

#### **AMNH**

The American Museum of Natural History is one of the world's preeminent scientific and cultural institutions. Its global mission is to discover, interpret, and disseminate information about human cultures, the natural world, and the universe through a wideranging program of scientific research, education, and exhibition. Through this work, the Museum addresses the most pressing challenges of our day, including the impact of climate change.

### UN Headquarters and Summit of the Future

Held at the UN Headquarters in NYC, The Summit of the Future (20–23 September 2024) brings world leaders together to forge a new international consensus on how we deliver a better present and safeguard the future.

#### Climate Week NYC

Climate Week NYC (22–29 September 2024) is the largest annual climate event of its kind, bringing together over 600 events and activities across the City of New York – in person, hybrid and online.

Hosted by Climate Group, The Hub Live convenes global leaders to delve deep into the action and innovation that are needed to speed up climate action, ignite progress and accelerate action.

This year, in partnership with Wellcome, a new health theme is launched and CANOPY, a citizen art and science festival, brings health to the heart of climate action.

#### Governors Island

Governors Island is a popular and unique destination with an award-winning park complemented by dozens of historic buildings, year-round educational and cultural facilities, and a rich arts and culture program. It is also home to New York Climate Exchange, a first-of-its-kind, cross-sector non-profit organisation dedicated to climate research, solution development, education, workforce training, and public programs.

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CANOPY,
Wellcome's
citizen art and
science festival,
bringing health
to the heart of
Climate Week NYC

CANOPY: a tent or tree cover; a place of exchange, of shade, and of shelter, and, on our heating planet, important for protecting life. It's also our broad and encompassing call to work together towards the collective health of humans and the planet in a changing climate.

Our planet is warming. 2024 is on track to being Earth's hottest year on record and there is scientific consensus that this changing climate is putting human lives in danger. We can put science to work in helping us move towards a healthier future for all, but science alone won't do it. We need to be connecting with people not only through facts, but in emotional and relevant ways if we are going to change climate policy at the massive scale necessary to protect human and planetary health. Wellcome is working with researchers and others to support the climate and health field to embed health research into climate policy. Health is personal, and we all understand the importance of good health. That's where the cultural work comes in, creating experiences that make meaningful and personal connections between climate and health.

Cultural work creates opportunities for sharing different perspectives on climate and health across science, policy, and art. Cultural work is about valuing different kinds of expertise – especially locally grounded knowledge – for not only story-telling but also story-listening. Cultural work bridges worlds, builds trust, and forges unlikely alliances. It provides opportunities for creativity, collaboration, and participation as we radically re-imagine what is possible when we strengthen the social glue that binds us through reciprocity and care.

There is so much we can do to protect each other and the future of our planet, but we need cultural change and political will to make it happen. Change is possible, and we all have a role to play. We can build cross-sector partnerships that urgently and imaginatively address the climate crisis, moving towards a healthier future for all. We can create space for exchanges that broaden perspectives, illuminate possibilities, and remind us of our interconnectedness and interdependence.

CANOPY is Wellcome's citizen art, science and policy festival and a cross-sector collaborative network launching for Climate Week NYC's first ever health theme, in September 2024. CANOPY addresses the need for joyful cultural work to shift attitudes and policies when it comes to climate and health. CANOPY's aim is to democratize public conversations about climate through the lens of health, and create a large, open and inclusive atmosphere where everyone is welcome to have a say. It celebrates equitable approaches to adaptation and mitigation.

In developing this programme, we have worked with an extraordinary group of researchers, artists, policymakers, designers, youth leaders and advocates who are leading the way with their generosity, humility, and determination. They are seeking to better understand the health impacts of climate change, advocating for a health perspective in climate change conversations, developing evidence-based solutions to protect health, and building and nurturing international collaboration.

We have also had the pleasure and privilege of working closely with CANOPY's writer-in-residence, Priya Basil and, in collaboration with her – for this publication and to mark the first time that health has been a theme at Climate Week NYC – have assembled conversations with some of those that have informed and inspired us along the way.

The following question animates this publication, and our collective work:

"As climate change reshapes our lives, what stories of transformation and dreams of a healthier future do you carry with you?"

Whether you're reading this in New York in September 2024 and able to join CANOPY events or reading it further down the line, we hope you'll feel the same sense of gratitude that we do for the life-enhancing work that they are involved in and that you might also feel inspired to find your own way of changing our world for the better.

CANOPY team: Anthea Longo,
 Danielle Olsen, Rebecca Jacobs



# At the American Museum of Natural History



#### **Exhibition**

### Portraits on Climate and Health: Dreams We Carry

On display from September 23rd at the American Museum of Natural History in the Ellen V. Futter Gallery, the Richard Gilder Center for Science, Education, and Innovation, and online.

Capturing the portraits and voices of people all over the world, from scientific researchers, policy makers, students, Indigenous Land Stewards, and museum visitors, this Inside Out Action and exhibition organized by AMNH and Wellcome asks people to share their stories and dreams of a healthier future in the face of climate change.

The Inside Out Project is a global art platform created by French artist JR that helps communities around the world stand up for what they believe in and spark global change by taking local action. Since the Project's creation in 2011, over 560,000 people have participated in 152 countries and territories.

#### **Panel**

### In Conversation with Sean Decatur: Healthier Futures in a Changing Climate

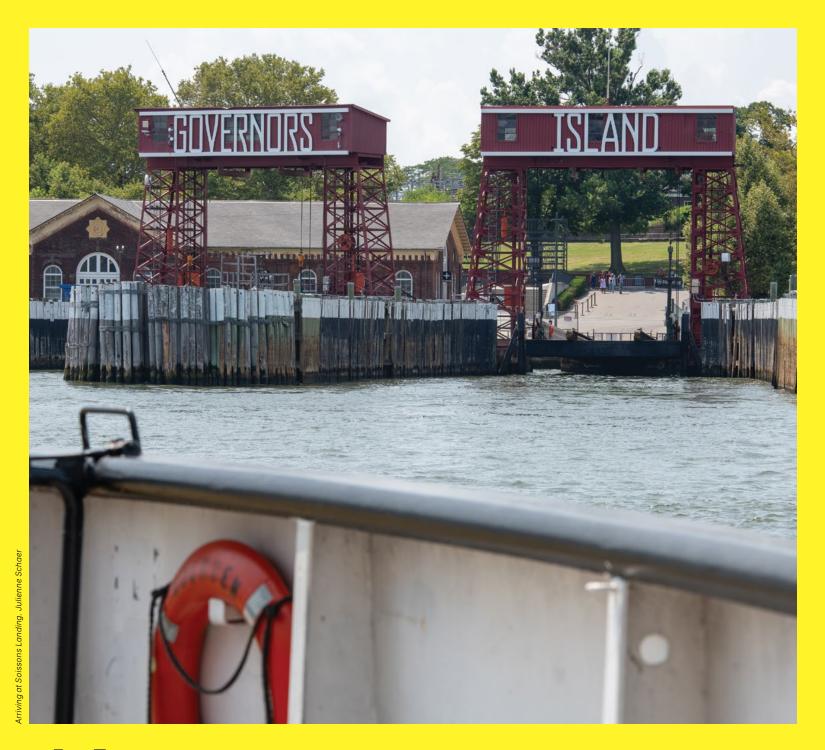
Wednesday, September 25th, 7pm, American Museum of Natural History, Richard Gilder Center

Climate action rooted in science empowers us to create a resilient future, where cultural strategies and policy change transform challenges into opportunities for a healthier and more equitable world.

Join us this Climate Week for a conversation that will explore innovative perspectives and approaches that help us live as part of natural ecosystems, and address the pressing global challenge of climate change on health.

Museum President Sean Decatur will moderate this conversation, investigating the pivotal roles of scientific research, policy initiatives, and cultural strategies in creating actionable solutions that aim to create a more sustainable and healthier future for all.

Panelists: Dave A. Chokshi (expert in public health, policy, and health equity), Jainey K. Bavishi (assistant secretary of commerce for oceans and atmosphere and deputy NOAA administrator), Priya Basil (CANOPY writer-in-residence), Tolullah Oni (Urban Better/ University of Cambridge).



## At Governors Island



#### Walkshop

What Makes a Healthy City?:
An Environmental Walkshop with
Melting Metropolis and CUNY
Community Sensor Lab

Saturday, September 21st, 11am and 2pm, Governors Island

Led by Melting Metropolis' historians Daniel Cumming and Kara Schlichting and CUNY's Community Sensor Lab's Kendra Krueger, a playful, embodied, mark-making experience that explores our sensory experience of summer in the city. Discover how, why, when and where heat moves through the city, how our bodies are impacted by it, and how this is tracked and engaged with by the scientific and local community.

Please note that this is an outdoor activity suitable for 14yrs+ who are comfortable walking/standing for up to 1 hour at a time. Walkshop starts at the Soisson's Arch, Governors Island ferry landing.

#### **Panel**

Outside the Climate Bubble: Democratizing Conversations through the Lens of Health

Thursday, September 26th, 6:30-8:30pm, Our Lady Star of the Sea Church, Governors Island

A short film screening, music, and discussion on how to democratize conversations about climate through the lens of health, bridging divides across communities and bringing together arts, policy, and research.

This event will feature youth leaders from Place4Hope, an online programme driven by a global community of young leaders who come together to co-create art works that address the urgent themes of planetary health and climate justice.

Moderator: Rebecca Hayes Jacobs (CUNY)

Co-hosted by the New York Climate Exchange

Panelists: Aish Machani (Global Citizens' Assembly Network), Kimberly Ong (National Resources Defense Council), Leyla Hasanova (Youth Climate Champion for COP29 Azerbaijan) and Micaela Martinez (We Act for Environmental Justice).



# The oldest tree in the world



by Priya Basil, CANOPY writer-in-residence

"If a tree is a book, then the rings are only the cover," said environmental scientist Jonathan Barichivich.

We were in the Alerce Costero Forest in southern Chile where Gran Abuelo, a five-thousand year old cypress tree, lives. The oldest in the world? "The exact age doesn't matter," Jonathan said, "what counts is the message."

The forest seems to grow; thickening, thrumming the deeper you go. The canopy becomes dense, a confederacy of light, shadow. Every kind of green. Artichoke. Moss. Emerald. Wind moves through like an ocean, waves arriving, carrying a ceaseless surf of scents: nutty whiffs, floral flurries, fungal breath. The air is a song, composed by birds whose calls chant their own names – chucao, huet-huet. I was awed, my steps clumsy over the braille of roots sprawling stories my soles had not learned to read. I was headed towards Gran Abuelo.

With ancient trees as his guides, Jonathan is collecting data on how they live-thrive-survive together. This could help others endure through present and future climate crises. If the rings were only the cover, what was Jonathan's method for reading the rest? "Conceptually," he said. "The technology I bring is another form of perception."

His family had lived for generations on a small plot within the Alerce Costero National Park: his grandfather had been a forest ranger, as had his mother, Nancy. "I grew up here," Jonathan said. "I knew the names of all the trees around me before I learned to read. The alerce are wise ancestors. I am using science to spread their knowledge."

Jonathan knew something more and more scientists are realizing. "Understanding plants will unlock a new horizon of understanding for humans: that we share our planet with and owe our lives to a form of life cunning in its own right," as science writer Zoë Schlanger notes in *The Light Eaters*. When I stood with Jonathan beneath an alerce, he touched its trunk and said, "I am made of the same material." You need a whole lifetime in a place to have that kind of connection, I thought wistfully, oblivious that every organ in my body was built with sugar from plants, every breath I took a tandem with their respiration.

Logging became illegal in Chile in 1976, but is ongoing. The land where Jonathan's family live is coveted by developers. When I visited in 2023, they had just survived a violent attempted eviction based on false claims. Nancy told me that when the police arrived, Jonathan and his brother went out, while she positioned herself by a window with the canister of gas she used for cooking. She heard the police attack her sons, and began to shout: if they didn't stop, she would light a match. The police left. "I have had no peace since this started," Nancy said. I wondered if it might be better for her health to leave. She shook her head, "For me, being well means taking care of the land."

"If you love the land, you will do anything to protect it," says botanist Diana Beresford-Kroeger. Her first piece of advice to anybody wanting to protect Earth is "deepen your love". How? "Go wandering... Take time to look at different trees." Simple. But difficult for those without access to such space, those unused to embodied forms of knowing, those fearful of loving.

My own encounters with Gran Abuelo held wonder, and estrangement. When I arrived at the tree, I was confounded. I wished I had a ritual to perform. I was compelled to lie down, and each time I fell asleep. A short slumber in which my mind filled with green. Asparagus. Fern. Sage. Perhaps it was only in this state that I could truly meet the tree. Awake I was too busy reasoning, stuck in Western cosmology. I had not yet understood what Jonathan and Nancy embody, as many others across all temporalities: I was nature. Nature was me, was everyone.

The diametric opposition of humans and nature still dominant in Western cosmology, is described by Rupa Marya and Raj Patel, in their book *Inflamed*– Deep Medicine and Anatomy of Injustice, as a "psychic technology" crucial to justifying colonial

capitalism. How much longer can the dichotomy hold? On our planet the temperature is rising, in our bodies inflammation is spreading. Marya and Patel say, "The study of ecology is becoming indispensable to the study of medicine because humans are not just a single animal, but a multitude, an ecology of beings living on us, in us, and around us."

For a week, I was pulled each day to Gran Abuelo, as if to a lover. Was the love requited? If the tree spoke in my dreams I recalled nothing on awaking. Back home in Berlin I noticed the trees in my neighbourhood with fresh attention; I learned to recognize linden, maple, oak. Slowly, I got the message, flickering in all shades of green: love every tree as if it were the oldest in the world.



"As climate change reshapes our lives, what dreams of a healthier future do you carry with you?"



## Promises are meaningless

with Rebecca Jacobs, New York cultural lead for CANOPY from The Graduate Center, CUNY, and Adam Lake from Climate Group, organizers of Climate Week NYC



Priya: What is Climate Week NYC?

Adam: Climate Week NYC is the largest climate event of its kind in the world. There are six hundred events. Cultural events are an essential part of that. For me, the key word is storytelling. Whether it's through film, music, photography or late-night TV shows. These are powerful tools that help people connect. When a lot of people come together over one issue they have to be taken seriously. Climate Week NYC is a really interesting exercise in how all sorts of different people can have power to influence the most critical decision makers in the world. We bring together civil society, culture, politics, industry and corporate worlds. Storytelling is the golden thread that links these groups.

Rebecca: Storytelling is an important through line for me as well. Specifically storytelling about what sustainability is and how we define it. What's been transformative over the past few decades is a mainstreaming of certain stories. Marginalized communities have been sharing their stories for years and years, but have not been listened to or had policies implemented that reflect the lessons learned from these stories until recently. The environmental and social justice movements have helped amplify some of those. They help us see how multiple harms intersect in certain places, communities and bodies, with Black, brown and Indigenous people especially affected.

**Priya:** So then sustainability becomes about more than decarbonization, it's also about restoring land and rights, it requires many forms of reparation and regeneration.

Rebecca: And also participation. A lot of the work of CANOPY is about making democratic spaces for social connections, knowledge exchange, trust building and collective imagining to grow. We are in a moment of massive mistrust in institutions, in politics, in science, in each other. How can we create coalitions among people who might not necessarily think they have something in common, but do? I'm a fan of the Environmental Voter Project. It's an organization in the US trying to activate voters around environmental issues. It recognizes there are a lot of people who are not consistent voters, but care a lot about the environment. It's counterintuitive, but holds such potential for transformation. There's something similar in Wellcome's move to centre health as a way of responding to climate crisis. Health matters to everyone, and we have an obligation to take care of everyone's health in a changing climate.

**Adam:** I've noticed the conversation shifting from two degrees of global warming by 2050 to the health

impacts on society today, tomorrow, next year. This is really resonating with people. Focusing on physical and mental health is an important way of helping people see that they have a very personal stake in this issue too. Through working with Wellcome Trust we're bringing in health as the first new theme at Climate Week NYC for a number of years. We believe Climate and Health together can mobilize people from all sectors.

Priya: Seems transformation is already happening?

Adam: Transformation is about who has power to change the world for the better. With climate change, which is influenced by the global economy and global politics, it's easy to have feelings of utter powerlessness, based on race, gender, class. I'm interested in how people can have a sense of power. What I find very exciting is how people working together over time, doing small campaigns in specific areas, create movements, and use their power to make changes.

**Priya:** Bringing people together, creating networks of collective action is a core part of what Climate Group does. Is anyone welcome to join in?

Adam: Our mission is reaching net zero carbon emissions by 2050. We get to choose who we work with. We do turn away organizations, but take a nuanced approach because it's about bringing as many people into this space of change as fast as possible. If companies are genuinely interested in doing the right thing, we try to support that. Promises are meaningless. We don't count them as climate action. What we do through our various initiatives such as RE100, the global corporate renewable energy initiative, is work with a company to set a specific, measurable goal, then regularly assess them.

**Priya:** What cultural treasure do you hope will still be around in a hundred years?

Rebecca: Prospect Park in Brooklyn. I feel like I'm in heaven on earth when I see people there on a beautiful day. It's an example of society working well when you have a much-used, beloved public park. I hope as soon as possible, and also in one hundred years, that Prospect Park has at least one Olympic size pool and more water play available. My dreams are always about pools everywhere. A future of lots of free public places to swim.

**Adam:** Monopoly. I grew up in a household where we played Monopoly every week from a young age. It's a board game that teaches you about power dynamics. It's a wonderful apprenticeship in how to negotiate and deal with other people.



# The best of humanity



with Alice Bell, Head of Policy – Climate and Health at Wellcome

**Priya:** As climate change reshapes our lives, what dreams of a healthier future do you carry with you?

Alice: In many respects, my dreams are quite old ones. Often, adding health perspectives to climate discussions is just another reminder of all the work countries agreed to do on climate back in the early 1990s: stop more warming from happening and protect people from the warming we've got. On the other side, bringing climate to health tends to underline the urgency of all the promises made with the establishment of the W.H.O. in the late 1940s, like universal health coverage. It's important to remember

that these old dreams are not only still needed in an era of environmental crisis, but still possible. We can still have those healthy futures that previous generations dreamed about.

**Priya:** It's good to be reminded that we don't always have to come up with something new. There are brilliant ideas still unfulfilled that we can draw on and expand.

**Alice:** A few years ago, I wrote a book about the history of the climate crisis, and I was worried that writing it would just leave me extra depressed.

Reading through all those missed opportunities and decades of delay was tough in places, especially as I was writing chunks of it during a particularly humid heatwave, but as I started to finish the conclusion, I was surprised by how inspired many of the stories left me. Understanding the climate crisis is hard, as is tackling it, and humans have worked together across continents, generations and academic disciplines to piece together some truly dazzling feats of science and technology. The IPCC has all sorts of gaps, problems and frustrations but is still a magnificent human achievement. And then, in the last few years moving to work more on health, I found another layer to this. Health work, whether that's research or practice, expresses some of the best of humanity, it's where we can find some of the most ingenious and inspiring tools to save lives. Applied well, and fairly, it's an inspiring place to find real, tangible and impactful hope.

**Priya:** When you set health alongside climate in spaces where policy is made, how does it change the conversation?

Alice: The combo of climate and health has certainly attracted political excitement in places. For a lot of policy-makers, they see the clear need to talk about this intersection. They get that climate change hurts, that it can kill - in some countries this is all too obvious -- and they want to know the detail of those threats so they can best protect their communities. Something I've noticed varies a lot by geography is how much people get the connection between health equity and climate justice. To me, it's very clear that adding health to the climate conversation – if mobilized in the right way - can be a powerful way to ensure you are doing climate policy in an equitable way, uncovering, for example, ways in which either climate change or poor decisions about how to tackle climate change can disproportionately impact some communities. I find people in the USA tend to really get this link. I think the history of the environmental justice movement means that connection between health and race in particular, but also other facets of inequality, and environmental pollution is all too obvious to people. It doesn't always resonate in Europe so well though. Yet!

**Priya:** Belém in Brazil, which will host the United Nations Climate Change Conference (COP 30) in 2025, is being called The People's COP, because of commitment to highlighting the views of indigenous and other marginalized communities. Is COP a space where some historic injustices may be redressed?

**Alice:** Is it being called the People's COP? It'll be interesting to see if that holds. There's certainly

scope for it to be. There's been talk about how COPs themselves have got too big – that we reached "peak COP" in Dubai last year – and we need other, more modern and more inclusive ways for the world to come together to talk about climate change. For example, a paired down COP itself but then a multitude of satellite events all across the world, all very much locally anchored in their own spaces but also networked and talking to each other. I remember being in New York for the climate summit in 2014 and the global climate marches felt a bit like that - I woke up and could see Europe starting their marches, others in early time zones already wrapping up, and then walking up town to Central Park for the core event. There was an inspiring feeling of people connecting across the world but also thinking about very local issues too, looking inwards and outwards at the same time. It'd be great to tap that sort of energy again, and build on it for something even bigger and broader.

**Priya:** Do the various city climate weeks hold some of that potential too?

Alice: They totally can and should be part of that global discussion. But it's vital we don't just stop at New York, and it's really sad that this year the UNFCCC had to cancel the regional climate weeks. New York climate week is often seen as the starting gun for the pre-COP season, but last year there was an African Climate Action Summit, a week before the NYC event which at least implicitly way saying, no, the moment that starts a pre-COP period should be in Nairobi not New York. The COPs move around each year, and there's a real power in that, all sorts of other places should not only be able to put on high profile climate weeks, but define what a big global climate event is to them.

**Priya:** What cultural treasure do you hope will still be around in one hundred years?

Alice: A pamphlet Ida B Wells, Frederick Douglass and others put together in response to the Chicago World Fair in 1893. It challenges the very limited way progress is presented and includes some trailblazing investigative journalism from Wells, all of which sadly remains all too relevant today. World Fairs like these were predecessors for a lot of science museums and also events like World Expos, and with that have left their mark on aspects of COPs and climate weeks. I hope that in one hundred years, we'll still appreciate this pamphlet as a piece of history, and even if we don't still need to keep saying the same things Wells was in the 1890s, people are still holding each other to account in terms of building better, more inclusive and equitable visions of the future.

## Money for more spaces



with Diego Baptista, Head of Research and Funding Equity at Wellcome

**Priya:** What stories of transformation and, dreams of a healthy future do you carry with you?

Diego: A healthier future for all is one where we've secured a healthier future for the people who are most affected by climate change. I know that's obvious and almost goes without saying. But actually the part of it I'm really keen to figure out is how this concept can become part of everyone's self-understanding and story. It's about getting beyond a paternalistic approach of solutions to 'help' people hold on to their culture, stay in their geography and keep well. How does the rest of the world come to see that "helping those people over there" isn't just good for them, it's actually critical for all of us?

**Priya:** By 'rest of the world' do you mean Western and wealthier countries who are in a position to pay towards supporting poorer countries and also have a historic responsibility to do so?

**Diego:** Absolutely, yes. And people in institutions that match your description, like the one I'm in, and many others need to appreciate the benefits of why cultures and peoples, who will be severely affected by climate change, must be supported to continue to exist in the ways they do.

**Priya:** I am also a product of a Western education. Only in recent years, partly through the research-travels I did as a Wellcome writer-in-residence, has my own appreciation of other cosmologies grown. It has been very enriching and humbling to learn of the deep knowledge and practices of well-being people hold. Knowledge which is rooted in place, which

derives from long-standing relationships to the land and more-than-human beings. What I understand you saying is, it's about seeing these communities not just as vulnerable due to the impacts of pollution caused elsewhere. But recognizing they have expertise, wisdom and resourceful ways of being which are valuable in themselves. Not as something else to extract and profit from, but to respect and contribute to protecting. Supporting many ways of living is essential to a healthier future.

**Diego:** Right. And if we can do it on equitable terms, co-creating the framework with the communities, there's something really valuable in this knowledge being articulated and disseminated. Probably we'll be exposed to different ways of approaching and solving problems that can be really inspirational.

Priya: I've noticed that in some research papers written by scientists from indigenous communities, they disrupt the typical academic script. They acknowledge Mother Earth, or thank ancestors for insights. Professor Anne Poelina, who has done a lot of work connected to Martuwarra Fitzroy River in Western Australia, recognizes the river as a core source of knowledge and includes it in her papers saying: "we acknowledge Martuwarra as the lead author".

**Diego:** These different knowledge sets are valuable. We have to ask ourselves, how can we learn from these narratives? And, we might find, in some cases – given the structures scientists are within at the moment – you may never be able to understand, because the Western structures are limited.

**Priya:** That seems important to acknowledge: the system I am in is inhibiting me. It brings to mind feminist scholar Gayatri Spivak's words: unlearn one's privilege as one's loss. She says, "Our privileges, whatever they may be in terms of race, class, nationality, gender, and the like, may have prevented us from gaining a certain kind of Other knowledge: not simply information that we have not yet received, but the knowledge that we are not equipped to understand by reason of our social positions."

**Diego**: There's something critical in this. It's unrealistic for any one individual to have all the knowledge and presume to know the way. Part of my work is asking: how can we create systems in which different knowledge sets from different individuals are appreciated, supported and utilized?

**Priya**: Is there any one project which you're especially pleased about, which is going in this direction?

Diego: Wellcome has supported different forms of knowledge production for a long time. More recently, Wellcome is beginning to be explicit about the need to further expand the knowledge it supports and values, initiating that process through whom it funds. So, we're acknowledging particular groups that have been disadvantaged by creating dedicated funding streams. This aspect is in focus now, and it is catalyzing questions about other aspects of the funding and research structures. I can see there is movement, and that's really exciting. For example, we are designing funding calls and initiatives that are specific to folks from Black, Bangladeshi and Pakistani backgrounds in the UK. We are working on setting agendas in a way that folks who live in lower or middle resource settings are actually able to work on solving the problems they want to solve, rather than problems they think Wellcome thinks they should be solving.

**Priya:** That's an important way to address some of the power asymmetries that persist.

Diego: I think it's about bringing in more and more different kinds of people to shape the research agenda. As you know, your socio-political experience of the world will shape the ideas that you're interested in solving. We are missing out on innovation if we don't open the research space. A seminal paper from the National Institutes of Health in the U.S. showed that topic selection could explain disparities in funding success rates between Black and white researchers. Black medical researchers tend to be more interested in health problems that affect their community specifically. They want their research to happen with and benefit the community. This focus and approach should absolutely not have

lower award rates. I'm excited that we are having more conversations around the diversity of research space and the connection to identity and experience. And that we can put money towards making more spaces. There's a lot to do.

**Priya:** The inclusion of lived experience expertise in the different Wellcome mental health funding calls has been a huge step.

Diego: Absolutely. With respect to extending and valuing knowledge Wellcome's mental health team has done awesome things. The approach they take is amazing, because it's done really thoughtfully and sensitively, so that all parties involved understand the benefit, and then can tangibly see the advantages of having this process. So those with lived experience, don't feel it's extractive, they're also gaining from a project and proposal. While the researchers themselves are also able to see the value of having lived experience experts shape some of the research agendas. We have to seek the expertise of people different to ourselves to do the most meaningful funding.

Priya: There's a lot of resonance with what you say to questions in culture, like restitution of museum objects to the source communities, most of whom are in developing countries. In the West you often hear: "But there's no museum we can send the objects back to." Well, some say, maybe people do not want to put their objects in museums. They were never there in the first place. They were part of life. At the same time, people in these places have now also been influenced by Western thought and methods, and are interested in building museums, but in a way that reflects their own culture. Either way, they don't want to wait longer to get their cultural heritage back. A different kind of negotiation of values is going on, which is really fascinating and complex. On that note: which cultural treasure do you hope will be around in one hundred years?

Diego: My first thought, could the cultural treasure be literally cultures and peoples? The displacement of people is a very pressing issue that's currently happening and has loads of cascade effects. Displacement changes a culture profoundly. I hope that communities who are now at risk will have been supported to stay where they are and maintain their ways of life, if that's viable and what they wish for. I hope that appreciation for these cultures and peoples grows and they thrive. I think this will contribute to a wider understanding that enabling people to flourish where they are, means that you can flourish where you are.



### Hazy summer buzz

with Modi Mwatsama – Head of Capacity and Field Development at Wellcome, Madeleine Thomson – Head of Climate Impacts and Adaptation at Wellcome, Rachel Huxley – Head of Mitigation, Climate and Health at Wellcome

**Priya:** As climate change reshapes our lives, what stories of transformation and dreams of a healthier future do you carry with you?

**Rachel:** The dream of a healthier future for me is seeing the energy transition continue and accelerate to a place where we don't have fossil fuels. Instead, we'll have more democratically owned energy systems, universal energy access, better housing and built environment. The potential for improving



people's lives and health is enormous if we can get to a point where industry isn't putting profits over people's health. We need to rethink and review what we value, and what is most important to us. We need a future where people's health and well-being is the measure of success, not GDP.

**Priya:** These multiple dimensions extend individual health beyond the body. Was this understanding always present at Wellcome and now just accentuated by the Climate and Health focus?

Madeleine: Climate change is fundamentally a political issue, rather than a science issue, in the sense that we decided to base our economies on fossil fuels. The decisions we make affect our health. Many are deciding to stop contributing to climate change by changing their diet, using renewable energy, driving electric and flying less. Change needs to happen at a personal level, a community level, a societal level. The challenge is how do people come together and say, no, this isn't what we want for ourselves and the next generations. What is our power individually, collectively, and politically to change course? Wellcome's role is to bring science to these questions. To show how we can change in ways that stop greenhouse gas emissions while benefiting our individual and collective health. We also have to find better ways to protect those most vulnerable to climate change impacts. We foster transdisciplinary research specifically because we know no individual scientific area has got all the answers. People must learn to work with each other, everywhere. I see the seeds of this that were planted, maybe ten, fifteen years ago, have grown. And that to me is really exciting. Wellcome played a significant part in that change. But others have also contributed.

**Priya:** That's a good reminder that transformation is a process, not just a moment, or an end.

Modi: My dream for a healthy future is a world in which people around the world are protected from the impacts of climate change, including through a greater focus on achieving the Paris climate goals. At the moment, developing countries are bearing the brunt of the impacts of climate change, even though they haven't been the ones responsible for causing it. I'd love to see a world in which investments in development finance centre climate resilience to protect people. A world where the most polluting countries and corporations pay for the climate change and associated harms that they are driving; and also pay for the solutions, for example through a carbon tax. Another aspect is that lots of developing countries have natural resources such as forests and rivers, which are at risk from both climate change

and development. Seeing a world in which these rich natural resources are protected, would be great; it's good for people's mental and physical health and for the planet's health.

**Priya:** Is some of this being set in motion at Wellcome?

**Modi:** We are investing in catalyzing the climate and health science and action field through a focus on transdisciplinary research to inform health-centered climate solutions. This type of research is co-created with the people and policy stakeholders in the regions that are affected by climate change to identify the context-specific solutions that will protect people and their health. We are focusing on building the field in developing regions where the climate and health impacts and opportunities are greatest.

**Priya:** What cultural treasure do you hope will be around in one hundred years?

**Madeleine:** Wilderness. It's very hard to find anywhere in the world that's not touched by human intervention. I don't need to go there, I just need to know it exists. To have that as a treasure for future generations is important.

**Rachel:** It would be nice to leave behind a habitable, sustainable, pleasant world. So people can live in places that don't make them sick. In many ways cities are the major cultural artefact we've created. Cleaner, calmer cities could be a gift to the future.

**Modi:** My family is originally from a small village in East Africa. It's a beautiful hilly area with trees, and a sea breeze. The village is urbanizing rapidly, as some families expand and others move there from the city for more affordable homes. Trees are being cut down to make way for homes and roads, as is happening globally. Not far from where I live in London, is a beautiful Heath – a large parkland with wooded areas where you can walk and get lost. The surrounding neighborhoods have changed, but the park remains for everyone, despite all the development that's happened over the years. I'd love to see those kinds of habitats protected across the urbanizing world.

**Rachel:** I share Modi's view; it's how we go about change rather than trying to stop it.

Madeleine: I trained originally as an entomologist, and I've really noticed the decline in insect populations. When I was a kid, you would lie on the lawn in the hazy summer and it would just buzz. I'd love to be sure the future has lots of friendly insects buzzing around.

# Cultivating curiosity



with Sean Decatur, President of the American Museum of Natural History

**Priya:** As climate change reshapes our lives, what stories of transformation and dreams of a healthier future do you carry with you?

**Sean:** When I think about aspirations for the future, what comes to mind is my regular experience with children at the museum. Witnessing the uninhibited, joyful curiosity the children bring to the space. There is such excitement about what they're seeing and experiencing. It literally sometimes spews out of them, in a really wonderful way. They are endlessly inquisitive, and their questions always boil down to "why something is the way it is," and a sense of wonder about that. We don't question that way as adults. The ability of young people to approach everything with that deep probing *why*, not accepting the world *as it is*, implies that it *really* could be quite different. This gives me hope.

**Priya:** They're not limited already by knowledge. Was that also what you enjoyed about teaching when you were a professor of chemistry?

Sean: One of the things that I enjoyed especially about teaching first-year college students was their openness to the idea that things actually could be different. One of the harder things about teaching was seeing that knowledge can be limiting as well as expanding. As folks learn more, there are ways in which the world also narrows. There's a contradictory tension here. In my own experience, I feel that often the more I learned, the narrower my focus became. Our education systems are still constructed to lead people into specialization. It's refreshing to get exposed to young people who still have a broad lens for looking at the world.

**Priya:** At the museum, many kinds of knowledges are present at once and being expressed in different forms. The multiplicity on offer seems itself like an exercise in openness, is that how you experience it?

Sean: There is something about leaving one's comfort zone, entering something a bit unfamiliar and challenging that recreates the sense of openness. Most of my career has been focused in sciences. I can still remember, when I was just beginning to study at the university level, the types of scientific questions that I would ask were really open, big questions. The more I learned, the more focused my questions became. But when I go into something very different, if I connect to visual art or music or literature, there are ways in which I open up again. Perhaps because I haven't gone down the formal education path in those areas, I still can approach the arts with a broader sense of curiosity and be at ease not knowing. I do think that's part of the power of transdisciplinary, multidisciplinary approaches. Not only as ways to study and understand the world, but then to convey information about the world. Bringing the arts and the sciences together takes both out of the familiar, into terrain that's perhaps uncomfortable and challenging. That's another kind of space, from which different questions, ideas, energy and future can emerge.

**Priya:** Do you see a special role for the museum in the context of climate change?

**Sean:** At our museum folks are working to educate, engage and activate around the climate crisis. There's more that's needed than just the scientific facts and information. Most people do not approach it needing to be convinced or needing evidence to demonstrate that there is a crisis. That's not to say that we

### "We're all part of a deeply interconnected system."

shouldn't still approach things in a very evidencedriven way. But the outcome we want is not just for folks to understand that there's an emergency, but to recognize and understand resilience. We want to engage their imagination by highlighting ways in which the natural world has been resilient to change in the past and to get them to wonder, as we do, how can that inform possible futures? Sometimes being hopeful about the future gets painted as naive optimism. It's not that we want people to leave with this feeling. We want them to be able to have moments of insight which lead to imagining something other than the most pessimistic outcome. Our role is really in cultivating a sense of curiosity and a skill set that helps people follow their curiosity with both rigor and openness.

**Priya:** I imagine that skill set includes modes of intellectual and scientific inquiry, but also the capacity to hold many different kinds of emotions in the face of climate change. What I experienced in the museum is the activation of mixed emotions. You can feel wonder alongside sorrow and shock as you encounter animals and plants that are extinct.

Sean: The complexity of natural systems and their interrelationships mean that, at our museum, you're not only exposed to parts of the living world that might now be extinct. You're realizing there are connections between what we've lost and the living world now, and that eventually also links to you. Our larger aim is not only to communicate the data around biodiversity loss, especially in the insect world, but also to show that it really matters because we're all part of a deeply interconnected system.

**Priya:** Listening to you reflect about the future, I keep thinking about how you've held a legacy of dreams for the future from a very young age. I read that you learned Martin Luther King's "I have a dream" by heart when you were six years old. Amazing to have memorized his incredible wish for the world so young. I imagine those words stay in you.

**Sean:** My grandmother, who was very active in the African-American church community in Cleveland, used to take me around to different churches to perform to "I have a dream" when I was a little kid. A very quirky part of my life growing up.

**Priya:** What cultural treasure do you hope will still be around in one hundred years?

Sean: The Jackson Five song I Want You Back. It is quite possibly one of the most joyful three-minute pieces of music one could have. It's almost impossible for people to listen and not smile and move. Even if they, like me, move awkwardly. Increasingly, the things that I value are those that truly spark joy across cultures, across time. There's something really special about a song that, in a very simple way, can make people happy. It's music that is powerful yet genius in its simplicity. There are pieces of music that I find moving and awe-inspiring, but also super intimidating, right? This song, on the other hand, is an invitation to join in and to share. I actually think the things most likely to survive over time are the ones that are aweinspiring. The simpler, more accessible evocations of pure joy are, strangely enough, a bit more fragile. I'd like to be sure we hold on to those as well.



## Generation Hope

with Camilla Tham (International Partnerships Manager) and Gareth Thomas (Head of Research Innovation) from The Natural History Museum, London



**Priya:** You both work at the Natural History Museum in London, which since 2020 has the mission of creating "advocates for the planet" as a way to address climate crisis. What stories of transformation and dreams of a healthier future have emerged for you through that mission?

Gareth: Some people think it's a cheesy tagline. I really love it. Because it represents a complete paradigm shift for the museum. We took the stance that we no longer want to merely curate, collect and archive planetary emergencies. With 350 world class scientists, 175 PhD students, and 80 million specimens – the largest natural history collection in the world – we can actively combat environmental challenges. Part of our mission now is to reverse and halt biodiversity loss. Sometimes scientists can become very compartmentalized. But when you're all working towards a common goal, you start to find new collaborative ways, new projects. For instance, we've developed the "Biodiversity Intactness Index (BII)", as a way of measuring ecosystem health.

Camilla: When we launched the new strategy with that mission, we weren't one hundred percent sure how we were going to measure success – what is an "advocate for the planet"? But we've collaborated with the right people who help us learn quickly, who help make us bolder and stronger. Like the climate justice activists from our Generation Hope programme. In that programme, we bring different fields of expertise together through workshops, discussions and creative sessions. We connect youth activists, scientists, storytellers, commons experts, folks in the business and policy worlds, in the recognition that everyone has a discrete pot of expertise. We can all benefit from listening to and learning from one another.

**Priya:** Why are they Generation Hope?

Camilla: Some of the young activists I've worked with have been on the edge of or, indeed, in severe depression because of the state of the planet. But, at the same time, they firmly believe a healthier future is possible. I've not been a huge fan of the word "hope" in the past, because it seems to imply that you can sit passively, cross your fingers and wait for something better. But Generation Hope believe that systems can radically change, something I struggle with, to be honest, after forty years of living through business as usual. I find it hard to imagine a different future, but they can. In fact they're adamant about it. That kind of spirit is transformative. It's why I value collaboration with these young changemakers.

**Priya:** It seems hope is something made not just received, it is actively created. Both of you are working to nurture biodiversity in different ways.

Gareth: For me, interconnectedness of humans and nature is at the center of it. If we can create healthy ecosystems, they will provide climate resilience. When you look at coral reefs they can get bleached to almost total extinction. But given the right support they're able to recover quite beautifully. That's the same with nearly all land. Even decimated land. Whether that's from extensive agriculture, logging, industry, allow nature the space and time and it always regenerates.

**Priya:** Bearing in mind that regeneration may not always mean being returned to a previous condition, but restored to a state of balance and flourishing, what can we do to support regeneration?

Gareth: There are many ways, one of which is to support and influence those who create the biggest impact but posses the substantiative power to change. For example, industry, corporates, and financial institutions. How can we get them to make nature-positive decisions? One aspect I advocate for is nature securing a "place on the board". It deserves to be personified in some way. For every strategic or operational decision that's made, we ask, what does nature have to say about that? There are maybe four companies in the world who have so far done this.

**Priya:** What would be your cultural treasure for the future?

Gareth: The Biodiversity Archive. A living monument to the incredible variety of life, a vibrant global resource that brings together the planet's biodiversity, present, historic and future. A dynamic, interactive repository that goes beyond static data, and blends real time ecological monitoring with immersive, multisensory virtual reality tours and engaging storytelling. It would remind us all of our shared responsibility to safeguard the earth, embodying the hope that the efforts we make today will ensure a vibrant and diverse world for generations to come.

Camilla: Working at the museum with our scientists has changed me, made me completely fall in love with the natural world. So I feel my answer should be our collections, because of how deeply they help us understand our planet. But actually the first thing in my mind was old growth forests. These are one of the few areas where humans haven't intervened at all and I hope they always remain untouched.

# Where the magic begins

with Lauren Wang, Director of Climate Programs at the Trust for Governors Island, and Stephen Hammer, founding CEO of The New York Climate Exchange

**Priya:** As climate change reshapes our lives, what stories of transformation and dreams of a healthier future do you carry with you?

Lauren: We're in the middle of a heat wave here. Over the past couple of summers, when I look out the window and see sheets of heavy rain, it's disorienting. New York City was reclassified as a humid subtropical climate in 2020. Our weather patterns now feel like they're from a different place – like where my parents are from in Taiwan. The climate crisis can make us feel confused and disempowered. When we are asking ourselves – are we doing enough? – my dreams are very personal and humble. The dreams I carry with me are a sense of a return home through a future in which we're all more connected. Home may not be the place where you grew up or your ancestors are from. It's the place you can find meaningful connections. I like to think Governors Island can be that kind of place. You might come for soccer practice and walk past an outdoor performance. You might come for a bike ride and see some sheep. You might plan on a picnic or cookout and walk by the latest carbon dioxide capture technology being tested. As you cross the island, which is walkable in scale, you can encounter all of this. What's magical is that sense of connection that's lacking in cityscapes where the things that we do are siloed from each other.

Stephen: For my doctoral work, I did a comparison of London and New York, looking at historical environment and energy practices and policies of both cities. What was most striking, looking back over a hundred and seventy-five years, was seeing that cities have repeatedly faced challenges in the past, and transformed themselves in meaningful ways. Both London and New York have had to navigate crises related to sanitation, water and air pollution. Each time there were people who had the vision and drive to make big changes. There was a mix of policy, finance, legislative and hard engineering solutions. But very often, it was municipalities, it was local authorities, who took the lead on actually delivering some very dramatic local impacts. In the last twentyfive years cities have begun, very prominently, to lead on climate plans, climate investments, climate policies. Increasingly heavy rainfall events are creating localized flooding problems around New York City. Affecting public transportation systems. Affecting homes and businesses. People are looking for local leadership on these issues again. It's a very exciting time to be in a position to help support and advance that.

**Priya**: What does *local* mean in a global city like New York, specifically on Governors Island? I read that around one million New Yorkers go there annually.

# "In the last twenty-five years cities have begun, very prominently, to lead on climate plans, climate investments, climate policies."

Lauren: After first opening during the summer months in 2005, the island expanded to becoming publicly accessible every day of the year in 2021. It became a part of New York City in 2003. Before that it was a federal military base. For two hundred years it was closed to New Yorkers. Many may not even have known it existed. The reopening of Governors Island over the last twenty years began through conversations with the public and with cultural institutions. A ten-year visioning process led to massive investment in constructing a visionary, climate resilient, sustainable park. That includes elevated hills, built from the rubble of buildings. It includes repurposed materials from our seawall to build steps and benches. Our arts program supports commissions of large-scale artworks, residency programs, and supports more than two dozen arts nonprofits from all five boroughs that host their own events on the island. We also have our Center for Climate Solutions, which includes the New York Climate Exchange. For the last few years, we've really been able to grow our audience around three pillars - arts and culture, the park and climate. Our visitors, we're proud to say, come from every residential zip code in New York City. That reflects our commitment to be an inclusive place.

Priya: What is the New York Climate Exchange?

Stephen: We're a coalition that brings together academic institutions, large private corporations, plus community organizations. Everybody is bringing different information to the table. We've created Ideas Labs to bring these different perspectives into an exchange about what each of them are doing, and where there are gaps. The gaps may well inform what we ultimately choose to do. The idea is always predicated upon where do we provide the greatest value add, compared to what's already there or what the partners are already doing. I imagine that the Ideas Labs will take many different forms. We want public participation to inform both process and ideas of what is achievable. We've learned over the years that many of the solutions we need exist, right in front of us. They're just not moving forward at the speed or scale that we need. In some cases it's money, and in other cases it's a policy environment that doesn't facilitate progress. We're interested in creating other channels to move things along.

Lauren: This island itself is a living lab for climate innovation. As one example, the *Climate Solutions Piloting Program* offers access across Governors Island's built environment, waterfront and natural areas for young companies and nonprofits to install and test their products. This happens within public view and in conversation with communities where those products might be deployed at scale. The idea is: starting small, but also daylighting the twists and turns that the innovation process might take. We're very excited to work with young companies and nonprofits that aren't afraid to do that in a public space. They don't want to be in an ivory tower.

"How can we better support the elderly facing high heat challenges? What about increased access to cooling in classrooms, because it will affect children's ability to learn? How to manage the high heat that hits workers whose job keeps them outside all day?"

**Stephen:** We've just started our programing for the themes climate and health, and oceans. In the decarbonization space, we're moving forward on a batteries initiative. We just had our first forum for young professionals on Wall Street. Completely different audience in each case. We really want to capitalize on the full asset base that is available.

**Priya:** What can be gained by highlighting health in your work?

Stephen: The health conversation is late to arrive explicitly in formal climate policy discussions, but it's been there for a very long time. The question we have to ask is, whether making that link between health and climate means we're going to get different outcomes? How is it different to just saying we've got a public health crisis and we need to take action because people are hurting, people are dying? I think the presumption is that foregrounding health will change the trajectory of progress, because more money and policy attention is being focused on the issue. We have yet to see if that's truly going to be the case.

I was talking to a researcher at University of Miami who said some of his colleagues are placing small sensing devices in the homes of elderly Floridians. Even in homes with air conditioning, the temperature in some homes was reaching almost one hundred degrees Fahrenheit. Why? Old, inefficient equipment. Households didn't have money to replace the air conditioner, or they couldn't afford the energy bill associated with running it on a regular basis. Is that a climate problem? Climate change is going to exacerbate this, for sure. But this is a current-day public health crisis. How can we better support the elderly facing high heat challenges? What about increased access to cooling in classrooms, because it will affect children's ability to learn? How to manage the high heat that hits workers whose job keeps them outside all day? Are we going to respond to all this, because it's a climate crisis, or because we need to do this for societal reasons, for education reasons, for equity reasons?

Lauren: I agree with Stephen, the connection between climate and health is not new. The good thing is that it really centres the conversation on people. With the Center for Climate Solutions our intention is to create and scale solutions, including those that focus on adaptation, coping with climate impacts today. Those impacts rest on a longstanding legacy of environmental injustices in low-income communities and communities of color. Recognizing the uneven landscape we're working in is important along the entire path. With our Climate Solutions Piloting Program, we're looking to support startups and nonprofits that align with this principle, that focus on people and include that in their vision and narratives. Are you working on something that will only benefit the top 1%? Or are you working on an affordable, accessible solution that makes sense for a city with one million buildings, most of which will probably still be there in 50 years? That's one of the reasons that some of the solutions we're supporting today focus on retrofits rather than only new construction.

**Priya**: You also organize field trips for young people. How does that work?

Lauren: The field trips we're developing at Governors Island are in collaboration with El Puente de Williamsburg, an organization which has been at the forefront of social justice initiatives, blending art, activism, youth development, and grassroots community building for 40 years. We've stitched together a fabulous climate action oriented, handson adventure for young people in elementary and middle school. In a single day kids can take a field trip and experience where their food comes from at the Grow NYC Teaching Garden. They can hold and take home an oyster shell that's donated by the Billion Oyster Project and understand how the restoration of oyster reefs cleans the harbour water which supports aquatic life.

**Priya:** Being on Governors Island sounds special, but getting there is special too?

Lauren: Unless you can fly, the only way to get here is by ferry. When you step on the historic ferry that we inherited from the U.S. Coast Guard, that's where the magic begins. The sky opens up above you. That can be a rare sight in New York City. Once you arrive, you walk into a green, peaceful landscape. We hope that the brief journey across the channel brings folks to a different mindset where they might be more open to receiving new ideas and inspiration for the better future that we need.

**Priya:** What cultural treasure you hope would still be here in one hundred years?

**Lauren:** Our parks and public spaces, both indoor and outdoor. Spaces of informal connection and discovery are so important.

Stephen: Our historic energy infrastructure. What I've found so interesting in other parts of the world is how sites which are remnants of poor energy choices have been repurposed. In London, you've got Battersea Power Station, which has been transformed into spaces for living, working and leisure. You've got Bankside Power Station turned into Tate Modern, a cultural institution. In Germany, in the Ruhr valley, there is a whole tourism economy predicated upon visiting the old coal mining part of the country. You can go down into the mines and eat at a high-end restaurant. It's a flip on the script. We don't have to walk away from this location as a source of economic activity that can sustain a neighborhood. It can be re-envisioned. New York is going to need some of this. Look at the power plant on the East River in Queens that is being converted from one of the oldest and largest gas turbine power plants in the city into a very large battery storage facility. It'll store power, hopefully coming from offshore wind. The lights stay on in New York. But we do it differently, and it's cleaner. Some of that infrastructure legacy is a very helpful reminder that we can change the way we do things.

# Museum of past futures

with Tolullah Oni from UrbanBetter/ University of Cambridge, and Amelia Dearman from Wellcome's Government Relations team



**Tolu:** We have transformed how we live over time. The predominant organization of society across the world now is urban. Further transformation is radically necessary, and has to be necessarily radical. I focus on the African continent where urbanization is happening very quickly, where climate precarity and vulnerability are high. My dream of a healthier future is one focused on creating and protecting health, not just treating lack of health. I frame it this way because people on the African continent are young! 70% are under 30. How can our definition of health be the same as Europe, where the median age is 44? If we don't have enough resources for a Western-style health care system, let's ensure our young population are able to live in healthy environments that help them keep well.

**Priya:** One question you often pose is, "What does global health look like from the point of view of the global South?" UrbanBetter, the advocacy platform and urban health practice you founded, is creating an "African-led global movement in which every citizen is a custodian of planetary health." Can you say more?

**Tolu:** One of the things I love about working in public health is it's basically a study of the bleeding obvious. We have roles as individuals, as professionals working in different spaces. We each have the potential to optimize health through what we do! I speak a lot to architects who, in my opinion, are health professionals. They shape the urban spaces that influence how we breathe, the ways we move, where we get our food. But their role as custodians of human and planetary health is not explicit. One part of transformation is making the implicit explicit.

Amelia: That concept of custodianship is really interesting and brings to mind interventions like Guerilla Greening. People taking individual action, being the change they want to see in their local community. There's a whole spectrum along which transformation can happen. I'm interested in how local action can inform my work in global politics, in processes like the UN General Assembly and COP. What Tolu says about the built environment is so important, especially as we get more heat waves. I was in New York learning about some of the active advocacy groups. You have people struggling because of historic redlining and racial injustice. People are still living in neighbourhoods systematically designed, since the 1930s, to be less livable. They have far fewer green spaces and trees, so surface temperatures in the summer can be up to 30°F/5°C hotter than other parts of the city. Black New Yorkers are twice as likely to die as a result of extreme heat than their white counterparts. In the UK, people of colour are four times more likely to be impacted by extreme heat. In New York, I saw how people's resourcefulness and tenacity from years of fighting for their rights means they are actually far ahead in terms of trying to imagine a better future. They need to be included in wider decision-making. Their experiences show that a healthier future for everyone will come through tackling the intersection between health, poverty and injustice.

# "Transformation is radically necessary, and has to be necessarily radical."

Tolu: Nelson Mandela said, "the strength of society is how it's treats its most vulnerable". We build cities that make it difficult to breathe, have no protection from heat, where people can't walk safely. Carcentric cities. This is all happening now, with all the knowledge we already have. I want to double-click on Amelia's point about inclusion. Who is involved in planning our cities? Recently, I asked someone about the biggest resilience risk in their city. They said, it's the disenfranchisement of young people. We are building infrastructure for the next forty years, and the young generation isn't included in the decision-making. So you're marginalizing that asset. And making them sicker earlier.

Amelia: There are also structural factors which limit how we act. Global financial infrastructure doesn't loan directly to cities. It normally has to go through the national government, which then distributes funding. This can get tricky in huge countries with complex political systems, like India or the U.S.. The Inflation Reduction Act in the U.S. is really interesting because a big proportion of that money is meant to flow directly to disadvantaged communities for adaptation. But the Act depends on the political will of whoever is in power. How do we find ways to make climate change mitigation a value across parties? I think health has a special role here.

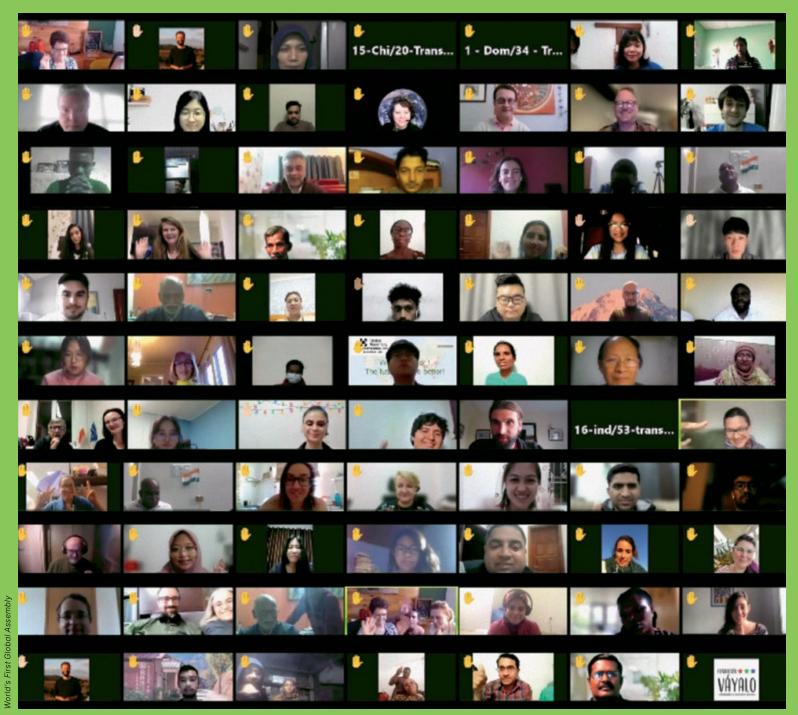
**Priya:** Maybe it's about what Tolu said: everyone understanding themselves as a custodian of health.

**Tolu:** I want to create a badge for people that says: I'm a health worker, ask me how.

**Priya:** What cultural treasure do you hope will still be around in a hundred years?

Amelia: I love wild swimming. It's so depressing that in the UK you first have to check if there's sewage in the sea before swimming. In Paris, with the Olympics, they've tried to the river Seine swimmable again. It's a quiet transformation, that makes living in a city very different. In a hundred years, I hope we've reclaimed more blue spaces, and that we have more urban lidos where people can swim for free.

**Tolu:** The way I assess any city is by how pleasurable it is to run in public space. I'm a trail runner. My happy place in London is Walthamstow Wetlands, a bird sanctuary in the middle of the city. It is a treasure to run in green spaces, protected from heat, or near water. On a more intellectual level, I propose a network of "Museums of Past Futures". I'm a public health physician and an epidemiologist. Planning health and sanitation go back to ancient times, but that longer history is invisible. I wonder how many inventions, systems and practices from all cultures we have lost. "Museum of Past Futures" would be a space to start sourcing and collecting past knowledge. People could immerse in that and who knows where it might lead?



## Radical collaboration

with Aishwarya Machani, UN
Advocacy Co-Lead at Iswe
Foundation, and Fleur Newman
who leads the work on gender,
children and youth and Action for
Climate Empowerment at the UN
Climate Change secretariat



**Priya:** As climate change reshapes our lives, what stories of transformation and dreams of a healthier future do you carry with you?

Aishwarya: In the first ever global citizens assembly organized for COP26 in 2021, people joined with little or no awareness of climate change. They went through this shared journey over eleven weeks and began to see themselves as part of a global community affected by this issue. They began to call for change in their communities. I saw the transformative power of bringing people together, even just in a virtual room. Their stories inspired me to work towards creating a permanent global citizens assembly. A group selected by civic lottery to be demographically representative of the world's population. They will deliberate on big questions and offer recommendations. I am now part of an effort to make this a permanent feature of global governance.

Fleur: In my work, on a daily basis, I see both the challenges and opportunities, the hope and despair of climate change. In equal measure. Climate change is a social and economic issue that has an environmental impact. Governments and everyone have to consider things more holistically. You cannot address climate change effectively in silos. The way in which we have to approach it is in itself transformational. And a little bit scary. We need new structures and instruments, like the global and local citizens assemblies. Addressing climate change requires radical collaboration.

**Priya:** Would such an Assembly's recommendations be binding?

Aishwarya: Citizens assemblies are mandated by local or national governments. They come up with recommendations, and then it's up to the local or the national governments to decide whether or not they put them into action. The permanent global citizens' assembly we are building is different because we're not getting a formal mandate from the UN. It's a bottom up process. We would make recommendations and encourage global leaders to enact them. But we want to avoid a process where we work to gather knowledge, offer this and are then ignored.

It's disempowering and dispiriting for people. So we're building a separate movement of actors around the assembly to support implementation at the UN, and we're finding ways for assembly members to take action in their local communities regardless of what happens at the higher levels of power.

**Priya:** So good to be planning measures that protect people from feeling helpless and disenchanted as they so often do these days with the political system.

Fleur: It's through education and civic engagement that people can come to understand the power and responsibility of the individual. Responsibility is empowering in the sense that it helps people see they have a role to play, that climate change isn't somehow separate from them. We are all connected.

**Priya:** What can considering health add to all the work being done?

Fleur: Our current economic system doesn't appropriately value the natural world that, in fact, creates all our wealth. It also doesn't appropriately value the things that are important for human thriving, including health and education. Health is one of those things that is universal. People understand the importance of good health for themselves, their families and friends. So, health is a really direct way of talking to people about climate change. It's a powerful communication medium that can transform the way people understand the issue.

**Priya:** What is the role for women and girls in the transformation? Historically, they have borne the responsibility of trying to keep others healthy.

Fleur: For that reason, you don't want to burden women and girls with now saving the planet. But it's essential that the perspectives of women and girls, in all their diversity, are valued, listened to and acted upon. We won't change "business as usual" if we don't address patriarchy. It's not only women's responsibility to dismantle the system that's oppressing them. I can't imagine a healthy planet where gender equality hasn't been sorted.

**Priya:** What cultural treasure do you hope will be around in one hundred years?

**Aishwarya:** The temples in Hampi, South India, where my family is from. It's a UNESCO world heritage site. It was a thriving with life and culture from 1336 to 1565. You can still feel the past and a connection to people who lived there. It was recently refurbished for the G20 in India, which says something about the politics and economics of conservation. But also shows we make choices about what to preserve.

Fleur: I come from Western Australia. We have highly endemic plant and animal species, unique ecosystems, very sensitive to climate change. I was fortunate to have a childhood immersed in natural wonders. Especially Jurien Bay, a place where two ocean systems meet. It has a unique mix of cool and warm water species of coral, fish and other animals. In a 'two degree world' there is no coral left. I cannot bring myself to believe we would allow that to happen.



### Lungs of the city

with Kara Schlichting and Bryony Ella from Melting Metropolis: Everyday Histories of Health and Heat in London, New York, and Paris since 1945



**Priya:** Amongst other things, Melting Metropolis is investigating how "people have embraced heat". What does it mean to embrace heat?

**Kara:** New York City is hot and humid in the summer, but it has large stretches of Atlantic Ocean beaches. Heat can bring community together. A day at the beach or park, an outing for ice-cream. In our research, we acknowledge that a hot day can be unhealthy and dangerous for a body. But there's also moments of community, joy and fun. We try to see both.

**Priya:** Last year we had an extremely hot summer in Berlin, where I live. People tried to continue with their usual routines, then felt bad for not managing. In places where such high temperatures have long been standard, businesses close for some hours in the afternoon, people have siestas – they've evolved strategies to live with extreme heat. Is part of embracing heat also to change rhythm, allow for pause and quiet?

Kara: Chris Pearson, our colleague at Melting Metropolis, always reminds us that there are limits to the concept of resiliency. We have physical limits. He asks us to think about that embodied experience in moments of extreme heat. For example, when mayors lift the ban for sleeping outside and allow folks to stay the night in the park. That's altering behaviour to find more thermal comfort than an interior space might give you.

**Priya**: I'm imagining a future of collective sleepovers in New York parks! Melting Metropolis aims to "move beyond the widespread focus on 'climate resilience'". What does that mean?

**Kara:** It seems that to be resilient is to fight back and persevere in the face of climate change. This embattled stance sets up a positioning where altering course, backing down or acknowledging limits is somehow a failure. But maybe flexibility and sensitivity

are better as we think about collective strategies in the face of extreme weather. For heat, sea level rise or extreme storms, the embattlement narrative doesn't give room for folks to express something softer. That may be a new cultural pattern to develop. We could just be safer in acquiescence, you know, it isn't a failure. It's very interesting in the American context because, of course, there's the prevalent idea that I'm independent, I must persevere. But what is the battle you're winning if you're putting your body at risk?

**Bryony:** This idea is also put on workers or communities, from the powers that be, this onus to be resilient in a certain way. The pressure on the individual in our capitalist system to just keep going, keep going. Without any pause for reflection.

**Priya:** A healthier future sounds like a gentler one. What stories of transformation and dreams of a healthier future do you carry with you?

**Kara:** You've asked a historian to speculate about the future!

**Bryony:** The word that's jumping out for me, first of all, is transformation. That's a central focus in the studio. Change is essential (and constant) but it can be messy and feel catastrophic to step into the unknown and leave the familiar behind. What aspects of transformation do we feel empowered to engage in, individually and collectively, while in the midst of rapidly altering and uncanny climates and all the upheavals of societal change the swirl around us? What do we need to feel supported throughout this process? I am fascinated by this challenge and like to work with nature metaphors to explore alternative ways of disintegrating and reassembling states of being or ways of thinking beyond the extremes of tight or total loss of control. A lot of my research for Melting Metropolis is about understanding the inner journey in the face of the 'outer- world' shifts Kara has described. Change is far from easy though. It sparks much resistance and fear.

Kara: And apathy.

Bryony: And denial. I'm super aware that there are both collective, outer world and very personal, inner world, shifts that need to happen before anything is really going to change in the way it needs to. How can we support this in a way that's not a complete disaster? I like the humility Kara talks about. Recognizing that we can't necessarily fight our way out of this one. We are nature. It's not a battle between us and nature.

**Priya:** How do you prefer to frame it?

Bryony: I use this word 'porosity' a lot. A healthier future is where we acknowledge the porosity that exists between human and more-than-human communities. Recognizing that we're interconnected. If we conceptually break down some of those binaries, what new behaviours emerge? I'm interested in embodied ecology as a framework for exploring this porosity. It's fascinating to work with historians on this, to think more about deep time. This crisis makes us stay very much in the present, with the panic. But historians are able to show the cycle of repeated patterns that have led us into the current crisis – psychological, cultural, political, biophysical, environmental - and how our cities and our bodies are porous, absorbing and shaping these patterns. By bringing into this study voices previously under-heard in historical sources, Melting Metropolis is aiming to add more nuance and fresh perspectives on the emergence and impact of urban heat islands. I'm curious to see what new ideas grow from this place. Maybe that is a gentler future. Working with story can support this to be more of a nourishing process.

**Priya:** Would you say a bit more about the role of story?

Bryony: The collecting of stories in Melting Metropolis draws on community engagement and historical research to gather a fuller understanding of how and why we have created the cities as they stand now. Storytelling is ancient and, whether consciously or subconsciously, has always shaped our belief systems and therefore our behaviour. We urgently need new narratives now that do not gloss over reality, but instead amplify the perspectives of those who are most impacted by climate change today, so that their stories can have greater influence on how we collectively revision our cities.

Kara: Since the Chicago 1995 heat wave, and again in Paris in 2003, it's clear that social isolation is a key contributor to mortality during extreme heat events. Communities in a particular neighborhood or city can create a network that is a safety net. New York City has this 'Be a Buddy' program that encourages residents to check on neighbors during extreme heat events because of evidence that neighborhood conversations are crucial to better health outcomes. It's not an infrastructural change, it's tapping into existing social networks.

**Bryony:** Melting Metropolis' community engagement is with organizations that already have a long history of grassroots work. They are trusted locally and are offering spaces that feel safe for those who meet there. We're working to support the care work that's already being done by brilliant community groups, and we're hyper-aware that there is a long history of top-down extraction within the dynamic of community and academia relations. So, there is a humility and a softness in Melting Metropolis' approach that I think is essential if we are going to help to foster or support any meaningful change. The way we work has to be non-hierarchical and grounded in everyday real life-valuing the expertise of the communities we are working with.

**Priya:** What 'cultural treasure' do you hope will still be around in one hundred years?

**Bryony and Kara:** Spike Lee's 1989 film – *Do the Right Thing.* 

**Kara:** It's a story about communities coming together and splintering on a single hot day in Brooklyn one summer. It's a spectacular movie, just as relevant today as it was when it came out. And it's both joyful and sad. So all of New York at once.

**Bryony and Kara:** Also, Central Park and Prospect Park.

**Kara:** Frederick Law Olmsted, who designed some of our best parks, talks about green spaces as the lungs of the city. Refreshing the human body, and as a circulatory system for a healthy city.

**Bryony:** In the 'Drawing Heat' walks that Kara and I lead, we consider the whole city as a body, a living organism. We look at images of human lungs against the canopy or root system of a tree and see just how similar they are. This activity was inspired by Olmsted's "lungs of the city". We make drawings that explore the sensorial, embodied and porous experience of living inside an urban heat island.



# The original sensors

with Kendra Krueger from
The Community Sensor Lab
at CUNY Advanced Science
Research Center

**Priya:** You founded The Community Sensor Lab, a space for DIY community science and advocacy, what stories of transformation are emerging from this work?

Kendra: We are able to bring in people from all different types of backgrounds, including underresourced communities. They don't need any sort of prior knowledge to go through our training. And they get a really broad set of skills in hardware, software and environmental science. They learn to build tools with which they can observe and measure changes in their environment, like CO2 levels and particulate

matter. At the same time, they're encouraged to use their own senses, because we see collecting our natural observations of climate change as being on an equal footing with collecting scientific data. But we know anecdotal evidence alone is not going to change policy, so the technology and data help people tell their stories and advocate better for their communities. I see the transformative power of people becoming more comfortable working with technology to understand the science behind climate change. People transforming into community scientists.

**Priya:** As people use the technology, how is their own perception changed and therefore the science they do?

Kendra: We do a lot of activities where we try to get a better grip on our own sensing capabilities. How well can you estimate the length of a room? Or the temperature? We'll take an actual measurement, compare and discuss how the accuracy of perception can only go so far. We ask students to be observant. What changes do you already notice in your everyday life? The winters are less cold. We don't get big snowstorms in New York anymore. It's like a practice, cultivating a heightened sense of awareness. Remembering again that we are the original sensors. The tools that we have internally can be calibrated and finetuned in the same way that the technical tools can. I think that's the piece of it that is different from other STEM programs. It's not just about the research, it's also about the personal experience that undergirds and motivates the work and puts it into a broader context to create real social impact.

**Priya:** Embodied knowledge has been typically disregarded in the sciences. Do people get skillful using the technology faster than they do activating that inner knowing?

Kendra: It's something that we've had to build into this curriculum, learning how to integrate in slow ways. I would say that it's harder for people from any kind of background to engage in somatic and emotional work in a group than it is to collect data or read a technical paper. This is where more artistic ways of expression and exploration come in. At the lab, we integrate different approaches so our students have more skills for thinking with complex systems and understanding patterns, rather than taking the more reductionist way Western science tends towards through compartmentalizing.

**Priya:** How might the approach and practices you're developing take us to a healthier future?

**Kendra:** I hope we'll move into a future where the young people that are being educated through this program will be future engineers or creators of green technologies who have a wider understanding of design. I come from an engineering background. My Bachelor and Master degrees are in electrical

engineering, and I was always struggling with the fact that many engineers didn't have a sense of the possible impacts of technology on a wider societal level. Our students will be able to engage more with philosophical, science, technology, social questions, to think intersectionally about the environmental and personal and community impacts. Asking, how are we transforming within ourselves as individuals alongside our technology? With such an integrated, intersectional and interdisciplinary approach we are moving more towards more regenerative ways of thinking, and actively healing the harm that's been done. Going beyond sustainability. It's beyond how to sustain where we're at. It's about how do we heal simultaneously in multiple systems; healing ourselves, healing the planet, healing our social systems.

**Priya:** I watched a video where you show anyone how to make a DIY CO2 sensor. At the end of that, you said, "We all have the ability to keep imagining and being curious about the world and our place in it. And that's sometimes the most important thing we can do." Why do you think so?

Kendra: I found for myself that curiosity is sometimes the best motivator to stay light-hearted in periods of difficulty or crisis. Curiosity allows for more playfulness. It helps to be dynamic and flexible when things feel rigid. I've seen that in my students as well. So I try to cultivate curiosity as a magnetic force that makes it feel less like us pushing and more of something pulling us, into the future and into new experience.

**Priya:** What cultural treasure do you hope will still be around in one hundred years?

Kendra: The cultural artifact I hope will be preserved is the mixed and complex cultural identity of my childhood and current neighborhood of residence; the east village of New York City, more locally known as Loisida or alphabet city. In the 90s, I grew up amidst community gardens, activist spaces, Cuchifritos, pierogi, curries and probably one of the most culturally diverse populations in the world, all represented at my neighborhood public school. I hope the creative, ethnic and activist identity of the neighborhood continues to have staying power and in some ways re-emerges as a dominate identity in the face of gentrification and commercial homogenization.

# Nourish people, nourish the future

with Lucinda Jarrett, Artistic Director of Rosetta Life and Hannah Cloke, Professor of Hydrology at University of Reading



**Priya:** As climate change reshapes our lives, what stories of transformation and dreams of a healthier future do you carry with you?

Hannah: I'm a professor of hydrology, which makes me sound very clever. But basically, I just really love water, especially rivers and rain. I'm fascinated by how water moves around the world. Where it's going and coming from. Its intricate pathways through the landscape. What is rain? I've been interested in this question since I was a little girl. And I am still that little girl, I still get very excited. I think we could make a better world if we looked after our water better. My day job is developing forecasting systems, using giant computer models to track water. Seeing where and when a bad flood is going to happen. Getting that information to people who will be affected so they can take action. The statistics and models are vital, but you also need to be able to imagine how the water is moving, what it will touch along the way. I'd say that imaginative space is the most important part of my job.

Priya: How so?

Hannah: Worsening floods and droughts, dangerous storm systems, hurricanes, cyclones, changes to the monsoon. They're all happening *now*. A healthier future is one where each of us understand these phenomena better and know what actions to take based on good predictions. Even more importantly, we need to be able to give people strength and support to live with those dangers. Imagination helps connect to other realities and lives. When you work in this sphere it's also quite harrowing. It can be easier

to just stick with the numbers, as many scientists do. I can't separate my love of water and my love of people, they are the same thing. I try to encourage this in my students by getting them to imagine people as part of the Earth system, not outside it.

Lucinda: I agree, we can only make change happen if we understand each other enough to care for each other. The most important principle in all my practice is generating a culture of care, whether through dance, poetry or hospice work. Care is creative. Empathy cultivates the imagination, while caring for another engenders purpose and the sense that you can make a difference. Creativity, care and connection together form a foundation that offer us the grounds for dreaming and transforming.

**Priya:** How is the CANOPY project 'Place for Hope' an expression of this?

Lucinda: The vision behind "Place for Hope", which is six years in the making, is to form a global community by bringing together people who would not normally meet. In this project, young people from war-torn places like Ukraine, Gaza, Myanmar and Syria, connect online with people facing health crises, including vulnerable children from hospices in South Africa and Leicester, peers in cities, like Hong Kong, Lagos, Bangalore and Oxford, and rural villages in Colombia and Uganda to collectively create a song and film. They share their own experiences, engage with the knowledge of different experts, including Hannah, who gave an amazing talk about water. Together the young people formulated a call to action: only by working together can we save our waters



and future. This emerged after one participant from Gaza, who's in a refugee camp in Egypt, talked about the burden of having to carry water. She had to be fit enough to go off at four in the morning to gueue and get water for her family. The others reacted saying, you shouldn't have to do this on your own. None of us can do what needs to be done alone. In the process of working together they express their individual ecogrief and eco-anger, and they create something that becomes an anthem for working collectively. They will then take this back to their communities. The film will be screened in refugee camps in Egypt and Greece, in villages in Uganda, in hospices and hospitals in Oxford and South Africa, on Governors Island in New York. In sharing stories we build local and global communities that understand each other better.

**Priya:** The role of water in both your work is very interesting. 70% of the earth is water. The average human body is 65% water, with newborns that's 75%! Most of us don't register this.

Hannah: People have no idea! When I take my students on a field trip around Reading and ask them to find the rivers, they're puzzled. What rivers? They wonder. They just don't see them. I often get them to watch the water, and look up at the clouds. It's like unpeeling your eyes. Get rid of that water blindness. When you imagine a river, you probably think of a blue line, or sadly these days of a dirty, brown line, meandering through the landscape. But you should think about the whole of the river catchment. There's lots of water in our ground, soils and rocks. You've got really slow pathways down through the rocks, little streams running gently along the ground, very fast processes as with a big storm. All of these timescales going on at once. Altogether huge amounts of water. It's incredible to think about the meaning of all that movement in the earth, in our bodies, in our decisions.

**Priya:** That picture of the river catchment makes me think of tree branches and of the human capillary system. These corresponding patterns speak to something ...

Lucinda: It speaks to the web of connectivity, doesn't it? One of the most powerful exercises I do as a movement artist working in hospitals is a visual imagination of our water. When people have just had a stroke or a brain injury, their bodies are suddenly broken and can seem separate and unreachable. People often lose the connection between selfhood and body. It is called "neglect" and has strange parallels with our relationship to the planet. Often we ask people to imagine that their body is seaweed that was dry and is slowly being filled with water. It gives a feeling of volume. That ability to be full of water can

help restore people to a sense of coherence. Through breathing and imagining, we can connect to the rivers in our body. The very act of imagining water is something that fills and renews. It's an act of health.

**Priya:** Your artistic practice encompasses the field of palliative care. What can we take from that approach to help us through climate crisis?

Lucinda: All my work has been informed by palliative care. I'm a member of an organization called Pallchase, which works towards a world in which everyone affected by humanitarian crises, who is experiencing serious health-related suffering, has access to palliative care. For a healthier future, I think we need to apply the principles of palliative care to the wider world: compassion, holism, an awareness of total suffering, understanding of our complex narratives and the complex webs that hold us together as families, communities and as a planet. Whole earth care. It's in the interweaving of these different narratives that we'll find better ways to heal ourselves and the planet.

**Priya:** What cultural treasure do you hope will still be around in one hundred years?

Hannah: Next to my bed, I have a print of a woman wild swimming. She's just floating on her back, with the rain coming down. I did that as a kid. The experience probably changed my life. I used to pretend I was a water goddess. I could move all the water around, make it swirl and change tides and get eddies to spin by casting drops off my fingers. Later, I gave birth to all my four babies in water. Now when I'm wild swimming, I feel all of that as well. As if the memory is shared by me and the water. I hope such gifts that can come from immersing in clean rivers and oceans will be there for all in the future. So everyone can feel water as a source of play, imagination and life.

Lucinda: I think in the future, maybe we won't have the capacity to cook as we do now. So I'd like to gift my mother's recipe book to the future. My mother was from the West Indies, Her recipe book holds Afro-Caribbean cultural history. It holds stories of cooking from vegetables grown in the garden. My mother was one of eight children. It holds stories of slow cooking over days for large families. That book holds all the treasures of bringing families and communities together through food and taste and storytelling. I hope some of these will nourish people and nourish the future.

## In one hundred years we hope there will be...

Cultures and peoples

there wi	ll be		
			Wilderness
The oldest tree in the world		Cleaner calmer cities	
	Prospect Park in Brooklyn		Woodland habitats protected across the urbanising world
Lots of free public spaces to swim		The Jackson Five song, I Want You Back	
	Monopoly		The Biodiversity Archive, a living monument to the incredible variety of life
A pamphlet Ida B Wells, Frederick Douglass and others put together in response to the Chicago World Fair in 1893		Museum collections	
	People holding each other to account in terms of building better, more inclusive and equitable visions of the future		Old growth forests

Our parks and public spaces, both indoor and outdoor		The Temples in Hampi	
	Spaces of informal connection and discovery		Jurien Bay
Our historic energy infrastructure which is a very helpful reminder that we can change the way we do things		Spike Lee's 1989 Film, Do the Right Thing	
	More reclaimed blue spaces		Central Park
More urban lidos where people can swim for free		The east village of New York City, more locally know as Losida or alphabet city, and its creative, ethnic and activist identity	
	Walthamstow Wetlands in London, a bird sanctuary in the middle of the city		Wild swimming in clea rivers and oceans
Green spaces to run in, protected from heat		Lucinda's mother's recipe book which holds Afro-Caribbean cultural history and stories of slow cooking over days for large families	
	A network of 'Museums of Past Futures' to source and collect inventions, systems and practices from all cultures we		All the treasures of bringing families and communities together through food and taste and storytelling

have lost



CANOPY is Wellcome's citizen art and science festival, bringing health to the heart of Climate Week NYC. It aims to democratize public conversation about climate through the lens of health, to celebrate equitable approaches to mitigation and adaptation and to accelerate policy change towards healthier futures for everyone. CANOPY was conceived of, developed and delivered by Danielle Olsen, Rebecca Jacobs and Anthea Longo with the support of many others.

#### American Museum of Natural History















**United Nations**Framework Convention on Climate Change









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