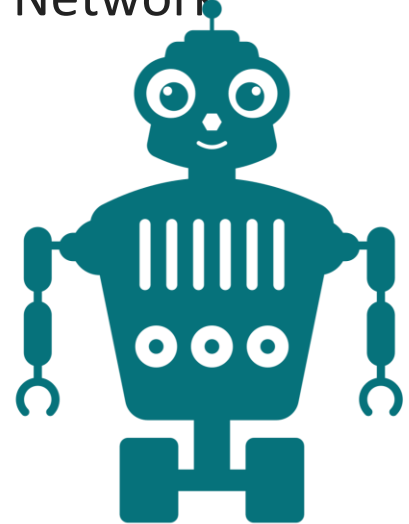


# AI ASAP: How to Amplify Existing Hands-On Activities to Start Sharing AI Concepts with Learners

- **Christina Leavell**, Arizona State University, NISE Network
- **Catherine McCarthy**, Arizona State University, NISE Network
- **Keith Ostfeld**, Children's Museum Houston
- **Darrell Porcello**, Children's Creativity Museum
- **Jaime Harold**, Space Science Institute
- **Anne Holland**, Space Science Institute

**Saturday, September 28th, 2024 1:30 PM – 2:30 PM**  
**ASTC 2024 Annual Conference**



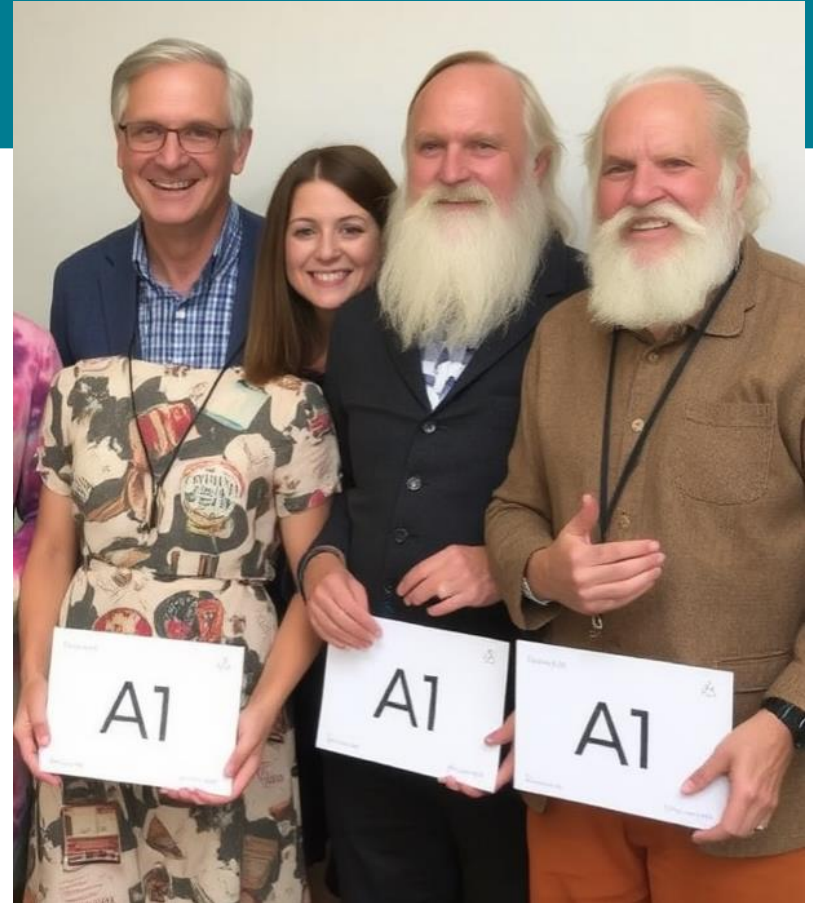
# Who is here?

- How many of you intentionally used AI this week?



# Who is here?

- How many of you have tried out AI chatbots like ChatGPT, Gemini, Claude, or others?



# Who is here?

- How many of you have tried out creating AI artwork?



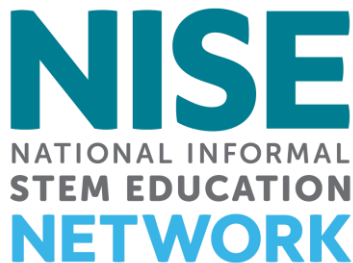
# Our Plan for Today

- **Very brief introduction to AI (5 minutes)**
- **Presenters share what they have been working on (20 minutes)**
- **Rotate tables to try out activities (25 minutes)**
- **Q&A and Discussion (5 minutes)**

**Catherine McCarthy  
Arizona State University  
& NISE Network**

**[cmccarthystem@gmail.com](mailto:cmccarthystem@gmail.com)**

# Why AI in Science and Children's Museums?



**Catherine McCarthy**

Project Manager Senior - NISE Network

Arizona State University, Tempe, AZ

cmccarthystem@gmail.com

[www.nisenet.org](http://www.nisenet.org)

ASTC Conference, October 2024

# What is Artificial Intelligence ?



## Machine learning

find patterns and make predictions  
based on training data

Some patterns and predictions  
are much easier humans than  
computers



# What is Artificial Intelligence ?

## Generative AI

Generate new things based on training data

- AI will be transformative to our lives
- New tools have made AI much accessible to non-experts



*Created with AI DeepDreamGenerator  
Prompt: "Chihuahua dog eating a blueberry muffin while wearing solar eclipse glasses"*

*Notice these are sunglasses NOT safe eclipse viewing glasses*

# Things to look forward to?

- Sparking creativity, have fun
- Help with mundane tasks
- Personalized learning



*Generative AI image created with DALL-E 3 using the prompt “generate a cartoon style image showing the bright future of kids and AI working together”*

***Notice the kids’ faces, potential biases***

# Things to worry about?

- **Bias:** discrimination, stereotypes, exclusion
- **Misinformation** (unintended inaccuracies, "hallucinations")
- **Disinformation** (material intended to deceive) more effective, harder to detect
- **Privacy risks**
- **Creator and content rights and ethics**
- **Fraud, scams, and targeted manipulation**
- **Socioeconomic harms** (e.g. job losses)



Generative AI image created with DALL-E 3 using the prompt "give me a suitable image for a presentation slide that shows kids" and the full bullet list under "Things to worry about"

*Notice bias with the kids/hair*

# Priorities for Children

## UNICEF Recommendations for Child-Centered AI

### 1 Support children's development and well-being

*Let AI help me develop to my full potential.*

### 2 Ensure inclusion of and for children

*Include me and those around me.*

### 3 Prioritize fairness and non-discrimination for children

*AI must be for all children.*

### 4 Protect children's data and privacy

*Ensure my privacy in an AI world.*

### 5 Ensure safety for children

*I need to be safe in the AI world.*

### 6 Provide transparency, explainability, and accountability for children

*I need to know how AI impacts me. You need to be accountable for that.*

### 7 Empower governments and businesses with knowledge of AI and children's rights

*You must know what my rights are and uphold them.*

### 8 Prepare children for present and future developments in AI

*If I am well prepared now, I can contribute to responsible AI for the future.*

### 9 Create an enabling environment

*Make it possible for all to contribute to child-centred AI.*

# Different Aspects of AI children's and science museums to focus on for children and families?

- Understanding what AI is
- Preparing for the future (and the present)
- Having fun with AI, being creative
- Media literacy (misinformation, disinformation)
- Future societal changes
- AI in Education

**Keith Ostfeld**  
**Children's Museum Houston**

**[kto@cmhouston.org](mailto:kto@cmhouston.org)**



# Kids, Meet Generative AI

(your new, benevolent overlords)



# What We Did

(in cooperation with our new, benevolent overlords)

- Prototyped Facilitated Workshop
- Prototyped Drop-by Programming





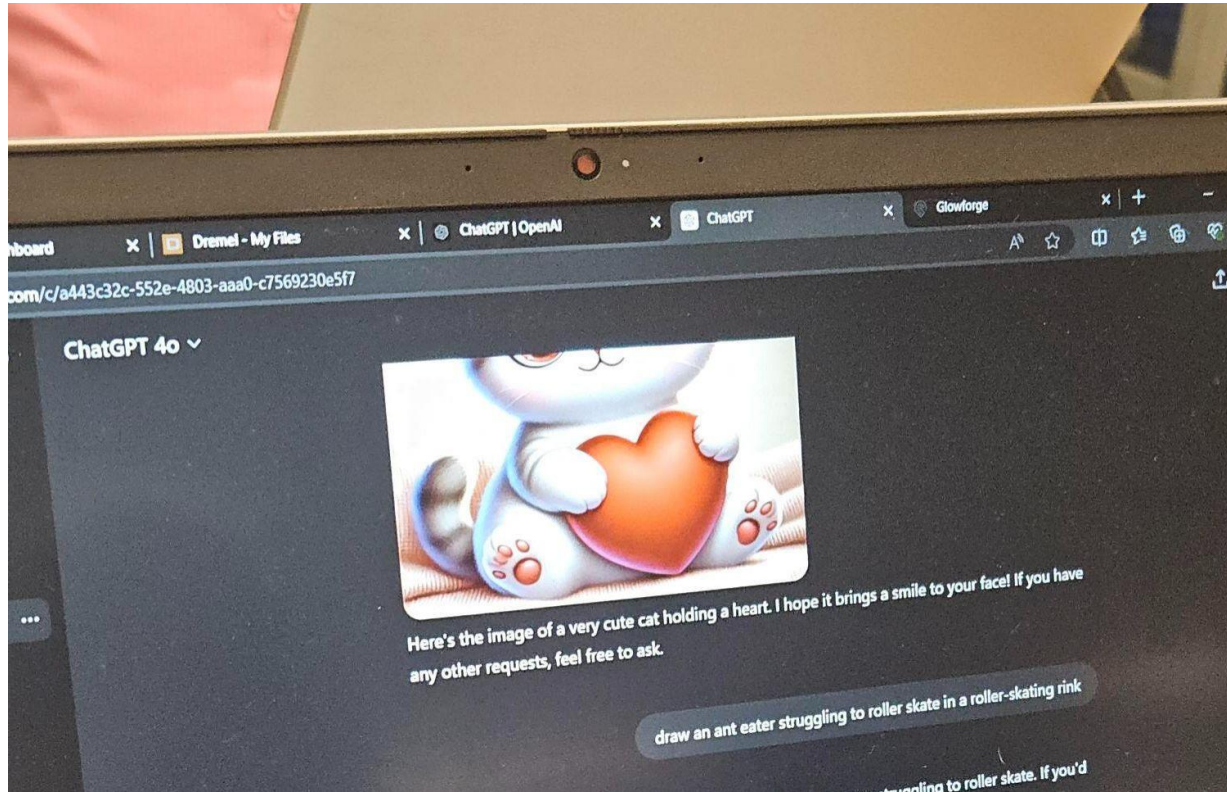
# How do you explain a drawing to someone?



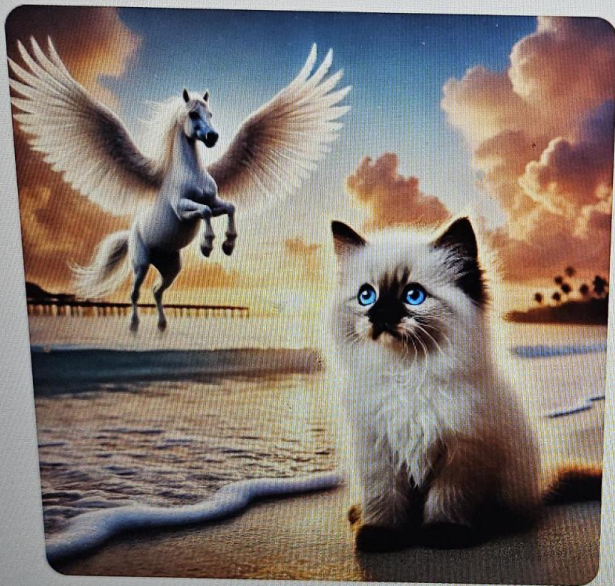
# Now, how do you explain it to AI?



# Discover what it can (and can't) draw

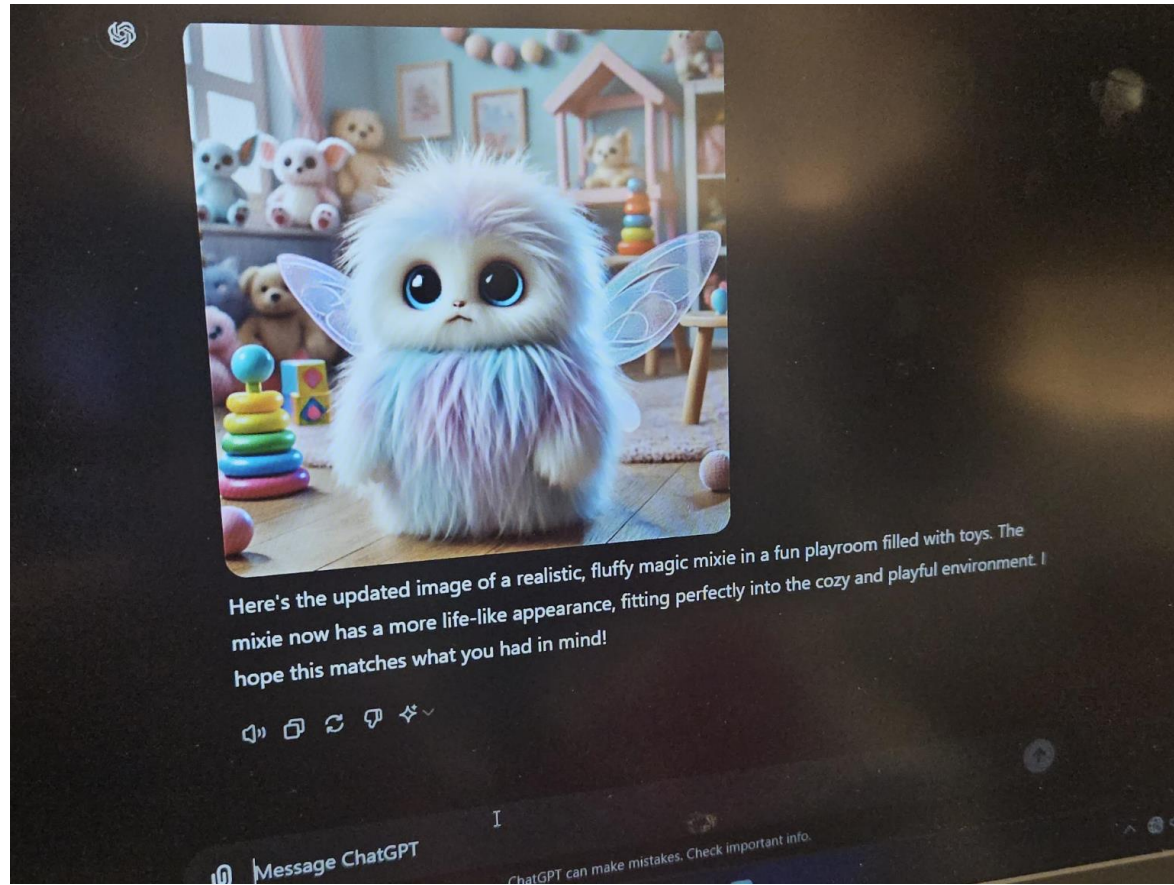


# Learn how to ask it to edit



Here's the image of the fluffy Siamese kitten with blue eyes, looking up at a beautiful sunset on a clear water beach with a majestic flying white horse with angelic wings in the sky. I hope this captures the magical scene you envisioned! ↓

# And then go nuts...



# Add the twist - take it home!



# What We Learned...from a very small sample size

(with much gratitude to our new, benevolent overlords)

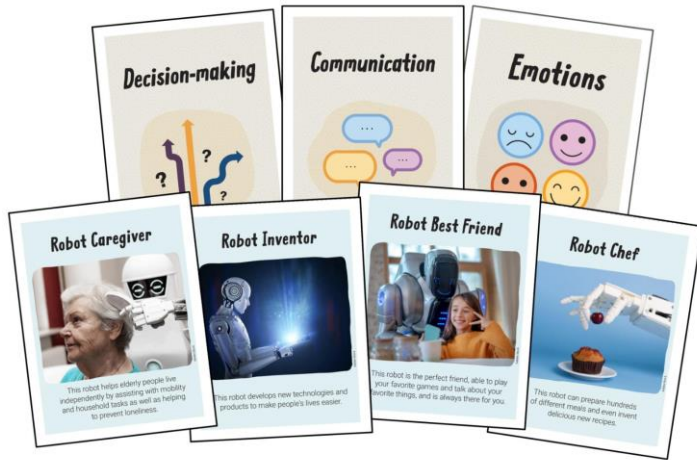
<b>Not That Surprising</b>	<b>Somewhat Surprising</b>
Most kids and adults had heard of AI	Most kids and adults had no preconceived opinions about AI (positive or negative)
Most kids had not experienced AI	Most parents had not experienced AI
Kids enjoyed working with AI to make images.	Kids enjoyed having to overcome some of AI's issues.
Workshop had kids spending more time exploring and tweaking their images, often going back and wanting to make more.	Drop-ins really didn't even want to try adjusting their first image or make something different.
Kids wanted to explore AI more at home.	Parents seemed open to it (once they understood there were free options and some "guardrails" in place)

**Darrell Porcello**  
**Children's Creativity Museum**  
**San Francisco, CA**

**porcello@gmail.com**



# Hands-on activities with AI themes you can use today



What Makes Us

[Human](https://www.nisenet.org/catalog/what-makes-us-human)

Scribble Bot

<https://www.nisenet.org/catalog/scribble-bot>

# What Makes Us Human

**Love**



**Morality**



**Most**  
uniquely human



**Least**  
uniquely human



**Robot Nanny**



This robot can entertain and take care of babies and children while their parents are busy.

**Robot Chef**



This robot can prepare hundreds of different meals and even invent delicious new recipes.

**Activity helps to scaffold conversations that explore how close AI may be coming to having human abilities.**

**Interactive Elements:** Learners sort abilities by their uniqueness to humans, then assign them to robots for specific tasks.

**Critical Thinking:** Participants decide how their custom robots would react in novel situations, reflecting on the "human-like" qualities of their creations.

**Open-ended Discussion:** The activity encourages thoughtful debate on whether robots should embody human traits, without right or wrong answers.

**Audience Engagement:** Suitable for both children and adults.  
Resources Provided: Includes downloadable cards, activity guides, and a facilitation training video.

# Scribble Bot



Participants create a homemade robot which can autonomously scribble on paper.

**Engagement Goal:** Designed to spark discussions about accountability and responsibility regarding the actions of AI and robotic creations.

**Ethical Considerations:** Explores questions of responsibility for harm and recognition for benefits derived from human-like technologies.

**Target Audience:** Fun and creative for young children; thought-provoking discussion topics suitable for older children and adults.

**Educational Focus:** Encourages thinking about responsible innovation and the ethical implications of new technologies.

**Anne Holland and James Harold**  
**Space Science Institute**



**aholland@spacescience.org**  
**harold@spacescience.org**

# Tentative Facilitators?

## Here's A Different Direction to Start

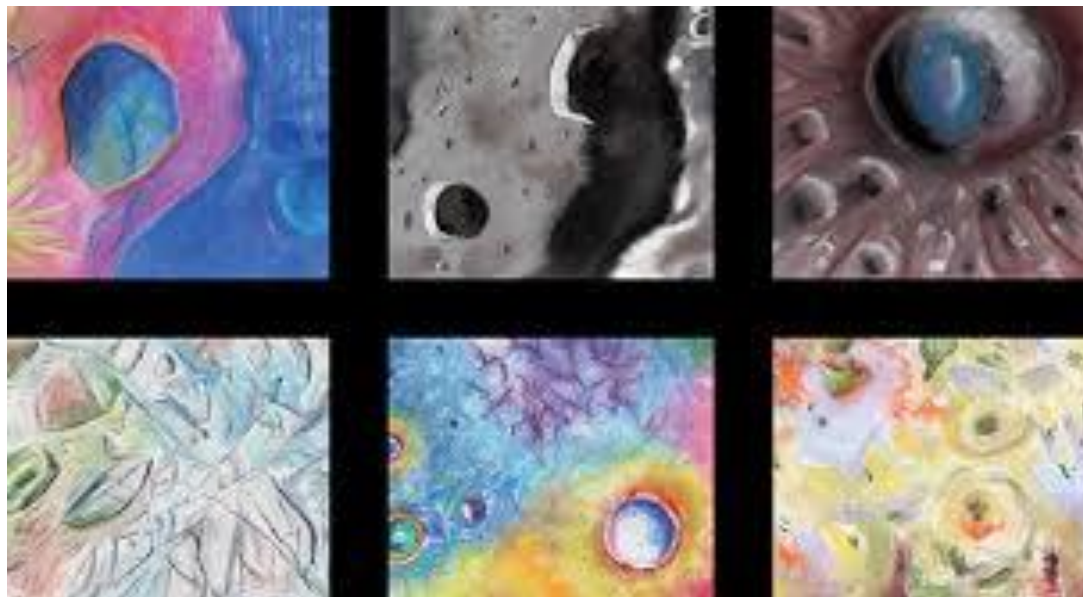


- Librarians have some concerns
- Like, a lot of concerns
- Soooo many concerns

# Start on Familiar Ground with Facilitators

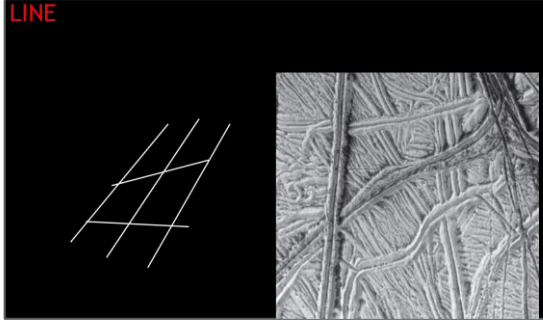
For libraries, this might mean:

- Art
- Literature
- Fandom
- Writing
- Citizen Science
- Making
- Imagination

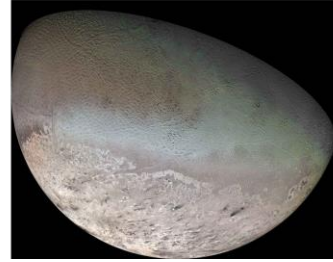


# Art and the Exoplanet Connection

LINE



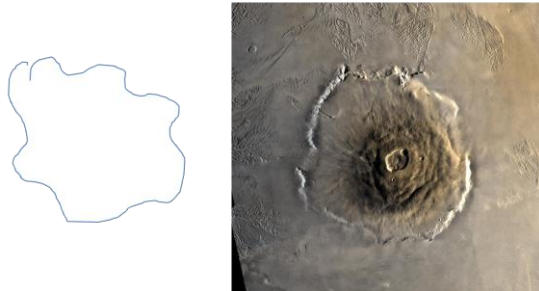
TEXTURE



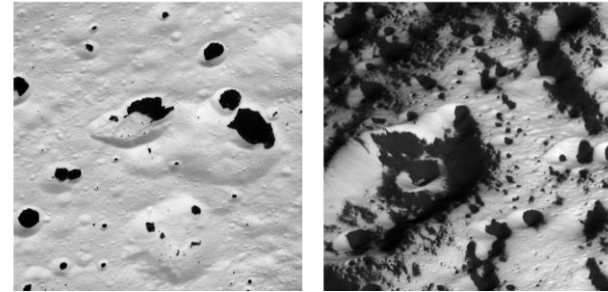
COLOR



SHAPE



VALUE / ALBEDO





imgflip.com

imgflip.com



# Try out the activities - 25 minutes

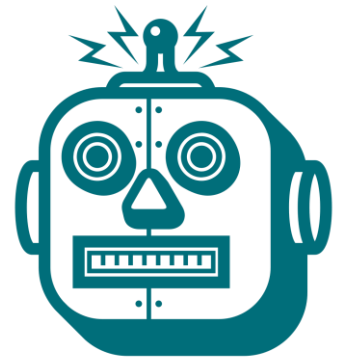
**Purple Line Workshop (Keith)**

**Art and the Exoplanet Connection (Jaime & Anne)**

**What Makes Us Human card game (Darrell)**

**What Makes Us Human card game (Catherine)**

**Scribble Bot (Christina)**



Thank you  
for joining  
us!



# Want to learn more about AI?

## Designing Exhibits About AI

Saturday, September 28, 2024, 4 – 5 PM Central

Location: S103BC

- Ari Krakowski, The Lawrence Hall of Science, Berkeley, California,
- Eric Greenwald, PhD, The Lawrence Hall of Science, Berkeley, California,
- Duri L. Long, PhD, Northwestern University, Evanston, Illinois,
- Jessica Ghelich, Museum of Science, Boston, Massachusetts, LB
- Lindsay Bartholomew, MIT Museum, Cambridge, Massachusetts