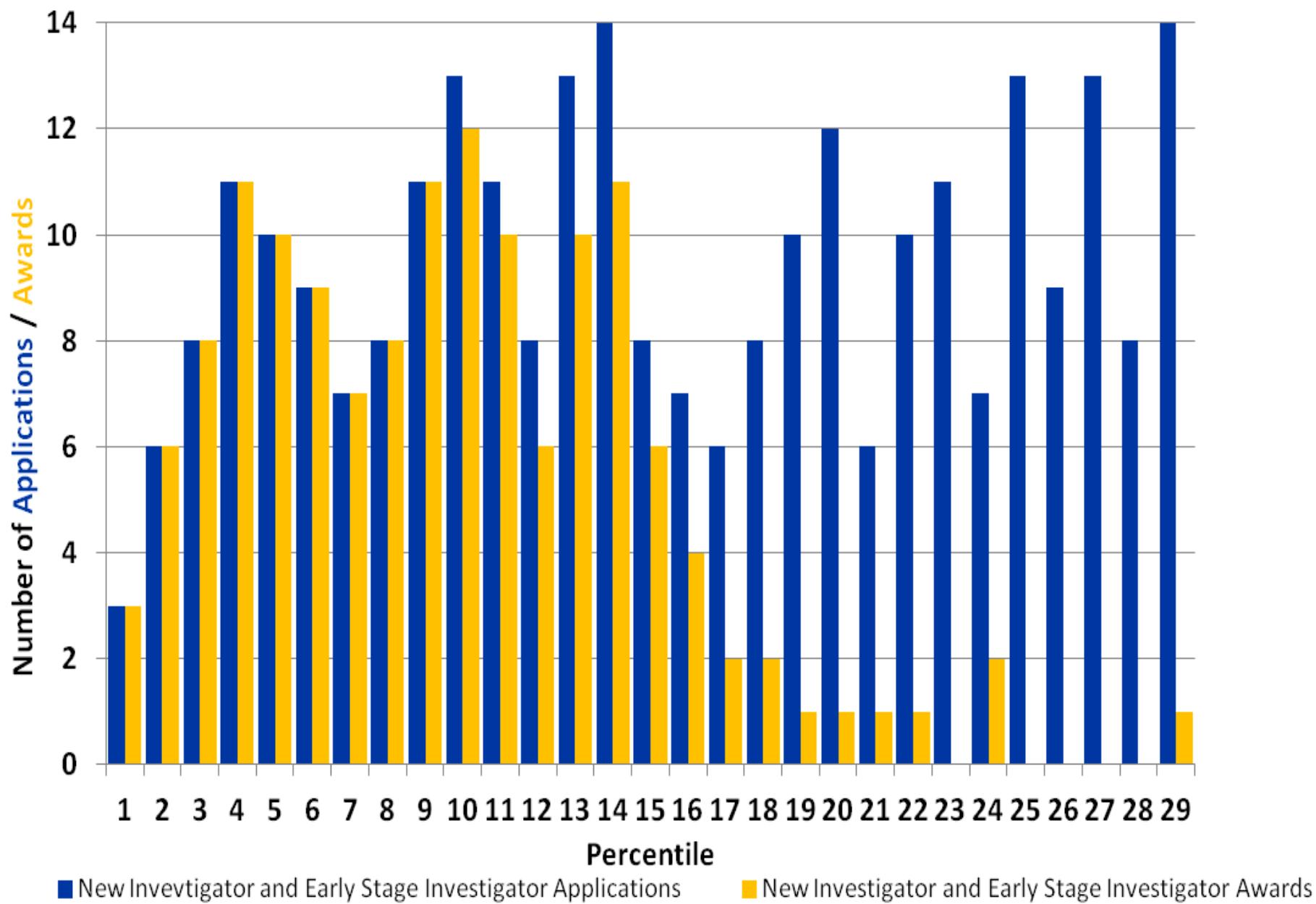
# NCI's Grant Selection Process

- In 2013, most R01 applications with scores up to the 9<sup>th</sup> percentile were funded.
- Applications with higher scores subject to branch, program, divisional and Scientific Program Leaders (SPL) review.
- Selection of grant applications for funding by exception
  - Not by an absolute payline- instead by individual consideration
- The NCI awarded 1,095 competing Research Project Grants (RPGs), resulting in a final success rate of 14%.

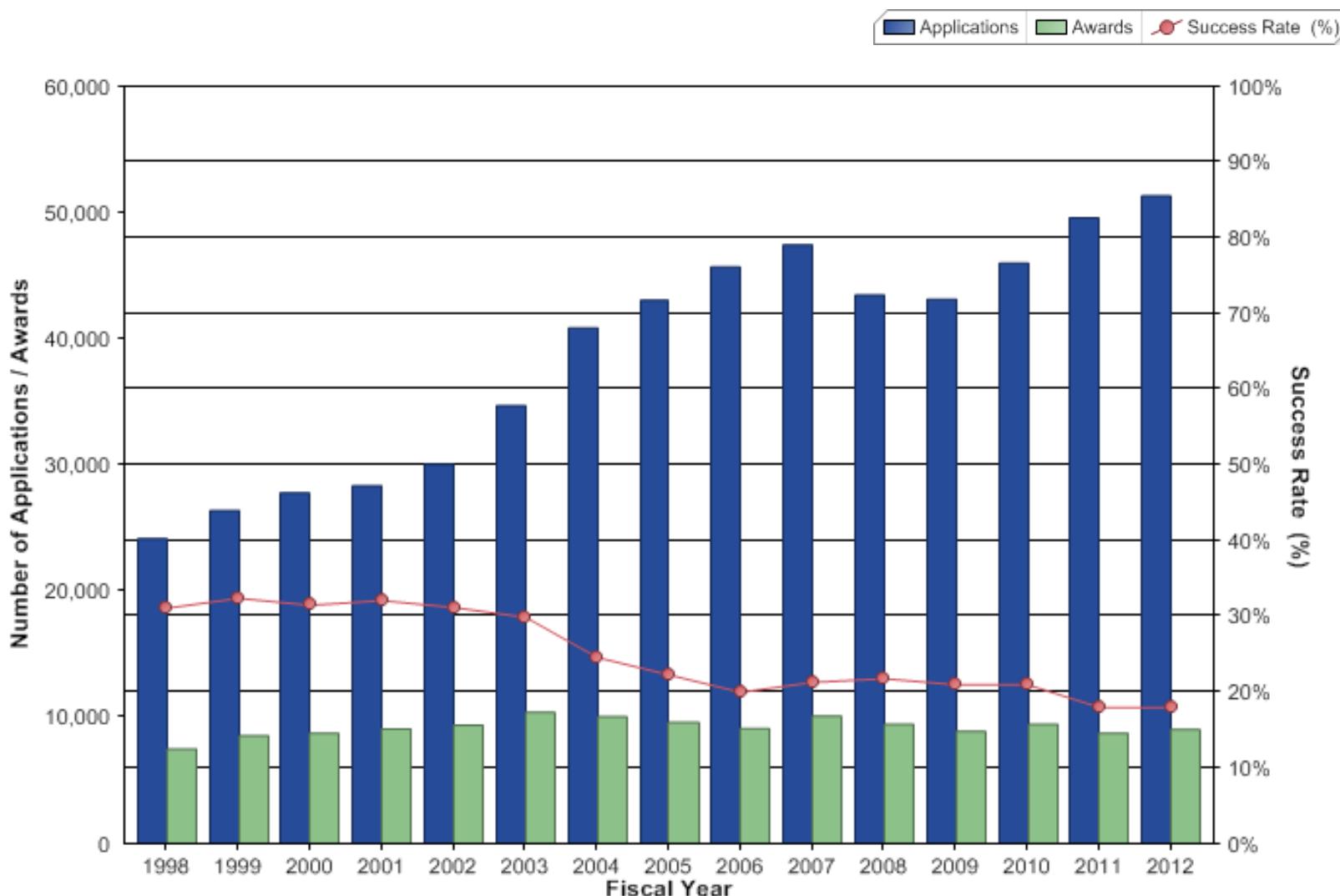
# NCI FY2013: All Investigators: Experienced, New and Early Stage



## NCI FY2013 Competing R01 Applications and Awards: New Investigators (Includes Early Stage Investigators)



NIH Research Project Grants  
Competing applications, awards, and success rates



# A 3-Pronged Strategy for DCCPS

- Focused scientific initiatives in key domains to advance knowledge
- Expand scope and effectiveness of interagency collaboration
- Develop, enhance, and expand infrastructures to enable next-gen cancer control and population science

# Enabling Next-Generation Cancer Control:

*Our Research and Programs Need to be:*

- *Faster*
- *Cheaper*
- *Bigger*
- *Better*

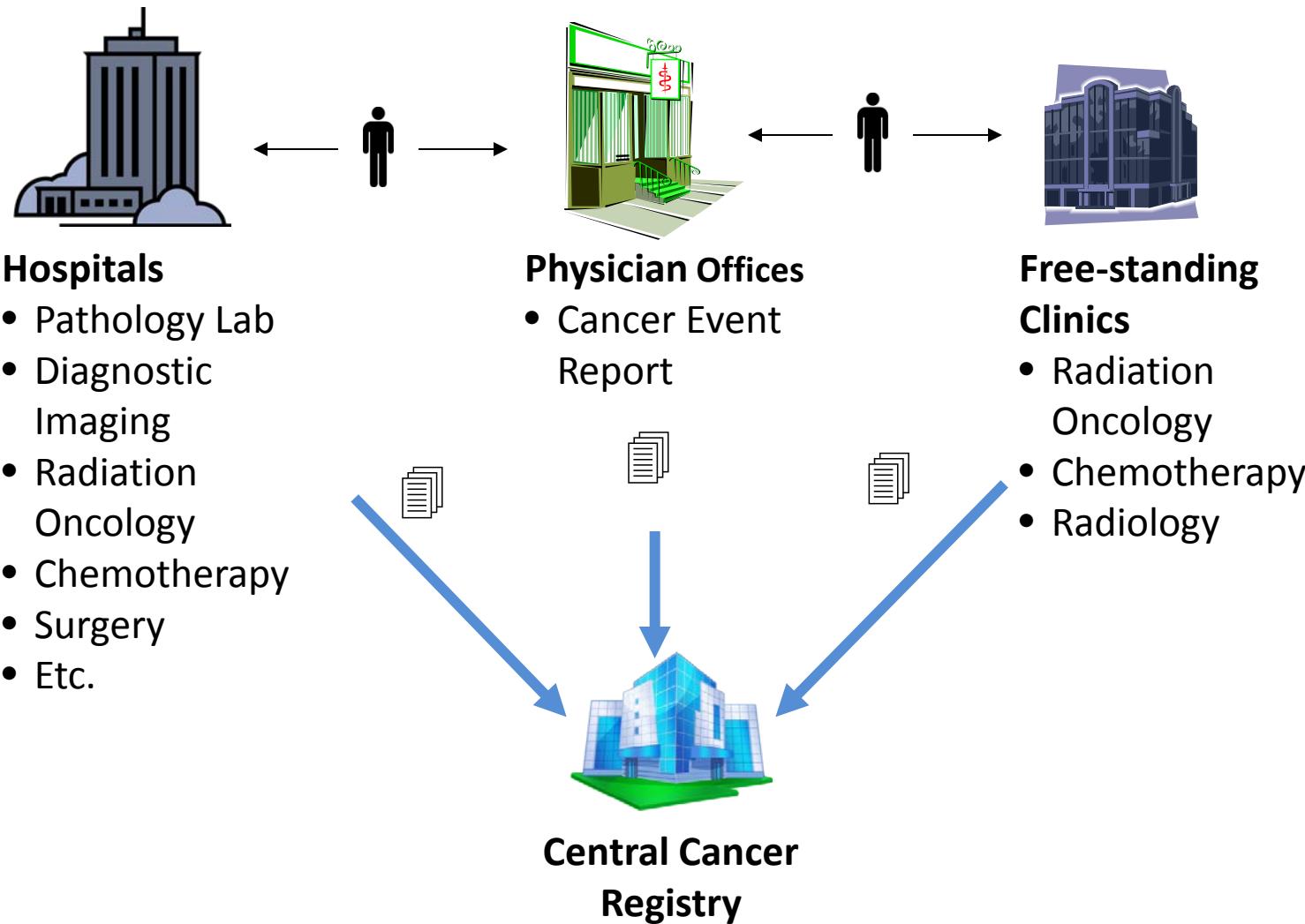
# Doing More with Less

- Bad news: shrinking budget
- Better news: improvements in infrastructure, capacity, technology, and availability of data
- Increasing capacity to do more, in less time
- Remarkable early wins in all of our four domains...faster, cheaper, bigger, better
- But, challenges remain

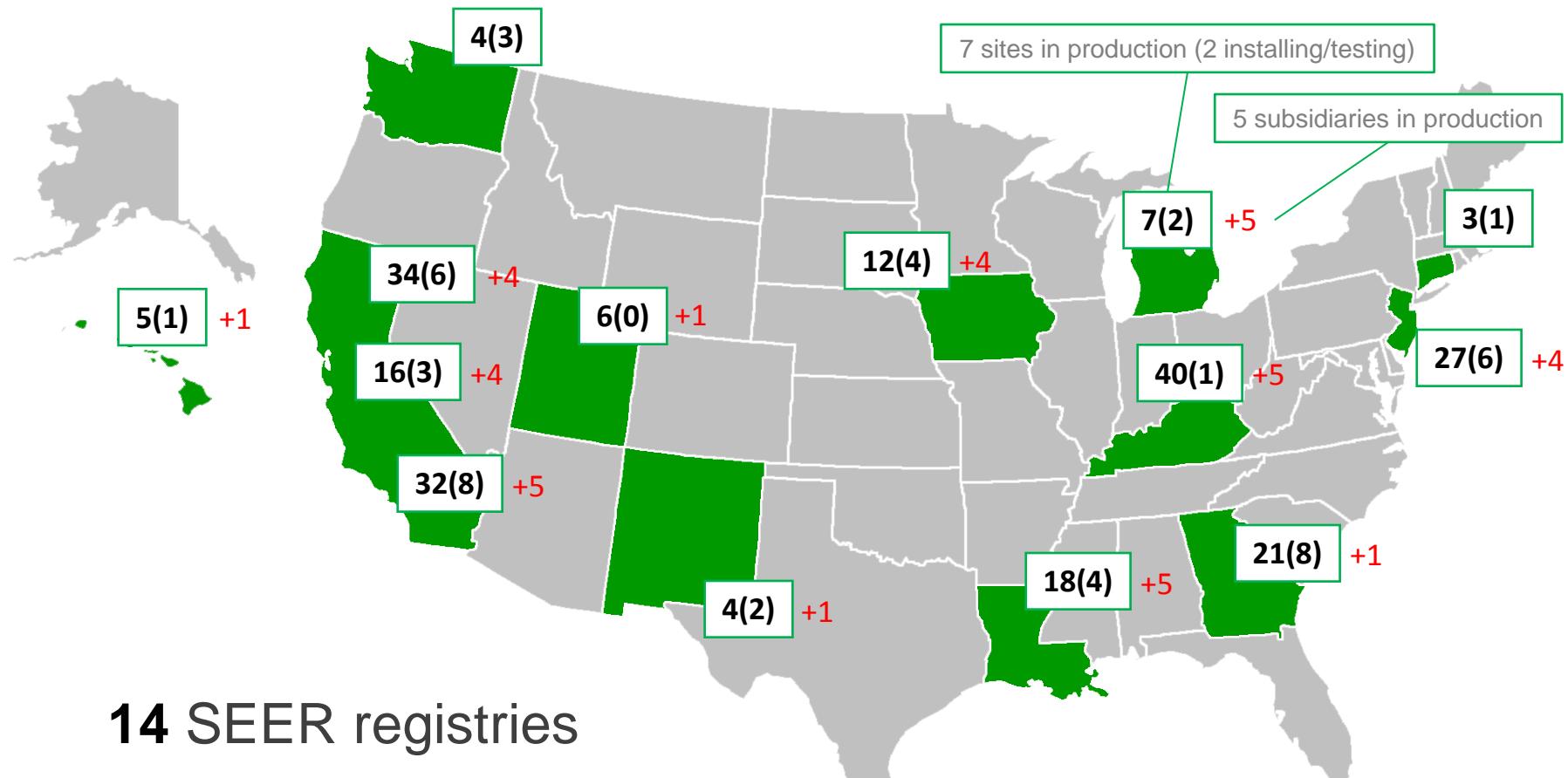
# *Faster*

- High-throughput technology for omics
- DIY surveys (e.g. SurveyMonkey, REDCap, Qualtrics)
- Electronic data capture and processing
- On-line interactive data tools (e.g. SEER\*stat)
- Web-enabled rapid RCTs
- Tools to accelerate research translation

# The future landscape of electronic data capture in cancer registries



# E-Path Reporting Sites



14 SEER registries

318 Sites (229/278 production, 49/278 installing, +40 subsidiaries)

~1,300,000 positive pathology reports delivered annually

# E-Path Functionality and Benefits

- Rapid case identification, high quality data, standardization of data, more complete reporting
- Sensitivity (Ability to Detect Selectable Reports) and Specificity (Ability to Detect Non-Selectable Reports) both in the range of 99.4-99.6%
- When used as part of a Rapid Case Ascertainment system, can deliver cases to researchers in **less than 30 days from date of diagnosis**

PERSPECTIVE

Open Access

# Rapid, responsive, relevant (R3) research: a call for a rapid learning health research enterprise

William T Riley<sup>1\*</sup>, Russell E Glasgow<sup>1</sup>, Lynn Etheredge<sup>2</sup> and Amy P Abernethy<sup>3</sup>

# Example: Rapid Testing Using the Internet

*New Web-enabled Methodologies (e.g., Multiphase Optimization Strategy, or MOST) enable researchers to do research more quickly, cheaply, and more efficiently.*

JOURNAL OF MEDICAL INTERNET RESEARCH McClure et al

Original Paper

## The Effect of Program Design on Engagement With an Internet-Based Smoking Intervention: Randomized Factorial Trial

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Jennifer B McClure<sup>1</sup>, PhD; Susan M Shortreed<sup>1</sup>, PhD; Andy Bogart<sup>1</sup>, MS; Holly Derry<sup>2</sup>, MPH; Karin Riggs<sup>1</sup>, MSW; Jackie St John<sup>1</sup>, BS; Vijay Nair<sup>3</sup>, PhD; Larry An<sup>2</sup>, MD

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### Abstract

**Background:** Participant engagement influences treatment effectiveness, but it is unknown which intervention design features increase treatment engagement for online smoking cessation programs.

**Objective:** We explored the effects of 4 design features (ie, factors) on early engagement with an Internet-based, motivational smoking cessation program.

**Source:** McClure JB, Shortreed SM, Bogart A, et al. The effect of program design on engagement with an internet-based smoking intervention: randomized factorial trial. J Med Internet Res. 2013;15(3):e69.



<http://cancercontrolplanet.cancer.gov/>

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## DATA

[State Cancer Profiles](#) (CDC, NCI)

## COLLABORATION

[Research to Reality](#) (NCI)

## RESEARCH SYNTHESIS

[Guide to Community Preventive Services](#) (Federally supported)

[U.S. Preventive Services Task Force](#) (Federally supported)

[Evaluation of Genomic Applications in Practice and Prevention \(EGAPP\)](#)

[Additional Research Evidence Reviews](#)

## PROGRAMS

[Research-tested Intervention Programs \(RTIPs\)](#) (NCI, SAMHSA)

## EVALUATION

[Reach Effectiveness Adoption Implementation Maintenance \(RE-AIM\)](#)

## PLAN

[Comprehensive Cancer Control Plans](#)

[Comprehensive Cancer Control Budgets](#)

## RESOURCES

[More about using these resources](#)

## TOPICS

- [Breast Cancer](#)
- [Cervical Cancer](#)
- [Colorectal Cancer](#)
- [Diet / Nutrition](#)
- [Informed Decision Making](#)
- [Obesity](#)
- [Physical Activity](#)
- [Public Health Genomics](#)
- [Sun Safety](#)
- [Survivorship](#)
- [Tobacco Control](#)

## WHAT'S NEW

RE-AIM, a framework for evaluating health promotion and chronic disease management programs, joins the Cancer Control P.L.A.N.E.T. family.

After 6 years, the site gets a facelift and some reorganization.

[Tell us what you think!](#)

## E-NEWSLETTER

[Sign up](#) to receive monthly updates on Cancer Control P.L.A.N.E.T.

## FEEDBACK

We welcome your [feedback](#) on the Cancer Control P.L.A.N.E.T. and its satellite web sites. Thank you for helping to improve this site for the cancer control community.

## SPONSORS



Profiles Home

### Quick Profiles

Area	<input type="button" value="... Choose a State ..."/>
Cancer	<input type="button" value="... Choose a Cancer Site ..."/>
<input type="button" value="Generate Profile"/>	

### Comparison Tables

-  **Rate/Trend Comparisons**  
set higher priority for cancer control when rates are high or rising  
[learn more...](#)
-  [Prioritize cancer sites](#) for a specific state or county
-  [Prioritize states or counties](#) for a specific cancer site
-  **Death Rates**  
for states or for counties in a state  
[learn more...](#)
-  **Incidence Rates**  
for states with high quality cancer registries  
[learn more...](#)
-  [Prevalence Projections \(All Sites and Breast Cancer Only\)](#)  
for counts, percents and age-adjusted percents  
[learn more...](#)

### Graphs and Maps

-  [5-Year Rate Changes](#)  
in cancer mortality or incidence for all major cancer sites by user selectable criteria  
[learn more...](#)
-  [Historical Trends](#)  
compare trends in cancer mortality and incidence by user selectable criteria  
[learn more...](#)
-  [Comparative Data Display \(Micromaps\)](#)  
explore relationships across geography of mortality, incidence, demographics, screening, or risk factors  
[learn more...](#)
-  [Interactive Maps](#)  
for states or for counties in a state - mortality, incidence, screening, or risk factor maps  
[learn more...](#)

### Support Data

-  [Screening and Risk Factors](#)  
estimates by state (or in some cases county) of screening data, risk factors, and smoking laws  
[learn more...](#)
  - Prevalence percents from behavioral surveys
  - Population percents based on smoking laws
-  [Demographic Data](#)  
showing census data for counties and states - expanded data now available  
[learn more...](#)
-  [Peer Counties](#)  
identify counties that are comparable based on a user specified criteria  
[learn more...](#)
-  [Cancer Knowledge](#)  
national estimates of cancer-related knowledge and awareness of cancer prevention strategies  
[learn more...](#)

 [Cancer Control P.L.A.N.E.T. Home](#)

### New Releases

- [Release Summary](#)
- [2010 SEER Incidence Data \(also released in the \[Cancer Statistics Review\]\(#\)\)](#)
- [2010 Mortality Data](#)
- [2010 USCS Incidence Data](#)
- [2011 Screening and Risk Factors by race/ethnicity](#)
- [Cancer Knowledge Maps](#)
- [Demographics data from American Community Survey and Small Area Health Insurance Estimates](#)
- [Healthy People 2020](#)

### Help & About

- [About this Site](#)
- [Quick Reference Guides](#)
- [Tutorials](#)
- [Interpret Rankings](#)
- [Data Use Restrictions](#)
- [Low Vision/Accessibility](#)
- [Download State Cancer Profiles brochure \(PDF\)](#)

Note: This Web site is best viewed in [Internet Explorer](#) (version 6.0 or higher), [Mozilla/Firefox](#), or [Safari](#) (MAC Users) at a [screen resolution](#) of 1024 by 768 or more.

### Links

- [State Registry Contacts](#)
- [US Cancer Statistics: 2009 Incidence](#)
- [Resources for Cancer Control: Cancercontrolplanet.cancer.gov](#)
- [Cancer Progress Report - 2009/2010 Update](#)
- [Annual Report to the Nation](#)
- [CDC's National Program of Cancer Registries](#)
- [NCI's SEER - Surveillance, Epidemiology, and End Results](#)
- [Cancer Facts and Figures \(American Cancer Society\)](#)
- [Finding Cancer Statistics](#)
- [National Cancer Data Base \(NCDB\)](#)
- [more...](#)

Links to non-Federal organizations found at this site are provided solely as a service to our users. These links do not constitute an endorsement of these organizations or their programs by the Federal Government, and none should be inferred. The Federal Government is not responsible for the content of the individual organization Web pages found at these links.

# The Guide to Community Preventive Services THE COMMUNITY GUIDE

What Works to Promote Health

Community Preventive Services  
Task Force

Search

Home

Task Force Findings ▾

Topics ▾

Use The Community Guide ▾

Methods ▾

Resources ▾

News ▾

About Us ▾



## New Technologies Used to Reduce Excessive Drinking

The Task Force recommends electronic screening and brief intervention to reduce excessive alcohol consumption and related harms.

1 2 3 4

## Task Force

### 2014 Meetings

February 26-27  
June 18-19  
October 29-30

### 2015-2016 Meetings

### Annual Reports to Congress

### Get Email Updates

Submit your email address to get updates on The Community Guide topics of interest.

Your email address

[What's this?](#)

## Topics

[Adolescent Health](#)

[Diabetes](#)

[Motor Vehicle Injury](#)

[Social Environment](#)

[Alcohol - Excessive Consumption](#)

[Emergency Preparedness](#)

[Nutrition](#)

[Tobacco](#)

[Asthma](#)

[Health Communication](#)

[Obesity](#)

[Vaccination](#)

[Birth Defects](#)

[Health Equity](#)

[Oral Health](#)

[Violence](#)

[Cancer](#)

[HIV/AIDS, STIs, Pregnancy](#)

[Physical Activity](#)

[Worksite](#)

[Cardiovascular Disease](#)

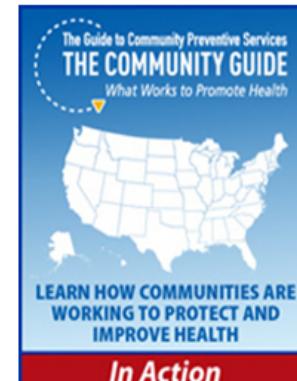
[Mental Health](#)

## What is The Community Guide?

The Guide to Community Preventive Services is a free resource to help you choose programs and policies to improve health and prevent disease in your community. Systematic reviews are used to answer these questions:

- Which program and policy interventions have been proven effective?
- Are there effective interventions that are right for my community?
- What might effective interventions cost; what is the likely return on investment?

Learn more [about The Community Guide](#), [collaborators](#) involved in its development and dissemination, and [methods](#) used to conduct the systematic reviews.





# RTIPs Celebrates its 10th Anniversary (2003-2013)!

Use the link below to select a number of criteria, and see a list that contains programs from several topics.

## Select from 138 Intervention Programs

**RTIPs** is a searchable database of cancer control interventions and program materials and is designed to provide program planners and public health practitioners easy and immediate access to research-tested materials.

**Register your program now** and be part of the RTIPs Community.



[Search Research to Reality \(R2R\)](#) NCI's online community of practice that links cancer control practitioners and researchers, for discussions, cyber-seminars, and much more.

## RTIPs and Research Reviews

The [Guide to Community Preventive Services](#) evaluates the effectiveness of types of interventions (as opposed to individual programs) by conducting [systematic reviews](#) of all available research in collaboration with partners.

The [Task Force](#) on Community Preventive Services then uses the systematic review findings as the basis for their recommendations for practice, policy and future research. The symbol to the right links to Community Guide findings. Many Research-tested Intervention Programs (RTIPs) are directly linked to associated Community Guide findings.



If you use tobacco and are trying to quit, please visit [Smokefree.gov](#) .

Looking for general information about cancer? Please visit [Cancer.gov](#) or call the Cancer Information Service at 1-800-4-CANCER.

- RTIPs is cited in the [Cancer Screening Interventions Resources Reference Package](#) .
- RTIPs turns 10! [Read more](#) .
- The N-O-T Program was featured 04/09/2013 on WTOP radio, as part of a George Washington University study. See the "[Exercise helps teens quit smoking](#) " news brief for more information.
- RTIPs was featured in the PubMed article - [What Works to Prevent Adolescent Smoking? A Systematic Review of the National Cancer Institute's Research-Tested Intervention Programs](#) .

## New Programs on RTIPs:

- Obesity
    - ★ [Vtrim - Your Online Partner for Healthy Weight](#) (Post date: September, 2013)
    - [Keep ME Healthy](#) (Post date: July, 2013)
  - Colorectal Cancer Screening
    - [Flu-FIT and Flu-FOBT Program](#) (Post date: August, 2013)
- ★ New programs are released periodically. Please check for updates.

## Tools Available:

- [Using What Works](#) a train-the-trainer course that teaches users how to adapt a research-tested intervention program to the local community context



We welcome your feedback on the Research-tested Intervention Programs Web site. To submit feedback, please [contact us](#). Thank you for helping to improve this site for the cancer control community.

# Wash. U.'s “Make it Your Own (MIYO)” Platform for Community-Based Participatory Research

The screenshot shows the MIYO platform's user interface. At the top left is the MIYO logo with the tagline "make it your own". The top right features links for "Contact Us", "My Account", and "Log Out". A navigation bar on the left includes a "home" link and a "Search by:" dropdown menu. The dropdown menu is open, showing a list of categories: "--Select--", "--Strategy--", "Small Media", "Flyers", "Inserts", "Posters", "Question cards", "Client Reminders", "Postcards", and "Text Messages". Below the dropdown, there are four template sections: "Poster D" (a variety of), "Poster F" (a variety of), "Insert A" (a variety of), and "Poster G" (a variety of). Each section includes a thumbnail image, a title, and a brief description.

Search by:

- Select--
- Select--
- Strategy--
- Small Media
- Flyers
- Inserts
- Posters
- Question cards
- Client Reminders
- Postcards
- Text Messages

Poster D

Use this template to create a poster that uses messages and images appropriate to a variety of settings and themes. Poster size: 17 x 11

Poster F

Use this template to create a poster using messages and images appropriate to a variety of settings and themes. Poster size: 17 x 11

Insert A

Use this template to create an insert using messages and images appropriate to a variety of settings and themes. Insert size: 8.5 x 5.5

Poster G

Use this template to create a poster without images. Poster size: 17 x 11

Community Tool to Enable Local Customization, Intervention





# Research to Reality

 [Home](#)[Discussions](#)[Cyber-Seminars](#)[Featured R2R Partners](#)[Mentorship](#)[Events](#)[About](#)[Sign Up](#) | [Login](#)

**Research to Reality** is an online community of practice that links cancer control practitioners and researchers and provides opportunities for discussion, learning, and enhanced collaboration on moving research into practice.

Sign up to join the community!

[Sign Up Today!](#)

Already have an account? [Log In](#).

## Featured R2R Partner

### Beth Casey Gold, MS, RD

We are happy to feature Beth Casey Gold as our RTIPS Featured Partner this month. The RTIPS site recently posted "Vtrrim – Your Online Partner for Healthy Weight" for adaption in a variety of settings.



Posted on October 23, 2013

## Registration open! Using Social/New Media for Cancer Control

In early summer, we issued a call for abstract inviting community members to share their experiences using new and social media tools in innovative and effective ways. The response was robust and we are delighted to present the first in a two-part series on Using New/Social Media for Cancer Control & Prevention Interventions. Join us as we explore two novel interventions and discuss key issues of cost, dissemination, and sustainability. [Find out more](#)

## Recent Activity

Thursday October 24, 2013 at 8:49am



Russ has participated in the Discussion "[PRECIS and Transparent Reporting](#)"

Wednesday October 23, 2013 at 1:20pm

The Event [APHA Cancer Forum Business Meeting & Social Hour](#) has been added to the Calendar.

Wednesday October 23, 2013 at 12:56pm

The Event [R2R Cyber seminar: Using New/Social Media for Cancer Control & Prevention Interventions](#) has been added to the Calendar.

Wednesday October 23, 2013 at 11:50am

The Cyber-Seminar [Using New/Social Media for Cancer Control & Prevention Interventions](#) has been added!

Tuesday October 22, 2013 at 1:33pm

Karen has participated in the

## Learn about R2R

Watch the video tutorial to learn how to use Research to Reality.

Research to Reality Tutorial

0:00 / 2:49

YouTube

## Events

### Next Event

October 31, 2013 1:00PM - 2:00PM EDT

[Twitter Chat on Health Literacy & the ACA](#)

[Calendar](#)

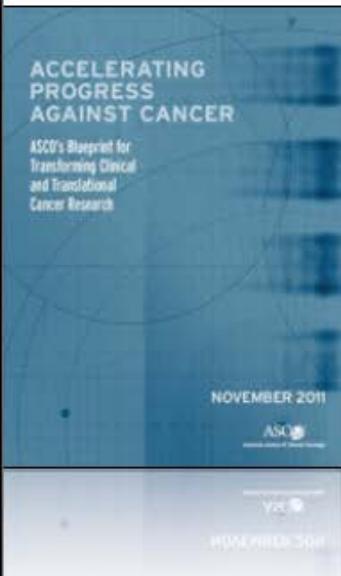
# ASCO CANCER\*LINQ:

## A Learning Oncology System

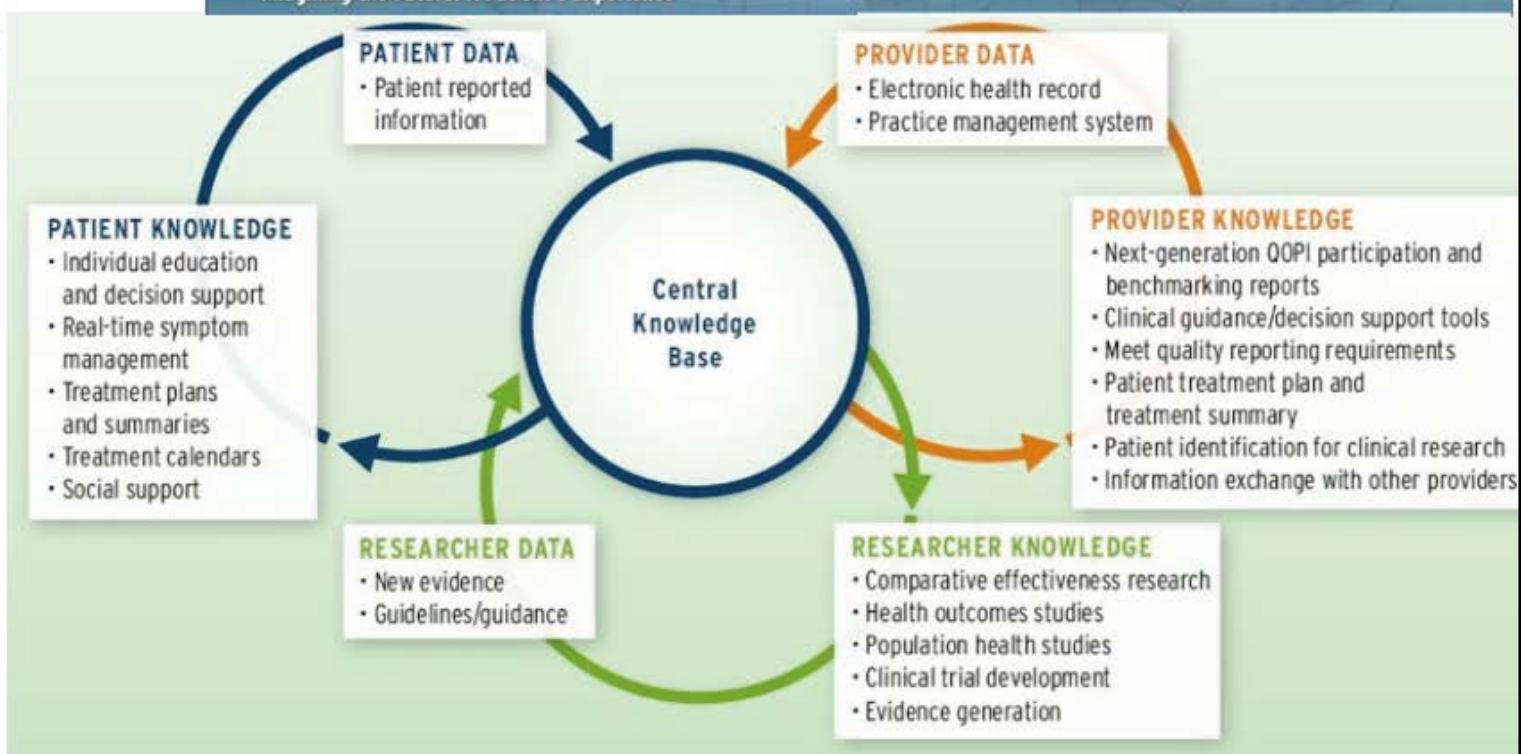


American Society of Clinical Oncology  
*Making a world of difference in cancer care*

Oncology as information science: "The Learning Health Care System"



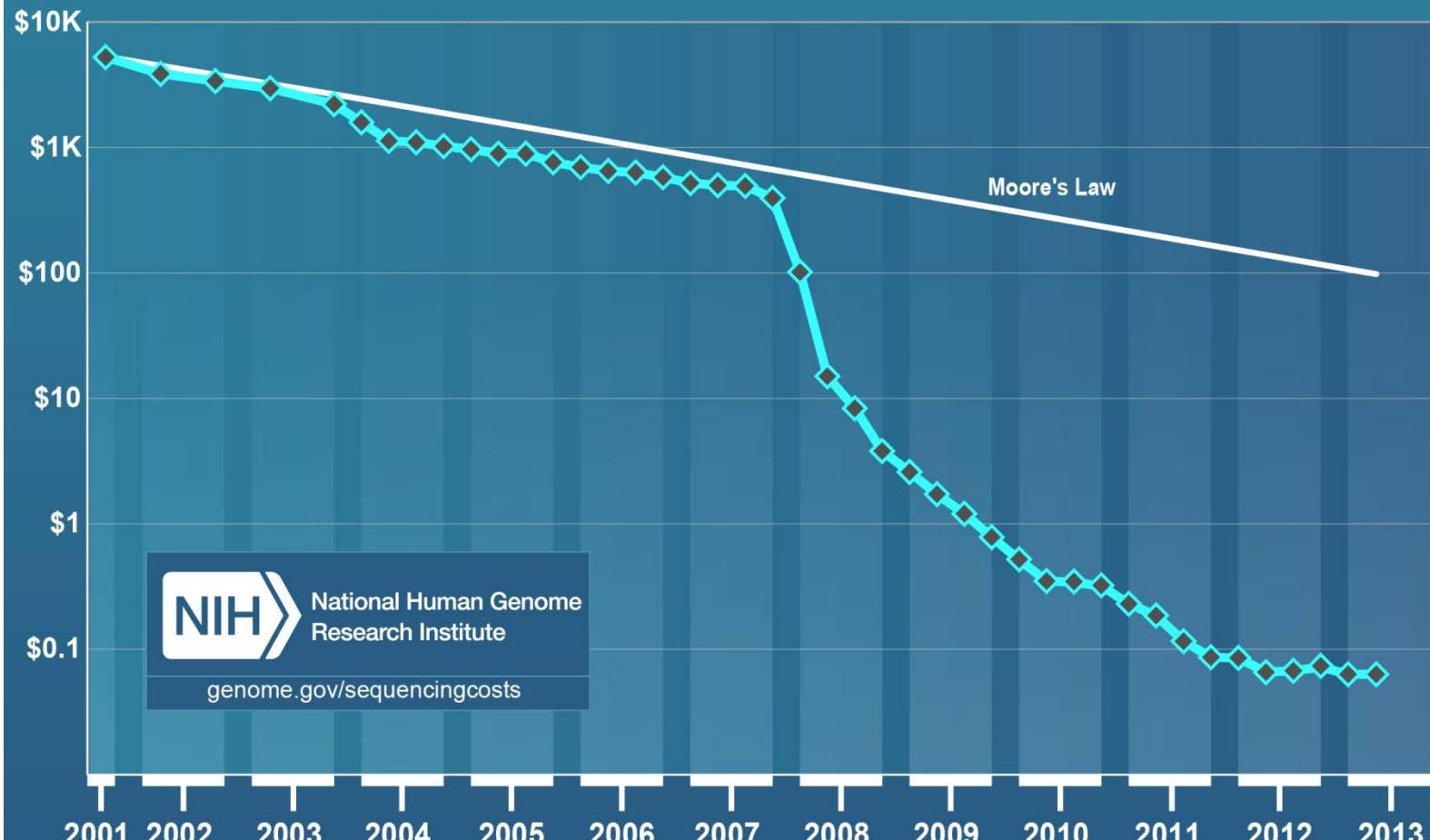
Imagining the Future: A Patient's Experience



# Cheaper

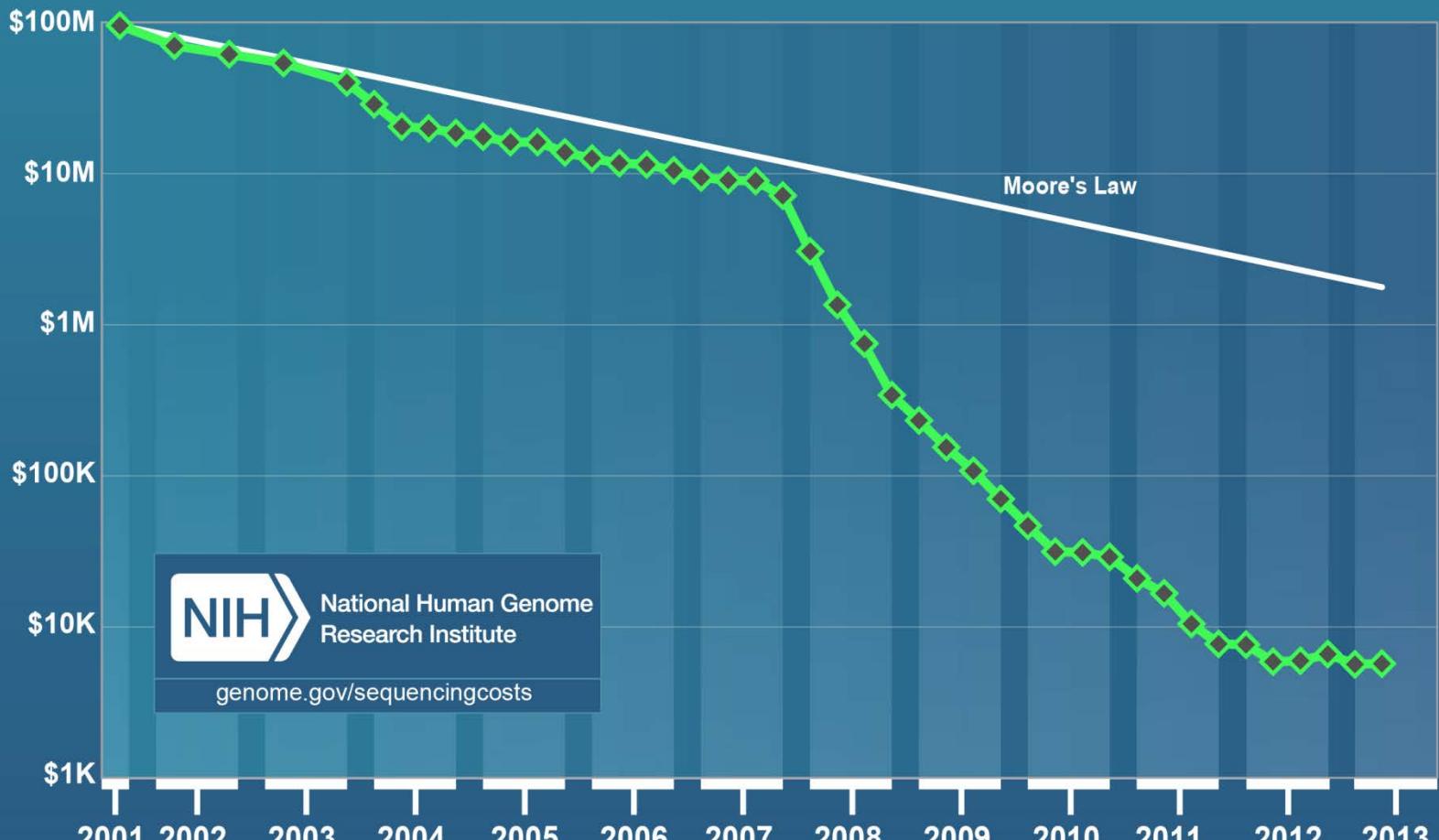
- Lower unit costs
- Reduce labor costs
  - e.g. Amazon's Mechanical Turk
  - Reduce interviewer time
- Use existing data

## *Cost per Raw Megabase of DNA Sequence*



Wetterstrand KA. DNA Sequencing Costs: Data from the NHGRI Genome Sequencing Program (GSP) Available at: [www.genome.gov/sequencingcosts](http://www.genome.gov/sequencingcosts). Accessed [10-21-13].

## *Cost per Genome*



Wetterstrand KA. DNA Sequencing Costs: Data from the NHGRI Genome Sequencing Program (GSP) Available at: [www.genome.gov/sequencingcosts](http://www.genome.gov/sequencingcosts). Accessed [10-21-13].



# Automated Self-Administered 24-hour Dietary Recall (ASA24)

ASA24 Progress Help Penguin Options AAA Font size

**Actions**  
Select an action below to edit your foods and drinks.

- Add a meal or snack
- Delete a meal or snack
- Edit a meal or snack
  
- Delete a food or drink
- Move a food or drink
- Copy a food or drink
- Edit a food or drink
  
- Done entering all meals and snacks
- Undo
- Finish later

**Find a Food or Drink**  
Browse the categories or search using the box below.

Enter search term

- Beans, peas, nuts, soy products
- Beverages
- Breads, other baked goods
- Cereals and energy bars
- Chicken, turkey, poultry
- Dairy, dairy substitutes
- Desserts and sweets
- Eggs
- Fats, Oils, Dressings, Spreads
- Fish, shellfish
- Fruit
- Meat
- Miscellaneous
- Mixtures, Chinese, Mexican, Chili, Other
- Pancakes, waffles, crepes
- Pasta, noodles, and spaghetti
- Pizza, calzones, hot pockets

No Match Found

**My Foods and Drinks**  
What I ate and drank Yesterday, Monday, October 17.

- Breakfast - 08:00 AM  
Cheerios  
Coffee
- Lunch - 12:00 PM  
Tuna salad sandwich  
Potato chips (unknown brand)  
Orange juice
- Dinner - 06:00 PM  
Chicken leg (drumstick and thigh)  
Broccoli  
Brown rice (regular)  
Green salad  
Ice cream

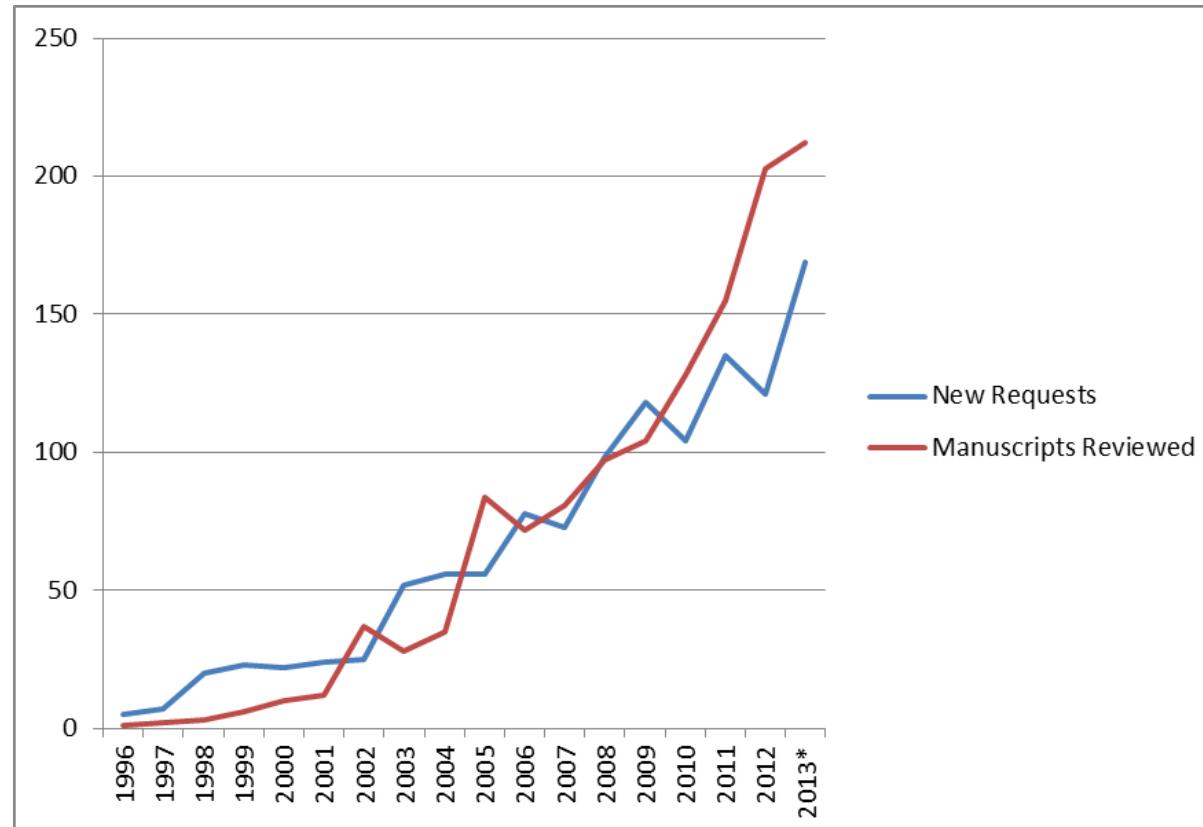


# ASA24™

- Freely available web-based tool for collecting high-quality dietary intake data
- Since September 2009
  - Released beta, ASA24-2011, ASA24-Kids-2012
  - Registered over 800 studies
  - Collected over 113,000 recalls
  - ASA24-3013 soon to be released
- Adaptations: Canada (underway); Australia (under consideration)
- Mobile device version currently under development

# SEER-Medicare

- What's available now?
  - Clinical, demographic, and death information on 1.6 million cancer cases from SEER
  - Health care services from Medicare, beginning in 1991
  - 5% random sample of Medicare enrollees without cancer
- Expanding available data
  - 4 years of Medicare Part D information
  - More diversified analyses (e.g., hospice and provider level data)
  - Plans to integrate census data



# Recent Pubs...

- 13 SEER-Medicare publications from Oct 1 to 22, 2013
  - Contraindicated use of bevacizumab and toxicity in elderly patients with cancer (Hershman DL et al., J Clin Oncol)
  - Influence of patient, physician, and hospital factors on 30-day readmission following pancreateoduodenectomy in the US (Hyder O et al., JAMA Surg)
  - Practices that reduce Latina survival disparity after breast cancer (Smith-Gagen J et al., J Womens Health)

- Beyond the Medicare Population
  - Cancer Research Network
    - All age groups
    - Pre-diagnostic data on the “whole patient”
    - Information on ~25% of Medicare enrollees who do not have claims because they are part of managed care plans
- Screening Processes and Outcomes
  - Population-based Research Optimizing Screening through Personalized Regimens (PROSPR)
    - Diverse range of delivery systems
    - Incorporate additional physician, facility, and system data



*As of January 2, 2014*

1. **88,418** datasets
2. **65,378** data sets posted in past 12 months (908 by HHS)
  - **1,875,270** visitors in past 12 months
  - Too overwhelming? Try [healthdata.gov](#)

# Huge, Ongoing Challenge:

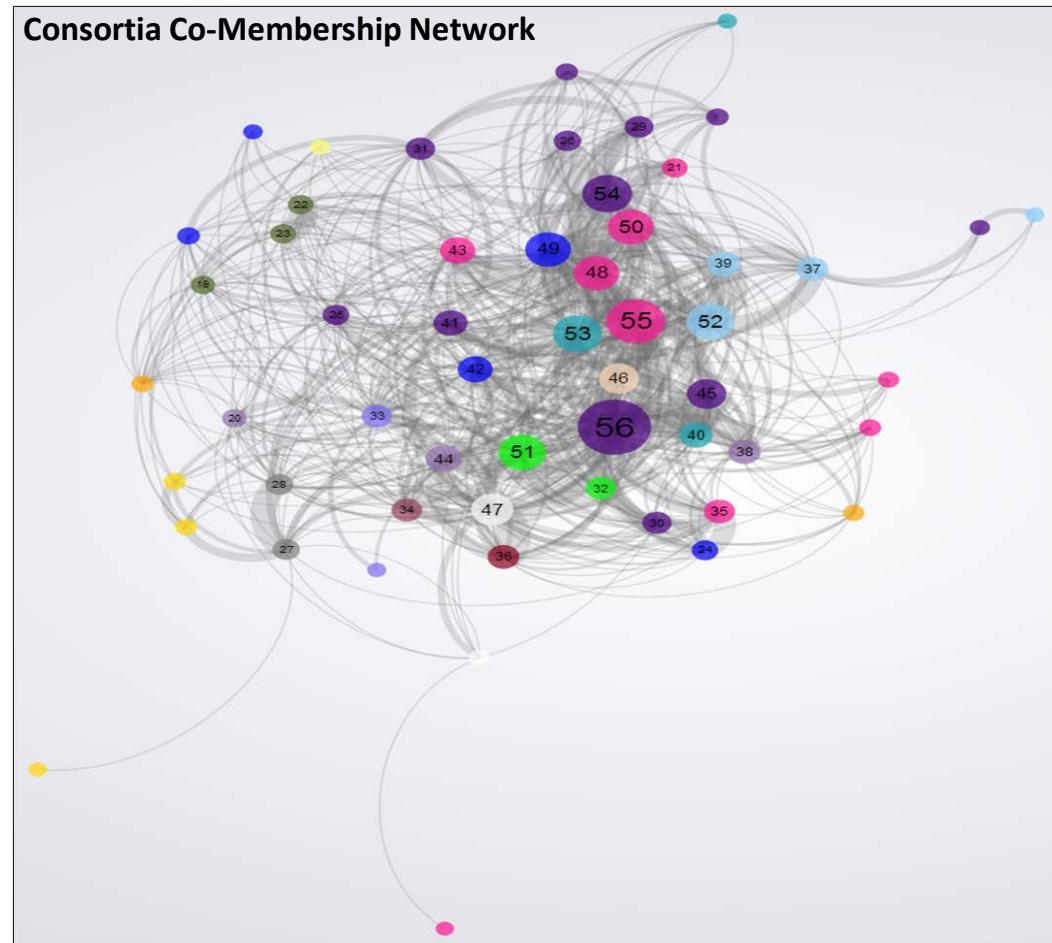
- How to support submission, storage, curation, access, and user support for data NOT collected by the federal government

# Bigger

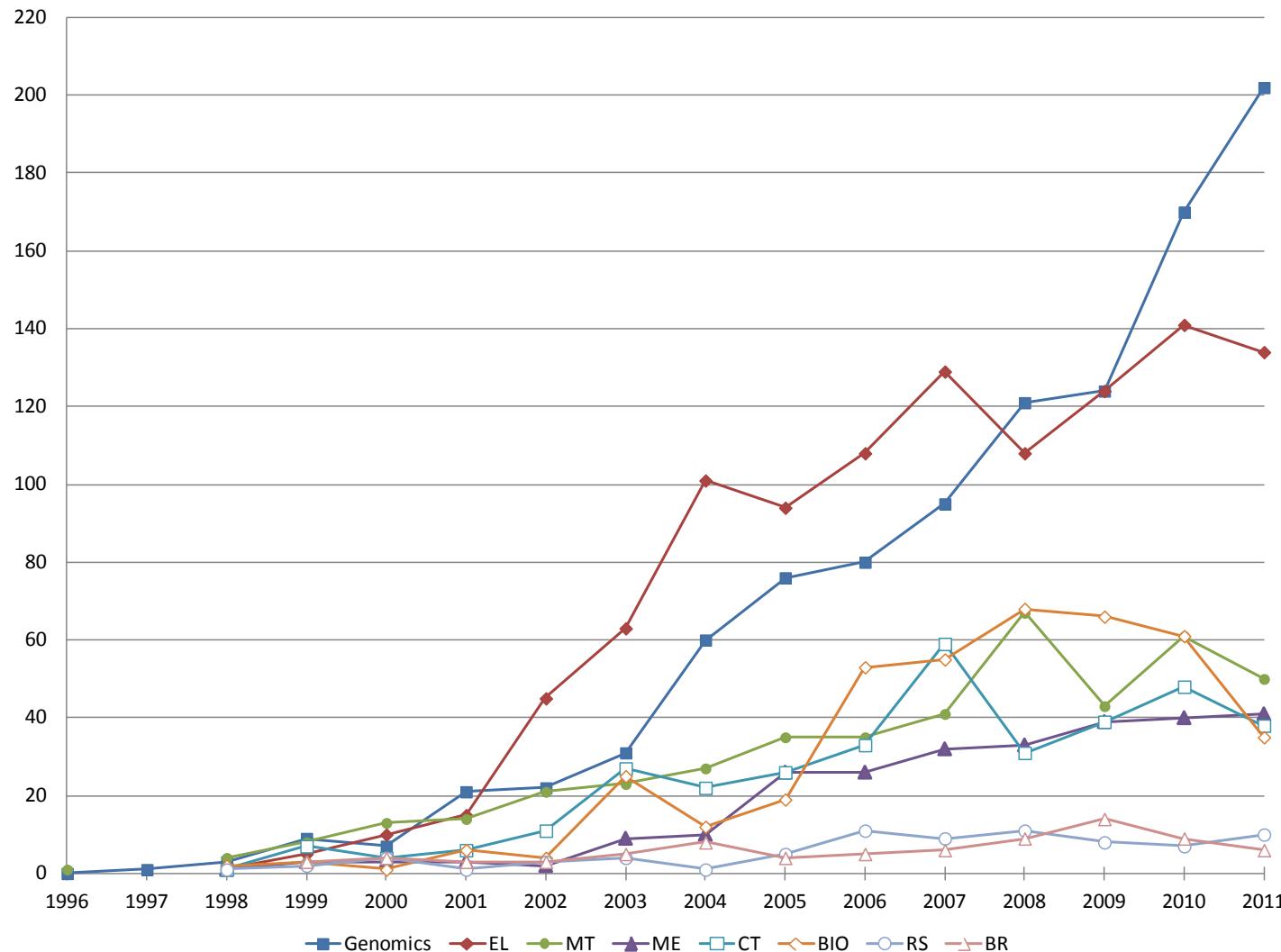
- Larger sample size for statistical power
- Consortia to enable collaboration and raise scientific ambition
- Expanded population coverage
- Linked datasets to provide more comprehensive data per subject
- A larger environmental context
- Greater reach of interventions

# Network of Cancer Consortia (NOCC)

- Evidence of an existing collaborative superstructure between scientific teams in the field of cancer epidemiology.
- Scientific research teams were mapped using the co-membership of investigators in multiple distinct teams.
- This network indicates characteristics of a “small world” network, which exhibit enhanced signal-propagation and synchronization properties for transferring information.
- These findings suggest NOCC provides an efficient framework for the dissemination of knowledge, methodologies, and discoveries within cancer epidemiology accelerating the translation of research results.

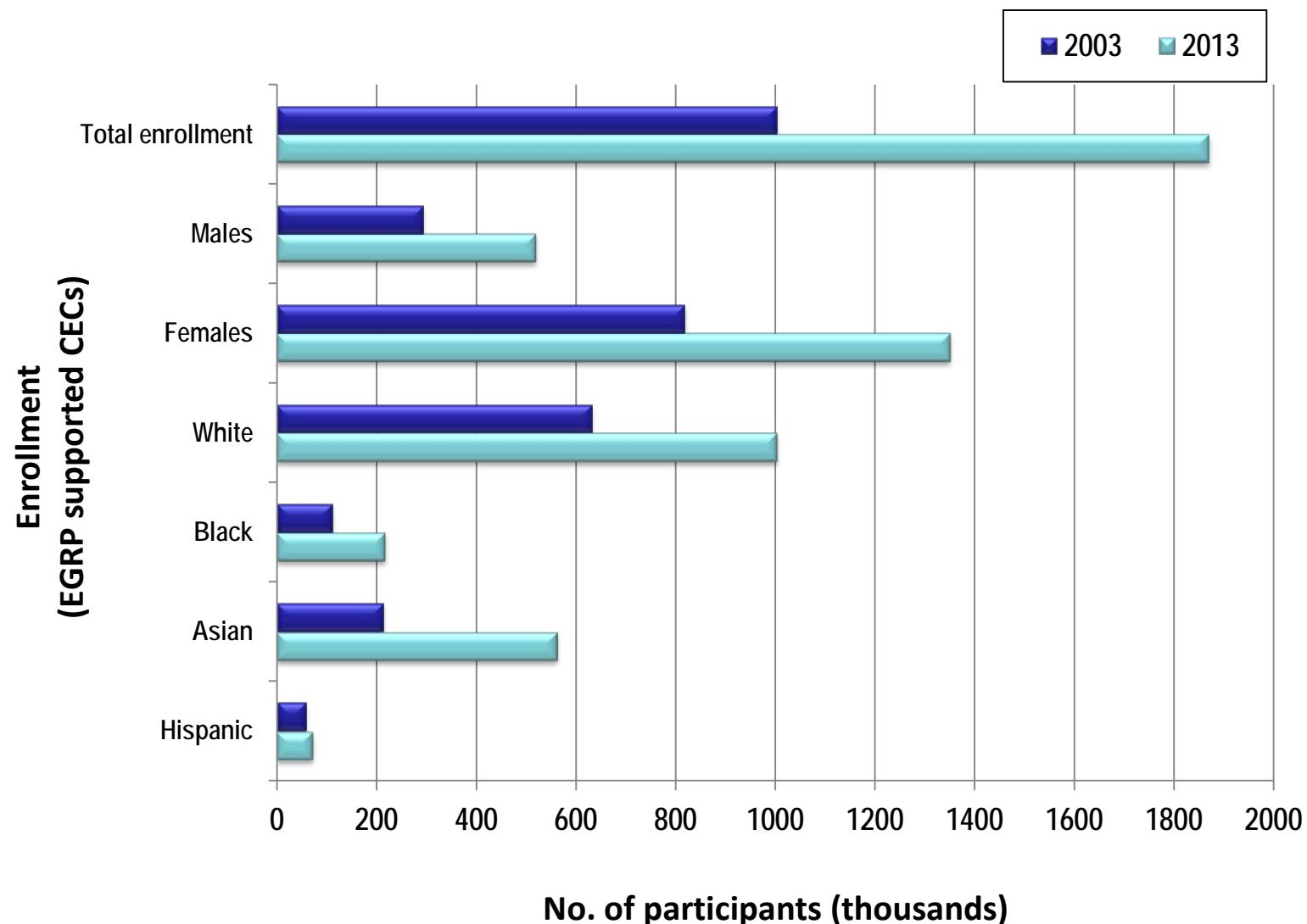


# Number of Cancer Epidemiology Consortia Papers in Scientific Areas by Year



Michael R. Burgio Jr., John P.A. Ioannidis, Brett M. Kaminski, et al. Collaborative Cancer Epidemiology in the 21<sup>st</sup> Century: the Model of Cancer Consortia. *CEBP*. 2013 Sep 19 [Epub ahead of print]

# EGRP-associated Cancer Epidemiology Cohorts: Population Characteristics



# A Comprehensive Genetic Analysis of Common Cancer Risk Through the Development of the OncoArray Network



**The GAME-ON Initiative**



Keck Medicine of USC



Genome Québec



National Institute of Environmental Health Sciences  
Your Environment. Your Health.



UNIVERSITY OF CAMBRIDGE

# Aims of OncoArray Network

- Genotyping of 210,000 cancer cases and 200,000 controls using a set of 600,000 markers. Define the effects of genetic factors in multiple ethnic groups and evaluate gene-gene effects.
- Meta-analysis jointly evaluating risk to identify shared and cancer-specific risks for common cancer development.
- Detailed fine mapping of established loci from each cancer site to identify candidate functional and causative variants.
- Integrative analyses that allow us to partition competing risk for common cancers, allowing for effects from genetic and environmental factors that are measured across sites.

# Summary

- By genotyping a very large number of samples on the same platform we can identify variants that influence common cancers
- Common platform facilitates gene-gene interaction studies
- Low cost and high throughput platform facilitates additional studies

# Team Science Toolkit

An interactive website to help you support, conduct and study team-based research.

[Home](#)[About Team Science](#)[About the Toolkit](#)[Discover](#)[Contribute](#)[Connect](#)[News & Events](#)[About Us](#)

## Discover what resources are available...

"The Toolkit provides a wealth of resources for team scientists, including practical tools to use with your colleagues, such as team assessment guides and training resources."

*—Holly Falk-Krzesinski, Vice President,  
Global Academic & Research Relations, Elsevier*



### › **Discover** what resources are available.

[Search](#)[Advanced Search](#)**OR**[Browse](#)

### › **Contribute** new resources to the Toolkit.

Share your knowledge by uploading tools and information about the practice or study of team science.

### › **Connect** to colleagues across disciplines.

Join expert discussions on the blog, add your name to the directory, or stay up-to-date on News and Events.

[Login | Register](#)[What Users Are Saying »](#)

### Resources

[Tools](#)[Measures](#)[Bibliography](#)

### Connections

[Blog](#)[Expert Directory](#)[Listserv](#)

**www.teamsciencetoolkit.cancer.gov**

The Team Science Toolkit is an interactive website that provides resources to help users support, engage in, and study team-based research.

# Expansion of SEER Registries over time

2000

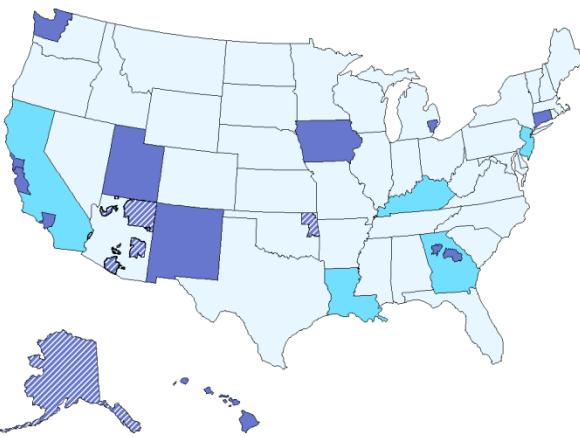
SEER 9: 1975+ (10%)



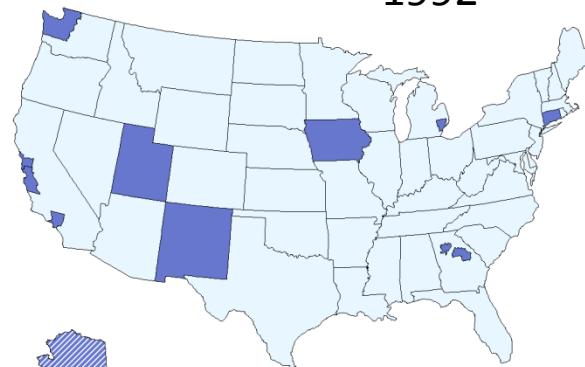
SEER 13: 1992+ (14%)



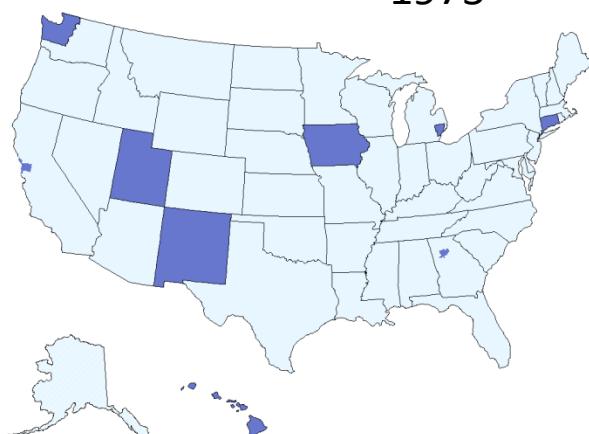
SEER 18: 2000+ (28%)



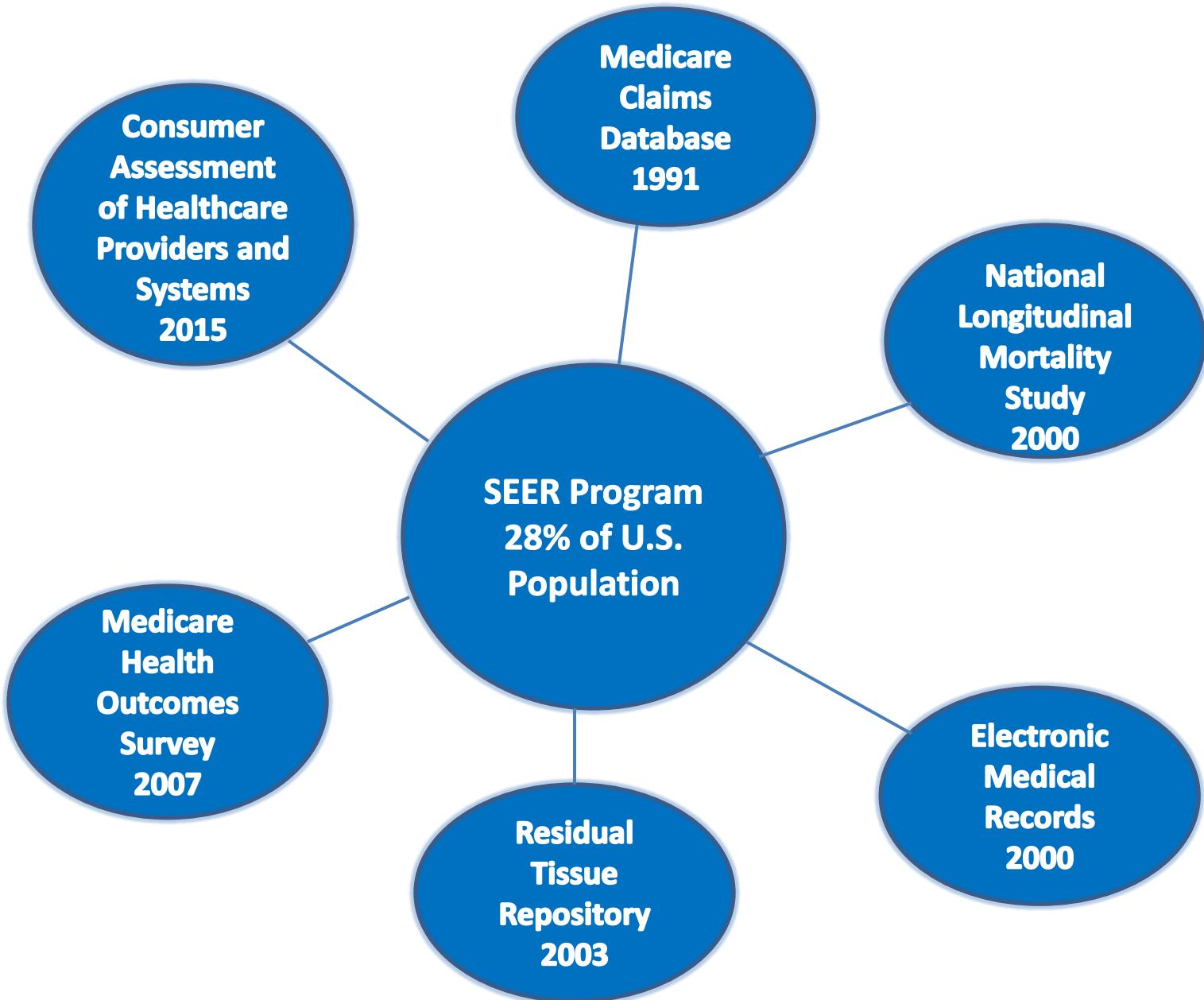
1992



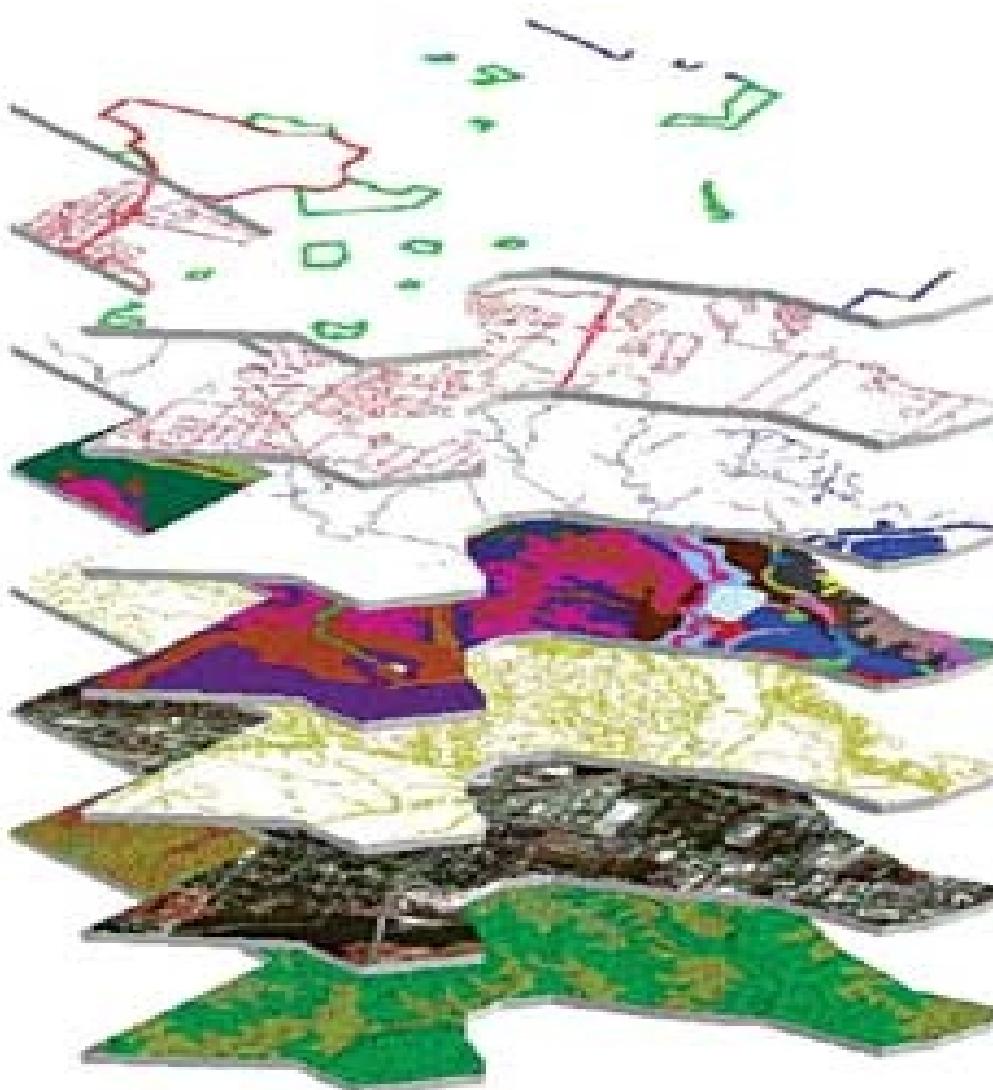
1975



- Registries funded by SEER/NCI
- American Indian/Alaskan Native registries funded by NCI
- Registries funded by SEER and the National Program of Cancer Registries



# Spatial Data for Etiological and Prevention Research



**Census tract SES data**

**Exposure (UV, toxins, pollution)**

**Small area estimates**

**Community Health Status**

**Urban sprawl index**

**Screening frequency**

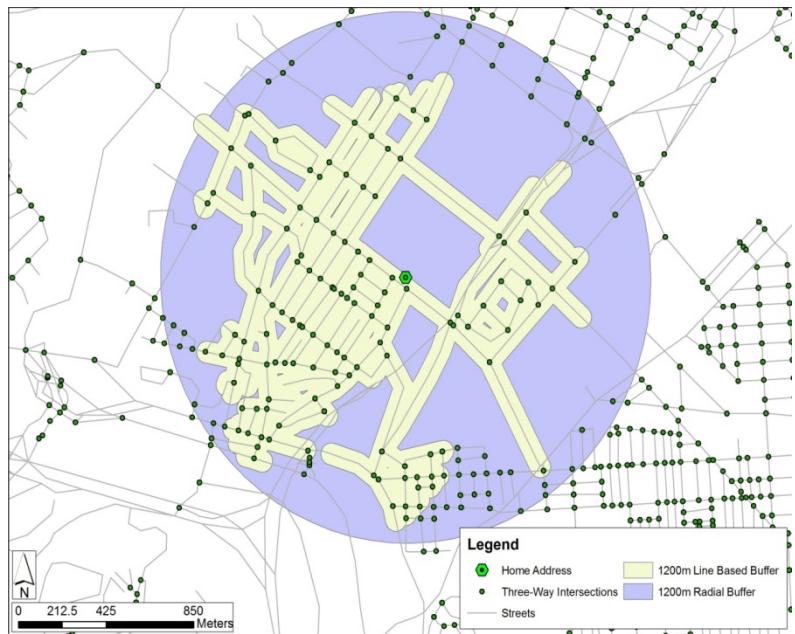
**SEP Index**

**Smoking prevalence**

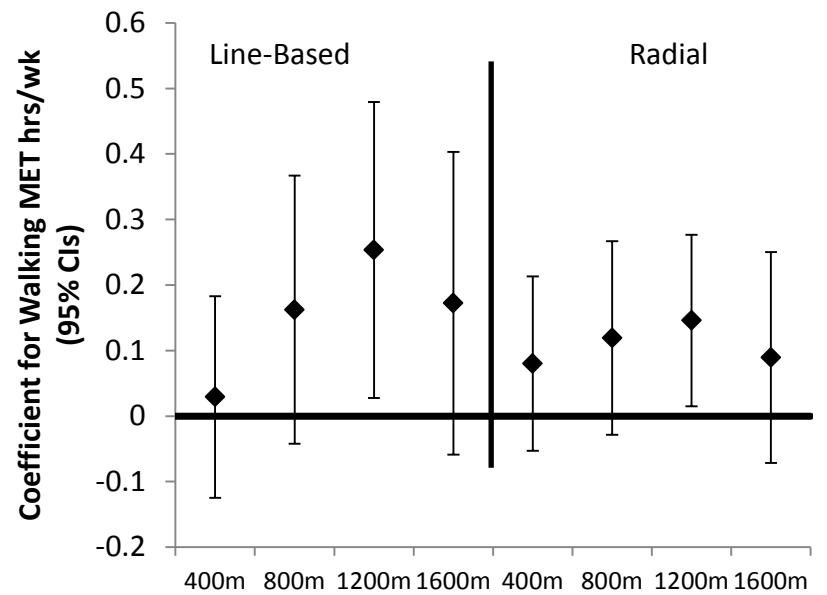
**Built environment**

# GIS to Explore Built Environment Influences on Physical Activity

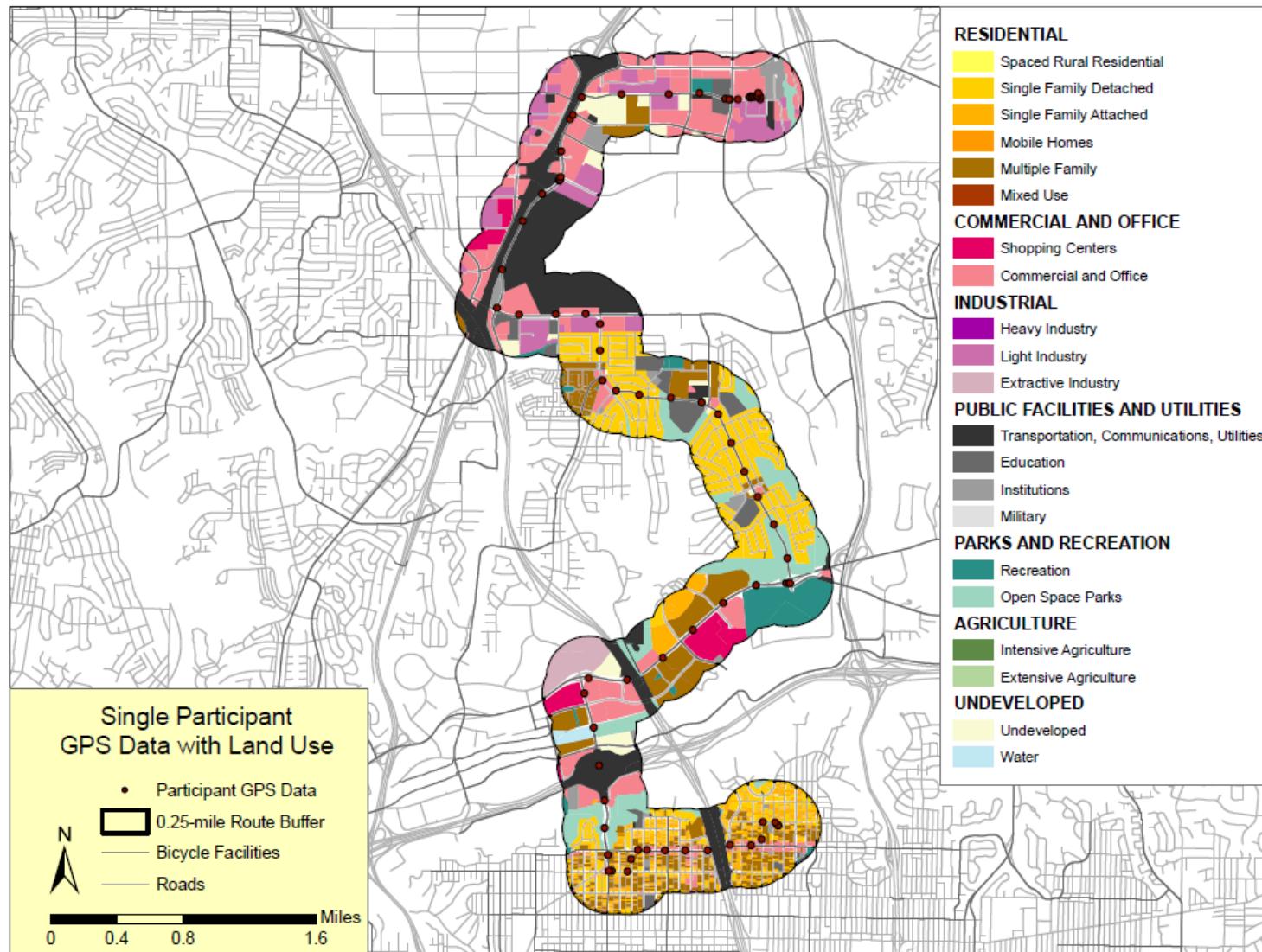
Radial and Network Buffers  
Around a Participants Home



Association Between Walking and Intersection Density for Different Buffer Sizes



# Improving Energy Balance Related Exposure Assessment with \$100 GPS devices



HOME

OVERVIEW ▾

NCI GIS PORTAL ▾

TOOLS &amp; DATA ▾

GIS RESEARCH ▾

The Geographic Information Systems and Science website is supported by the National Cancer Institute as a central source of information about GIS and related resources for use by the public, cancer researchers, and the GIS Special Interest Group.



#### Overview

An introduction to Geographic Information Systems at NCI.



#### NCI GIS Portal

Interactive web-based mapping tools and services.



#### GIS Research

View publications and see how institutions use GIS technology.



#### Tools & Data

Tools and data services to assist in analysis and visualization.

## Why Spatial Context Matters



#### Exposure: Water Quality

Certain cancers can be triggered by exposure to toxic agents, such as chemicals in the water supply.

1 2 3 4 5 6 7 8

*Photo Credits*

## Popular Resources



[NCI GIS Portal](#)



[NCI Tools: ColorTool for ArcMap](#)



[NCI Tools: Installation of ArcMap Tools](#)



[Geographic Information Systems Special Interest Group \(GISSIG\)](#)

## Recent Updates

► [New NCI Map Story showing incidence and mortality rate maps with the most recent cancer statistics for prostate cancer has been released](#) - 9/25/13

► [The Animated Historical Atlas, a web-based tool designed to visualize the historical patterns of cancer mortality, has been released](#) - 7/22/13

# NCI Geo Viewer

Visualize Data Selection Map Display Share

## Lung and bronchus cancer annual death rate per 100,000

Polygon Data Selection  
Polygon Display Settings

### Polygon Data

Lung_Annual_CD	NAME	STATE_FIPS
45.3	Archer	48
82.8	Baylor	48
	Throckmorton	48
70	Young	48
	Shackelford	48
62.1	Stephens	48
58.1	Taylor	48
74.2	Mitchell	48
67.9	Nolan	48
	Sterling	48
50.9	Coke	48
63.5	Runnels	48
52.4	Tom Green	48
	Concho	48
	Irion	48
	King	48
	Dickens	48
	Knox	48
43.5	Haskell	48
	Kent	48
	Stonewall	48
57.6	Jones	48
	Fisher	48
46.2	Scurry	48
68.9	Eastland	48
79.5	Callahan	48
60.5	Comanche	48
74.4	Coleman	48

### Lung and bronchus cancer annual death rate per 100,000

- 9.3 - 46.1
- 46.0 - 53.1
- 53.0 - 59.1
- 59.0 - 64.8
- 64.7 - 72.8
- 72.8 - 180.1
- No Data

Lock Legend Groups

1000 km

500 mi

Source: Age-adjusted death rates calculated by the National Cancer Institute using SEER\*Stat

# Animated Historical Cancer Atlas

[HOME](#)[OVERVIEW ▾](#)[NCI GIS PORTAL ▾](#)[TOOLS & DATA ▾](#)[GIS RESEARCH ▾](#)

Home > NCI GIS Portal > Animated Historical Cancer Atlas

**Options:**

**Geography** [?](#)

United States  
 Individual State

Select a State [▼](#)

**Year Groups** [?](#)

5 Years  
 10 Years

**Cancer Site** [?](#)

All Cancer Sites [▼](#)

**Sex** [?](#)

Both Sexes  
 Male  
 Female

**Color Scheme** [?](#)

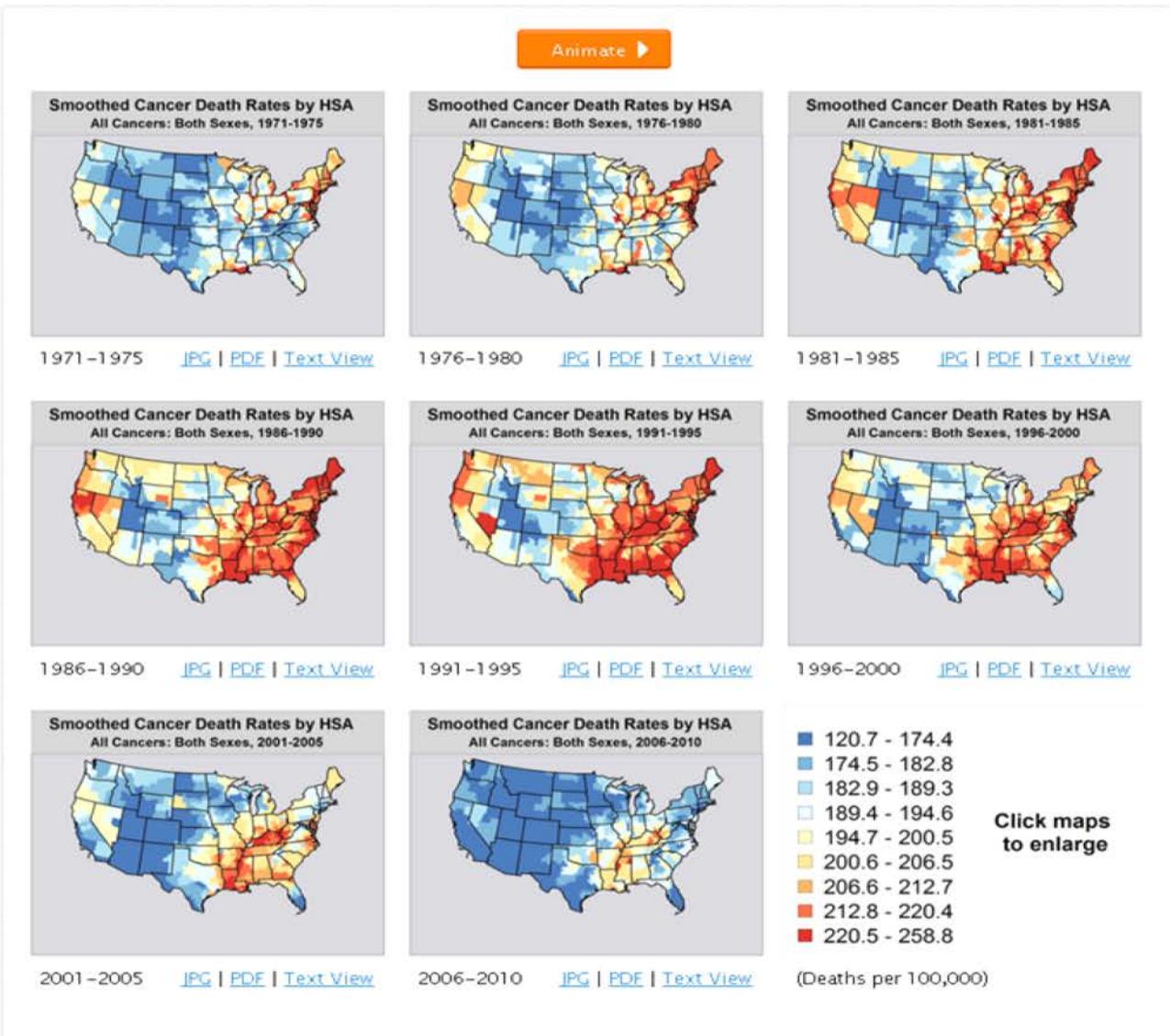
Red Yellow Blue  
 Orange (Both) Purple (F) Green (M)

[Generate Atlas](#)

**Methods:**

What is an HSA? [?](#)

How are cutpoints determined? [?](#)

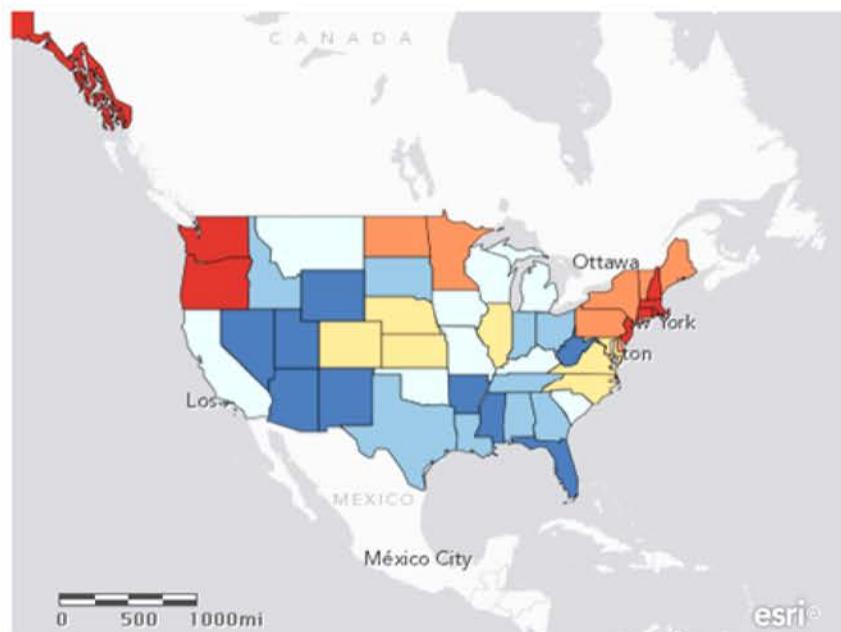


# NCI Map Stories

> NCI GIS Portal > NCI Map Stories > Breast Cancer

## Map Story: Breast Cancer

**Incidence: Breast Cancer (2005 – 2009)**



This map shows age-adjusted incidence rates of breast cancer for all races, females and all ages for the years 2005 – 2009.

This data was sourced from <http://statecancerprofiles.cancer.gov>

\* Wisconsin's data are 2005 – 2008 only.

Download Options:

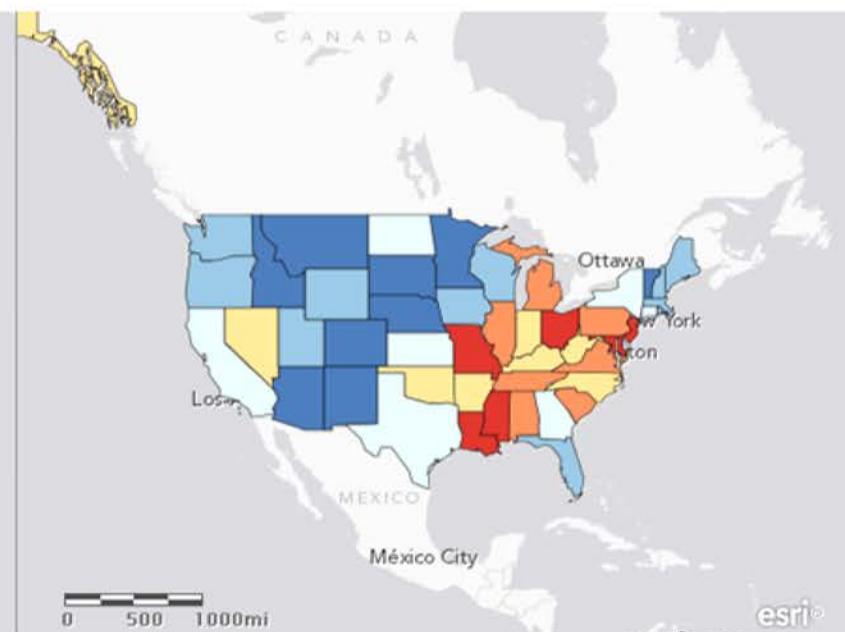
Map Options:

[  Description  Legend ]

Download Options:

[ Interpret | PDF | Data ]

**Mortality: Breast Cancer (2005 – 2009)**



This map shows age-adjusted mortality rates of lung cancer for all races, both sexes and all ages for the years 2005 – 2009.

This data was sourced from <http://statecancerprofiles.cancer.gov>

# Smokefree.Gov

smokefree.gov

Quit today      Prepare to quit      Smoking issues      Help someone

I'm craving cigarettes      I'm ready to quit      I slipped      I plan to stay smokefree

I need help now      I want to help someone      I feel depressed      I quit with SmokefreeTXT

Facebook Twitter SmokefreeTXT Quit Plan smokefreewomen smokefreeTeen smokefreeespañol

# Smokefree Women

**smokefree**women

Enter Search Criteria

Quit Smoking    Pregnancy & Motherhood    Support    Stress & Mood    Weight Management    Healthier Lifestyle    Tools



The Stress-Smoking Link

## RECENT ARTICLES

MOST RECENT



3 Very Real Dangers of Secondhand Smoke  
Secondhand smoke is the combination of smoke...  
[Read full story: 3 Very Real Dangers of Secondhand Smoke](#)

SHARE



4 Benefits of Quitting Smoking  
Many women are surprised by how well...  
[Read full story: 4 Benefits of Quitting Smoking](#)

### Tips

#### Give Yourself a Smokefree Makeover!

*Making over areas of your life can help you stay smokefree.*

- Within a few minutes after your last cigarette, your body starts to heal itself from the damage caused smoking. [Give yourself a makeover...](#)
- For many people, the hardest place to resist the urge to smoke is at home. [Give your home a makeover...](#)
- Exercise is a great way to stay smokefree & gives you a burst of energy. [Give your workout a makeover...](#)
- Mood changes are common after you quit smoking. [Give your mood a makeover...](#)



(With Voiceover) Reach Out & Offer Her a Helpin...  

And be healthy.

WOMEN.smokefree.gov

0:00 / 1:29    YouTube

**" We can support a pregnant woman to quit and stay smokefree. "**

### Quit Guide

From those of us at Smokefree Women... Congratulations! You are taking the first step towards a healthier, new lifestyle.

Start Today



### Our Tools

The Smokefree Women Web site includes a variety of interactive tools to help you quit smoking.

› **Smokefree TXT**  
24/7 encouragement, advice, and tips.

### Together

WE ARE STRONG ENOUGH TO QUIT



f    t    YOUTUBE    p

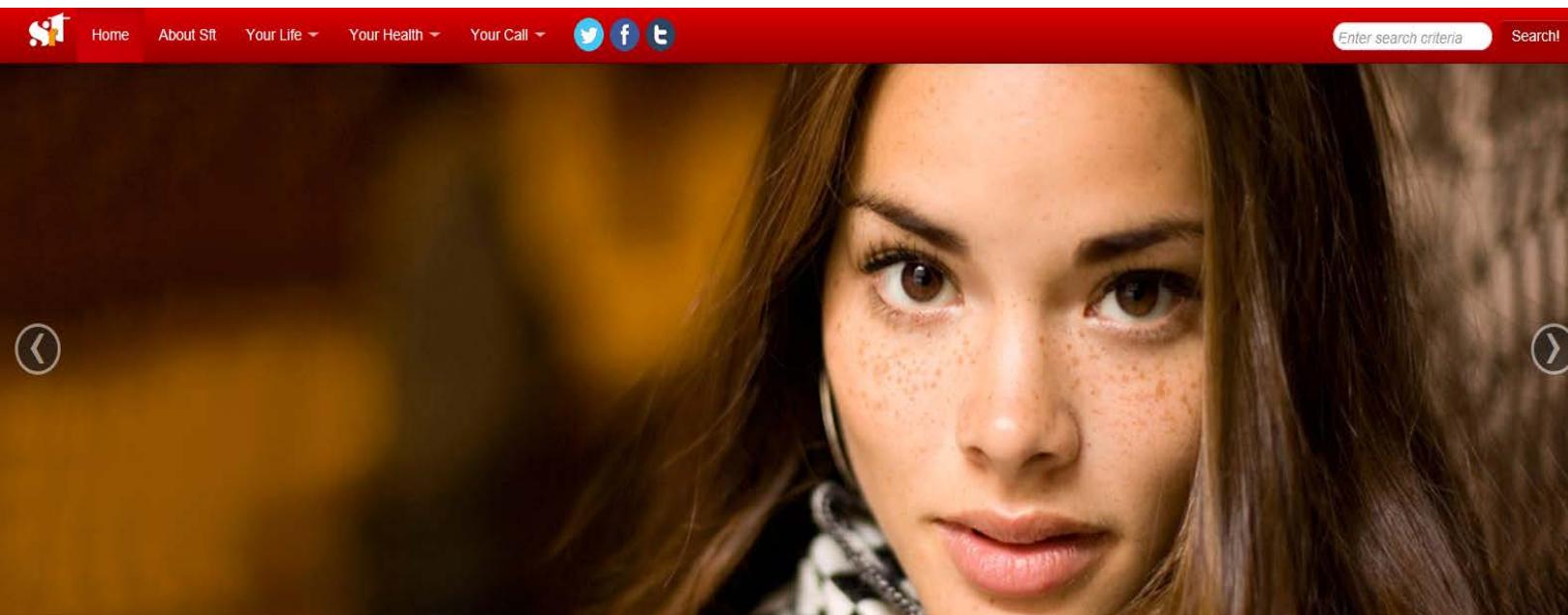
### What Do You Think?

WHICH SMOKEFREE RESOURCE DO YOU THINK IS MOST HELPFUL?

SmokefreeTXT  
 QuitGuide Mobile App  
 Information about topics related to smoking and quitting

### Quitting Smoking Happens

# Smokefree Teen



Want to quit but don't know how?  
Get your daily dose of the support you crave.

[Learn more](#)

**Smokefree TXT**

Sign up for this text message program that provides 24/7 encouragement, advice, and tips to help you quit smoking.

**QuitSTART**

Download this quit smoking app to track your cravings, mood, smoking triggers, and overall smokefree progress.

**Quizzes**

Think you have all the answers? Prove it! Quiz yourself on what's really important.

# Smokefree Español

Mi familia, mi salud, mi vida. Mi tiempo para dejar de fumar.

Búsqueda 

smokefreeespañol

Deje de fumar hoy | Prepárese para dejar de fumar | Aprenda más | Ayude a alguien

 Yo estoy listo para parar >

 Quiero ayudar a un fumador >

 Yo tengo anteojos de tabaco >

 Haga un plan para dejar de fumar > plan 27

 Me desilicé >

 Quiero proteger a mi familia >

 Yo fumo a veces >

 Dejar de fumar con SmokefreeTXT > mensajes

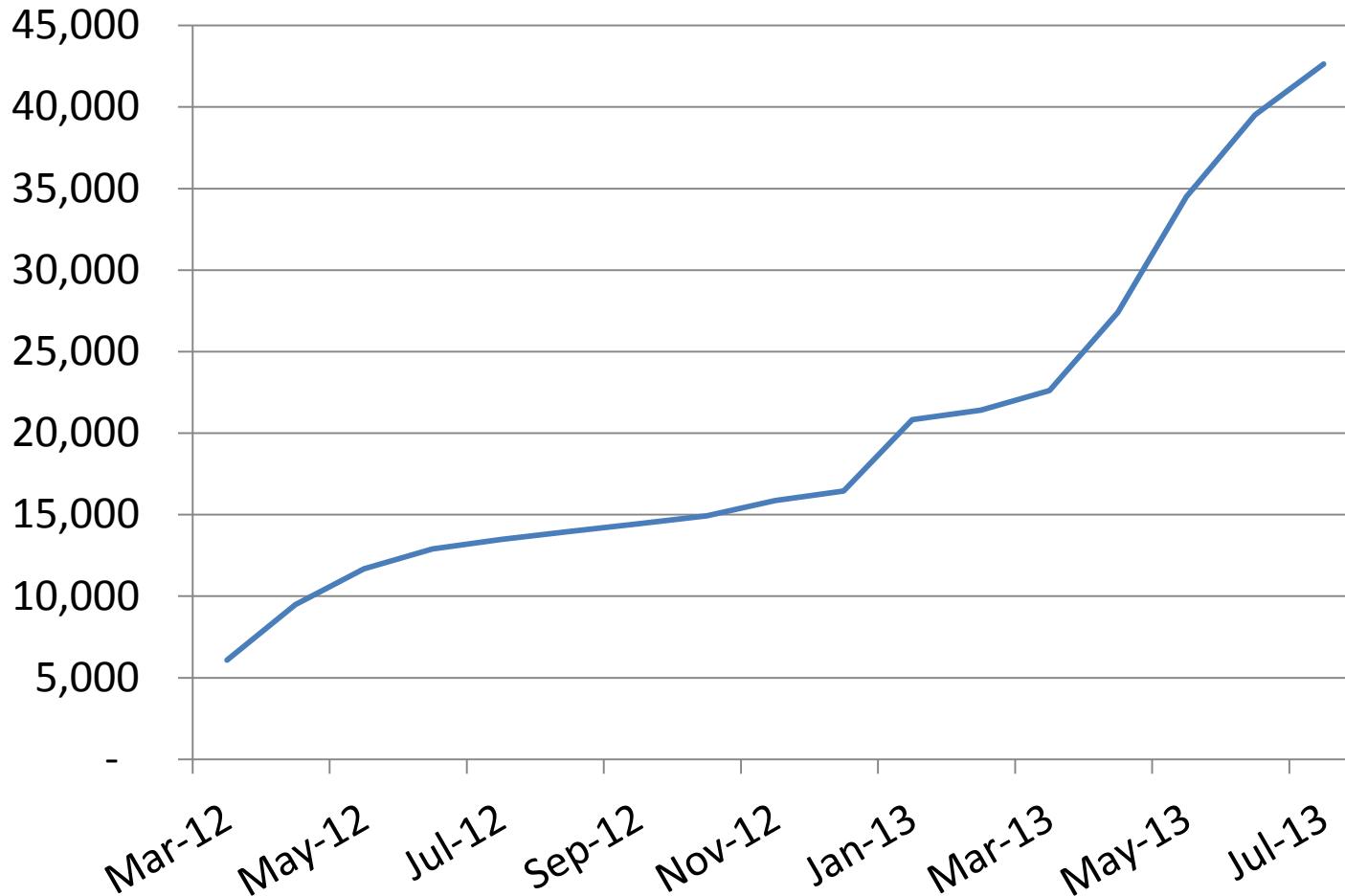
# SmokefreeTXT Program



**ARE U  
READY  
2 QUIT  
SMOKING?**

# SmokefreeTXT Metrics

Total Subscriptions  
March 2012- July 2013



# Better

- Data quality and completeness
- Recognition of the importance of replication
- Measurement reliability and validity
- Transdisciplinary team science culture and practice

# Accelerometer-Based Tools for Physical Activity Assessment, Monitoring & Interventions

## Past Technology (1990's)

- High cost- \$450/unit
- Poor reliability/Manual Calibration
- No consumer market
- Use in very small studies

## Current Technology

- Improved cost & capabilities
  - Research Tools - \$225/unit
- High reliability/no calibration
- Use across diverse research areas, study designs & sizes

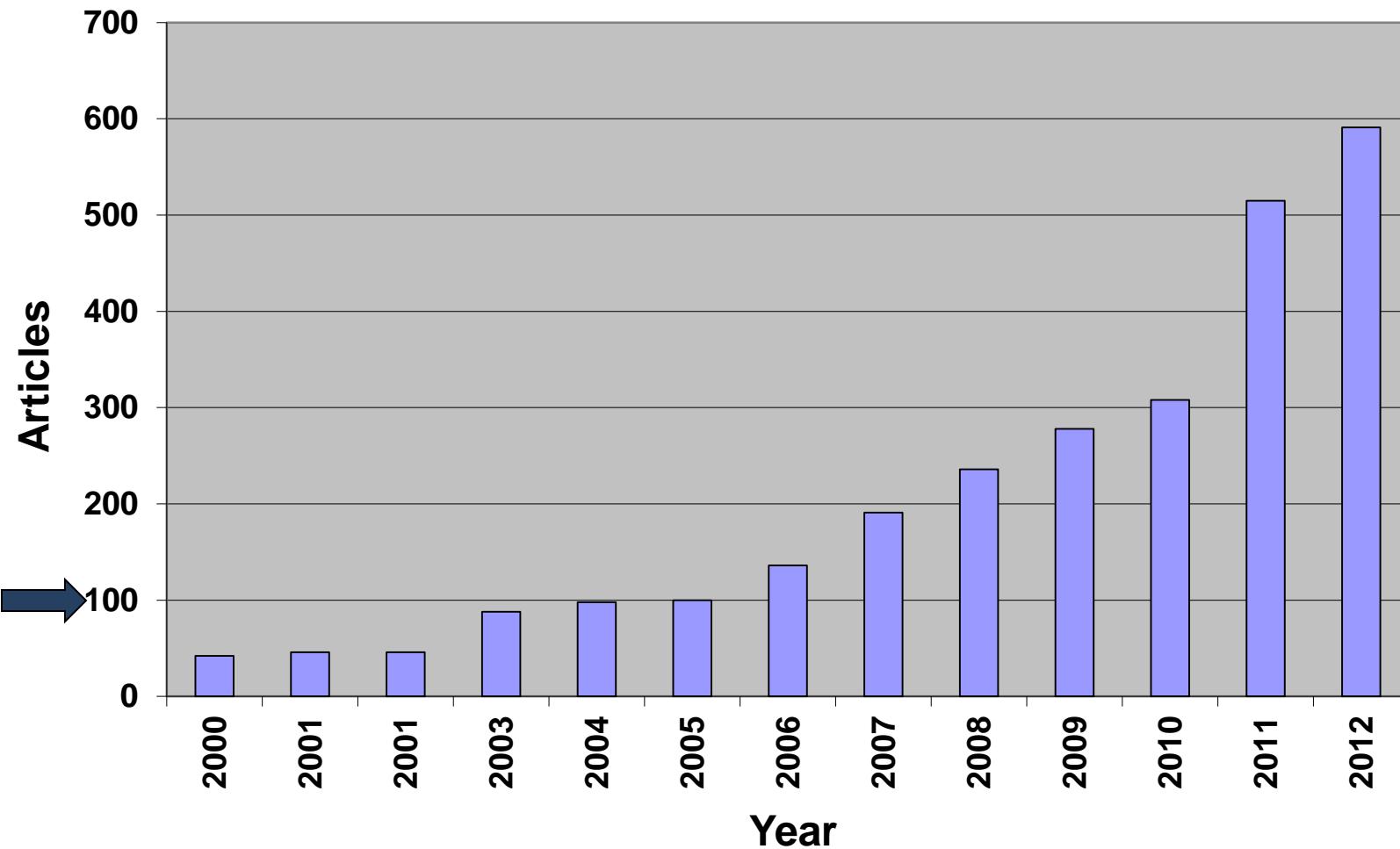
## Emerging Opportunities

Large scale exploitation of wearable & embedded sensors in consumer technology for clinical & research applications



# Accelerometer Cites in Scopus 2000-2012

Trend in Accelerometer Articles



# Accelerometers in National Surveillance

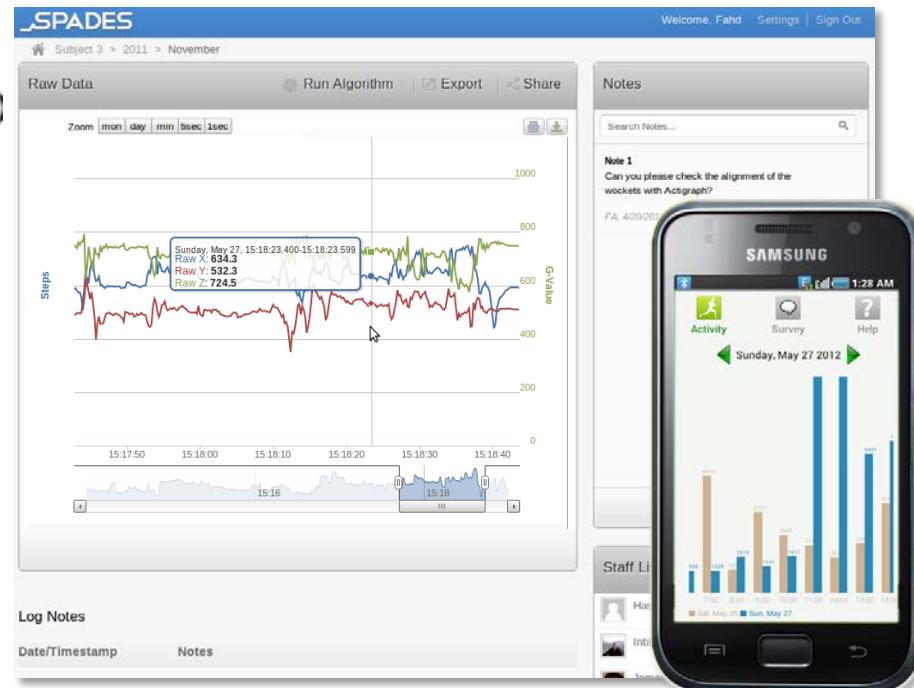
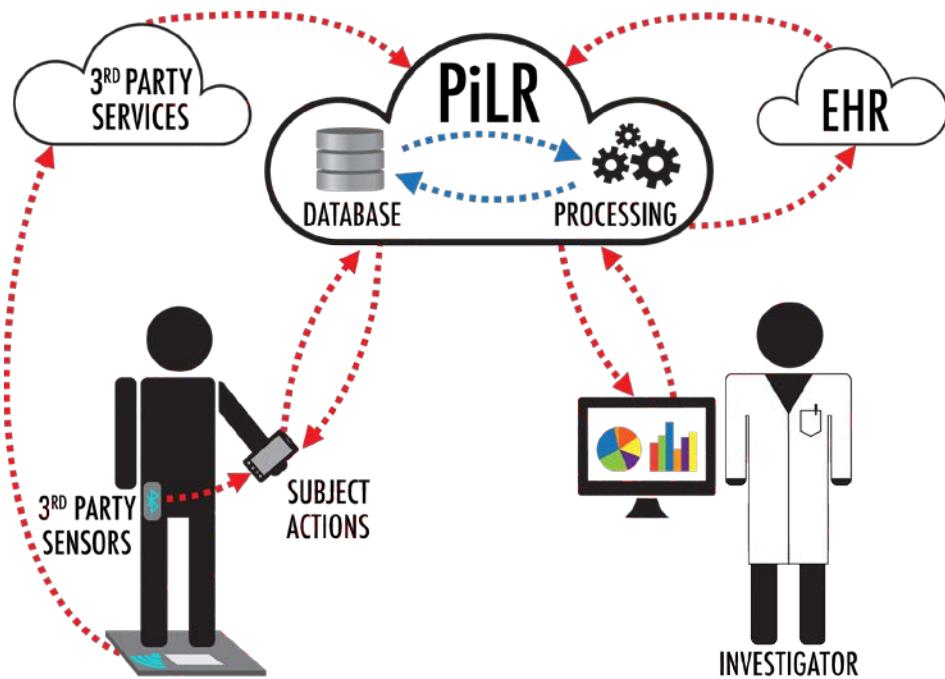
- US National Health and Nutrition Examination Survey (NHANES) 2003-2006, 2011-2014
- Canadian Health Measures Surveys (2007-11)
- Health Survey for England 2008

# Large Cohorts with Accelerometers

- Activity and Function of the Elderly in Ulm (ActiFE Ulm)
- Avon Longitudinal Study of Parents and Children (ALSPAC)
- Child Heart and Health Study in England (CHASE)
- European Youth Heart Study (EYHS)
- Identification and Prevention of Dietary- and Lifestyle-Induced Health Effects in Children and Infants (IDEFICS)
- International Study of Childhood Obesity, Lifestyle and the Environment (ISCOLE)
- Millennium Cohort Study
- Personal and Environmental Associations with Children's Health (PEACH)
- Raine Study
- Sport Physical Activity & Eating Behaviour: Environmental Determinants in Young People (SPEEDY)
- Women's Health Study

# Mobile Tools for Clinical Monitoring, Surveillance & Intervention Research

- Remote participant enrollment
- Collect, store & analyze streaming sensor data
- Support phones, consumer wearables & research sensors



# Our Challenge: In an Era of Faster, Cheaper, Bigger, Better, How do we Balance:

- What is easy?
- What is interesting?
- What is fundable?
  - Vs.
- What is important?

# And, we still need, when appropriate...

- Small-scale studies
- Traditional, single-investigator studies
- Basic, mechanistic knowledge
- ...but in cancer control and population sciences, biology is just one of many levels of analysis that are critical



[cancercontrol.cancer.gov](http://cancercontrol.cancer.gov)