

2012 Kellogg Marketing Leadership Summit

Inventing the Future of Marketing

SPEAKER

James Fowler

Professor of Medical Genetics and Political Science, UCSD

From Theory to Practice: How Social Networks Shape Our Lives

Egon
Zehnder
International

McKinsey & Company

NORTHWESTERN UNIVERSITY



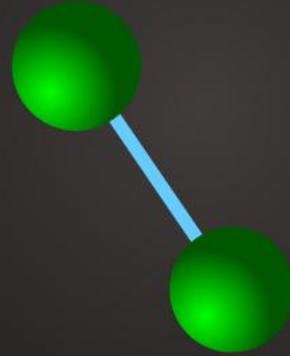


Who are YOUR Friends?

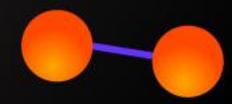
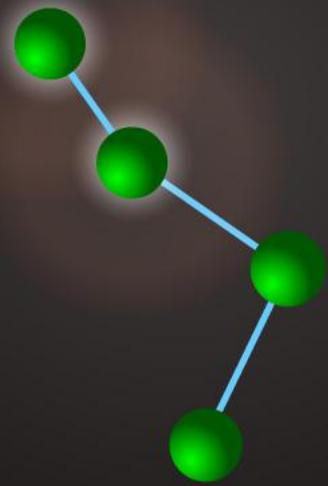
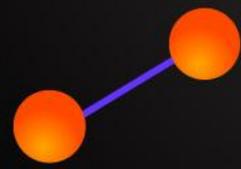
Who do you discuss **Important Matters** with?

Who do you spend your **Free Time** with?

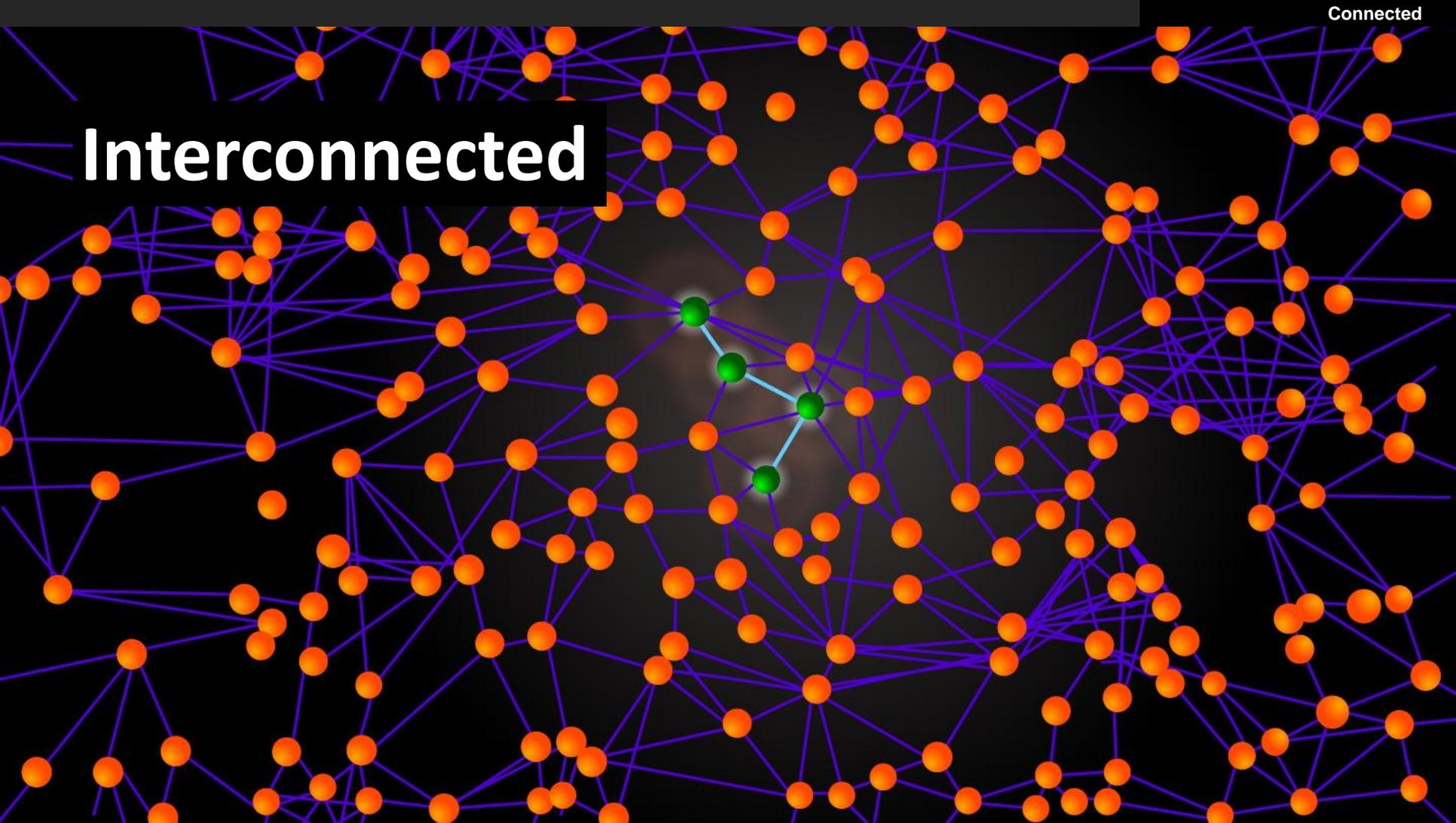
One Pair



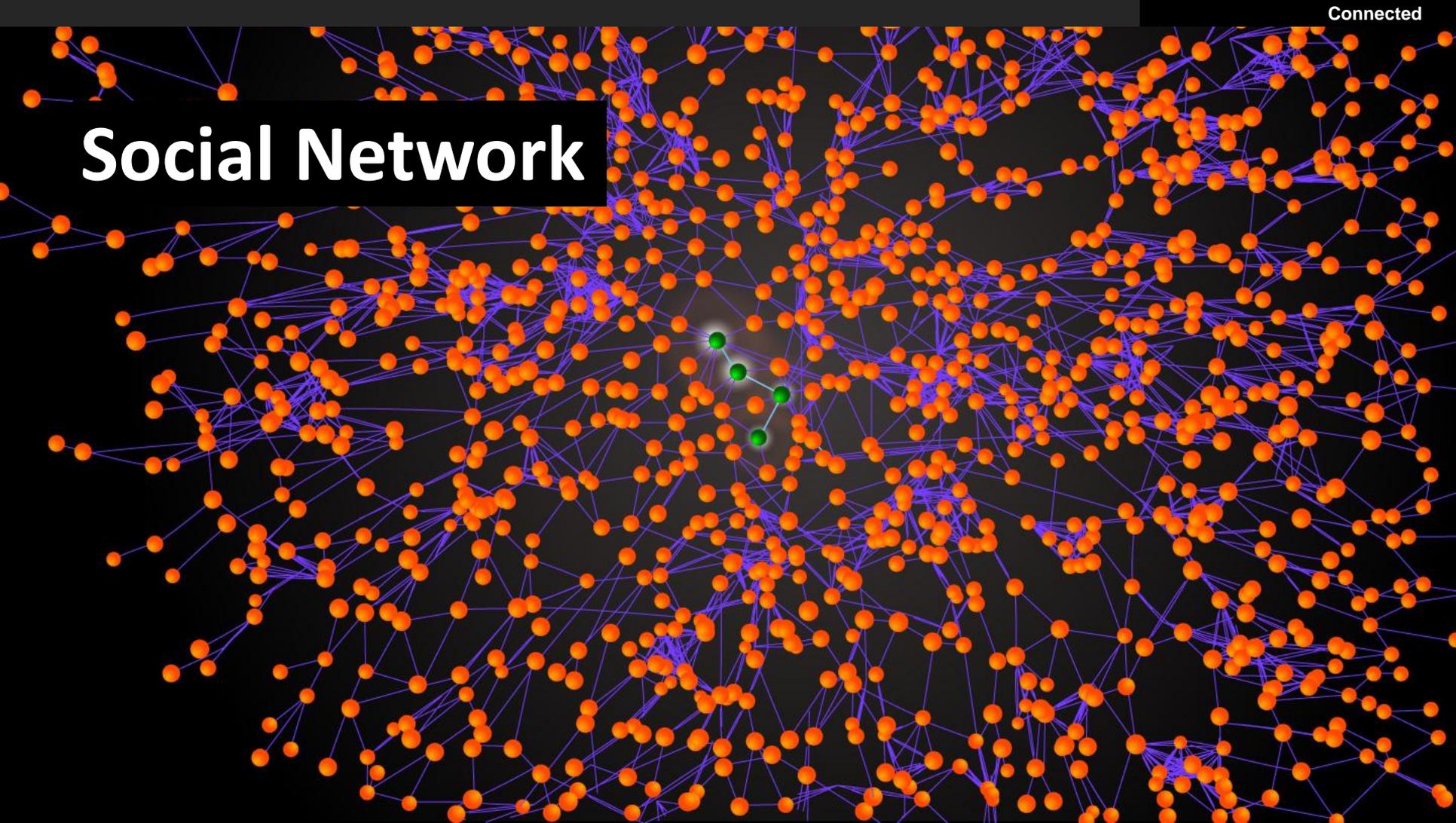
Many Pairs



Interconnected



Social Network





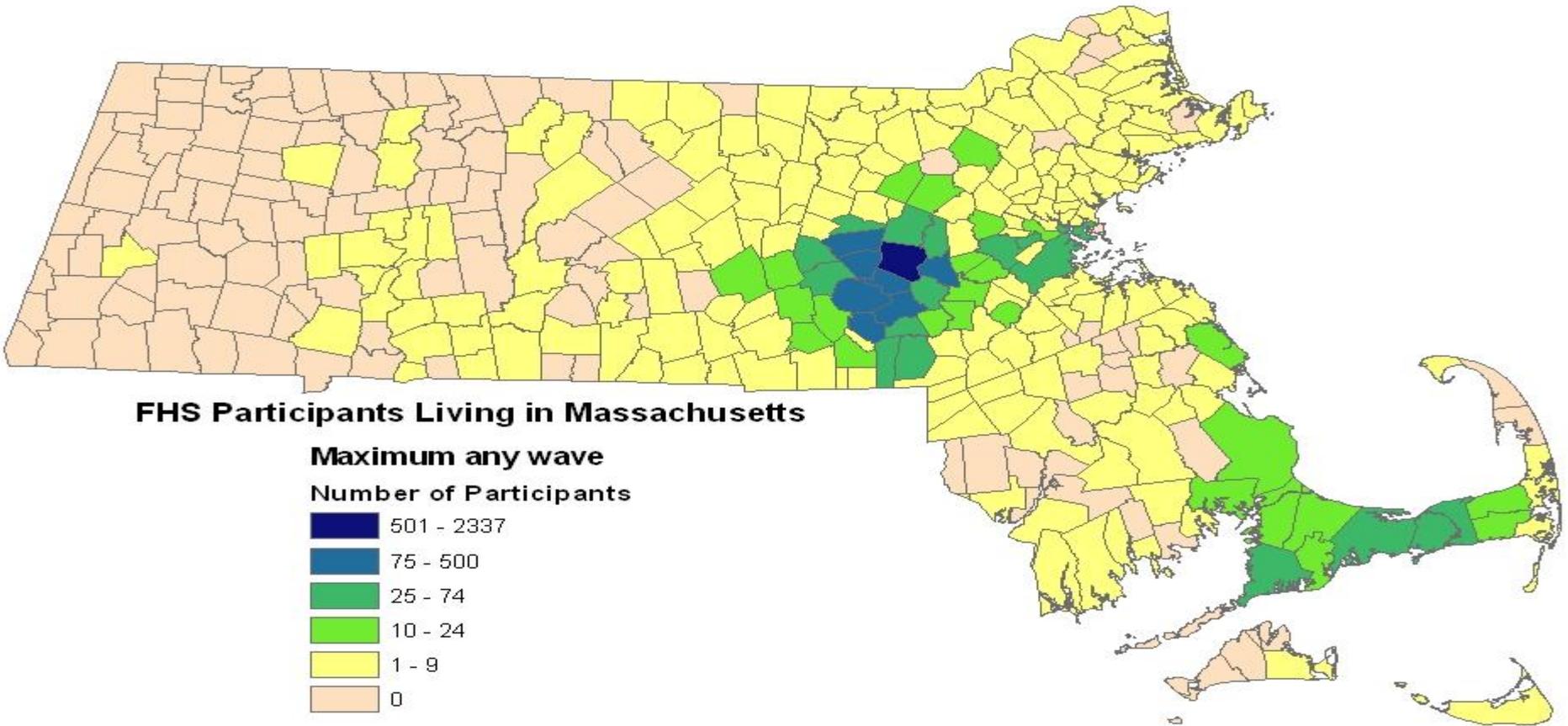
The Framingham Heart Study

Original Cohort
1948
N = 5,209

Offspring Cohort
1971
N = 5,124

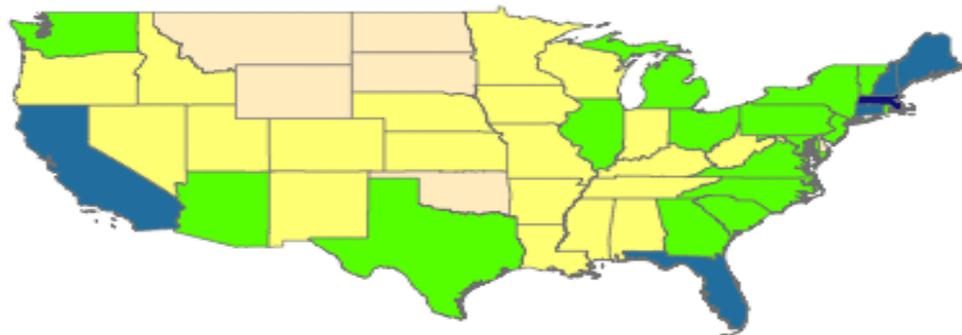
Gen 3 Cohort
2002
N ~ 4,000





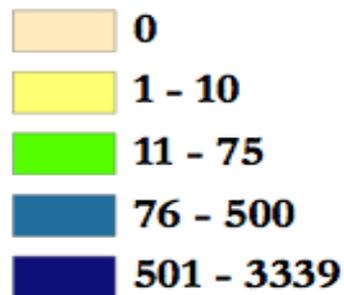
FHS Participants Living in Massachusetts

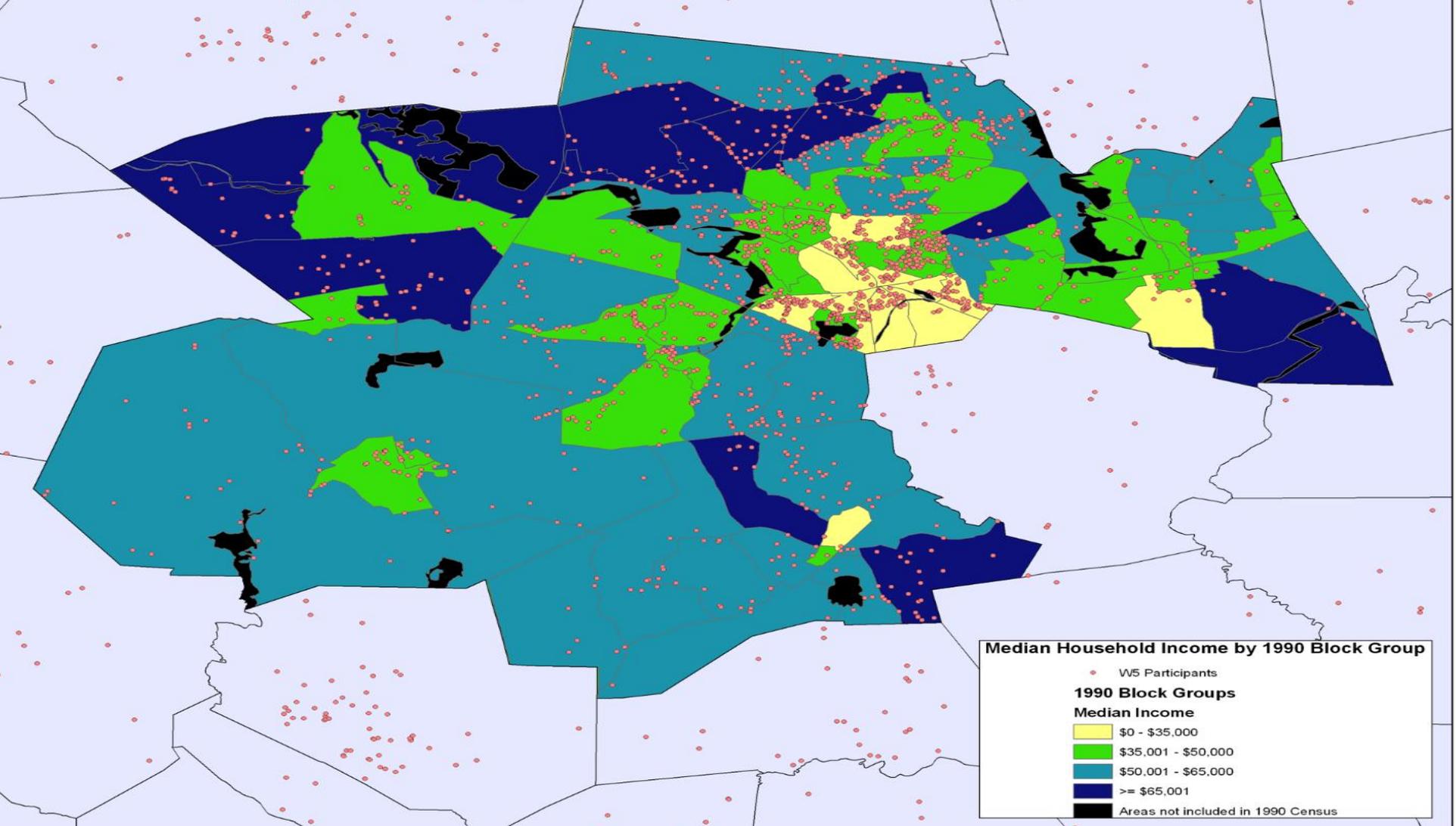
Maximum any wave
Number of Participants

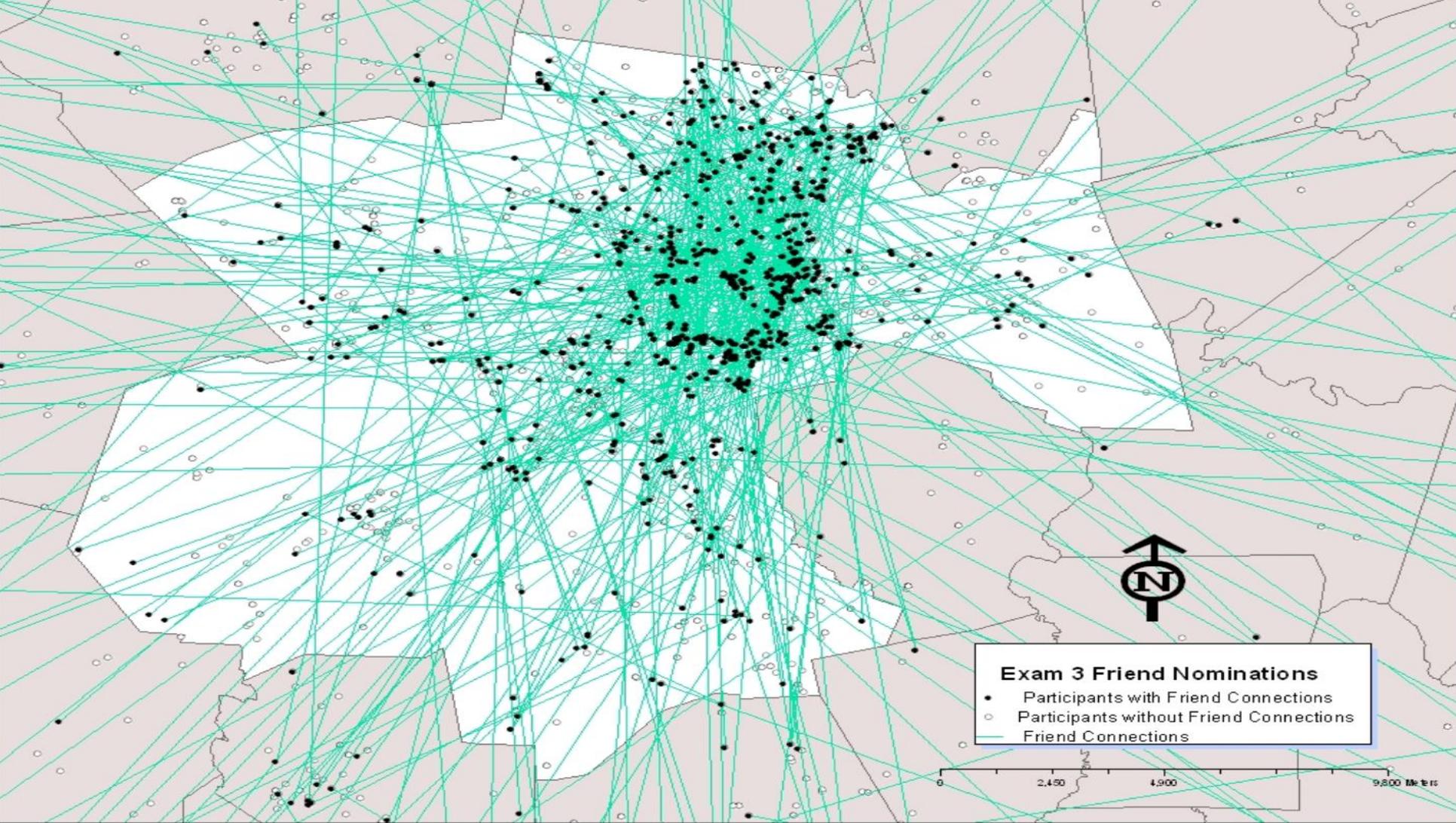


FHS Participants in US States

Number of Participants at Wave 7

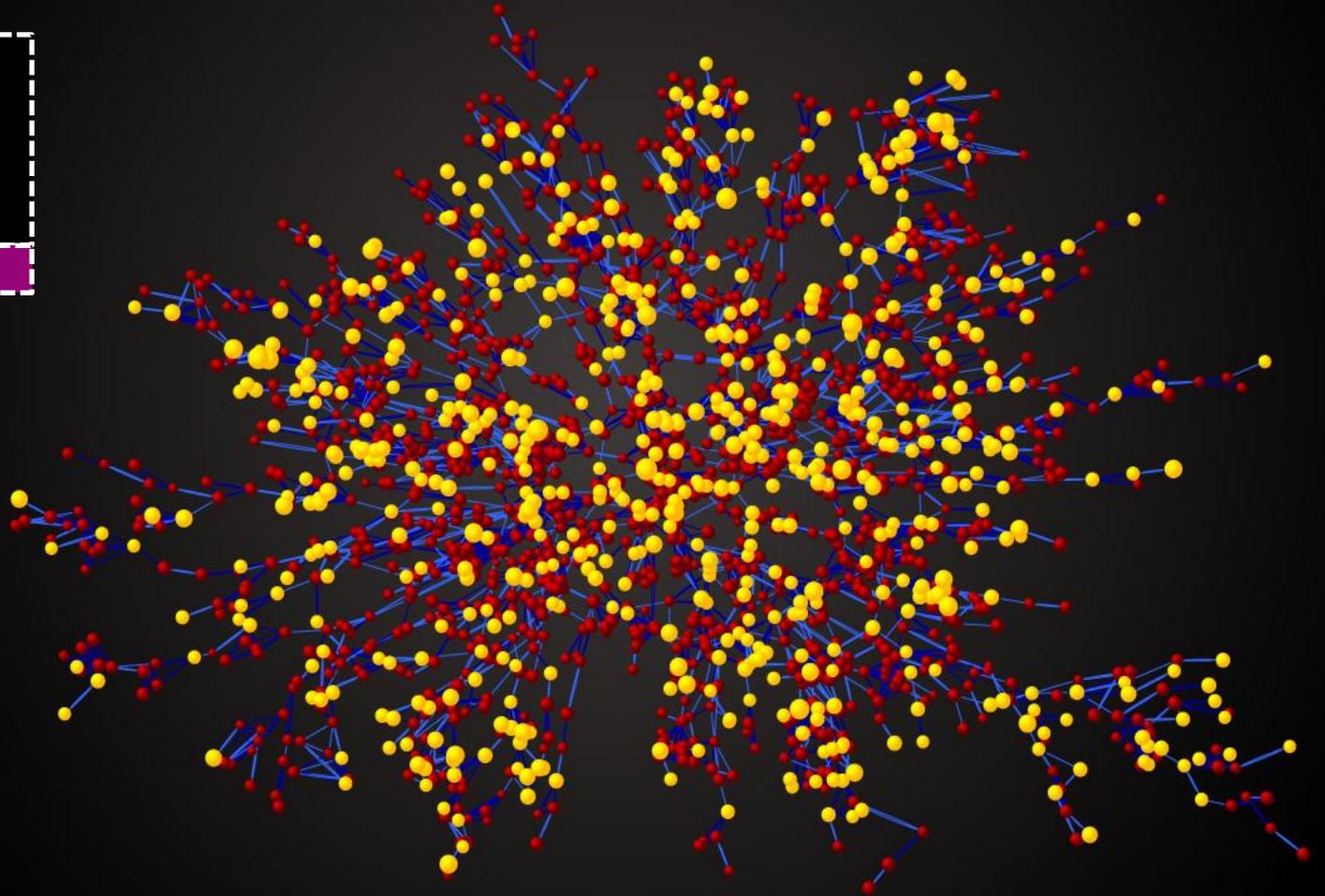






Obesity Clusters

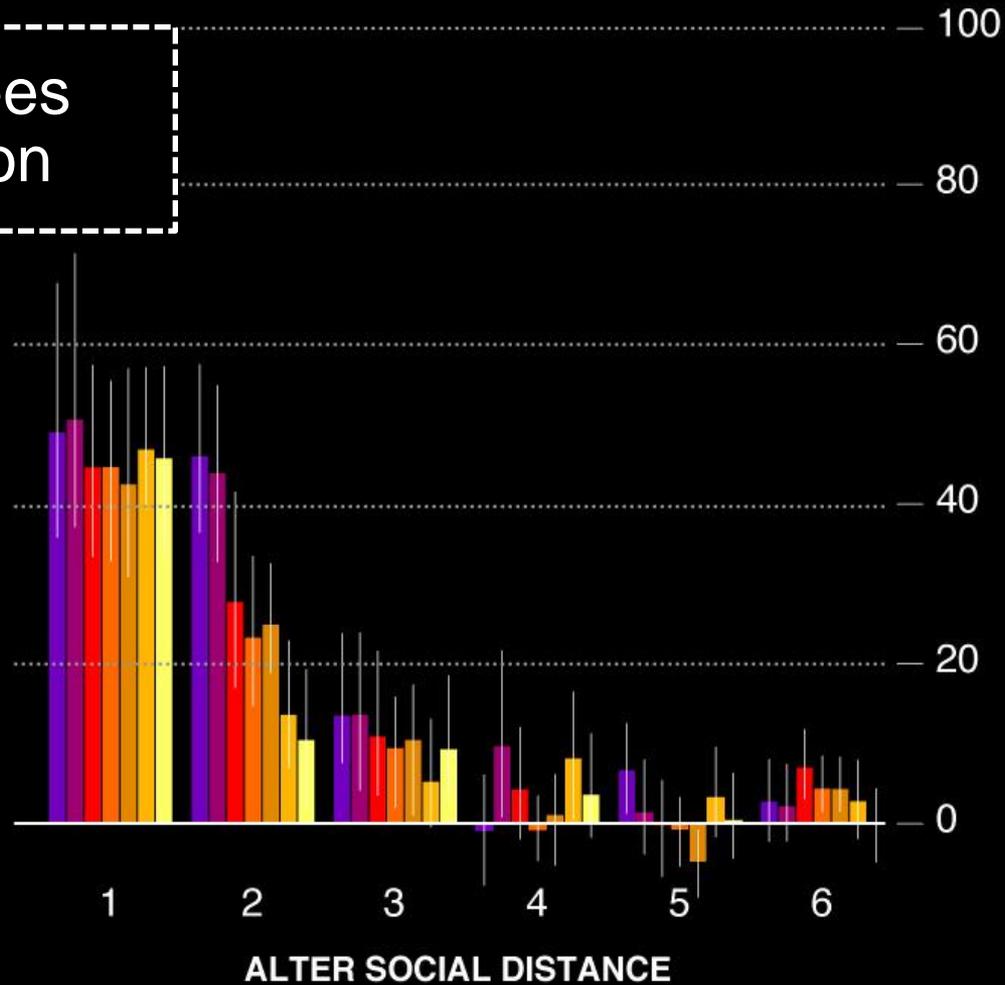
FHS NETWORK



Three Degrees Of Association

FHS NETWORK

- Wave 1
- Wave 2
- Wave 3
- Wave 4
- Wave 5
- Wave 6
- Wave 7



Causes of Similarity and Clustering



INFLUENCE



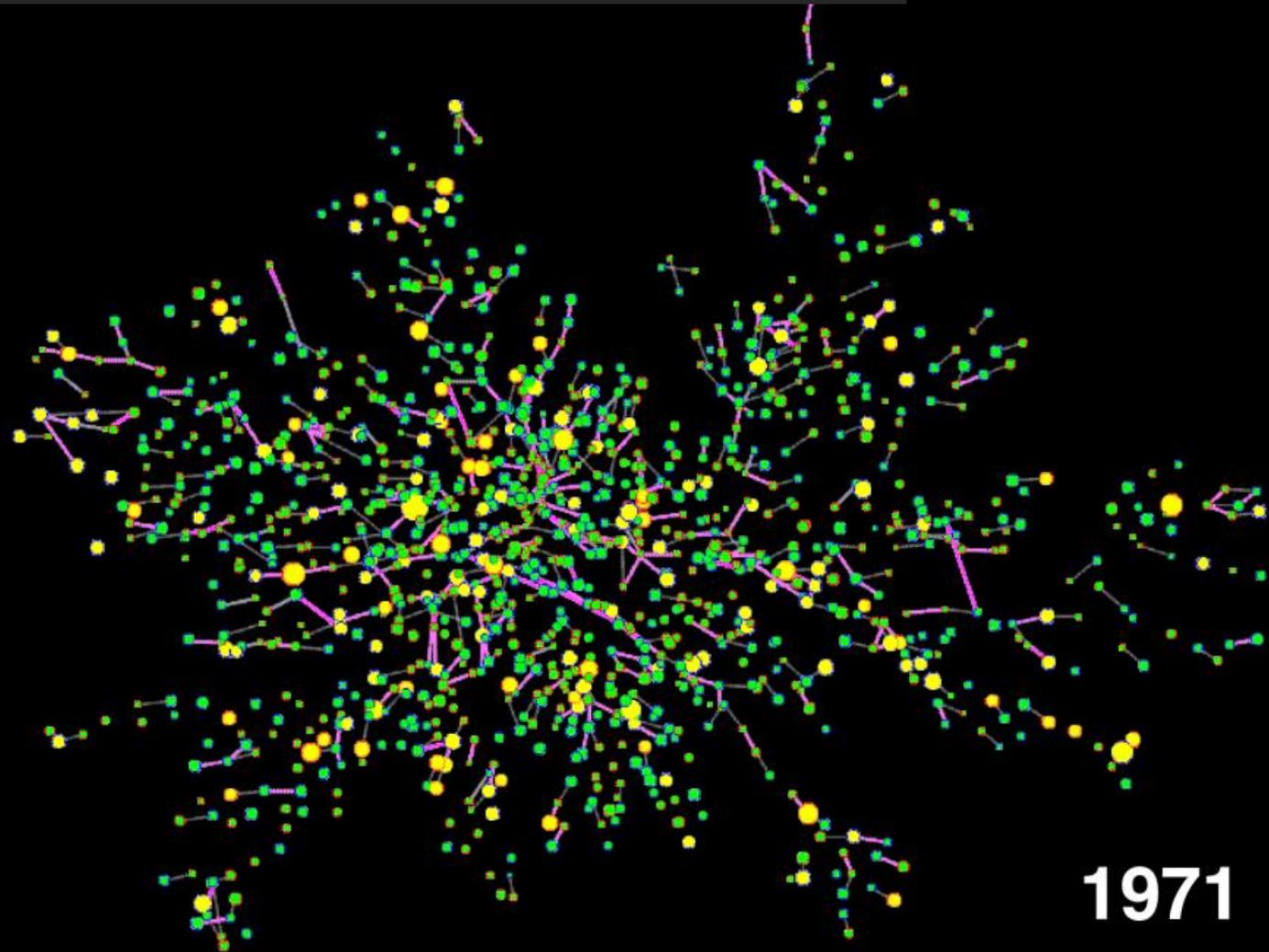
HOMOPHILY



CONTEXT

The Spread Of Obesity

FROM 1971 TO 2003

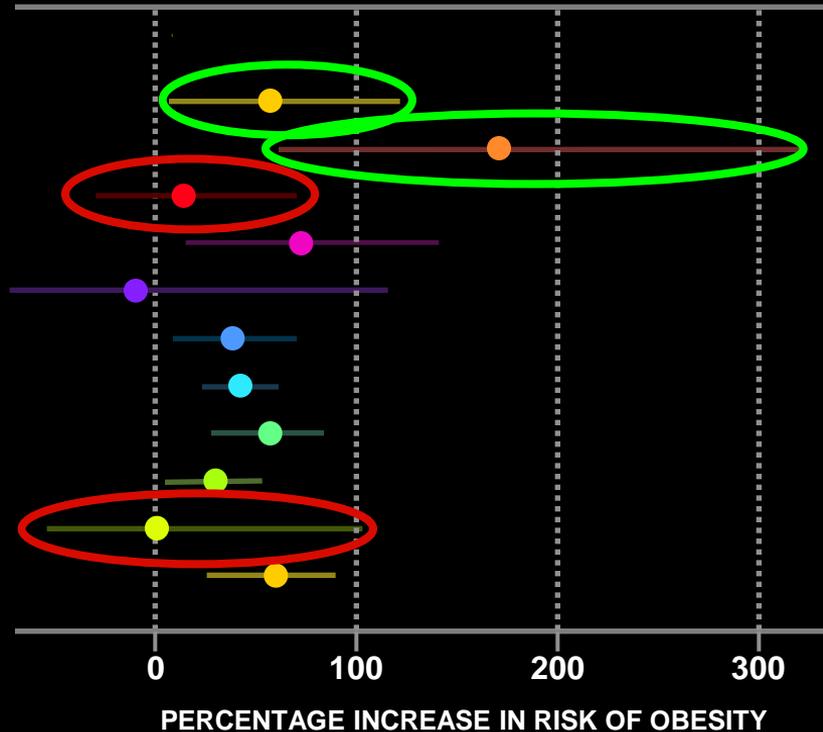


1971

Spread of Obesity

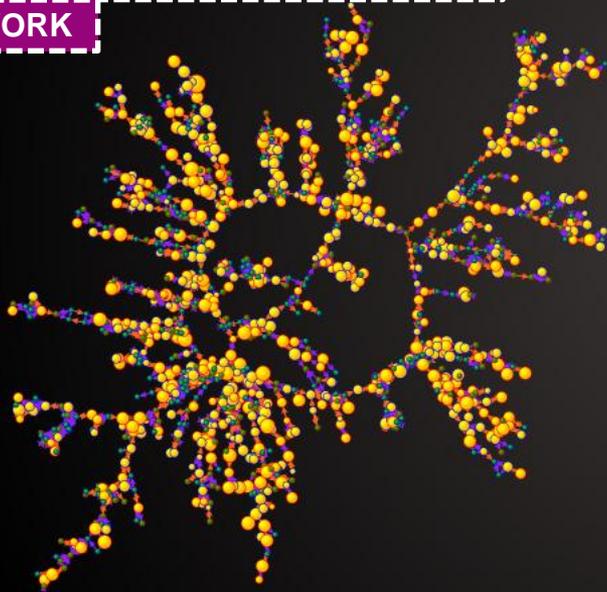
SOCIAL CONTACT

Ego-Perceived Friend
 Mutual Friend
 Alter-Perceived Friend
 Same Sex Friend
 Opposite Sex Friend
 Spouse
 Sibling
 Same Sex Sibling
 Opposite Sex Sibling
 Immediate Neighbor
 Small Workplace Co-worker

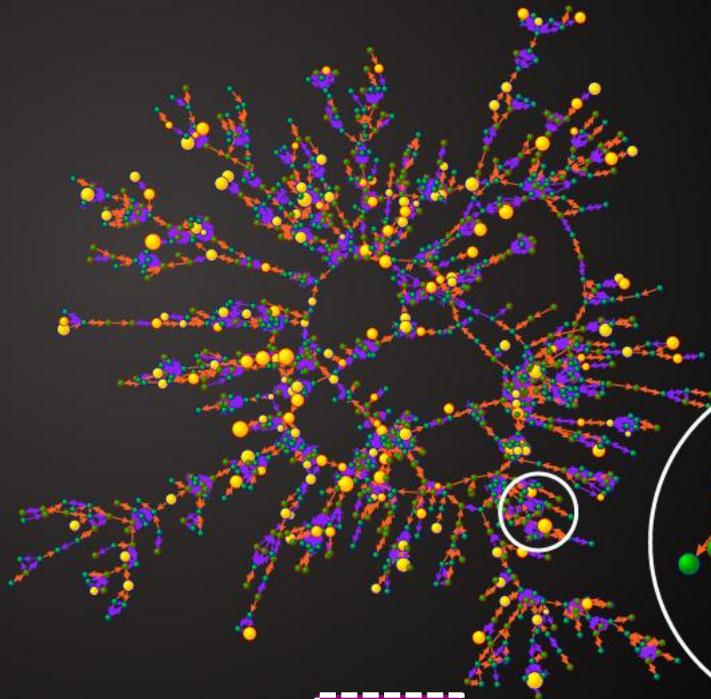


Smoking Clusters

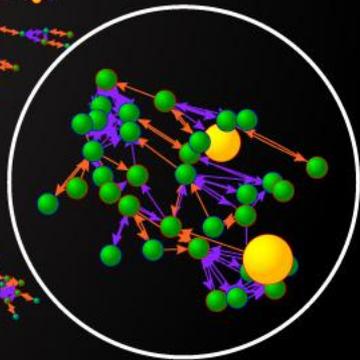
FHS NETWORK



1971

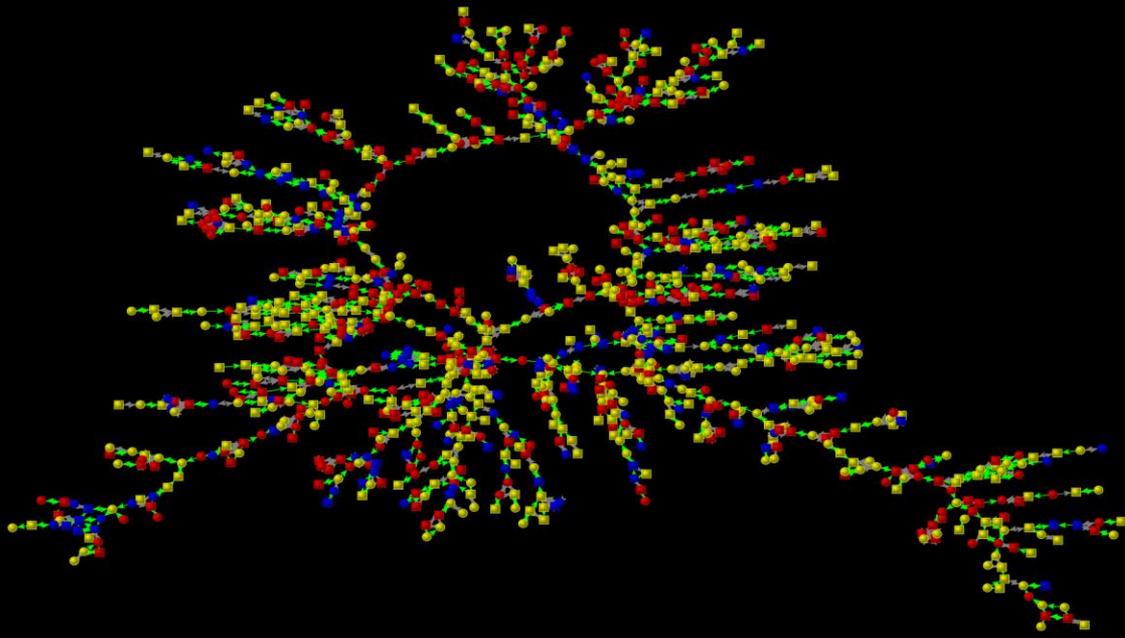


2001

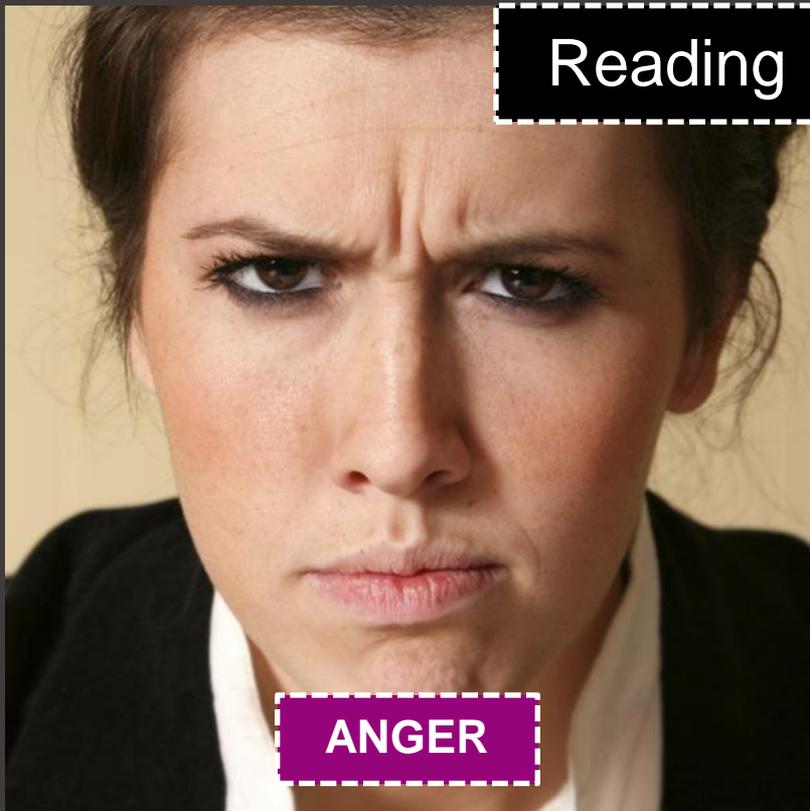


Drinking Clusters

FHS NETWORK



Reading Emotions



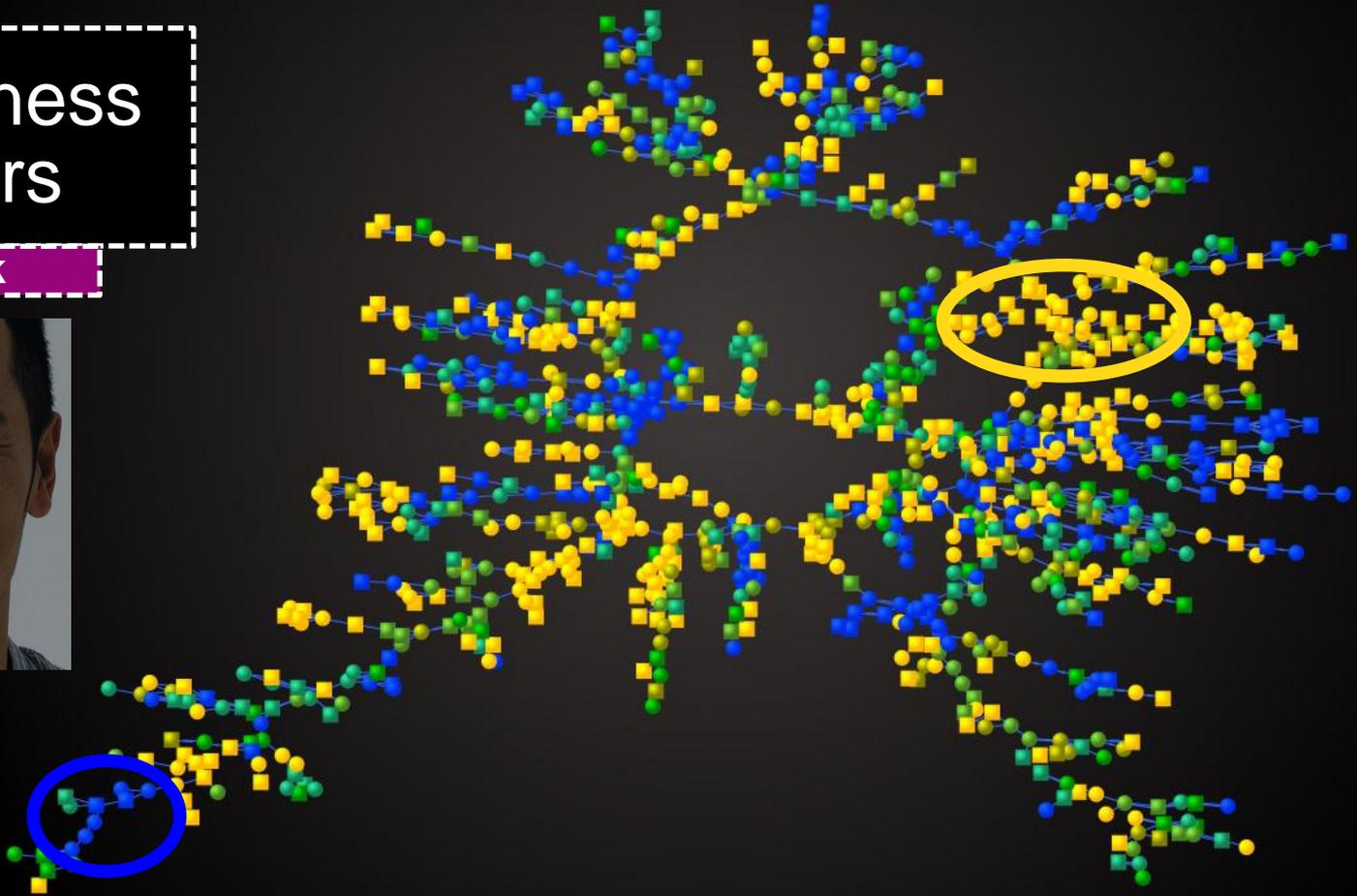
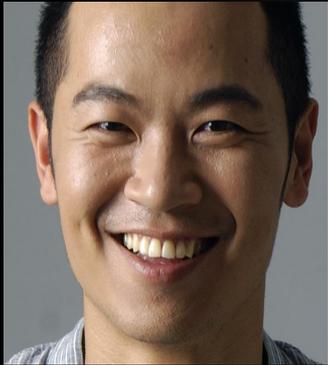
ANGER



HAPPINESS

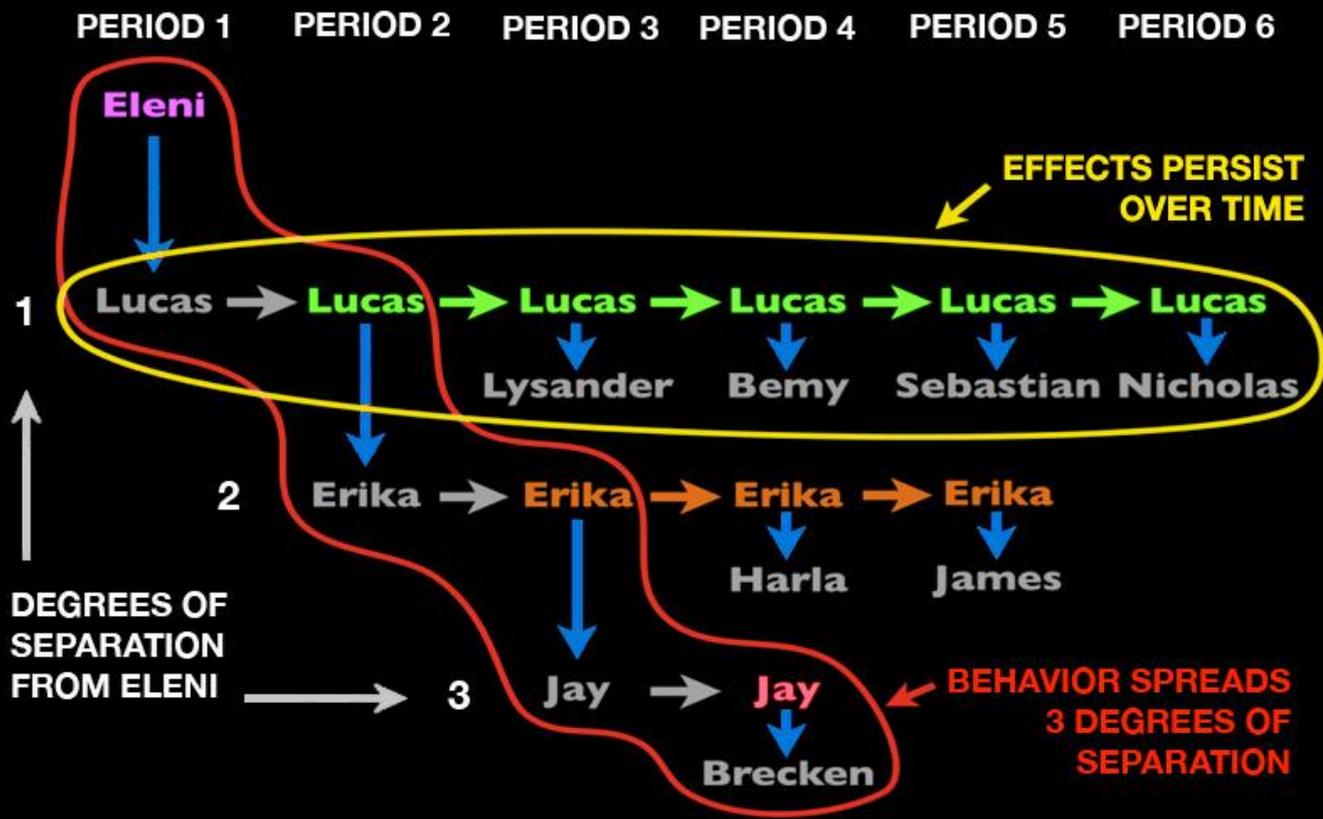
Happiness Clusters

FHS NETWORK



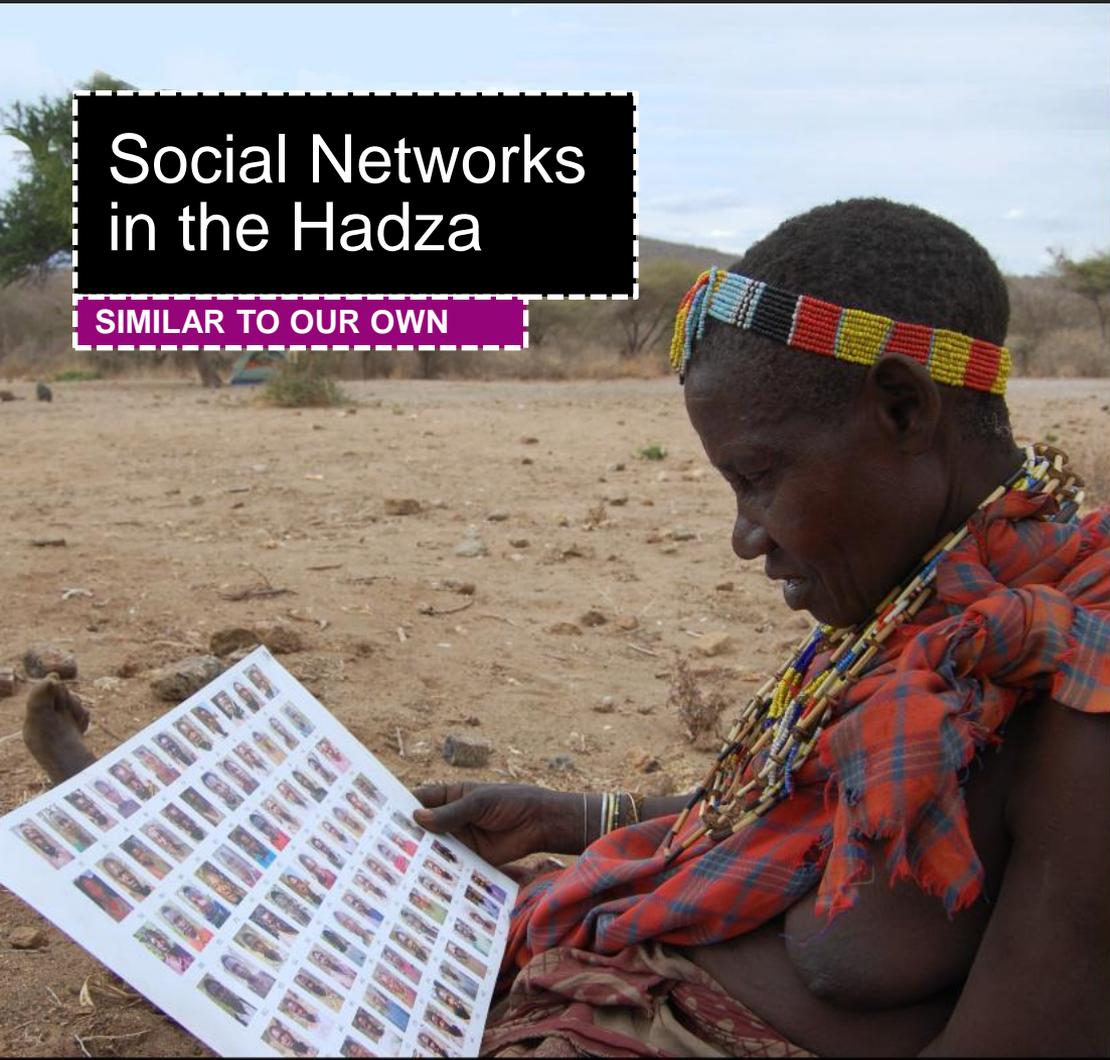
Generosity Cascades

EXPERIMENTAL NETWORK



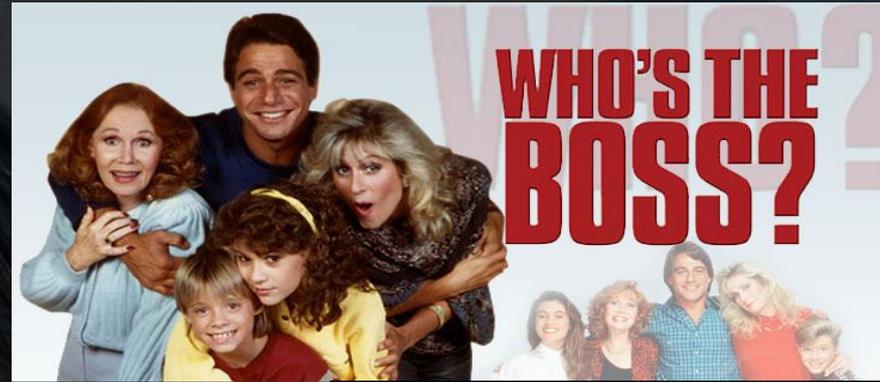
Social Networks in the Hadza

SIMILAR TO OUR OWN



How Do We Take Our Natural Social Networks Online?

The screenshot displays the TouchGraph Facebook Browser interface. On the left, a photo gallery shows a group of people at a social event, with names like Simon F, Julie N, Jennifer L, Jennifer S, Nitasha S, and Olga Sv overlaid. Below the gallery, it indicates 'Photos of Olga Sv (115)' and 'with Nitasha S (5)'. The main area on the right features a social network visualization with nodes representing individuals and locations. Key locations include Columbia, New York, NY, NYU, and Cornell. Numerous individual profiles are connected, with names such as Anastasia, Artem, Eugene, and others. The interface includes navigation tabs (Profiles, Photos, Networks), a search bar, and various tool icons. The bottom right corner notes 'powered by TouchGraph'.



Alyssa Milano



Home Profile Find People Settings Help Sign out

www.alyssa.com



Alyssa_Milano

Follow

Lists



Followed by @wigsonlinestore, @SummerAnneRoss, @PreChannel, and 4 others

That's a wrap. Seeps not wakes. Xo.

★ Connected: The Surprising Power of Our Social Networks & How They Shape Our Lives <http://is.gd/f8nP8> /via @brainpicker

11:50 AM Sep 14th via TweetDeck

Bill Plaschke... Stanley's public stand <http://lat.ms/aO2Oea> /via @LATimesSports #dodgers about 9 hours ago via Twittelator

📺 AlyssaDotCom Extra! Extra! Exciting #SundaysAtTiffanys casting news <http://is.gd/feiNV>

about 10 hours ago via Twittelator

Retweeted by Alyssa_Milano and 27 others

Working. Should be wrapped by now but there are military helicopter exercises overhead. Can't shoot until it stops

Verified Account

Name Alyssa Milano

Location Los Angeles

Web <http://Alyssa.com>

Bio @, ♥, and BASEBALL.

This is my official page. I tweet a lot. Consider yourself forewarned.

776

following

1,058,725

followers

536

likes

Tweets

11,745

Favorites

Lists

@Alyssa_Milano/followanyday

@Alyssa_Milano/i-love-animals

@Alyssa_Milano/makes-me-laugh

@Alyssa_Milano/twitter-related

@Alyssa_Milano/technology



Websites you may enjoy:

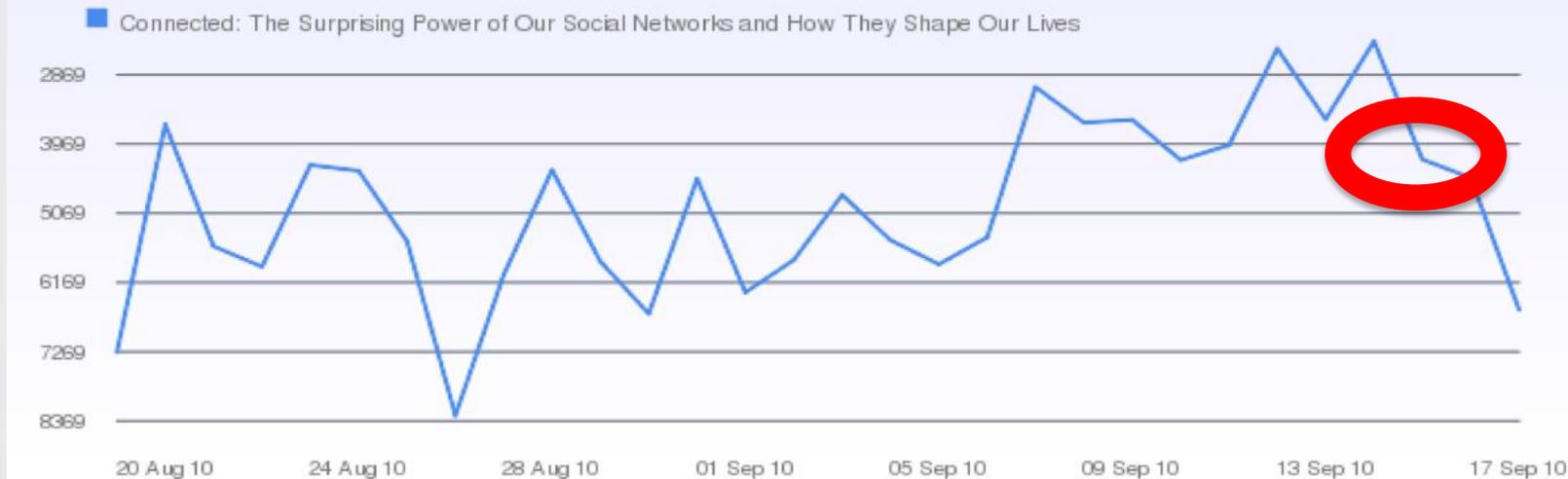
<http://alyssa.com>

<http://alyssa.mlblogs.com>

<http://www.fandalia.com>

Online Networks

NO EFFECT!



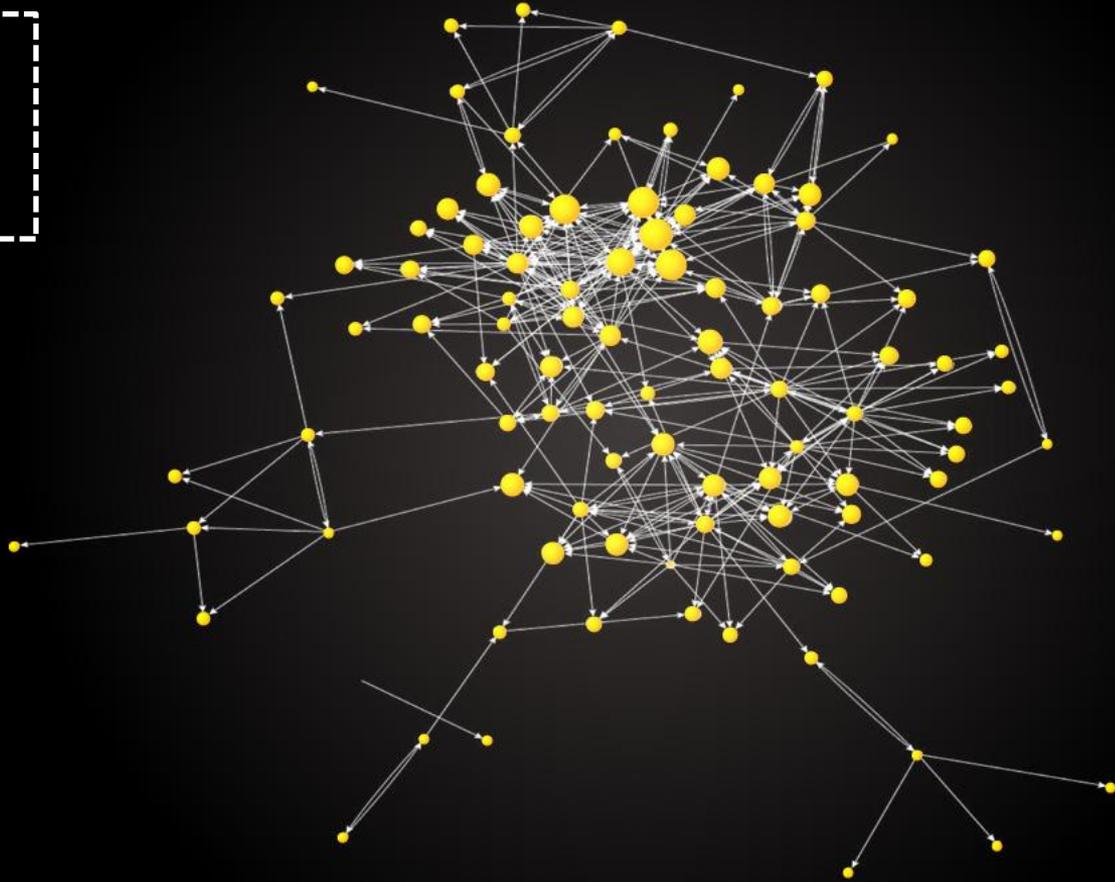
Date range

Data source

Apply

Online Networks

REAL FRIENDS



Online Networks

FRIENDS PLUS
FACEBOOK

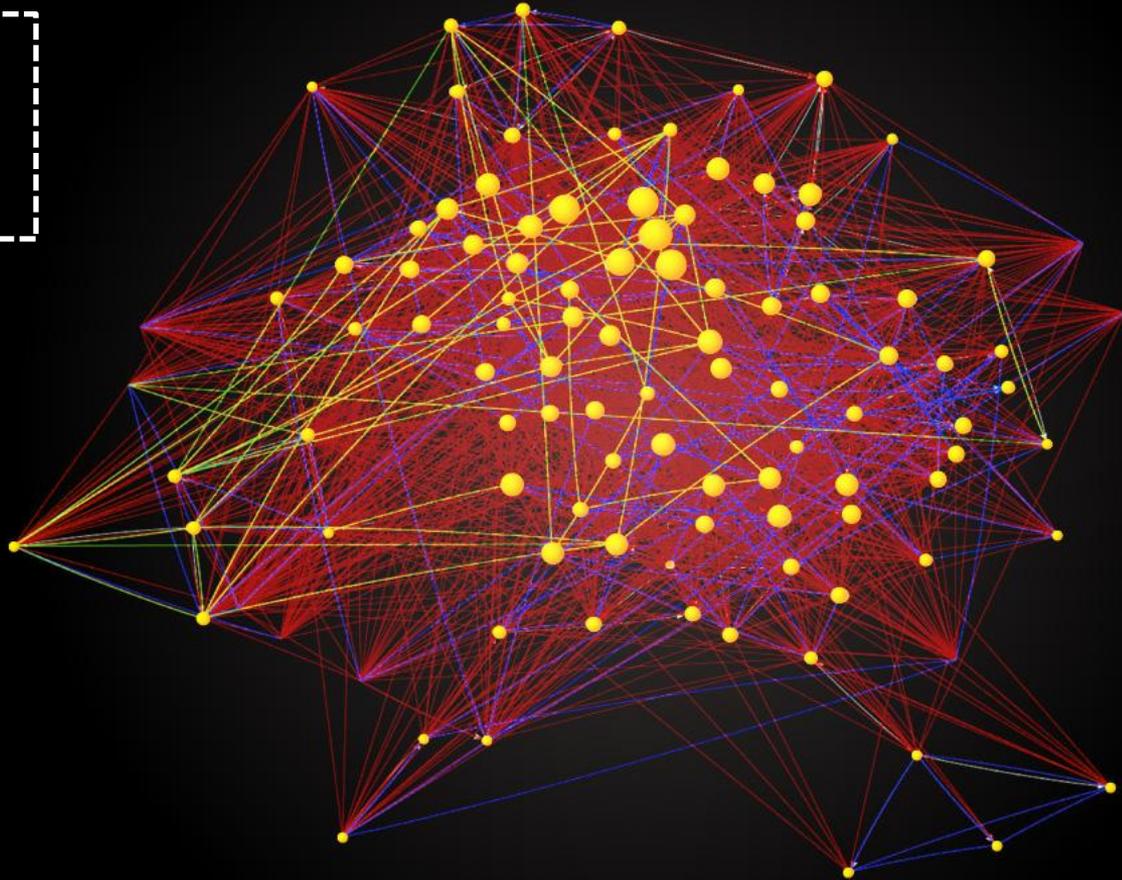


Photo Tagging

FACEBOOK

facebook Search Home Profile Account

Who's in These Photos?

The photos you uploaded were grouped automatically so you can quickly label and notify friends in these pictures. (Friends can always untag themselves.)



[Skip Tagging Friends](#) [Save Tags](#)

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Research, I swear
By Jaime Settle · 1 of 1

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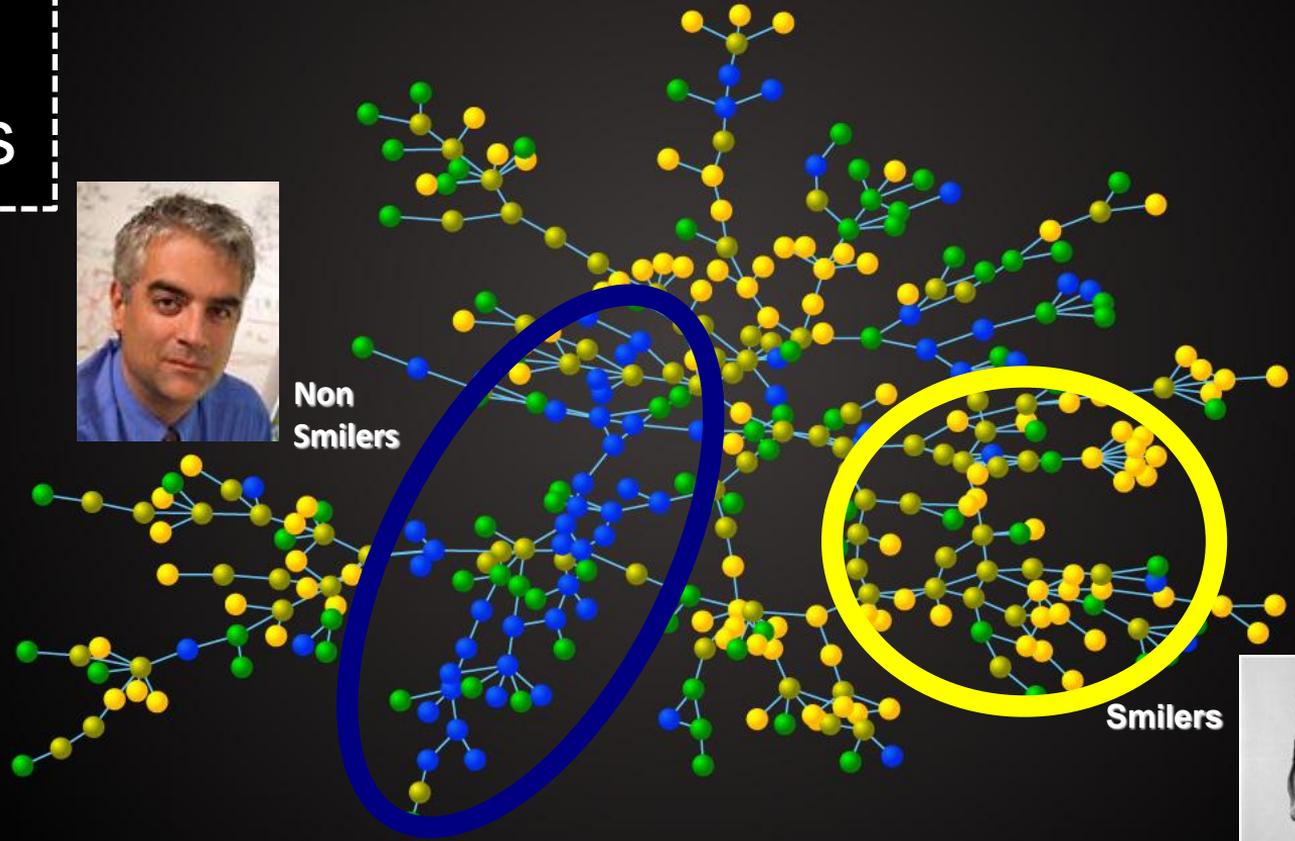
[f](#) [B](#) [1](#)

Smiling Clusters

FACEBOOK NETWORK



Non Smilers

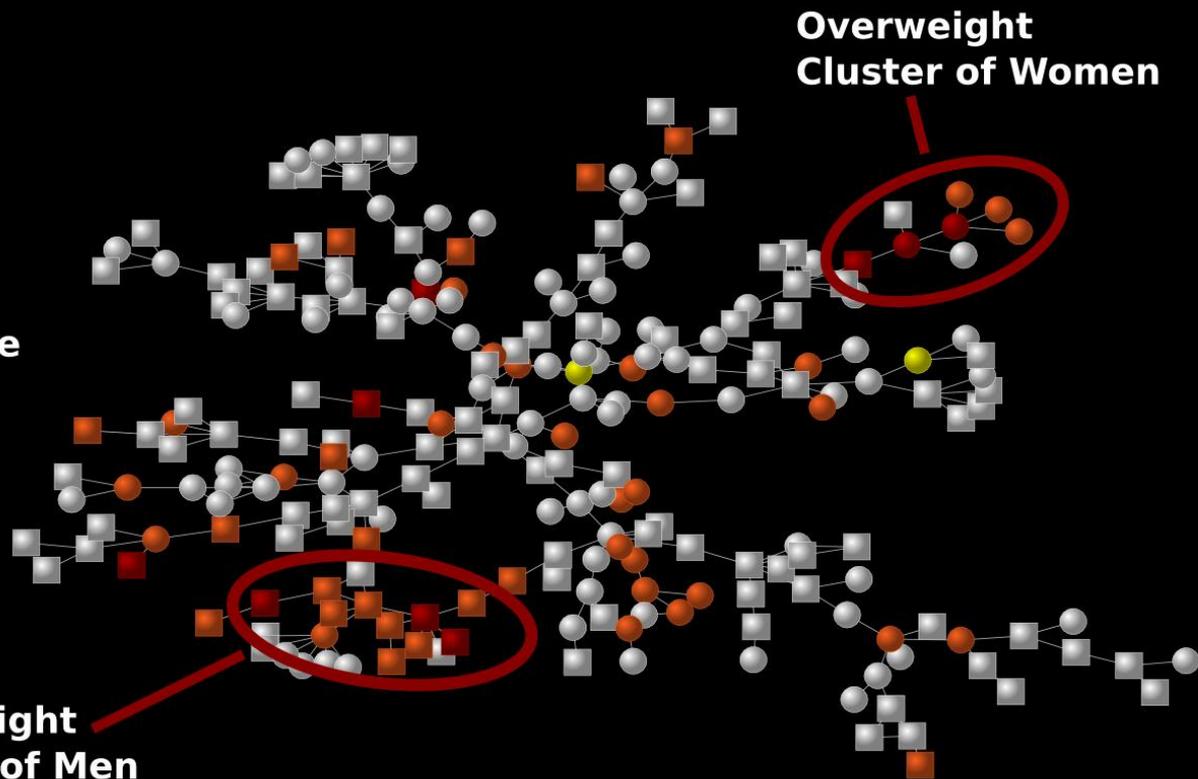


Smilers

Obesity Clusters

FACEBOOK
NETWORK

■ Male
● Female



Source: connectedthebook.com

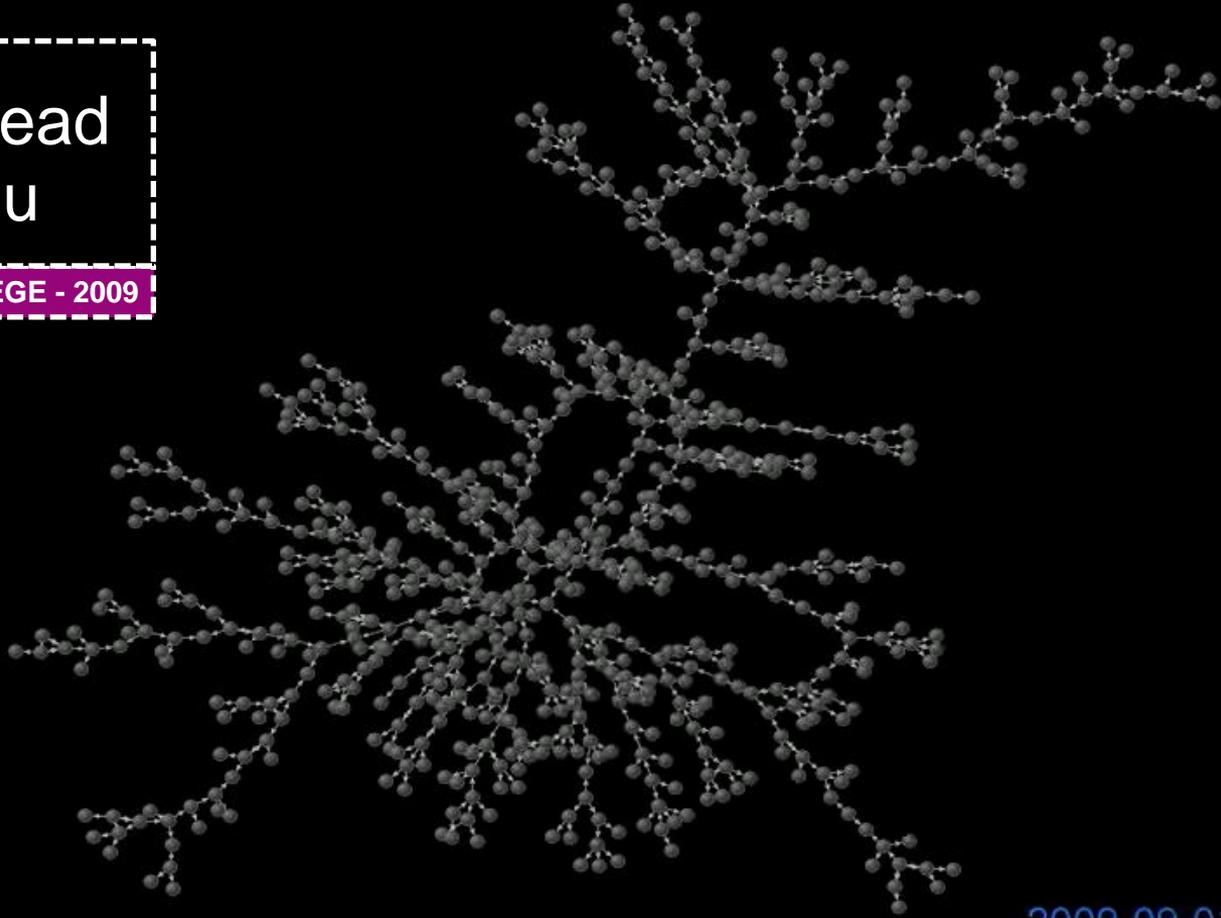
Intervening in Social Networks

Connection: **changing the structure**

Contagion: **changing the flow**

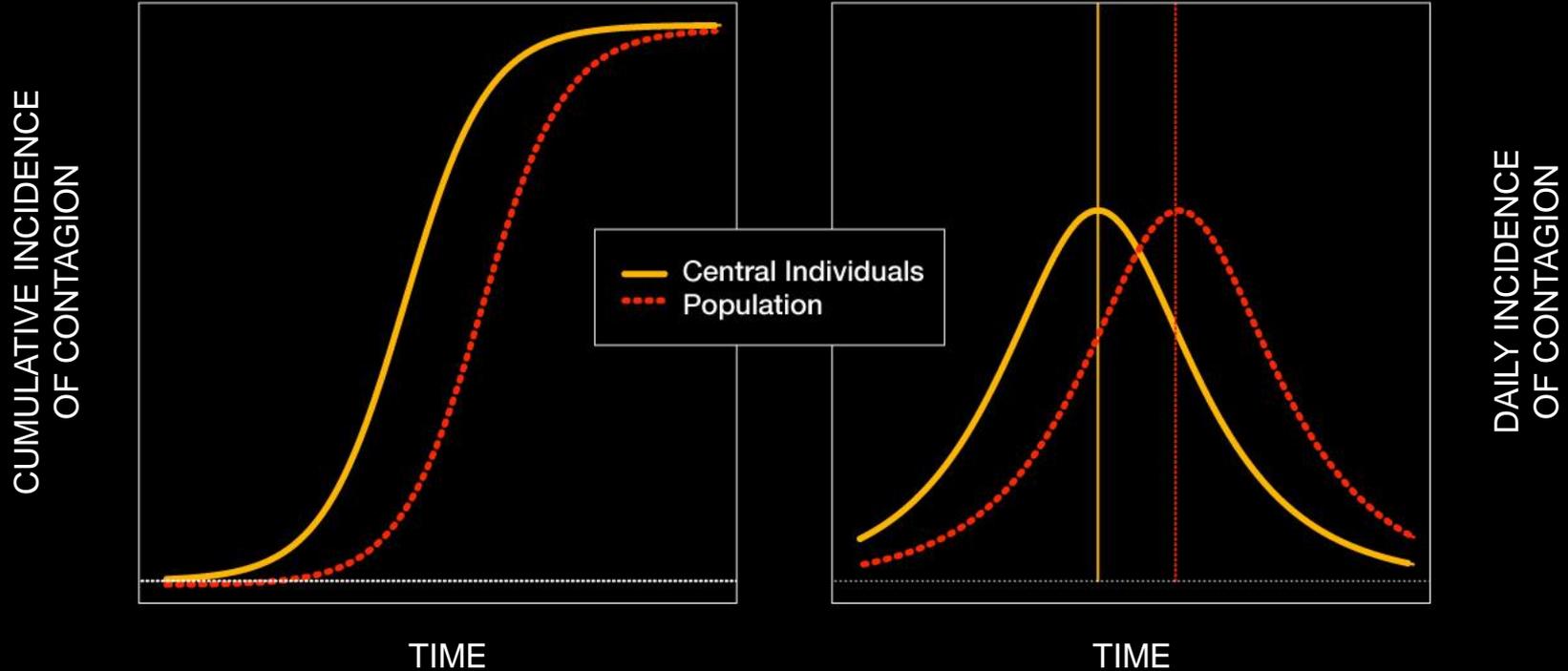
The Spread of the Flu

HARVARD COLLEGE - 2009

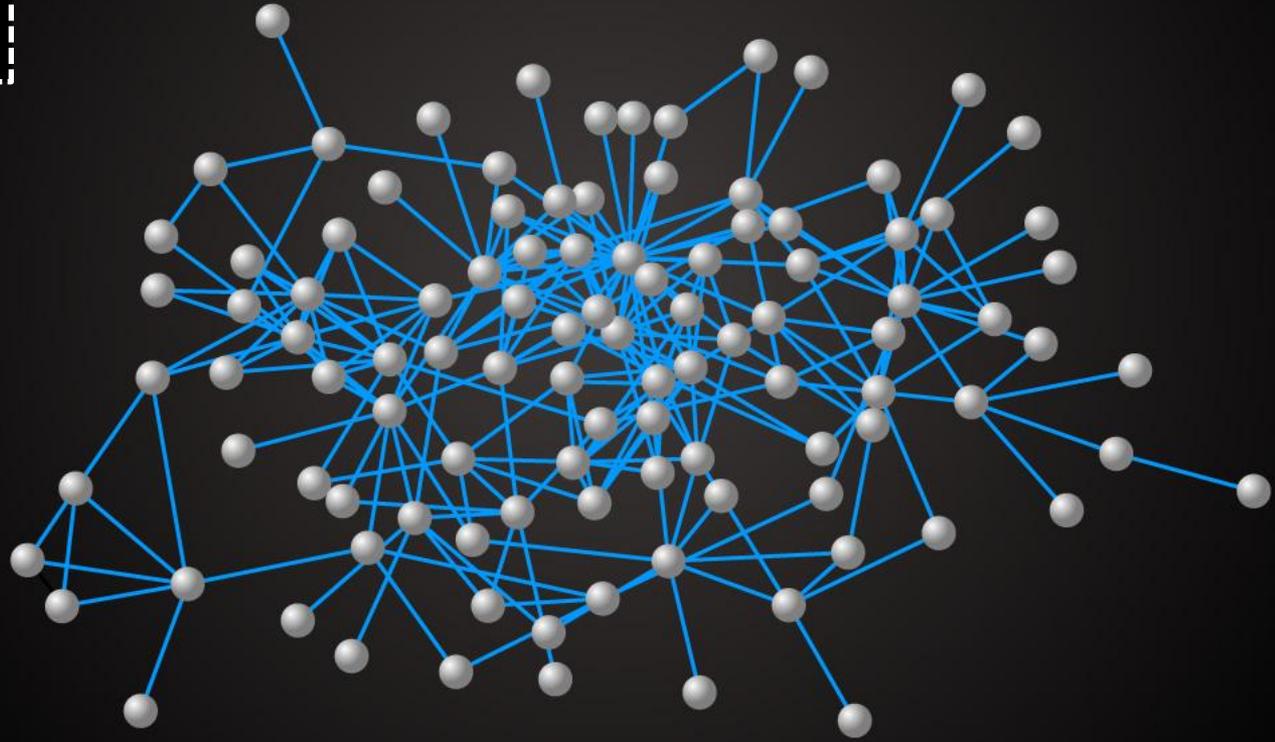


2009-09-01

Theoretical Differences in Epidemic Curves



Network



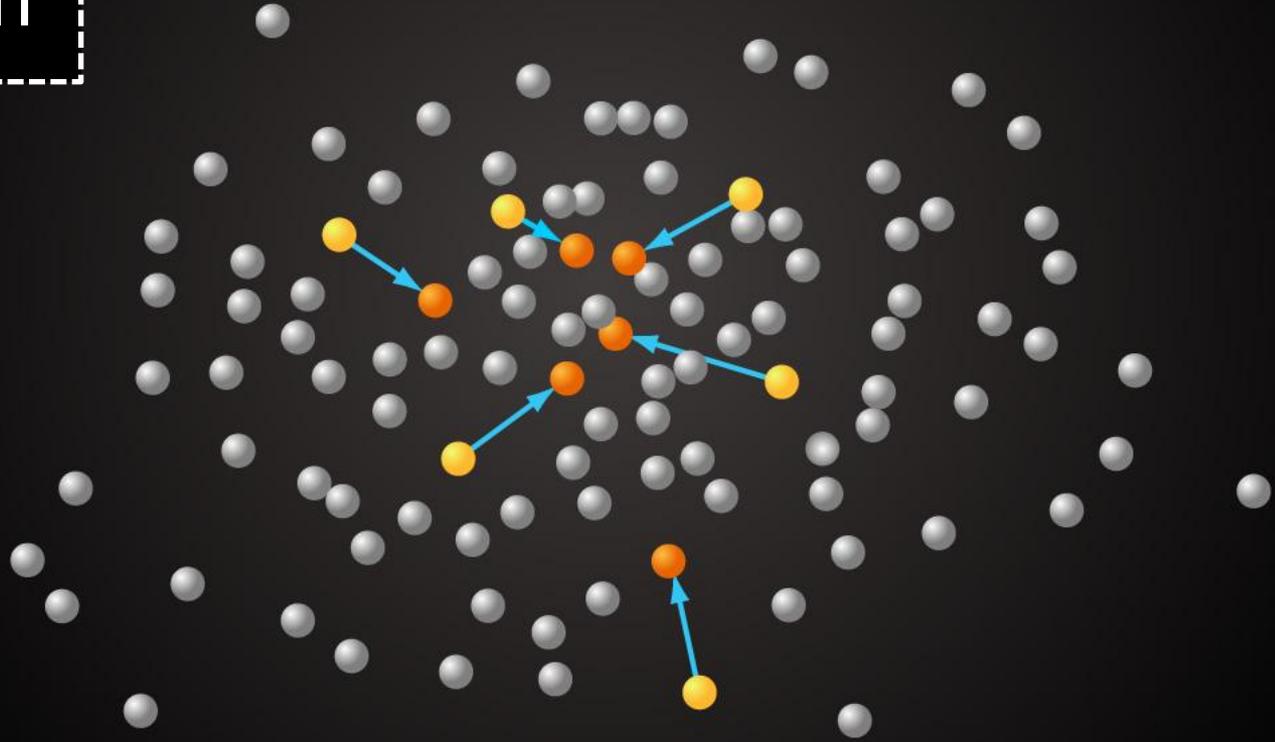
Population

RANDOM PEOPLE

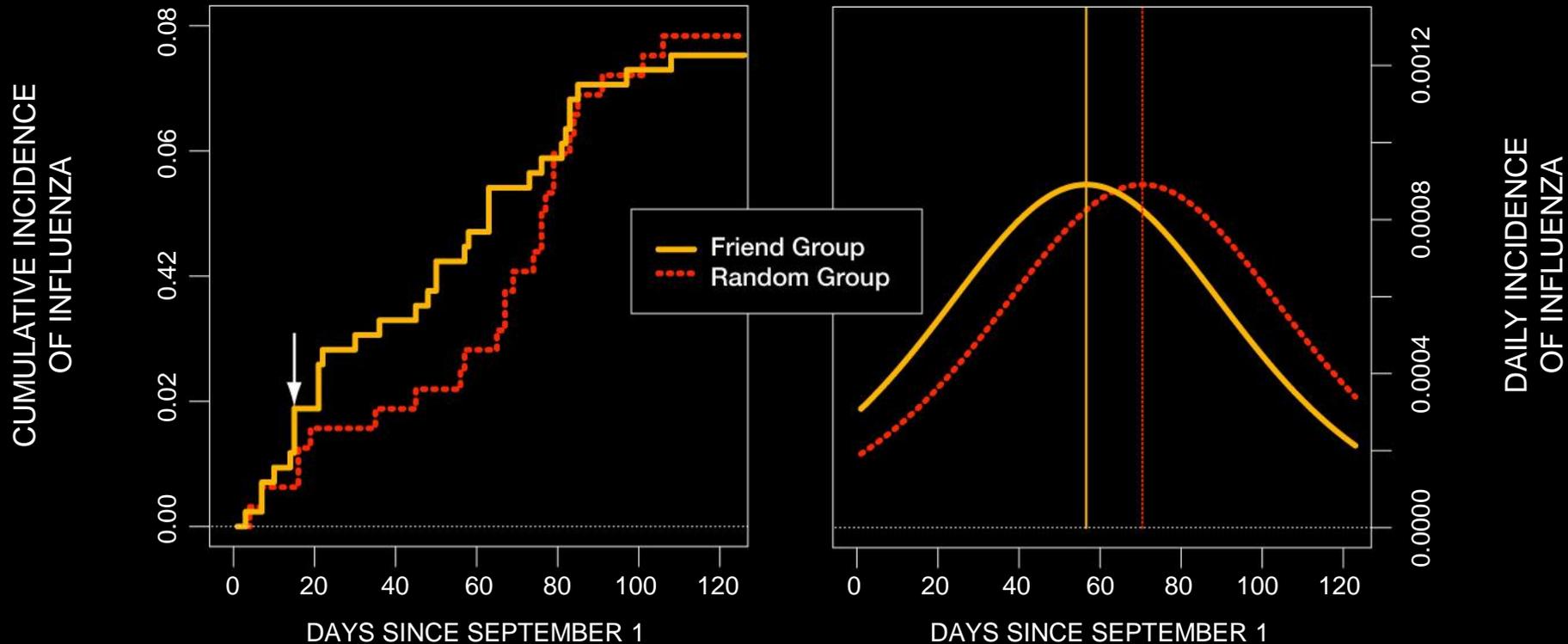


Population

PEOPLE &
FRIENDS



Observed Differences in Epidemic Curves



Contagious Outbreaks



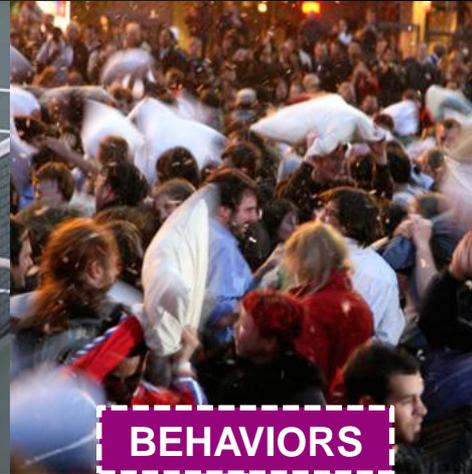
PATHOGENS



INFORMATION



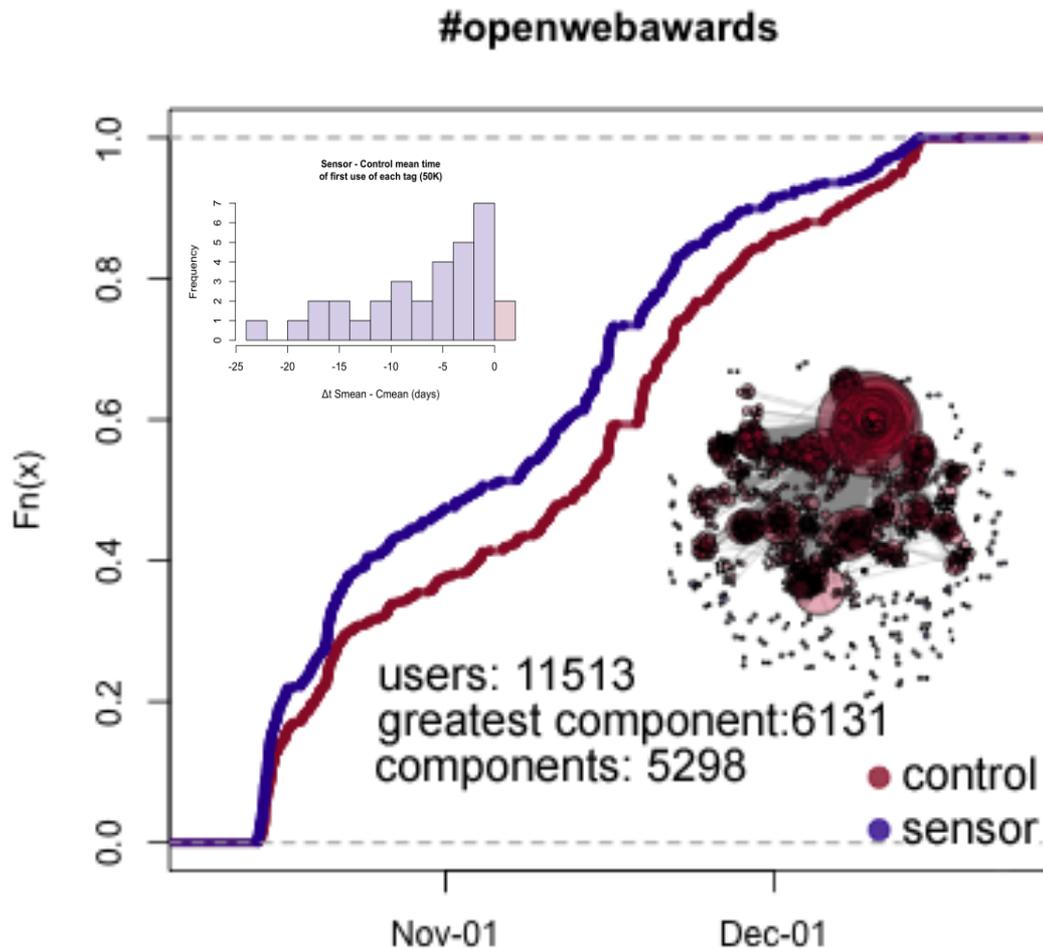
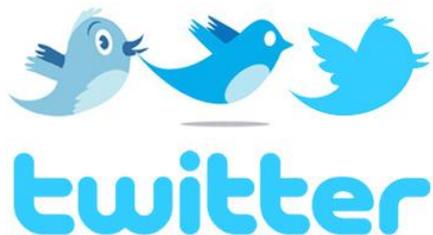
NORMS



BEHAVIORS

Contagious Outbreaks

TWITTER
NETWORK



Viral Voting

FACEBOOK NETWORK



a

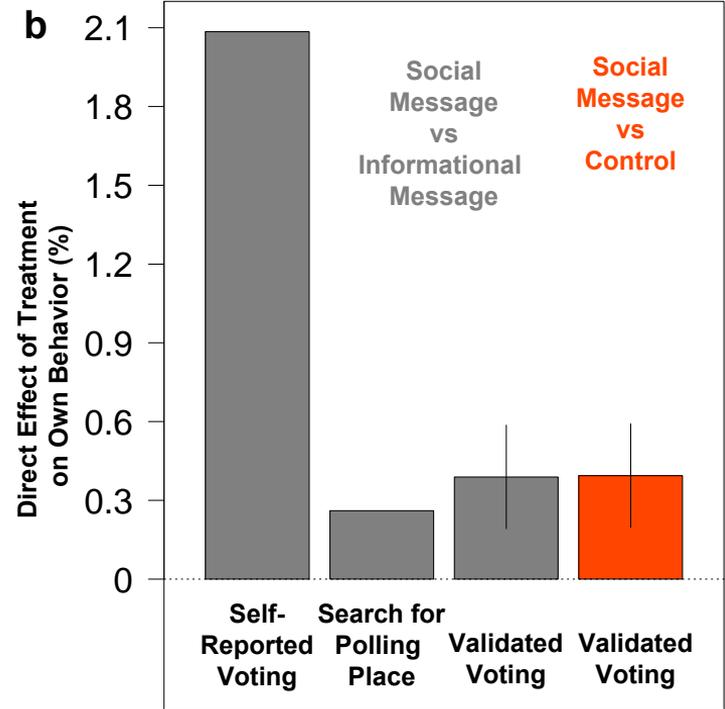
Informational Message



Social Message



b

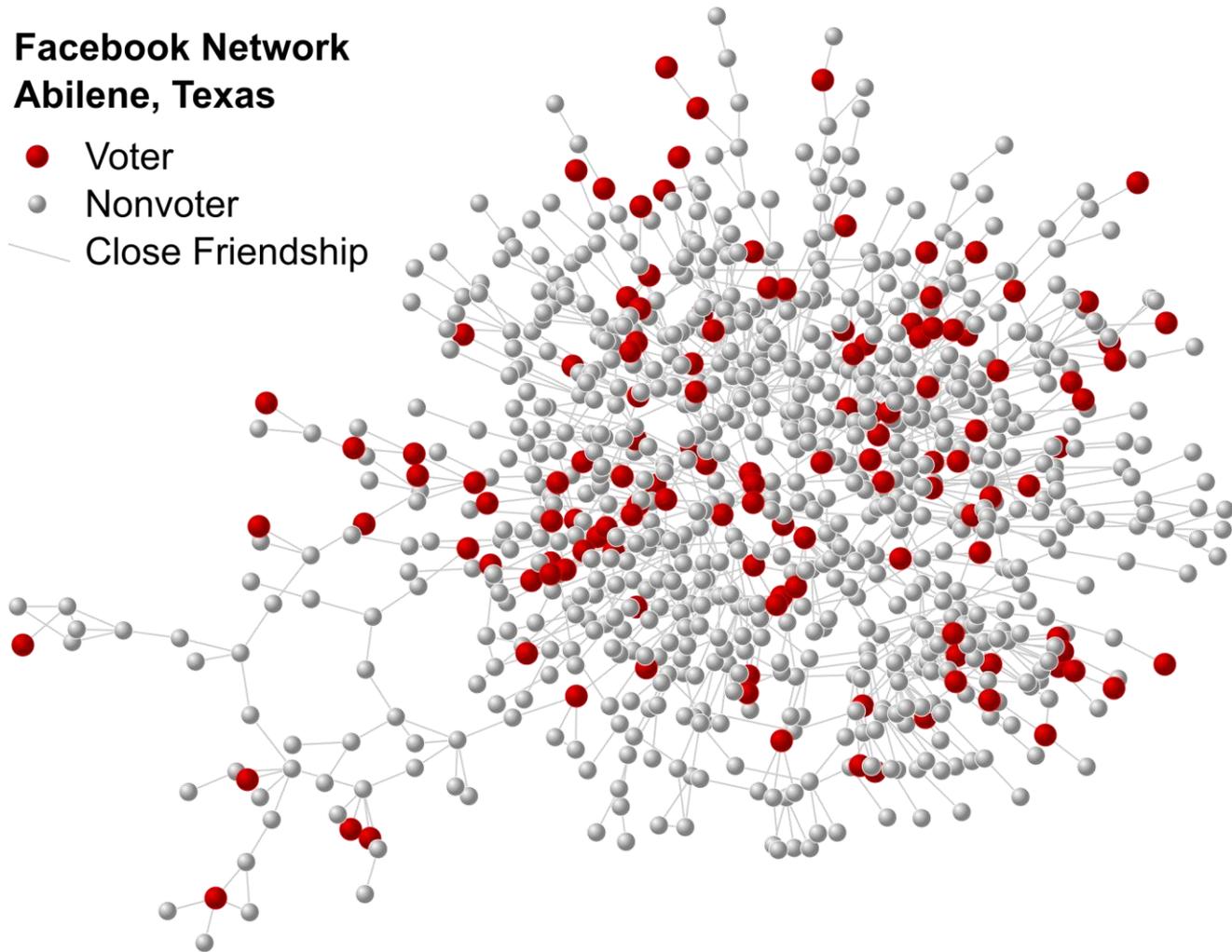


Viral Voting

FACEBOOK
NETWORK

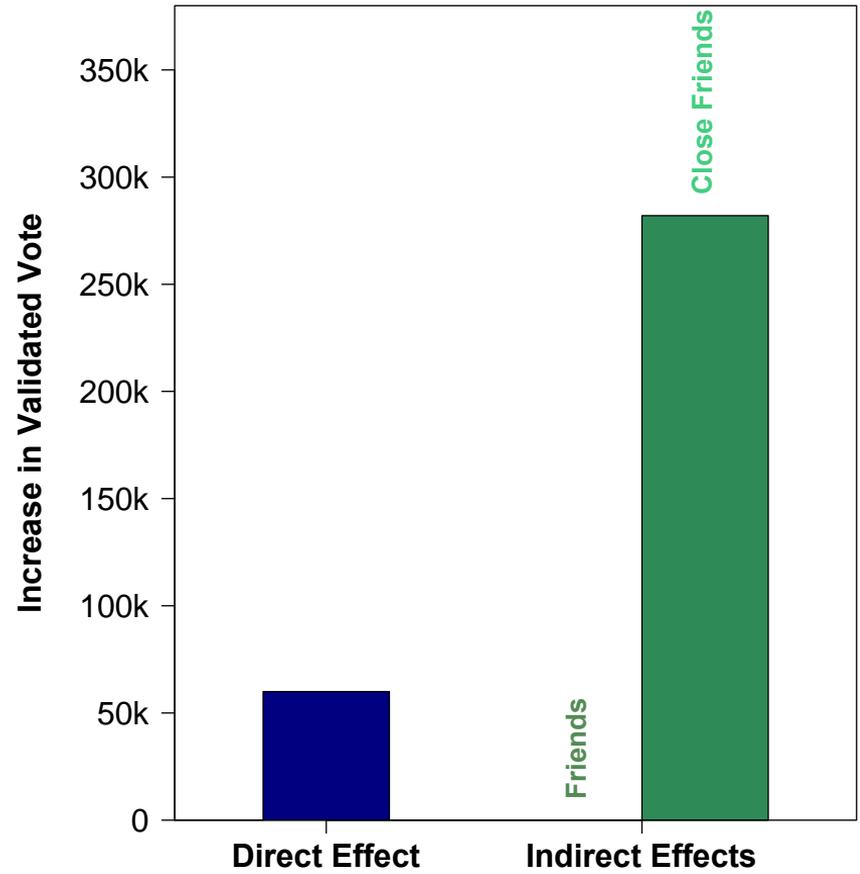
Facebook Network Abilene, Texas

- Voter
- Nonvoter
- Close Friendship



Viral Voting

FACEBOOK NETWORK



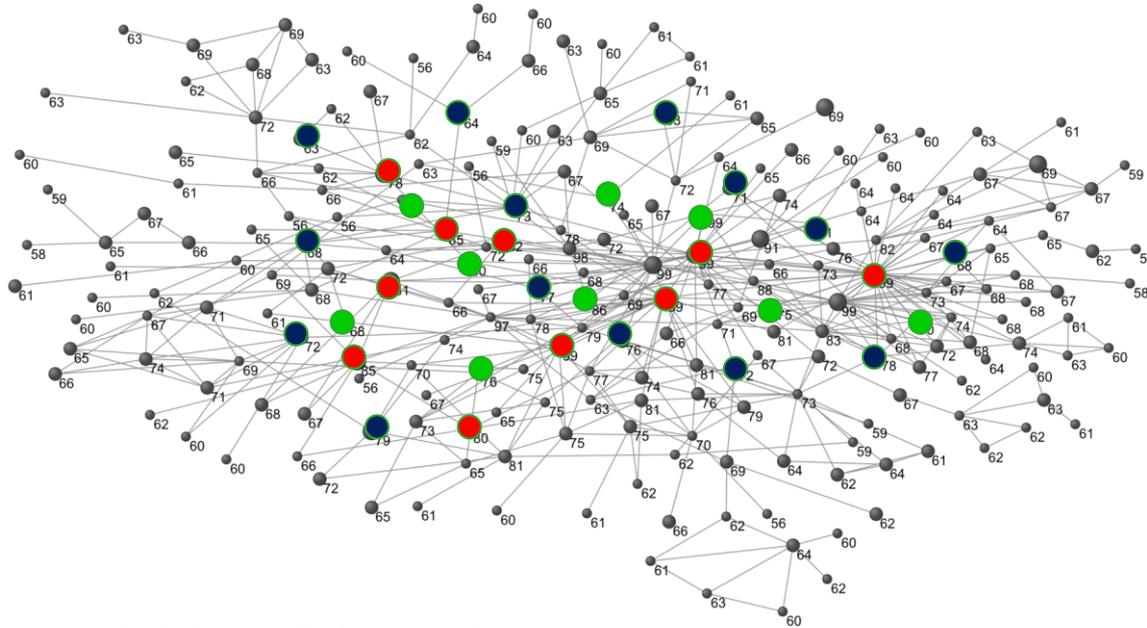
Understanding physician network structure allows:

- Identification of influencers and influencees
- Guidance of programs to take advantage of influence patterns
- Capture of the “multiplier effect”, i.e., social influence propagates behavior change throughout a community



The result: Greater *efficiency and effectiveness* in implementing programs for physicians, patients, plan members, etc

Express Scripts



- **Initially targeted** High influence & high receptiveness
- **Second wave** More receptive
- **Third wave** Increasing acceptance



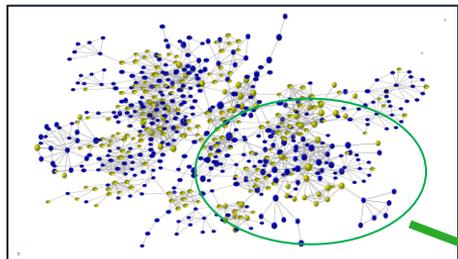
Measuring susceptibility--
Intervention is more effective



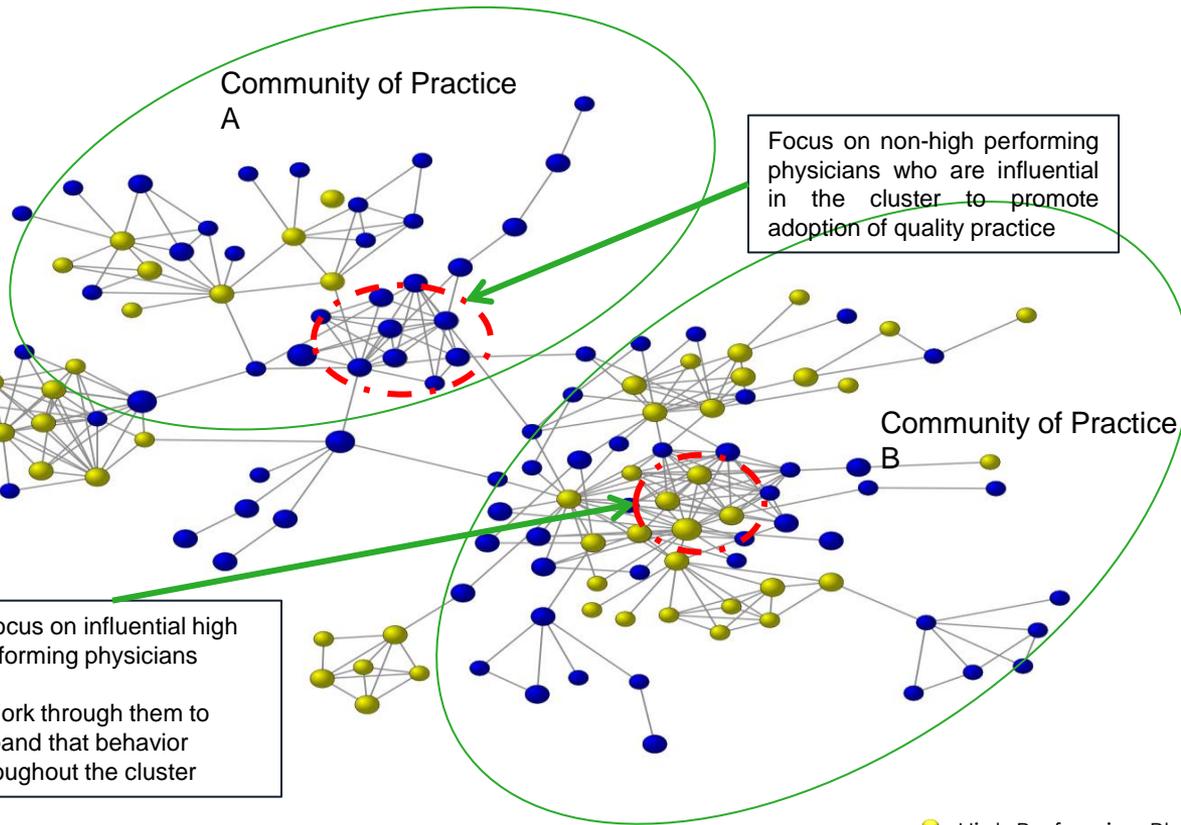
Activate Networks, INC.

MedNetworks is now Activate Networks

SCAN Arizona/SilverSneakers®



Regional level network map



Focus on non-high performing physicians who are influential in the cluster to promote adoption of quality practice

Influence Index and Optimized Targeting List

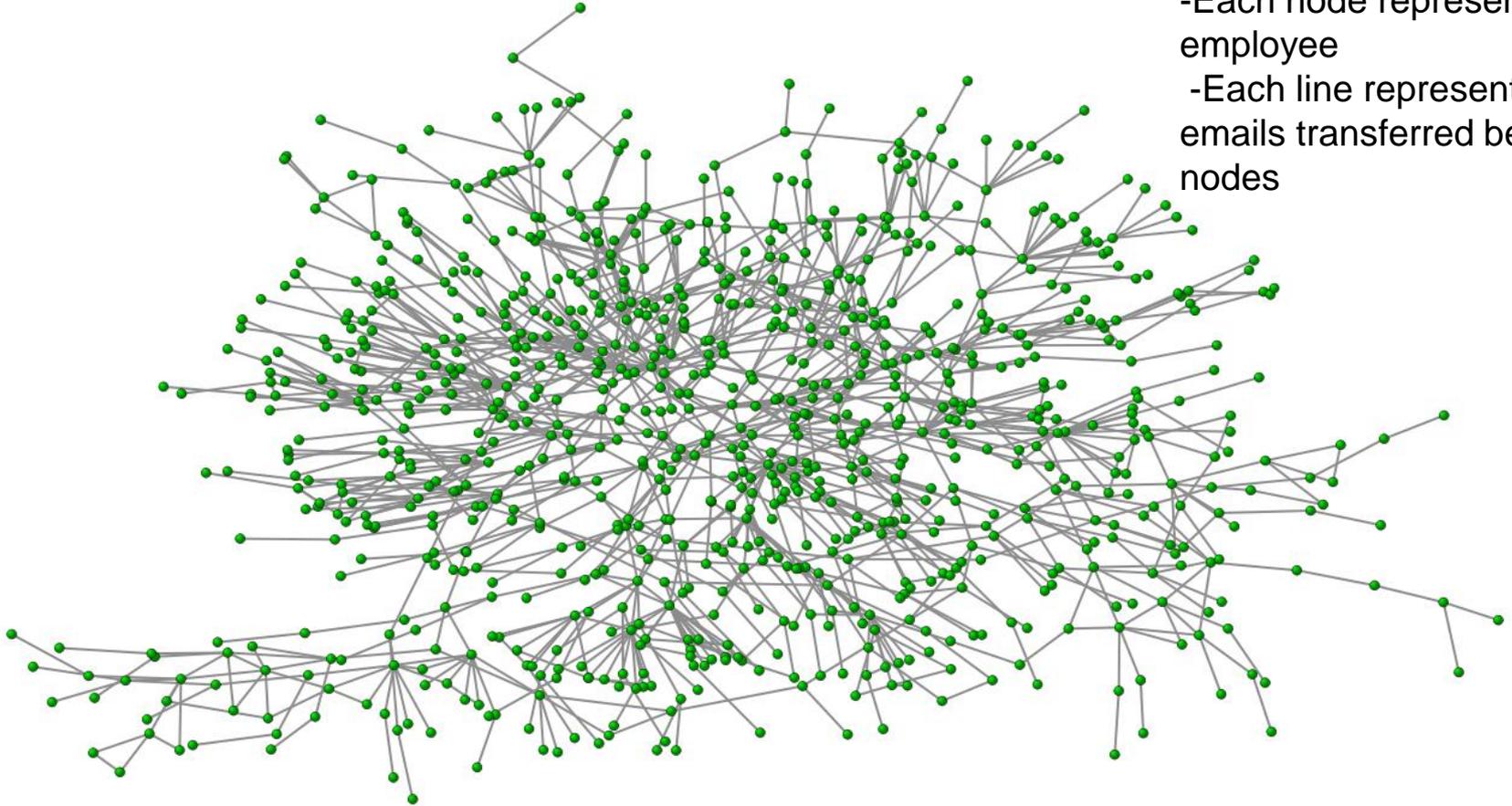
Physician	Physician ID	Physician Name	Physician Address	Physician City	Physician State	Physician Zip	Physician Phone	Physician Email	Physician Fax	Physician Website	Physician Type	Physician Specialty	Physician Board	Physician License	Physician Status	Physician Influence Index	Physician Targeting Score
Dr. John Doe	12345	John Doe	123 Main St	Phoenix	AZ	85001	602-555-1234	john.doe@hospital.com	602-555-5678	www.hospital.com	Physician	Internal Medicine	ABIM	12345	Active	0.85	0.92
Dr. Jane Smith	67890	Jane Smith	456 Oak St	Scottsdale	AZ	85251	480-555-6789	jane.smith@hospital.com	480-555-9012	www.hospital.com	Physician	Obstetrics & Gynecology	ABOG	67890	Active	0.72	0.88
Dr. Michael Johnson	11111	Michael Johnson	789 Pine St	Tempe	AZ	85281	480-555-1111	michael.johnson@hospital.com	480-555-2222	www.hospital.com	Physician	Family Medicine	ABFM	11111	Active	0.65	0.78
Dr. Sarah Lee	22222	Sarah Lee	1010 Elm St	Glendale	AZ	85021	623-555-2222	sarah.lee@hospital.com	623-555-3333	www.hospital.com	Physician	Psychiatry	ABPN	22222	Active	0.58	0.71
Dr. Robert Kim	33333	Robert Kim	1313 Maple St	Mesa	AZ	85201	480-555-3333	robert.kim@hospital.com	480-555-4444	www.hospital.com	Physician	Orthopedics	ABOS	33333	Active	0.51	0.64
Dr. Emily White	44444	Emily White	1616 Birch St	Chandler	AZ	85221	480-555-4444	emily.white@hospital.com	480-555-5555	www.hospital.com	Physician	Cardiology	ACC	44444	Active	0.44	0.57
Dr. Daniel Brown	55555	Daniel Brown	1919 Cedar St	Peoria	AZ	85131	623-555-5555	daniel.brown@hospital.com	623-555-6666	www.hospital.com	Physician	Neurology	ABN	55555	Active	0.37	0.50
Dr. Olivia Green	66666	Olivia Green	2222 Spruce St	Flagstaff	AZ	86001	909-555-6666	olivia.green@hospital.com	909-555-7777	www.hospital.com	Physician	Pediatrics	ABP	66666	Active	0.30	0.43
Dr. Noah Black	77777	Noah Black	2525 Fir St	Safford	AZ	85351	909-555-7777	noah.black@hospital.com	909-555-8888	www.hospital.com	Physician	Emergency Medicine	ABEM	77777	Active	0.23	0.36
Dr. Sophia Gray	88888	Sophia Gray	2828 Ash St	Yuma	AZ	85401	909-555-8888	sophia.gray@hospital.com	909-555-9999	www.hospital.com	Physician	Geriatrics	AGAF	88888	Active	0.16	0.29
Dr. Benjamin Blue	99999	Benjamin Blue	3131 Redwood St	Kingman	AZ	86401	909-555-9999	benjamin.blue@hospital.com	909-555-0000	www.hospital.com	Physician	Urology	ABU	99999	Active	0.09	0.22

- Focus on influential high performing physicians
- Work through them to expand that behavior throughout the cluster

● High Performing Physician
● Non-High Performing Physician

Email Data at Healthways

- Each node represents an employee
- Each line represents >100 emails transferred between nodes

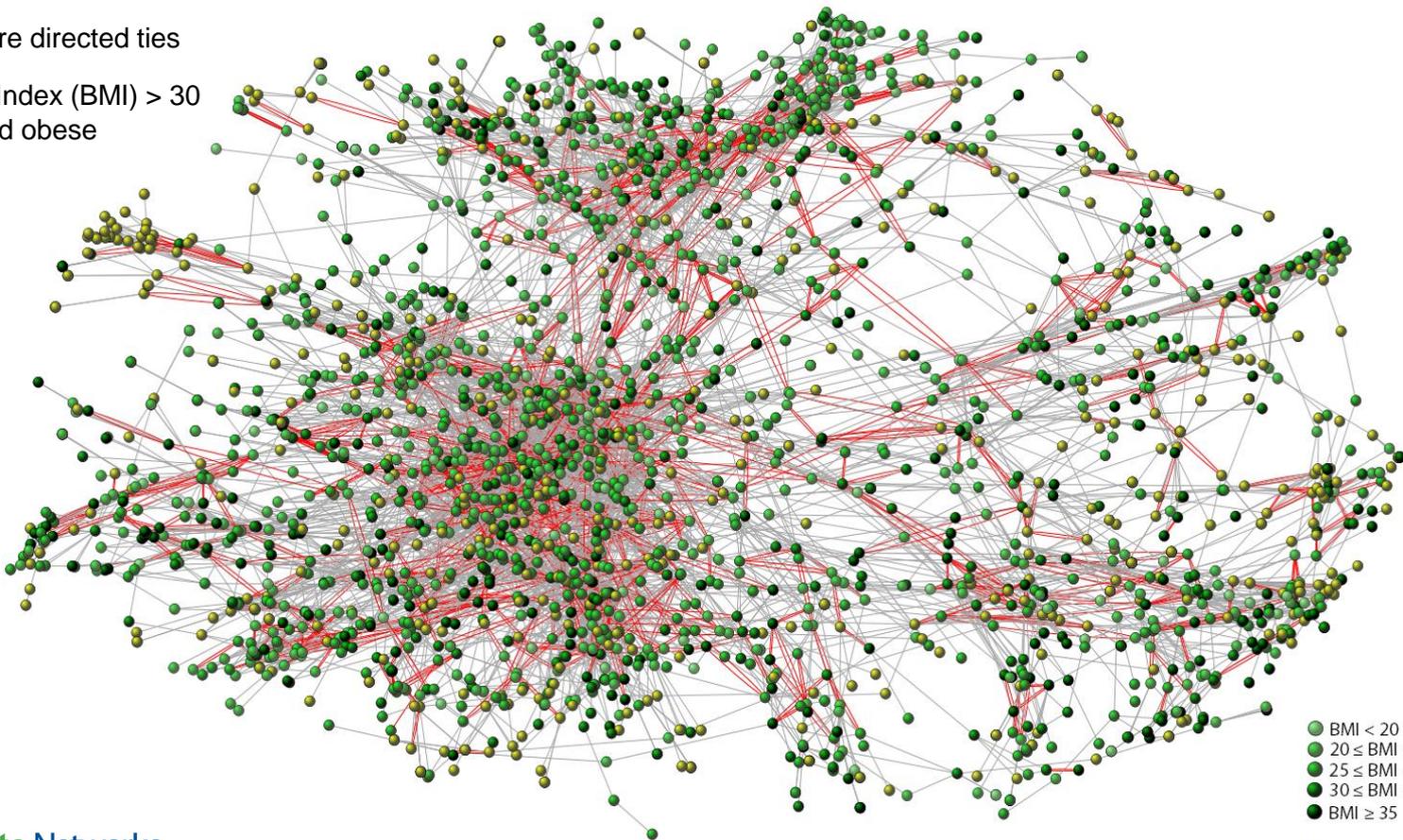


BMI Ranks and Obesity at Healthways

Red lines show bi-directional ties

Grey lines are directed ties

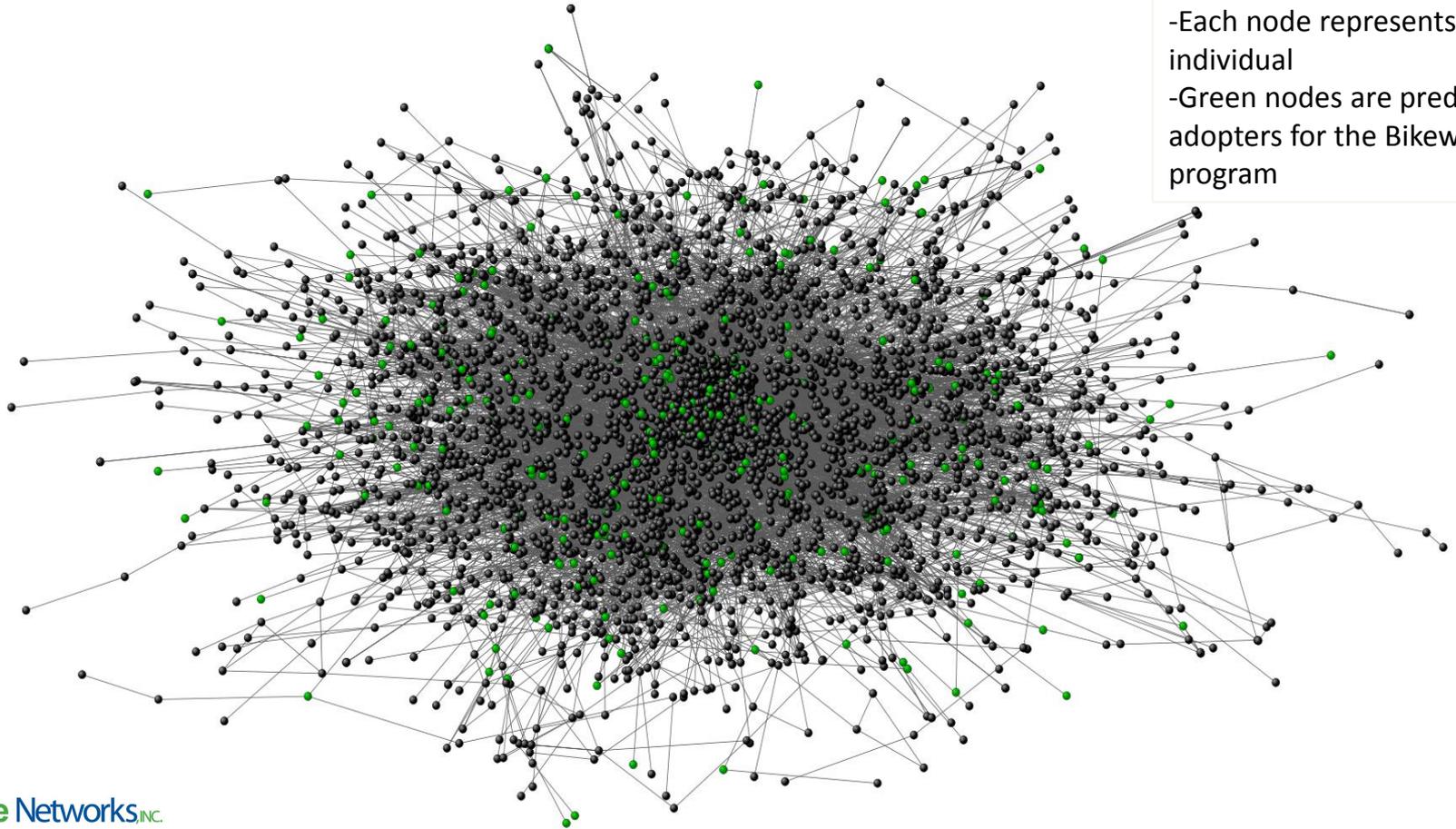
Body Mass Index (BMI) > 30
is considered obese

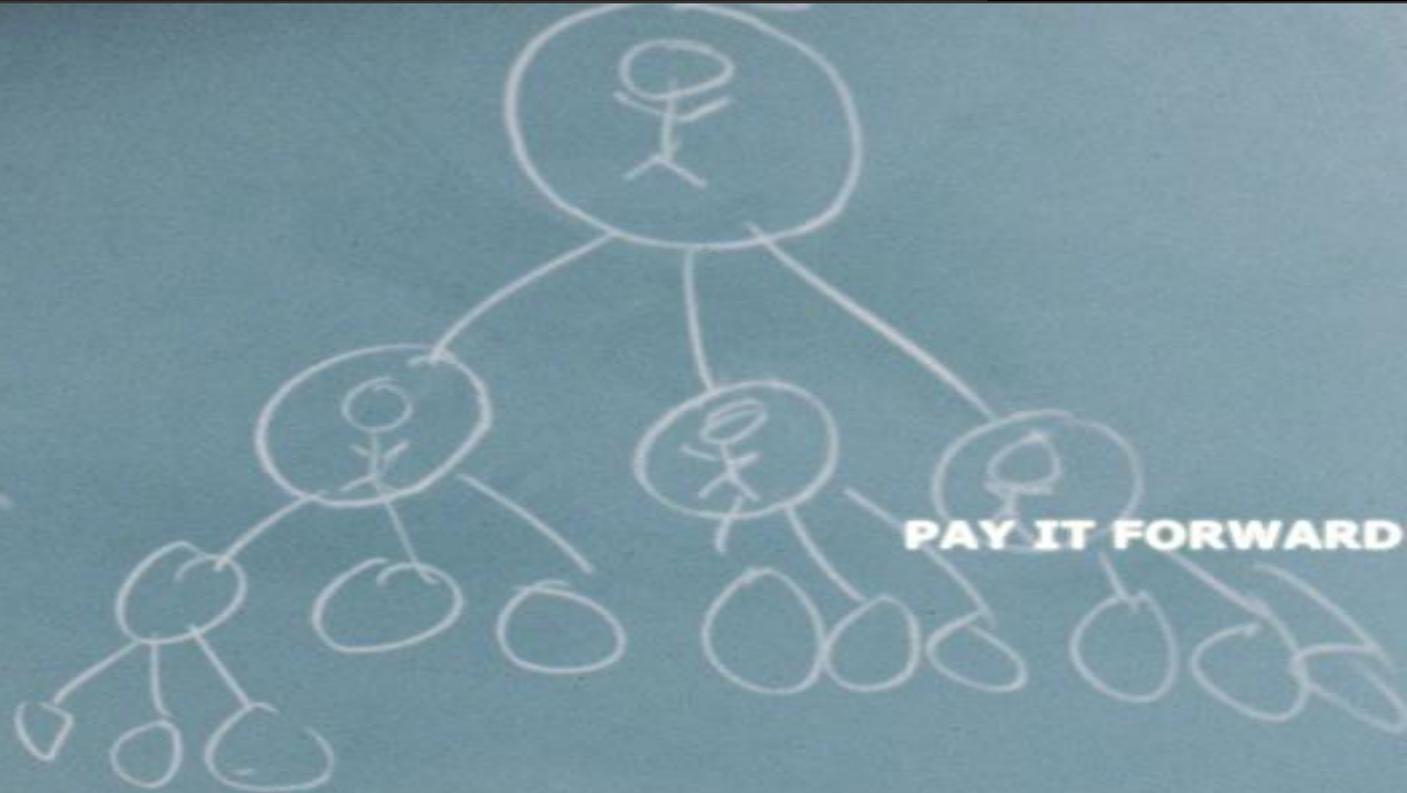


- BMI < 20
- 20 ≤ BMI < 25
- 25 ≤ BMI < 30
- 30 ≤ BMI < 35
- BMI ≥ 35

● BMI not available

Bikewalk Program in Vitality Cities





Realize Your Network Power

