



Concealed  
microphone  
in operation.



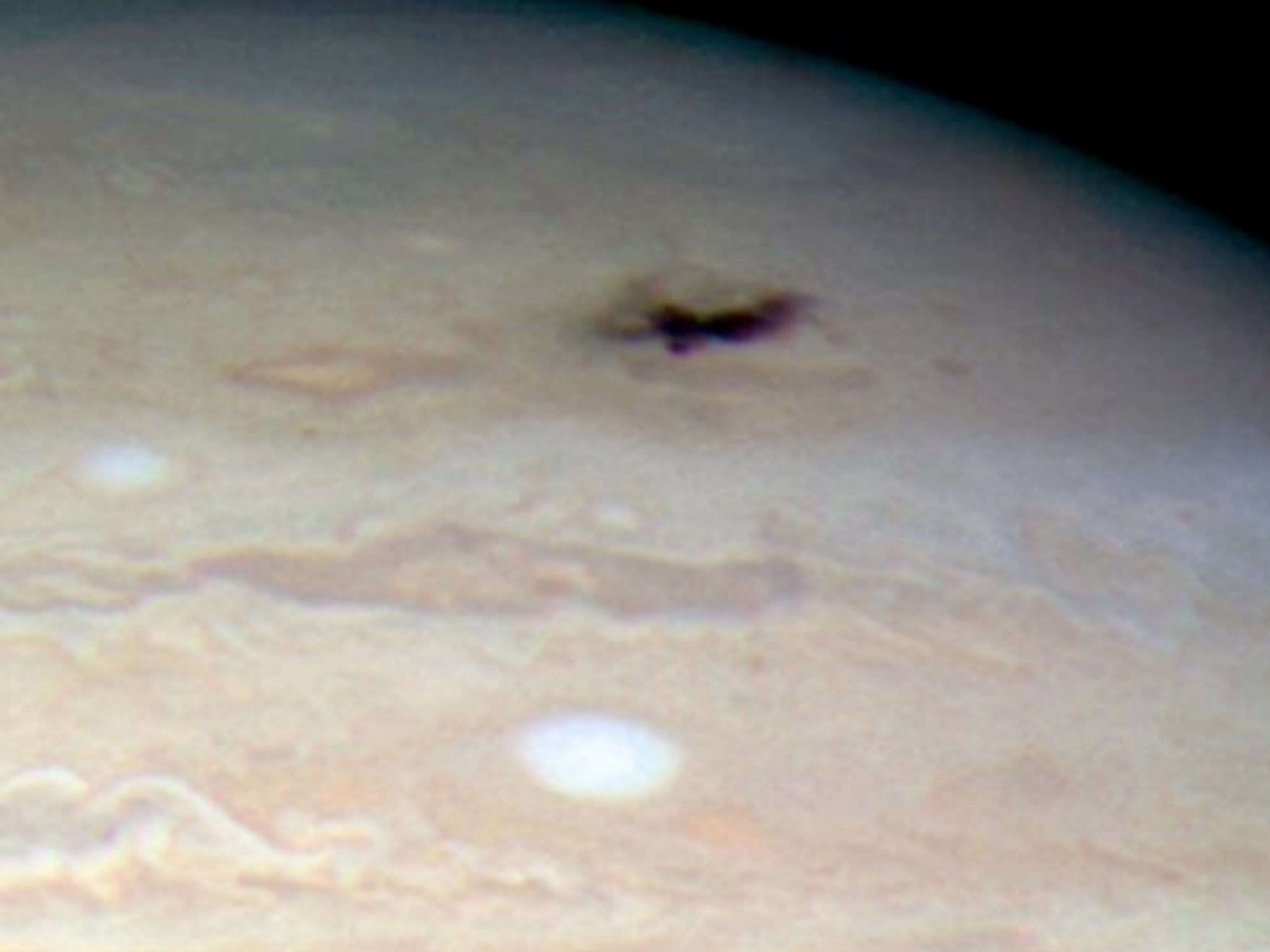




















2008ha

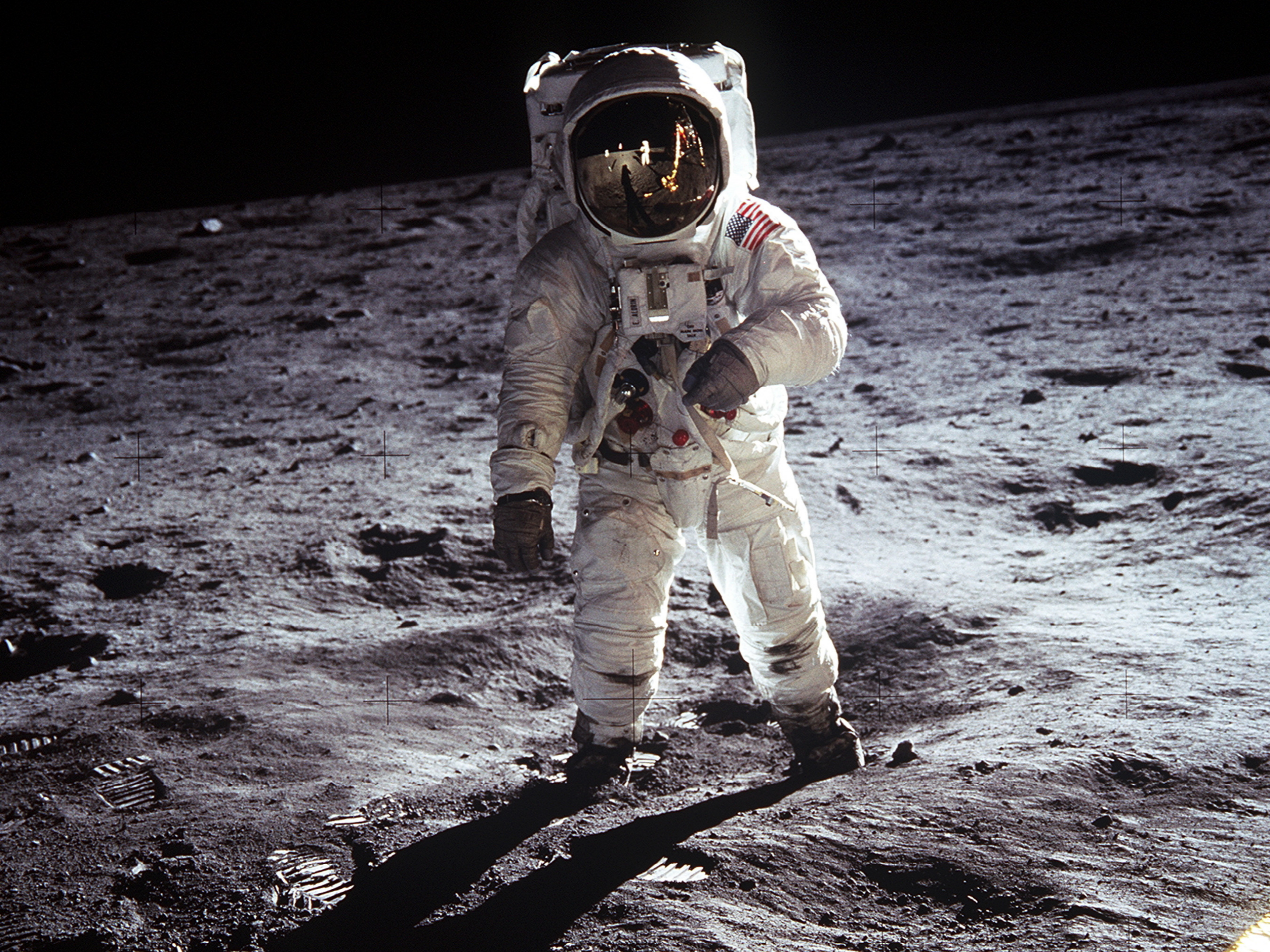




































CANADA  
LAND OF THE  
HOMELESS

NEW YORK

2878



















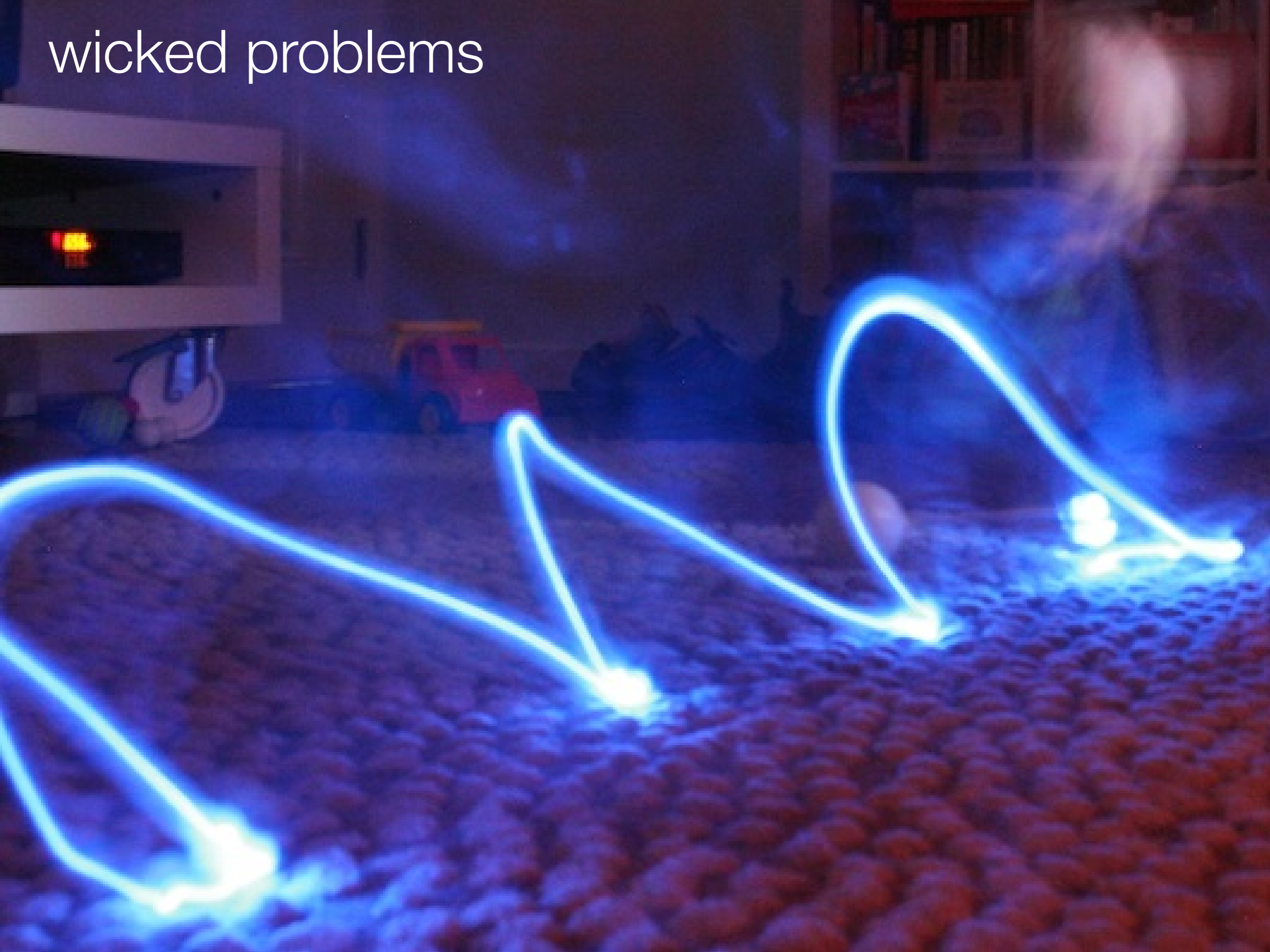






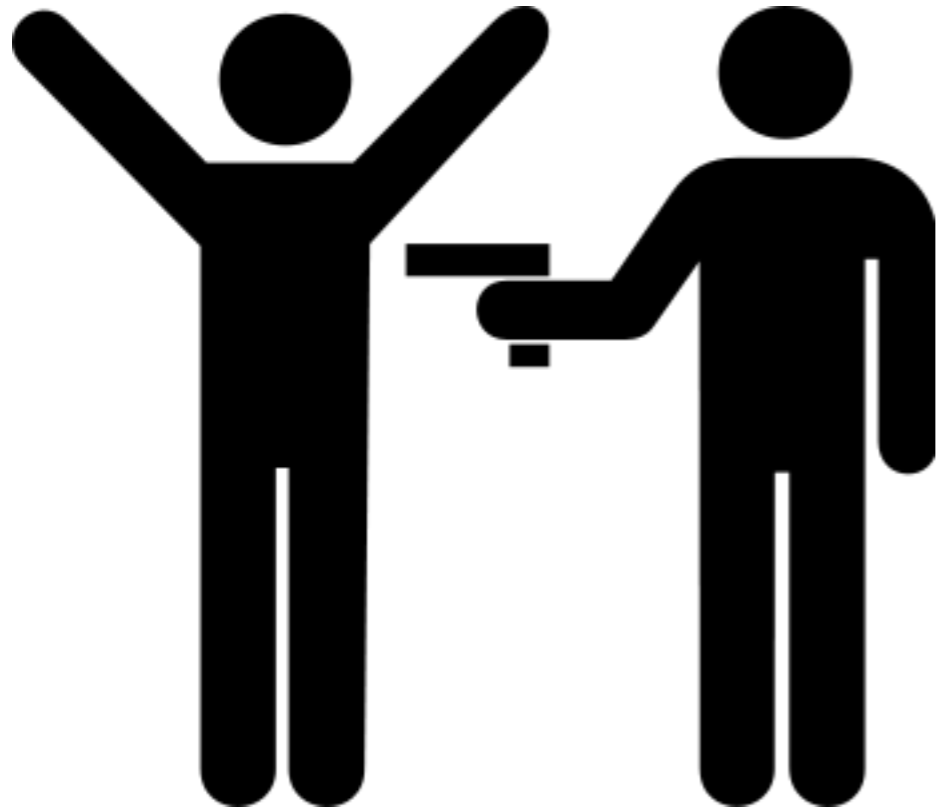


wicked problems





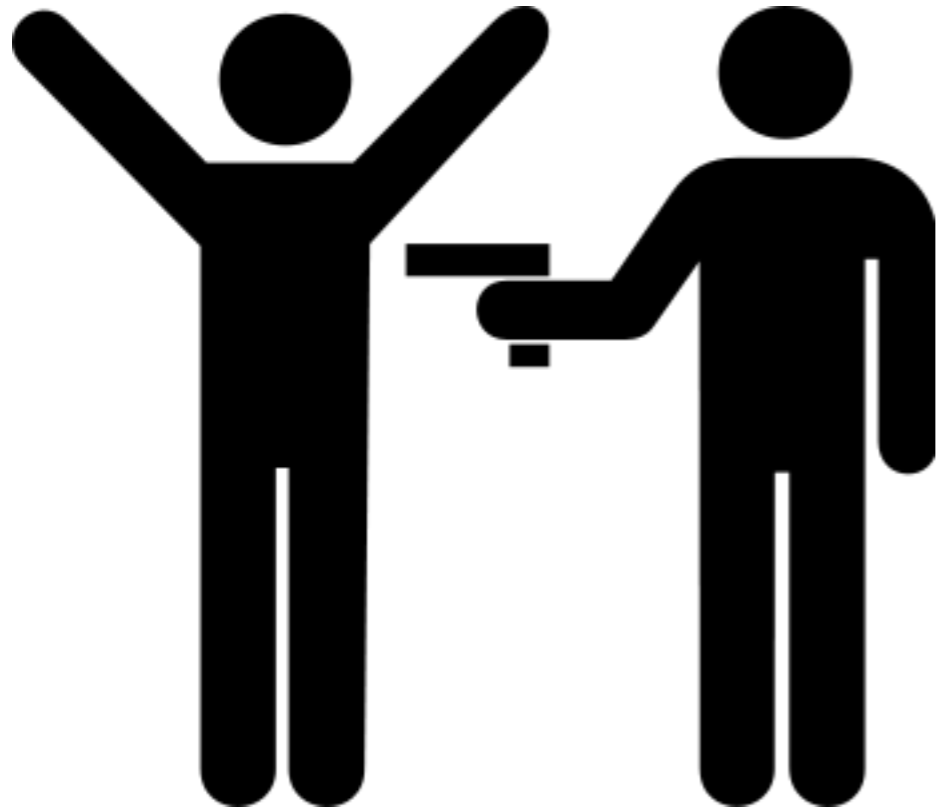
wicked problems



street crime



wicked problems

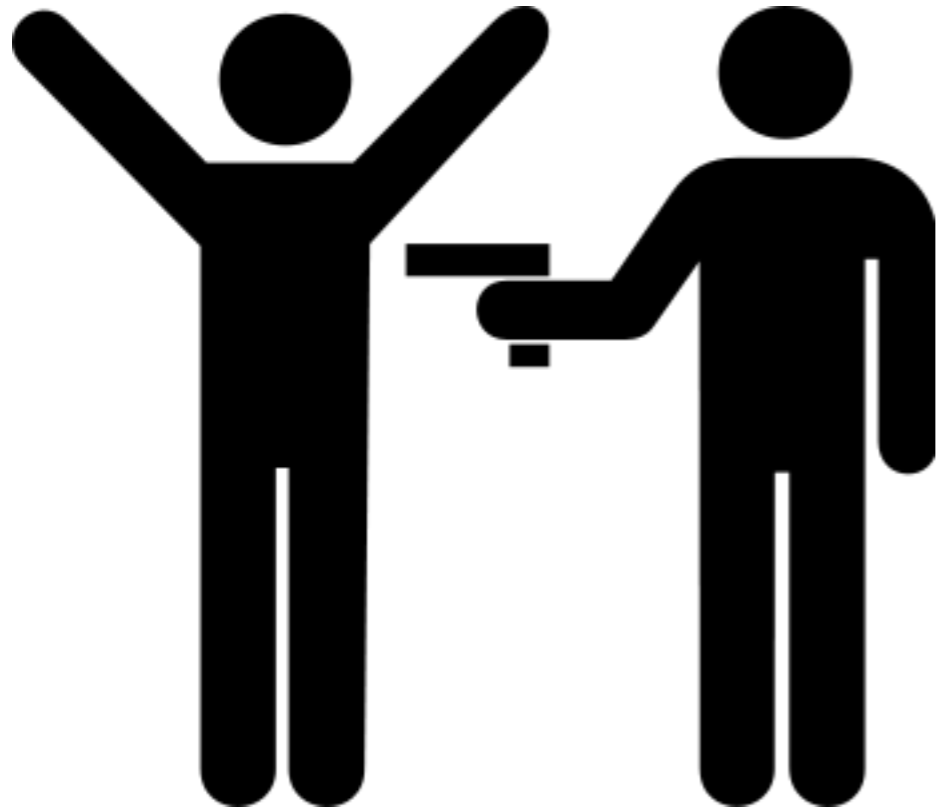


street crime

disarm police?



wicked problems



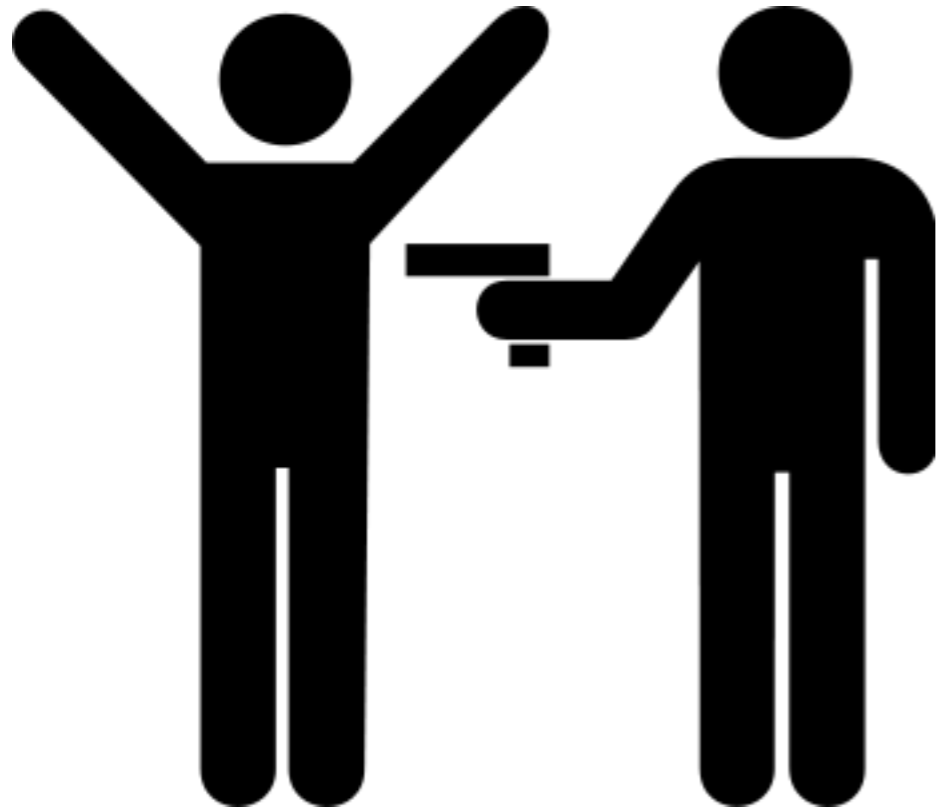
street crime

disarm police?

repeal laws that define crime?



wicked problems



street crime

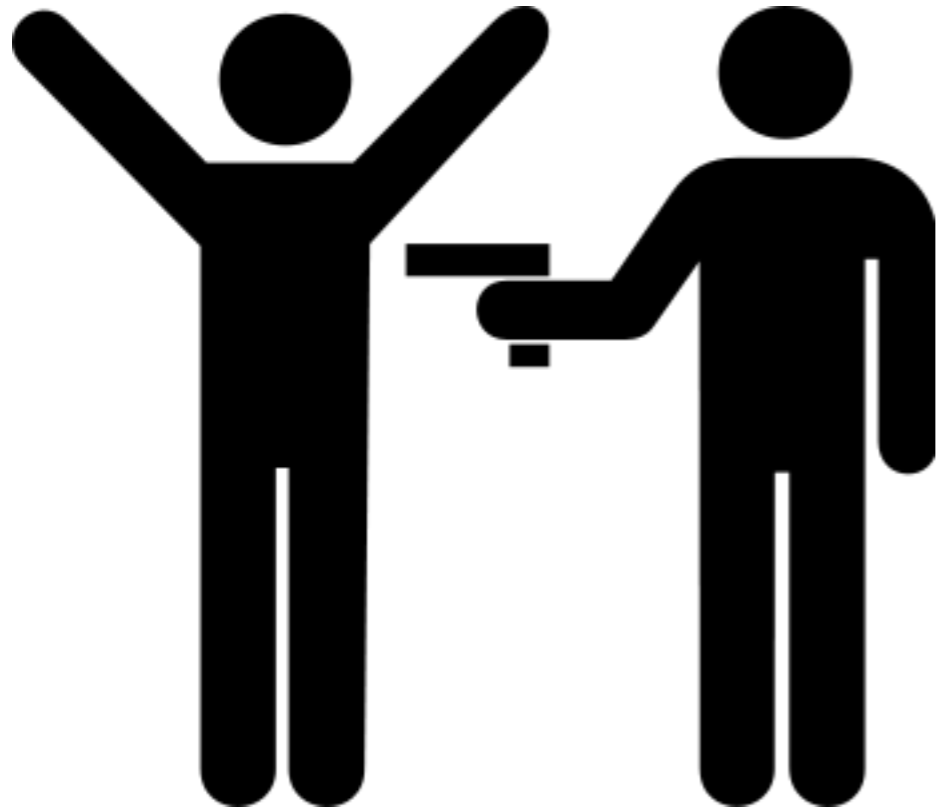
disarm police?

repeal laws that define crime?

substitute ethical self-control for police and courts?



wicked problems



street crime

disarm police?

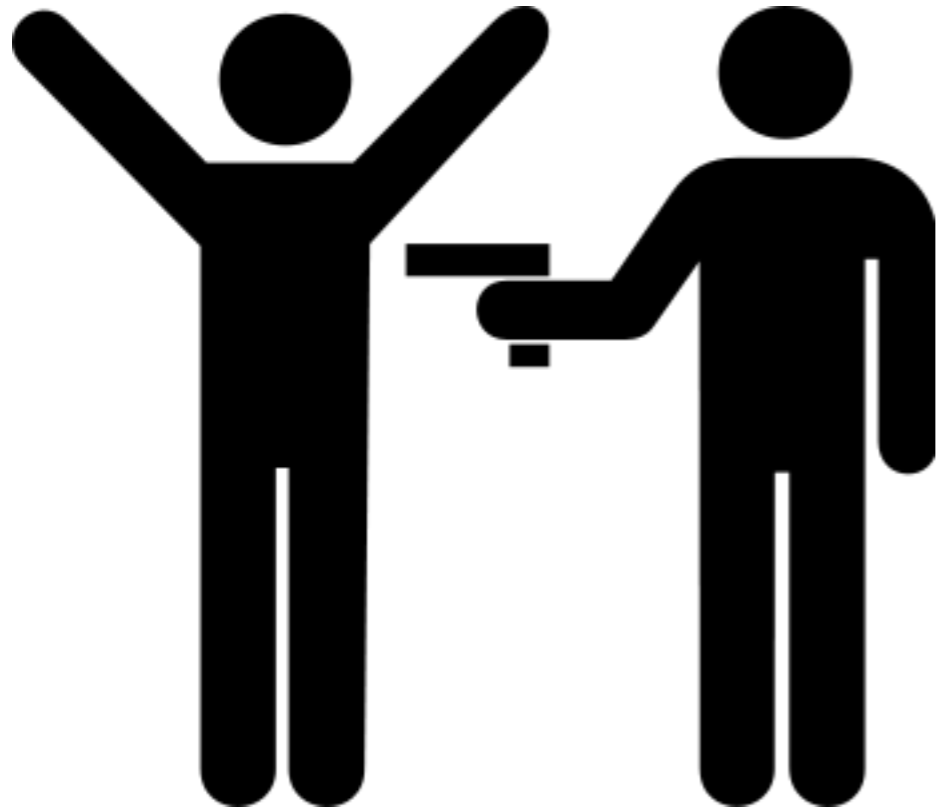
repeal laws that define crime?

substitute ethical self-control for police and courts?

shoot criminals and thus reduce  
the numbers who commit crimes?



wicked problems



street crime

disarm police?

repeal laws that define crime?

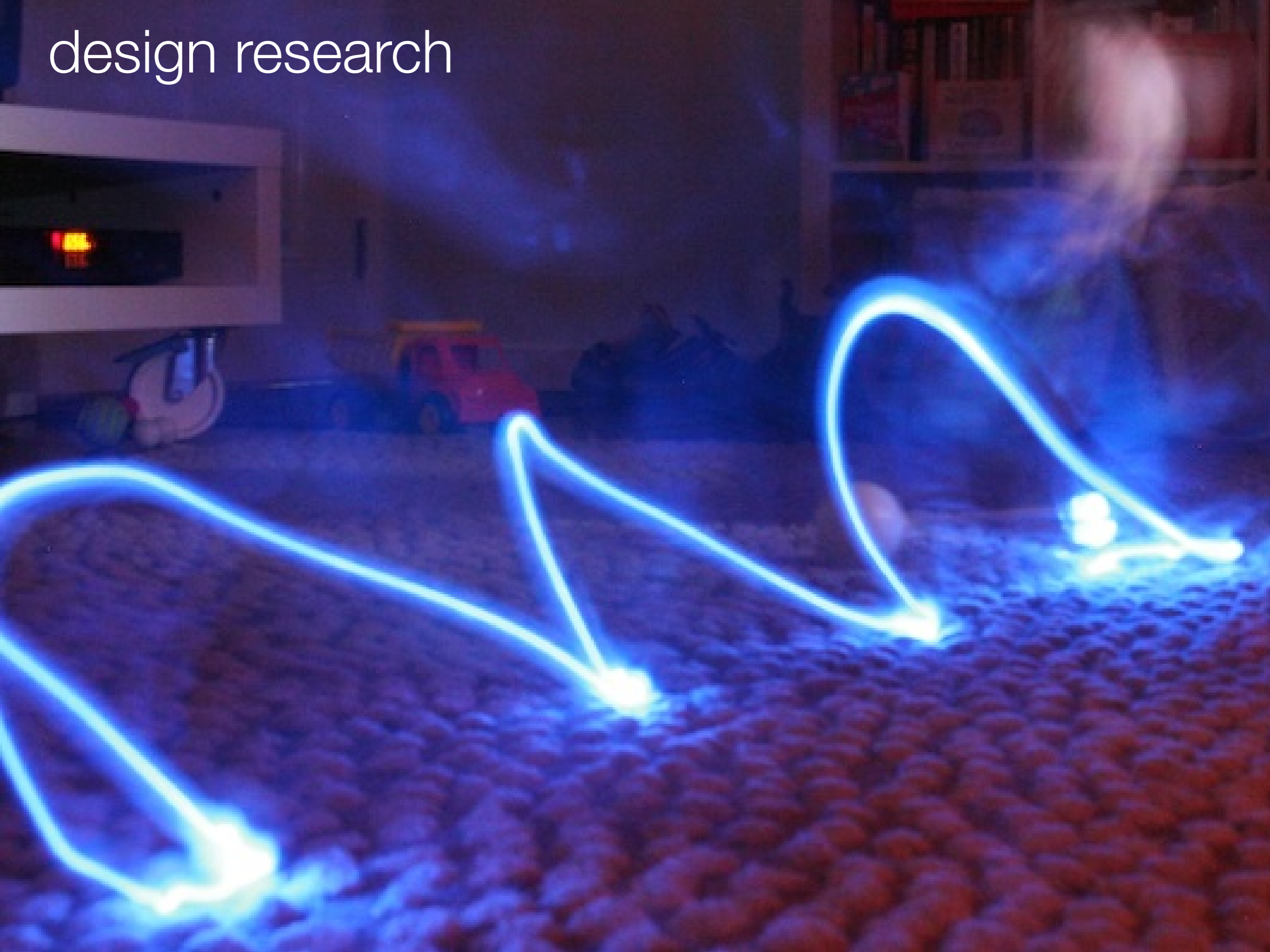
substitute ethical self-control for police and courts?

shoot criminals and thus reduce  
the numbers who commit crimes?

give away free loot to would-be-thieves  
to reduce incentive?



design research





# design research

design research is  
an inquiry focused on producing  
a contribution of  
knowledge

NOT

to directly inform  
the development  
of a commercial product



# design research

emphasize problem making over problem solving

critique norms and expectations

tackle wicked problems

encourage interdisciplinary thinking

highlight empathy for users

allow for disruptive ideas



# Urban Atmospheres

Eric Paulos  
Chris Beckmann  
Elizabeth Goodman  
RJ Honicky  
Ben Hooker  
Tom Jenkins  
August Joki  
Chris Myers  
Ian Smith  
Parul Vora



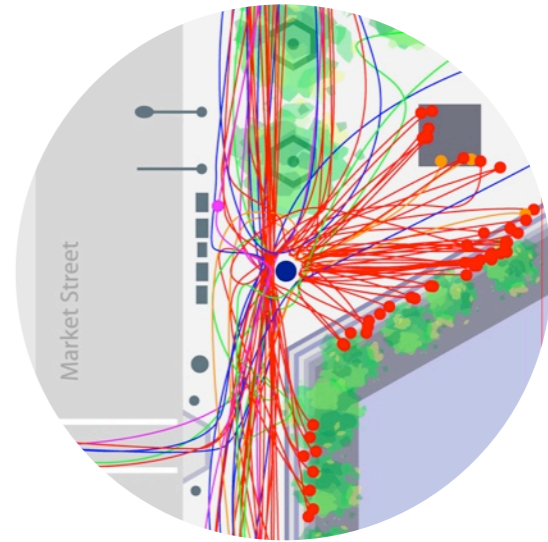
Human-  
Computer  
Interaction  
Institute



The map is not the territory

- Alfred Korzybski







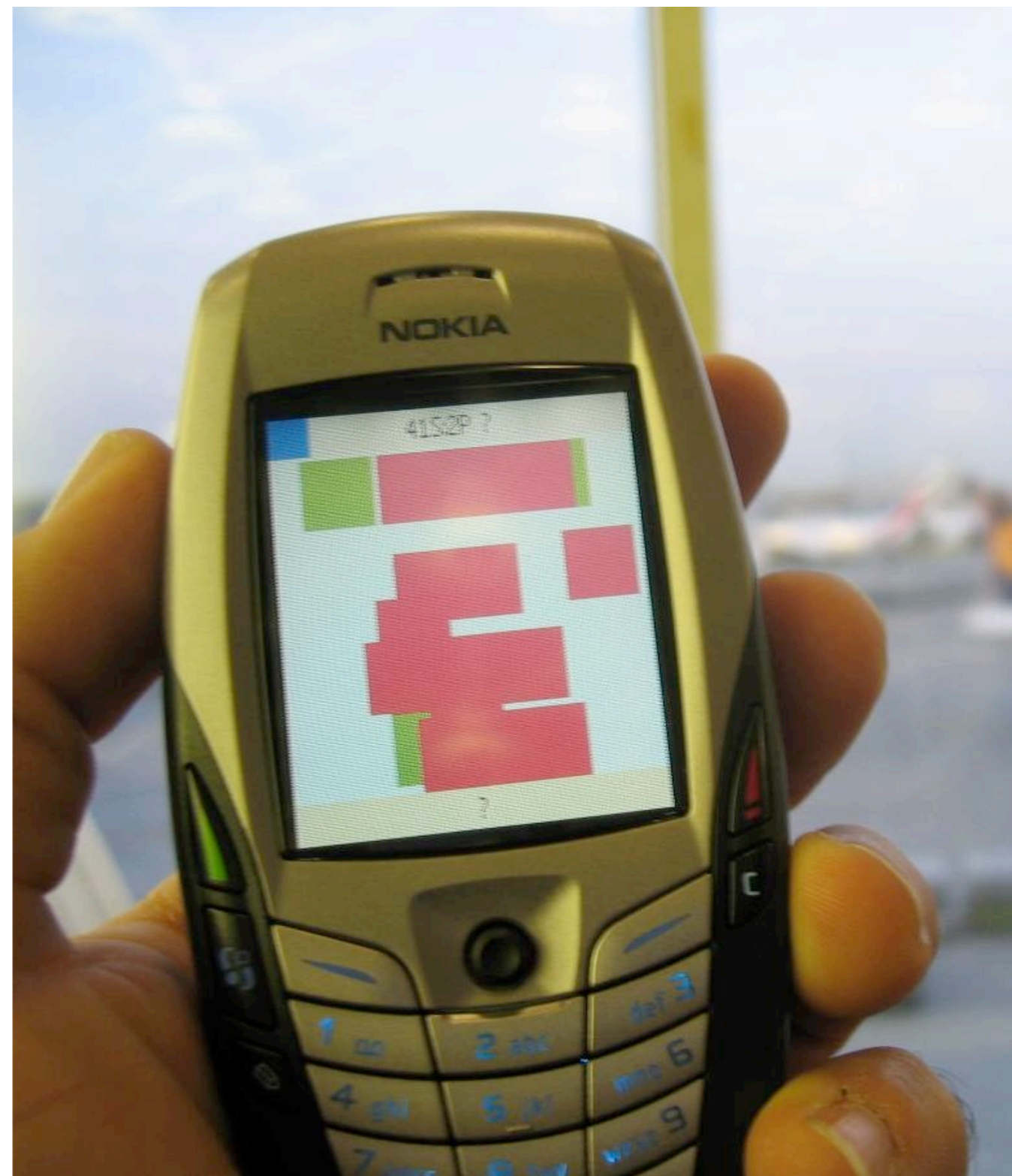
# Jabberwocky

Encountering our familiar strangers



*The Familiar Stranger: Anxiety, Comfort, and Play in Public Places*, ACM SIGCHI 2004  
Eric Paulos and Elizabeth Goodman









Stanley Milgram 1971





Vito Acconci / Following Piece 1969





Sophie Calle / Please Follow Me 1983





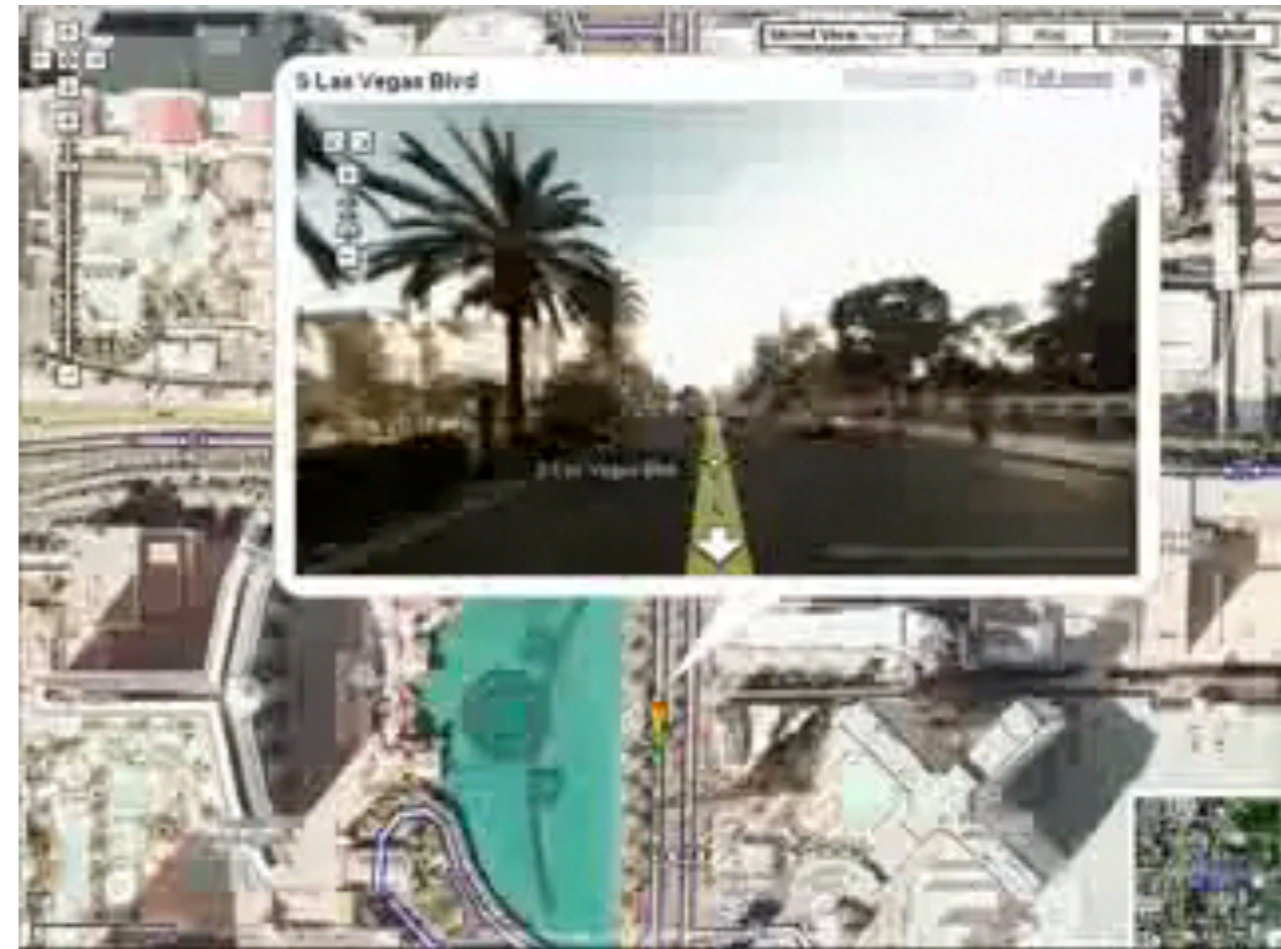




Aspen Movie Map  
Michael Naimark  
1978



Aspen Movie Map  
Michael Naimark  
1978



Street View  
Google  
2007

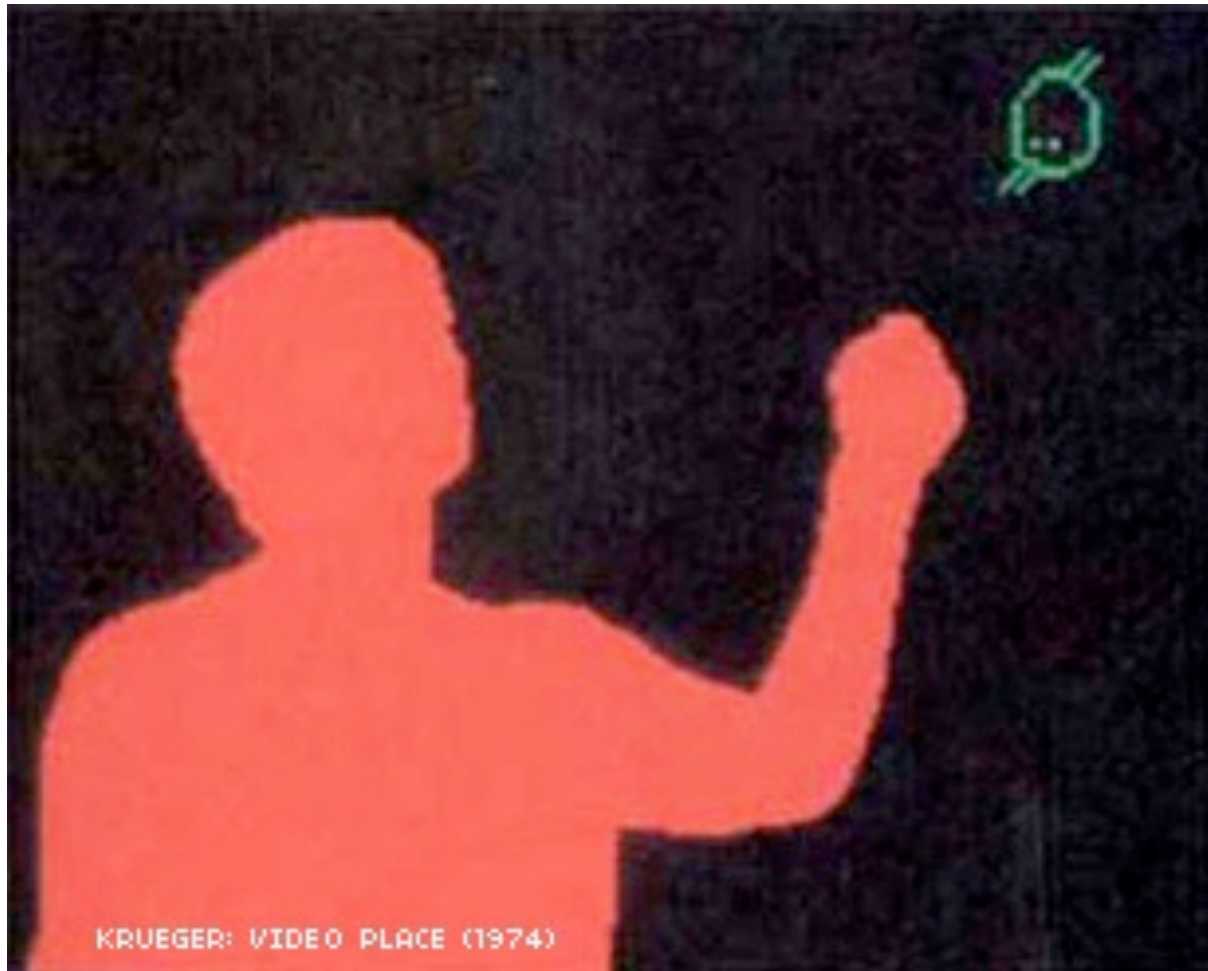




Michael Naimark & MIT  
ArchMac's Aspen Movie Map  
1978-1980



Google StreetView  
2007



Myron Krueger's Video Place  
1974



Sony EyeToy  
2003





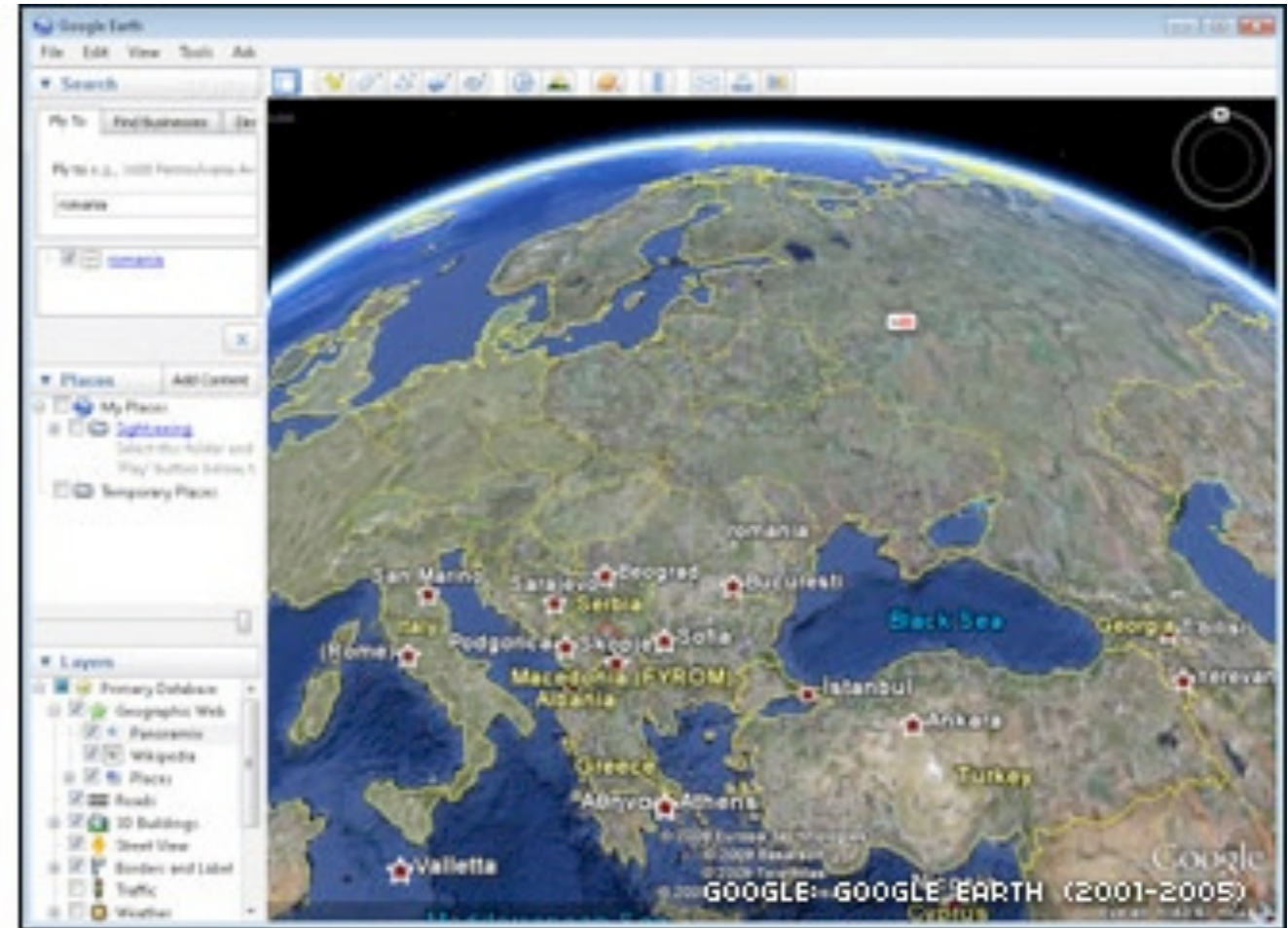
Jeffrey Shaw's Legible City  
1988



E-fitzone exercise equipment  
2008



Art+Com's Terravision  
1996



Google's Google Earth  
2005





Institute for Applied Autonomy's  
GraffitiWriter & Streetwriter  
1998-2004

Nike Chalkbot  
2009





Motoi Ishibashi and  
Motoki Kouketsu's  
G-Display artwork  
1999



The Incredible Maze (Wii) 2008  
aMaze (iPhone) 2009





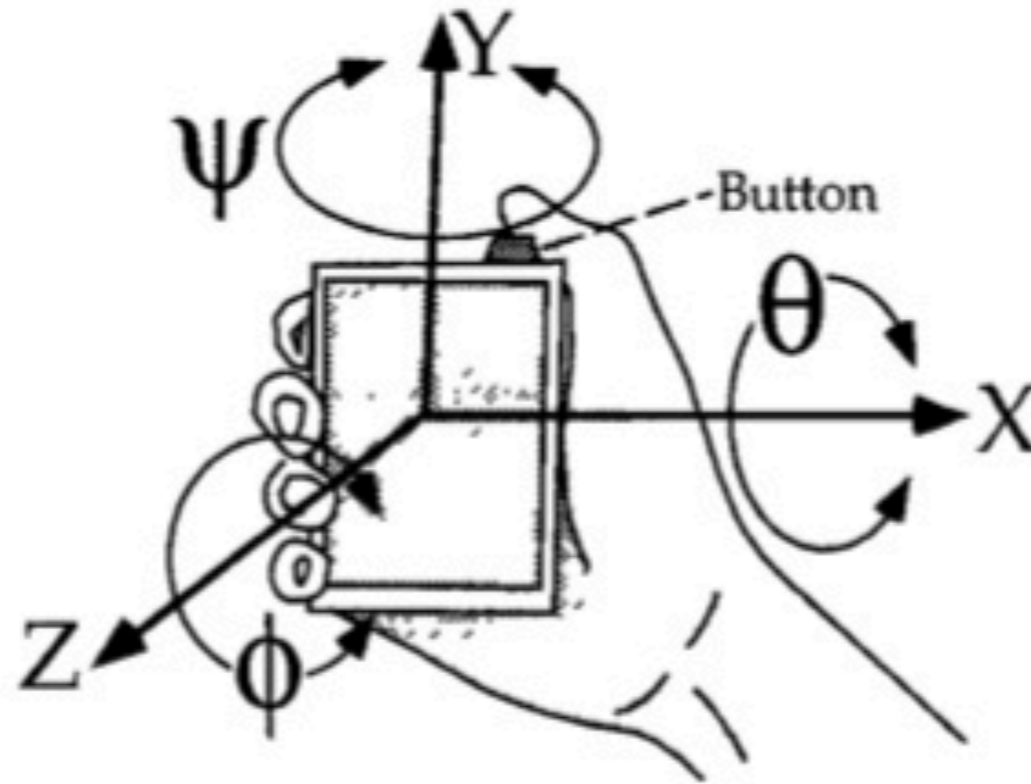


Figure 1: The operational concept of the tilting interface

## Jun Rekimoto's Tilting Operations for Small Screen Interfaces

Tech Note  
UIST 1996



Wearable Computing  
Parasitic Power Shoes Project  
1991-1998





The Eudaemons Shoe  
1978



Wearable Computing  
Parasitic Power Shoes Project  
1991-1998



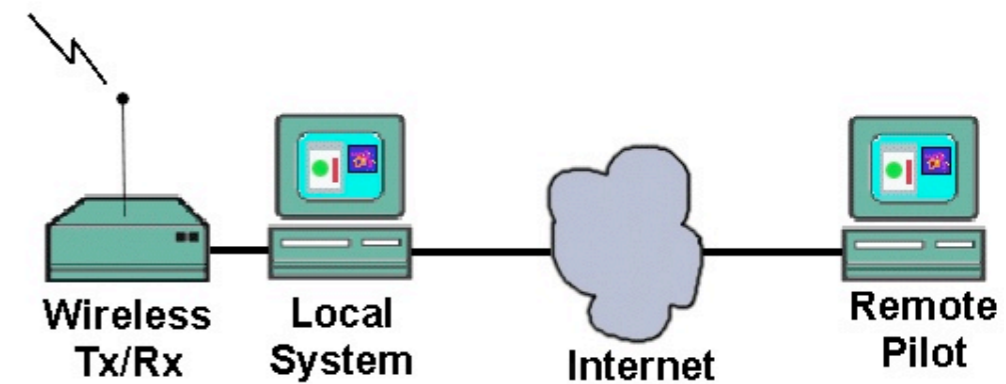
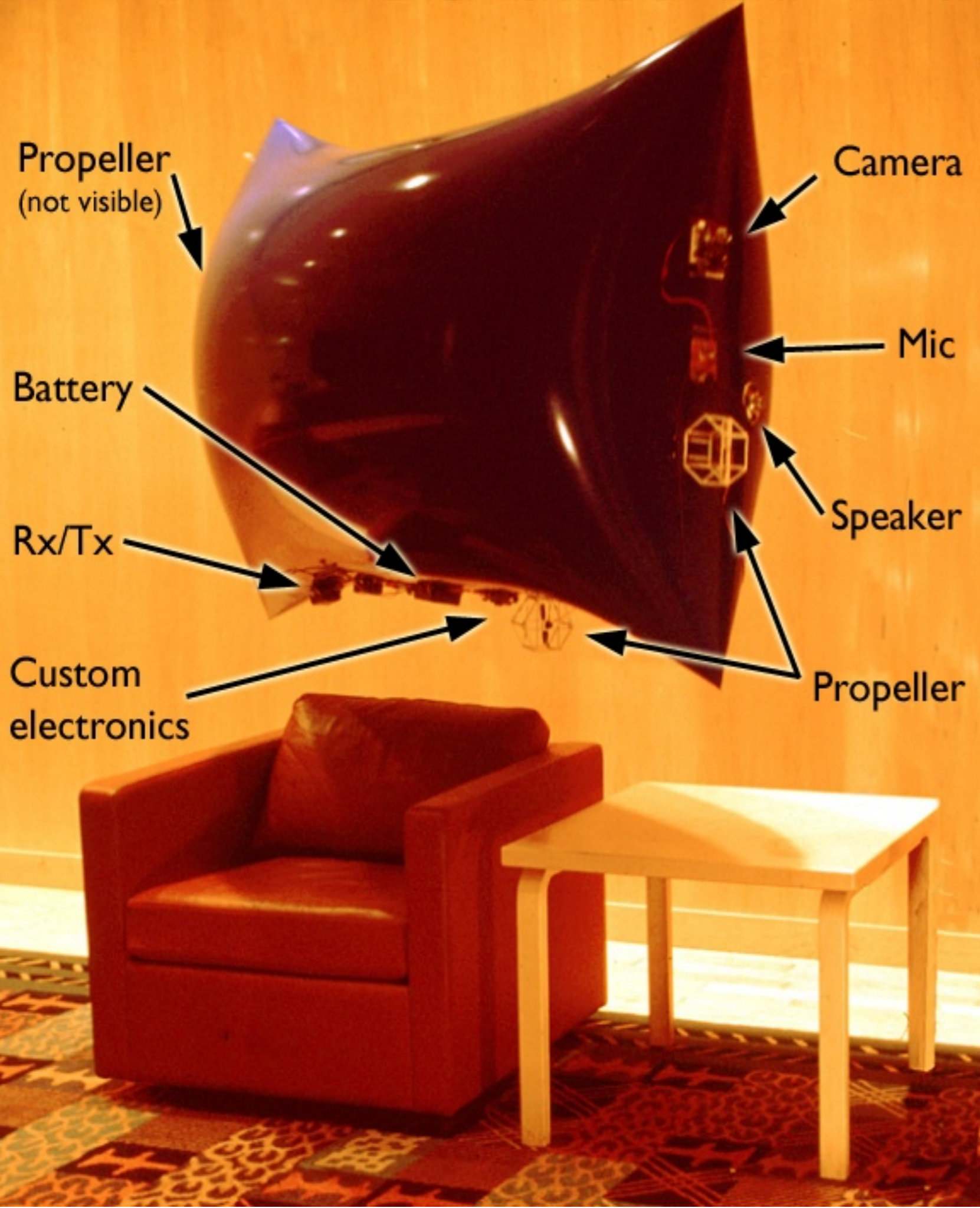


The Eudaemons Shoe  
1978



Wearable Computing  
Parasitic Power Shoes Project  
1991-1998









Silver Clouds by Andy Warhol 1966





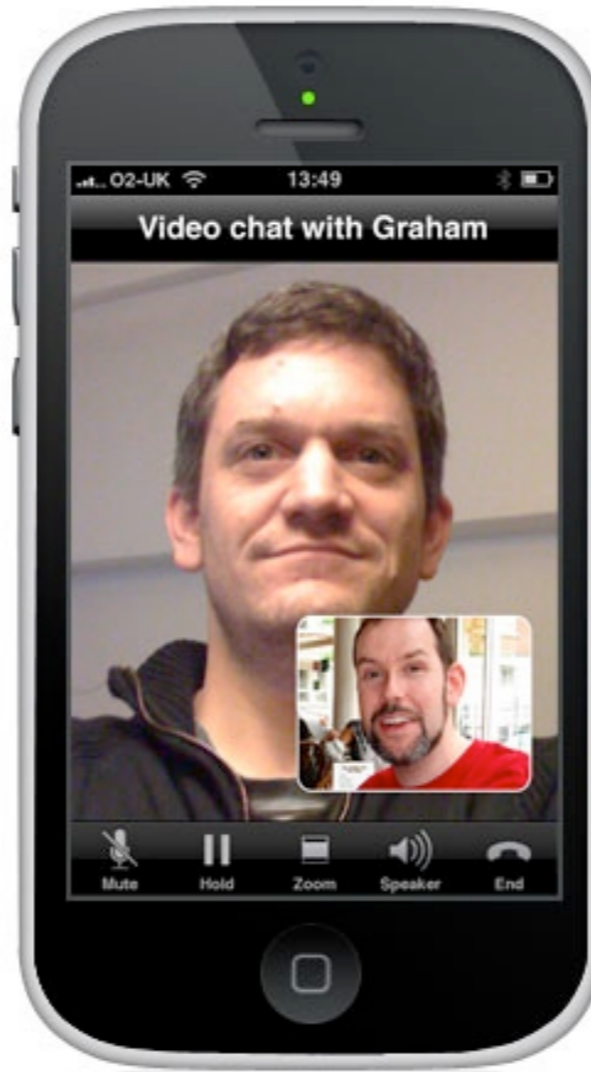


Remote Controlled Blimp  
\$19





Remote Controlled Blimp  
\$19



iPhone 3Gv



Remote Controlled Blimp  
\$19



iPhone 3Gv

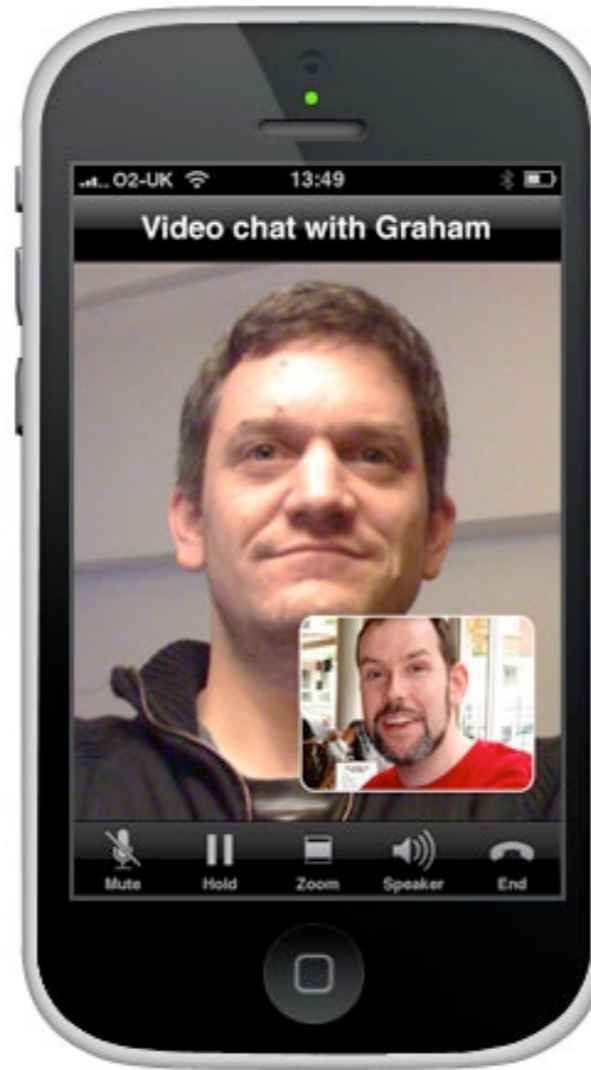


Eric's Thesis App  
99¢





Remote Controlled Blimp  
\$19



iPhone 3Gv

My PhD Dissertation  
\$19.99

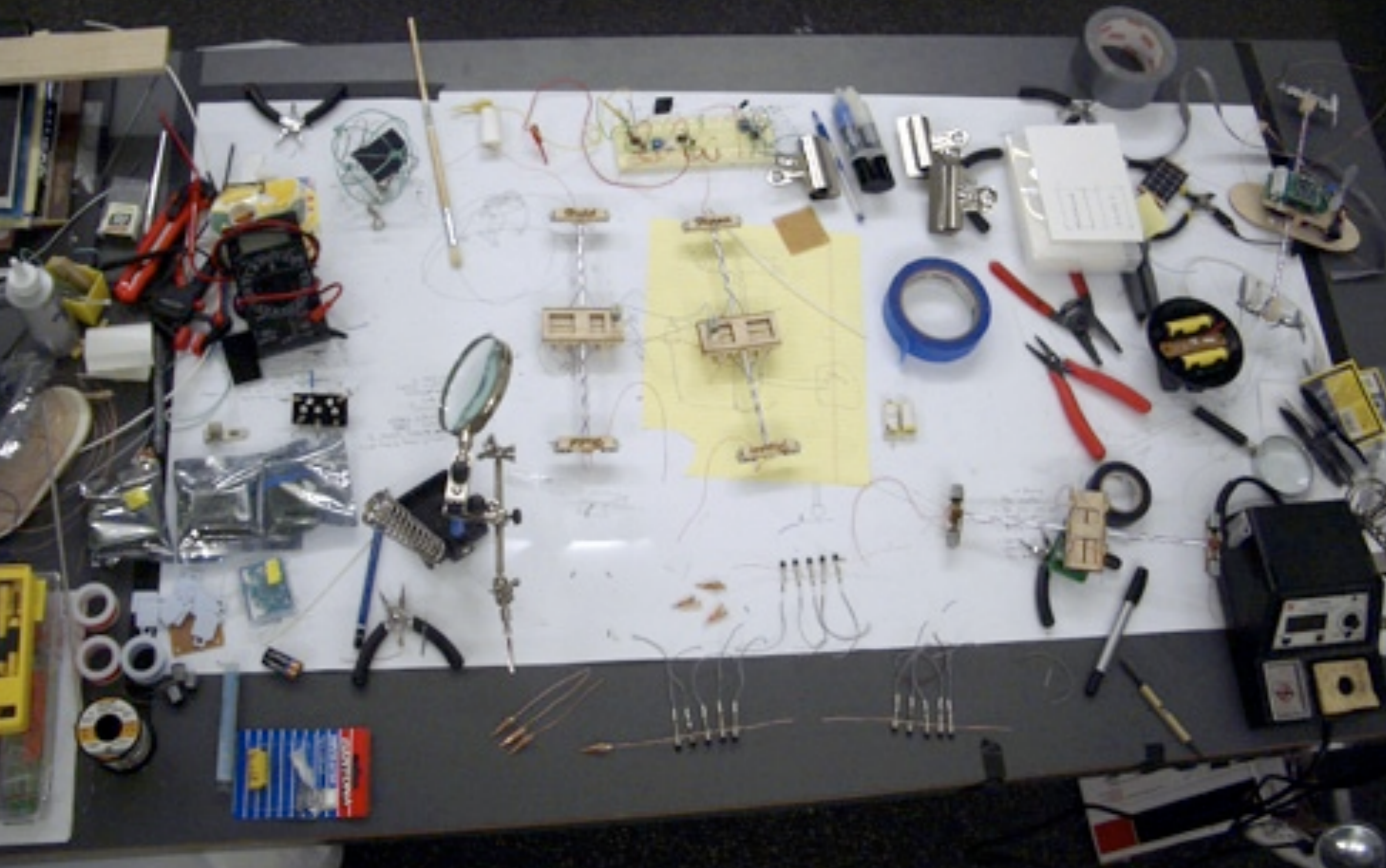


Eric's Thesis App  
99¢











Top

Secret

ERIC'S

Plans

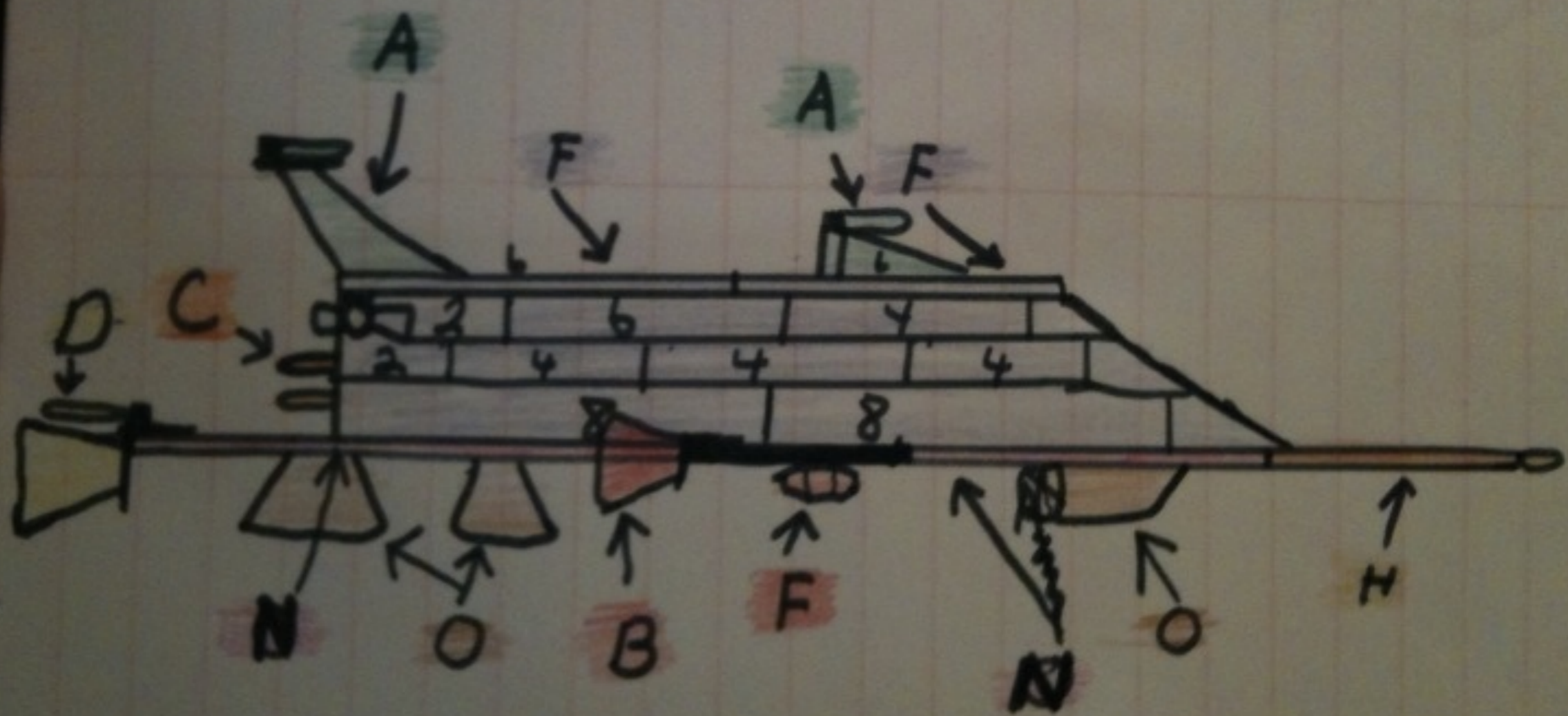
Do not

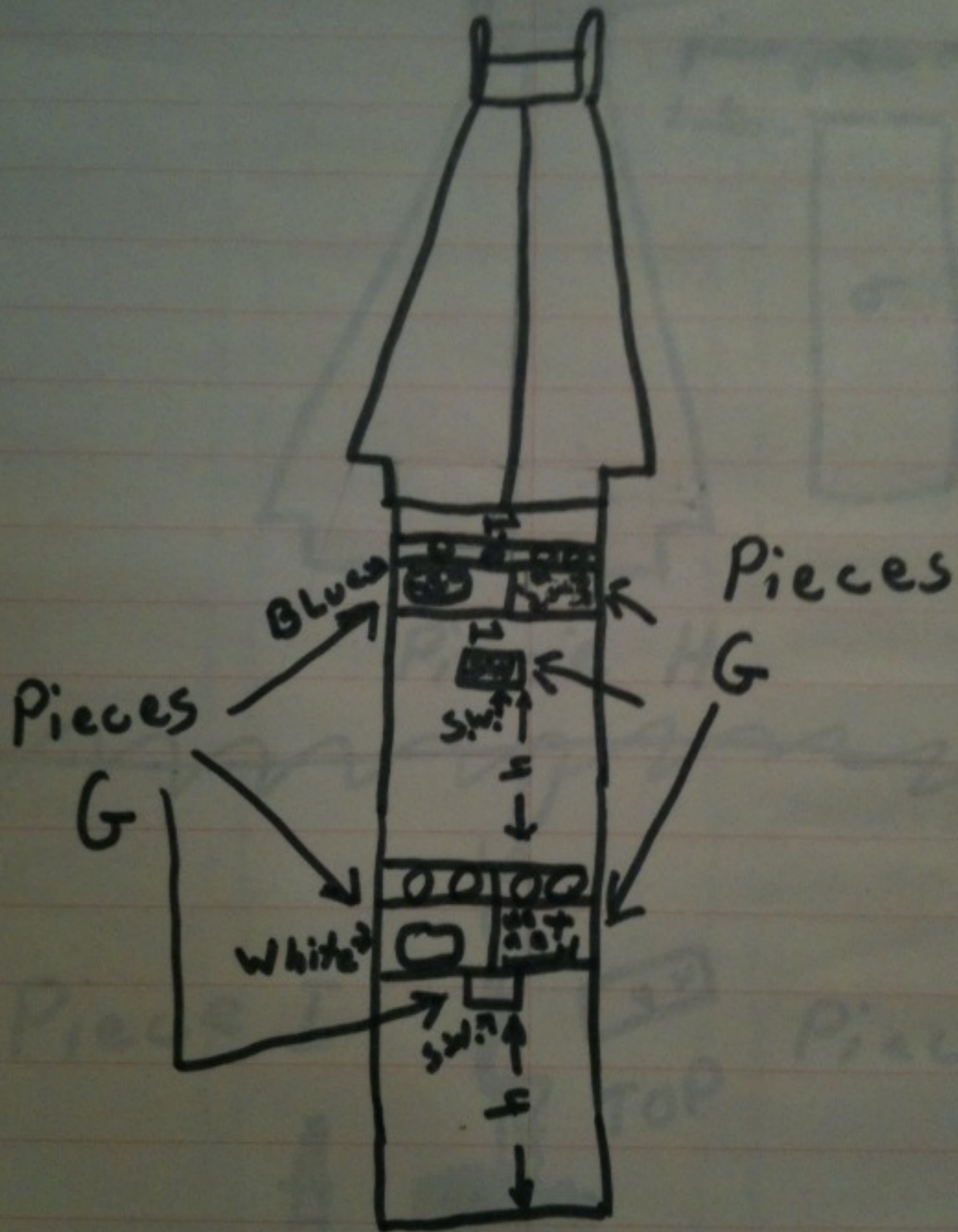
open

UNLESS

AUTHORIZED

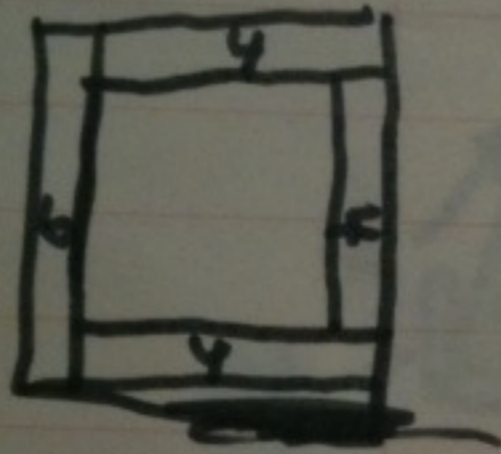




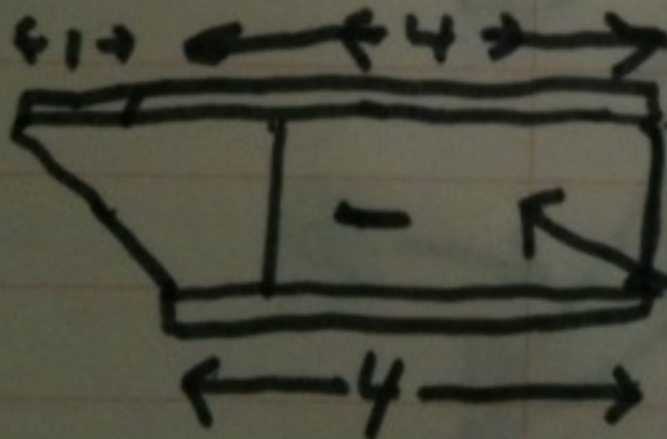




# Part 0



TOP

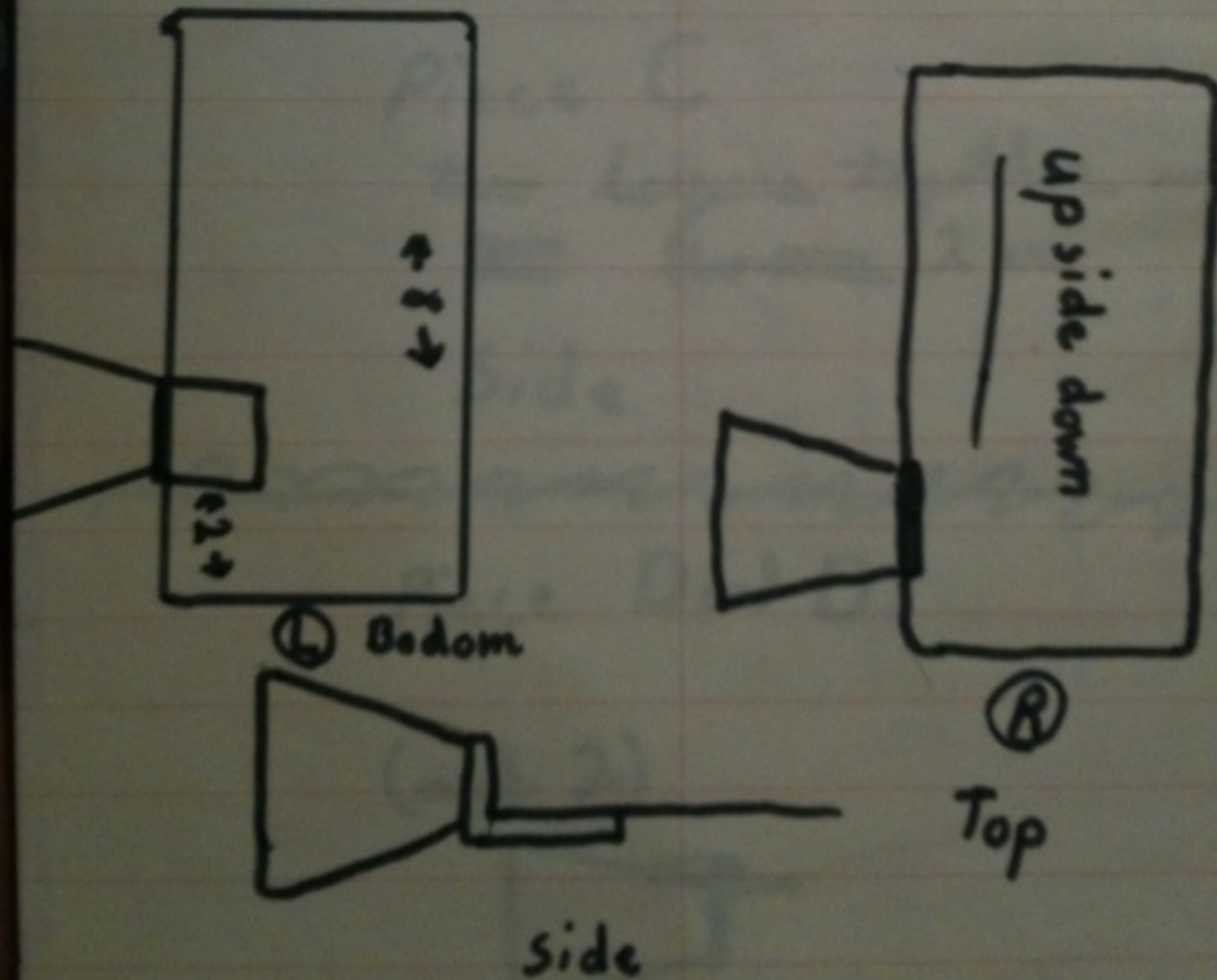


put a door on each side

SIDE

Piece B and B<sub>2</sub>  
...

Engine and engine holder need  
to be reversed for right and  
left side







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CosplaySupplies.com

Home of the Wonderflex F.A.Q.

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Prosthetics

Wigs

Footwear

Craft Materials

Props

Feedback - Ads by Google

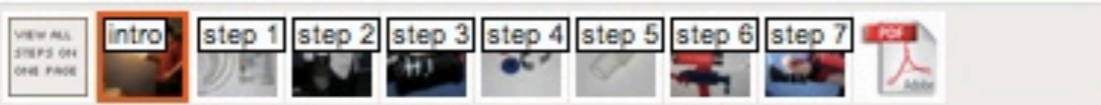
All Art Craft Food Games Green Home Kids Life Music **Offbeat** Outdoors Pets Photo Ride Science

Tech



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## Flameslinger



Intro Flameslinger

- FACEBOOK
- TWITTER
- EMAIL
- EMBED
- PRINT
- PDF

Instructions on how to modify a spiderman webslinger into a handheld flamethrower.  
 Disclaimer: I havent had any problems with this design and I have never been burned by it, however it still is dangerouse and I take no responsibility for anyone who attempts to build this.



« previous step

To View All Steps on one page, [Go Pro Today!](#)

next step »

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**STATS** ★★★★★ 3.823 views

3.52 (34 ratings)

Author: **Tetrahydrate**

Joined: Jul 3, 2006 [subscribe](#)

Instructables: 44

published: Jul 3, 2006 [\(more info\)](#)

### RELATED



**Nerf Gun Modifications.**  
Nerf guns are not just for kids any more. In this how-to, you will learn how to



**How to Kill Ants**  
Many people can't figure out how to get rid of those pesky little ants. If you're



**Orange Peel Flamethrower**  
No, this has nothing to do with textured plaster. Basically, you just squeeze



**Easy Flame Thrower !**  
In this instructable i will show you how to make a flamethrower/blaster in



**Overclock a lighter, AKA: . ALLERT: I jsut realized that another person has made this same instructable only in**



**Fire Extinguisher super-so.**  
I am liable for nothing you do with this. by reading this instructable, you accept...




**Filming Sniper Scenes**  
Every war movie must have









“fail-safe”

load-bearing members must fail catastrophically  
when exposed to flame

throttles default to max when control signal is lost







from proprietary innovation ...

to populist innovation



# Manifesto of Open Disruption and Participation

20 Feb 2009

We want our technologies  
to sing  
of not just productivity  
but of our love of curiosity,  
the joy of wonderment,  
and the freshness of the  
unknown.



# Emancipation Computing

*emancipation* - the act of setting an individual or social group free

*emancipation* - to free from restraint, control, or the power of another

*emancipation* - to free from bondage

*emancipation* - to free from any controlling influence

# Amazing but True Cat Stories

by Folks on the Internet











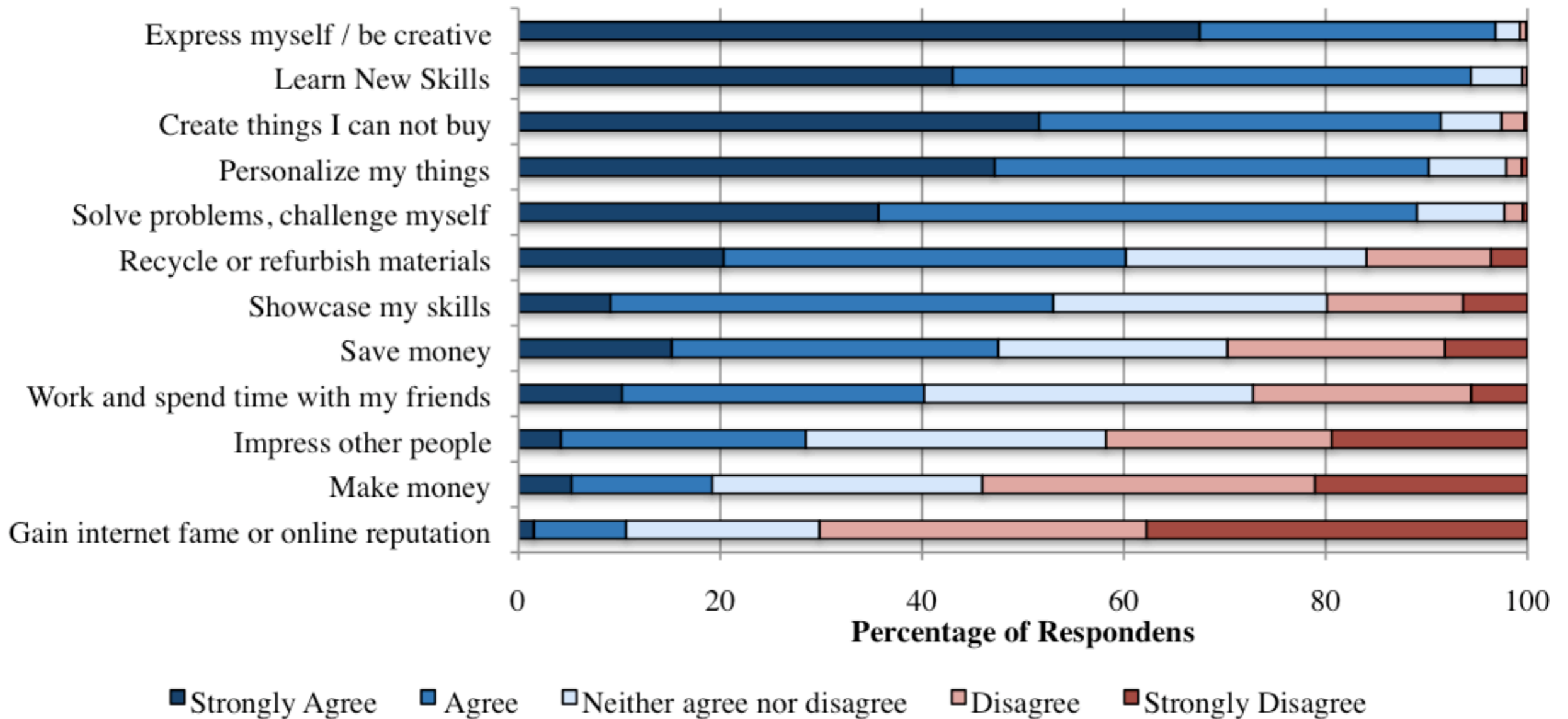


## DIY Culture

Stacey Kuznetsov

Rise of the Expert Amateur

### Motivations for Contributing to DIY Projects



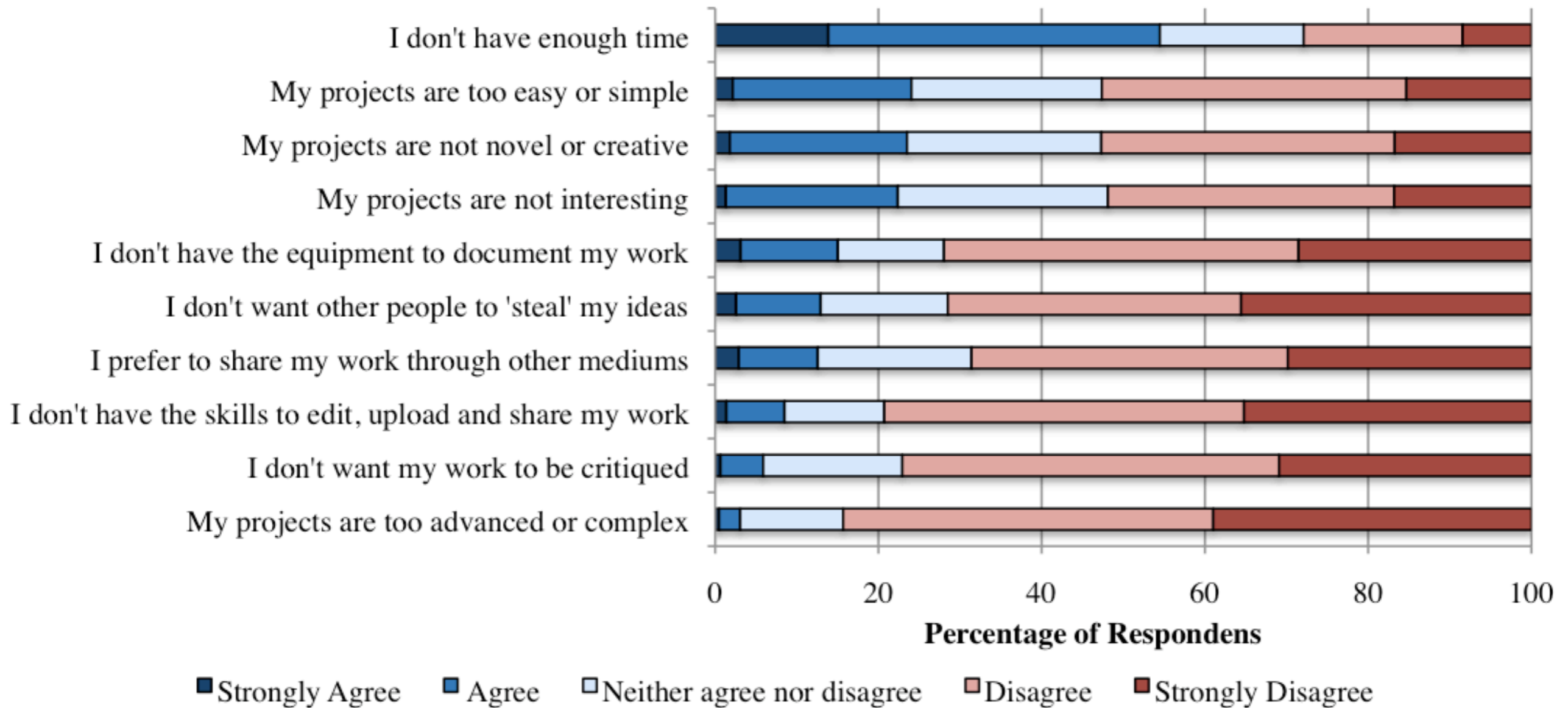


## DIY Culture

Stacey Kuznetsov

Rise of the Expert Amateur

### Factors that Deter from Sharing with DIY Communities





# DIY open questions

- How important is DIY to people?
- Is it a moral, aesthetic, or practical choice?
- How many people places themselves in the category?
- What portion of their life is DIY?
- Is it something that appeals to young people more or less?
- Is DIY a durable phenomenon -- will it last?
- Is it affected by the economy?
- Concerns about climate change?
- How is DIY incorporated into an individual's work life?
- Is it a value/practice they'd like to pass on to children?



Chronicle / Penni Gladstone



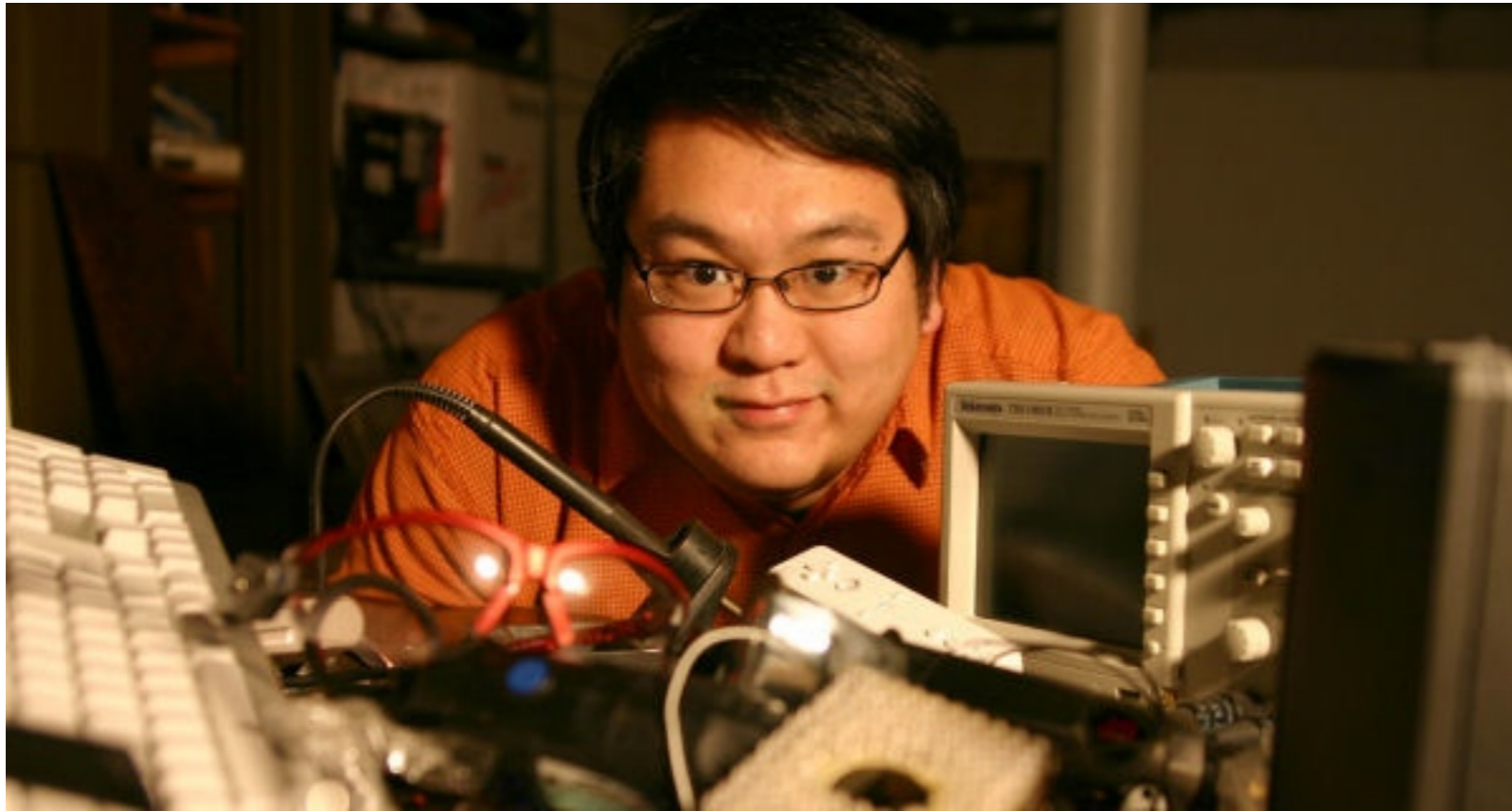
- Build rather than design
- Materials must come pre-broken
- Rubbish is the root of virtuosity
- Celebrate incomplete designs
- Allow for non-rivalrious use
- Embrace new materials - organic, decomposable, Hertzian, biological, molecular, food, soil ...





Every profession is a conspiracy  
against the laity

- George Bernard Shaw



UIST

+

DIY

our role is changing from “professional idealizer” and “problem solver” to ...  
non-professional facilitator of new artifacts

we are not the sole gatekeepers but rather equal practitioners in a loose process where we encourage the flow of possibilities and modalities and are open to learning and surprise by others - especially from those outside of our community





# Living Environments Lab

*a collaborative research laboratory  
focusing on the critical intersection of  
human life, our living planet, and technology*

## human life

HCI  
interface design  
usability  
experience  
empowerment  
emotion  
persuasion

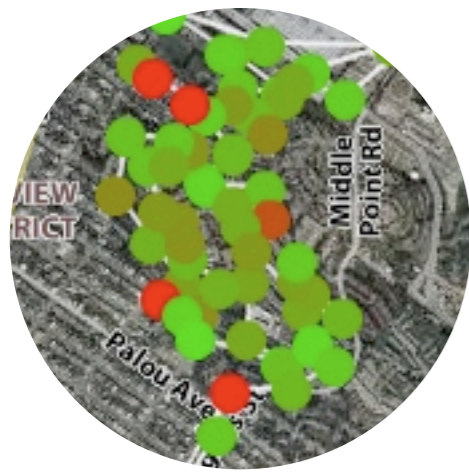
...

## environmental life

sustainability  
environmental awareness  
human health and well being  
alternative energies  
peer-to-peer power  
new materials  
methods for making & re-making

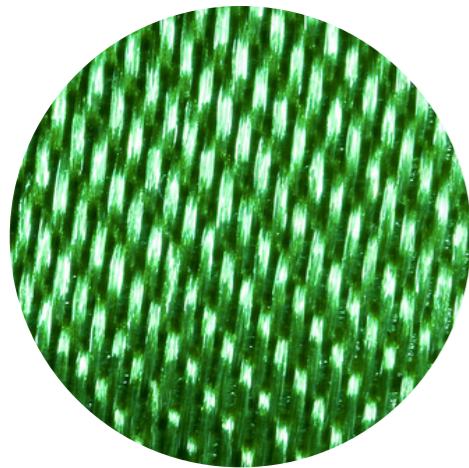
...





## Health and Well Being

citizen science  
education and awareness  
debate and policy change  
collective action



## DIY Green

materials and methods  
material revolution  
methods of making and re-making  
citizen as maker



## Energy Ethics

new energy education  
micro-power  
peer-to-peer power  
micro-payments  
alternate economies



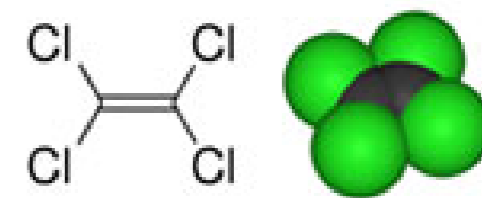


If you cannot measure it  
you cannot improve it

- Lord Kelvin



EPA = 2 ppb

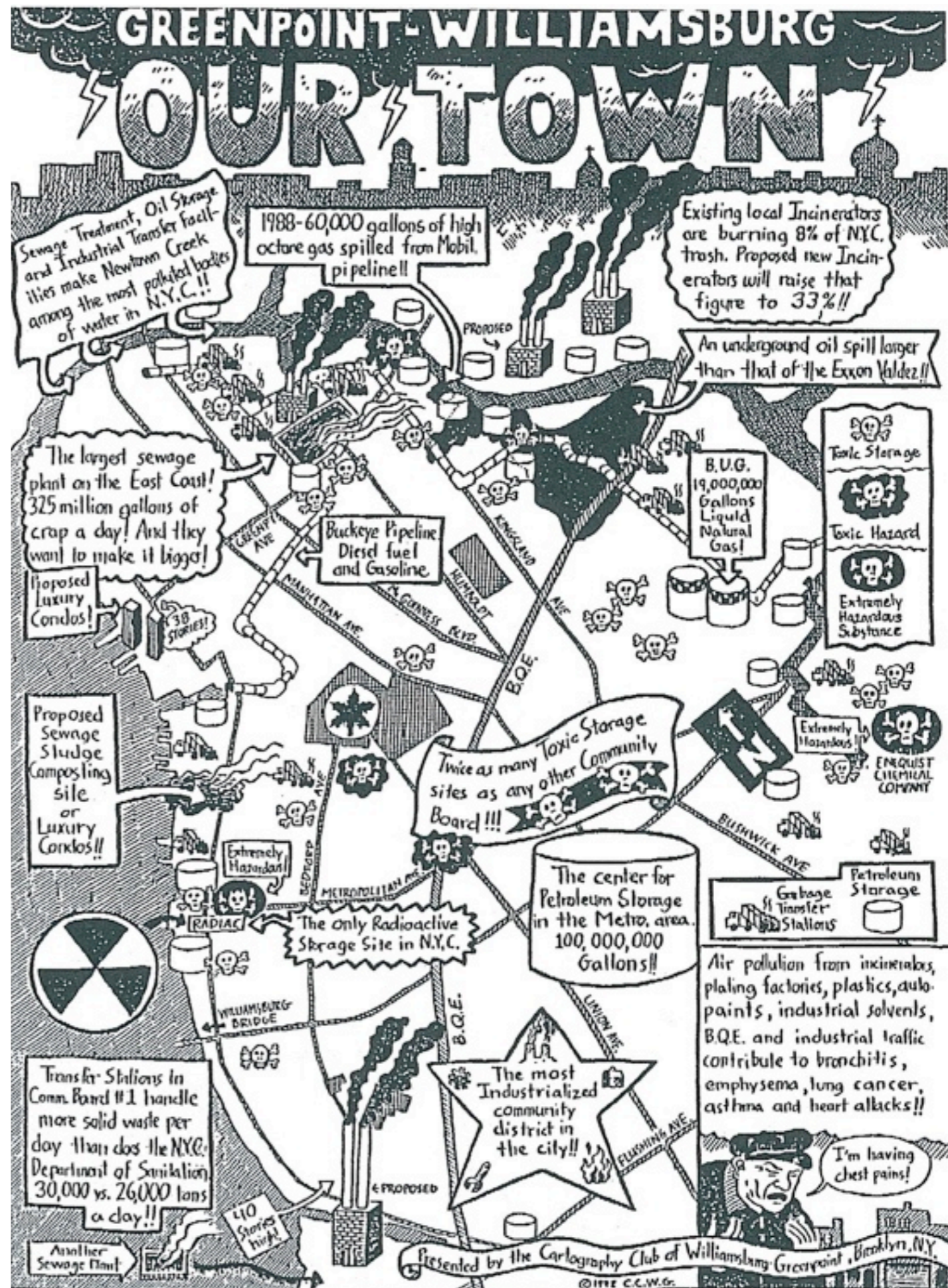




39 of 40 apartments  
> 100 ppm

24 of 29 apartments above dry  
cleaners eight day  
concentration  
> 1,000 ppm



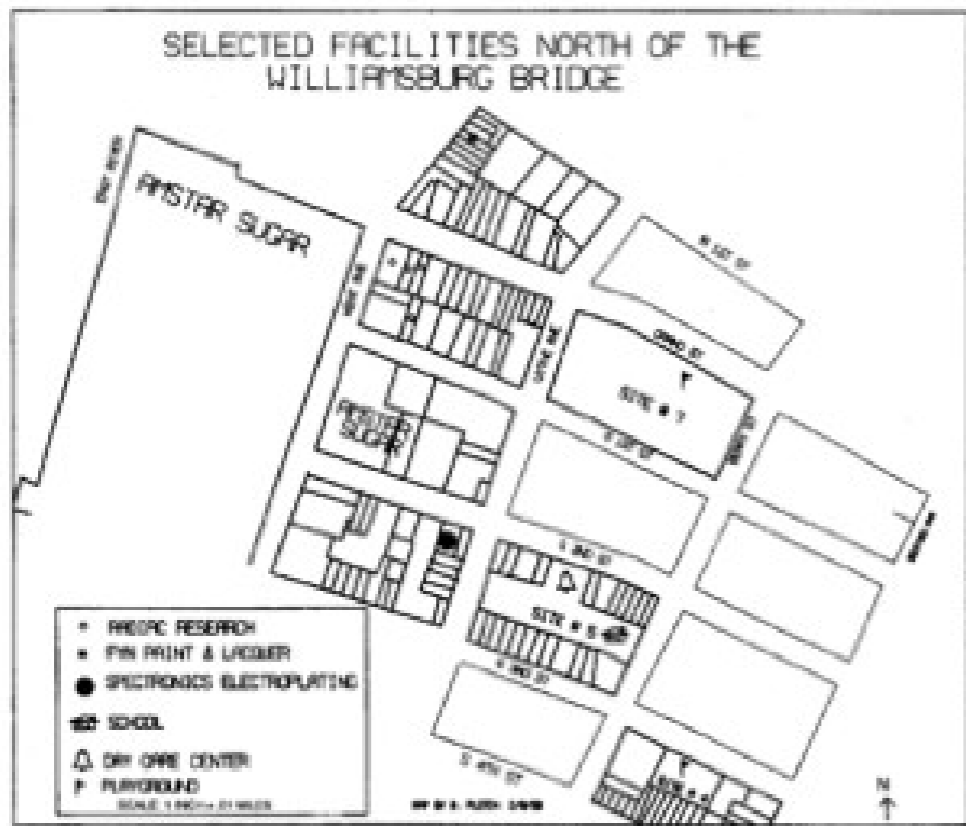


39 of 40 apartments  
 > 100 ppm

24 of 29 apartments above dry  
 cleaners eight day  
 concentration  
 > 1,000 ppm

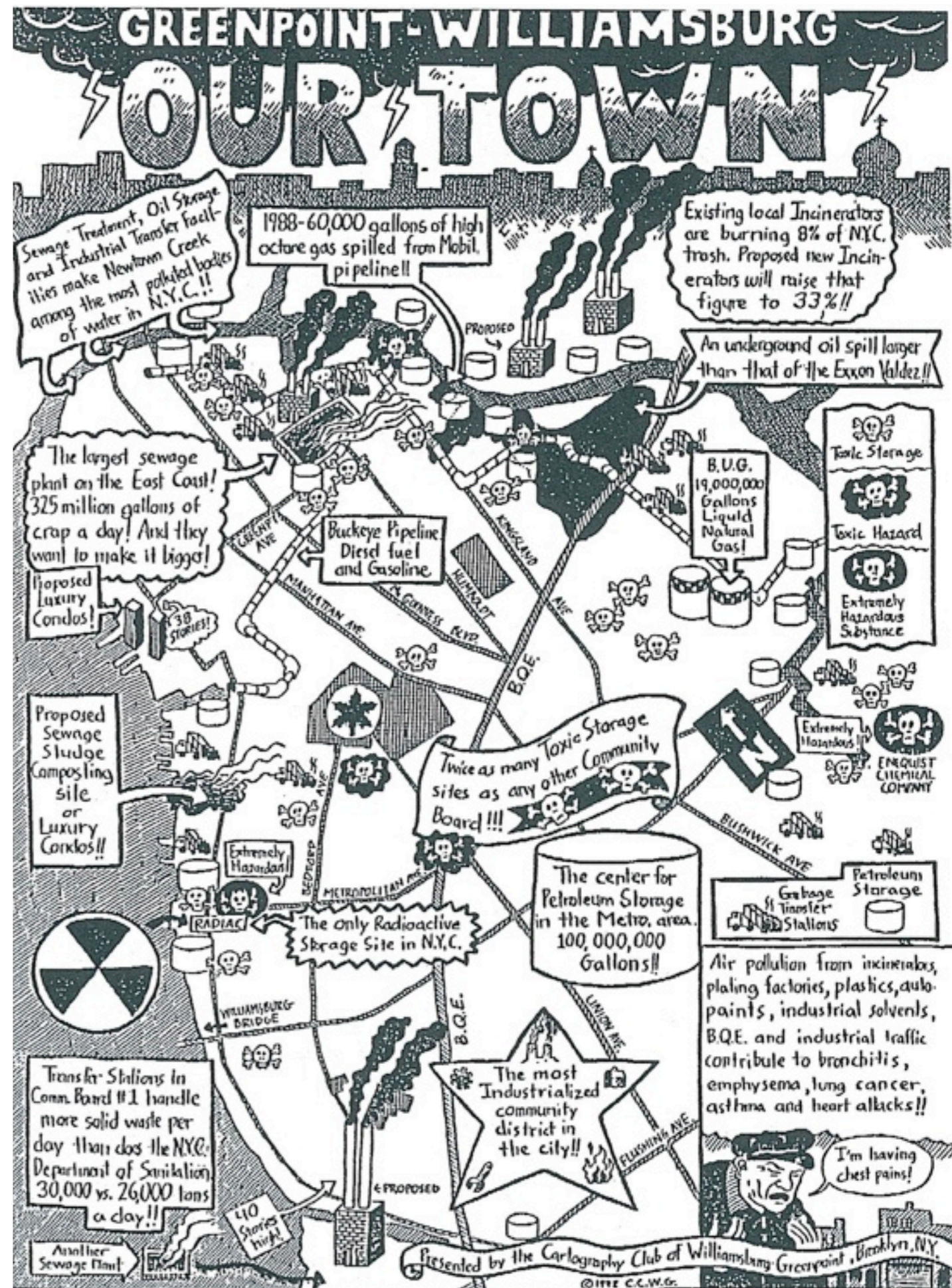
HAZARDOUS NEIGHBORS. Center for Environmental Health, Hunter College, 1989 — TOXIC CHEMICAL ACCIDENT RISKS IN NYC, Warren, Nic. Consumer Policy Institute/Consumer Union, 1991 — THE NEW YORK ENVIRONMENT BOOK, Goldstein, Jzeman. Technical Press, 1990 — NEW YORK CITY COMMUNITY RIGHT TO KNOW, 1990. Board of Environmental Control, New York City.





39 of 40 apartments  
> 100 ppm

24 of 29 apartments above dry  
cleaners eight day  
concentration  
> 1,000 ppm





ПРИПАТЬ

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Ф

РЕЖИМ

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Am

X

ВРЕМЯ

ПРЕДЕЛ

100  
МИН

10

200  
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Н  $\frac{мкЗв}{ч}$

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X  $\frac{НР}{ч}$

2.000

20.00

Ф  $\frac{ЧАСТ}{СИ \cdot МИН}$

2000

20.00-10<sup>-4</sup>

Am  $\frac{Кл}{кг}$

2000-10<sup>-4</sup>

20.00-10<sup>-4</sup>









Tell me, I forget.

Show me, I remember.

Involve me, I understand.

- Chinese proverb







SOUTHPOLE KM 15130

BANGKOK KM 1734

KAPSTADT KM 9230

REYKJAVIK KM 2049

KASTLE KM 2671

LONDON

WIEN KM 471

BUIZZARD

GALLNEUKIRCHEN 424 Km

6  
5





















PELAS 95

FRASE 4.95

TOMATE 2.95

PINA 8.90

FRASE 6.90

FRASE 4.95

FRASE 1.50

FRASE 2.90

FRASE 1.50

FRASE 1.50

FRASE 1.50

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FRASE 1.50

LANEKA 34.90

KISSIMKI 18.95

FRASE 3.90

FRASE 2.90

FRASE 1.90

FRASE 0.90

FRASE 0.90

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FRASE 0.90

FRASE 0.90

FRASE 0.90

FRASE 0.90

FRASE 0.90

AMAGROC 19.90

CHIMBES 6.95









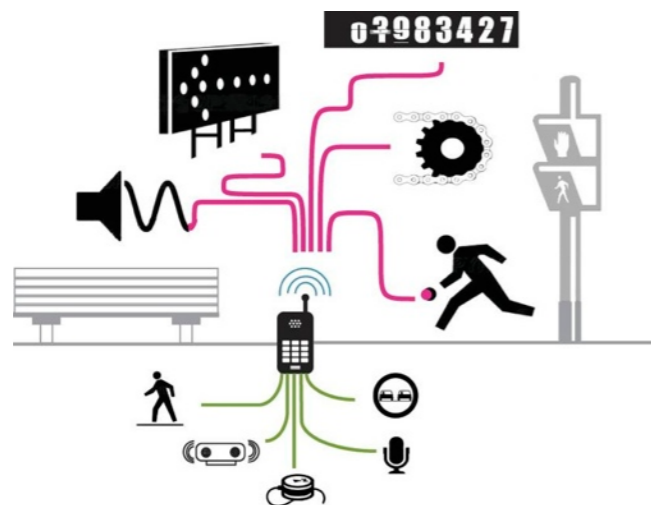




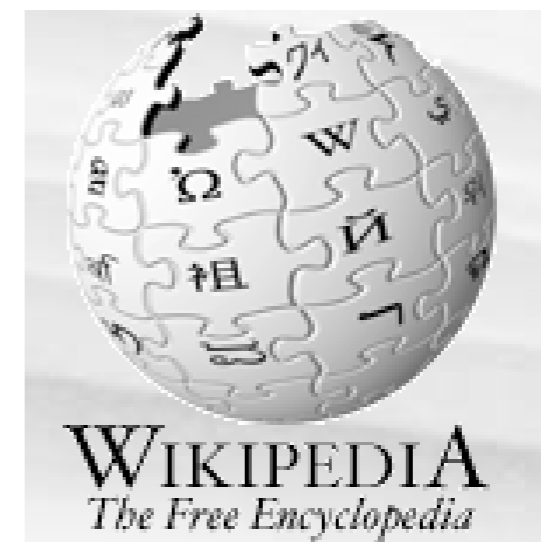




# Sensor Rich Mobile Devices



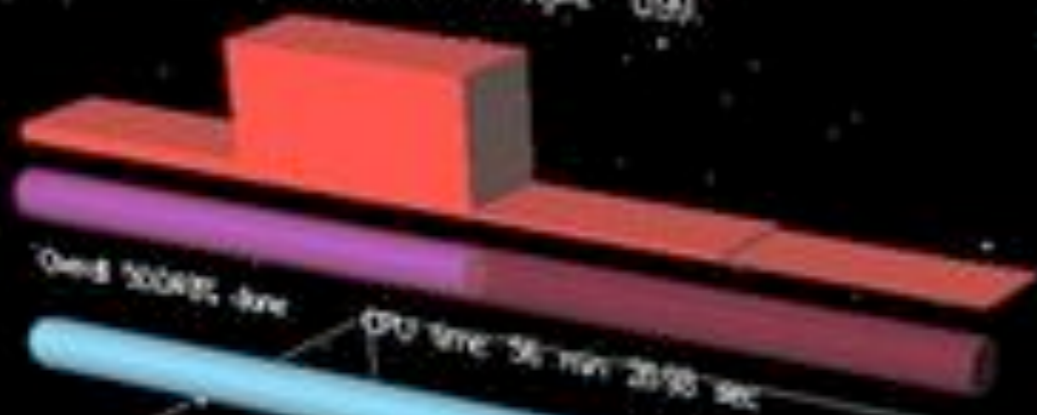
# Citizen Driven Content Creation





## Data analysis

Damping Fast Fourier Transform  
Doppler drift rate 4.8803 Hz/sec Resolution 0.075 Hz  
Best Fdr: power 0.57, period 0.0143, score 0.99



## Data info

From: 6 hr 3 54" RA +11 deg 3' 47" Dec  
Recorded on: Mon Jan 05 04:04:24 2004  
Base frequency: 1.421093750 GHz

## User info

Name: [unreadable]  
Team: Team [unreadable]  
Total credit: 0.00

Time (sec)

Frequency (Hz)

Power



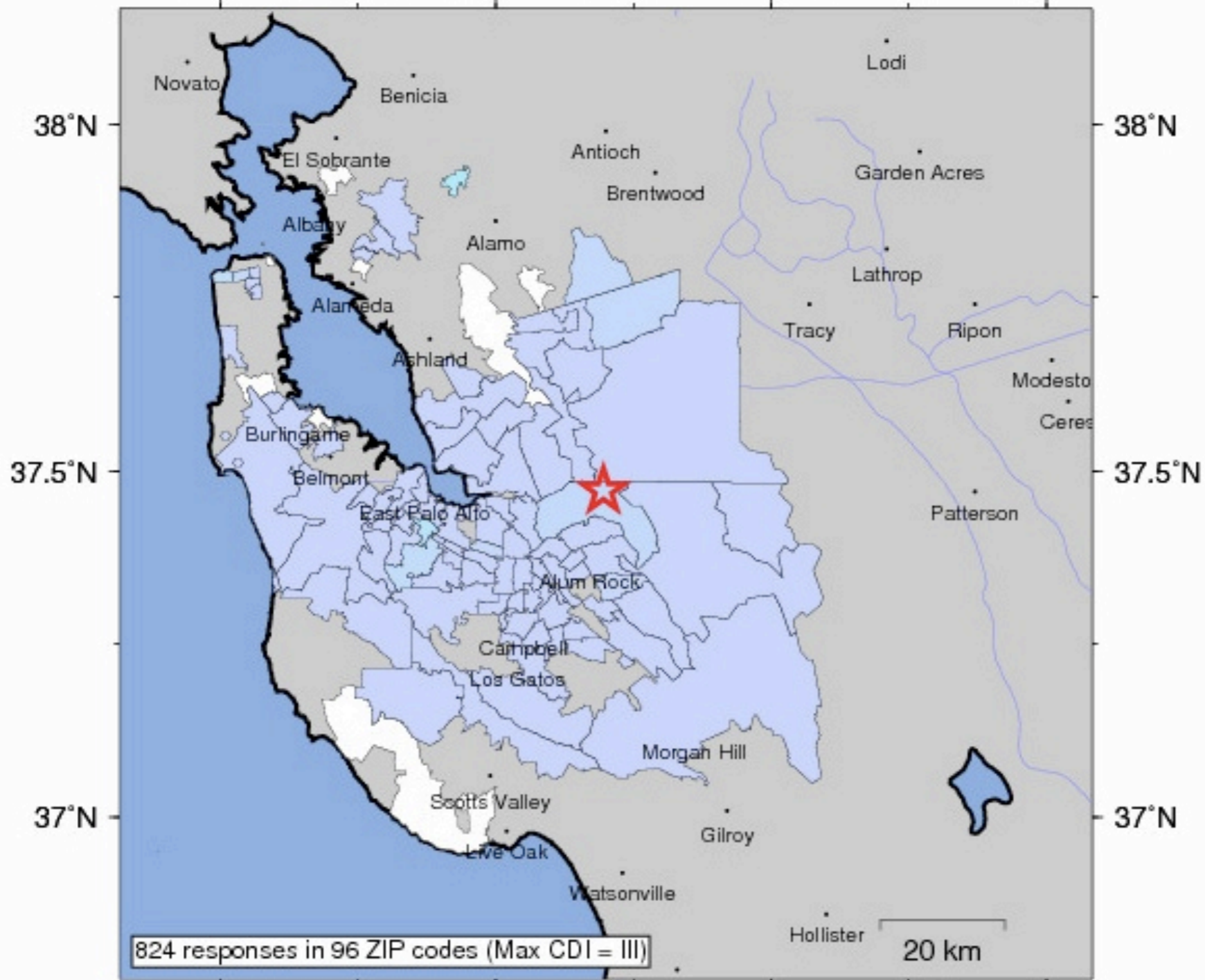
# SETI@home

The Search for Extraterrestrial Intelligence



USGS Community Internet Intensity Map  
 SAN FRANCISCO BAY AREA, CALIFORNIA

Mar 8 2009 06:47:19 UTC-8 37.471N 121.8047W M3.5 Depth: 8 km ID:nc40232887



INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X+
SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
DAMAGE	none	none	none	Very light	Light	Moderate	Moderate/Heavy	Heavy	V. Heavy





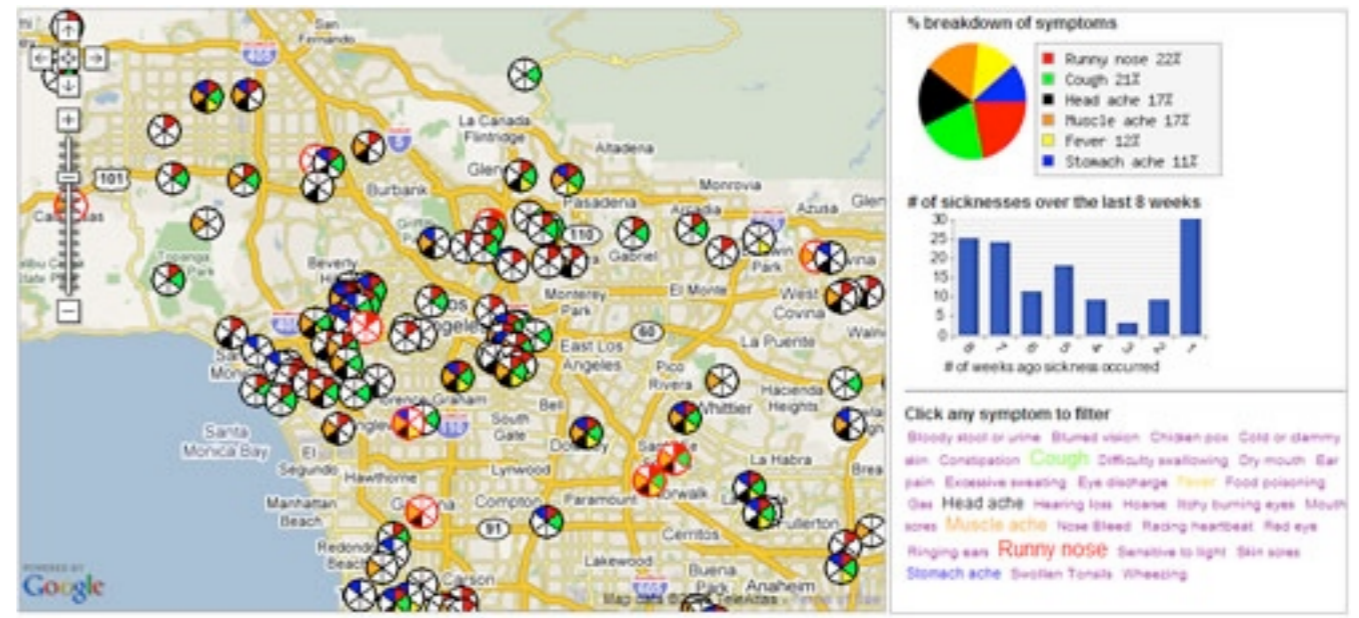


Region  
Continent





# citizen science for citizen services



phenology

**Project BudBurst**

For Students For Teachers Participate! Materials Report Observations Phenology Climate Change Results

Overall Participation  
Native Trees/Shrubs  
Native Flowers  
Common Weeds/Ornamentals  
Data  
2007 Report

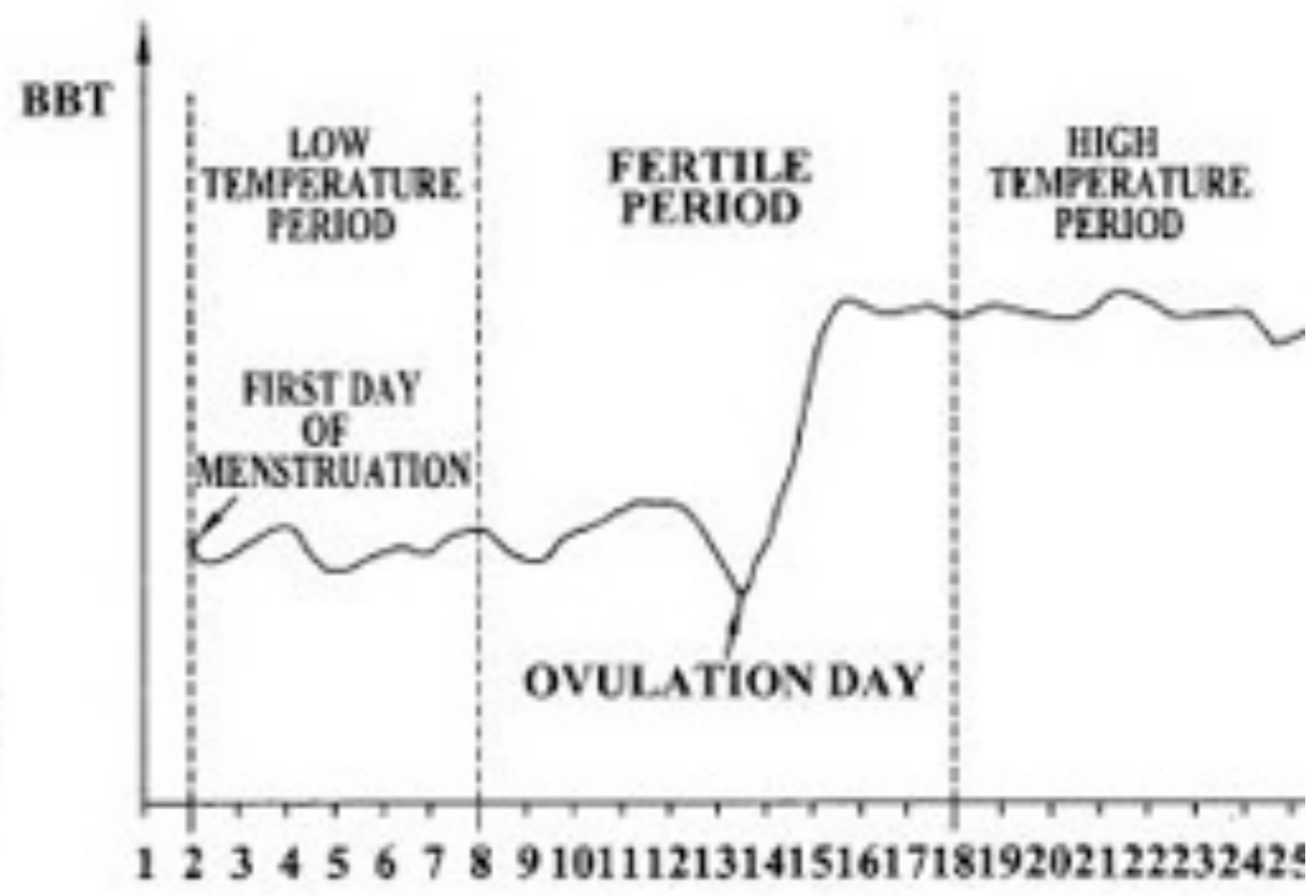
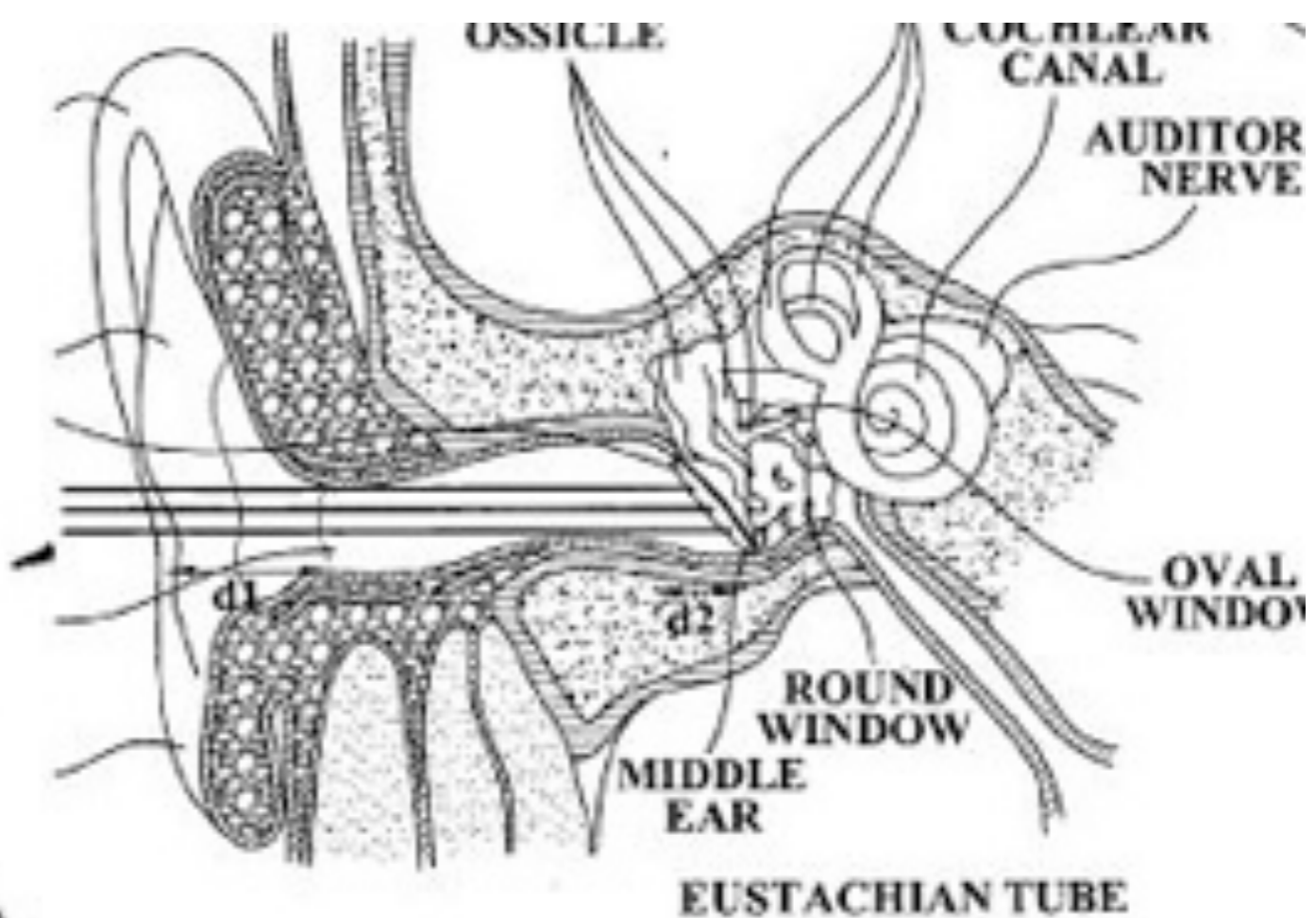
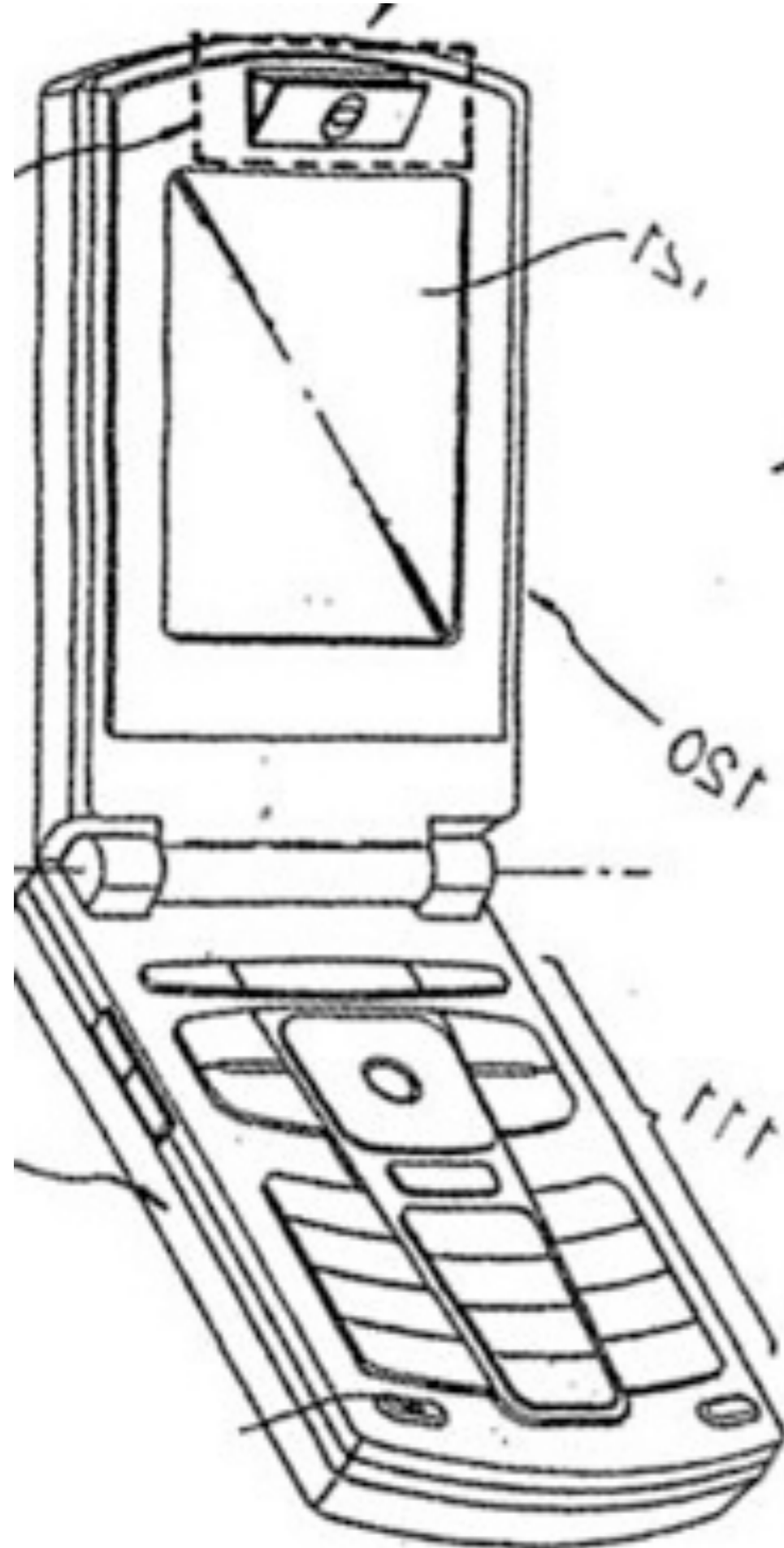
We are currently analyzing and summarizing the 2008 Project BudBurst dataset. Thank you for your patience and it will be available soon.

The map below shows all reported observations as of November 12, 2008.

Observations per Location

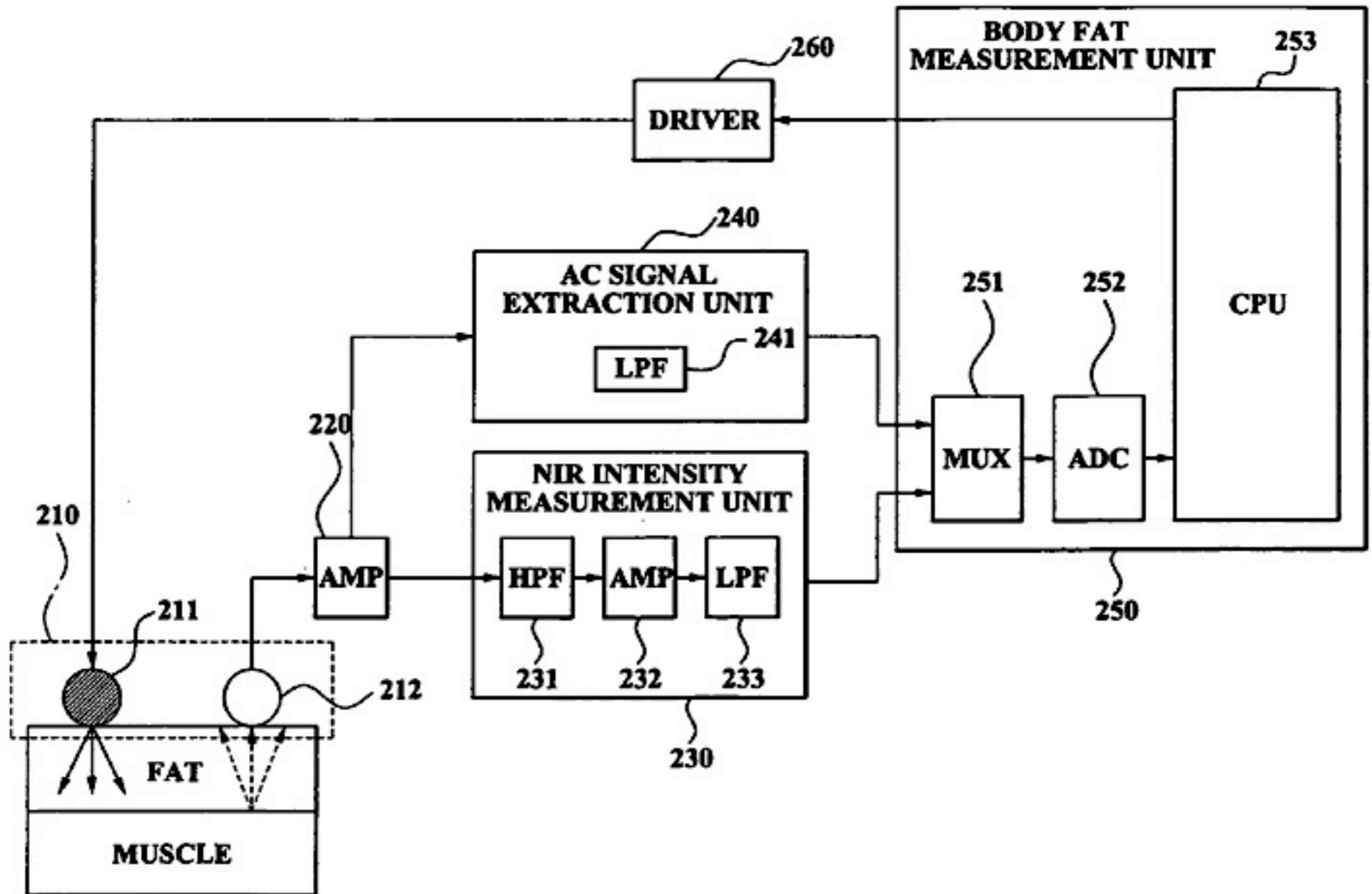
Project Budburst



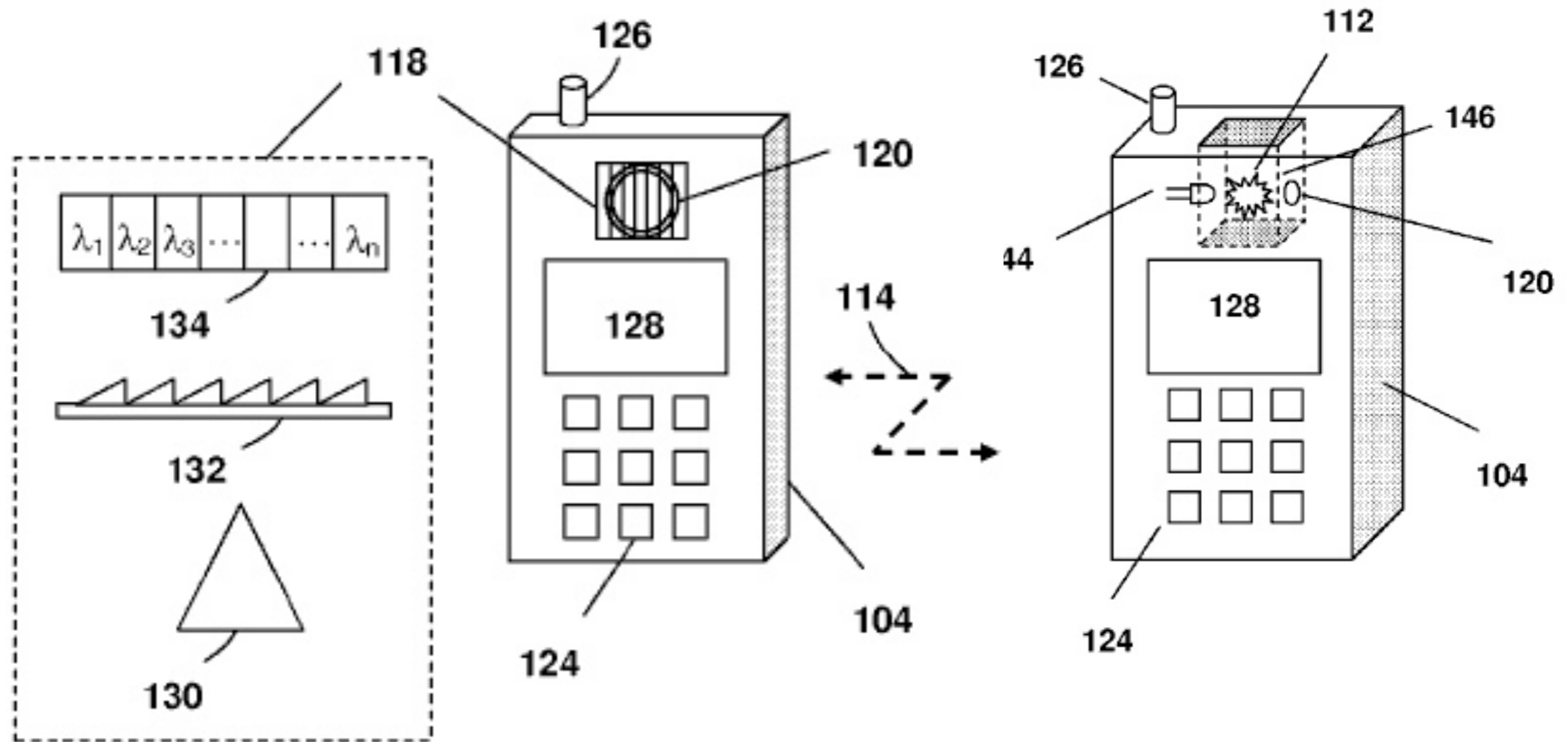




# Apparatus, method, and medium for measuring body fat using a near infrared signal

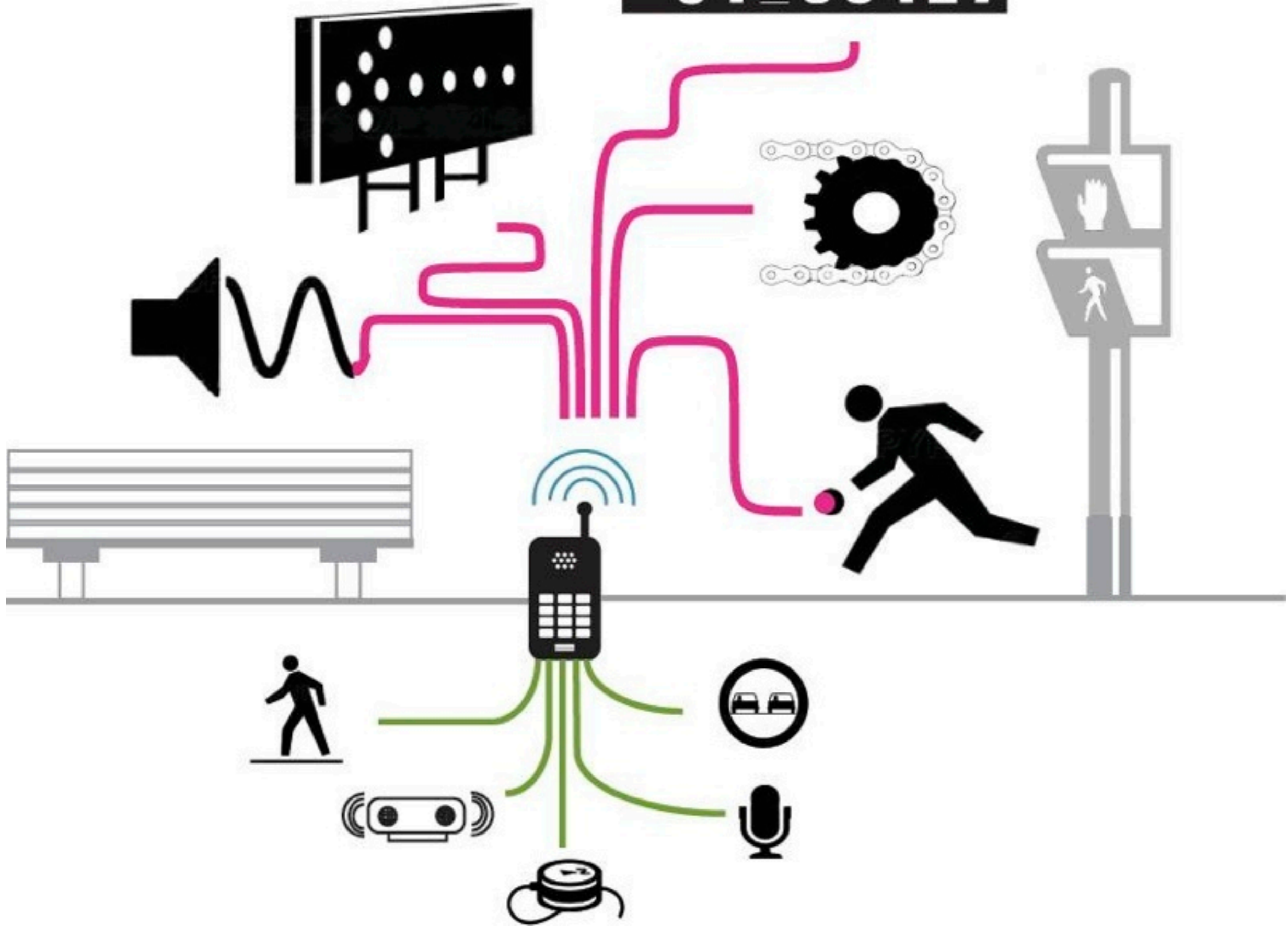


# Spectroscopic Sensor on Mobile Phone





03983427





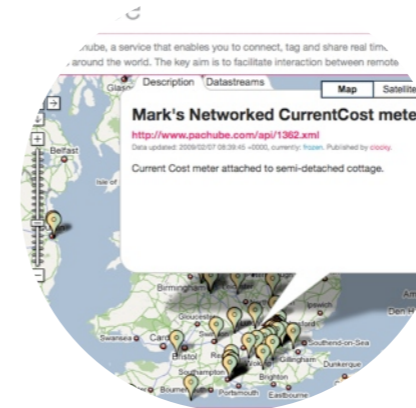
SensorPlanet  
Nokia



CitySense  
MIT



CENS  
UCLA



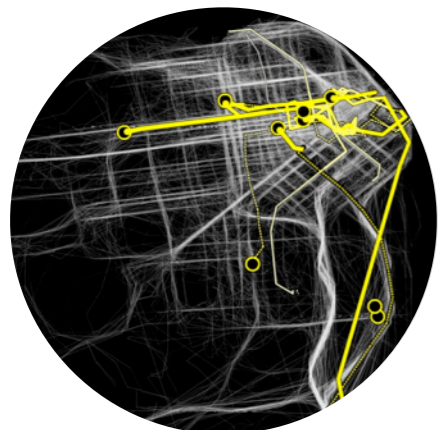
Pachube  
Usman Haque



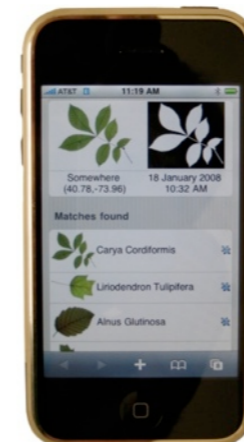
SenseWeb  
MSR



Feral Robots  
Natalie Jeremijenko



Cabspotting  
Stamen Design



LeafView  
Sean White



The best way to make art is to  
intrigue and to be a bit seductive.

You just say, here's this and  
this...you figure it out

- John Baldessari

# Citizen Science

1. Engage people in doing Street Science that results in practical action
2. Motivate people to gather, analyze, share, and act upon information
3. Develop a device that is usable by lay people and produces **credible** information that can be understood by non-experts
4. Develop community software infrastructure to support communication and action



# Citizen Science

Improve the science literacy of everyday citizens through active participation in basic scientific data collection and use of scientific principles



# Citizen Science

Provide professional scientists and stakeholders with access to richer, finer grain data sets for modeling, analyzing, and advancing both fundamental and applied knowledge regarding people and the ecosystem





# Citizen Science

Develop new usage models and user experiences for the mobile phone as a tool for promoting transparency and enabling grassroots participation in local community and civic government policy making



# Citizen Science

Create greater public awareness and understanding of the relationships between humans and the natural environment particularly with regard to sustainability and environmental issues

















20 June 2007

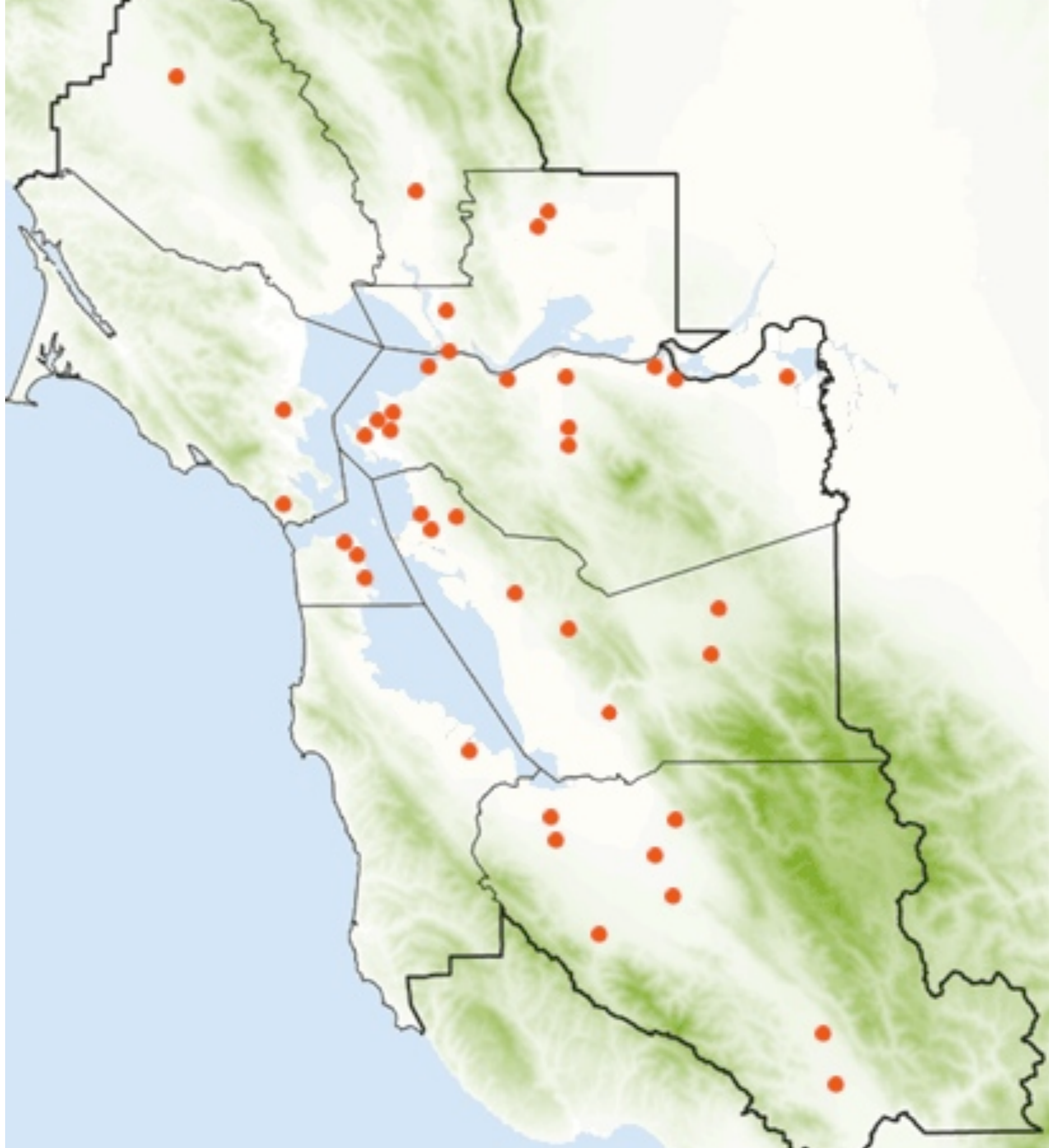


17 Sept 2007

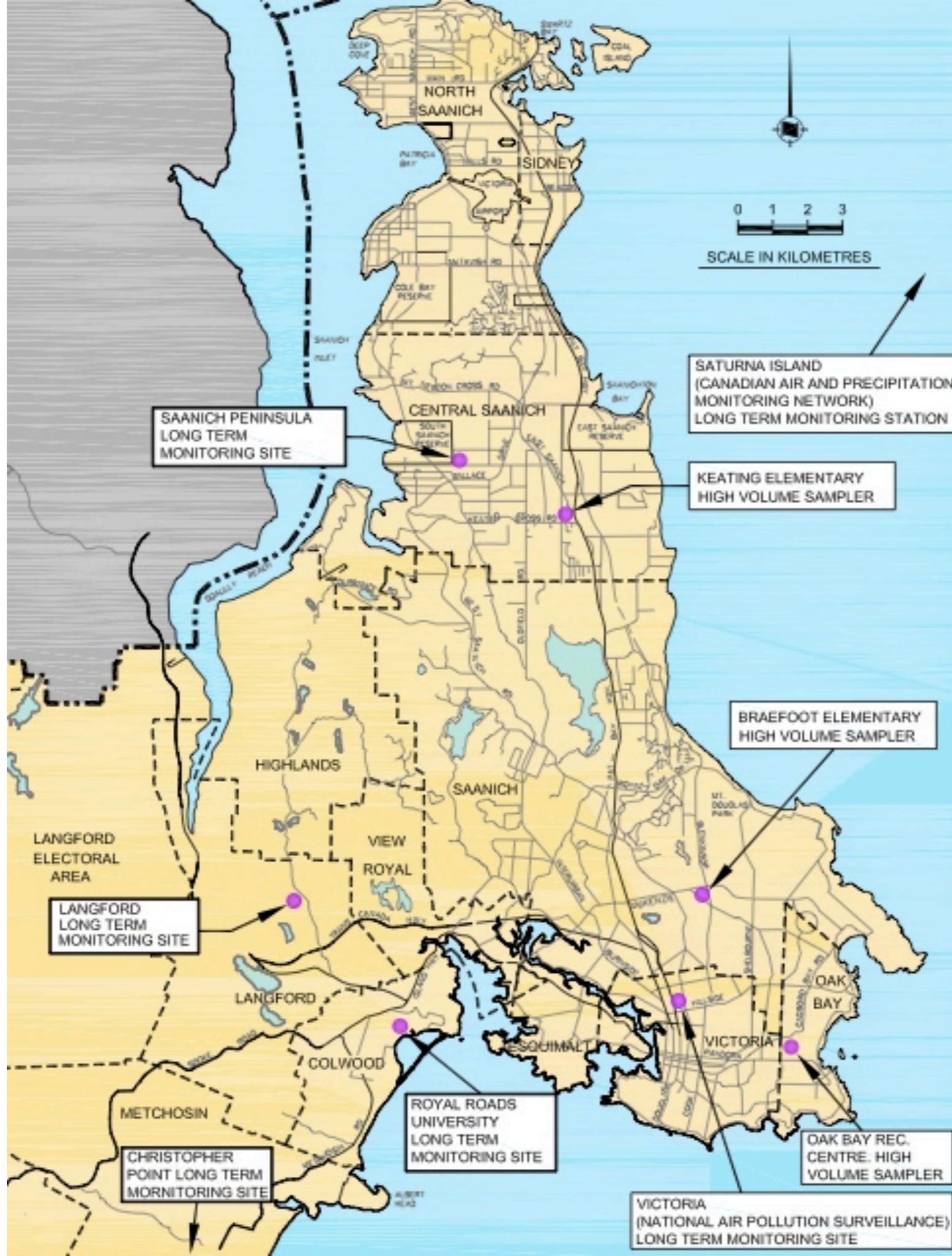


image credit: Alex Hoffard



















13030 Murphy Ave, San Martin CA 95046



13030 Murphy Ave, San Martin CA 95046









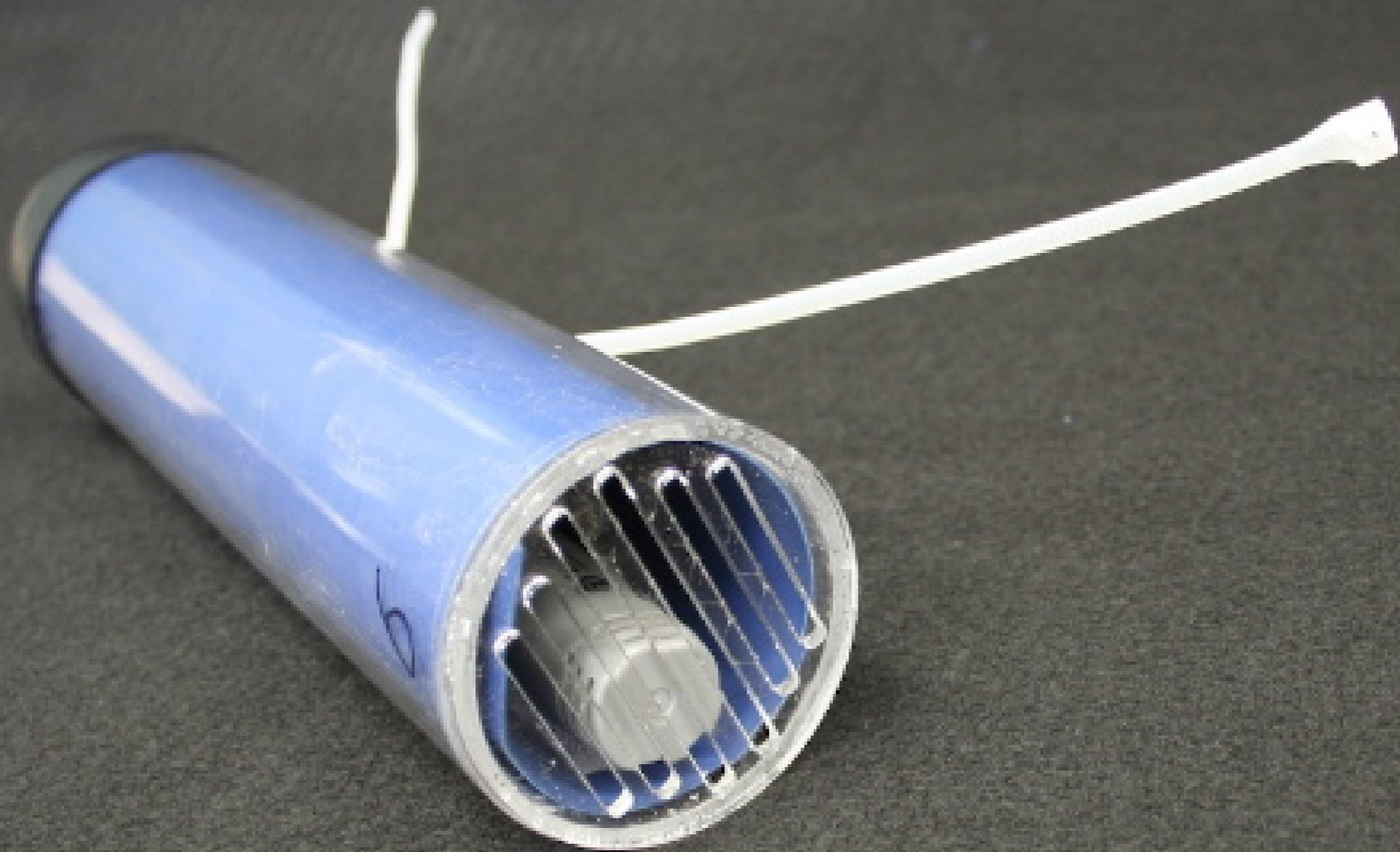
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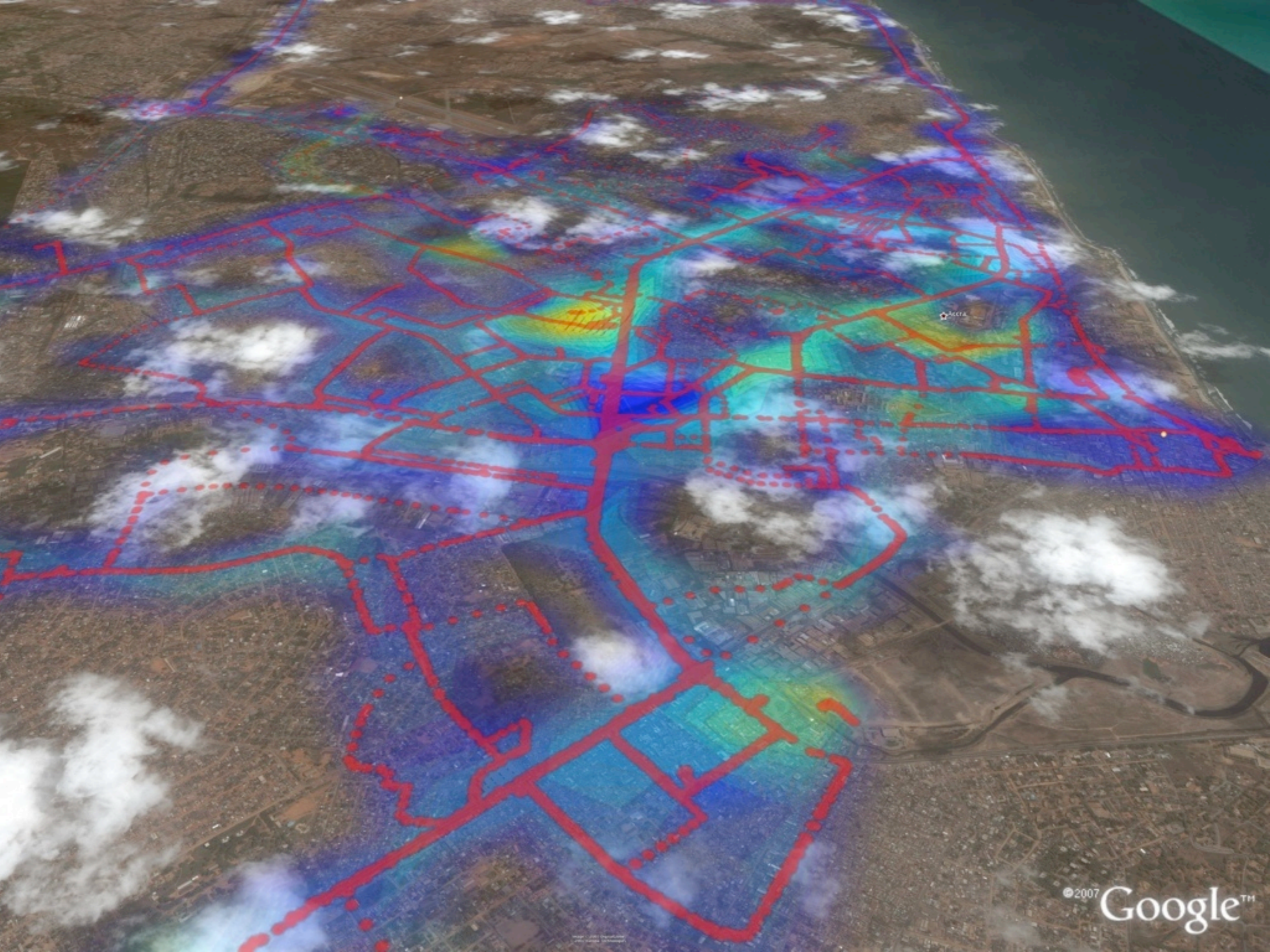
9



















# Consumption

OUTSIDE  
TEMP

61 °F

 =50Wh Regenerated



Energy

Average

61.7 MPG

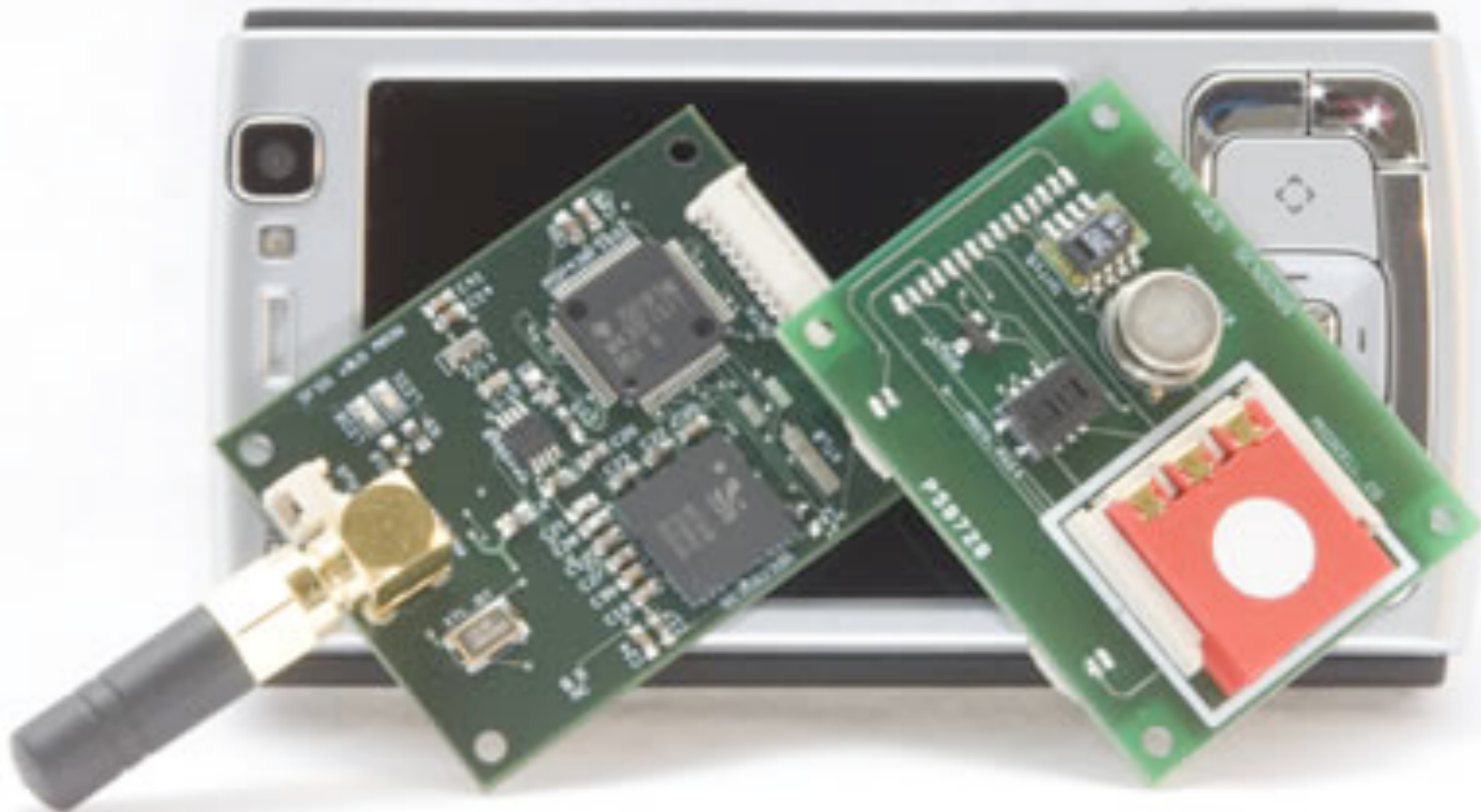
79 miles

Reset

Prius Effect



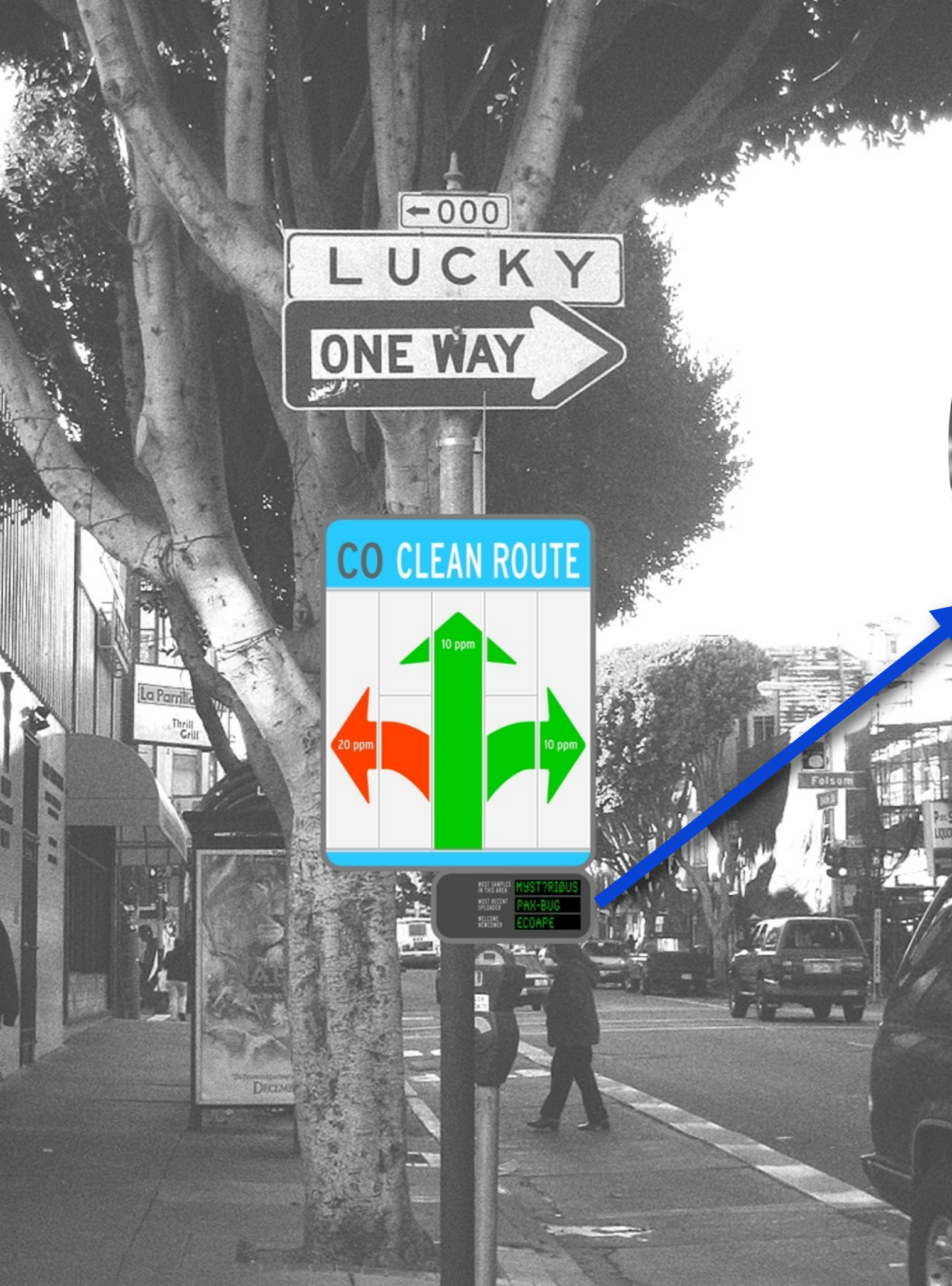
Eric Paulos  
Allison Woodruff  
Paul Aoki  
Alan Mainwaring  
RJ Honicky











← 000  
LUCKY  
ONE WAY →

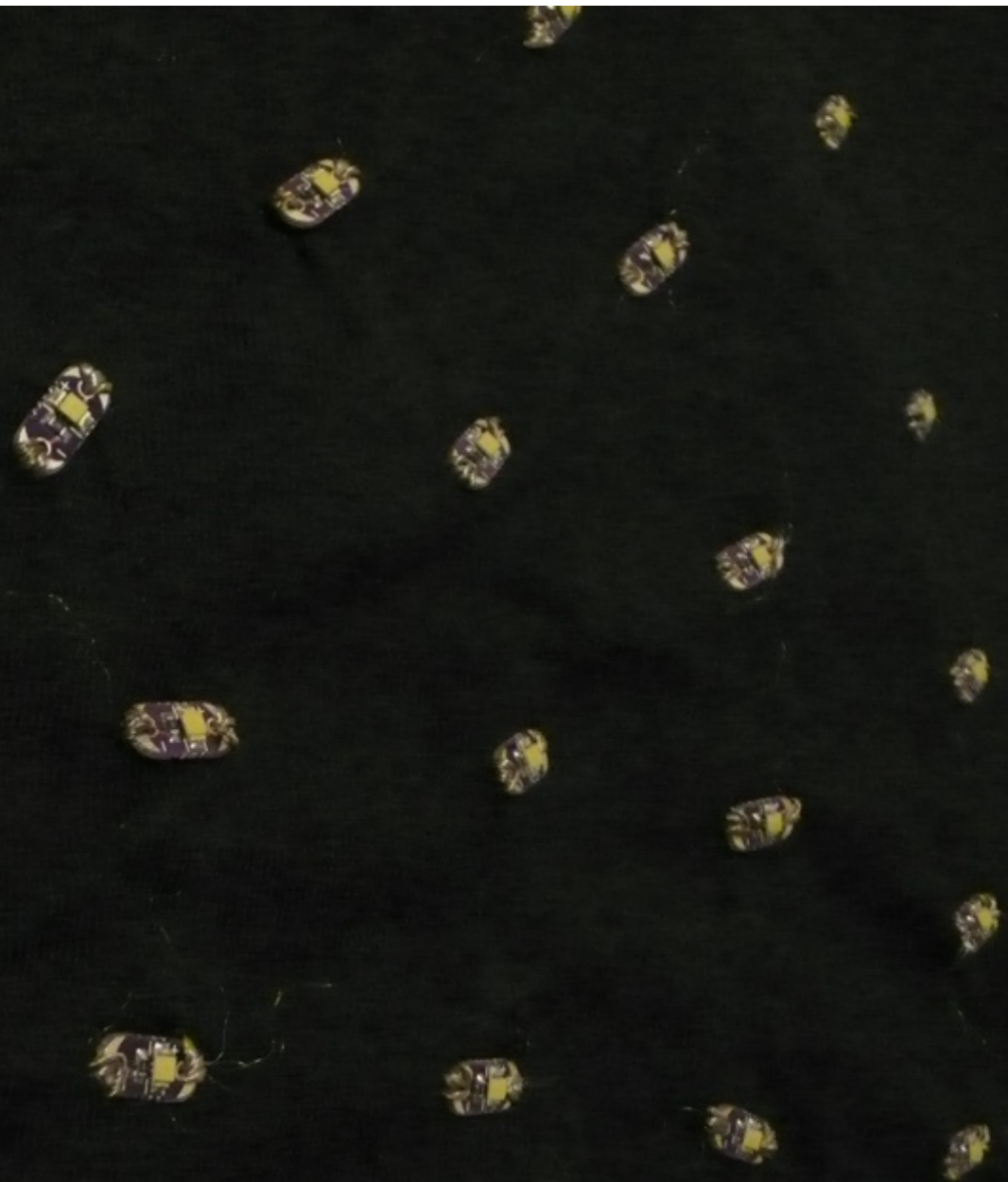


MOST SAMPLES IN THIS AREA  
MOST RECENT UPLOADER  
WELCOME NEWCOMER  
MYST?RIØUS  
PAX-BUG  
ECOAPE



MIST SAMPLES IN THIS AREA  
MIST RECENT UPLOADER  
WELCOME NEWCOMER  
MYST?RIØUS  
PAX-BUG  
ECOAPE











Eric Paulos  
Allison Woodruff  
Paul Aoki  
Alan Mainwaring  
RJ Honicky







**CO**  
**NOx**  
**Ozone**  
**Temperature**  
**Humidity**  
**Accelerometer**

# SAN FRANCISCO AIR QUALITY

SELECT MODE

DAY

CHOOSE DATE

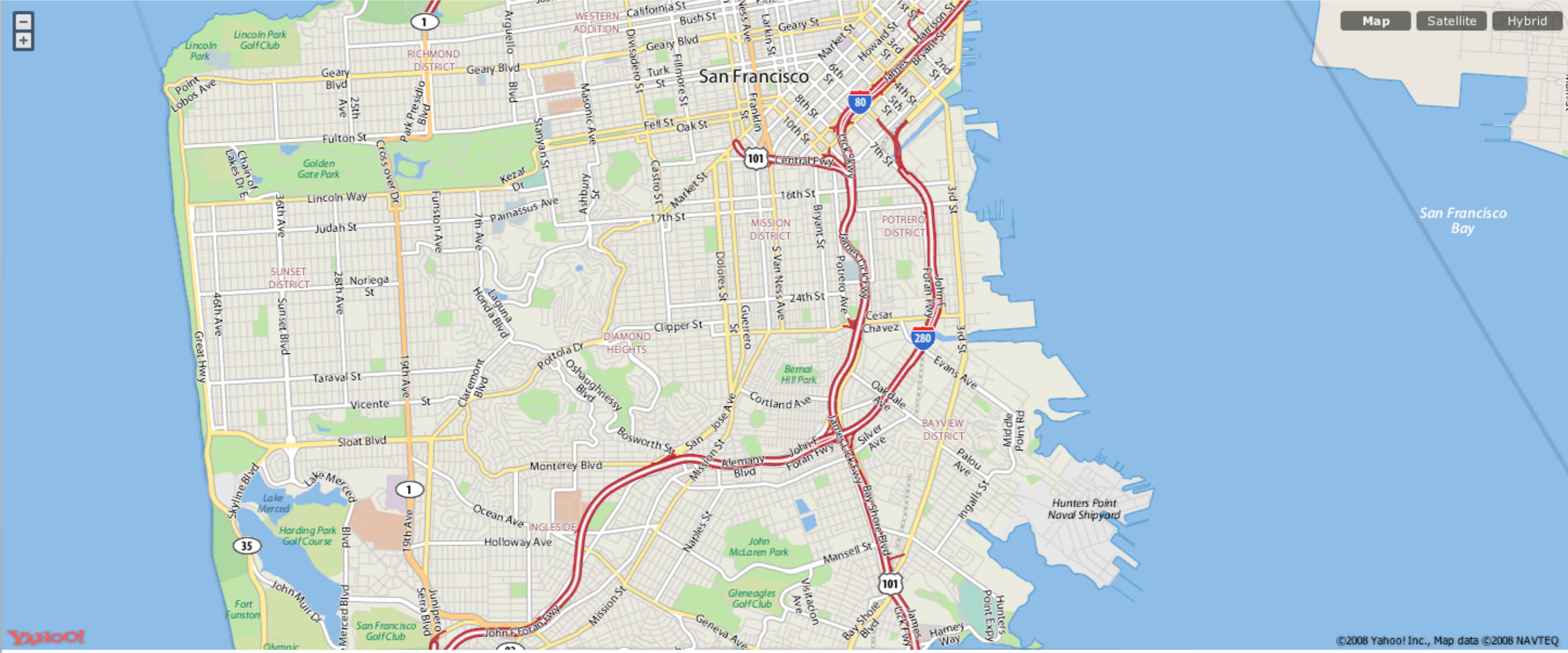
Thr 24 July

CHOOSE SPEED

FAST

CHOOSE SENSOR

Carbon Monoxide (CO)



©2008 Yahoo! Inc., Map data ©2008 NAVTEQ

Fri Jul 25 09:03:19























pesticides

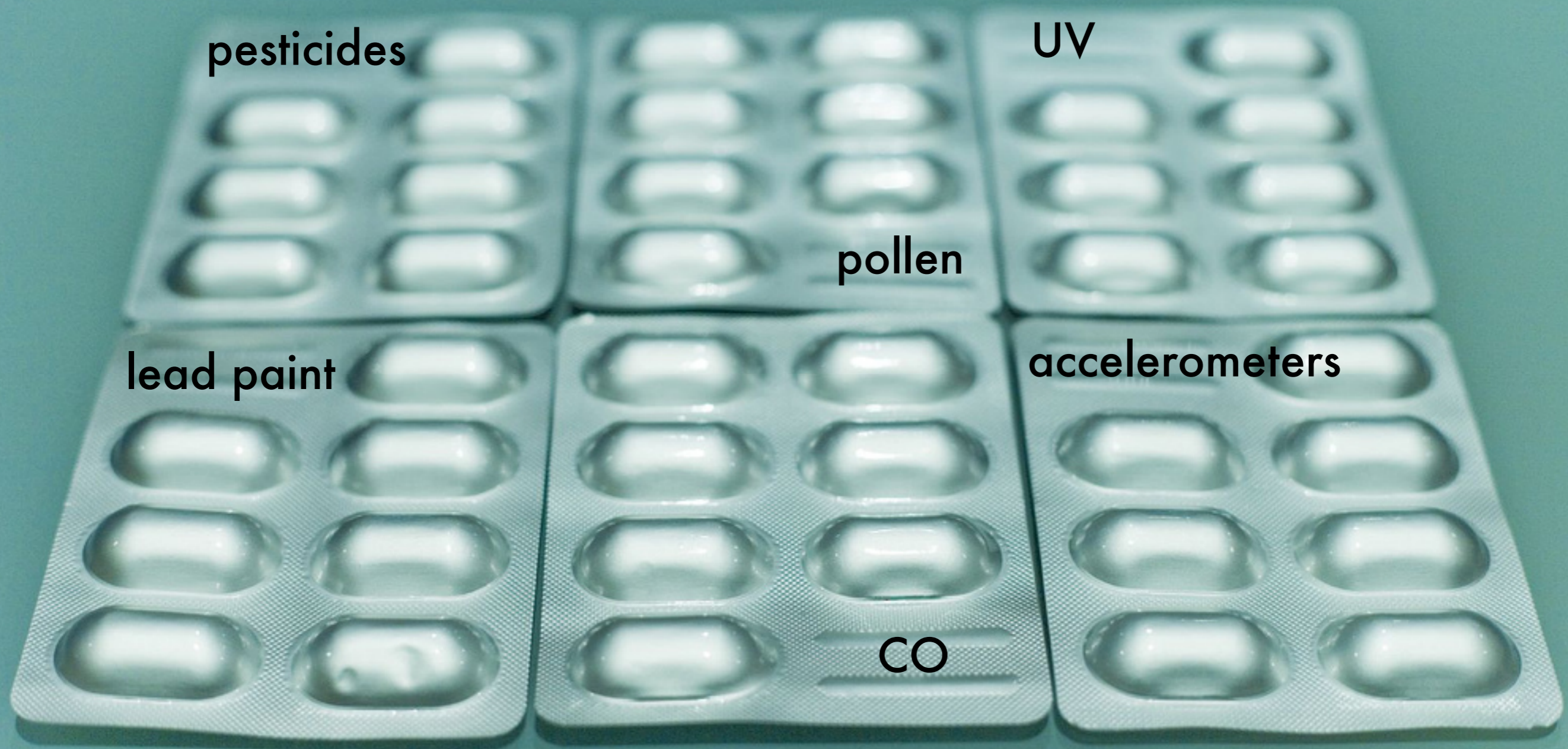
UV

pollen

lead paint

accelerometers

CO





Water is the driving  
force of all nature

- Leonardo Da Vinci













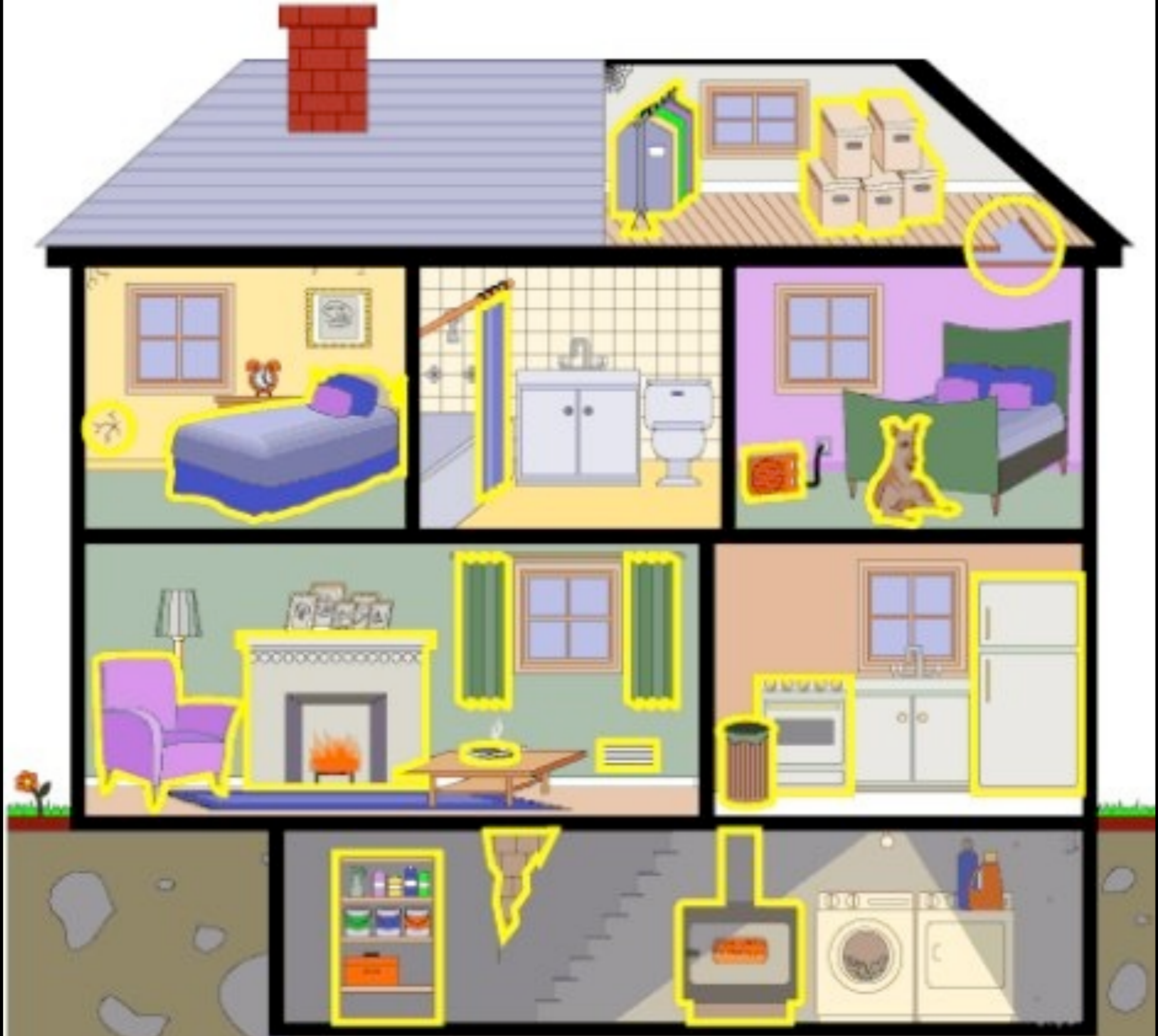




Stacey Kuznetzov

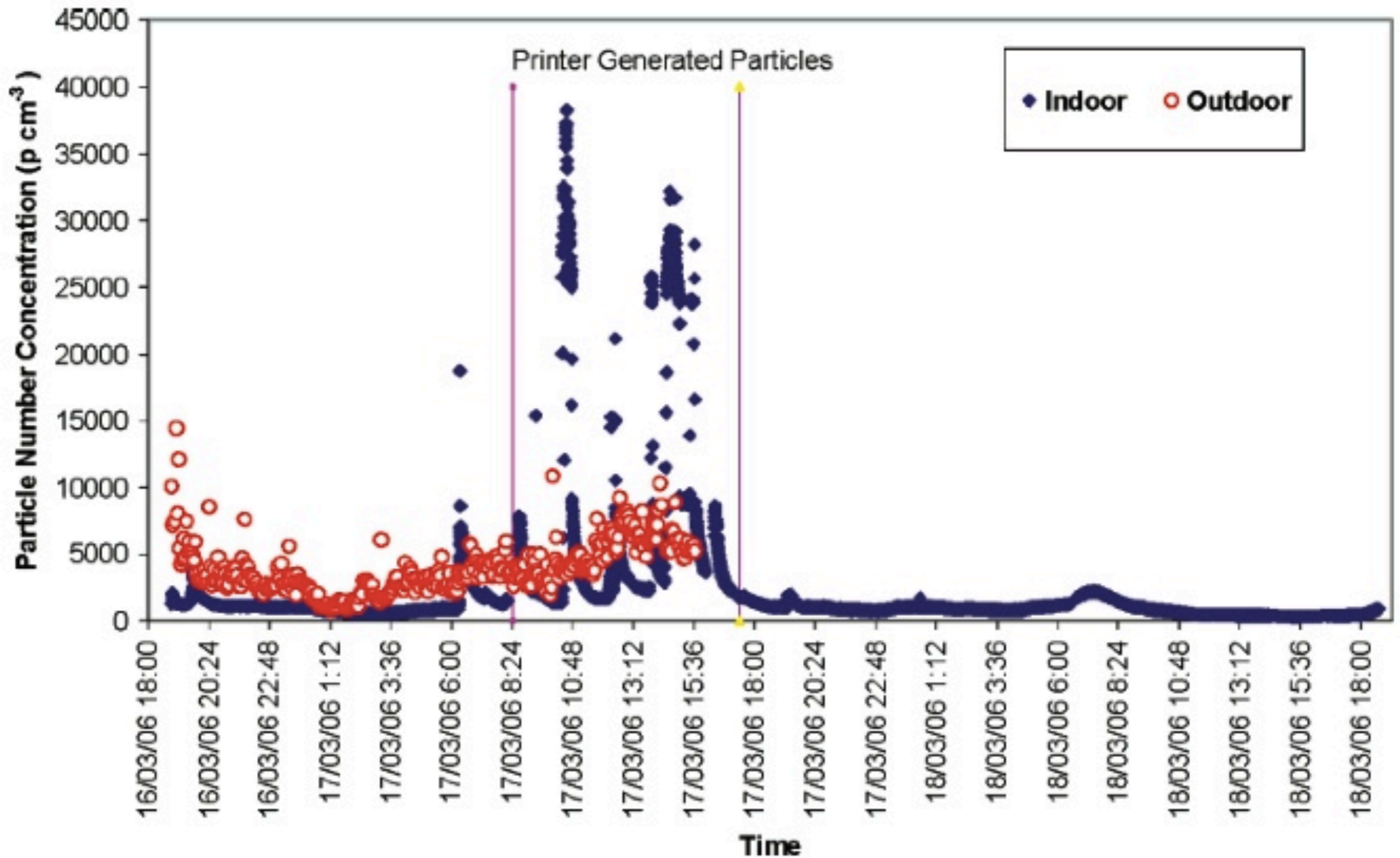
















# InAir

Sunyoung Kim



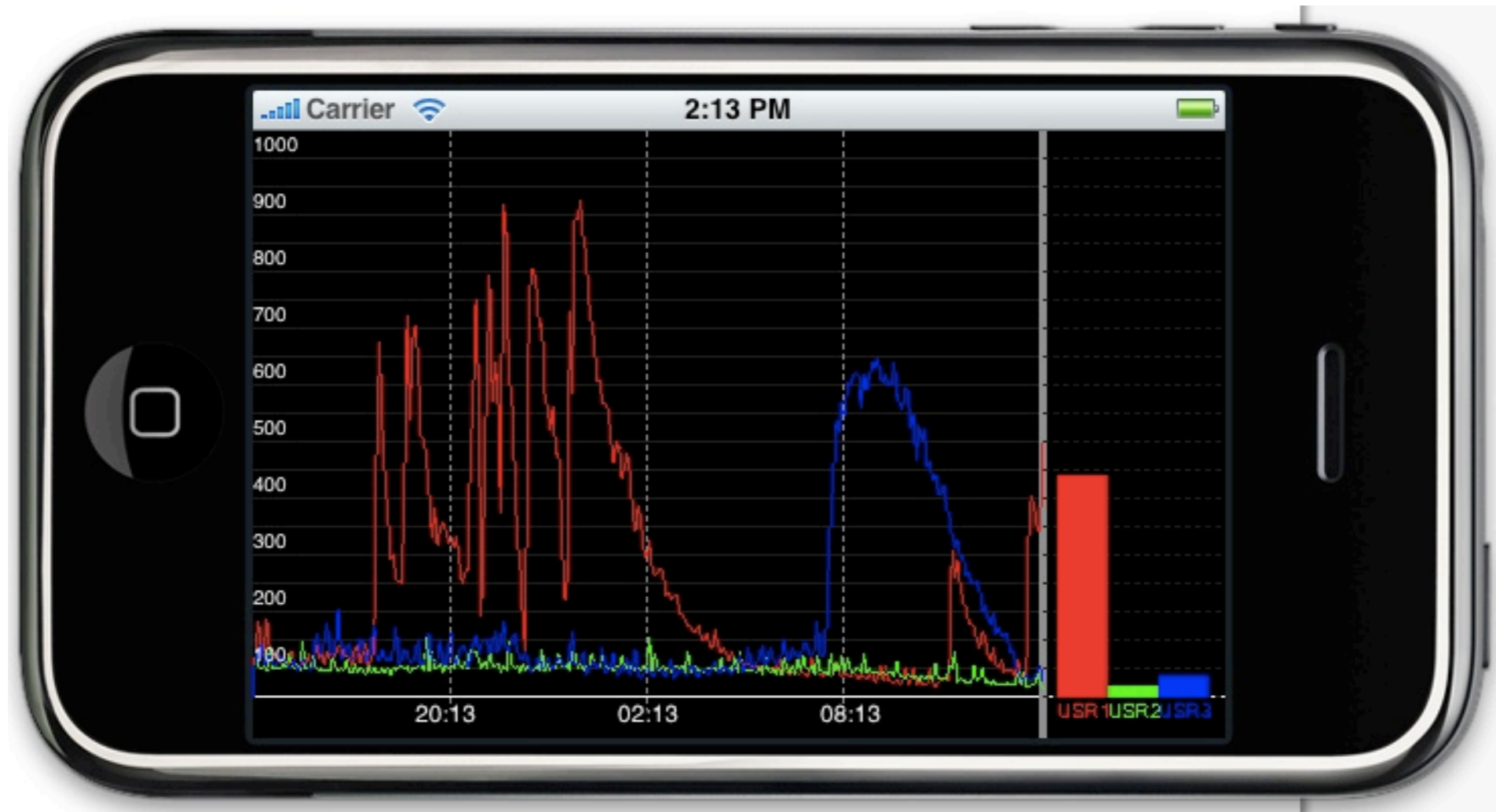
CO

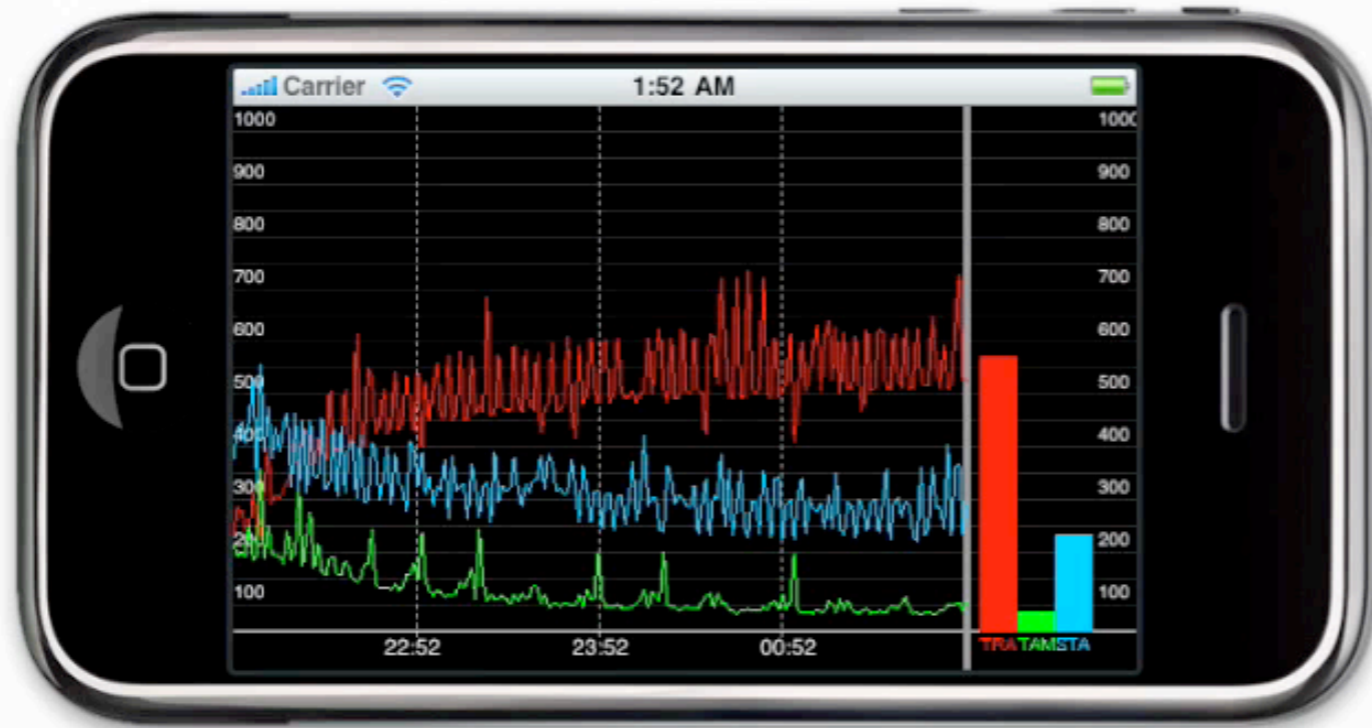


VOCs

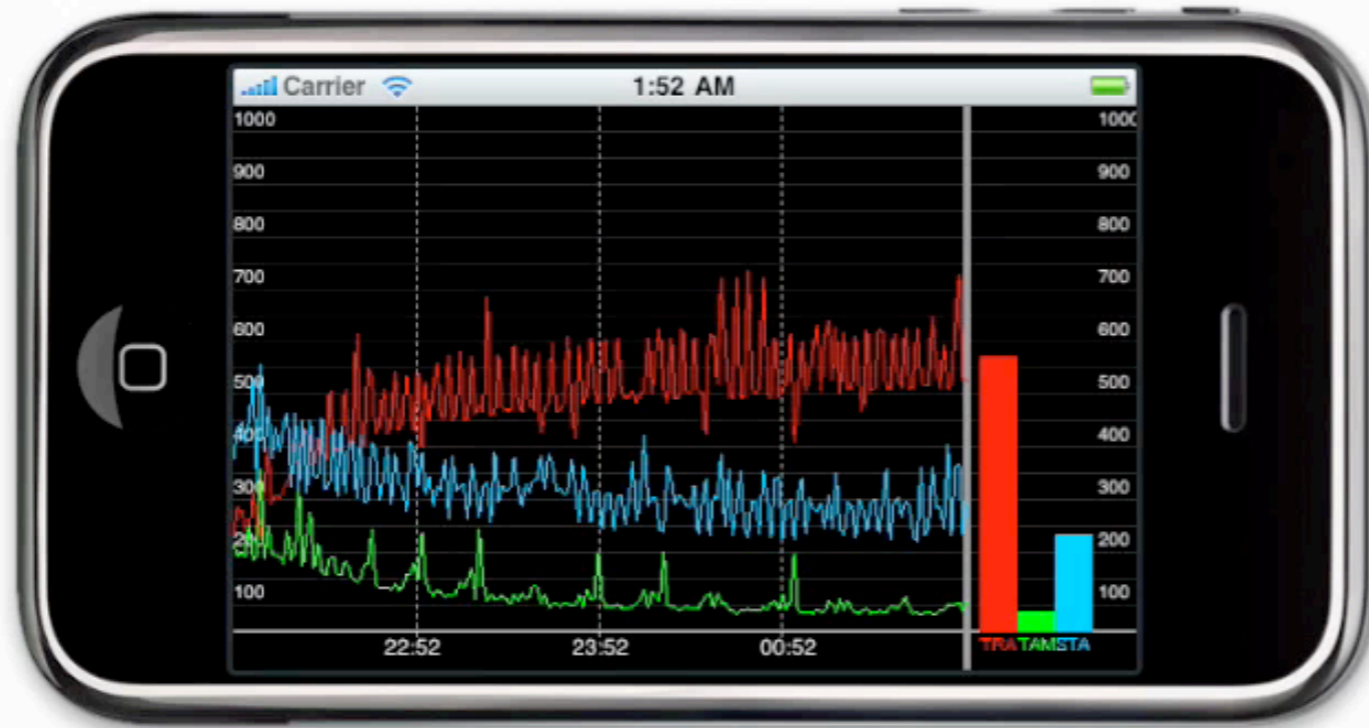


Particles

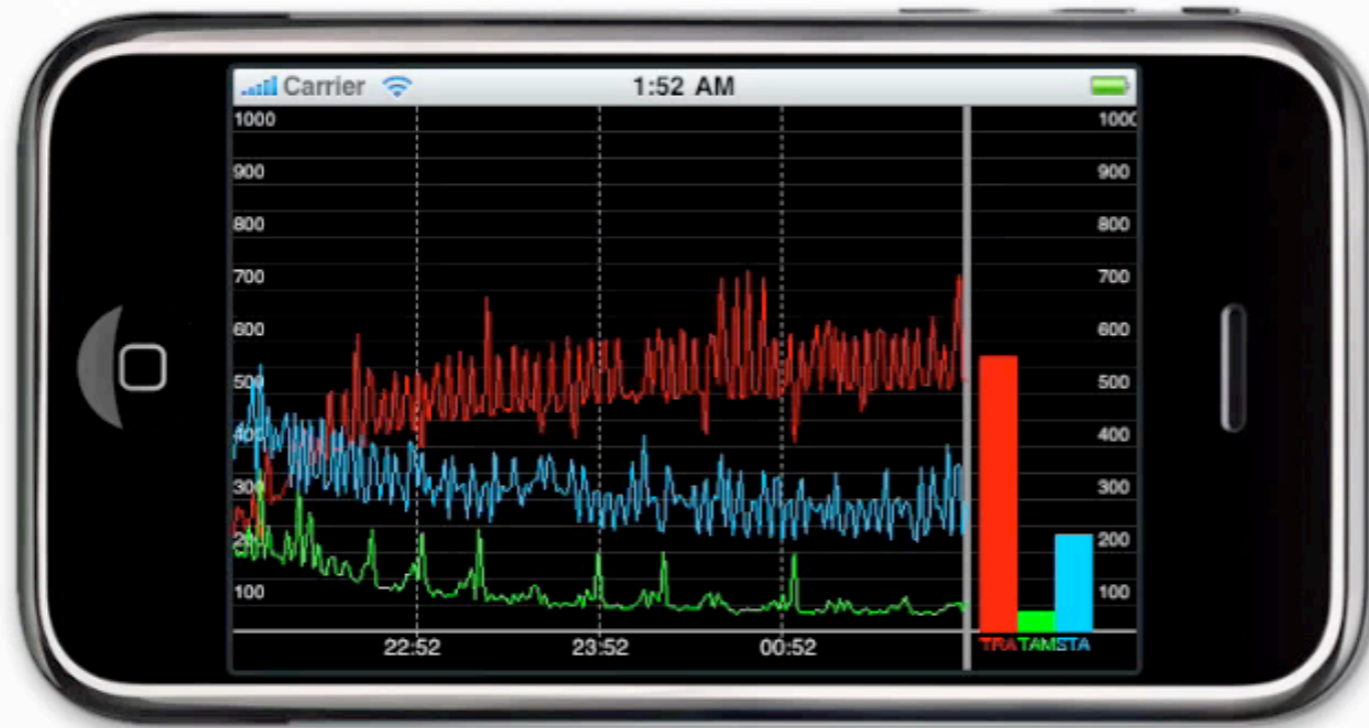








I have smoked more than 40 years. I have no reason to quit.

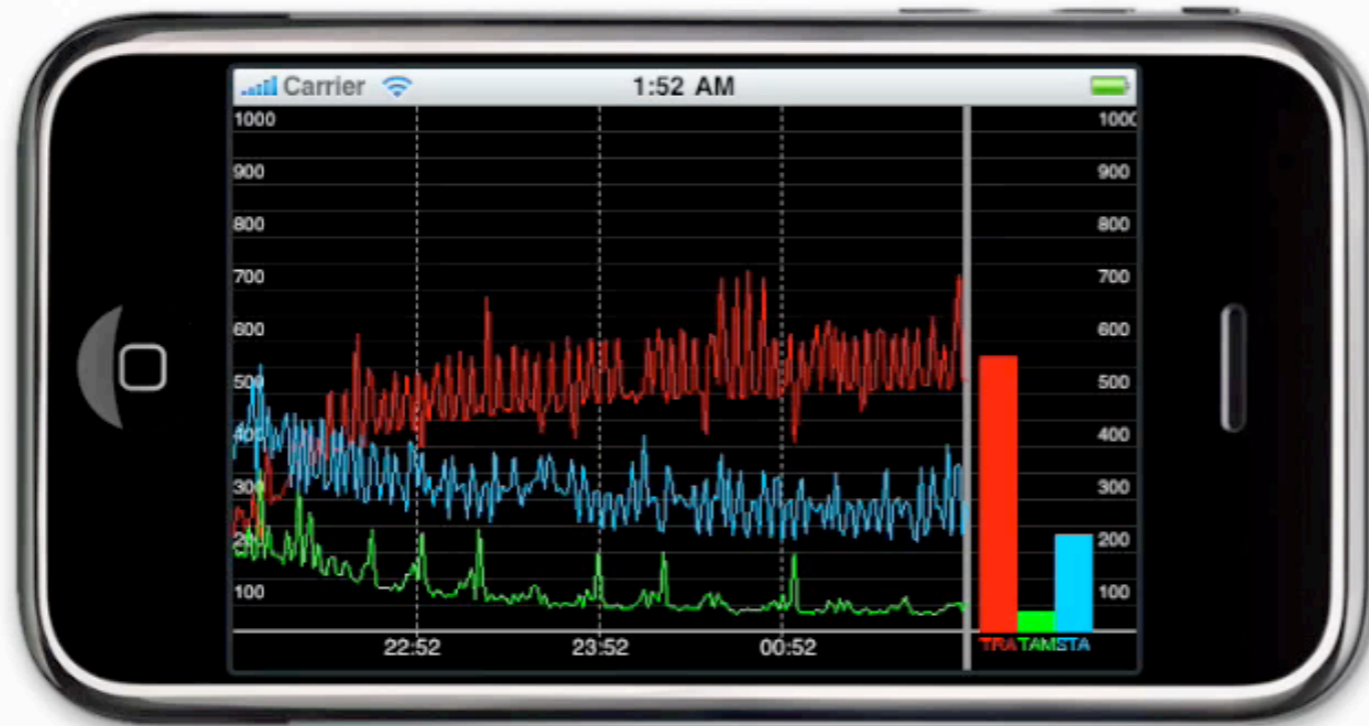


I have smoked more than 40 years. I have no reason to quit.

It was different from **knowing** how bad it is to **seeing** how bad it is.

Sometimes you need a smack in the face. It shoots up when I light a cigarette.





I have smoked more than 40 years. I have no reason to quit.

It was different from **knowing** how bad it is to **seeing** how bad it is.

Sometimes you need a smack in the face. It shoots up when I light a cigarette.

It was affecting my denial over smoking. It is too predominant.

Nothing else made air worse than smoking, Cooking, vacuuming, lighting a fireplace...Nothing! My air quality is like ten times worse than others. I am not feeling comfortable anymore with smoking.







# Making Sense of Sensors

sensor legibility

design for disassembly

designing for doubt

designing for activism

representation: good or evil?

neutral sensors

avoid creating culture of fear

The time for games has passed.

Now is the season for action

- Barack Obama



