

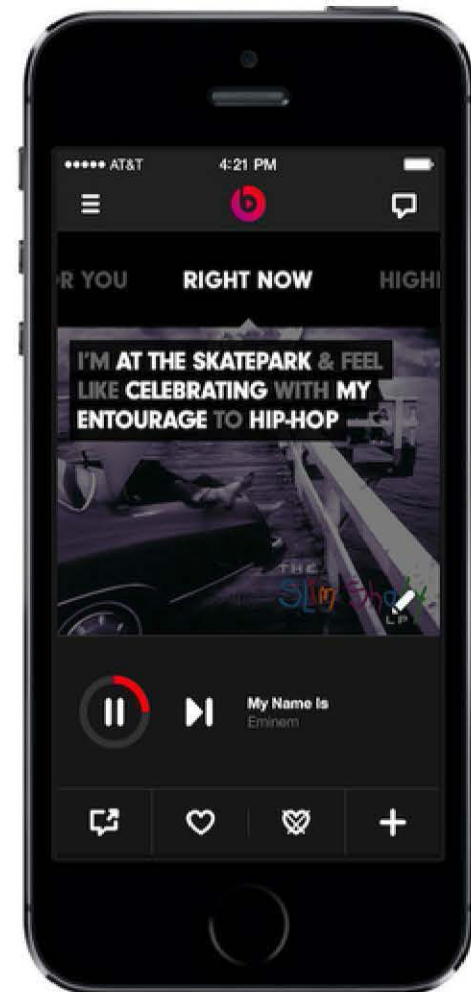
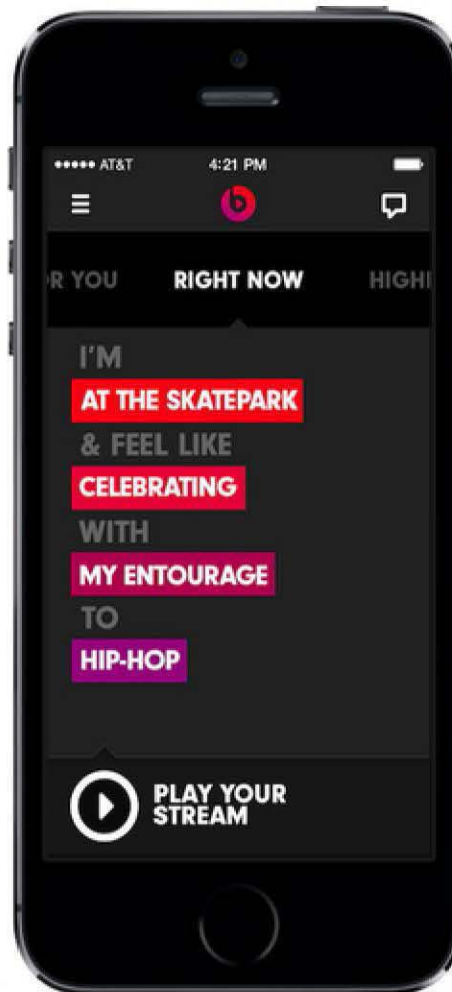
# Communication, Health and the Urban Poor

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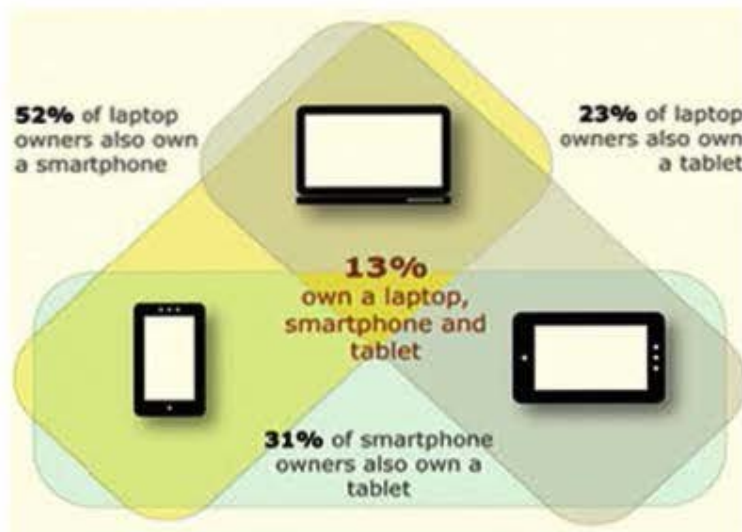
K. Viswanath

Harvard School of Public Health  
Dana-Farber Cancer Institute  
Dana-Farber/Harvard Cancer Center

# *The Communications Revolution*



# Communication devices and their use



## Digital news consumers are adding to their news consumption



N's: Use desktop/laptop for news=1,602; smartphone for news=571; tablet for news=291

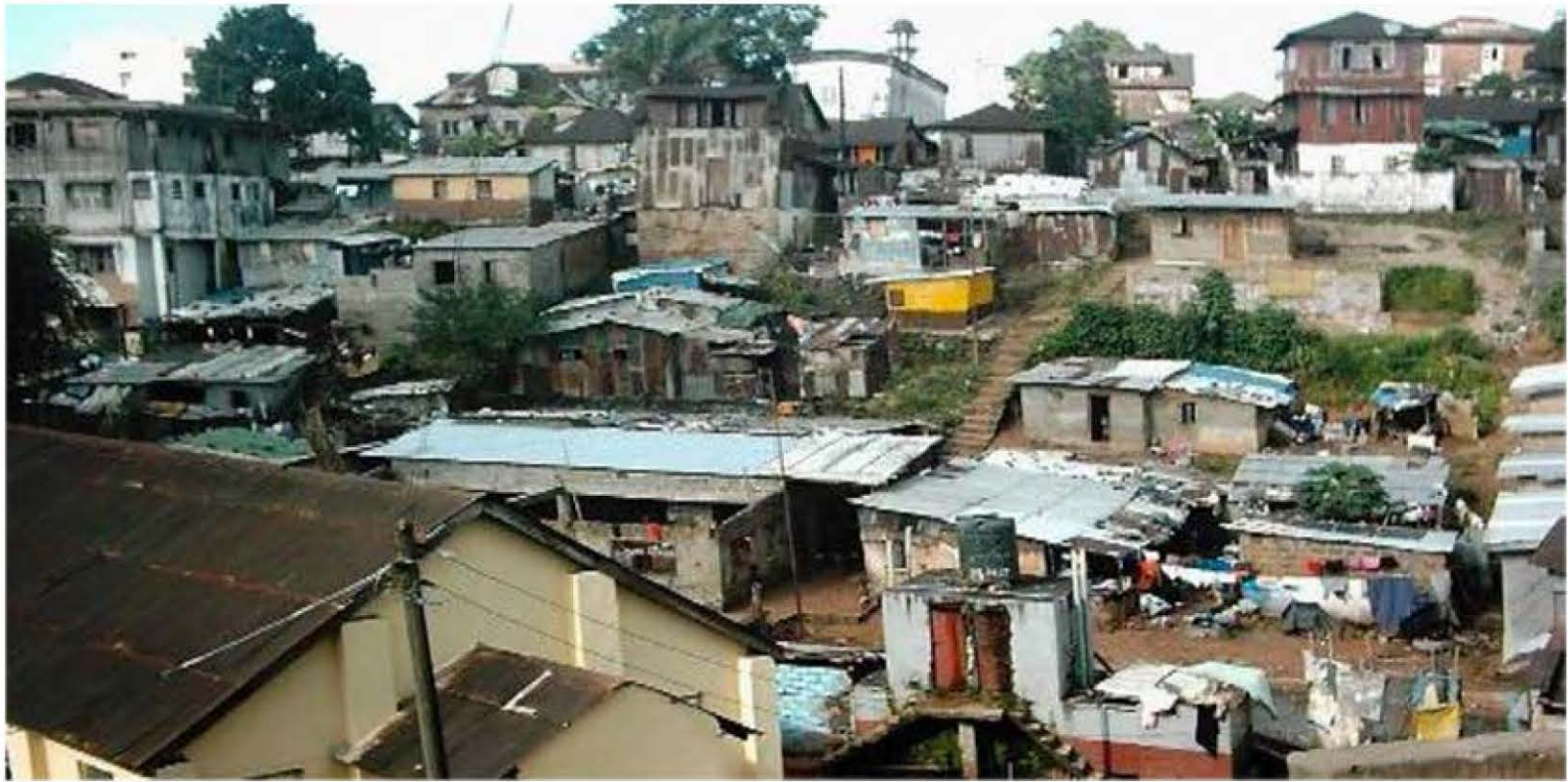
*The Pew Research Center's Project for Excellence in Journalism (2012). The State of the News Media 2012. Accessed on March 31 at: <http://stateofthemedias.org/2012/overview-4/key-findings/>*

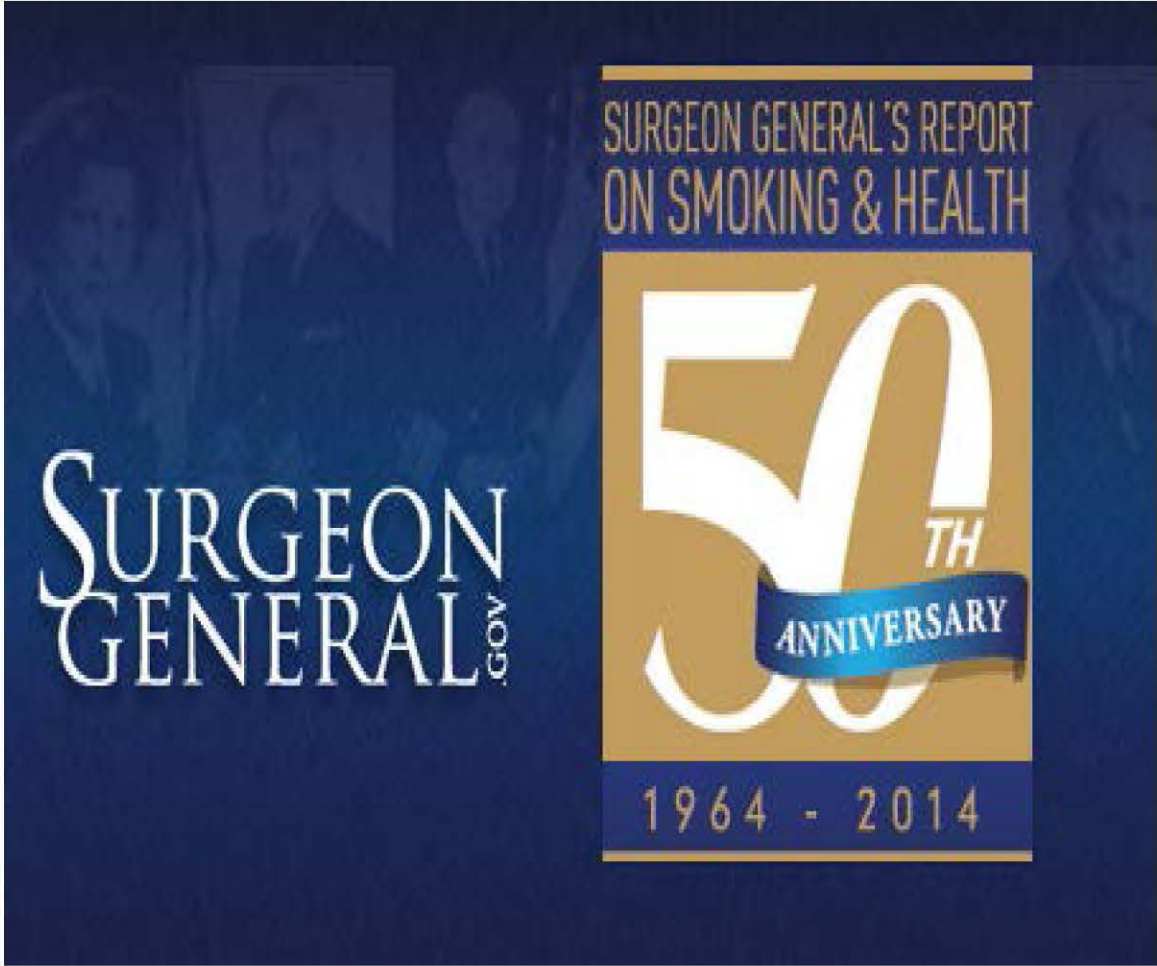
# Promises.....

- **Broad and wide penetration**
- **Data synchronization and Integration**
  - E.g. with EHRs
- **Opportunity to educate**
  - “teachable moments”
  - Personalized or tailored education
- **Public-Private partnership**

# Perils....

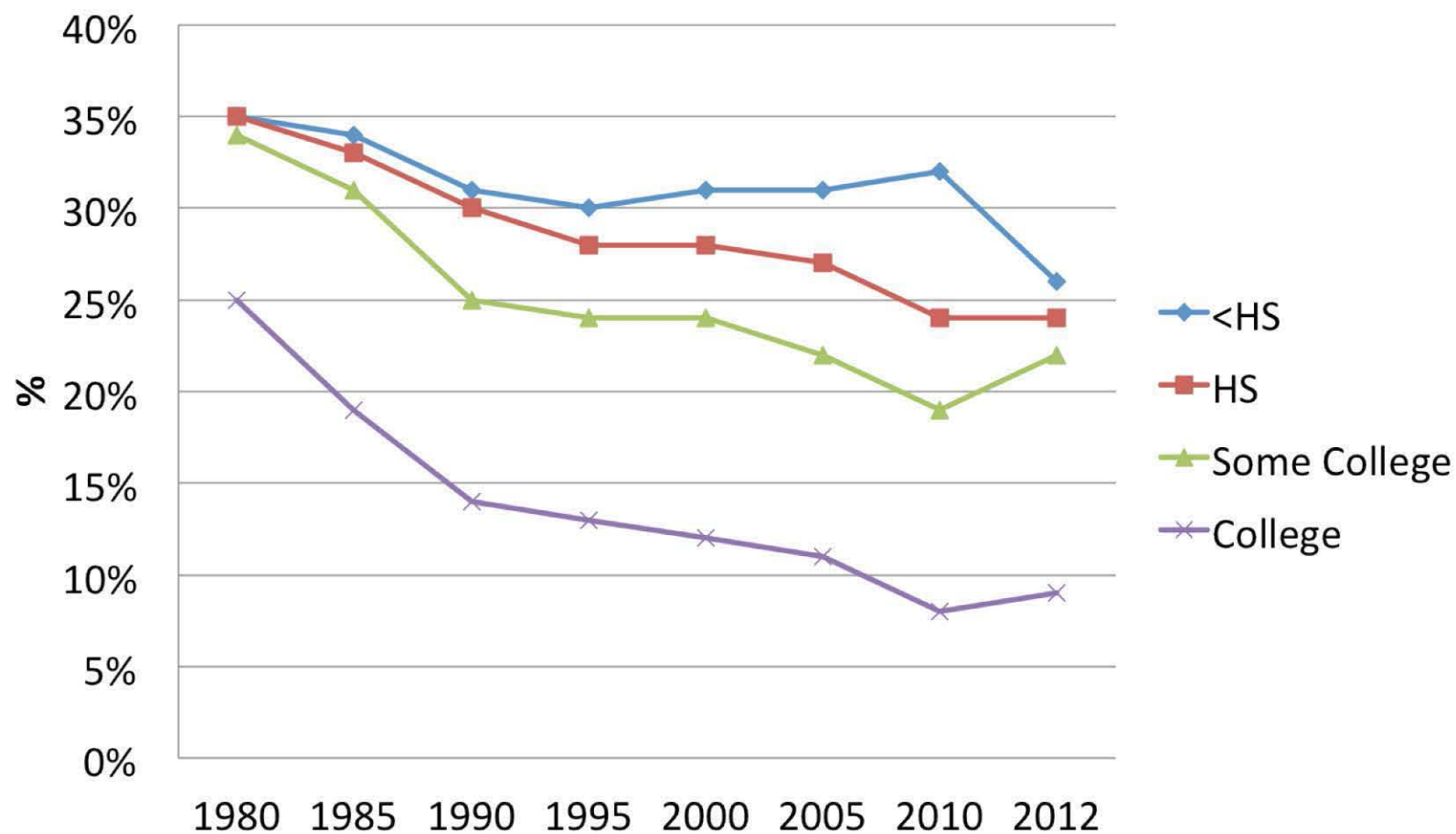
- The Context in which ICTs are introduced matter
- The role of *class, race* and *place*
- *Health Inequalities and Communication Inequalities*







# US Cigarette Smoking Prevalence by Education, 1980-2012



# Burden of smoking on Low SEP Individuals

- **Smoking disproportionately impacts those from low socioeconomic position (SEP)**

- 29% of people below the poverty level smoke, compared with 18% above the poverty level
- 26% of those with a less than high school education smoke compared to 9% with a college degree

- **Smoking initiation is often patterned by subgroup**

- Low SEP is a predictor of smoking initiation
- African Americans are more likely to initiate smoking as young adults than as youth

| Middle School Smokers |    | High School Smokers |     |
|-----------------------|----|---------------------|-----|
| Black                 | 5% | Black               | 10% |
| Hispanic              | 7% | Hispanic            | 18% |
| White                 | 4% | White               | 23% |

# Social determinants

- **Race/ethnicity**
- **Living conditions**
- **Socioeconomic status**
  - Income
  - Education
  - Occupation
- **Gender**
- **Sexuality**
- **Immigration status**
- **Stressful life events over the lifecourse**



# *Communication, class, place and poverty*

# Communication Inequality...

*...differences among social classes in the **manipulation**, and **distribution** of information at the group level and differences in **access to** and **ability to** take **advantage** of information at the individual level.*

# Recent work

## Socioeconomic Status (SES), Race and ethnicity are associated with:

- Subscription to cable or satellite TV and the Internet
- Daily readership of newspapers
- Differential *time* with different media
- *Preferences* for different media

*Attention* to health content in different media

Processing (confusion) of health information

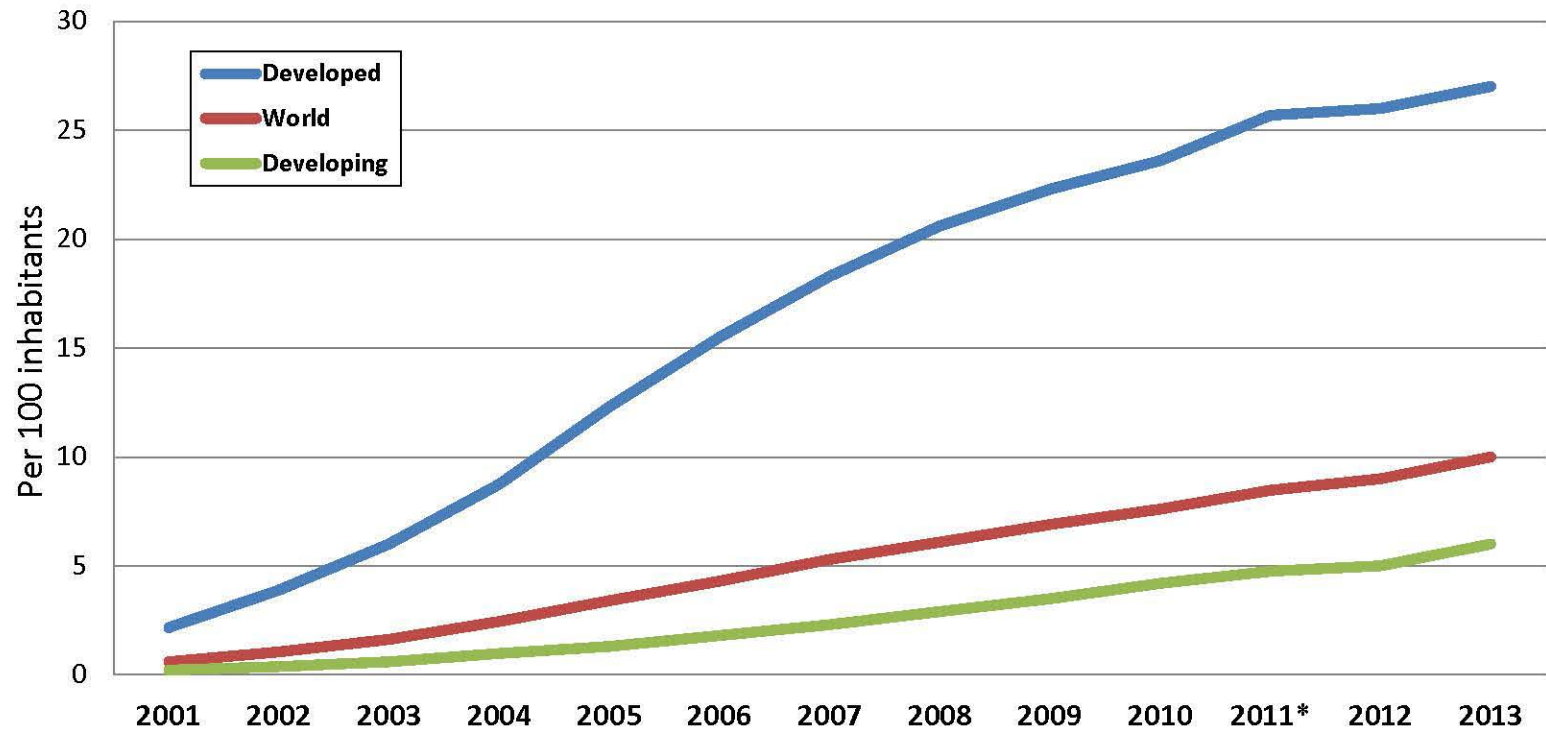
Trust in media

*Knowledge gaps* in health

Intermittent smoking

*Viswanath et al., 2012; Viswanath, 2011; Kontos et al., 2011; Blake et al., 2010; Blake et al., 2011; Ackerson & Viswanath, 2009; Ramanadhan & Viswanath, 2006; Arora et al., 2008; Viswanath et al., 2006; Viswanath, 2006; Viswanath & Kreuter, 2007; Kontos, Bennett & Viswanath, 2007*

# Fixed (wired)-broadband subscriptions per 100 inhabitants, 2001-2013\*

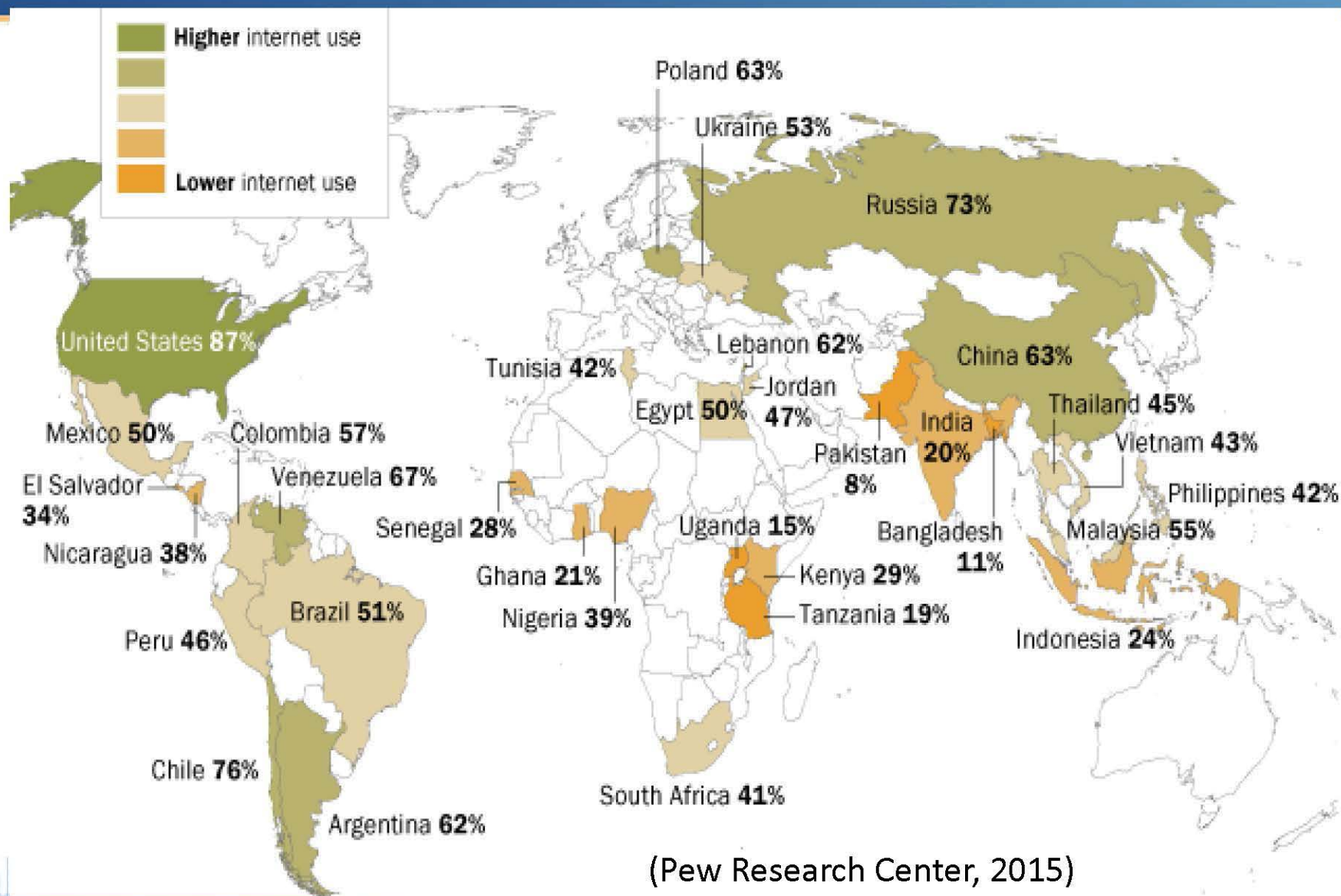


\* Estimate.

The developed/developing country classifications are based on the UN M49, see:  
<http://www.itu.int/ITU-D/ict/definitions/regions/index.html>

International Telecommunication Union [Report on the Internet]. World Telecommunication/ICT Indicators Database. [www.itu.int/ITU-D/ict/statistics/](http://www.itu.int/ITU-D/ict/statistics/), Viswanath et al., 2011

# Internet Access Across the Globe

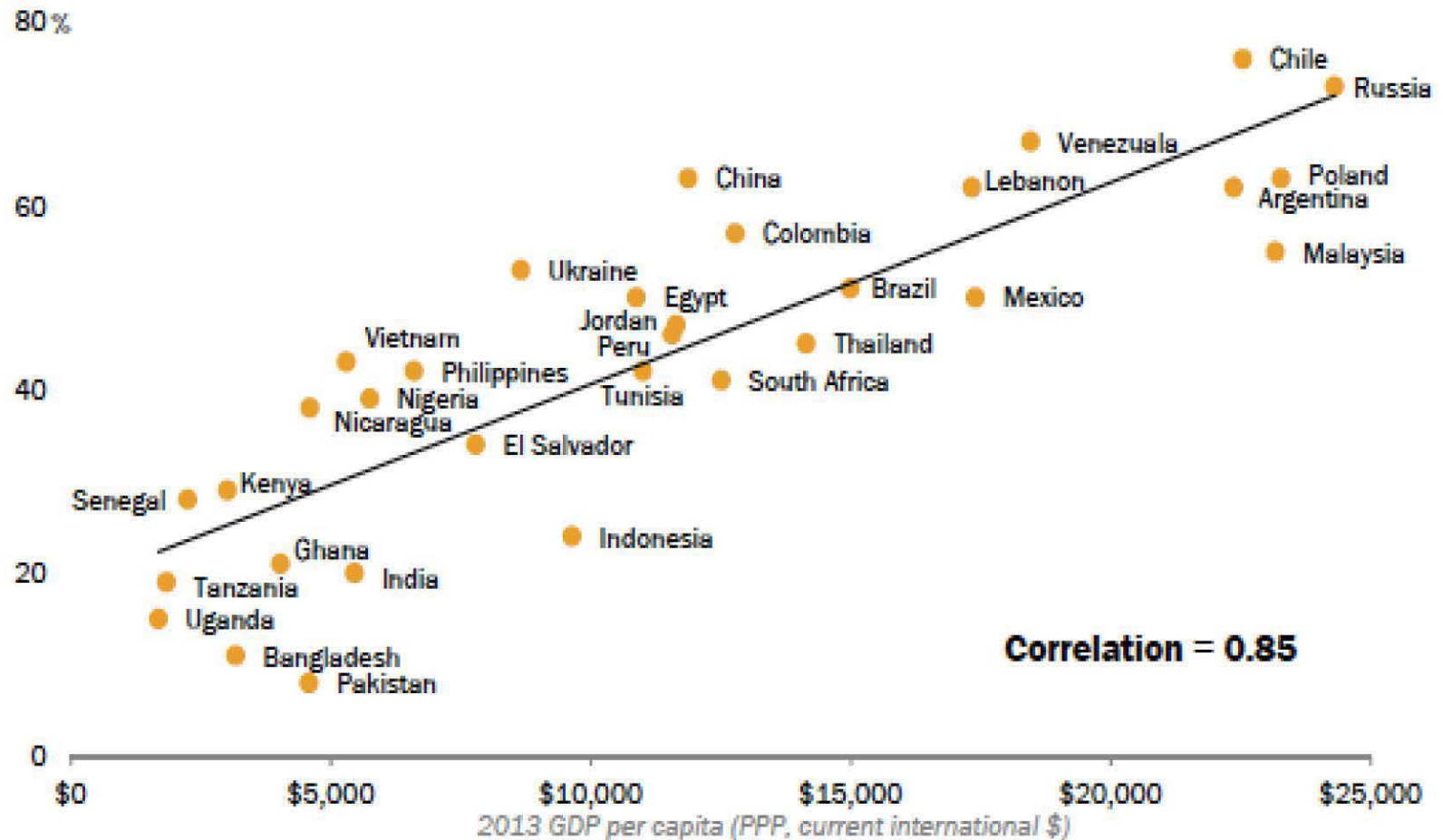


(Pew Research Center, 2015)



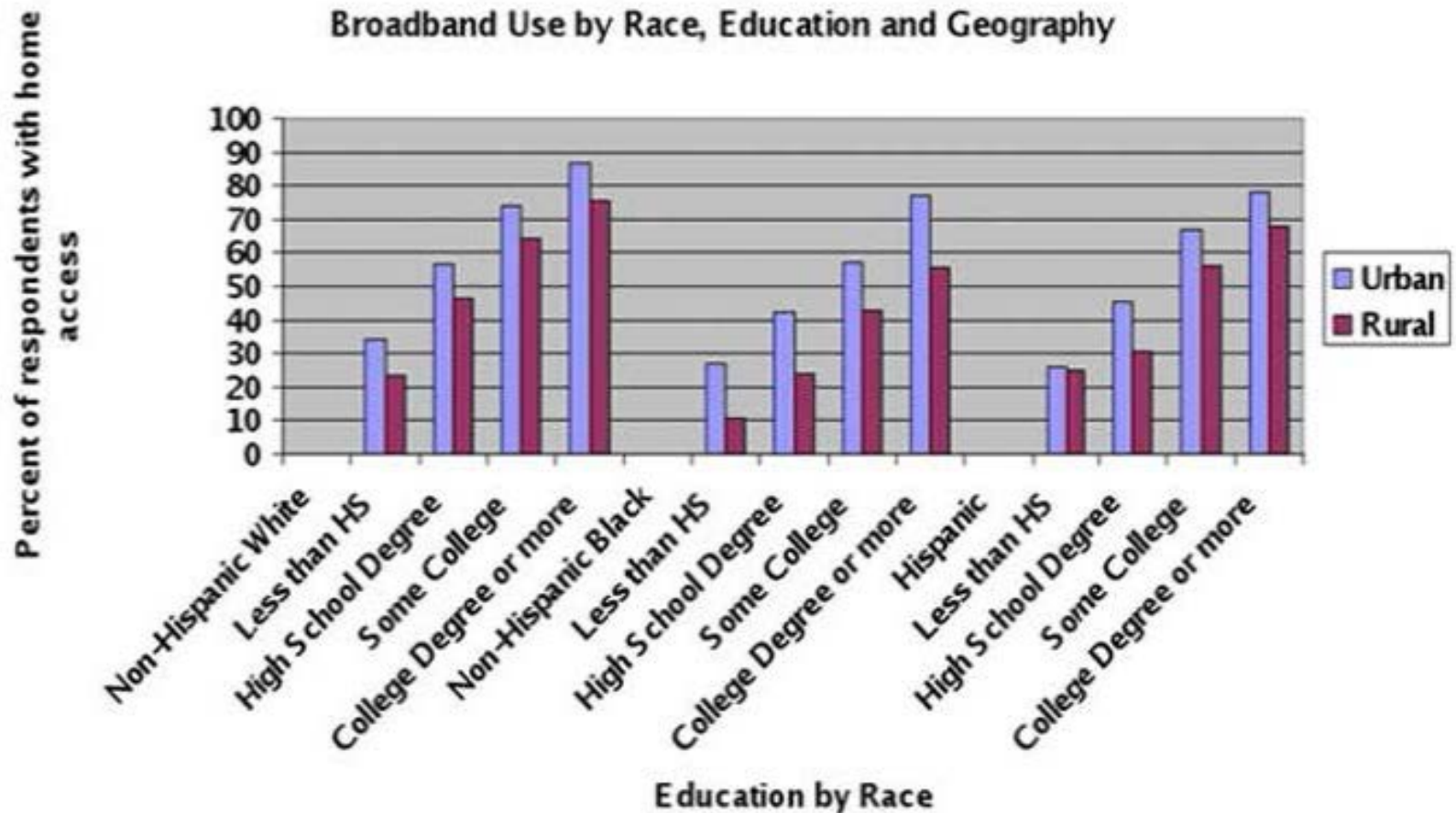
## Internet Access Strongly Related to Per Capita Income

Adults who use the internet at least occasionally or own a smartphone



Source: Spring 2014 Global Attitudes survey. Q87 & Q89. Data for GDP per capita (PPP) from IMF World Economic Outlook, October 2014.

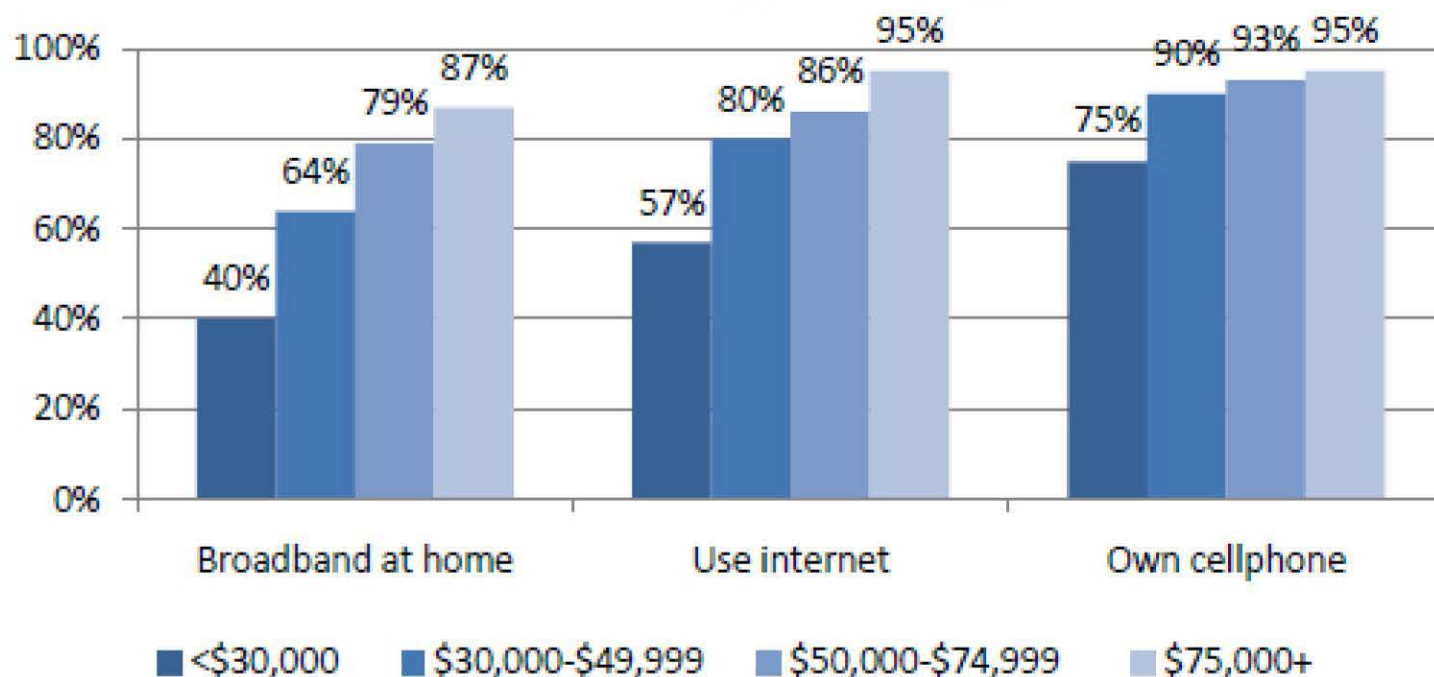
# Broadband use: Exemplar of Intersectionality



NTIA, 2010

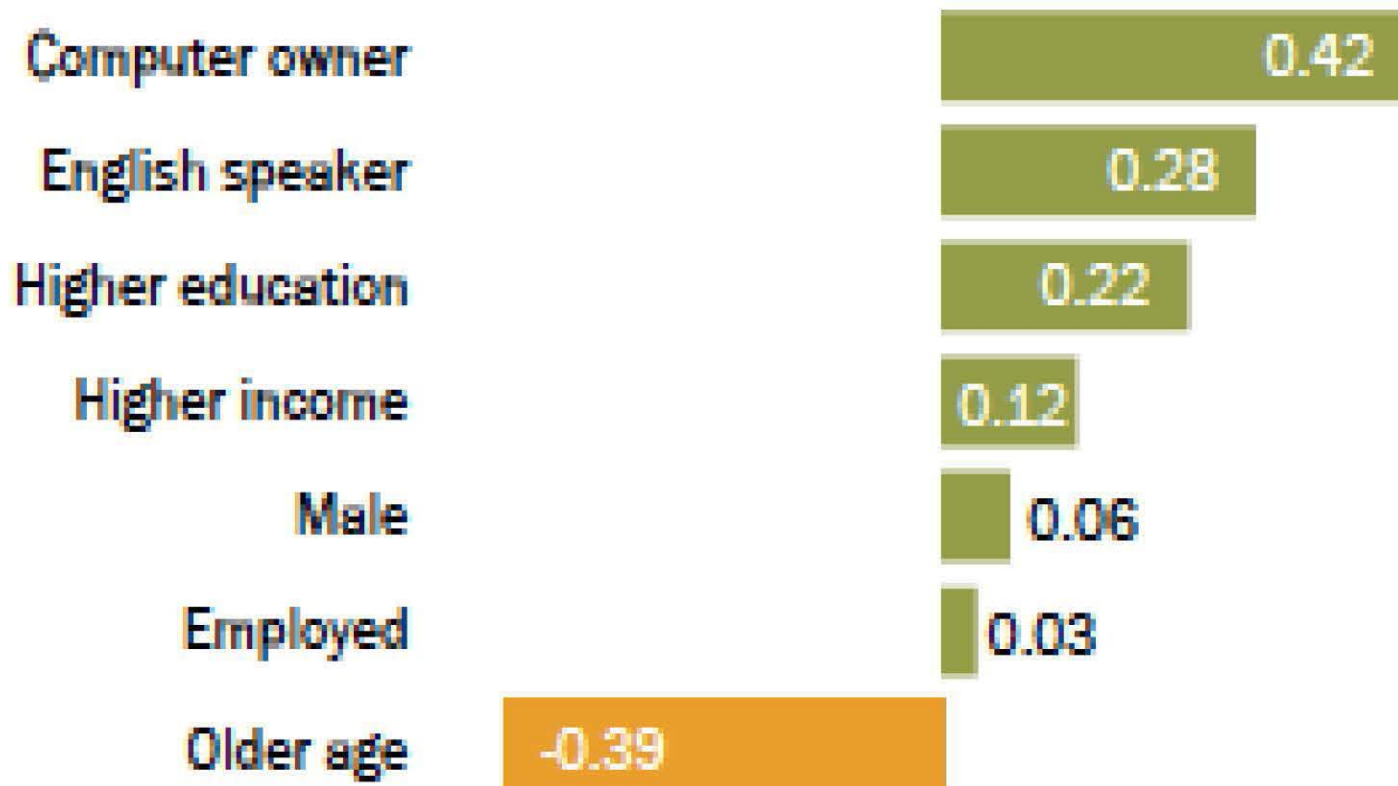
# Disparities by Income Level

**Figure 1. Comparison of broadband access at home, cell phone ownership, and internet usage by income brackets of general population**



Source: Pew Research Center's Internet & American Life Project, August 9-September 13, 2010 Tracking Survey. N=3,001 adults and the margin of error is +/- 2.5 percentage points.

# Who uses the Internet....



Note: The number shown is the difference in predicted probability of internet usage between selected groups for each variable. For example, the predicted probability that someone will use the internet

# *Promises and Pitfalls: Two Stories*

# *Story 1*

# Click to Connect (C2C)

***How do computer and internet barriers impact the health information seeking behaviors of low SEP individuals?***

# Click to Connect (C2C)

## Selected Perceived Barriers....

- **70% No free time to use computer**
- **54% Concerned about information quality**
- **43% Takes a lot of effort to find health information**
- **30% Frustrated in search for information**



# Click to Connect (C2C)

## Technology Barriers...

- **Over the study period, participants experienced:**
  - A median of 2 computer problems (lasting a median of 6 days)
    - Most common issue: computer virus
  - A median of 2 internet problems (median 6.5 days)
    - Most common issues: general connectivity issues, scheduling setup from service provider



# Internet Connectivity Issues Decreased Health Information Seeking

| Health information seeking   | IRR (95% CI)<br>n=118 |
|------------------------------|-----------------------|
| Days without internet access | 0.989 (0.980, 0.998)* |
| * p<0.05                     |                       |

- Indicate that access alone is not enough
  - Even with full IT support, internet connectivity barriers were still a major issue for participants
  - Frequent moves often exacerbated these issues

McLoud et al., In Press.

# Click to Connect (C2C)

*How do low SEP individuals use the internet for other purposes (capital enhancing or entertainment), and how does this impact health information seeking?*

# Introduction

## Who is best positioned to participate in the online world?

- **Extent of Use- Diverse ways of using the internet**
  - Social networking, streaming, reference, email  
(Wei, 2012)
- **Capital-Enhancing Websites-**
  - Higher education
  - Money
  - Government resources
  - Housing
  - Jobs
  - News

(Hargittai & Hinnant, 2008; Livingstone & Helsper, 2007)

Adds context to internet use among low SEP over health information alone

# Low SEP: Seen as Using Internet Primarily for Entertainment

## The New York Times

Wasting Time Is New Divide in Digital Era



Drew Kelly for The New York Times  
Alejandro Zamora, an eighth grader, calls himself "a Facebook freak." His mother would prefer that he use the computer for homework.

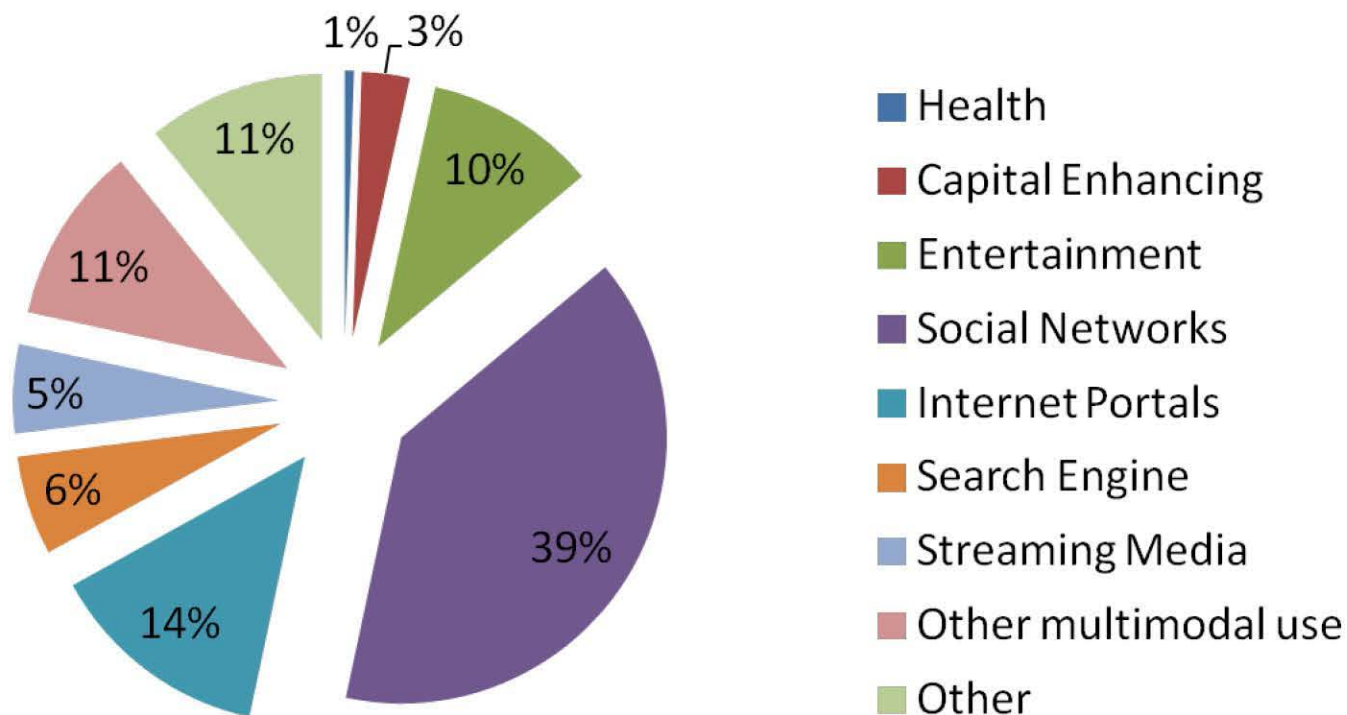
### Time Wasting Gap

*"As access to devices has spread, children in poorer families are spending considerably more time than children from more well-off families using their television and gadgets to watch shows and videos, play games and connect on social networking sites, studies show"*

Other "usage gap" theories also posit that low SEP individuals use the internet more often for primarily entertainment purposes compared to their high SEP counterparts

[http://www.nytimes.com/2012/05/30/us/new-digital-divide-seen-in-wasting-time-online.html?pagewanted=all&\\_r=1&](http://www.nytimes.com/2012/05/30/us/new-digital-divide-seen-in-wasting-time-online.html?pagewanted=all&_r=1&)

# Internet Use Breakdown by Number of Hits



# Capital Enhancing Internet Use and Health Seeking

|                             | IRR (95% CI)            |
|-----------------------------|-------------------------|
| <b>News Site Users</b>      |                         |
| Medium                      | 5.87 (3.32, 10.38)**    |
| High                        | 11.36 (6.21, 20.79)**   |
| <b>Financial Site Users</b> |                         |
| Medium                      | 1.928 (1.009, 3.683)*   |
| High                        | 5.126 (2.814, 9.336)**  |
| <b>Education Site Users</b> |                         |
| Medium                      | 3.037 (1.637, 6.35)**   |
| High                        | 6.943 (3.733, 12.916)** |
| <b>Residence Site Users</b> |                         |
| Medium                      | 2.159 (1.112, 4.193)*   |
| High                        | 3.913 (2.033, 7.532)**  |

|                                 | IRR (95% CI)            |
|---------------------------------|-------------------------|
| <b>Job Search Site Users</b>    |                         |
| Medium                          | 3.051 (1.652, 5.640)**  |
| High                            | 6.170 (3.275, 11.624)** |
| <b>Government Site Users</b>    |                         |
| Medium                          | 4.820 (2.640, 8.800)**  |
| High                            | 8.897 (4.822, 16.415)** |
| <b>Total Capital Site Users</b> |                         |
| Medium                          | 2.268 (1.265, 4.066)**  |
| High                            | 8.708 (4.842, 15.661)** |

\*p<0.05, \*\*p<0.001

Adjusted for age, race, employment status, native language, and wave

# Entertainment Use and Health Seeking

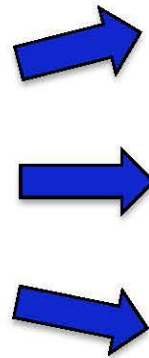
- **Entertainment use was positively associated with health information seeking**
  - Compared to low users:
  - Medium users had **3.4** times the rate of health seeking ( $p < 0.001$ , 95% CI 1.9, 6.2)
  - High users had **3.9** times the rate of health seeking ( $p < 0.001$ , 95% CI 2.1, 7.4)



# *Story 2*

# Project CLEAR

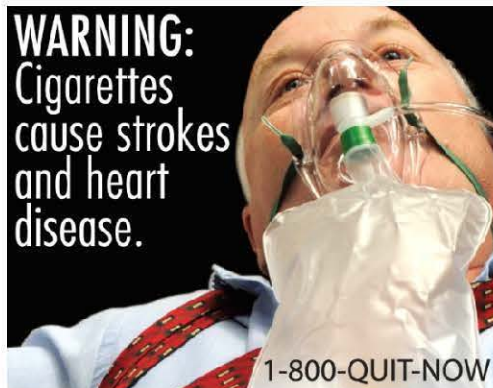
- Are there ways to close the inequalities between different SEP groups on risk perceptions and behaviors on tobacco use?
  - Current research must focus more upon the specific communication behaviors and context of these individuals
  - Will new strategies effectively reach them?



# Project CLEAR Aims

The overall aim of Project CLEAR was to study the impact of new FDA-mandated graphic health warnings on smokers and non-smokers from **vulnerable population groups**.

# Graphic Health Warning Labels



# International Graphic Health Warnings-Added for comparison

**WARNING**

**Cigarettes are a major cause of heart disease.**

Smokers are up to 4 times more likely to develop heart disease than non-smokers.

You can quit. We can help.  
 1-866-366-3667  
[gosomefree.gc.ca/quit](http://gosomefree.gc.ca/quit)

Health Canada



**SMOKING CAUSES LUNG CANCER**

**BRYAN DIED AGED 34**

**10 WEEKS EARLIER**



**WARNING**

**This is what dying of lung cancer looks like.**

Barb Tarbox died at 42 of lung cancer caused by cigarettes.

You can quit. We can help.  
 1-866-366-3667  
[gosomefree.gc.ca/quit](http://gosomefree.gc.ca/quit)

Health Canada




**"I wish I had never started smoking."**

"I was diagnosed with cancer of the larynx when I was 48. I had to have my vocal cords removed, and now I breathe through a hole in my throat."  
 – Leroy

Need help to quit?  
 1-866-366-3667  
[gosomefree.gc.ca/quit](http://gosomefree.gc.ca/quit)

Health Canada



**WARNING TOBACCO SMOKE HARMS YOUR BABY**



**WARNING**

**A single stroke can leave you helpless.**

Cigarettes are a major cause of stroke.

You can quit. We can help.  
 1-866-366-3667  
[gosomefree.gc.ca/quit](http://gosomefree.gc.ca/quit)

Health Canada



**WARNING**

**ORAL CANCER**

These white spots are a form of oral cancer caused primarily by smoking. Even if you survive, you may lose part or all of your tongue.

Need help to quit?  
 1-866-366-3667  
[gosomefree.gc.ca/quit](http://gosomefree.gc.ca/quit)

Health Canada



**WARNING TOBACCO SMOKE CAN KILL BABIES**



**WARNING**

**Your kids are sick of your smoking.**

Second-hand smoke causes more frequent and severe asthmatic attacks in children.

You can quit. We can help.  
 1-866-366-3667  
[gosomefree.gc.ca/quit](http://gosomefree.gc.ca/quit)

Health Canada



# Mixed Methods Approach

## Focus groups

- 8 Focus groups in 2012 and early 2013
- Explored GHW resonance across diverse, vulnerable populations
- Gathered information to inform
  - Future supplementary GHW communication campaigns
  - The experimental survey

## Experimental survey

- Test GHW resonance across diverse, vulnerable populations using random assignment

# Survey Inclusion Criteria

- Smokers and non-smokers
- Adults age 18-70
- White, Black, or Hispanic
- Recruitment efforts have focused on **low SEP participants from diverse groups**
  - LGBT
  - Blue Collar Workers
  - Spanish Speakers
  - Young Adults

# Survey Recruitment- Reaching Low SEP Participants

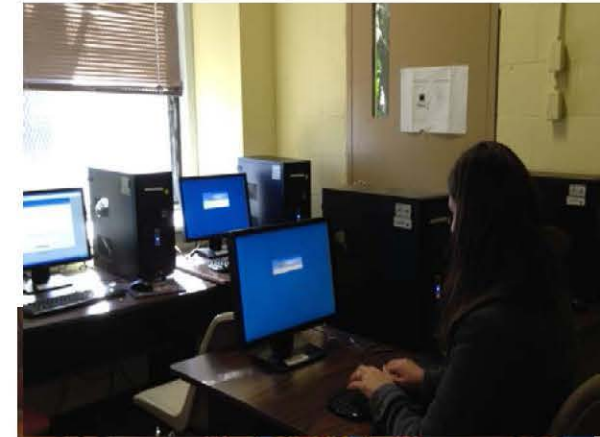
**Extensive measures to include the target population**

**Survey conducted at:**

- Community colleges and trade schools
- Community centers and senior centers
- Housing projects
- Safe houses
- Viswanath lab

**Recruitment through several channels**

- Community partners
- Word of mouth
- Flyers
- Craigslist





# Project CLEAR Demographic Comparison to National Studies

|                      | Project CLEAR | US Census 2010 | Hints 2014     | PEW Internet 2013 |
|----------------------|---------------|----------------|----------------|-------------------|
| Total n              | 1,200         | 308,745, 538   | 7,674          | 7,235             |
| <b>Income</b>        |               |                |                |                   |
| Less than \$10,000   | 21%           | 8%             | 31% < \$35K    | 9%                |
| \$10,000 to \$29,999 | 26%           | 18%            |                | 23%               |
| \$30,000-\$49,999    | 15%           | 25%            | 13% \$35-\$50K | 17%               |
| \$50,000-\$74,999    | 8%            | 18%            |                | 11%               |
| \$75,000+            | 6%            | 32%            | 29%            | 15%               |
| <b>Education</b>     |               |                |                |                   |
| Less than HS         | 16%           | 8%             | 9%             | 13%               |
| HS Degree/GED        | 38%           | 50%            | 25%            | 32%               |
| Some College         | 29%           | 21%            | 30%            | 24%               |
| Bachelor's +         | 16%           | 28%            | 36%            | 28%               |

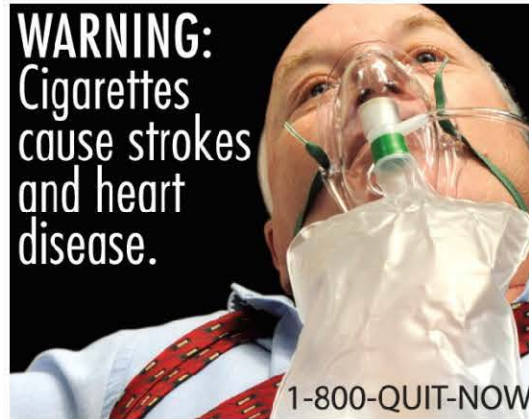
# Labels with Highest Effectiveness Ratings



56% "Very Effective"

Felt "Extremely"

|             |     |
|-------------|-----|
| Grossed out | 42% |
| Scared      | 27% |
| Sad         | 26% |
| Worried     | 25% |



55% "Very Effective"

Felt "Extremely"

|             |     |
|-------------|-----|
| Sad         | 30% |
| Scared      | 28% |
| Worried     | 28% |
| Grossed out | 26% |



54% "Very Effective"

Felt "Extremely"

|             |     |
|-------------|-----|
| Grossed out | 38% |
| Worried     | 31% |
| Sad         | 25% |
| Scared      | 25% |

# Conclusions

- Future risk communication research must operate with an understanding of communication inequalities with a particular focus on the poor/poorer countries
- ICTs do show tremendous promise
  - Need policies and programs to facilitate penetration and use
- There are opportunities to engage low SEP individuals
  - Must understand context of communication behaviors
  - More work needed with low SEP populations and detailed measures

- Cabral Bigman, PhD
- Carmenza Bruff, BS
- Hope Cummings
- Rachel McCloud, ScD
- Hana Hayashi, MPH
- Yulin Hswen, MPH
- Minsoo Jung, PhD
- Nancy Klockson
- Emily Kontos, ScD
- Lisa Lowery, BS
- Janhavi Malliah, MBBS
- Sam Mendez
- Yudy Muneton, LCSW
- Sara Minsky, MPH
- Rebekah Nagler, PhD
- Shoba Ramanadhan, ScD
- Tanjina Shabu, BS
- Farah Vimadalal

[www.viswanathlab.org](http://www.viswanathlab.org)

McCloud RF, Okechukwu CA, Sorensen G, Viswanath K. Entertainment or health? Exploring the internet usage patterns of the urban poor. *J Med Internet Res* (in press). doi:10.2196/jmir.4375

McCloud RF, Okechukwu CA, Sorensen G, Viswanath K. Beyond access: Barriers to internet health information seeking among the urban poor. *J Am Med Inform Assoc* (in press). doi:10.1093/jamia/ocv204

Pew Research Center, March, 2015, "Internet Seen as Positive Influence on Education but Negative Influence on Morality in Emerging and Developing Nations". Available at <http://www.pewglobal.org/2015/03/19/internet-seen-as-positive-influence-on-education-but-negative-influence-on-morality-in-emerging-and-developing-nations/>. Accessed on Feb.20, 2016