

## 2021 STEM FOR ALL VIDEO SHOWCASE

### COVID, Equity & Social Justice, May 11-18

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JAN MOKROS  
(<https://scieds.com/leadership/>)  
Science Education Solutions



CID-Inspired Data Science Education  
(through Epidemiology (CIDSEE))

Awards:  
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[https://www.nsf.gov/awardsearch/showAward?AWD\\_ID=2048463](https://www.nsf.gov/awardsearch/showAward?AWD_ID=2048463)

The ongoing COVID-19 pandemic provides an ideal starting point for empowering young people to understand the relevance and uses of data science and epidemiology. Many Americans have been

RESOURCE:  
• CIDSEE press release (/attachments/205.pdf)

3123 VIEWS

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May 10, 2021 10:04 a.m.

Welcome to our video on the CIDSEE project, where data science meets epidemiology in out-of-school settings. We are making use of a middle-grade novel about epidemics and infectious diseases (especially COVID) to engage middle school youth in using data to ask questions, find patterns, make predictions, and become interested in the work of data scientists. We would like to hear your insights about the integration of various elements of the work, including the narrative, social-emotional learning, using CODAP as a data tool, epidemiology, and career exploration. We are doing research on how youth learn about data, how their interest in data careers is piqued, and how they use data to address important public health and social justice issues. What do you think are the most salient contributions we could make to research, given the breadth of the work?

Please share our video with anyone who is working with middle school youth—kids need to learn how to examine and interpret data about epidemics!

1



May 11, 2021 1 08:23 a.m.

It is ironic that when we started working on this project a year ago, one big worry and criticism was that COVID would be over before it reached any significant number of kids. Now we just keep adding chapters (10) and activities (efficacy of vaccines, differential infectivity of virus variants) to keep up with the changing landscape.

2



May 11, 2021 1 08:26 a.m.

Good Morning Everyone!

A YA story is at the heart of this project, which I think is absolutely wonderful (and a marvelous achievement), and the presence of the author throughout the video gave a beautiful coherence to the project. **A few questions:**

I'd love to hear a little about student reaction to this story. All of this could have been presented outside the context of the story, so did you notice anecdotally or are you measuring how the student learner was impacted by the choice to use a story as the springboard for investigations and explorations in data science? And finally, it sounds like your project is in the process of measuring the overall impact of this after-school program. Do you have any early findings you could share?

Also, I wonder if you have viewed the PBS project here: <https://stemforall2021.videohall.com/presentations/2109.html>

So to respond to the question you posed: I think one of the most impactful things you can do (and you are already doing this) is to connect students with actual people working in the field. It would be amazing to connect with this NPR project and the people who are taking data literacy so seriously and conscientiously in their reporting.

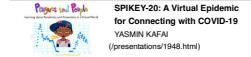
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1



May 11, 2021 1 09:07 a.m.

Thank you for your comments, Amy. The NPR project is fantastic, in part because it gives a glimpse of the most effective techniques of data visualization. We'll need to talk to the PIs!

So far, according to feedback from club facilitators, students have really enjoyed the story. For some, the reading level has been a challenge (it's nominally around 4th grade, but there is a lot of new vocabulary). Some program leaders, especially for ELL students, read aloud. We get some feedback about favorite and unfavorable chapters—visiting Congo, France and Taiwan have been hits, colonial Boston not so much.

Our early findings come from pilots at the Boston Museum of Science and a summer program at the Maine School of Science and Mathematics. Kids who responded to the surveys reported becoming less anxious about COVID, more confident of their ability to look at data and graphs, more interested in topics from virology to epidemiology to data science, and interested in doing more science book clubs. But this was a self-selected sample, many of them with parents in the sciences, so we are ramping up to look at similar questions with our respondents from afterschool clubs with 4H, Girls Inc., the Y, and Boys and Girls Clubs.

As for connecting kids with people working in the field, we have advisors and volunteers to meet with them, but if any readers work with data epidemiology and would like to offer ten minutes every once in a while to meet with eager learners, please get in touch!

1



May 11, 2021 1 09:20 a.m.

I'll add too that career connections is a key component of each club, which each have 2 brief virtual visits from people working in fields like public health, medicine, epidemiology, and data science. Each club finds one person working in the club's region, and the project provides another visitor, often from our partner the Jackson Laboratory. These are fairly informal visits—the person briefly describes what they do, how they got interested in it, and then there's time for Q&A/discussion with the kids. I am now beginning to organize the career connections visits for the summer clubs (late June to late August). If anyone is interested in volunteering, please shoot me a quick email. ([j.sagrans@scieds.com](mailto:j.sagrans@scieds.com)) ([mailto:j.sagrans@scieds.com](mailto:mailto:j.sagrans@scieds.com)). It can be a fun, rewarding experience, and does not take a lot of time (15 minutes or so for a visit). Thanks!

1



May 11, 2021 1 09:42 a.m.

Also, here is some more detail from what we found in the two pilots (again, this is a relatively small/self-selected sample at this point, but we should have more data from a broader range of youth by the end of the summer):

Post-club surveys from youth who participated show: 74% became more interested in COVID-19 as a result of their experience; 48% became less anxious about the pandemic (while none became more anxious); and 65% became more confident in their ability to use and interpret graphs. Moreover, their interest in STEM careers grew, with 39% becoming more interested in immunology, 39% in data science, 30% in teaching about disease data, 30% in epidemiology, 22% in virology, and 17% in health policy advising. Our observational notes show that youth quickly grasped the basic concept of rate when it was placed in the context of "fair comparisons." For example, they immediately understood that numbers of infections do not tell the whole story when we asked them to compare Maine vs. California.



**Amy Alznauer**

Facilitator

(<http://www.amyzitz.com>)

Lecturer

May 11, 2021 | 10:20 a.m.

To both Jacob and Pendred,

Thank you for your responses. The early results (though self-selecting as you said) are so encouraging! And I am not surprised. In my own work teaching quantitative reasoning skills I always felt like there was this huge gap between reasoning ability in an applied, consequential context and in the abstract, so something like computing the cost of materials for a home project would be easy if a student were standing in Home Depot but difficult if encountered in a text. So having students think about COVID which has so profoundly impacted their lives opens up this amazing possibility for them to really see data working in a way that makes sense and is consequential for their lives.

And Pendre, I love how you are honestly assessing which chapters are working most effectively. Are you planning to revise in light of these reader responses?

And to both - so wonderful that you are using this platform to hopefully find some volunteers! Connecting kids with real scientists and people working with data in the field is just a tremendous thing to do.

1



**Pendred Noyce**

Co-Presenter

(<https://tumblehomebooks.org/who-we-are>)

Founder and Executive Director

May 11, 2021 | 10:40 a.m.

I haven't yet acted to remove colonial Boston, because I love the story of how smallpox variolation came to the US, brought by an enslaved African. But maybe after more feedback I will! Mostly I have focused on revisions and new chapters to keep up with the pandemic--vaccines and variants. The other challenge is making the data-focused activities active and interactive.



**George Hein**

Facilitator

(<http://george-hein.com>)

Professor Emeritus

May 11, 2021 | 08:46 a.m.

Hi Penny and Jan,

What a terrific, timely concept. I have a personal question: How do I get information to establish a "club" so my 10-year old granddaughter in Western Massachusetts (she'll be middle-school age soon enough) can get involved in this?

1



**Pendred Noyce**

Co-Presenter

(<https://tumblehomebooks.org/who-we-are>)

Founder and Executive Director

May 11, 2021 | 08:51 a.m.

George, I will also reply privately, but the general answer is that although our current scale-up is happening through Imagine Science with underserved populations, soon everyone will have access to the materials. The second edition of the book will soon be back up on Amazon or can be pre-ordered through [www.tumblehomebooks.org](http://www.tumblehomebooks.org) (<http://www.tumblehomebooks.org>), and the program facilitator's guide will soon be freely available. Club leaders can talk to Jan and me, and we will happily share and advise.

2



**Jan Mokros**

Lead Presenter

(<https://scieds.com/leadership>)

Senior Research Scientist

May 12, 2021 | 08:23 a.m.

Hi George,

It's good to hear from you and as Penny said, the book is available to all. We'd love to expand to more youth through programs at the Y, 4-H, Girls Inc, or Boys and Girls Clubs, but we are just getting started! Stay in touch and we'll keep you updated as the project expands



**Laura Santhanam**

Health Reporter & Coordinating Producer for Polling

(<https://www.pbs.org/newshour/author/laura-santhanam>)

Laura's video + (<http://presentations/2109.html>)

May 11, 2021 | 10:44 a.m.

This is a wonderful way to encourage children and youth to actively learn about data accumulating around them in real-time. I love the final phase of the project where they connect what they have acquired to needs in their community. Are there examples of these PSAs that have been aired or otherwise shared broadly in their respective communities? To what degree are you seeing students engage by drawing/sharing comics based on their own experiences during the COVID-19 pandemic? And do the clubs interact with and learn from each other? I look forward to keeping an eye on this effort as it grows!

1



**Pendred Noyce**

Co-Presenter

(<https://tumblehomebooks.org/who-we-are>)

Founder and Executive Director

May 11, 2021 | 11:45 a.m.

Hi Laura,

We don't have any PSAs from kids yet; this summer will be the first time. We plan for the clubs to spend three sessions developing them, and we hope to get a mix: posters, videos, songs... But all have to include data.

We never thought of comics. Do you have experience with kids doing that?

And so far, no interaction between clubs, which meet on different schedules; but soon I hope we will be able to do something like share PSAs.

1



**Pei**

Informal Educator

May 11, 2021 | 11:50 a.m.

This project is much needed, not just in the US but around the world, to help young students better understand Covid-related data so that they can alleviate their fears about not just the pandemic, but about science and statistics as well. I think it's wonderful that the lessons are correlated to an adventure/mystery story as more students are likely to engage in STEM once they feel that they are the protagonists in their own story. This certainly will help to build their science identities, and improve their science literacy while enticing young people to become more book-literate as well. I look forward to seeing the publications that come out of these evaluations, as I believe this will be a highly effective approach, and I'm hoping to reference this work in my own papers in the future. My work is primarily in the space of international STEM collaborations, and I believe that this project could certainly inspire similar works in other educational communities around the world, where this approach would also be of great benefit. Thank you for putting together such an important study, at this critical time in history.

4



**Pendred Noyce**

Co-Presenter

(<https://tumblehomebooks.org/who-we-are>)

Founder and Executive Director

May 11, 2021 | 03:20 p.m.

Thank you, Pei. We will make sure you hear about what we learn!



**Jan Mokros**

Lead Presenter

(<https://scieds.com/leadership>)

Senior Research Scientist

May 12, 2021 | 08:27 a.m.

Pei, let me add that one of our implicit goals is to help kids learn about other parts of the world. The protagonists visit DCR, Bangladesh, France, and Taiwan (among others). Much of the data we work with comes from international sources, and we encourage kids to examine data from other countries. We agree that international collaboration is critical, especially now!

1

May 11, 2021 | 01:17 p.m.



**Laura W. Martin**  
Researcher

Hi Everyone. I'm doing some of the research for this project so it's great to have such positive comments about the approach and interest in the results. I am also grateful for the links to the NPR work and other related work - keep those connections coming! Thanks.

1



**Crystal James**  
Higher Ed Faculty  
(<https://www.tuskegee.edu/programs-courses/colleges-schools/cvm/cvm-dgph-crystal-m-james>)  
Crystal's video - ([/presentations/2118.html](#))

May 11, 2021 | 01:46 p.m.

Pipeline issues are critical. This a great idea to get students interested early in these specialty areas of public health.

2



**Pendred Noyce**  
Co-Presenter  
Founder and Executive Director  
(<https://tumblehomebooks.org/who-we-are>)

May 12, 2021 | 01:44 p.m.

We do hope to make certain health-related professions like epidemiology or data science more visible to students, so they can think about ways to serve the public beyond becoming a doctor.



**Jennifer Ward**  
Associate Adjunct Faculty  
(<https://tumblehomebooks.org/who-we-are>)

May 11, 2021 | 02:20 p.m.

This is a very intriguing project!

How might you disseminate this project to other cities? Would volunteers be trained by you or will folks acquire materials and set off on their own?

How did you advertise your project and get students involved?

Thanks. :)

1



**Pendred Noyce**  
Co-Presenter  
Founder and Executive Director  
(<https://tumblehomebooks.org/who-we-are>)

May 11, 2021 | 03:16 p.m.

Hi Jennifer,

At the moment we are disseminating through Imagine Science (<https://imagineisci.org>), which is a collaborative effort of 4H, the Y, Boys and Girls Clubs and Girls, Inc to reach the hardest-to-reach kids in 9 cities around the country. Nav Deol-Johnson, who administers Imagine Science, has done the heavy lifting of recruiting clubs that want to try the program. (It's the first time Imagine Science is offering a packaged curriculum to all their clubs, so that's something new for them.) The clubs then promote the program to interested kids.

Imagine Science has so far been happy to help involve interested clubs that belong to one of those four youth-serving organizations but are not in Imagine Science cities by letting them join in training and data gathering. However, the training for this summer is at capacity, unless overwhelming demand leads to us holding another facilitator training--two three-hour sessions.

If there is enough interest, Jan and I can probably offer training for next fall, spring, or summer. But it's a heavy lift for a club: 15 hours of programming, computers for every kid, two three-hour training sessions... and at this point we would still want to collect data on every club. Usually this means that someone has to find extra funding for program facilitators/club leaders; it's not something I would ask of volunteers. On the other hand, both the book and the facilitator's guide are going to be widely available, so one could try to do it another way. Best if anyone interested gets in touch with us directly, though!

2



**Becky Tapley**  
STEM Education Specialist  
(<https://mmsa.org/2020/08/becky-tapley>)  
Becky's video - ([/presentations/1918.html](#))

May 11, 2021 | 02:56 p.m.

I enjoyed learning about your project! I'm curious about the software you used for the animations that you created. We are exploring how we can use a scripted

animation to evaluate what educators have learned in our project (<https://stemforall2021.videohall.com/presentations/1918>

(<https://stemforall2021.videohall.com/presentations/1918.html>) and are finding it a helpful tool for our needs. Can you share any challenges or successes related to this aspect? Thanks!

1



**Jacob Sagrans**  
Co-Presenter  
Senior Research Associate  
(<https://www.linkedin.com/in/jacobsagrans/>)

May 11, 2021 | 03:32 p.m.

Hi Becky, I am glad to hear you enjoyed learning about our project. What a cool idea to have your ACRES participants view animations of a hypothetical afterschool activities and discuss them! Are you asking about the animations we have here in our video, or the animations that will be created to share with youth in the clubs? For the former, I could ask Barnas Monteith, who did much of the tech behind our video. For the latter, we are actually working with the Jackson Laboratory to create animations. These animations are not yet complete, but should be soon. JAX has a lot of great experience/skill in creating animations (you can find some on their YouTube channel: <https://www.youtube.com/user/TheJacksonLab>).

1



**Jacob Sagrans**  
Co-Presenter  
Senior Research Associate  
(<https://www.linkedin.com/in/jacobsagrans/>)

May 11, 2021 | 03:32 p.m.

And here is what Barnas says about what he used to make our video: "Mainly Openshot, with some xbox tool clips and some open source chroma key stock images. Other images were custom created in house with contract artists."



**Becky Tapley**  
STEM Education Specialist  
(<https://mmsa.org/2020/08/becky-tapley>)  
Becky's video - ([/presentations/1918.html](#))

May 11, 2021 | 04:26 p.m.

Thanks! I was wondering about the animations you referred to in terms of using with youth. I will look into what JAX has done. Thank you!

1



**Troy Sadler**  
Researcher  
Troy's video - ([/presentations/2183.html](#))

May 11, 2021 | 04:11 p.m.

I really like the explicit connections between the COVID themed learning opportunity and data representation and analyses. The pandemic has really highlighted the need to support student understanding of data representations in conjunction with science concepts and social impacts.

1



**Pendred Noyce**  
Co-Presenter  
Founder and Executive Director  
(<https://tumblehomebooks.org/who-we-are>)

May 11, 2021 | 05:22 p.m.

Yes, such a promising topic for interdisciplinary study, with even a bit of fascinating history that can be thrown in. Kids can also try on civic roles and responsibilities -- definitely rich material for a Socio-Scientific Issues approach.



**Marcia Linn**  
Higher Ed Faculty  
Marcia's video - ([/presentations/1950.html](#))

May 11, 2021 | 05:23 p.m.

Hi Jan! It's great to learn about the exciting work you are doing. Your video is thought provoking. We share your interest in making information about COVID more accessible and understandable. See our work exploring the ways teachers use data while teaching for social justice in science--including helping students interpret COVID data. Enjoy, Marcia

1



**Jan Mokros**  
Lead Presenter  
Senior Research Scientist  
(<https://scieds.com/leadership/>)

May 12, 2021 | 07:00 a.m.

Thanks Marcia, and good to hear from you. I'll check out your video, as it sounds like there are real parallels between our projects. Social justice and science go hand in hand much of the time, and the pandemic has been a catalyst to bring them together, as Troy pointed out in his comment. There's some pioneering work from Eric Gutstein 20 years ago that involved middle school kids in studying data on driving while black, as well as other social issues. It's worth going back to examine his work.



**Zenon Borys**  
Higher Ed Faculty  
Zenon's video  
(<https://www.warren.rochester.edu/faculty/staff/who/borys/>)

May 11, 2021 | 10:05 p.m.

What a fantastic project. Relevant, interdisciplinary, and creative. It's great to read about the positive initial results, too. I also mostly work with teachers and that's where some of my wonderings are. For the training of facilitators component, do they get to experience the materials as students? Or how is it different? And, I'm also curious about the facilitators reactions. Do they get excited when working with kids on the project? - I know as a teacher this seems like it would be one of the sequences I look forward to getting to and teaching.

2



**Jan Mokros**  
Lead Presenter  
Senior Research Scientist  
(<https://scieds.com/leadership/>)

May 12, 2021 | 08:14 a.m.

Hi Zenon,

We are starting our large scale teacher PD next week, so this is a timely question. Yes, teachers will do many of the activities as kids themselves would do this. It's especially important for them to become comfortable with CODAP and the data activities. There is strong interest in this project among the club leaders, because it is so relevant to their students. Of course, the data are sensitive, and it's important for leaders to know their youth and what experiences they (or their families) may have had with COVID.

1



**Heather Masson-Forsythe**  
Graduate Student  
(<https://www.heathermassonforsythe.com/>)  
Heather's video <[/presents/2133.html](https://presents/2133.html)>

May 12, 2021 | 12:56 a.m.

Very cool! Love the use of reading and video-game-like activities to introduce critical science literacy skills to students at such an important age group. Important for any person, even if they don't pursue science in their careers.

1



**Zach Mbasu**  
Informal Educator  
Zach's video <[/presents/1986.html](https://presents/1986.html)>

May 12, 2021 | 01:10 a.m.

A very inspiring project! Data concepts in epidemiology and virus science are important skills to be introduced to youth and the ideas presented are excellent examples! I totally agree that teaching Covid-related data should start as early as possible. Are the applications and tools mentioned freely available? Also, what would be your suggestion on how scale up these clubs to youth in developing countries like Kenya that have low connectivity settings?

2



**Jan Mokros**  
Lead Presenter  
Senior Research Scientist  
(<https://scieds.com/leadership/>)

May 12, 2021 | 08:06 a.m.

Hi Zach. Thanks for your question. Yes, the tools are readily available for free. CODAP and NetLogo are up and running, and if you go to the CODAP website, you'll find all kind of interesting datasets, including what Bill Finzer and his colleagues are developing for our project. We will have up to date data on immunizations as well as rates of infections. This is a rapidly changing landscape, so current data are essential.

In a situation with poor connectivity, you can have kids read one chapter during each club session and consider the datasets off line. It's not as powerful, but it's certainly a way in. On the other hand, we've seen kids use CODAP on their phones, and certainly on iPads, so working with this data may be easier than you think!

1



**Jacob Sagrans**  
Co-Presenter  
Senior Research Associate  
(<https://www.linkedin.com/in/jacobsagrans/>)

May 12, 2021 | 08:35 a.m.

Thanks for the comments/questions, Zach! There is quite a lot available on the CODAP website that is freely available to anyone: <https://codap.concord.org/> (<https://codap.concord.org/>) . Everything can run online in most any browser, so it works well on Chromebooks too. I believe CODAP can also work pretty well on slower internet/hotspot connections because it doesn't use up a lot of data.



**Elizabeth Hadley**  
Informal Educator  
Elizabeth's video <[/presents/2119.html](https://presents/2119.html)>

May 12, 2021 | 09:07 a.m.

Hi Jan and team!

I love that you were able to use such a relevant current event that really has impacted the whole globe to teach data literacy! I especially like that each of the chapters covers a different virus and different data analysis/visualization skills. Others have had some great questions above, so my only additional question is if you have had any challenges with the topic being too sensitive for some students since so many of our lives have been touched by COVID19 at this point? Are you offering any advice to your instructors to help them with messaging to prevent some of these emotional responses or skills to help them handle a situation if a student does become upset during the modules?

1



**Jan Mokros**  
Lead Presenter  
Senior Research Scientist  
(<https://scieds.com/leadership/>)

May 12, 2021 | 09:51 a.m.

Elizabeth, your question about sensitive issues is a good one. We have made a point of asking kids about others who they know, rather than asking about themselves. For example, we ask what they have seen about vaccine hesitancy in their community, rather than in their families. Also, we don't examine data about rates of death, as that is too much. Many of the kids have been impacted by COVID, and we are eliciting ideas "from leaders" about strategies for coping with sensitive COVID issues. Leaders know their youth, and sharing strategies for addressing sensitive issues during a PD workshop has been very helpful to them. The issues include not only the personal devastation that may have impacted kids' families, but also issues around political differences within families. For example, what might kids do if their families take COVID less seriously than kids themselves?

1



**Perrin Chick**  
STEM Education Specialist  
(<https://mmsa.org/projects/acres/>) Perrin's video <[/presents/1918.html](https://presents/1918.html)>

May 12, 2021 | 09:37 a.m.

Greetings

Before COVID19, my daughter was very interested in becoming a virologist. Unfortunately her teacher kind of squashed that dream. Participating in data clubs and reading the book sounds like a great way to nurture STEM identity and Make Career Connections. Those are skills we highlight in our professional development too. Excited to see this role out. How did you decide what schools and programs to work with? And will there be opportunities for youth outside of those chosen districts to participate in the future?

Perrin



**Jan Mokros**  
Lead Presenter  
Senior Research Scientist  
(<https://scieds.com/leadership/>)

May 12, 2021 | 10:15 a.m.

Hi Perrin,

Your daughter will have many choices, and epidemiology or virology are good ones! We are working through Imagine Science, which is a STEM-focused group that works with underserved kids throughout the country, mostly in cities like Houston, NYC, Denver, etc. They are expanding to a few less urban sites. Nav may want to respond more. One unique thing about these programs is that sites need to devote 15 hours to any STEM unit they undertake, and the leaders get quite a bit of professional development. They also work with PEAR on evaluation, and understand the importance of research/evaluation. We don't yet have an expansion plan, because we just started March 1st! But it is something we talk about a lot. Your thoughts on dissemination are appreciated!



**Nav Deol-Johnson**

Co-Presenter

(<https://imagineisci.org/>) National Program Operations Manager

May 12, 2021 10:32 p.m.

The Imagine Science network currently includes nine communities. We work with communities that have local affiliates of our national partners - Boys & Girls Clubs of America, Girls, Inc., Y-USA and the National 4-H Council - and focus on working collaboratively to increase STEM opportunities for underserved youth. For this project, we've invited any of the interested partners in the Imagine Science network to participate.



**Samuel Ogalo**

Educator

(<https://www.linkedin.com/in/samuel-okoeth-aa8378106/>?originalSubdomain=ke)

May 12, 2021 10:48 a.m.

Thank you very much for this initiative. The Data Detective Clubs have come a long way, and it's inspiring to see how far they've progressed. This is a fantastic opportunity to use Covid data to engage young learners in a more constructive way. I can't wait to have this in Kenya!

1



**Pendred Noyce**

Co-Presenter

(<https://tumblehomebooks.org/who-we-are/>) Founder and Executive Director

May 12, 2021 10:48 a.m.

Samuel, when we are just a little farther along we should Skype and talk about how we could adapt to Kenya. That will be an exciting development.



**Linda Kekeli**

May 12, 2021 10:52 p.m.

What a timely topic! While COVID is in the daily news, the topic isn't much addressed for kids. Knowledge is power, so I appreciate the effort to inform you.

I like the inclusion of role models and career exploration. On their own, STEM activities don't necessarily go from "fun to do" to "I want to explore a future in..."

I also like the idea of including PSAs. This gives kids a chance to put what they're learning into action and to communicate ideas to make a difference.

I would love to see family engagement added to this project. Parents and caregivers like to know what kids are doing and learning in OST programs along with how they can support and sustain their child's interest.

1



**Pendred Noyce**

Co-Presenter

(<https://tumblehomebooks.org/who-we-are/>) Founder and Executive Director

May 12, 2021 10:28 p.m.

Linda, I agree, including families in seeing what their kids are learning and discussing the issues raised would be great. Any guidance you have for how best to involve families in what already seems like a packed and almost overwhelming program will be welcome, and we can continue the conversation either here or offline!



**Laura w Martin**

Researcher

May 12, 2021 10:48 p.m.

I agree with Penny - the family connection would be really interesting to explore. The kids will have a book to read at home so that may induce some discussion after after school time!



**Nav Deol-Johnson**

Co-Presenter

(<https://imagineisci.org/>) National Program Operations Manager

May 12, 2021 10:46 p.m.

On the topic of family engagement - I think it will be interesting to see if any of the groups at our upcoming sites identify parents/caregivers as the target audience for their PSAs.



**Hezron Ingutia**

Undergraduate Student

May 14, 2021 10:55 a.m.

This is an amazing project now that we have a real time data on COVID 19! Best way also for interested learner to be educated (on data science and epidemiology) in a fun way.



**Pendred Noyce**

Co-Presenter

(<https://tumblehomebooks.org/who-we-are/>) Founder and Executive Director

May 14, 2021 10:26 a.m.

Thank you for your comment. Our CODAP partners have made it possible for some data sets to keep updating themselves directly in the program, which is very helpful.



**April Bartnick**

K-12 Teacher

April's video - ([/presentations/2061.html](https://presentations/2061.html))

May 14, 2021 10:17 a.m.

What a fantastic video with awesome graphics and an amazing message. Your project is incredible! Teaching students how to be critical thinkers is such an important skill in an age of social media and false information on the Internet. I think teaching students to be creative thinkers is equally important. Do you ever incorporate art (STEAM) with the Data Detectives or Imagine Science Clubs?

1



**Pendred Noyce**

Co-Presenter

(<https://tumblehomebooks.org/who-we-are/>) Founder and Executive Director

May 14, 2021 10:28 a.m.

Thank you for your enthusiasm, April! The only place for art right now is in the PSA that kids are asked to create during their last three club sessions. We want them to be creative in any media--to dance or sing their message or film it instead of just making a poster. It will be up to them--but our pilots did not include the PSA, so we don't know yet how it will go. There is also a little bit of role-playing, which could be considered theater...

2



**April Bartnick**

K-12 Teacher

April's video - ([/presentations/2061.html](https://presentations/2061.html))

May 14, 2021 10:50 a.m.

How cool! Offering options with the media/art components is so fun.

1



**Martin Storksdieck**

Facilitator

(<https://stem.oregonstate.edu/people/martin-storksdieck>) Director

May 16, 2021 03:55 p.m.

I am really late to the discussion, but want to say: amazingly timely - a wonderful project. It might have been discussed already, and it is an issue that is true for the PBS project as well: what do we learn about kids (and adults) ability to make meaning from real data? How does the fact that these are data about real or highly relevant issues change willingness to engage and overcome obstacles in dealing with data? I think there are great opportunities. You know Leigh Peake and LabVenue and I wonder about forming collaboration between all these wonderful projects to dig into these tricky questions.

1



**Jan Mokros**  
Lead Presenter  
Senior Research Scientist  
[\(https://scieds.com/leadership/\)](https://scieds.com/leadership/)

May 16, 2021 | 04:27 p.m.

Hi Martin, and thanks for your comments and intriguing suggestion about collaboration. We've also worked through a sister project (Data Clubs) on data about ticks and Lyme disease, teens and technology, and sports injuries. We don't know whether there's a correlation between "relevance" and continued engagement with the data when there's more of a challenge. We are seeing anecdotally that relevance relates to the quantity and quality of the questions kids ask about data. We have a Data Dispositions survey that could be used to gauge initial level of relevance and then look for correlations with depth of subsequent exploration of data. Thanks for sparking our thinking on this!



**Laura w Martin**  
Researcher

May 16, 2021 | 04:46 p.m.

Hi Martin. I'm doing some of the research on this project which is looking at how youth use datasets and tools to understand the spread and containment of infectious disease. Though we don't have a comparison group we will collect the kids' graphs and charts as well as PSAs they design based on data to see how they develop interest and identity through this very relevant topic. A central part of the treatment, as it were, is the use of an adventure novel which should grab the kids with inspiring characters and tales.



**Ying Wu**  
Researcher  
[\(https://insight.ucsd.edu/our-team/\)](https://insight.ucsd.edu/our-team/) Ying's video - [\(/presentations/2000.html\)](https://presentations/2000.html)

May 16, 2021 | 08:22 p.m.

I think this project is fantastic! In fact, our group at UC San Diego (<http://imagination.ucsd.edu>) (<http://imagination.ucsd.edu/>) is interested in a similar concept, but with a focus on Virtual Reality. I would love to talk with you more after this forum to find out about your design and development process and to explore possible points of connection.



**Pendred Noyce**  
Co-Presenter  
Founder and Executive Director  
[\(https://tumblehomebooks.org/who-we-are/\)](https://tumblehomebooks.org/who-we-are/)

May 17, 2021 | 12:22 p.m.

Hello, Ying. I will take a look at your video, and then yes, let's talk!



**Ying Wu**  
Researcher  
[\(https://insight.ucsd.edu/our-team/\)](https://insight.ucsd.edu/our-team/) Ying's video - [\(/presentations/2000.html\)](https://presentations/2000.html)

May 18, 2021 | 11:16 a.m.

Thanks, Pendred! We are currently exploring a project that would involve creating a book -- as you did -- along with a companion AR/VR experience. How can I get in touch with you? [ycwu@ucsd.edu](mailto:ycwu@ucsd.edu) (<mailto:ycwu@ucsd.edu>) -- P. S. I loved Tumblehomebooks. What a great resource! I was really impressed by the anthology of science poetry. I've been looking for something like that for a long time.



**Sue Allen**  
Researcher  
[\(https://mmsa.org/2016/09/sue-allen-ph-d/\)](https://mmsa.org/2016/09/sue-allen-ph-d/) Sue's video - [\(/presentations/1918.html\)](https://presentations/1918.html)

May 17, 2021 | 01:55 p.m.

What a great line of work you are advancing together! I wish my schoolbooks had included data explorations at the end of each chapter - maybe this could be integrated into textbooks too. Also what strikes me is that this is one of the most cross-disciplinary projects I've come across - a truly integrated mix of data, math, science, medicine, science fiction, history, and various kinds of literacy. So it really supports the kinds of cross-domain connection-making that's so important for this century - seems a great on-ramp for the NSF idea of "convergence research."



**Pendred Noyce**  
Co-Presenter  
Founder and Executive Director  
[\(https://tumblehomebooks.org/who-we-are/\)](https://tumblehomebooks.org/who-we-are/)

May 17, 2021 | 02:07 p.m.

Thanks, Sue! For me a big question, and one that's hard to research, is whether reading fiction can help motivate learning about STEM content. If so, how closely linked does the fiction have to be? How "good" does it have to be in terms of plot, characterization, and style? (My sense is that it would be all too easy to write a flat or mechanical story that matches content but doesn't draw anybody in.) But this is kind of cross-connection is definitely one that I, and Tumblehome, want to keep exploring.



**Ron Ottlinger**  
Funder

May 17, 2021 | 04:59 p.m.

STEM Next has been pleased to help fund the early piloting of this important work and make the connection to Imagine Science. When kids understand the role of data they develop a better understanding of the science, especially during a real life crisis that has threatened everyone globally. The fact that the early adopters are from low-income highly diverse communities is even more impressive. Congrats to Penny, Jan, Jacob and others!

1



**Jan Mokros**  
Lead Presenter  
Senior Research Scientist  
[\(https://scieds.com/leadership/\)](https://scieds.com/leadership/)

May 18, 2021 | 11:18 a.m.

Ron, we are very pleased to have received funding from STEM Next! Nimble educational interventions were called for as the pandemic swept the world, and your nimble and timely funding enabled us to meet kids needs as they were becoming curious and concerned about COVID.



**Jacob Sagrans**  
Co-Presenter  
Senior Research Associate  
[\(https://www.linkedin.com/in/jacobsagrans/\)](https://www.linkedin.com/in/jacobsagrans/)

May 18, 2021 | 03:35 p.m.

Thank you everyone for viewing our video and contributing to such a lively discussion forum! We will be keeping what you said in mind as we move forward with our project. And we would love to continue the discussion even after the Showcase closes. Please keep in touch!

NSF funding for this project ended on 8/31/23. At this time the site was archived. All Videos and Discussions are still available. See more. [\(/presentations/about/about-event.html\)](https://presentations/about/about-event.html)

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