

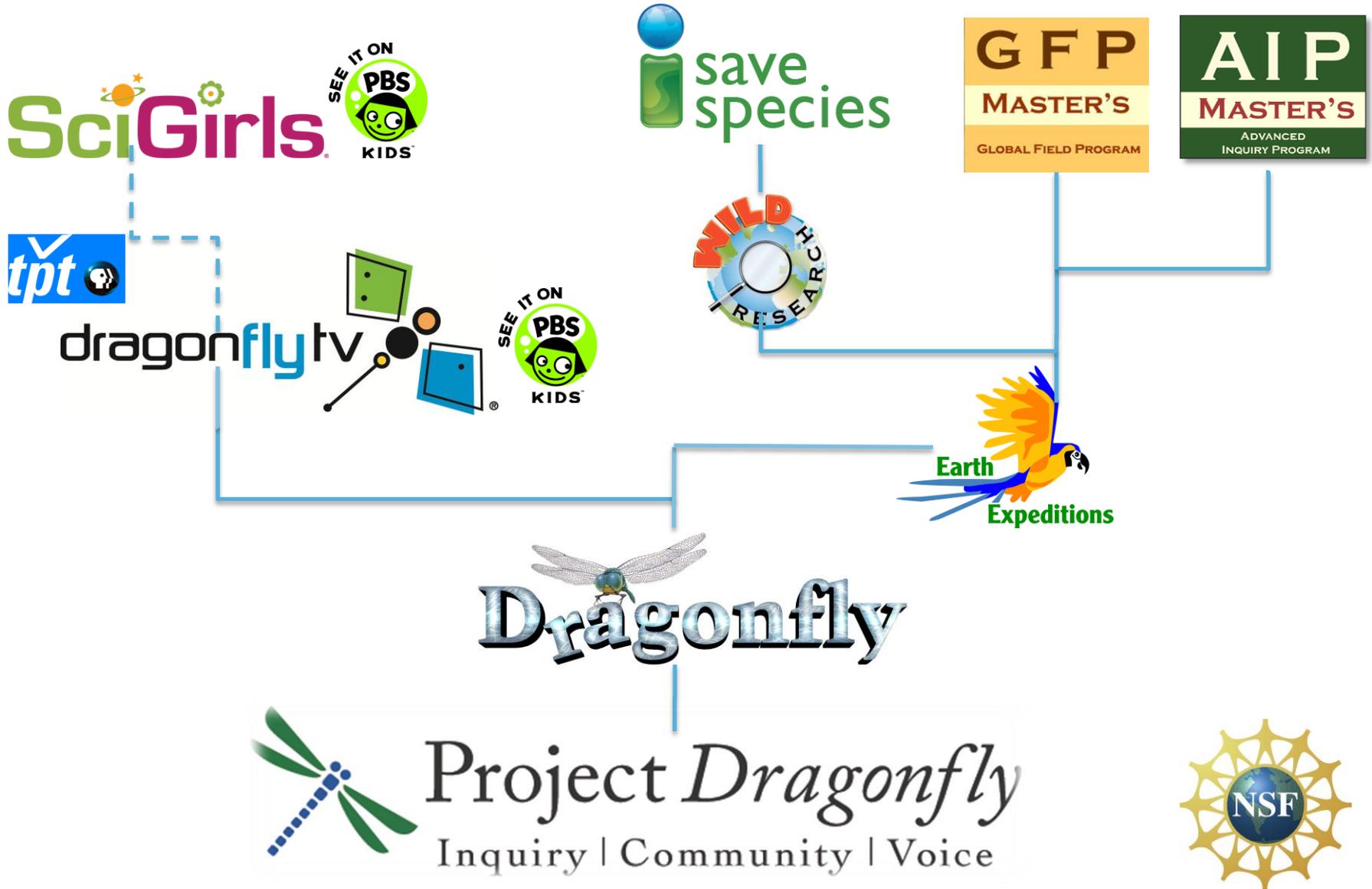
# Participation in Sustainability Science: A Whole-Institution Approach



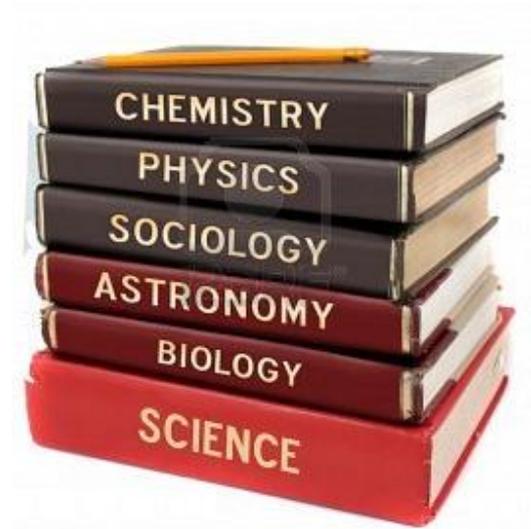
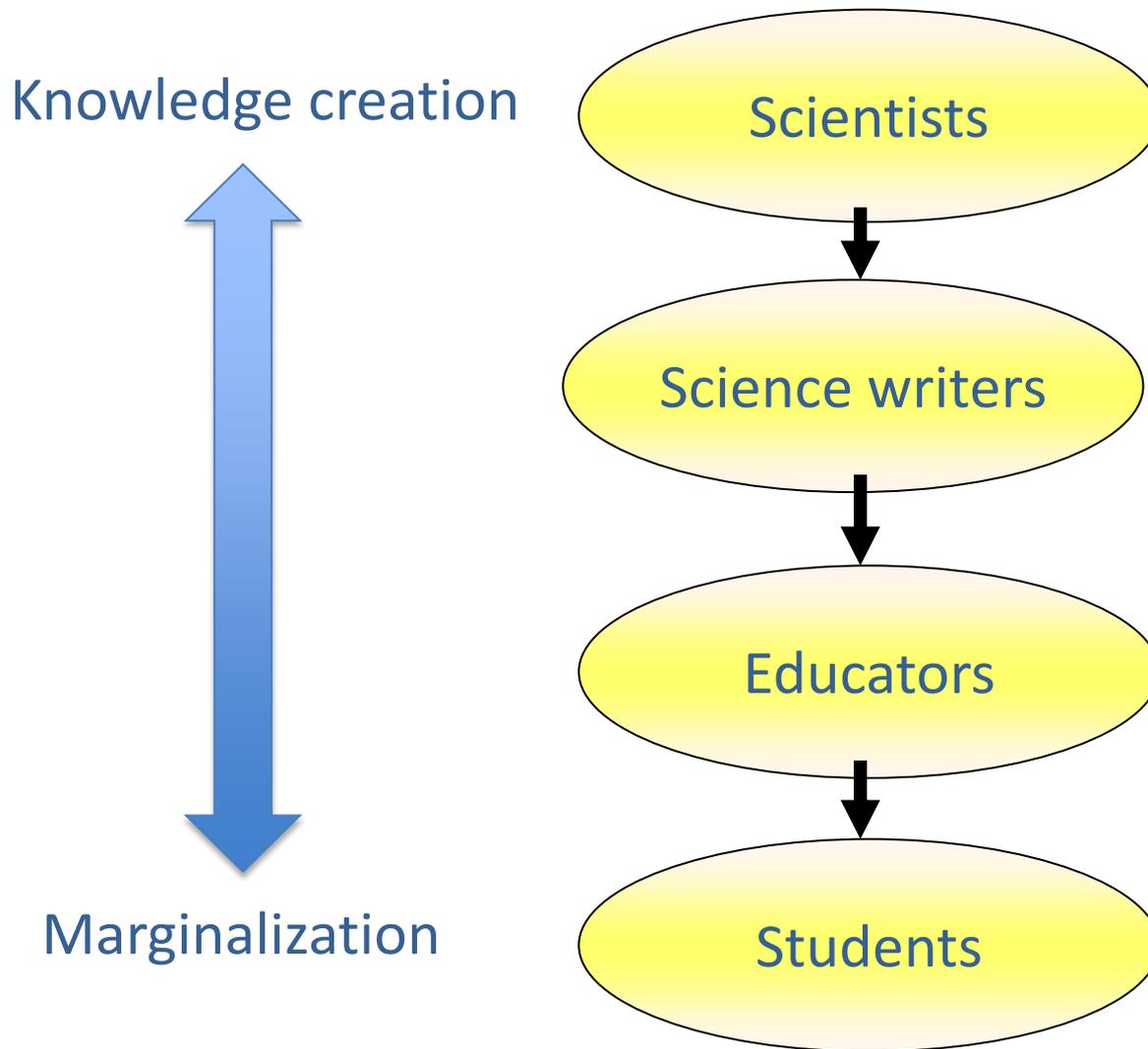
Project *Dragonfly*  
Inquiry | Community | Voice



# Dragonfly's inquiry phylogeny

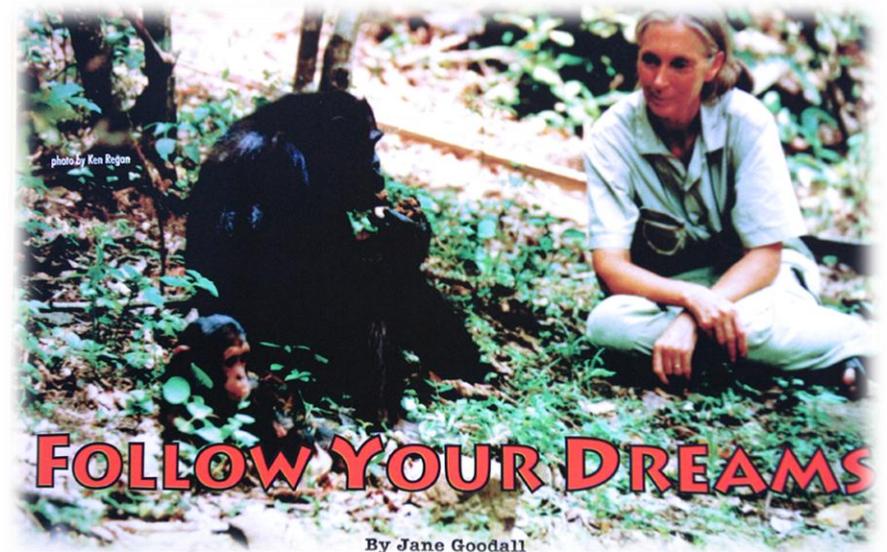
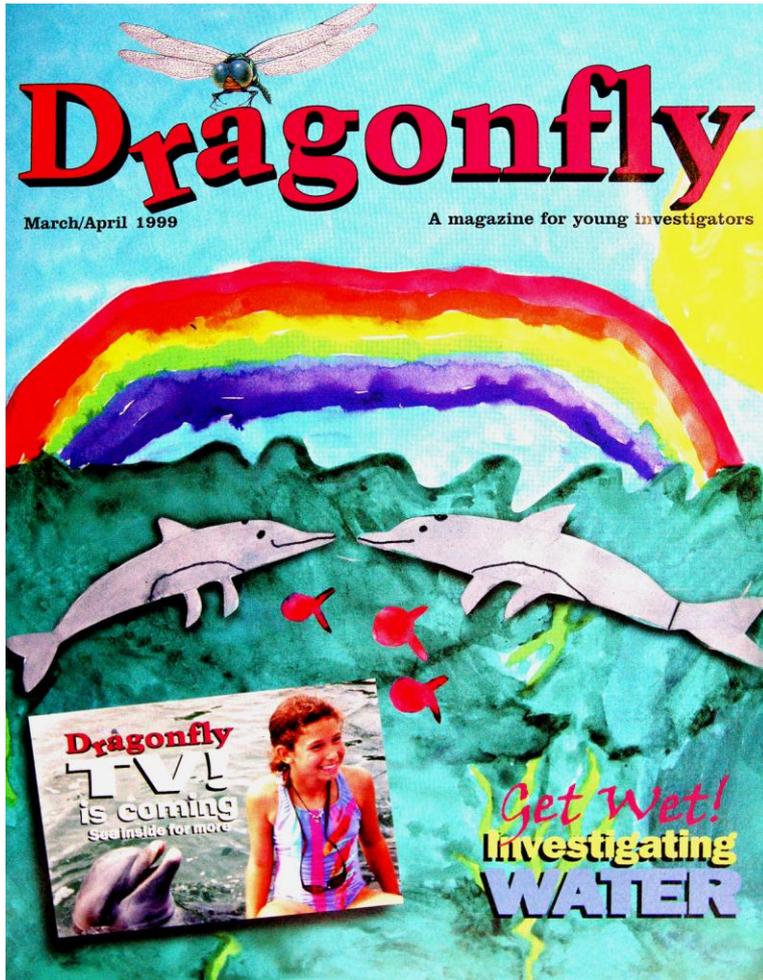


# A problem with our science media

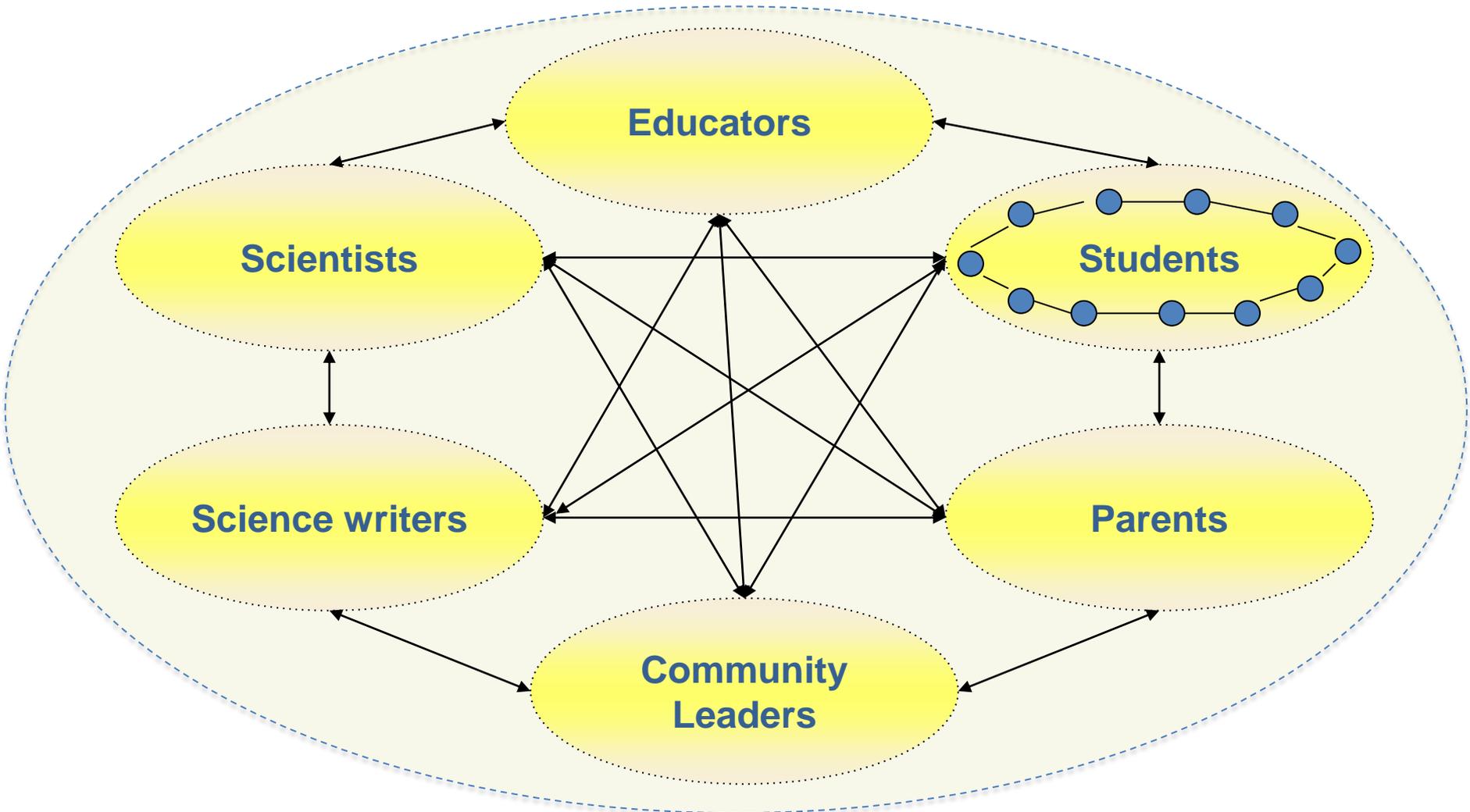


*Exceptionally ineffective for Sustainability Science*

Publish, broadcast, exhibit, or otherwise share children's investigations and discoveries



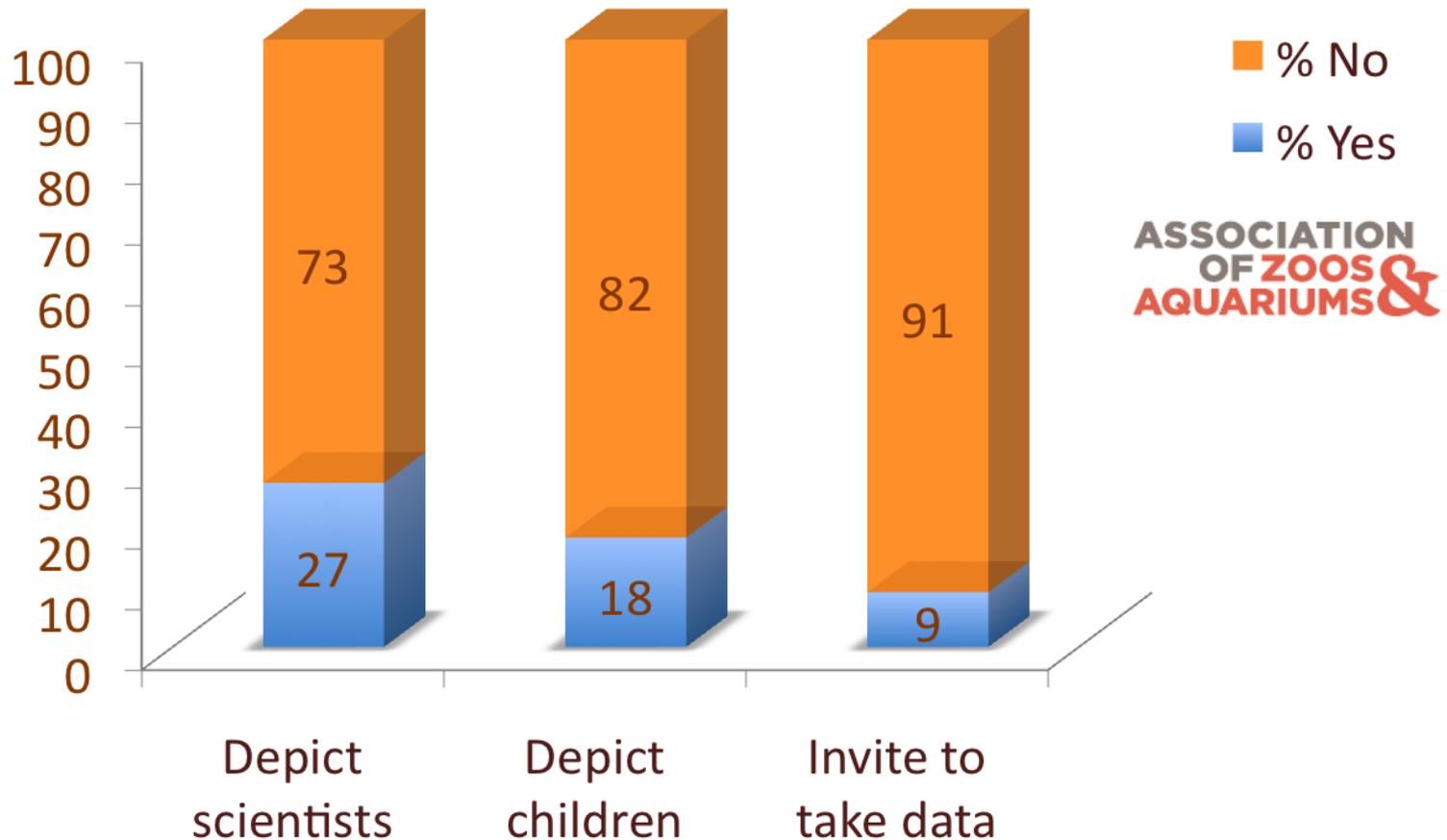
# Sustainability Science will need networks of investigation, communication, and action



# Zoos & aquariums

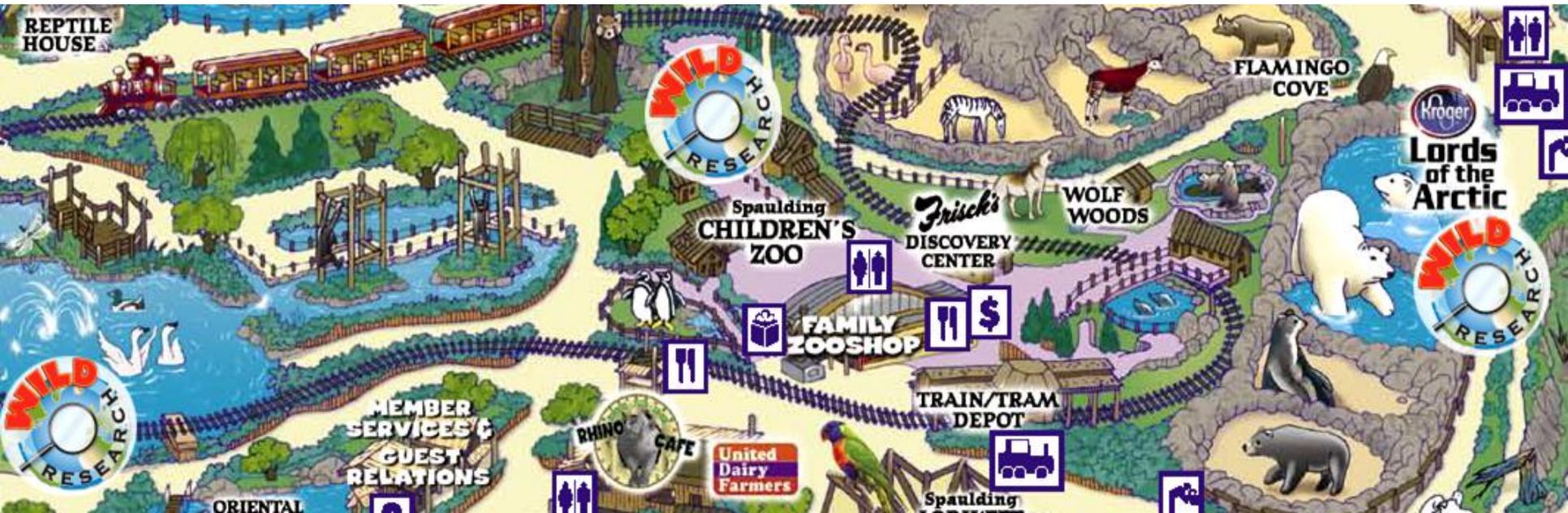
Suited for environmental stewardship

But have historically failed to engage audiences in science and conservation





# Wild Research Stations





# Building a culture of inquiry and action



Programs



Conservation

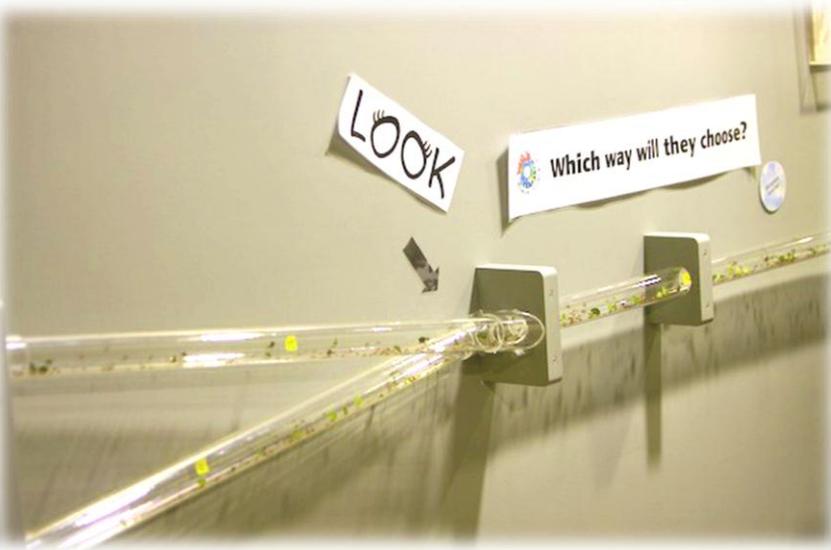


Staff & Volunteers



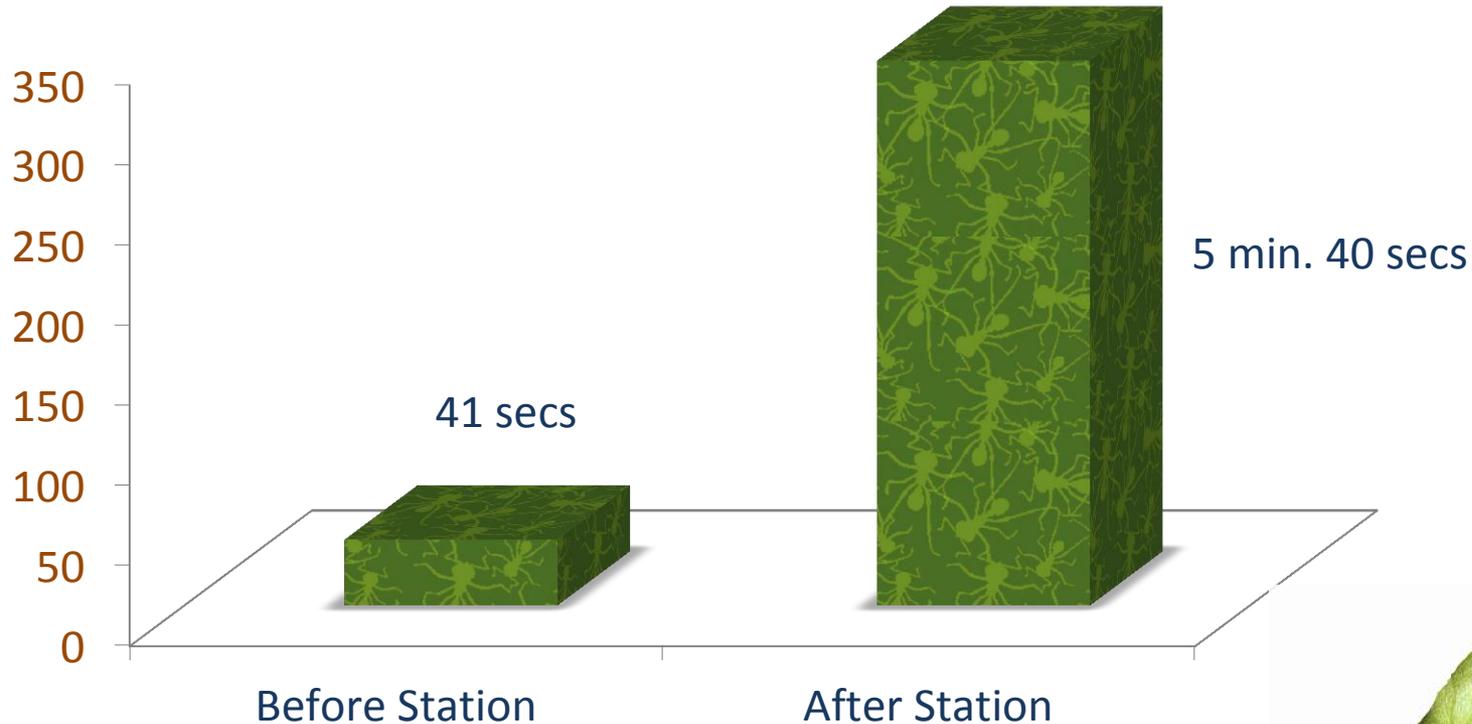
Exhibits

# Ant Evidence

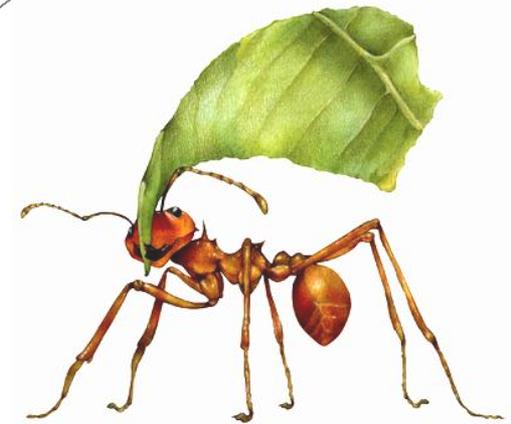


# Will families engage?

## Time at Leaf-Cutter Ants (secs)



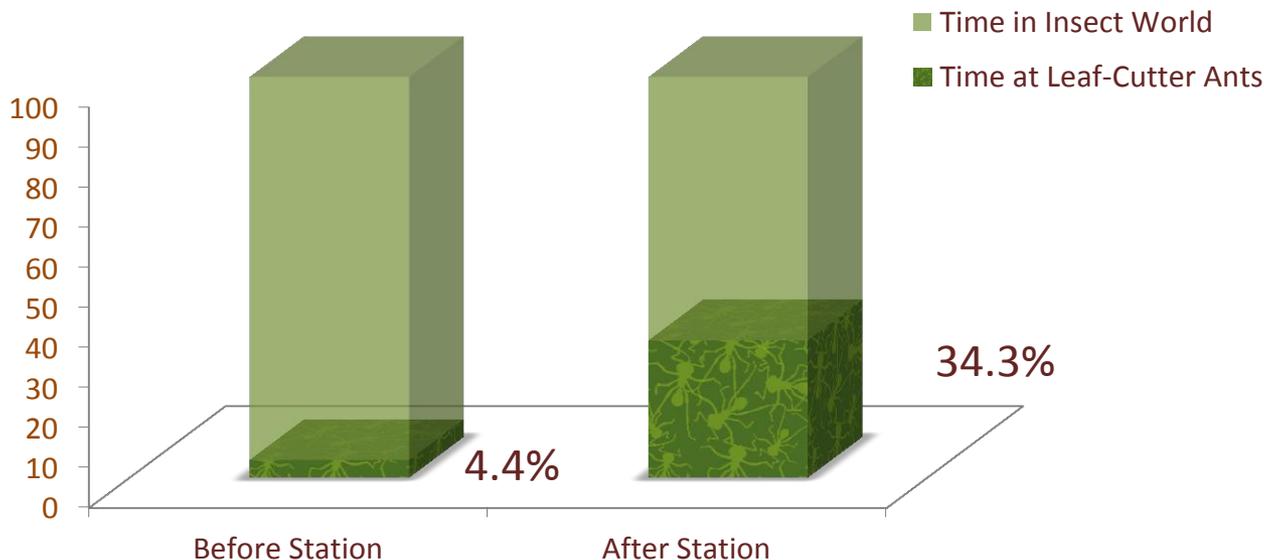
> 8X more time



# Yes

In a free-choice setting, without facilitation, families are not only engaging in inquiry on zoo grounds, they prefer the inquiry-enhanced exhibit over others by a striking margin.

## % Time in Insect World at Leaf-Cutter Ants





Play with Plants



Step 1  
Prick  
the soil  
with a stick

Step 2  
Insert  
the plant

Step 1  
Prick  
the soil  
with a stick

Step 2  
Insert  
the plant

Will the leaf  
quicker with fin

Will the leaf  
quicker with fin

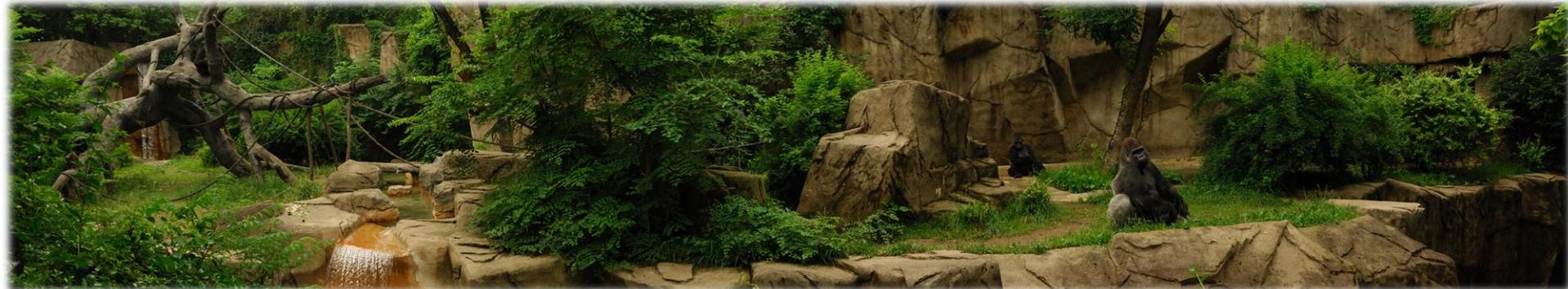


what do gorillas do all day?

Number of other

Number of other

# Gorilla Station





# What Do Gorillas Do All Day?

**You've joined the Wild Research Team!**

**Help discover how gorillas spend their time.**

1, 2, or even 3 people can do this gorilla study!



**Go!**



# What Do Gorillas Do All Day?

**What do you think will happen today?**

**Pick one!**

**The gorillas will spend most of their time:**

Playing

Grooming

Resting

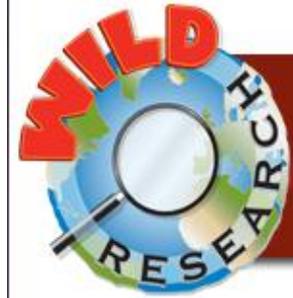
Eating or Drinking

Walking or Climbing

Being Aggressive

Doing Other Things

Back



# What Do Gorillas Do All Day?

## Time to find out!

### *How to do it:*

- **LOOK** at the gorillas in the exhibit
- Pick only **ONE gorilla** to watch
- Always watch the **SAME gorilla**



Back



Start!



# What Do Gorillas Do All Day?

## Watch Your Gorilla!

**WAIT for the BEEP! :5**

Playing

Grooming

Resting

Eating or Drinking

Walking or Climbing

Being Aggressive

Other

Back



# What Do Gorillas Do All Day?

**Nice work!**

**You discovered something.**

Your gorilla spent most of its time **grooming**.

You predicted **grooming**

What did other visitors discover?

**Find out!**



# What Do Gorillas Do All Day?

## Here's what other visitors discovered!

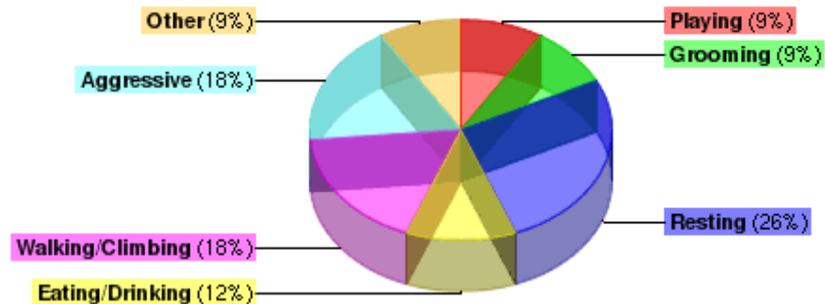
Overall, these gorillas spent most of their time **resting**.

That is **different than** what you observed today.

Why do you think your findings were different?

Many things can change how a gorilla acts: time of day, weather, feeding times -- and more!

What Do Gorillas Do All Day?





# Where Do Gorillas Hang Out?

Now, **LOOK** at the gorillas in the exhibit.  
How many gorillas are in **A**?

Cincinnati Zoo Gorilla World

On or near play tree

Gorillas in **A**

1 2 3

4 5 6

None (0)

The image shows a 3D-rendered gorilla exhibit. A red outline highlights a specific area labeled 'A' which contains a large, dark, gnarled play tree. The exhibit features a sandy ground, a blue stream, and rocky terrain with some green bushes. A white input box with a red border is overlaid on the scene, containing a checkbox, the text 'Gorillas in A', and a numeric keypad with buttons for 1-6 and 'None (0)'.

Start Finish

Back

Families investigate exhibit habitat choice



# Which Gorilla Are YOU?



I don't mind pushing someone a little if I need to get past them.

I do not agree

I agree

I strongly agree

1

2

3

4

5

Question 4 of 12

Go Back One



Families explore gorilla personalities



# Which Gorilla Are YOU?

## Guess What?

The gorilla that best matches your personality is **Muke!**

You're playful, sweet, and protective of others. You enjoy exploring while trying your best to avoid risky situations.

Do you see YOUR gorilla out today?



**Surprise!**

## Positive signs for Sustainability Science at ISE Institutions

- **Families will engage in inquiry on zoo grounds**
  - This is a change in typical and expected visitor behavior
  - Demonstrates that zoos can improve as ISE institutions
- **Very high use rates**
  - 55% of visitors engaged in Wild Research (exit-gate survey)
  - Wild Research Stations were recognized by nearly all (88%) visitors (use rates of screens and mobile phones at zoos are often <2%)
- **High appeal**
  - Average Station ratings range from 4.3 (Wild Me Quiz) to 4.7 (Manatee Poster)
- **Impacts are experience-specific**
  - More is needed to support generalization of outcomes and off-site impacts

## More signs

- **Increased awareness, knowledge, sense of taking a conservation action**  
e.g. significantly higher:
  - knowledge of leaves chosen by leaf-cutter ants
  - understanding of experimental setup of the leaf-cutter ant exhibit
  - answered yes: “Have you helped spread the word today?”
  - answered yes: “Do you feel you have taken a conservation action?”
- **The Stations prompt high levels of communication and collaboration**
  - 82% (376 of 456 tracked participants) invited others to join them
  - 75% of participants talked to others about the interactive



Project *Dragonfly*

Inquiry | Community | Voice

# Thank You

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