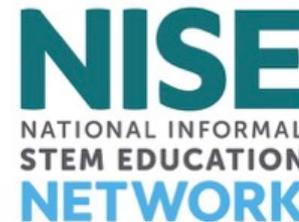


NISE Net Online Workshop

The COVID-19 Vaccine: What role can museums play in the rollout of the new vaccine?

February 2, 2021



Today's presenters:

- Dr. Dominique Brossard, University of Wisconsin-Madison
- Liz Kollmann, Museum of Science, Boston
- Dr. Jayatri Das, The Franklin Institute
- Karen Jepson-Innes, WonderLab Museum of Science, Health and Technology



Welcome!

As we wait to get started with today's discussion, please:

Introduce yourself! Type your name, institution, and location into the [Chat Box](#)

Questions? Feel free to type your questions into the [Chat Box](#) at any time throughout the webinar or use the raise your hand function in the participants list and we'll unmute your microphone.

Today's discussion will be recorded and shared on nisenet.org at: <https://www.nisenet.org/online-workshop-recordings>

COVID-19 Vaccine Museum Resources



NISE
NATIONAL INFORMAL
STEM EDUCATION
NETWORK

Educational Resources Professional Learning Events Impact Community About

COVID-19 Vaccine Museum Resources

Educational products for public audiences

Viruses

- Children's Museum of Houston, TX
Mr. O video "[It Snot Funny](#)" video (for kids) about coronavirus
- Building with Biology: VirEx Delivery activity
<https://www.nisenet.org/catalog/building-biology-virex-delivery>
- Exploratorium, San Francisco, CA activities about viruses
<https://www.exploratorium.edu/learn>
- New York Hall of Science, NY - Transmissions: Gone Viral is a digital interactive comic book
Transmissions: Gone Viral [supplemental resource guide](#)
<https://nysci.org/school/resources/transmissions-gone-viral/>



COVID-19 Coronavirus

- Museum of Science, Boston, MA
Coronavirus: A Community Conversation was held on 3/8/20 at MOS with experts in infectious disease research, public health administrators, and community organizations
<https://www.youtube.com/watch?v=8bR5H8WHI2A>
- The Franklin Institute, Philadelphia, PA
[COVID-19 Update videos](#) (for adults) with Jayatri Das about the changing science news surrounding the virus (link goes to full playlist on YouTube)
- [COVIBOOK: Supporting and reassuring children around the world](#)
This free downloadable short book to support and reassure our children, under the age of 7, regarding the COVID-19; this book is an invitation for families to discuss the full range of emotions arising from the current situation (translated into many languages)
- [Georgie & the Giant Germ](#) free downloadable children's book
Developed to support caregivers and children in having conversations about the pandemic and to give children a way to express and manage their worries (translated into many languages)

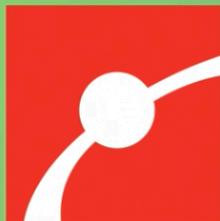


A compilation of COVID-19 Vaccine resources for museums including science communication approaches and public engagement about viruses and vaccines.

- Coronavirus museum resources
- Educational Products for public audiences
- General science and resources on vaccines
- Science communication about COVID-19 vaccine
- Public perception and audience research about COVID-19 vaccine

<https://www.nisenet.org/vaccine>

<https://www.nisenet.org/coronavirus>



Museum of Science[®]

Rolling out the vaccine
A survey of Massachusetts residents on COVID vaccine issues

Elizabeth Kunz Kollmann (ekollmann@mos.org)

Survey Background

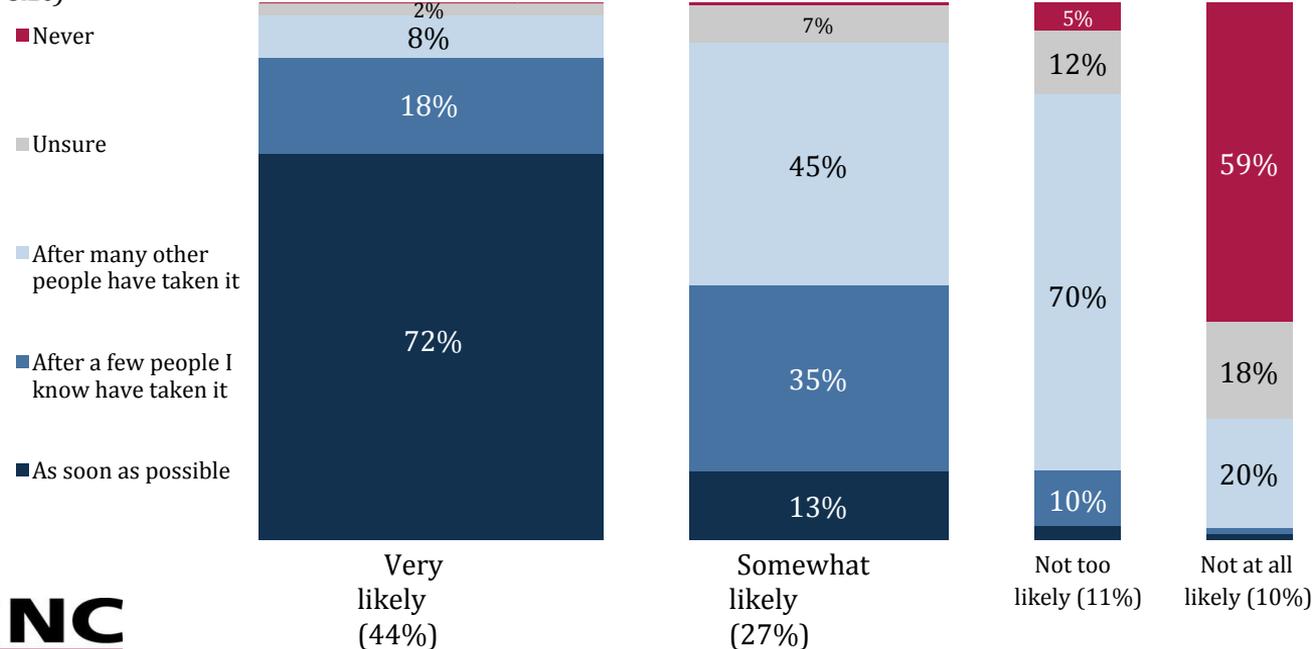
- This project was sponsored by the Museum of Science and conducted in partnership with the Massachusetts League of Community Health Centers. It was conducted by the MassINC Polling Group.
- Results based on a statewide survey of 1,180 residents of Massachusetts including the following.
 - A base sample of 800 residents statewide.
 - Oversamples to reach ~250 each of Black and Latino residents.
- Conducted November 18-25, 2020 via live telephone and online survey interviewing in English and Spanish.
- Data was weighted first within race groupings by gender, age, education, and region, and then to known population parameters by gender, age, race, education level, and region for the state's population.

Who will take it and when?

- Many who say they are less likely to take it mean they will take it later or are unsure, not that they won't take it.

Those who say they are less likely very often mean they want to take it later

% in each likelihood group who say they will take the vaccine in each timing (scaled to group size)



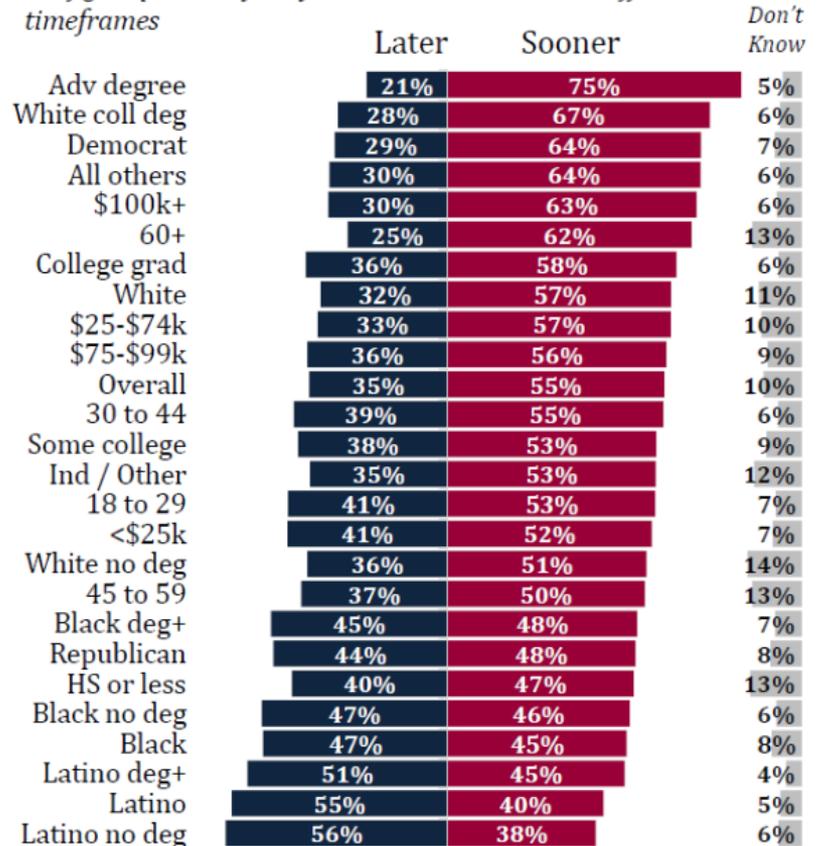
Who will take the vaccine when?

- Major differences in who plans to be first in line when vaccines are available.
 - Sooner = ASAP / After a few others have taken
 - Later = After many others / never
- Could add to inequities as the economy reopens.

Q: When an FDA-approved vaccine for COVID is made available, when do you think you would be most likely to take it?

Who plans to take the vaccine at different times

% of group who say they will take the vaccine in different timeframes



Concerns about vaccine

- Concerns about how thoroughly the vaccine has been tested top the list of issues people mention.

Testing, government trust are 2 top hesitations about taking the vaccine

% who say each reservation about the vaccine applies strongly or somewhat

	Applies strongly	Applies somewhat	Total
Concerned the vaccine has not been thoroughly tested	26%	40%	65%
Do not trust the government on health care issues	21%	40%	61%
Do not believe the vaccine will be developed safely	16%	29%	45%
Not convinced the benefits outweigh the risks	15%	24%	39%
Do not believe the vaccine will be affordable	13%	25%	37%
Wouldn't know where to get the vaccine	8%	23%	32%
Prefer natural remedies to vaccines	12%	19%	31%
Do not trust vaccines	10%	19%	29%
Do not believe COVID is real	10%	7%	17%
I have religious objections to this vaccine	6%	7%	14%

Q: Here are some reasons people have expressed reluctance to take a coronavirus vaccine. Please indicate how much each of these apply to you personally.

Trust in personal doctors

- Black and Latino residents are more likely to say they trust their own doctors, followed by major hospitals and the CDC.

Testing, government trust are 2 top hesitations about taking the vaccine

% who say they completely or mostly trust each person or group about the COVID vaccine

	Black	Latino	White	All others
Your personal doctor	72%	74%	82%	74%
Major Boston hospitals	63%	63%	74%	67%
The Centers for Disease Control and Prevention (CDC)	62%	59%	73%	80%
The American Medical Association (AMA)	59%	56%	77%	74%
Harvard Medical School	55%	55%	68%	74%
Dr. Anthony Fauci	55%	45%	65%	58%
President-Elect Joe Biden	55%	44%	47%	50%
Your local community health center	52%	53%	53%	55%
The Food and Drug Administration (FDA)	51%	52%	65%	69%
The American Red Cross	46%	51%	30%	48%
Governor Charlie Baker	46%	38%	50%	48%
Massachusetts state government agencies	45%	43%	54%	61%
Friends, family, and neighbors	42%	42%	36%	45%
The Museum of Science, Boston	41%	44%	59%	60%
Local elected leaders	33%	27%	27%	35%
Local faith leaders such as pastors, rabbis, and imams	28%	27%	18%	33%
President Donald Trump	11%	17%	21%	17%

Q: How much do you trust each of the following people or organizations to tell you a COVID vaccine works and is safe?

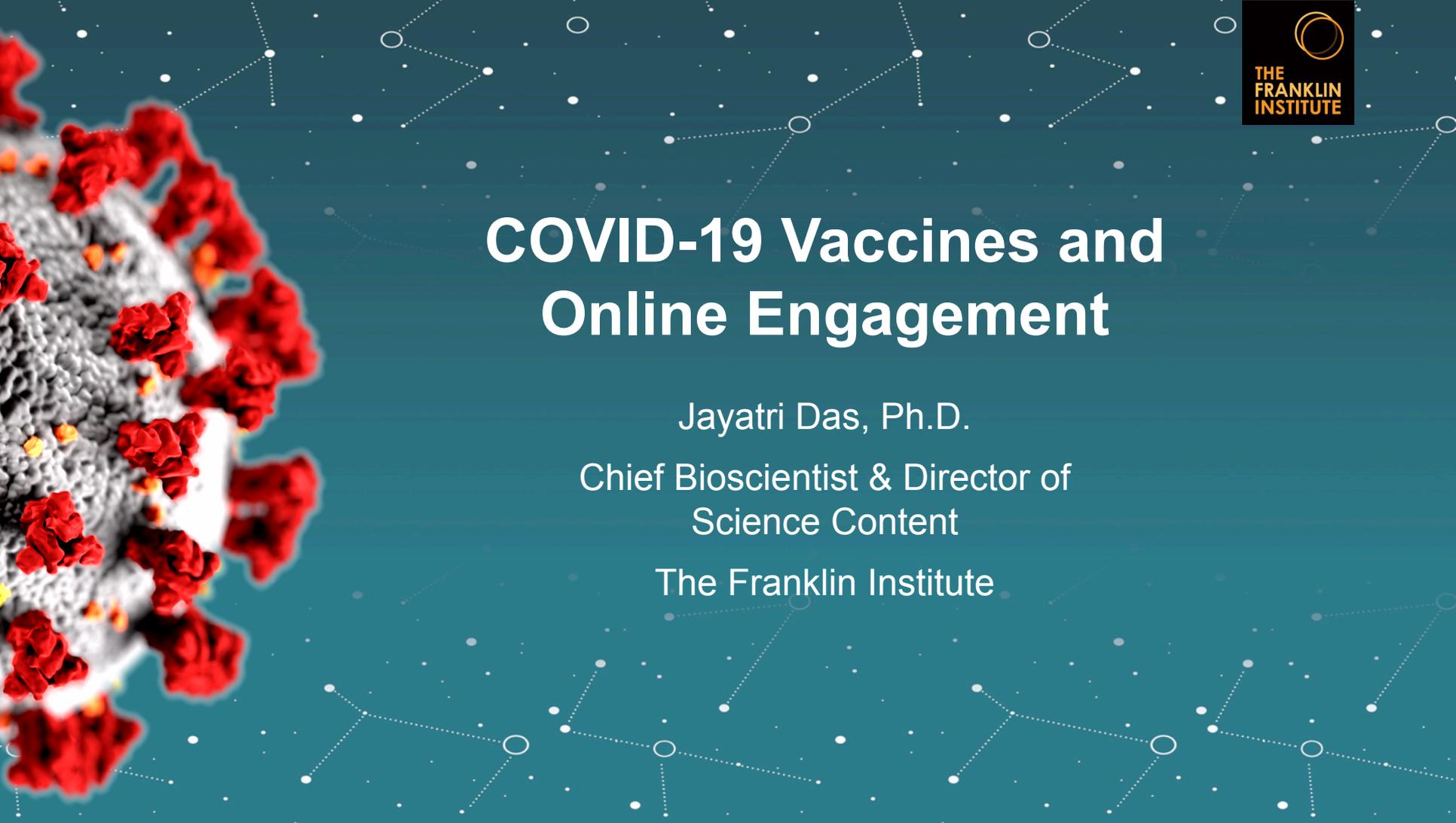
Key findings

- The large majority of Massachusetts residents say they plan to get the vaccine, but many are not eager to be first in line.
 - The key hesitations are questions about whether the vaccine has been thoroughly tested and distrust of the government on healthcare issues.
 - Those who are most hesitant include Black and Latino residents, along with Republicans.
- Boosting vaccine uptake is a matter both of communications and showing proof. Many appear likely to participate once they see it working safely for others.
 - People's own doctors are the most trusted messengers, particularly for the most hesitant groups.
 - Political and religious leaders are less trusted on these issues, as are friends and family.



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COVID-19 Vaccines and Online Engagement

Jayatri Das, Ph.D.

Chief Bioscientist & Director of
Science Content

The Franklin Institute

Goals for Digital Programming

- Remain actively connected with audiences
- Make hands-on science & historical information accessible
- Reinforce our reputation as a trusted source of science information



Facts About **COVID-19 VACCINES**

Sources: PublicHealth, Geisinger, Science News,
CNET, CDC, CHOP Vaccine Education Center



Audience Considerations

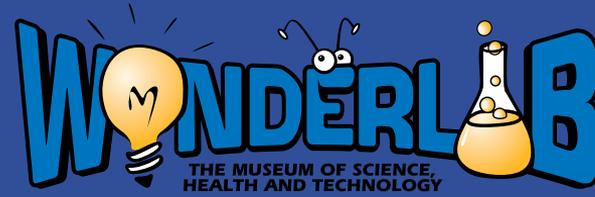
- Focus on people and process
- Be compassionate, consistent, and current
- Amplify diverse voices and themes
- Empower our audience to be trusted messengers

Dealing with Skeptics

- Encourage considerate conversation
- Maintain scientific accuracy
- Find an angle to engage productively

Example:

“Does the vaccine alter the part of DNA that is responsible for religion as Bill Gates was explaining to the CIA?”



***Vaccine Communication
Strategies:
Resources, a Virtual Program
and a Modified Exhibit***

Karen Jepson-Innes
Executive Director, WonderLab Museum



WONDERLAB



Goal: Message to our community that COVID-19 Vaccine is

SAFE

EFFECTIVE

ESSENTIAL

Message Delivery

- Trusted Voices

- Familiar Faces



Strategy #1. Resources on Website and Socials

- Links to trusted and familiar sources of detailed information
 - CDC
 - [Indiana] Department of Public Health
 - [Monroe County] Health Department
 - NISE Net Resources!
- Videos of conversations from local sources and specific community voices, E.g:
 - Self-Advocates of Indiana – Hoosiers with physical and cognitive disabilities
 - <https://www.youtube.com/watch?v=DO4QsCbj1HA&feature=youtu.be>
 - Indiana University – student community, on and off campus
- Call to Action from Museum Director
 - Museum stands with science
 - What getting the vaccine means personally
 - Genuine voice for encouragement



Strategy #2. “Ask Me Anything” Virtual Program

Virtual programs series that brings experts to topical, open, interactive community forums for accurate science information and the opportunity to clear up misconceptions.

Program length: 30-45 minutes

Program format: Each program will feature two “experts” available to answer questions from the community about various topics related to the COVID-19 vaccines. A WonderLab staff person will be in attendance for introductions, facilitation of questions and tech support.

Program Platform: Zoom

Program Cost: Free

Registration in advance: Yes

Day and Time: This will vary to provide options for the broadest audience and to work with presenter schedules.



WonderLab
FREE Community Virtual Q & A.
AMA
Ask Me Anything
Talk to Experts. Ask your questions.

2.2.2021
Viruses and Vaccines

Special Guest:
IU Professor
Tuli Mukhopadhyay

Schedule: Every other week with rotating series of topics

Topics:

COVID-19 Vaccines and How They Work

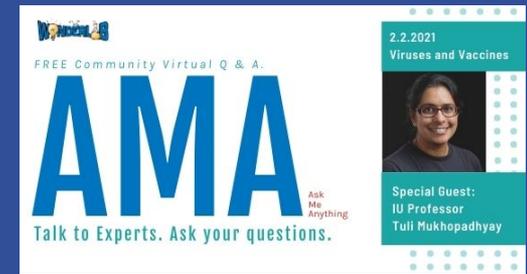
I’m in a Vaccine Trial

Vaccine Safety and Efficacy

Strategy #2. “Ask Me Anything” Virtual Program

Best Practices:

- To avoid a frustrating and program with many unanswered questions, each presenter will introduce their area and scope of expertise.
- Zoom communication tools and program topic will be verbally communicated by WonderLab staff at the beginning of each program.
- Resources will be assembled in advance to address questions that fall outside of the presenters’ knowledge (chat). Presenters and WonderLab staff are empowered to honestly acknowledge when they do not know something.
- Listening is paramount for a successful program. Acknowledge concerns. Provide balanced, scientific info in everyday, jargon-free language. Make it feel familiar.
- Be prepared for divergent or contrary opinions and answer them honestly and respectfully with reference to evidence or support.
- Be un-biased and transparent with information. Share the good and the bad; the known and the not known.



Strategy #3:

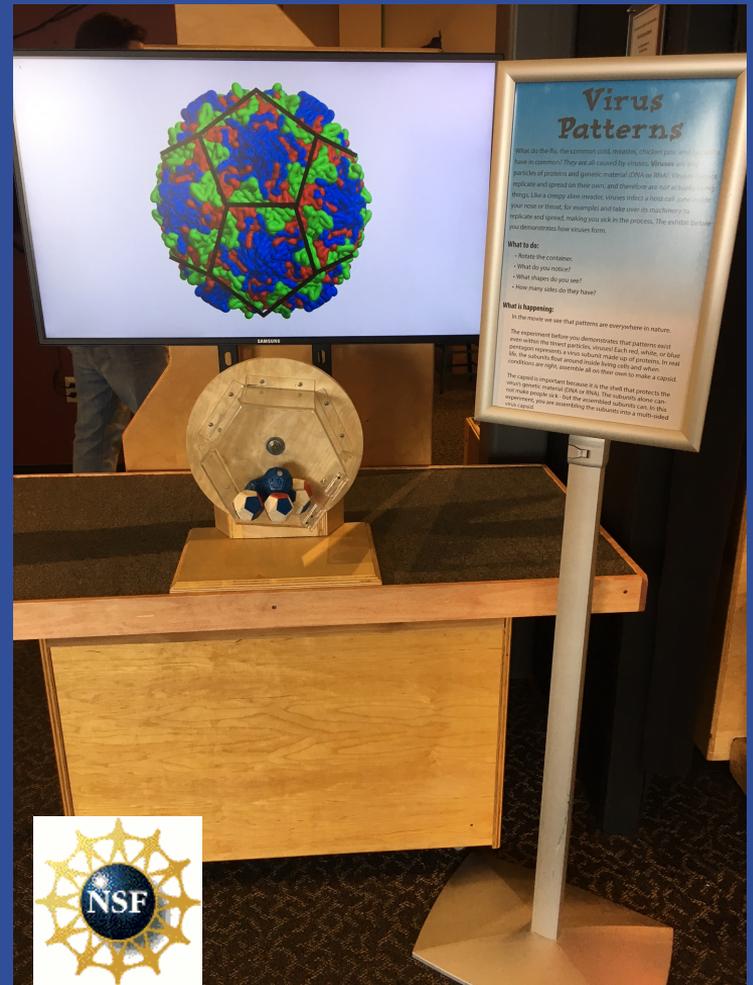
Update Virus Assembly Exhibit in museum gallery

The Virus Assembly Exhibit

Patterns in nature and how virus capsids form

- Video Component
- Interactive Tumbler Activity

Tuli Mukhopadhyay, Indiana University Biology Department, supported by research grant from National Science Foundation



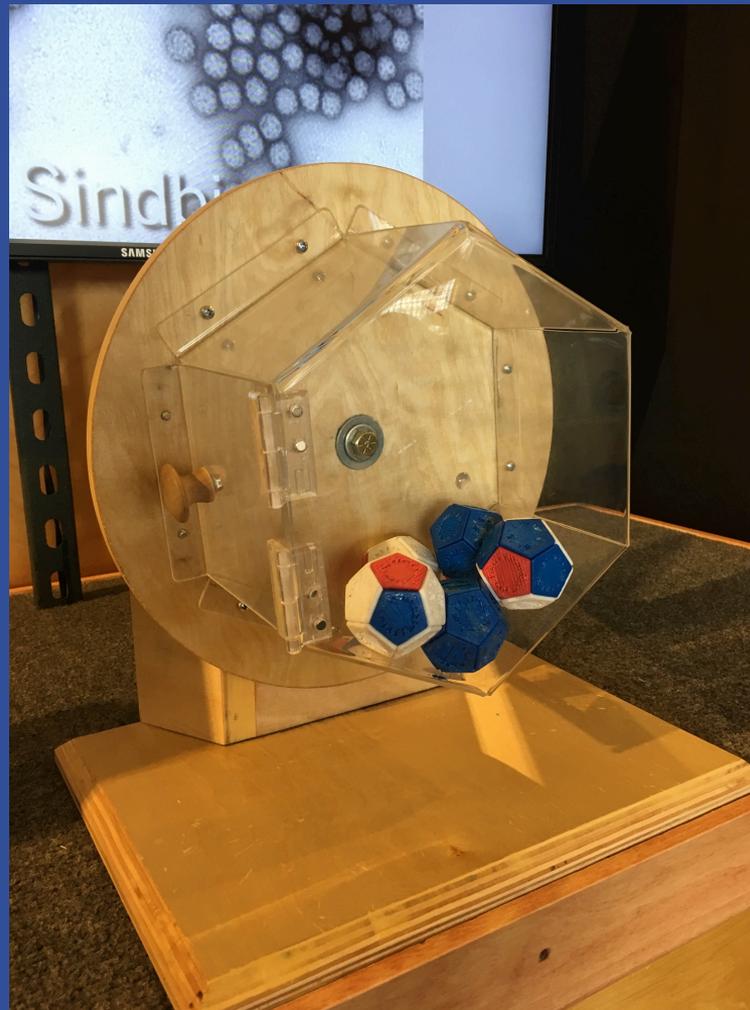
How it works

- Plastic pentagons with embedded magnets represent virus subunits
- Simple bingo-style tumbler
- 3-D printer and in-house fabrication
- Load tumbler and spin...



How it works

- Complete and partially assembled spheres provide excellent model for how virus capsids actually assemble in a cell
- Enhance this activity with a hands-on model for SARS-CoV-2 assembly and vaccine...



Strategy #3:

Update Virus Exhibit: Assemble a SARS-CoV-2 virus and block its function with antibodies

- Wiffle ball, nerf darts, foam golf balls
- These materials will share table with Virus Assembly exhibit



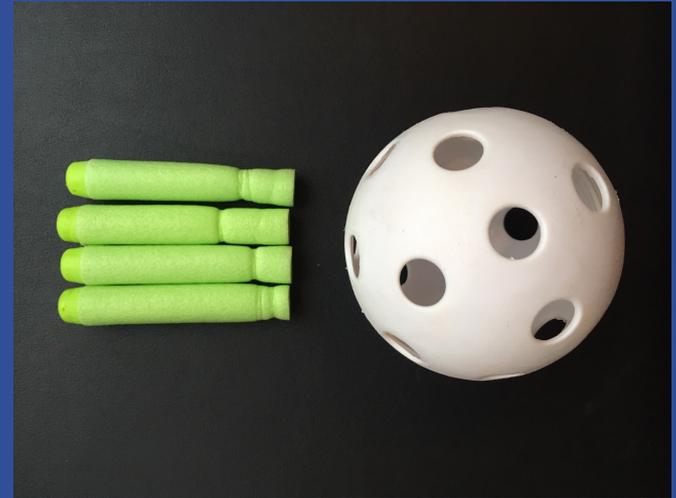
Wiffle ball: Represents the capsid of the virus, with virus DNA inside

- Different sizes can represent different kinds of viruses
- We choose white for SARS-CoV-2



Nerf Darts: represent the spike proteins on the outside of the capsid.

- Add Nerf Darts to the Wiffle Ball to make an active SARS-CoV-2 virus
- The virus is able to enter cells in your body
- Most people have very few antibodies ready to recognize and fight off the virus

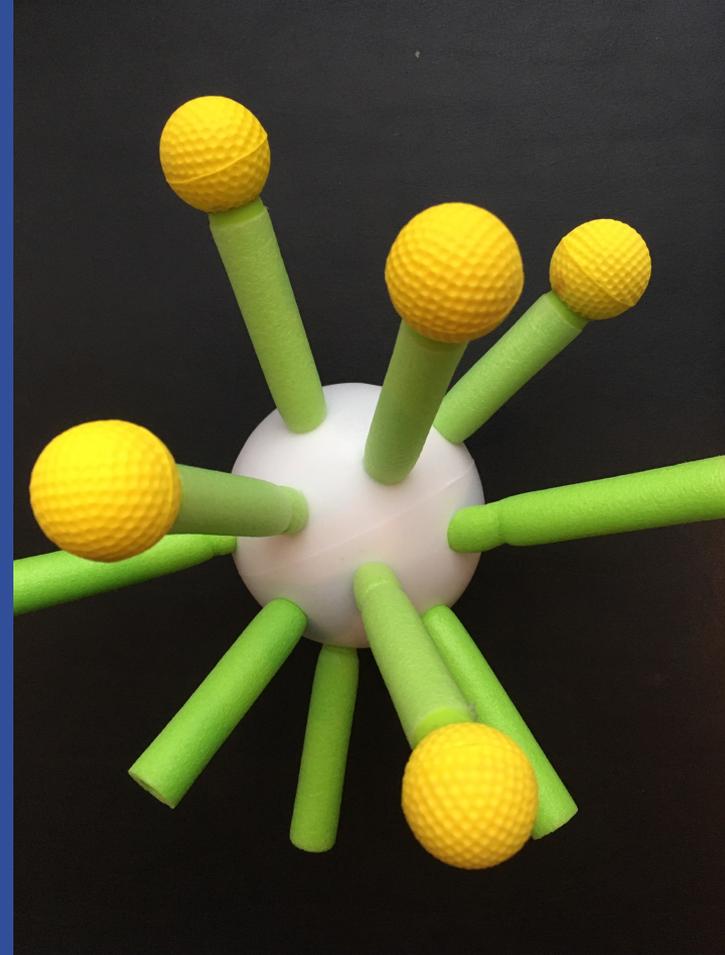


Foam Balls: represent antibodies that recognize spike protein



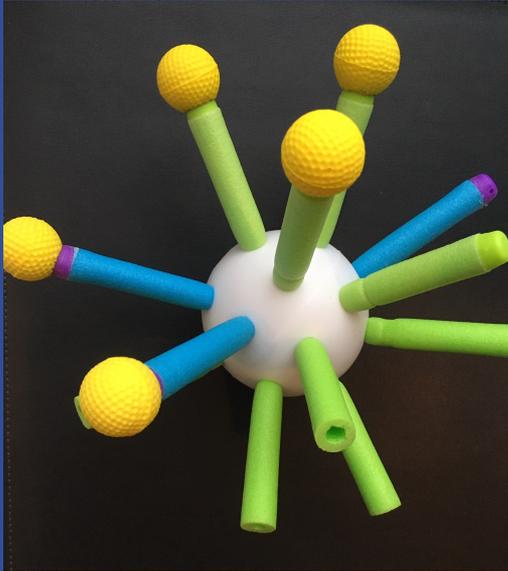
The vaccine ramps up natural antibody production so your immune system is ready to go in case of infection

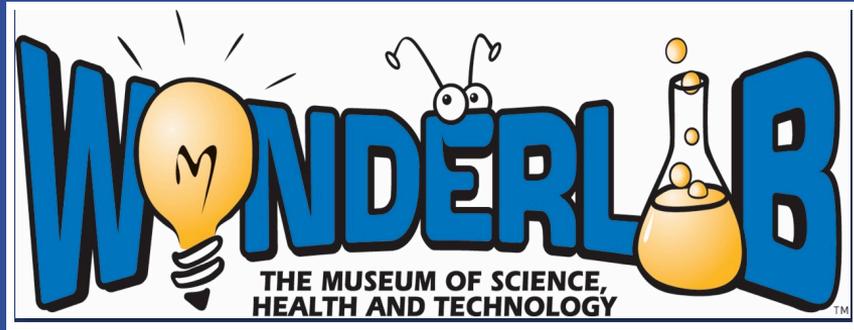
- mRNA vaccines enable cells in your body to make many copies of the SARS-CoV-2 spike protein
- Immune system recognizes the spike protein and starts making antibodies
- Antibodies attach to spike protein and prevent infection by SARS-CoV-2



Fun Modifications!

- Mutation on the spike protein (blue nerf darts); antibodies still fit and protect
- Different antibodies in your body (different colors or sizes of foam balls, with different size connection points)





www.wonderlab.org

Future Online Workshops

Sustainability in Science and Technology Museums – Part 2

Tuesday, February 9, 2021

2pm-3pm Eastern / 11am-12pm Pacific

Learn more at nisenet.org/events



Get Involved

Learn more and access the
NISE Network's online digital resources
nisenet.org



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Thank You

