



# WorldWide Telescope Ambassadors Program

**Alyssa Goodman**

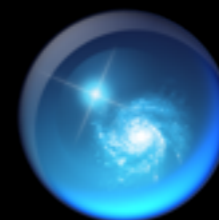
*Harvard University Professor of Astronomy,  
WGBH Scholar-in-Residence, Microsoft Academic Partner*

**Annie Valva**

*WGBH Interactive, Director of Research & Development*

**Pat Udomprasert**

*WWT Program Coordinator*



# WorldWide Telescope: a UIS from Microsoft Research

[UIS=Universe Information System]



Created by Curtis Wong and Jonathan Fay at MSR; AG is "Academic Partner" on the WWT Project

*“Why is one polar ice cap on Mars bigger than the other?”*  
– Clarke Middle School 6<sup>th</sup> Grader

The screenshot displays the Microsoft WorldWide Telescope interface. The main window shows a 3D view of Mars, highlighting its polar ice cap. The interface includes a top navigation bar with options like 'Explore', 'Guided Tours', 'Search', 'Community', 'Telescope', 'View', and 'Settings'. Below this is a 'Collections' bar with various categories such as 'My Collections', 'Constellations', 'Solar System (Sky)', 'All-Sky Surveys', 'Spitzer Studies', 'Chandra Studies', 'Hubble Studies', 'Astrophotography', 'Radio Studies', 'NOAO Studies', 'Gemini Studies', and 'Messier Catalog'. At the bottom, there is a 'Look At' panel with a dropdown menu set to 'SolarSystem' and a '3D Solar System View' button. A row of planet thumbnails is visible, with 'Saturn' highlighted. To the right of the planet thumbnails is a 'Tracking' section set to 'Mars', a 'Context Search Filter' set to 'All', and a 'Planet Size' slider. The 'Planet Size' section shows a comparison between 'Actual' and 'Large' sizes, with a thumbnail of Mars and the text 'Ursa Major 8187 km'. The coordinates 'Lng: 20:32:48' and 'Lat: +51:11:21' are also displayed.

[Demo]

WGBH  
teachers' domain  
NOVA

MASSACHUSETTS Digital Media for Massachusetts Educators  
teachers' domain

Home → Resource

User: Annie Valva of WGBH EDUCATIONAL FOUNDATION

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Resource: **What Is a Planet?** Recommended for: Grades 3-12

Media Type: QuickTime Video  
Length: 3m 04s  
Size: 10.0 MB

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Permitted use: Download, Share, and Remix

In this video segment adapted from *NOVA scienceNOW*, learn about the debate over the definition of a planet. Historically, there has been no scientific definition for a planet, leaving astronomers with the difficult task of properly classifying new discoveries in our solar system, such as Ceres and Eris. However, in August 2006, members of the International Astronomical Union (IAU) passed a resolution that defined a planet. Under the new definition, Pluto is not classified as a planet, but rather as a dwarf planet along with Ceres and Eris.

NOVA | Mars | PBS

Corporate funding provided by: ExxonMobil PACIFIC LIFE

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**IS THERE LIFE ON MARS?**  
The decades-long search for life on the Red Planet heats up with the discovery of frozen water.

**LIFE'S LITTLE ESSENTIAL**  
Everybody knows that liquid water is necessary for life, at least as we know it. But just why exactly?

**ASK THE EXPERT**  
Dr. Leslie Tamppari of the Mars *Phoenix* Lander mission answers viewer questions.

**MARS FROM AFAR**  
See some of the finest images ever taken of the martian surface, including *Phoenix's* most famous.

**MARS UP CLOSE**  
In late 2004, Steve

WATCH ONLINE

WATCH A PREVIEW TV PROGRAM DESCRIPTION

450K registered users



1.5M visitors/month

# WWT Ambassadors

## Who?

Harvard/CfA and WGBH staff in collaboration with Microsoft Research & Volunteer Ambassadors

## What?

Future-leaning way to teach and learn STEM concepts

## How?

Use new WWT platform to give experts and learners access to the Universe

## Where?

Public spaces and schools in a variety of regions

# Who?

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## Here today

**Alyssa Goodman**

*Harvard University Professor of Astronomy,  
WGBH Scholar-in-Residence, Microsoft Academic Partner*

**Annie Valva**

*WGBH Interactive, Director of Research & Development*

**Pat Udomprasert**

*WWT Program Coordinator*

## Advisors

**Christine Borgman**

*Lead Author, NSF Cyberlearning Report (UCLA)*

**Roy Gould & Susan Sunbury**

*CfA Science Education Department*

**Megan Watzke**

*NASA Chandra Public Affairs Coordinator*

## Microsoft Research

**Curtis Wong**

*Creator of WWT*

**Jonathan Fay**

*Software Engineer for WWT*

**Yan Xu**

*Academic Partners Program*

**Tony Hey**

*VP of External Research*

## Pilot Ambassadors

**Michelle Bartley, Science Teacher**

*Clarke Middle School, Lexington, MA*

**Phil Rosenfield, Graduate Student**

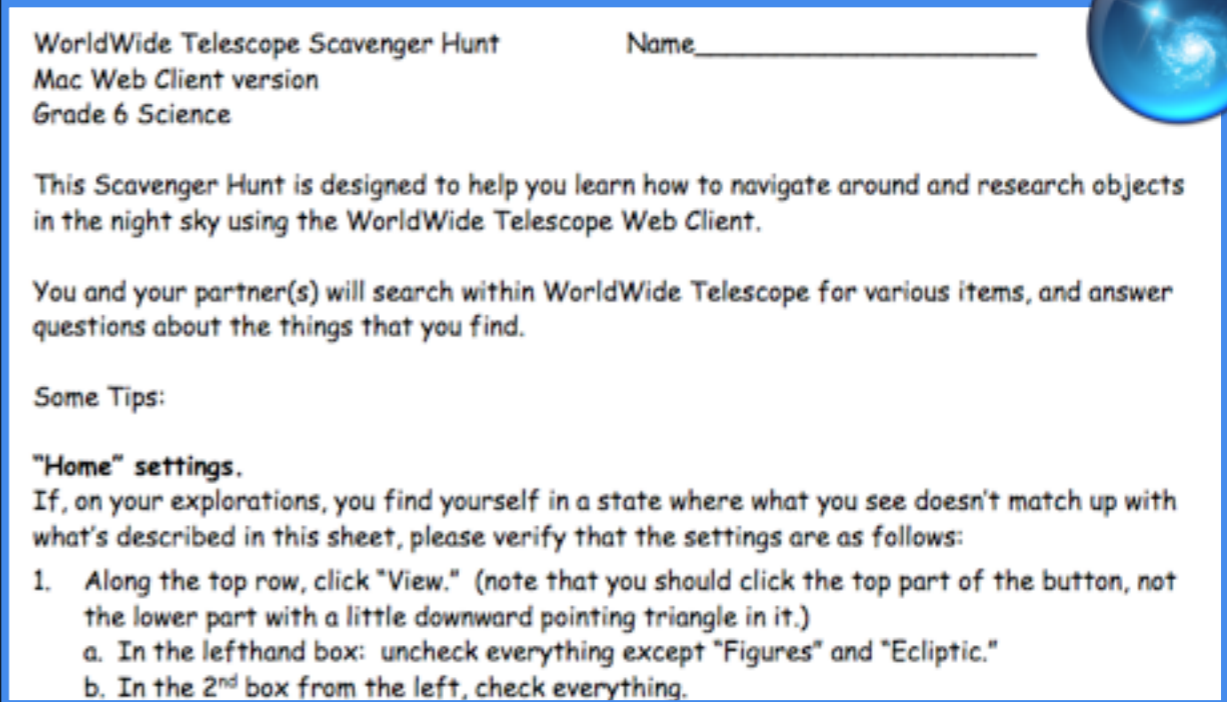

*University of Washington*

**Steve Strom\***

*NOAO Retired Scientist*

# What?

## Future-leaning way to teach and learn STEM concepts



WorldWide Telescope Scavenger Hunt Name \_\_\_\_\_  
Mac Web Client version  
Grade 6 Science

This Scavenger Hunt is designed to help you learn how to navigate around and research objects in the night sky using the WorldWide Telescope Web Client.

You and your partner(s) will search within WorldWide Telescope for various items, and answer questions about the things that you find.

Some Tips:

"Home" settings.  
If, on your explorations, you find yourself in a state where what you see doesn't match up with what's described in this sheet, please verify that the settings are as follows:

1. Along the top row, click "View." (note that you should click the top part of the button, not the lower part with a little downward pointing triangle in it.)
  - a. In the lefthand box: uncheck everything except "Figures" and "Ecliptic."
  - b. In the 2<sup>nd</sup> box from the left, check everything.

*WWT Tours,  
including creation by  
Ambassadors &  
learners + hosting*



*Guided WWT  
Exploration  
activities created by program  
staff & Ambassadors/teachers*

A photograph of a student looking at a laptop screen. A white document with a blue border is overlaid on the image, containing text about a scavenger hunt. In the top right corner of the document, there is a small blue globe icon. The background shows a classroom setting with a wooden door and a sign that says "STORAGE CENTER".

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Clarke Middle School, Lexington, MA (WWT Ambassadors Pilot School)





*Michelle Bartley interviews her 6<sup>th</sup>-grade science class about WWT*  
*December 19, 2009*

# How?

Using new WWT platform to give experts and learners access to the Universe



## WWT Ambassadors Program *Recruiting, Vetting, Coordination*



hosted/  
promoted by



# Where?

## Public spaces and schools in a variety of regions

Pilot ● *Boston Area*

Phase I candidates ● *Tucson, AZ; Seattle, WA; Appalachia; Gainesville, FL; Fairbanks, AK*

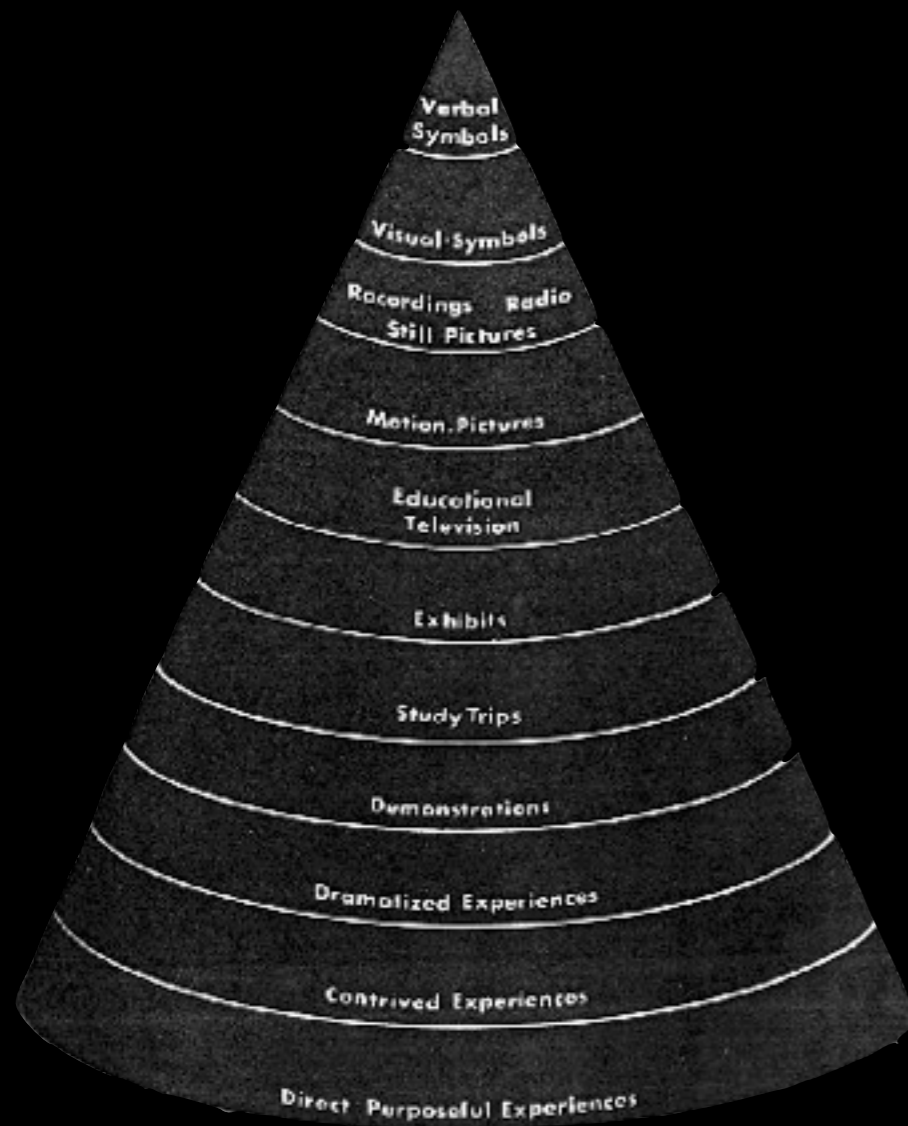


*Phase II: US-wide; Phase III: International*

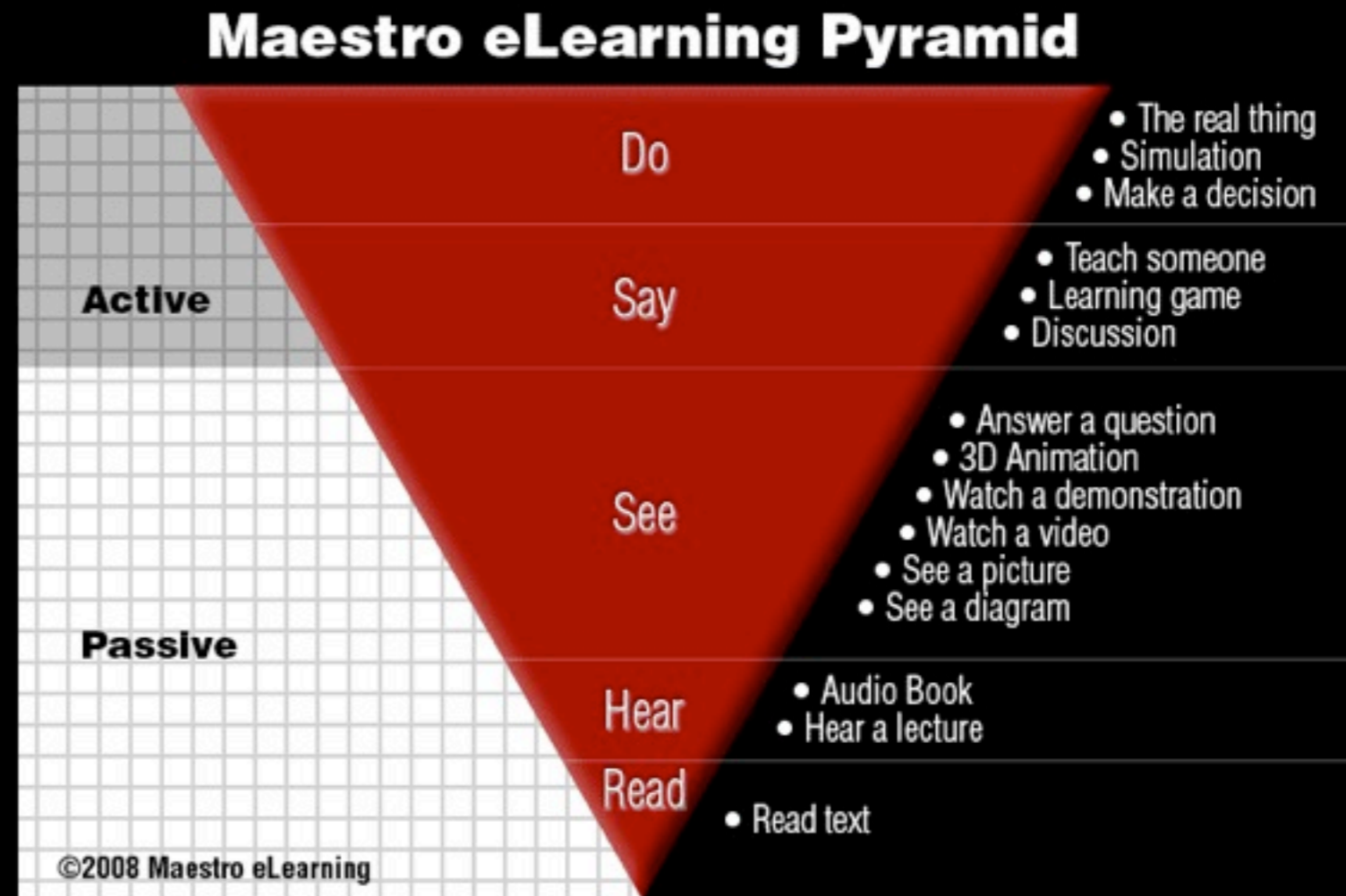
# Why?

Increase STEM literacy in US now.

Demonstrate cyberlearning's value to the “Cone of Experience”



Edgar Dale, “Audio Visual Methods in Teaching”, 1946-69





*“I never knew programs like this could even exist. It’s just amazing.”*

*–Clarke Middle School 6<sup>th</sup> grade student*

### More quotes from Clarke 6<sup>th</sup> Graders

*“Learning about our Universe by actually seeing and exploring it makes it easier to contemplate and more fun.”*

*“You can explore the Universe yourself and you don't always have to only learn from the teacher.”*

*“It gave me a better mental map of the universe.”*

*(And of the 72 surveys we’ve collected, 71 are positive toward WWV Ambassadors.)*



RETIRED SCIENTISTS,  
ENGINEERS & TECHNICIANS  
*in the classroom*

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ReSET is a D.C.-based non-profit volunteer organization that partners with elementary schools to provide science education and literacy training to students and teachers. It is an exciting and rewarding experience for all involved.

## Boston RE-SEED Center

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### Overview

## RESEED Silicon Valley

Retirees Enhancing Science Education through Experiments & Demonstrations

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## TIP on TOPS

- ◆ Scientists participate and assist in classroom presentations, family science nights, field trips, science clubs, careers days and act as content resources over the school year.
- ◆ Training at a school site is offered to scientists to bridge the worlds of science and K-12 education.
- ◆ Ongoing training and support is provided for the TOPS team, scientists and teachers.
- ◆ TOPS targets elementary school who have made a commitment to improving their science instruction and curriculum.
- ◆ TOPS has served over 50 elementary schools and over 3,000 students in six counties of Central California.



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# Programs

## Education

### Senior Scientists and Engineers

#### MCPS Science Volunteer Project

In 2004, the AAAS Senior Scientists and Engineers (AAAS/SSE) decided to partner with the Montgomery County Public Schools (MCPS) to implement the MCPS Science Volunteer Project (MCPS SVP). AAAS and the SSE organization recognized that a successful project would benefit both MCPS and the scientists and engineers who participate. For volunteers, this initiative can:

- Provide great satisfaction in working with teachers and students to share knowledge gathered in university and professional life.
- Broaden content knowledge, e.g., as a physical scientist assists in life science activities, and a life scientist assists in physical science activities.
- Allow them to contribute to AAAS's national focus on science education through lessons learned and recommendations to similar organizations across the US interested in establishing K-8 science volunteer projects in their local school districts.

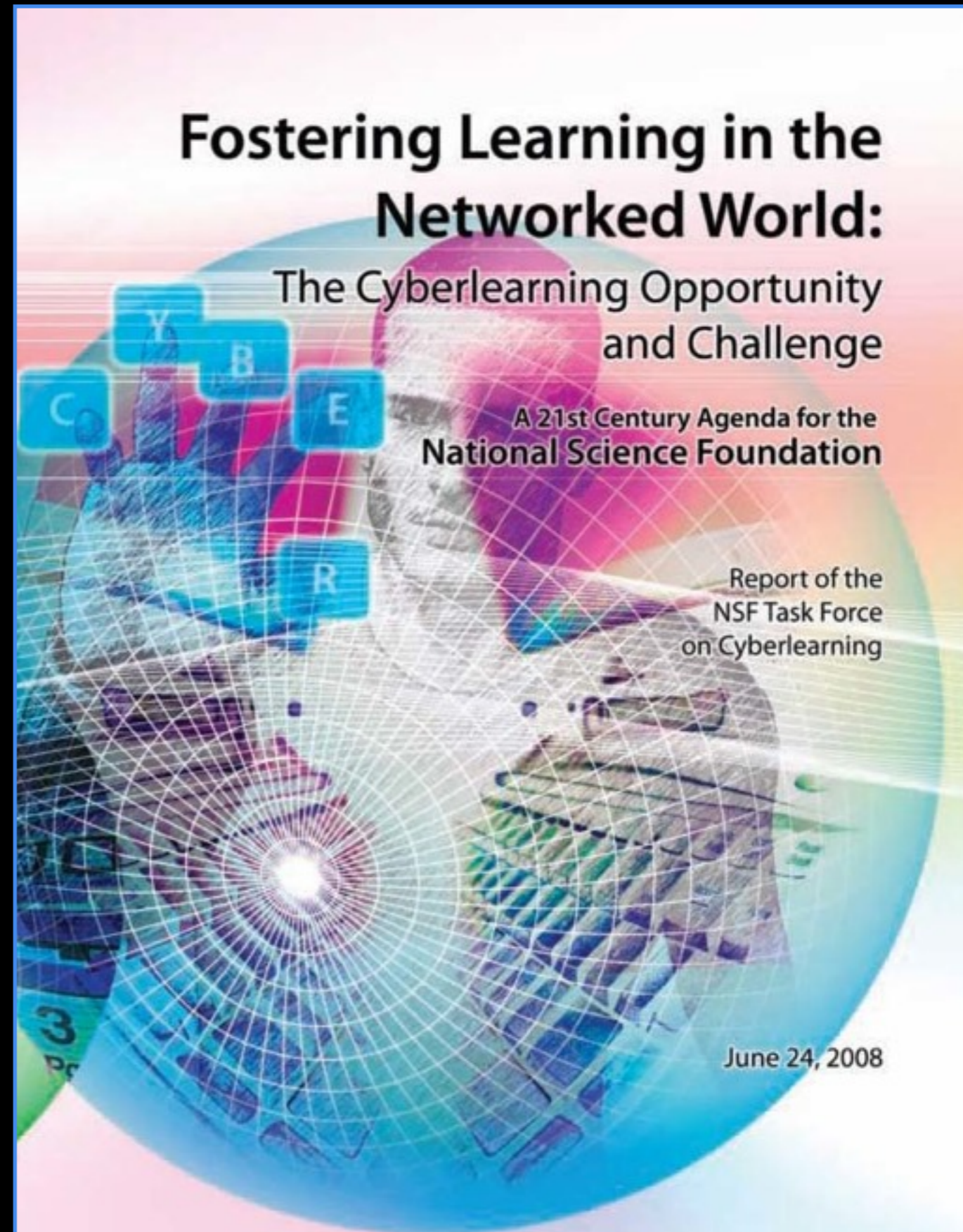
During the development of the MCPS SVP, it became clear that an essential element of a science volunteer project is "ownership" by a local organization that is strongly motivated to improve K-8 science education. It can be a school organization like the San Joaquin County (CA) Office of

# Exemplars/ Partners...



When?

Now...and we need your advice on NSF funding to make this happen.



# WWT Ambassadors: Phased Approach

Pilot ● Boston Area

Phase I candidates ● Tucson, AZ; Seattle, WA; Appalachia; Gainesville, FL; Fairbanks, AK



Phase II: US-wide; Phase III: International



How best to work with NSF  
OCI, MPS/AST, EHR & CISE  
simultaneously?

## Proposals/Phases

- > RAPID/EAGER?
- > Unsolicited?
- > Cyberlearning?
- > Other?

We are *ready-to-go* in 2010 on Phase I.  
Phase II possible in 2011-12.

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**Astronomical Sciences (AST)**

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**Astronomical Sciences (AST)**

# The Matrix

<i>Tour: Dust &amp; Us</i>	Spatial Scale	Time	Gravity	Chemistry	Temperature
Planets					
Stars					
Galaxies					
Gas					
Exotica (Black Holes, etc.)					