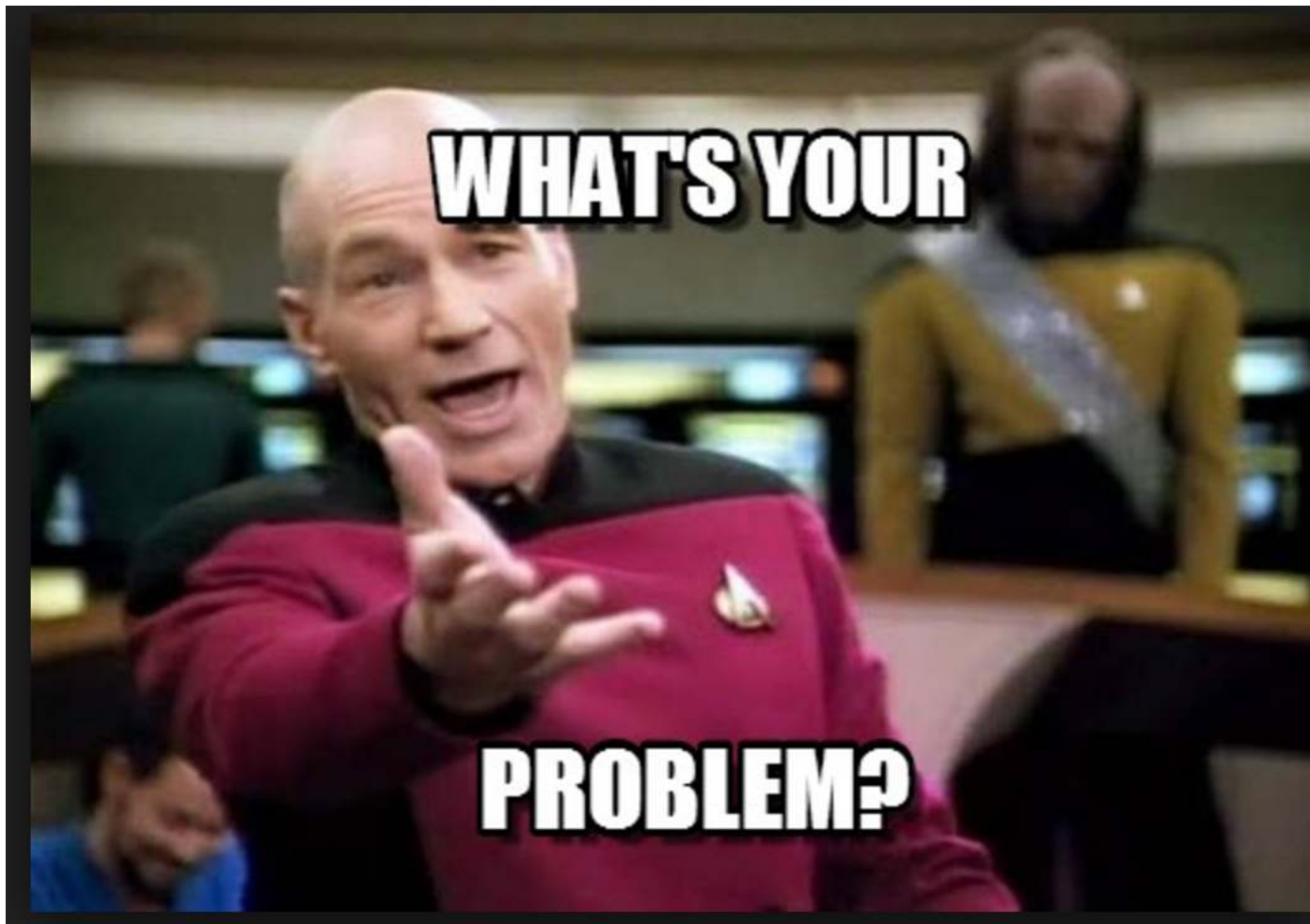


Can Games Really Solve Real-World Problems?

Dr. Karen Schrier
Marist College



WHAT'S YOUR

PROBLEM?

Addiction

Pay-to-play

Aggression

Immorality

Marketing to kids

Violence

Obesity



15 Ways Pokemon Go Is Making The World A Better Place

QUANDARY

AT THE DAWN OF A NEW SOCIETY...
HOW WILL YOU DECIDE?

Planet Braxos
needs your help!

When the human colonists on Planet Braxos can't resolve their dilemmas, they need you, their Captain, to help. Play Quandary now and shape the future of a new civilization.



USER:

PASSWORD:

English

MISSION US AN INTERACTIVE WAY TO LEARN HISTORY

LOGIN REGISTER



HOME ABOUT PLAY EDUCATORS HELP CONTACT



Mission 1 For Crown or Colony?

It's 1770. You are Nat Wheeler, a 14-year-old apprentice in Boston. When fighting starts, what will you do?

PLAY

WATCH THE TRAILER



Mission 2 Flight to Freedom

It's 1848. You are Lucy King, a 14-year-old enslaved in Kentucky. Will you find a path to freedom?

PLAY

WATCH THE TRAILER



Mission 3 A Cheyenne Odyssey

It's 1866. You are Little Fox, a Northern Cheyenne boy. Can you help your tribe survive life on the Plains?

PLAY

WATCH THE TRAILER



Mission 4 City of Immigrants

It's 1907. You are Lena Brodsky, a Jewish 14-year-old from Russia. How will you start a new life in America?

PLAY

WATCH THE TRAILER

About Mission US

Mission US is a multimedia project that immerses players in U.S. history content through free interactive games. [read more](#)

THINK FAST!

ABOUT THE PAST

Test your knowledge of history as you race against the clock! *Three free ways to play.*

PLAY ONLINE

APPLE IPAD

ANDROID TABLET

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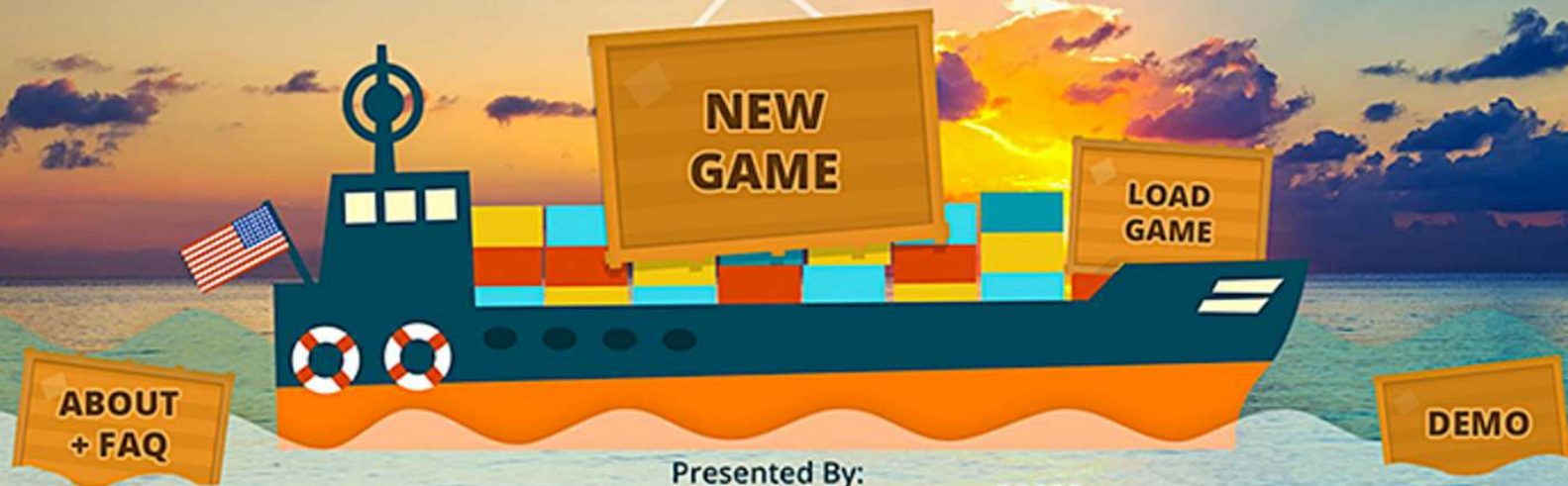
WNET
THIRTEEN

Funding for Mission US provided by the Corporation for Public Broadcasting. Additional funding provided by the National Endowment for the Humanities. Educational outreach support provided by The Page & Osta Marx, Jr. Foundation and Atran Foundation.



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THE FISCAL SHIP



Presented By:



Hutchins Center
on Fiscal & Monetary Policy
at BROOKINGS



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PETER G.
PETERSON
FOUNDATION



Richard Lounsbery Foundation

THE
THREE
LITTLE
PIGS
VR!



A Google Cardboard Experience

Climb
the ladder
to learn what
BIG NUMBERS
are made of!

20
19
18

17

16

15

14

13

12

11

10

9

8

7

6

5

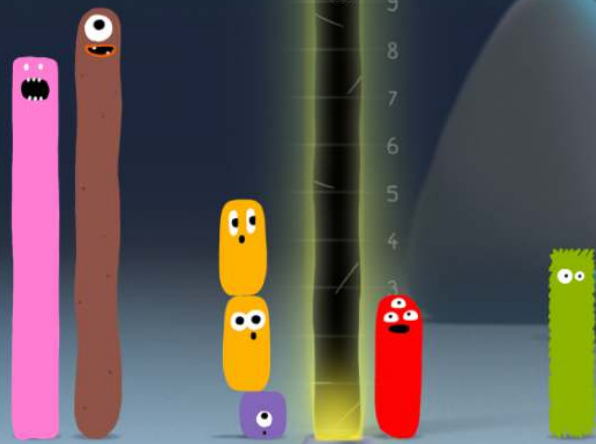
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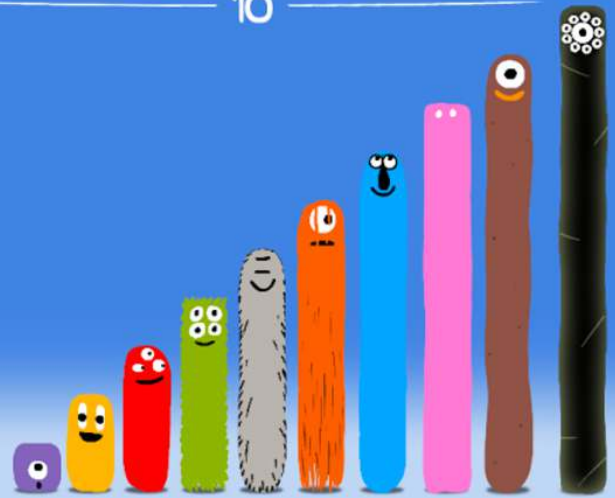
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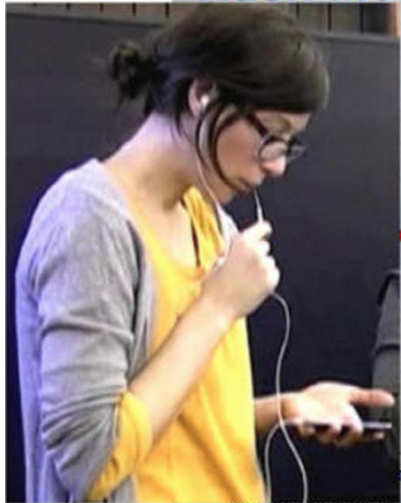
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Rush Mode: Game Objective



Obstacles such as asteroids cause damage to the spaceship and canister.



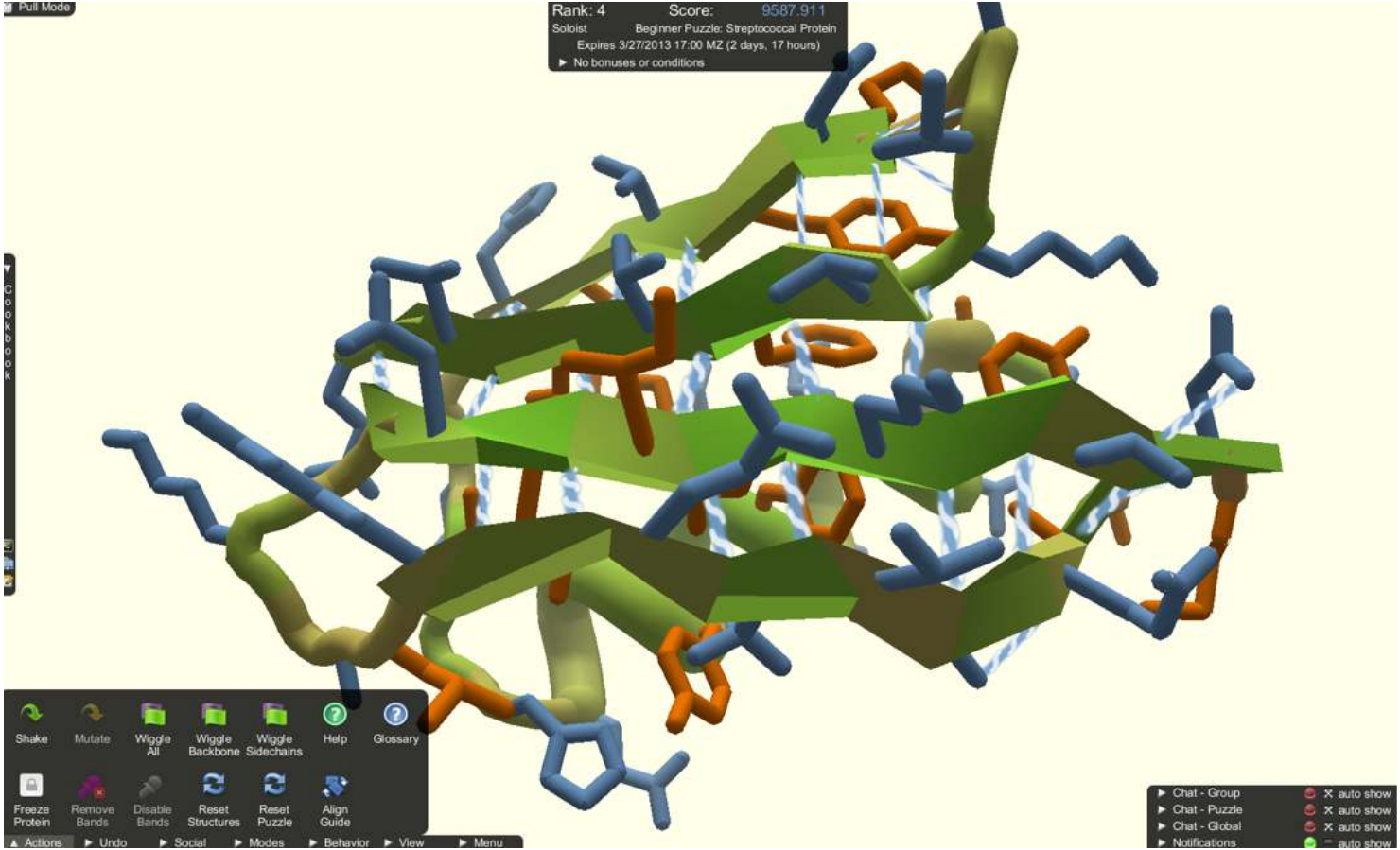


Skip a Beat





Games are already **solving problems**,
but can we also solve real-world
problems **through the game itself**?



Seth Cooper, Firas Khatib, Adrien Treuille, Janos Barbero, Jeehyung Lee, Michael Beenen, Andrew Leaver-Fay, David Baker, Zoran Popović & Foldit players (2010) “Predicting protein structures with a multiplayer online game,” *Nature* 466, 756–760.

These games have been called
Human Computation Games,
Crowdsourcing Games, Citizen
Science Games and Games with a
Purpose (GWAP).

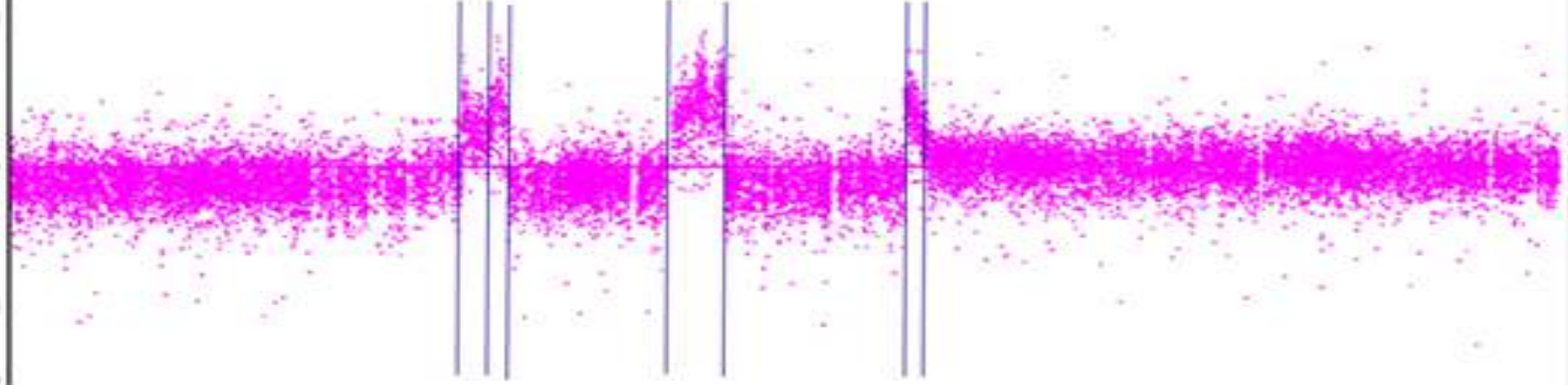
I call these games **Knowledge Games**,
because they help build knowledge.

Humans + Computers = Problem Solving **Gold**





-8 -2 0 2 8



PLAY TO CURE™ GENES IN SPACE

IN ONE MONTH
'CITIZEN SCIENTISTS'
HAVE ANALYSED
AROUND

40

MILES OF
DNA DATA



THIS IS THE LENGTH OF

540

FOOTBALL PITCHES

AND AROUND **170** TIMES THE HEIGHT OF THE
EMPIRE STATE BUILDING

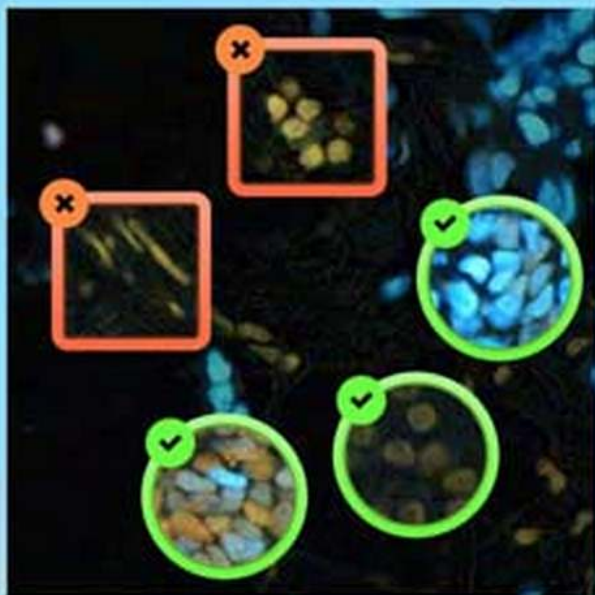


DATA ANALYSED WOULD
HAVE TAKEN A
SCIENTIST APPROXIMATELY
6 MONTHS
TO ANALYSE THAT AMOUNT BY EYE



**HELP BEAT CANCER SOONER
IN THIS GREAT NEW MOBILE GAME!**





The shapes we're looking for are uneven and sometimes speckled, like the ones highlighted in the circles. You can ignore the round or stretched shapes that we've highlighted in red squares. We're not looking for these.



<http://eyewire.org/explore>

Eyewire

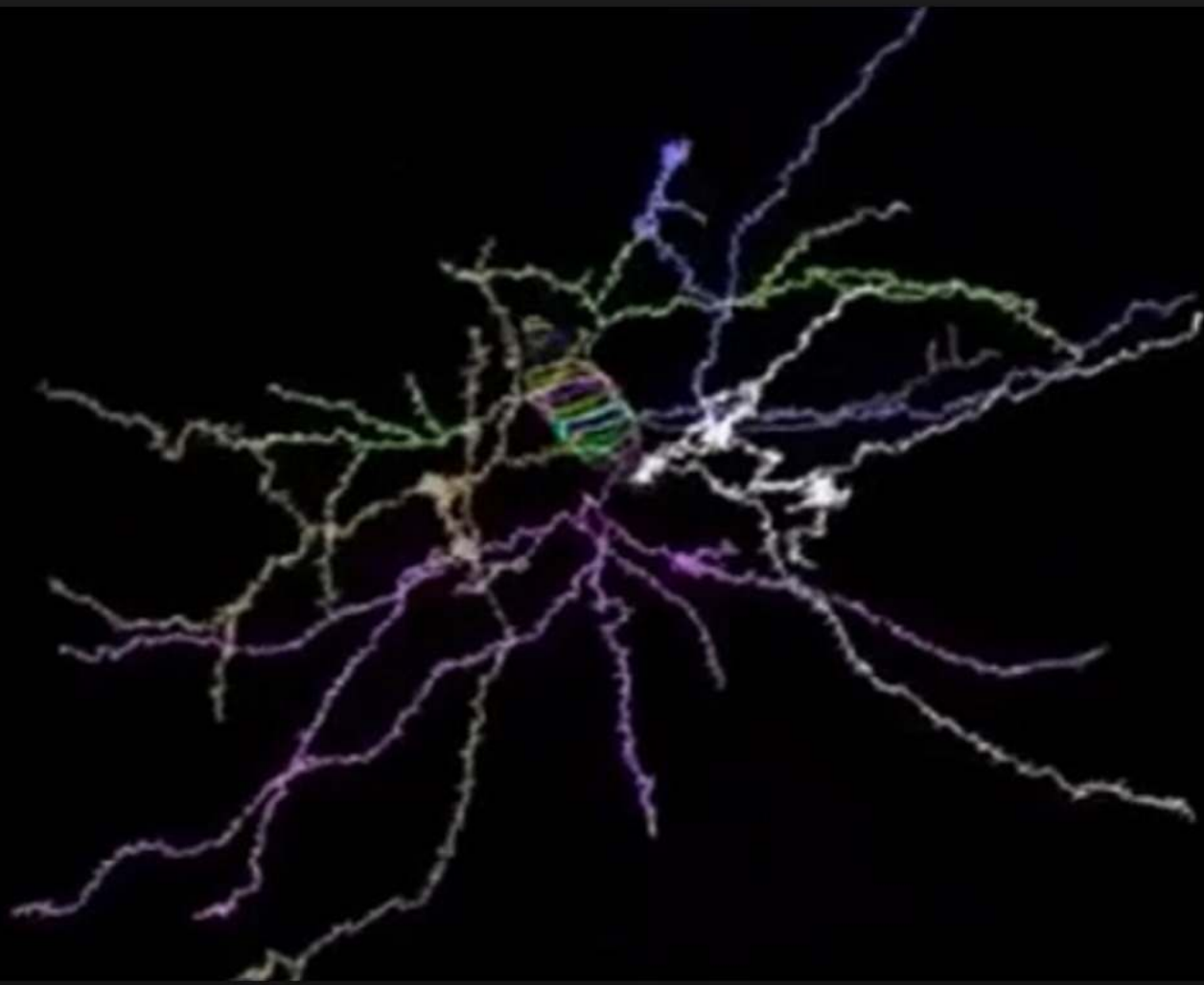
SHARE 



A GAME TO MAP THE BRAIN

PLAY NOW











Landwehr, P., Spraragen, M., Ranganathan, B., Carley, K., M., and Zyda, M. (2012). "Games, Social Simulations and Data—Integration for Policy Decisions: The SUDAN Game" *Simulation and Gaming*.

So, **Knowledge Games**—it seems like a no-brainer, right?

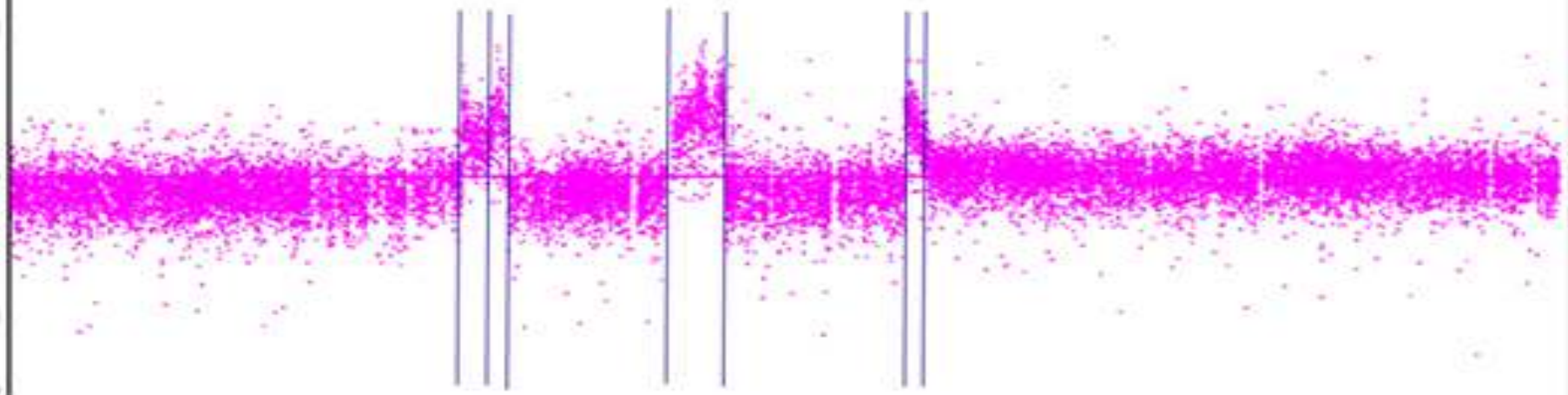
But what about **ethics**?

*

1. What about **privacy** and **security**? How can we ensure that players' actions, behavior or attitudes in a game not get used against them?



-8 -2 0 2 8



2. What about **authenticity**? How can we ensure that people's stories and ideas are told and played appropriately?

When Good Intentions Go Awry

The counterintuitive effects of a prosocial online game

Like 304

Posted Dec 07, 2015

SHARE

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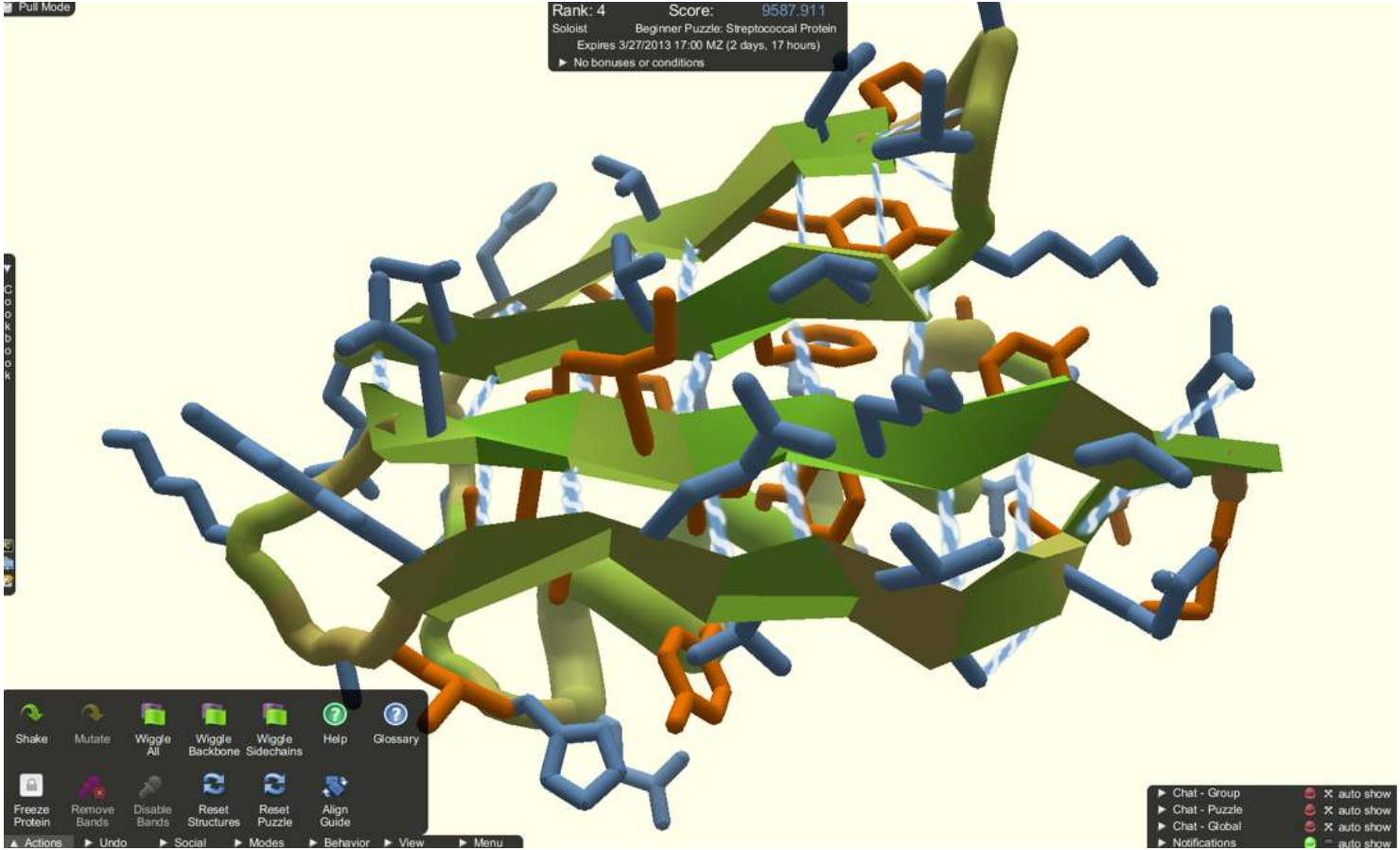
MORE

By *Gina Roussos*

Online gaming is booming—consumers are champing at the bit to play an increasingly large number of fun, free, and easily accessible games. Some entrepreneurs have taken this opportunity to create online games meant to increase empathy and positive attitudes



3. What about **data validity** and **accuracy**? How can we ensure that players are providing accurate results in a game? Does the game have to be accurate to be meaningful?



Seth Cooper, Firas Khatib, Adrien Treuille, Janos Barbero, Jeehyung Lee, Michael Beenen, Andrew Leaver-Fay, David Baker, Zoran Popović & Foldit players (2010) “Predicting protein structures with a multiplayer online game,” *Nature* 466, 756–760.

4. What are the **design values**? How do the biases inherent in any design shape the experience? Are these communicated and is the design transparent?



Landwehr, P., Spraragen, M., Ranganathan, B., Carley, K., M., and Zyda, M. (2012). "Games, Social Simulations and Data—Integration for Policy Decisions: The SUDAN Game" *Simulation and Gaming*.

5. Are players having **fun**? Is it unethical if the game makes a difference but the experience is tedious or even exploitative? At what point are games too harmful if they aren't pleasurable.

Use this link and enter **PAV15** in your cart

PAVLOK



**ENTER 'PAV15'
FOR 15% OFF**



Moths!

Setup!

Get Started!

Drag bad photos to the choices below to swap them.
When all the photos look good, click "play" to start!



Not a Moth



Drag a photo to this space if it is not a picture of a Moth.

Trash



Drag a photo to this space if it is too light, too dark, or too blurry to use.

Play

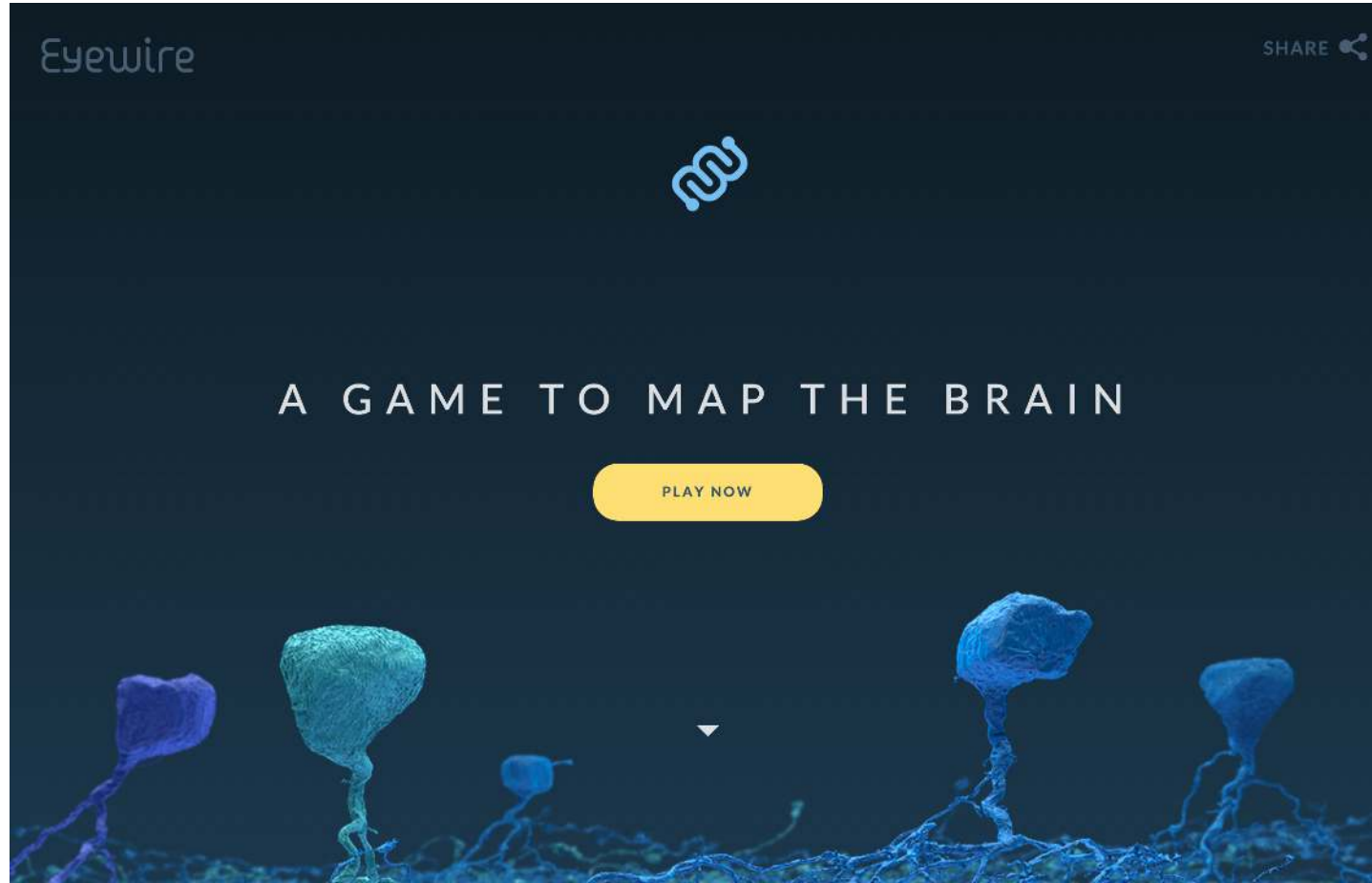


[Instructions](#) | [About](#) | [Credits](#) | [Go Back to Citizen Sort](#)

Greg Newman, Andrea Wiggins, Alycia Crall, Eric Graham, Sarah Newman, and Kevin Crowston (2012). The future of citizen science: emerging technologies and shifting paradigms. *Frontiers in Ecology and the Environment* **10**: 298–304.

6. Are players using **higher-order skills**? Are we making players act like laborers who are contributing data collection or basic analysis, but with no actual interpretation or knowledge production?

<http://eyewire.org/explore>

The image shows a dark blue banner for the Eyewire website. At the top left is the 'Eyewire' logo in white. At the top right is the word 'SHARE' followed by a share icon. In the center is a white DNA double helix icon. Below the icon is the text 'A GAME TO MAP THE BRAIN' in white, spaced-out capital letters. Underneath the text is a yellow rounded rectangular button with the text 'PLAY NOW' in black. At the bottom of the banner, there are several 3D models of neurons in various colors (purple, green, blue) against a dark blue background. A small white downward-pointing triangle is centered below the neurons.

Eyewire

SHARE

A GAME TO MAP THE BRAIN

PLAY NOW

7. How do **social interactions** and **community** shape the game? How might real-world and virtual social values and norms affect a game and one's experience of it?



8. How are games for good received differently? Will using games for **social scientific** or **humanistic** purposes be as well received as those for **STEM** or **health**?



**HELP BEAT CANCER SOONER
IN THIS GREAT NEW MOBILE GAME!**



9. What happens **next**? What are the contexts and communities that emerge from and around a game and how does it shape our future?

Let's find ways to use, make, and research
games together!



Thank you.

Find out more at:

www.facebook.com/knowledgegames

kschrier@gmail.com

@drgamermom

www.knowledgegamesbook.com

Knowledge Games:

How Playing Games Can Help Solve Problems, Create Insight, and Make Change

(May 2016, Johns Hopkins University Press)

Learning, Education & Games (Volumes 1 and 2)

(ETC Press- FREE ONLINE)

