

A FISHBOWL FILMS PRODUCTION

# INVENTING TOMORROW

THE FUTURE IS BRIGHTER THAN YOU THINK

A FILM BY LAURA NIX



2018-2021

# IMPACT REPORT

POV

PBS

PEABODY  
WINNER

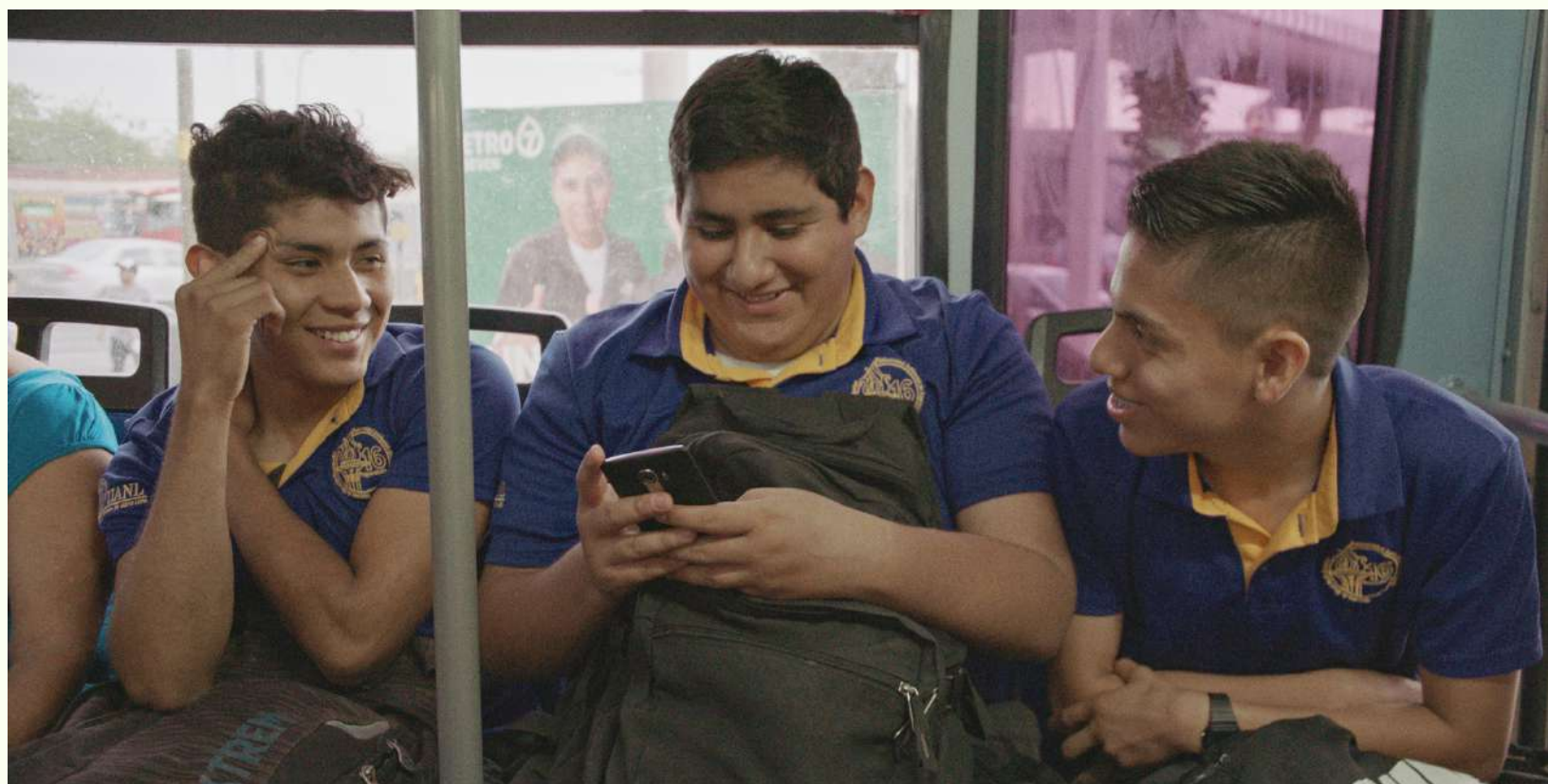
impactmedia  
PARTNERS

hhmi | Tangled  
Bank  
Studios

FISHBOWL  
FILMS

# FILM IMPACT CAMPAIGN

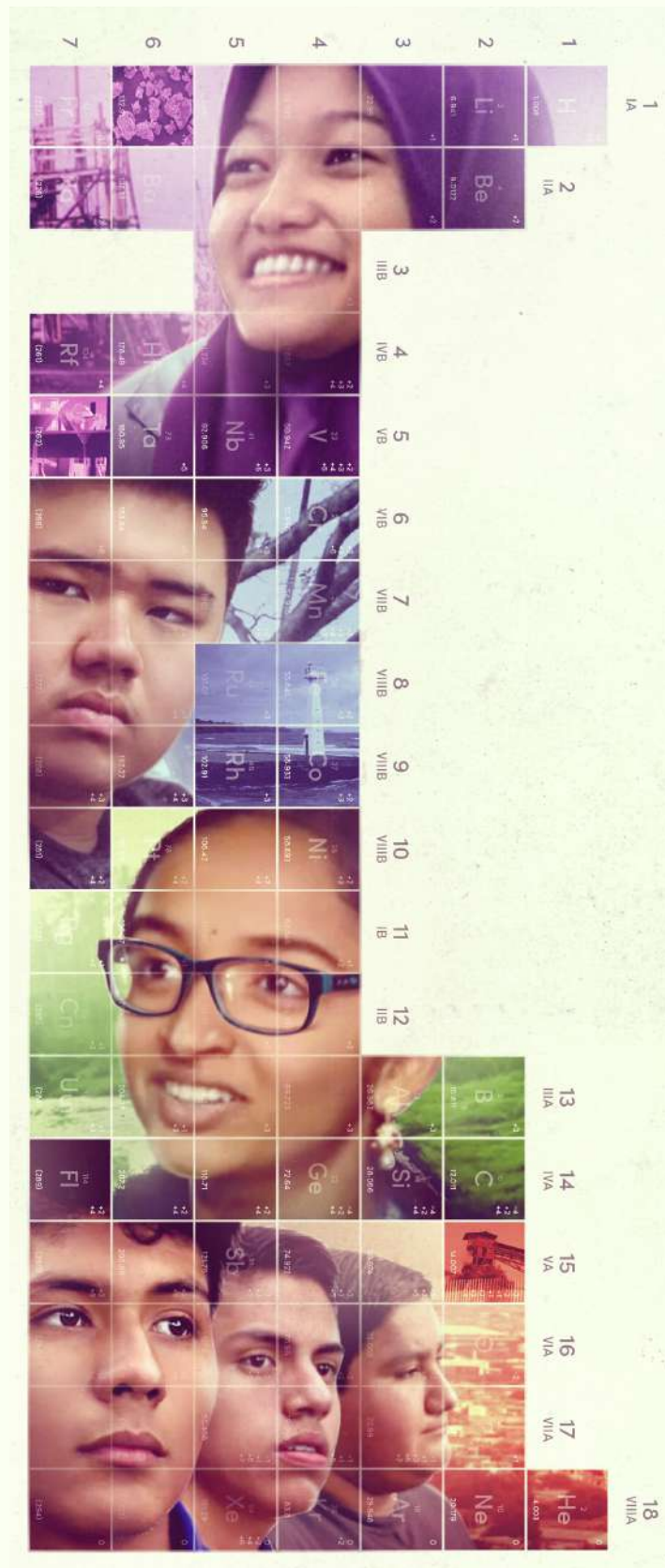
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## FILM SYNOPSIS

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**INVENTING TOMORROW** shares the stories of passionate teenage innovators from around the globe who are creating cutting-edge solutions to the world's environmental threats – found right in their own backyards – while navigating the doubts and insecurities that mark adolescence. Take a journey with these inspiring teens as they prepare their projects for the largest convening of high school scientists in the world, the Intel International Science and Engineering Fair (ISEF), a program of Society for Science.







## OUR MISSION

With its message of hope and possibility, the Peabody Award-winning documentary film *INVENTING TOMORROW* shows how passionate teenagers across the globe are using science, technology, engineering, and mathematics (STEM) to take on large-scale environmental threats in their own communities.

After its premiere in competition at the Sundance Film Festival in 2018, *INVENTING TOMORROW* embarked upon a four-year impact campaign designed to integrate concepts from the film into science education and put resources and materials into the hands of youth and educators nationwide. We are proud to share the accomplishments and milestones achieved during this extensive multi-year campaign.

This report covers the entirety of the *INVENTING TOMORROW* impact campaign, which was carried out in three phases between 2018-2021. The mission of our campaign aligns with the content of the film:

- ◆ **Increase the number of young people who become science leaders, with a focus on youth and educators from frontline communities; those who have experienced systemic socioeconomic disparities, environmental racism, and other forms of injustice**
- ◆ **Support youth engagement in STEM as a path towards solving the planet's greatest environmental challenges**
- ◆ **Provide greater and more equitable access to STEM education focused on sustainability**
- ◆ **Center the voices and experiences of people of color**
- ◆ **Help young people realize they have the ability to solve complex problems that affect their neighborhoods and the entire world**



“

In a world full of existential crises – climate change, pollution, environmental degradation – it feels like at every turn we are confronted with seemingly unsolvable problems. It's enough to make one despair, but for the next generation of scientists. *Inventing Tomorrow* follows young scientists – girls and boys of all backgrounds from across the globe – as they develop real, practical, and indeed, inspired solutions to these crises.

”

- Peabody Awards

# ACHIEVEMENTS & OUTCOMES

## IMPACT HEADLINES 2018-2021

2.5+ M	television viewers via PBS and WORLD Channel
4,673	classrooms equipped with free DVDs or streaming links of the film
5,280	Foldscope paper microscopes distributed to educators and students
373	WaterInsights Classroom Water Testing Kits supplied to schools
27 M	impressions on social media
18,000+	Facebook followers
575+	posts across INVENTING TOMORROW social media platforms
\$1.2 M	in earned media coverage (as AVE) in 89 articles
4,600+	downloads of educational & screening guides
1,955	educators reached through 29 STEM events
868	teachers trained and activated

## IMPACT PHASE 1 – 2018

In partnership with **Policy in Focus**, **HHMI Tangled Bank Studios**, and **GOOD DOCS**, we provided opportunities for over 10,000 students to see INVENTING TOMORROW, and facilitated their interest through key educational programming and resources. This included:

- ◆ School field trip campaigns that brought 1,800 students from 31 schools to theaters for screenings and discussions during our theatrical release
- ◆ 2,000 copies of the screening guides, hundreds of copies of the lesson plans, and 2,980 Foldscope paper microscopes distributed to students and educators
- ◆ Screenings at 40 film festivals in 21 states and 9 countries, during which the filmmakers and subjects took part in 26 theatrical panels, discussing the film's themes and impact goals with a variety of target audiences
- ◆ Inclusion in the 2018-2019 Southern Circuit Tour of Independent Filmmakers and the U.S. State Department's 2018-2019 American Film Showcase, increasing the film's reach in the United States and abroad
- ◆ Special screenings held at the Smithsonian National Museum of Natural History, Simons Foundation, Association of Science and Technology Centers Annual Conference, Making Cents International presents Global Youth Economic Opportunities Summit, the 2018 Intel Science and Engineering Fair, and 2018 Broadcom MASTERS



# ACHIEVEMENTS & OUTCOMES

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## IMPACT PHASE 2 – JAN 2019-JUNE 2020

In partnership with **Impact Media Partners**, **HHMI Tangled Bank Studios**, and **GOOD DOCS**, we focused on expanding the film's reach through television broadcasts and a nationwide high school classroom initiative. Accomplishments included:

- ◆ **PBS's POV broadcast on July 29, 2019, reaching 2.2 million people**
- ◆ **WORLD Channel's broadcast on April 24, 2020, carried by 71 markets reaching 66.5% of U.S. TV households**
- ◆ **In-person and virtual Teacher Workshops, in partnership with PBS stations, that trained and activated 500+ educators through 11 events in ten markets**
- ◆ **Free DVDs to Classrooms Program, sponsored by HHMI Tangled Bank Studios, reaching educators from 4,423 schools nationwide**
- ◆ **1,395 Foldscope paper microscopes and 268 WaterInsights Classroom Water Testing Kits distributed nationwide**
- ◆ **Release of the film on Amazon Prime in August 2019**
- ◆ **New versions of the film in different lengths, created to meet the needs of classroom use**
- ◆ **Free Remote Learning Toolkits distributed to classrooms nationwide**

## THE GLOBAL PANDEMIC

When the COVID-19 pandemic hit in 2020, we responded quickly, pivoting our impact activities to virtual events and screenings, and retooling our educational materials for remote learning. This allowed our campaign to continue unabated so we could support students, teachers, and parents with Remote Learning Toolkits for the pandemic and beyond.



# ACHIEVEMENTS & OUTCOMES

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## IMPACT PHASE 3 – JULY 2020-JULY 2021

In partnership with **Impact Media Partners**, **HHMI Tangled Bank Studios**, and **GOOD DOCS**, we focused on initiatives to integrate INVENTING TOMORROW concepts and materials into the classroom long after the impact campaign ended. This included new lesson plans and short films cut from the feature film, to help teachers who had limited time in the classroom. In this phase, we:

- ◆ Created new short films on AIR and WATER, cut from the feature film for classroom use
- ◆ Created new lesson plans to accompany the short films, with Dr. Jessica Bean of UC Berkeley
- ◆ Piloted the new short films and lesson plans in four school districts
- ◆ Started implementing the short films and lesson plans in Baltimore City Public Schools for Spring 2022
- ◆ Distributed the short films and lesson plans on the WORLD Channel website
- ◆ Launched our second Teacher Workshop program, reaching 953 educators with 13 events
- ◆ Activated 368 teachers and reached seven new markets in the U.S. and Mexico
- ◆ Hosted our first Spanish language workshop, attended by our Mexican film subjects
- ◆ Continued our Free DVDs to Classrooms Program, sponsored by HHMI Tangled Bank Studios, reaching educators from an additional 250 schools nationwide
- ◆ Participated in an Earth Day 2021 global watch party that reached 2,134 viewers in 60 countries, held by the prestigious American Film Showcase





## DIRECTOR'S STATEMENT – LAURA NIX

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When we were casting for the film, we interviewed over 100 ISEF finalists around the world, and learned that most of the students who were focusing their research on environmental solutions were motivated by an issue facing their local community. We also looked at the data for accepted ISEF science projects going back several years and discovered that in developing countries, approximately 60-70% of student projects we reviewed were focused on making an environmental impact. But when we reviewed ISEF projects in the United States, the number of projects focused on the environment fell to around 10%.

Why was there such a stark drop-off in interest in environmentally focused STEM projects in the United States? Was it because the American students weren't being taught about these issues? Or was it because the students who live in frontline communities most affected by environmental issues weren't making it into the STEM pipeline that sends students to science competitions like ISEF?

Over time, we realized young people who live in American frontline communities; mostly urban and rural students who are directly impacted by environmental injustice, don't have access to the type of advanced STEM education that trains students to qualify for the top science fairs. This disparity in STEM education is directly related to structural racism and economic inequity which plagues the American education system.

Recognizing the complexity of this issue drove my passion to get the film into the hands of students, educators, and environmental advocates in strategic communities. We decided to create hands-on interactive educational materials to provide teachers with not only a hopeful story, but with resources to teach sustainability concepts in the STEM classroom.

In an era where we are besieged by disinformation, our goal was to empower young people to create evidence-based solutions for cleaner air, potable water, the reduction of industrial contamination, renewable energy, and improved quality of life for their families and communities. I am so very grateful to all the people and organizations who worked with us on this campaign, with a special thanks to the teachers who tackle the challenge of teaching sustainability in the classroom year round.

## GOALS & AUDIENCE

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An overarching impetus of our impact campaign is the idea "If you see it you can be it." Just like the students in INVENTING TOMORROW, we want to encourage youth to look around their own communities, identify a local problem, and use STEM to address the issue.

Throughout the campaign, we developed innovative programs and materials designed to inspire young people, focusing our efforts on:

- ◆ **Getting students excited about science as one way to understand the world, and sharing how to use STEM to design solutions to societal and environmental problems**
- ◆ **Encouraging youth to think about science as something they already use in everyday life; not as something abstract**
- ◆ **Creating programs and materials that highlight youth who are doing high level community-based work, as well as a diverse group of scientists and science educators, so students can see role models who look like them**
- ◆ **Helping young people realize STEM is one way to change the world**

To support these shifts in student thinking, we provided science educators with high-quality educational and community engagement materials, which they are using to connect core science concepts to sustainability issues.

We developed a series of lessons responsive to Next Generation Science Standards (NGSS) that teach the science concepts introduced in INVENTING TOMORROW. These lessons bring to life everything from marine biology and geography to the engineering design process and environmental science.

We specifically targeted our outreach to frontline communities, providing tools to high school teachers working with students in urban and rural areas that face unique environmental challenges.

## FRONTLINE COMMUNITIES

Frontline communities experience the "first and worst" consequences of toxic pollution. Often low-income and/or communities of color with little political power, they are increasingly vulnerable as our ecosystem deteriorates.

These communities experience a range of environmental hazards, including:

- ◆ **Water pollution due to fracking, industrial contamination, or lack of regulation**
- ◆ **Air pollution due to nearby freeways, oil refineries, or Superfund sites**
- ◆ **Soil contamination due to pesticides, fertilizer, runoff, or drought**



# LEARNING MATERIALS

## NEW SHORT FILMS

Due to constraints on teachers' time in the classroom, we saw greater demand for shorter versions of the film in our educational initiatives.

Based on this feedback, in Phase 3 we created two short films, which were cut down from the feature-length film. Working with WORLD Channel, we debuted the shorts on the WORLD Channel website in March 2021, where they remain free and available to the American public.

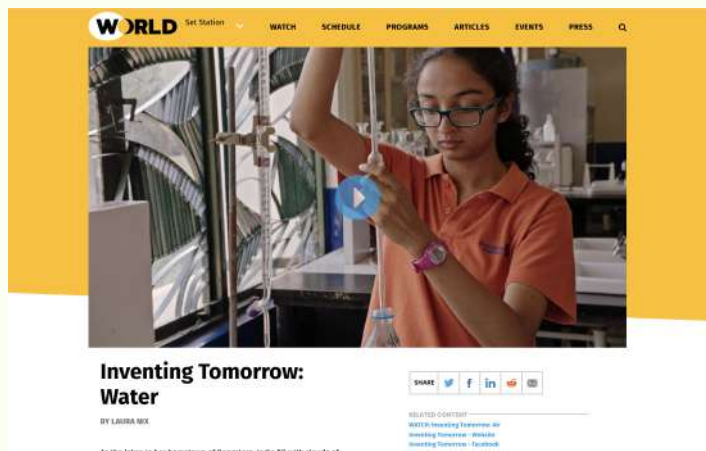
**INVENTING TOMORROW: AIR (TRT: 17:54)** is based on film subjects Jesús Martínez, José Elizalde, and Fernando Sánchez, as they invent a paint that can remove pollutants from the air in Monterrey, one of Mexico's most polluted cities.

**INVENTING TOMORROW: WATER (TRT: 15:38)** follows film subject Sahithi Pingali's story, as she creates a "citizen science" project that lets anyone measure and share water quality data in her hometown of Bangalore, India.

Along with these short-format films, we created an **87-minute, 82-minute, and 55-minute version of the film** to serve our educational audiences.

## NEW LESSON PLANS

To accompany the short films, we created **new lesson plans; five on AIR and five on WATER**. These step-by-step lesson plans include activities and materials that make it easy for educators to engage students in investigations related to environmental sustainability, and provide examples and opportunities to connect science learning back to their local environments. The lesson plans were designed by UC Berkeley PhD research scientist Dr. Jessica Bean, in alignment with Next Generation Science Standards (NGSS). They incorporate materials from her program "Understanding Global Change," and were piloted by teachers in Santa Cruz City Schools, CA; Prince George's County Public Schools, MD; Grosse Pointe Public School System, MI; and Joplin School District, MO.



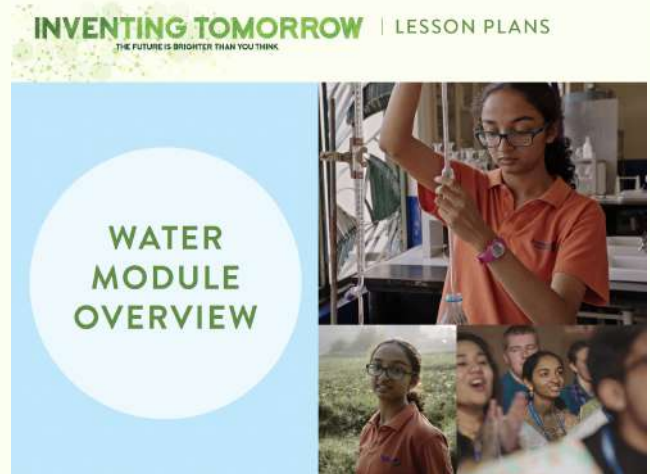
# IMPLEMENTATION IN SCHOOLS

## PILOT & IMPLEMENTATION PROGRAM

In January and June of 2021, we piloted the new learning materials with approximately 50 Baltimore teachers in professional development workshops. With the pilot program complete, in Fall 2021 educators worked with Dr. Jessica Bean to integrate the WATER module into the "Baltimore Watersheds" core Biology Curriculum for Baltimore City Public Schools. Our new WATER module is now integrated into their district curriculum, and starting in Spring 2022, students will engage in Lessons 1-4. This includes watching the short film about Sahithi Pingali's research, using the "Understanding Science" and "Understanding Global Change" interactive resources, and engaging in WaterInsights water testing. This curriculum will be available to approximately **100 teachers** in the district, and will potentially reach **over 10,000 students each year** on an ongoing basis.

## STUDENT IMPACT

In one focus group, students reported feeling awe as they witnessed the INVENTING TOMORROW subjects tackling big environmental issues in their communities, noting their ability and sense of civic responsibility. Research around the emotion of awe shows it is a powerful feeling that forces the brain to accommodate new ideas. The young viewers were able to connect with the subjects because they were "just like them," allowing a greater degree of empathy and expanding their sense of what is possible.





# TEACHER WORKSHOPS

To promote STEM learning and empower educators with resources to teach the values of and solutions for sustainable practices, in Phases 2 and 3 we partnered with local PBS stations and educational organizations to train and activate **868 educators in 17 markets** around the country, as well as educators in Mexico, through **24 Teacher Workshops**.

In Phase 2, we rolled out the program with PBS stations partners in ten markets, introducing educators to the film and our Educational Toolkits through 11 workshops. In Phase 3, armed with all-new lesson plans and new short-format films, we held 13 events and reached seven new markets, engaging existing partners and building new relationships with educational organizations.

We also offered our first **Spanish language workshop**, for educators in the U.S. and Mexico, in partnership with the Chief Science Officer program of Arizona's SciTech Institute. Attendees were treated to a discussion with our film subjects from Monterrey, Mexico.

Along with the lesson plans and short films, we distributed **905 free Foldscope paper microscopes** and **105 WaterInsights Classroom Water Testing Kits** to attendees, as well as 230 DVDs of the film. These hands-on classroom resources were provided with the support of HHMI Tangled Bank Studios.

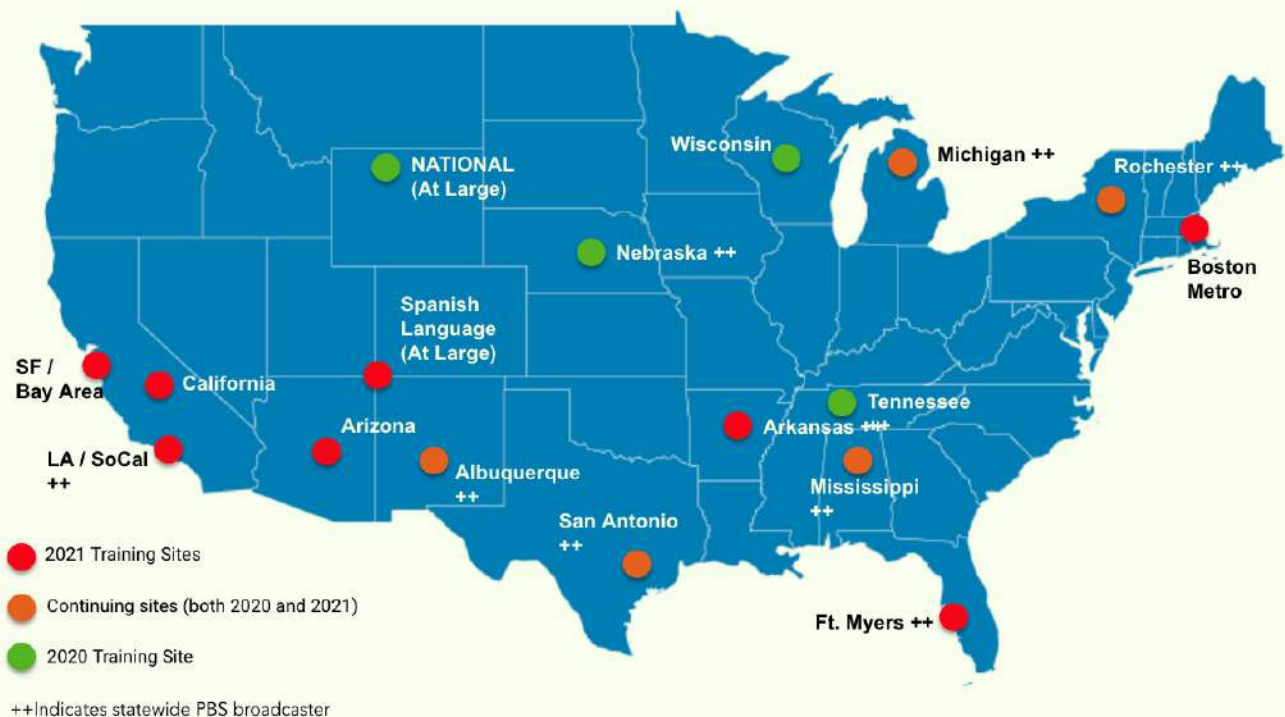
“

This content and lessons will be a great “jumping off” point for my program...so relevant and helpful. I loved how you found some relevant bodies of water in my area...that piqued my interest for sure. This all goes along well with encouraging scientific research that my STEM team is working toward.

”

- Southern California Workshop chat participant

## 2020 & 2021 TEACHER WORKSHOPS



# TEACHER WORKSHOPS



## PHASE 3 WORKSHOPS

June 23, 2021	San Francisco Unified School District, San Francisco Recreation & Parks, Port of San Francisco, TreePeople, and The EcoCenter at Heron's Head Park - California Statewide
June 19, 2021	SciTech Institute - U.S./Mexico - Spanish Language Workshop
May 27, 2021	The Meemic Foundation - Michigan Statewide
May 25, 2021	San Francisco Unified School District, San Francisco Recreation & Parks, Port of San Francisco, TreePeople, and The EcoCenter at Heron's Head Park - California Statewide
May 18, 2021	Arkansas PBS - Arkansas Statewide
May 13, 2021	KLRN - Texas Statewide
May 12, 2021	North American Association for Environmental Education
May 05, 2021	WGPU - Ft. Myers, Florida
April 22, 2021	WXXI - Rochester, NY
April 21, 2021	PBS SoCal - Los Angeles, CA
April 20, 2021	MPB - Mississippi Statewide
April 17, 2021	SciTech Institute - Arizona Statewide
March 20, 2021	KNME - New Mexico Statewide

## PHASE 2 WORKSHOPS

October 10, 2020	New Mexico PBS - Albuquerque, NM
October 06, 2020	The Meemic Foundation
September 29, 2020	Mississippi Public Broadcasting - Jackson, MS
September 23, 2020	WCTE - Cookeville, TN
September 16, 2020	Nebraska Educational Television - Omaha, NE
June 18, 2020 and August 20, 2020	WXXI - Rochester, NY
July 30, 2020	KLRN - San Antonio, TX
June 16, 2020	Association of American Educators
March 3, 2020 and March 21, 2020	Detroit Public TV - Detroit, MI - In-person Workshop

\*All Workshops were virtual unless otherwise noted.

# INVENTING TOMORROW AMBASSADORS

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To lead our Teacher Workshops, we recruited, trained, and deployed INVENTING TOMORROW Ambassadors. These hand-picked Ambassadors, all of whom are retired or former teachers, were sourced from organizations that recognize teaching and educator excellence.



**GARY ABUD, JR.** *Lead Program Ambassador*

An educational consultant and award-winning educator, Gary is the 2014 Michigan Teacher of the Year. As an educator, he has served in schools as a principal, science teacher, curriculum specialist, and college instructor. As a consultant, his clients have ranged from non-profits and investment banking firms to K-12 schools and universities. He has spoken at events such as TEDxDetroit, the Michigan Governor's Education Summit, and the Lions Club International State Convention, and is author of the children's book "Science With Scarlett."



**MATINGA RAGATZ** *Program Ambassador*

Matinga Ragatz is a multiple-award-winning educator, keynote speaker, and instructional innovation consultant. A National Teachers Hall of Fame member, she delivers virtual and in-person workshops nationwide and internationally on Culturally Responsive Teaching, Project Based Learning, STEAM, Integrated Course Design, and Social Emotional Learning. She is currently an NPR Michigan Radio education commentator and speaks weekly about education issues throughout the state.



**ANTHONY GRISILLO** *Program Ambassador*

Affectionately known as Mr. G, Anthony is the 2014/15 Pennsylvania Teacher of the Year, a 2014 Making a Difference Award winner, and a VOYA National STEM Fellowship Master Teacher. Anthony has taught gifted support in the Rose Tree Media School District for 16 years while also working with accelerated math students and acting as a Science Coordinator. Currently in his 23rd year of teaching, he is the Teacher Librarian at Glenwood Elementary School and an Adjunct Professor at West Chester University.



**CHRIS SKOWRONSKI** *Program Ambassador*

Chris Skowronski has been teaching biology and environmental science in the Detroit metro area for 15 years. An instructor at Grosse Pointe North High School for over a decade, Chris has been involved with community projects including Lake St. Clair watershed testing and community outreach, and installing a rain garden on the school grounds, ensuring Grosse Pointe North High School has been honored as a Michigan Green School for ten years running.



## FROM OUR AMBASSADORS

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“

Many of the teachers that attended the INVENTING TOMORROW Teacher Workshops shared their excitement about the 'How Science Works' framework and tool. They were especially hooked on a redefinition of the traditional 'Scientific Method' approach that fits the complexity of the work of real-world scientists.

”

**- Matinga Ragatz**

*Inventing Tomorrow Program Ambassador, National Teachers Hall of Fame member*

“

The Teacher Workshops and INVENTING TOMORROW learning resources provide teachers a springboard for getting their students to engage with important environmental issues through project-based learning.

I showed the clip of Sahithi and her water testing project. The crowd went nuts and was really inspired. This is a suburb of Detroit with a high population of people of Indian descent, so seeing someone who looked like many of the young scientists in the room was a very connective moment.

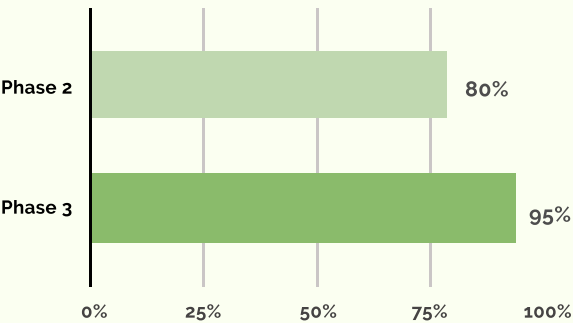
”

**- Gary G. Abud, Jr.**

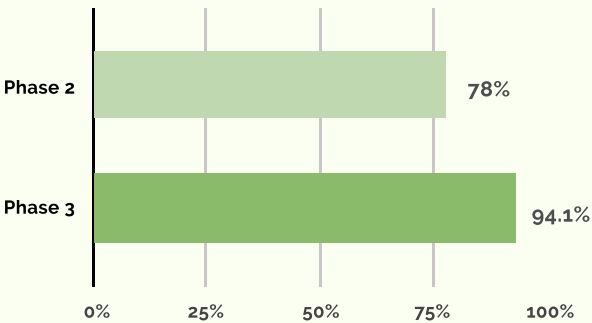
*Inventing Tomorrow Lead Program Ambassador, 2014 Michigan Teacher of the Year*

# ATTENDEE FEEDBACK

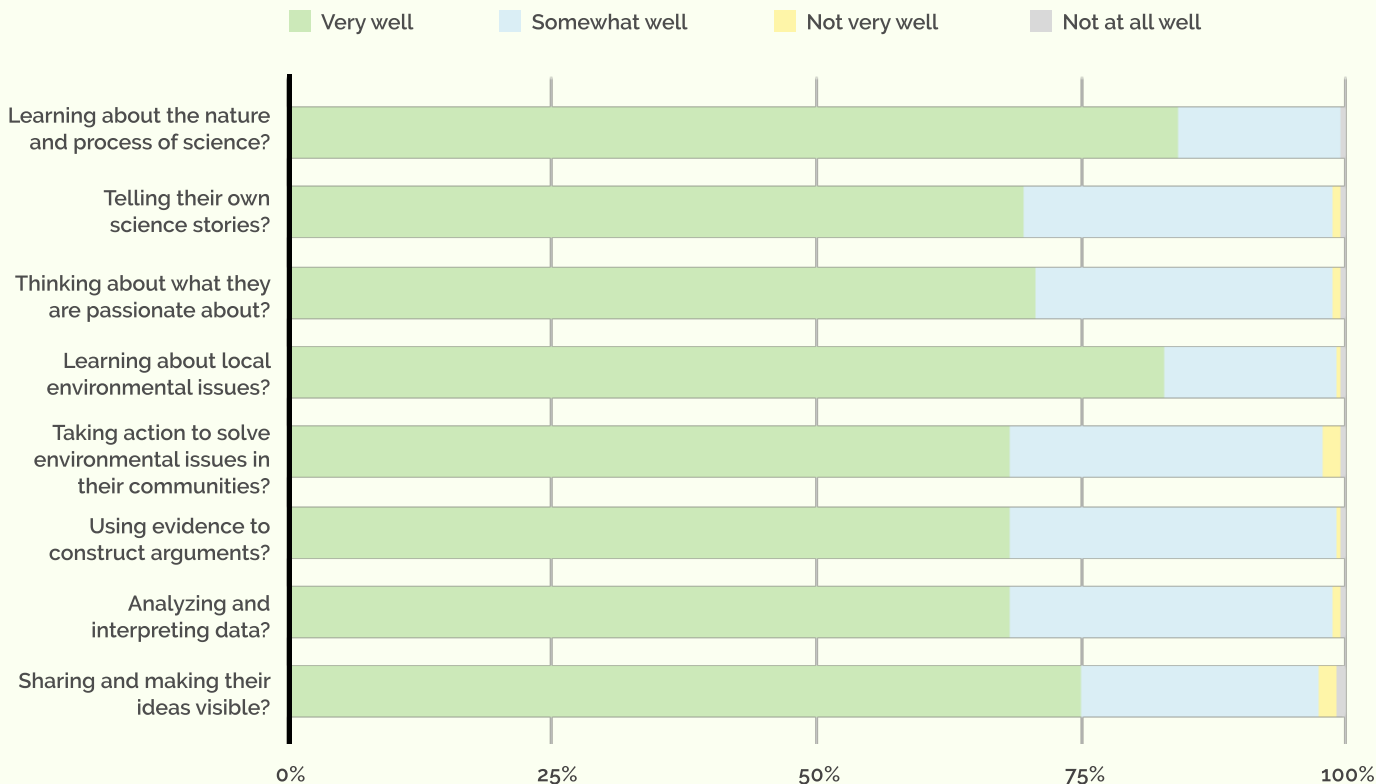
At the conclusion of our Phase 2 workshops, we evaluated the program so we could offer attendees an even more valuable experience in Phase 3. As we designed the Phase 3 workshops, we integrated feedback from past participants, Ambassadors, and PBS and education partners. In response to these adjustments, we saw an increase in attendees' satisfaction with both the training and the materials.



**Respondents "Agreed" or "Strongly Agreed"**  
the training was well defined, well presented, and had value



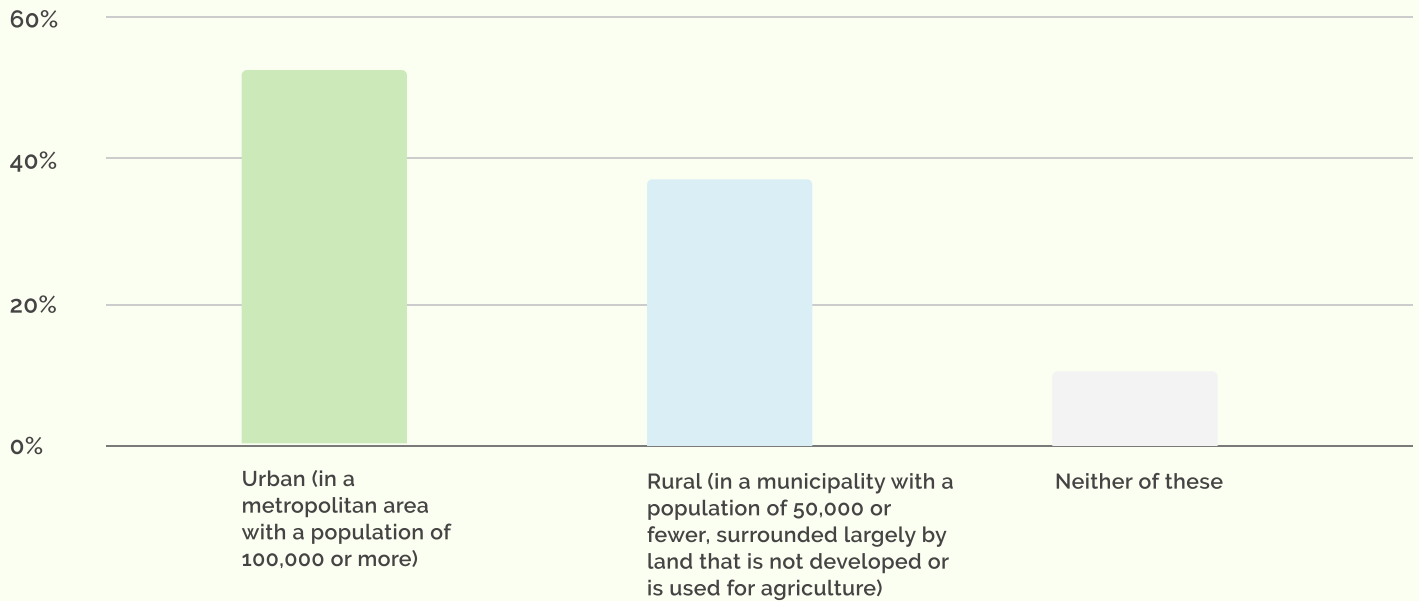
**Respondents "Agreed" or "Strongly Agreed"**  
the resources presented in the trainings were applicable to their curriculum, and planned to use them in their classrooms



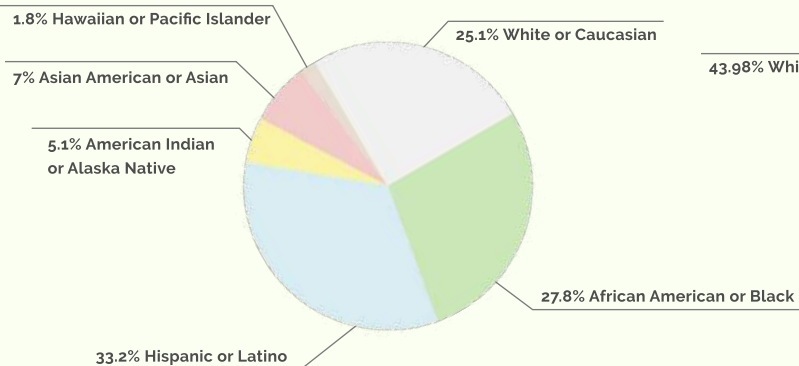
# WORKSHOP DEMOGRAPHICS

We designed the Teacher Workshops to reach our impact campaign's target audience, which includes educators and students from frontline communities, communities of color, and urban and rural settings. When we evaluated our Phase 3 post-workshop surveys, we were pleased to see we had succeeded in reaching communities that are more likely to experience the consequences of environmental degradation and have historically had limited access to STEM education resources.

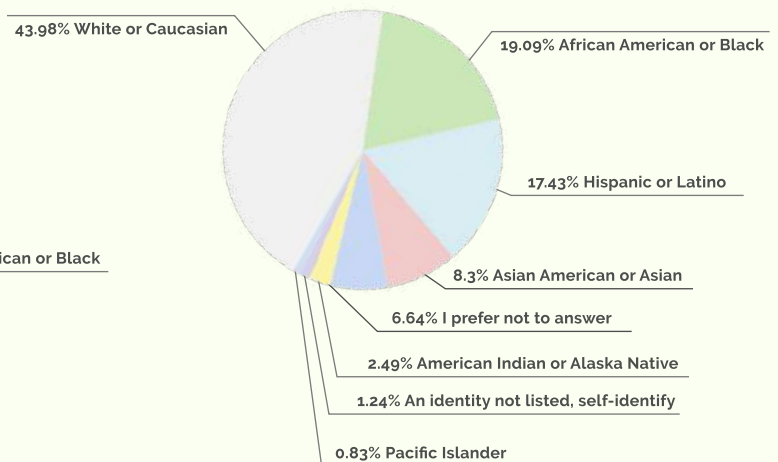
## SCHOOL SETTING



## STUDENT DEMOGRAPHICS



## ATTENDEE DEMOGRAPHICS



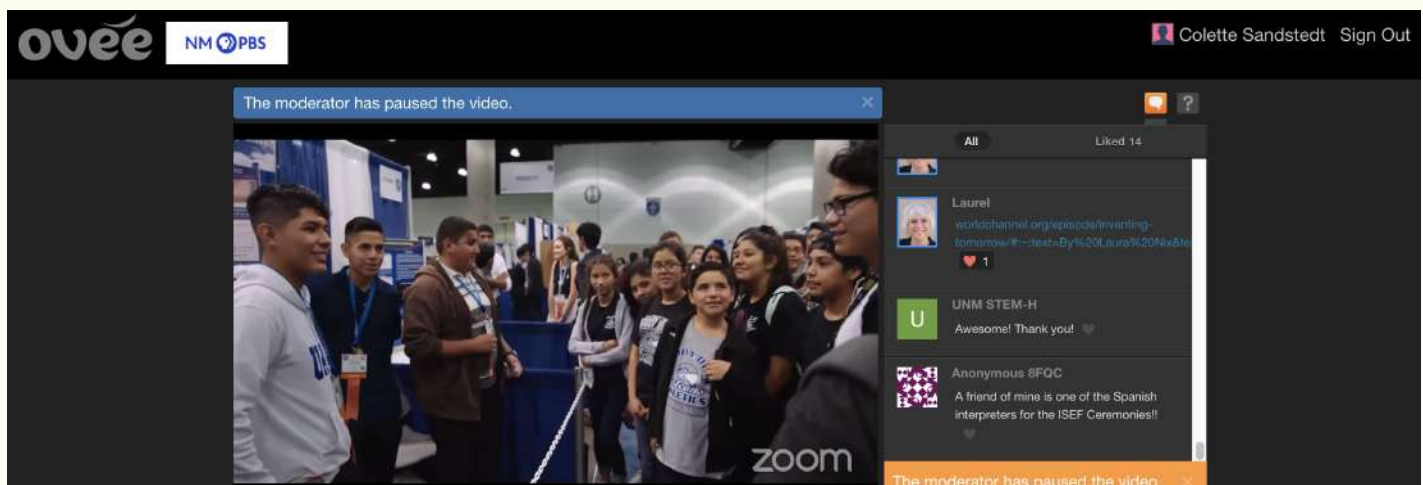


# REMOTE LEARNING

When the COVID-19 pandemic hit in 2020, we pivoted to Virtual Teacher Workshops when requested. We rapidly designed an online version of our workshop, which we piloted with small groups of teaching professionals. These early, more intimate webinars gave us the opportunity to refine our program for maximum impact in the new teaching and learning landscape.

We also designed the INVENTING TOMORROW curricular packages to take the guesswork out of lesson planning for teachers who wanted to embrace blended learning. We created Remote Learning Toolkits to help educators engage their students in group-worthy environmental science explorations. We were also able to offer teachers a streaming option for the 55-minute version of the film through our educational distributor GOOD DOCS.

Through these initiatives, educators of all experience levels learned new methods for getting students to work on air and water pollution problems in their local areas, and were introduced to new digital tools for online collaboration and learning.



“

I was most impressed with the video clips of students doing actual projects where they live to help improve things there. I think my students would benefit greatly from basing our learning standards around what THEY think needs to change in their local area ... The film was by FAR the highlight of the Town Hall. It has really changed how I plan to conduct my classes from now on.

”

**- David Burns**

*Public School Teacher, Mississippi Teacher Workshop*

## FREE DVDS TO CLASSROOMS

Through our Free DVDs to Classrooms program, **4,673 classrooms across the U.S. and Canada have received a free DVD** of the film, courtesy of HHMI Tangled Bank Studios. Teachers requested copies through our website, after our OVEE presentations, at screening events, or via outreach from our educational distributor GOOD DOCS. The DVD contains the 55-minute and 87-minute versions of the film, and can be used in conjunction with our Educational Toolkit.

Educators can order the DVD on the GOOD DOCS website, or via links on the PBS LearningMedia INVENTING TOMORROW Curriculum page and the INVENTING TOMORROW website. When COVID-19 hit, we were also able to offer a streaming option for the 55-minute version to complement remote learning.



“

We are extremely proud to be associated with this film and the accompanying outreach efforts. Congratulations to the incredible team of filmmakers, scientists, and educators who have come together to inspire the next generation about how science can heal and restore our natural world.

”

**- Sean B. Carroll**  
*Head of HHMI Tangled Bank Studios*

# EDUCATIONAL TOOLKITS

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Thousands of educators have received free Educational Toolkits with resources that bring the stories of *INVENTING TOMORROW* off the screen and into students' lives, wherever they live and learn. All resources are free for teachers.

During Phase 3, we listened to teacher feedback on the materials we introduced in Phase 1 and Phase 2, and created additional resources for the classroom. Developed in partnership with STEM educators, the tools below help teachers integrate concepts from the film into the classroom, and inspire students everywhere with hands-on STEM and STEAM learning.

## NEW RESOURCES – GRADES 7-10

### SHORT FILMS

Two new short films focusing on AIR and WATER, cut from the feature-length version of *INVENTING TOMORROW*

### LESSON PLANS

Two sets of lesson plans corresponding to the new short films, created in alignment with Next Generation Science Standards (NGSS)



**INVENTING TOMORROW** | LESSON PLANS

THE FUTURE IS BRIGHTER THAN YOU THINK

#InventingTomorrowPBS [inventingtomorrowmovie.com](http://inventingtomorrowmovie.com)



# EDUCATIONAL TOOLKITS

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## FEATURE LENGTH FILM RESOURCES – GRADES 6-12

### FREE DVDs TO CLASSROOMS

Free DVD with the 87- and 55-minute versions of INVENTING TOMORROW available for educators and non-profits based in the U.S. or Canada, thanks to a partnership with HHMI Tangled Bank Studios

### SCREENING GUIDE

For student use before and after watching INVENTING TOMORROW, to encourage critical thinking and help students connect stories in the film with their own lives

### CURRICULUM - FEATURE-LENGTH FILM

Developed in 2018 to accompany the feature-length film, four lesson plans on SOIL, AIR, OCEANS, and WATER that teach concepts featured in INVENTING TOMORROW, created in alignment with NGSS

## ADDITIONAL TEACHING RESOURCES – GRADES 6-12

### POV BEST PRACTICES TEACHING WEBINAR

Best practices webinar for using INVENTING TOMORROW and its Educational Toolkits in a high school teaching environment, created with POV and available online on the INVENTING TOMORROW and POV websites

### PBS LEARNINGMEDIA

The INVENTING TOMORROW Curriculum page on the PBS LearningMedia site, featuring the 2018 curriculum and corresponding film clips



## OVEE SCREENINGS & WEBINARS

We presented several live online screenings of the film and teaching webinars via OVEE (Online Viewing & Engagement Experience), a proprietary social screening platform created by ITVS and funded by the Corporation for Public Broadcasting. We invited teachers to attend by conducting outreach to educational partners, the National Science Teacher Association, and Society for Science.

These screenings and webinars, followed by live Q&As with director Laura Nix and educational experts, included **502 participants** from more than 1,000 RSVPs, most of them STEM educators.

In Phase 3, we held a special OVEE screening event and discussion on March 24, 2021 with New Mexico PBS. During Phase 2, the October 29, 2019 OVEE Teaching Webinar introduced educators to the film and accompanying educational materials, and debuted our Best Practices Teaching webinar, co-produced with our partner POV. The December 4, 2019 OVEE event, co-branded with PBS Education, featured a screening of the film followed by a panel discussion. Given the success of the first two events, and in response to the nationwide COVID-19 stay-at-home orders, we hosted two additional screenings on April 21, 2020 and June 11, 2020.

OVEE panelists included Blueshift Education curriculum designer Fran Sterling, POV Vice President of Impact and Engagement Strategy Asad Muhammad, POV Manager of Education Courtney Cook, Michele Glidden from Society for Science, UC Berkeley STEM educator Dr. Jessica Bean, INVENTING TOMORROW Ambassador Gary G. Abud, Jr., and film director Laura Nix.

March 24, 2021 OVEE

**66 attendees**

June 11, 2020 OVEE

**88 attendees**

April 21, 2020 OVEE

**277 attendees**

December 4, 2019 OVEE

**32 attendees**

October 29, 2019 OVEE

**39 attendees**

“

As a teacher who has "done" science fairs and still judging now virtually this spring, I have to admit I'm happily crying watching this!

”

- Janelle Roberts, OVEE Viewer

“

Extraordinary! Thank you for this touching film. You captured both the perseverance and intelligence of these students and their humanity.

”

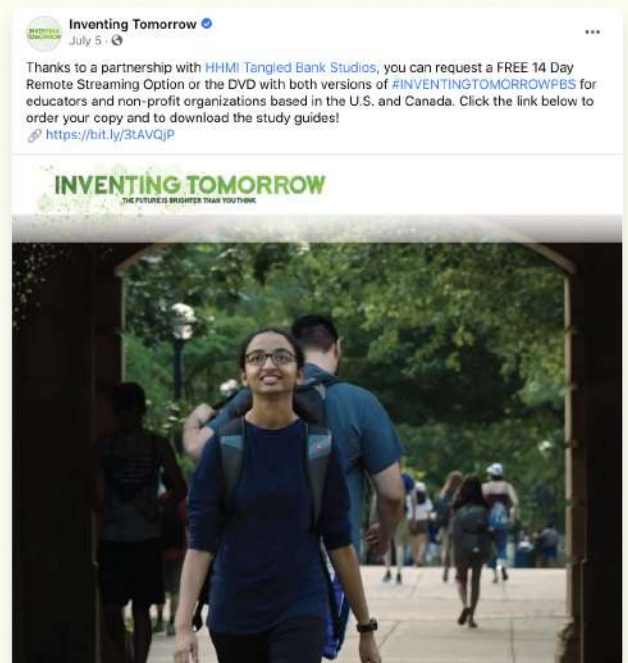
- Vineeta Ribeiro, OVEE Viewer



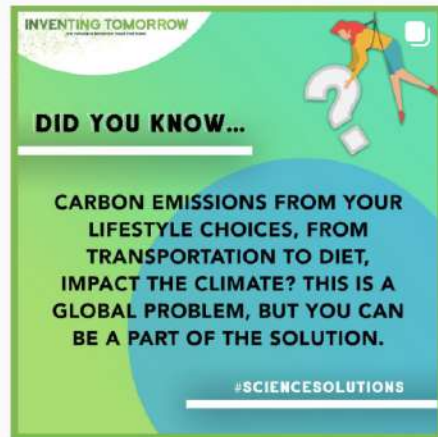
# SOCIAL MEDIA CAMPAIGN

It is critical that we move the conversation about climate change and other environmental challenges out of the realm of political and social opinion and replant it firmly within the arena of fact-based scientific evidence. We used social media to spark conversations about how the quality of human life is connected to environmental resources, how we know the world is changing, and how we can design evidence-based scientific solutions to create a sustainable future. Targeting educators, students, and citizen scientists on Facebook, Instagram, and Twitter, our social media campaign:

- ◆ **Garnered 18,222 followers on Facebook**
- ◆ **Achieved a post reach of 27 million+ for the film's hashtag #InventingTomorrowPBS**
- ◆ **Maintained reach of 250,000 a month and total post engagement of 25,000+**
- ◆ **Deployed social media advertising to support the efforts by our PBS affiliate partners**
- ◆ **Incorporated curated information, events, related activities, and high-quality media stories to educate, connect, and inspire students to work and think as young scientists**
- ◆ **Reached our target audiences with real-world examples of the effects of toxic pollution**
- ◆ **Amplified the efforts of those taking action to combat them**
- ◆ **Leveraged the INVENTING TOMORROW team, strategic partners, the film's subjects, Teacher Workshop Ambassadors, and PBS/POV**
- ◆ **Built on the audience we garnered from the PBS/POV and WORLD Channel broadcasts**
- ◆ **Supported our guiding concept "If you see it you can be it"**



# #SCIENCESOLUTIONS



In Phase 3, we amplified and extended our efforts with a new social media campaign entitled #ScienceSolutions, which promoted science-based conversations around climate change and environmental challenges. To do this, we created a new suite of original graphics that succeeded in:

- ◆ Promoting news literacy
- ◆ Discussing in basic terms the scientific evidence for environmental changes that harm ecosystems and human health
- ◆ Highlighting youth activism
- ◆ Sharing ways for young people to get involved in STEM
- ◆ Offering science-based activities that young people could undertake in their own backyards
- ◆ Spotlighting scientists and activists of color
- ◆ Focusing on environmental justice in communities of color and other communities on the frontline of the impacts of climate change



## WHO SAW THE FILM

- 2.5+ M** television viewers via PBS and WORLD Channel
- 300+** PBS stations covering 95% of American households
- 7** scheduled national broadcasts on PBS and WORLD Channel
- 50+** scheduled local broadcasts on PBS affiliate stations across the country
- 502** OVEE online screening & webinar participants

- 128** film festivals
- 30** states
- 63** countries

- 1,955** educators reached through 29 STEM events
- 4,673** classrooms that received free DVDs or streaming links
- 2,348** screening guides distributed
- 2,280** lesson plans distributed

- 575+** social media posts
- 27 M** social media impressions
- 18,000+** Facebook followers
- 500+** posts to the #InventingTomorrowPBS hashtag
- \$1.2 M** earned media coverage (as AVE) in 89 articles





## WHAT THE VIEWERS SAID

---

“

It was really interesting that these projects were made because each of the students had personal connections to the problems they were trying to solve. It made me feel hopeful that our future is in the hands of these students, who are not much older than I am and are so smart and thoughtful.

”

**- Galicia Lozano Stack**

*High school student, San Francisco, CA*

“

As a STEM educator, this is the film we've been waiting for ... a rich story with relatable characters, working at the intersection of youthful optimism, authentic science, and true globalism. My students are hungry for stories of real kids having real impacts, and this hits all the marks. The contrasting backgrounds and profiles of these incredible kids are so welcome to a classroom like mine in a city rich with immigrant culture. It is surprisingly difficult to find teaching resources that are aspirational, accessible, and grounded in science and technology.

”

**- Cora Carey**

*Robotics and STEM Specialist, Boston Public Schools*

## AWARDS & RECOGNITIONS

In 2020, **INVENTING TOMORROW** won the prestigious **Peabody Award for Documentary Film** (2019), chosen by a unanimous vote from a jury of industry leaders. We are proud the film's urgent message of youth leadership advocating for environmental sustainability has been recognized by this distinguished community.

“



For serving not only as a celebration of science, of the beauty of knowledge, of sheer ingenuity, but also as a celebration of the young people who are working to solve the problems gifted to them by prior generations *Inventing Tomorrow* wins a Peabody.

- Peabody Awards

”



Peabody Award for Documentary Film

Jason D. Mak Award for Social Justice, DisOrient Asian American Film Festival

Special Jury Selection, Jackson Wild Summit



Grand Jury Prize, Documentary Competition, Seattle Film Festival

Special Jury Prize Honorable Mention, Nashville Film Festival

Film of the Year, MōTif Film Festival

Green Spark Award, American Conservation Film Festival

Best Documentary Film, Ellensburg Film Festival

Student Jury Award, InScience International Science Film Festival

## SPECIAL SCREENINGS

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American Film Showcase Earth Day Global Watch Party - 2021

Carnegie Science Center - 2021

Regeneron International Science and Engineering Fair - 2020

American Film Showcase - 2018, 2019, 2020

National Science Teaching Association Conference on Science Education - 2019

Student Screening Day, Palm Springs International Film Festival - 2019

Intel International Science and Engineering Fair - 2018 & 2019

Southern Circuit Tour of Independent Filmmakers - 2018 & 2019

Smithsonian National Museum of Natural History - 2018

Association of Science and Technology Centers Annual Conference - 2018

Simons Foundation - 2018

Broadcom MASTERS - 2018

Hot Docs' Docs For Schools - 2018

SIFF Education - 2018

SFFILM Schools at the Festival - 2018

Media Impact Forum - 2018

Making Cents International presents Global Youth Economic Opportunities Summit - 2018

## NATIONAL SCIENCE TEACHING ASSOCIATION CONFERENCE

In 2019, the National Science Teaching Association (NSTA) held a special screening of *INVENTING TOMORROW* at their Conference on Science Education in St. Louis, MO. Attended by science educators and professionals, the conference offered a powerful opportunity to target key influencers with the film and our accompanying learning materials.

*INVENTING TOMORROW*'s participation in the conference, sponsored by HHMI Tangled Bank Studios, included a film screening for **over 1,000 science teachers**. The film was followed by a panel discussion, the rollout of our first free curriculum package, and the distribution of free DVDs for classroom use. Film subjects Nuha Anferesi, Jesús Martínez, José Elizalde, Fernando Sanchez, and Jared Goodwin's mentor Dr. Steve Lundblad participated in the post-screening panel, moderated by *INVENTING TOMORROW* director Laura Nix. The film, lesson plans, and DVDs we distributed reached and inspired an enthusiastic audience with the potential to impact thousands of students in STEM classrooms nationwide.





# AMERICAN FILM SHOWCASE (AFS)

## U.S. DEPARTMENT OF STATE

During 2018-2020, INVENTING TOMORROW was invited to participate in the prestigious American Film Showcase; the film, TV, and digital media diplomacy program of the U.S. Department of State. Its goal is to build cultural bridges by presenting American films that highlight shared challenges across international borders and supporting local storytelling capacity for increased self-representation.

In coordination with U.S. Embassies and Consulates, the film was screened in eight countries. Director Laura Nix, who has been a film expert for AFS since 2017, was invited to travel to select countries to screen the film, conduct workshops and presentations, and engage with local film festivals and audiences. Laura was joined by film subject Sahithi Pingali in Thailand and film subjects Nuha Anfaresi and Intan Utami in Indonesia.

With the advent of the global pandemic, AFS switched to virtual screenings, and Laura was invited to participate in several remote discussions and workshops. Through AFS, INVENTING TOMORROW was able to reach STEM educators and youth audiences across the globe with its inspiring message.

### AFS SCREENINGS

Colombia

Greece

Thailand

Indonesia

Montenegro

Nigeria

Kyrgyzstan

Mongolia



# AFS EARTH DAY GLOBAL WATCH PARTY

In celebration of Earth Day 2021, the American Film Showcase held a global virtual watch party with U.S. Embassies and Consulates worldwide, screening *INVENTING TOMORROW* for **2,134 viewers in 60 countries**. The film was introduced by U.S. Ambassador Marcia Bernicat, Acting Assistant Secretary of the Bureau of Oceans and International Environmental and Scientific Affairs.

Following the screening, *INVENTING TOMORROW* director Laura Nix moderated a virtual discussion with film subject Sahithi Pingali and former U.S. Chief Technology Officer and CEO of shift7 Megan Smith. Live discussions and activities were also held in countries including Morocco, Yemen, Barbados, and Indonesia.

***INVENTING TOMORROW* was translated and subtitled in Arabic, Chinese, English, French, German, Portuguese, Russian, and Spanish**, as was the conversation when it was presented to an audience of foreign nationals and cultural officers from the U.S. Department of State.

This unprecedented global event showcased how young people from around the world are putting forth solutions to today's environmental problems, leaving audiences worldwide with a sense of inspiration and hope.

## AFS EARTH DAY PARTICIPATING COUNTRIES

Argentina	China	Greece	Malaysia	Russia
Austria	Colombia	Grenada	Mexico	Saudi Arabia
Azerbaijan	Croatia	Haiti	Morocco	Slovakia
Bahrain	Cyprus	Hungary	Nigeria	Spain
Bangladesh	Czech Republic	India	North Macedonia	Ukraine
Barbados	Dominica	Indonesia	Norway	United Kingdom
Belarus	Ecuador	Israel	Oman	United States
Bolivia	Ethiopia	Japan	Palestine	Virgin Islands
Brazil	France	Jordan	Panama	Uzbekistan
Cambodia	Georgia	Kazakhstan	Portugal	Venezuela
Canada	Germany	Kuwait	Qatar	Vietnam
Chile	Ghana	Kyrgyzstan	Romania	Yemen

## U.S. BROADCASTS

### PBS POV BROADCAST



An impressive **2.2M viewers** tuned in to INVENTING TOMORROW's broadcast on PBS's flagship program POV on July 29, 2019; a very strong showing that reached a wide audience.

### INVENTING TOMORROW PBS POV AUDIENCE COMPOSITION

**55% female, 45% male**

**16% aged 18-49, 32% aged 50-64, and 51% aged 65-99**

**15% Black head of household (HOH), third highest of the season up to that point**

**4% Asian HOH**

**9% Hispanic HOH**

**48% of the audience HOH make less than \$45K/year**



### WORLD CHANNEL BROADCAST



Due to the success of the POV screening, INVENTING TOMORROW received an encore national broadcast on April 24, 2020 by PBS affiliate WGBH, whose syndicated WORLD Channel is carried in 71 markets reaching 66.5% of U.S. TV households. The success of this broadcast resulted in an additional airing on WORLD Channel in early Fall 2020 to coincide with back-to-school, followed by four additional broadcasts through 2021.

In total, INVENTING TOMORROW received **seven PBS and WORLD Channel scheduled national broadcasts**, plus 50+ scheduled local broadcasts on PBS affiliate stations across the country, airing on **300+ PBS stations covering 95% of American households**.



## STREAMING & INTERNATIONAL

Amazon Prime: Available for streaming as of August 19, 2019



PBS.org/POV: 14-day streaming window garnered 15,603 viewers July 30-Aug 12, 2019



## INTERNATIONAL TELEVISION BROADCAST SALES

Brazil

Norway

Australia

New Zealand

Canada

France

Thailand

China

Hong Kong



## SELECT FILM REVIEWS

---

See the [INVENTING TOMORROW](#) website for initial reviews of the film.

“

Laura Nix's documentary follows six high school students ramping up for competition in the Intel International Science and Engineering Fair. Each young whiz kid has proposed a solution to one of the world's environmental problems inspired by something they've witnessed in their own communities. Kids who believe in science? Yes, please.

”

- WIRED

“

Laura Nix's inspiring film, *Inventing Tomorrow*, is about a diverse quartet of high school students — from Indonesia, India, Mexico and Hawaii — who were among the competitors at Intel's International Science and Engineering Fair. All of their projects deal with trying to solve high impact pollution problems in their neighborhoods and make the viewer conscious, on a microcosmic level, how we are destroying the Earth, a little here, a little there.

”

- THRIVE GLOBAL

“

*Inventing Tomorrow* shows brilliant teen scientists trying to deal with climate change.

”

- NOW MAGAZINE

## SELECT FILM REVIEWS

---

See the [INVENTING TOMORROW](#) website for initial reviews of the film.

“

The competition is beside the point in Laura Nix's inspiring film because she's interested in showcasing a specific type of high school entrant: those who see an environmental threat in their backyard and are driven to fix it with science. [...] But by the end, as you dry your eyes, it's their futures you want them to win — as scientists, optimists and change agents — not just a science fair prize.

”

- LOS ANGELES TIMES

“

Laura Nix's new documentary *Inventing Tomorrow* is thrilling for how it depicts teenaged scientists from around the world refusing to surrender to hopelessness. Instead they identify environmental threats around their homes and set about trying to fix them.

”

- NPR

“

In *Inventing Tomorrow* directed by Laura Nix, the audience meets passionate teenage innovators who are creating cutting-edge solutions to confront the world's environmental threats.

”

- DAILY SABAH



## SELECT PRESS CLIPS

“

### Teen Vogue's 21 Under 21 2019: The Young People Changing the World

Sahithi began working to raise awareness about Bangalore's many polluted lakes — only to find there was little concrete data to support her activism. So she changed course and ultimately created a kit and app, WaterInsights, that allows citizens to collect water samples and crowdsource the data necessary to address pollution in freshwater bodies in India and around the globe. [...] Sahithi has already earned a top award at an international science fair, was profiled in the documentary *Inventing Tomorrow*, and had a minor planet in the Milky Way named after her.

”

- TEEN VOGUE

“

### Inventing Tomorrow' films young scientists tackling environmental issues

The film allows audiences to see the participants' viewpoint on the environment, the research process and the competition itself. It also shows how they coped with setbacks and moved on with their projects. It is heartwarming to see how eager the young participants were upon presenting their studies before the judges.

”

- THE JAKARTA POST

“

### The 18-Year-Old Scientist Helping Bangalore's Residents Save Its Water

The teenagers spearheaded innovative solutions to major environmental threats in their own backyards: air pollution in Monterrey, Mexico; ocean pollution caused by tin mining in Bangka, Indonesia; arsenic-contaminated soil caused by tsunamis in Hilo, Hawaii; and, in Pingali's case, toxic lake water. Each of them then traveled to the prestigious Intel International Science and Engineering Fair (ISEF) 2017 in Los Angeles, where they defended their research for 1,000 expert judges.

”

- MTV NEWS

## SELECT PRESS CLIPS

---

“

### [Transforming Our World through The Next Generation, Six Young Scientists Are INVENTING TOMORROW Premiering 7/29](#)

Being selected to compete [at ISEF] is a feat in itself, and these determined young scientists dream of placing in the competition. But the heart of this story isn't about who goes home with an award. As they take water samples from contaminated lakes, dig up the dirt in public parks, board illegal pirate mining ships, and test their experiments in a lab, we see each student display a tenacious curiosity, and a determination to build a better future. Motivated by the desire to protect their homes, these young people ask questions about the issues that threaten their communities, and propose innovative solutions to fix them.

”

- BROADWAY WORLD

“

### [This Young Scientist Created an App to Test Water for Pollutants](#)

Pingali is one of eight young scientists featured in *Inventing Tomorrow*, a documentary directed by Laura Nix that follows teen innovators developing solutions for environmental issues in their communities. [...] For those who want to solve problems in their own communities, Pingali urges “don't accept it,” and take small steps to enact change.

”

- NOW THIS NEWS

“

### [A New Film Called 'Inventing Tomorrow' Is Coming to PBS This Month](#)

The new film *Inventing Tomorrow* will bring us on the journeys of young scientists and inventors alike from all over the world as they seek to find solutions to the environmental issues that aim to destroy their future. Directed by Laura Nix, the Fishbowl Films production will feature six budding scientists from Hawaii, India, Indonesia and Mexico in their pursuit of a brighter future for our planet while they compete in the Intel International Science and Engineering Fair with thousands of other youth.

”

- GRUNGECAKE

## PARTNERS

---

\*Asterisk denotes funder

19340\*

BLUESHIFT EDUCATION

GLASSBREAKER FILMS\*

GOOD DOCS

HHMI | TANGLED BANK STUDIOS\*

HOT DOCS | DOCS FOR SCHOOLS

INTERNATIONAL DOCUMENTARY ASSOCIATION

LAGRALANE\*

MEDIA IMPACT FUNDERS

MOTTO PICTURES

SFFILM EDUCATION

SHARK ISLAND INSTITUTE\*

SHIFT7

SIFF EDUCATION

SIMONS FOUNDATION | SCIENCE SANDBOX\*

SOCIETY FOR SCIENCE

SUNDANCE INSTITUTE\*

SUSTAINABLE FILMS\*

THE KENDEDA FUND\*

THE REDFORD CENTER\*

UTAH FILM CENTER

WAVELENGTH PRODUCTIONS\*

## IN CLOSING

When we embarked upon the INVENTING TOMORROW impact campaign in 2018, we had clear goals in mind: to inspire students, reach new audiences, and catalyze action around the globe. As we complete our multi-year campaign, we are proud of our efforts to engage students, educators, parents, and other stakeholders in communities worldwide, and to put materials in their hands to support them in creating impact for years to come.

As our society collectively grapples with the urgency of the COVID-19 pandemic and the devastating effects of climate change, one thing has become clear: **STEM education and effective science communication have never been more vital.** During these unprecedented times, thousands of teachers have been grateful for access to lesson plans, multiple versions of the film, and educational materials they can use in their classrooms. Most of our free resources will remain available on the INVENTING TOMORROW website and via other outlets, to be used in classrooms worldwide long after the campaign ends.

**The INVENTING TOMORROW team is indebted to our campaign collaborators, funders, partners, and participants** for their extraordinary efforts and dedication to STEM learning. We remain committed to uplifting young people, celebrating their exceptional ability to tackle complex challenges, and supporting them with the tools they need to catalyze change in the world.

“

My students can relate to the backgrounds of these students. I could definitely encourage my students to reflect and make connections and relate their experiences to the students on the screen.

”

**- Dawn Lambert**

*WXXI Teacher Workshop attendee*

“

I like the videos showing how young people saw problems and found solutions and the fact that it was not an adult-driven initiative but rather a student-driven initiative. There is hope for our future!

”

**- Bonnie Dodge**

*KNME Teacher Workshop attendee*

“

I want to definitely incorporate some of the lessons early on in my research class to get them thinking about issues they could investigate... Really enjoyed being able to discuss with other teachers!

”

**- Karisa Boyer**

*The Meemic Foundation Teacher Workshop attendee*





FOR MORE INFORMATION, PLEASE CONTACT US AT:

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