SCIENCE TALK

What do Brené Brown and Greta Thunberg have in common? Both were featured on the TEDx stage by organizers in their local community. Volunteers produced and shaped their talks, and felt these individuals had an important message to share with the world.

These local organizers received no money, no glory, and no visibility. Yet, because of them, Brown and Thunberg are the convening voices of movements that define our current times.

The TEDx community is a world-wide community of change-makers who put in countless hours, focused determination, and exceptional teamwork.

Our work in this domain is focused toward removing the veil between the public and science – creating strong partnerships for change in a critical time for society, the planet, and science itself.

Air. Fire. Water. Earth.

We are facing alarming rates of change in our planetary ecosystems. Science is a key player.

Because of this, we feel it is important to share what scientists are thinking about.

On October 24th, 2020, we hosted a TEDCountdown event, sharing four original TEDx talks with a live audience in an interactive half-day virtual experience.

When TED took a key stand against the climate crisis, and invited NGOs to be part of TEDCountdown, ReImagine Science became eligible for a TEDx license under our own name (for the first time), and Richard Stafford, co-founder and President of the board, was granted the license for TEDxReImagineScience. Our event was one of more than

Richard Stafford, president of the board, ReImagine Science

600 TEDx Countdown events that took place around the world as part of a global movement to find ways to shift more rapidly to a world with net zero greenhouse emissions and tackle the climate crisis.

Gabe Lee

TED, the parent nonprofit organization, is devoted to Ideas Worth Spreading, usually in the form of short, powerful talks (18 minutes or fewer) delivered by today's leading thinkers and doers. Many of these talks are given at TED's annual conference (usually in Vancouver, British Columbia), and made available, free, on TED.com. In the same spirit of ideas worth spreading, TED provides guidance, rules and regulations for TEDx organizers to create independent, self-organized events that bring people together to share a TED-like experience. These events are branded TEDx, where x indicates that it is an independently organized TED event.

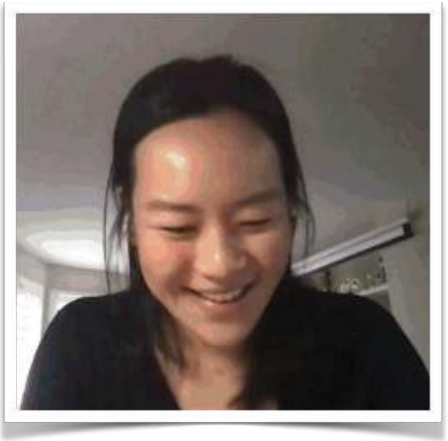
Our history with TEDx

Polina Popova

ReImagine Science believes there is tremendous potential for giving visibility to emergent phenomena via self-hosted TEDx events. The grassroots nature in sharing aspirational visions and new approaches supports top-down/bottom-up systemic change is a good match for our philosophy of change (anyone can apply for a license to create a TEDx).

We feel science needs this stage. For one, science is the antennae that monitors, measures and assesses habitat, ecosystems, and species change. It's the place new knowledge is generated with discoveries that support technology and new invention.

But technological advances, particularly beginning with the industrial age, are the source of unintended consequences that bring negative impacts to the earth's ecosystems.



Isabel Lee

So, science can be imagined as both source and monitor. Creator, through knowledge, of powerful tools and processes that create both desirable and unforeseen outcomes, and source of ever clearer understanding of impacts. And, a potent source of innovation and new advances to shift yet again, in search of ways to rebalance our planet and ourselves.

The original talks we brought to the (virtual) stage – 'air, fire, water, earth' - were given by friends (old and new). They spoke of HFCs, fire ecology and wildfire mitigation (the talk was recorded in an ash-covered forest near Santa Cruz, which was burned during the CZU-complex fire in California), the health of corals and reefs, and energy mini-grids to create locally based, locally used energy. We note that HFCs, or Hydrofluorocarbon refrigerants, were named the #1 issue for climate change mitigation in the seminal book Drawdown, and are the

focus of the Kigali Amendment. Following the Covid-19 based safety measures used for TED talks in 2020, our speakers recorded their talks in outdoor locations, with only one or two other people present to help with the recording equipment.

Designing the event was an opportunity for co-designer Brinda Dalal to reconvene the ReImagine Science club from Dougherty High School – now Sophomores in college – as co-producers and hosts for the event. The event also featured original poetry read by young student-creators, who are part of the Pseads program we champion, sharing their work using science, story, design and poetry to explore what it means to be a human being.

The opening welcome, from 'The Art of Hosting,' was extended by Polina Popova (recorded here).

Our event space on Qiqochat featured a bookstore, jewelry shop, meditation room, and two virtual coffee shops to meet up and chat with other attendees. The jewelry shop was hosted by Maile Urbancic, founder of Boutique Academe, a PhD scientist herself that began making math & science based jewelry in 2010 as her way to fight against stereotype threat and the subtle bias that suggests that math is for boys.

During the live event, we were able to share beautiful musical performances from Will Ackerman's 'The Gathering' and the mountain dulcimer community under Neal Hellman's 'Gourd Music' label, through our friendship with Ned Hearn, who provides legal counsel to artists (including Will and Neal) and was able to obtain all necessary rights to share.

Staying true to our vision for exploration and immersive events, participants mapped themselves onto Berkana Institute's two-loops model of systemic change processes. You can have a go at it yourself: after laying two 5-6 foot arcs on the floor (using painters tape, rope, or twine), print out the individual roles in this pdf, cut into separate rectangles and place according to this model, and follow along with Anamaria's guidance in this recording.

Educating for Careers

Last year, as part of our explorations in the K-12 education space, we began collaborating with David Militzer of the California Department of Education to create presentations and interactive workshops. David has worked on state-wide initiatives in whole person, whole child, student-centered models, integration of social/emotional learning, as well as career technical education reform for the California Department of Education.

In 2020 Kennan Salinero and David Militzer gave an interactive presentation at the 'Educating for Careers' conference in Long Beach California entitled 'Design Considerations for Student-Centered Career Education for All,' using improv techniques to get into the worlds of both educator and student.

After the Covid-19 outbreak, David believes education became a white-water world. In 2021 we revisited the Educating for Careers community with new urgency, asking how a system under such intense stressors can evolve appropriate to the needs of the time. ReImagine Science's work as a u.lab hub gave us an avenue of approach, as TheoryU is a model for change in complex systems undergoing radical change.

This year, we partnered with educator Deborah Hale, allowing the three of us, together, to explore how the TheoryU lens can align with her real-world experience.

We have created a 10 minute mash-up of the presentation (the original is 35 minutes) to bring together the TheoryU portions of our talk in 'Connecting the Dots.'

Unfinished Business

Though we spoke of identifying and removing obstacles as part of our offering, theory alone is not sufficient, we feel. The 'u' processes, which include empathy walks, stakeholder interviews, 3D mapping of the system, and Social Presencing Theater, requires experiential participation – participation that allows a group of diverse stakeholders to discover deeper commitments, and novel experiments to explore how obstacles can fall away as new openings for action emerge.

The Three P's Podcast

These podcasts are based on the intro session given at the March 2020 Connected Learning Journey retreat, by Kennan Salinero (you can also watch the video versions for Potential, Popcorn and ReParenting on Vimeo).

Can we harness collective momentum for change (when it disappears)?

Principal founder of ReImagine Science KennanSalinero considers the many highly dynamic programs that have come and gone in the landscape of Science, exploring new ways of 'doing' science. The Carnegie Initiative on the Doctorate, NSF's GK-12 and IGERT programs*, ELISS, and NAFKI are programs that were built, built up, then sunsetted. What has been learned from these incisive and broad-reaching experiments? How can that learning move as effectively as possible into our future of science? How are the lessons learned informing the present, and future, of science?

The Popcorn Popper: When did we run out of time in science?

Academe seems to give the work of three people to assistant professors, to then watch them sink or swim. Why not give the work of three people to three people, and make sure they can succeed? Being in academic research science is like being in a popcorn popper, popping around trying to keep up with yourself. Worse yet, those who 'pop out' seem to land far away from the pressure cooker of the university and the world of basic research, so

there is no effective interface for feedback, continuing interaction, or change. Without feedback loops between the target recipients of scientific work (in particular, the public) and the work being done on their behalf, how robust are the results? In this podcast, Dr. Salinero asks about the moral underpinnings of why we would keep such a system alive.

Re-Parenting: What is the history that birthed modern-day science, and the society within which it exists?

Americans, and much of the rest of the world, live from the narrative of a nation born on ideals of life, liberty and the pursuit of happiness. Yet current re-examinations of collective and individual histories, generational and race-based trauma, and embedded inequities have given momentum to birthing new justice in an act of Re-Parenting the United States. In science, with its own arcs of history, what would a re-birth look like? What is the innate value-system of science? To paraphrase Nicholas Maxwell: "A value-less science is a dangerous science."

* These NSF programs were featured in our 2010 and 2012 Science UnSummits.

Visualizing the cultural landscape of scientific research

Students who get hands-on experience with lab research and have scientific role models who look like them are more likely to consider science careers for themselves. For example, research shows that gendered stereotypes about who can succeed as a scientist or engineer directly impact student career exploration. It makes sense, then, that when girls engaged in learning experiences with a female science, technology, engineering or math role model, a 2020 study by Spanish researchers found that the girls' interest in STEM studies and careers increased.

Look around at the leaders of today's research communities and you will find that white men are still overrepresented, particularly at the management level; hence the demographics of current STEM professionals are likely an inherent barrier that perpetuates and reinforces preconceived notions about what scientists and engineers look like.

To help break this barrier, Ken Hallenbeck of ReImagine Science has been developing a digital game in a laboratory setting. In a virtual world, the broader scientific world we hope for in the future can be experienced *now*. Students and other young people can see themselves as a scientist through their player characters and explore a laboratory setting that might be out of their real-world reach.

Ken Hallenbeck, a ReImagine Science Board member, gave an oral presentation at Experimental Biology 2021 about this project at the end of April 2021. Ken dreamed up Research Rush when coronavirus stay-at-home orders went into effect.

"One day I was doing full-time lab work and the next I was sitting at home passing the time with my main hobby: video games. I was struck by how the similar the progression at the core of video games was to my

now-on-pause lab experiments. Soon I was downloading game development software and digging into coding tutorials."

The project aims to build a fun virtual lab, but the vision is to change the cultural landscape of scientific research, one player at a time. Interested readers can watch a concept trailer showcasing the lab gameplay or even play a tiny bit of a prototype in your browser right now by visiting Ken's website and subscribing to updates.

With a prototype built, ReImagine Science is looking to add the right voices to the conversation about how the final game should play. By leveraging ReImagine Science's network of science students and educators to engage in the next stages of Research Rush development, we envision game-based, bottom-up impact on the lopsided demographics of today's research communities. If this is something you're excited about, reach out!

You can watch a video of the full talk on YouTube.

Let's Talk!

Thank you for reading our Spring Newsletter! Reach out to us if you'd like more information on any of our programs and initiatives.

Email Kennan Salinero at kennan@reimaginescience.org.