SCIENCE GALLERY

30.04.21 - 31.12.21

# CONTAGION

## TRANSMISSION STARTS NOW

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Photograph courtesy of Yohann Libot.

# ABOUT CONTAGION

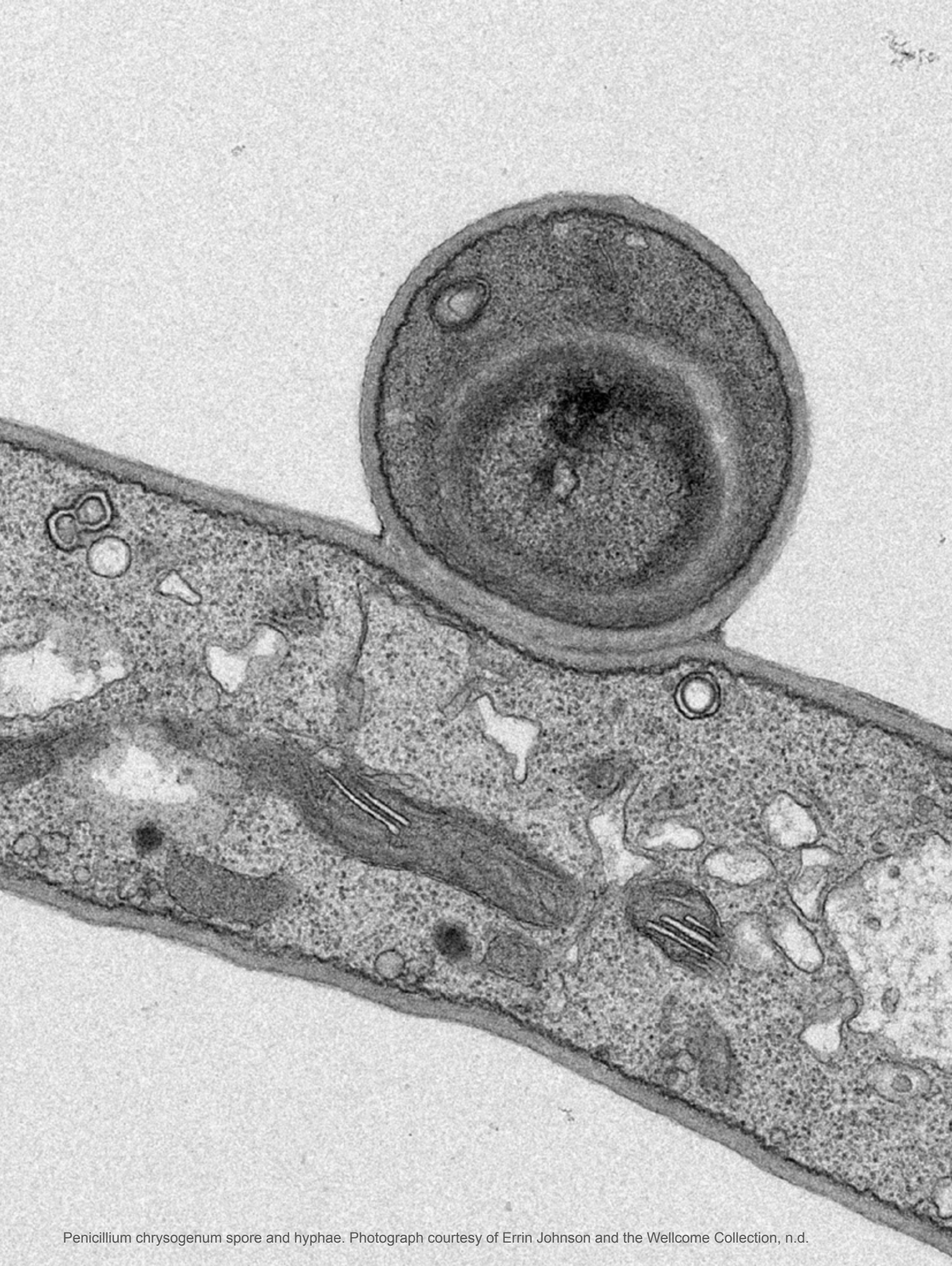
Still from Dan McCarey and Sonia Shah's exhibit *Mapping Cholera*, 2014.

**The domino effect, the ripple effect, or the ability of one event to set off a chain of others has been known and described in various ways. From a yawn in a classroom setting off a wave of them to a chain reaction within a nuclear reactor leading to the creation of energy, this effect can be seen everywhere.**

**Human social interactions are among the most studied examples of this. We have observed historically that our ability to travel, combined with our need to communicate and connect, has led to some of the worst epidemics. Within the human body, the spread of infection from cell to cell requires communication and strategy, which is well exhibited by microorganisms, viruses, and parasites.**

**Emotions are contagious too! Our everyday lives are filled with examples of how we 'catch' subtle or complex emotions, such as happiness, anger, panic, or depression, from other people. We see this contagion manifested in social phenomena like mass protests, violent riots, or the selling panics and buying frenzies of the stock market. Research has shown that moving against the crowd provokes the alarm circuits in our brain, while conformity keeps us calm. This has formed the basis for much of the advertising, propaganda and social media.**

**Psychologists, anthropologists, virologists, historians, designers, health workers, artists, and neuroscientists have studied how and why human minds and bodies are captured and cultivated by viruses, visionaries, and vogue. In a bid to unpack the layers of contagious phenomena that surround us, this exhibition explored the transmission of diseases, behaviours, and emotions at a time when the world was grappling with the COVID-19 pandemic.**



Penicillium chrysogenum spore and hyphae. Photograph courtesy of Errin Johnson and the Wellcome Collection, n.d.

# ABOUT THE PROGRAMMES AT CONTAGION

CONTAGION was conceptualised as a living exhibition—where the programming derives from and feeds into the exhibits themselves. The exhibits explored the core theme—the transmission of diseases, behaviours and emotions. The programmes extended this theme into the socio-political and cultural domain and provoked critical questions on research agendas, equity and social justice during the COVID-19 pandemic. Through interlinked exhibits and programmes, we hoped to provide our audience with the tools to ask questions and make sense of the world around them.

It was essential that visitors did not experience the exhibits as black boxes that they entered, interacted with and left. In order to deepen engagement, we provided them with the means to delve into the making of the exhibit. Both through sharing documentation of the artists' process but also through live interactions with the artists who shared their creative inspiration and failed experiments.

The exhibits also became a starting point for new inquiries and a linchpin for understanding the socio-political context and larger scientific issues around contagion. We invited scholars, artists, and filmmakers to share their research through talks, workshops, and discussions that allowed visitors to actively participate, engage and contextualise the message conveyed by the exhibits.

For instance, Anaïs Tondeur's exhibit *When the World was a Laugh* and Tina Gonsalves' *The Chameleon Project* explored the contagious nature of emotions. In order to delve deeper into how behaviours and emotions are transferred between individuals, we collaborated with the Department of Experimental Psychology at University College London to create a live experiment on social contagion. To recognise how emotions and behaviours might transmit between individuals, visitors took part in a series of tasks with guidance of trained mediators.

In addition, two lectures—one by researcher Damon Centola which showed how social networks were formed and maintained, and the other by literary historian Ananya Kabir on the contagious energy of dance—lent further insights into social contagion. Taken together, visitors could understand not just psychosomatic phenomena but also its impact on the way we vote, dance, and make decisions in our everyday lives.


Alexander Fleming’s petri dish, 1954. Reproduced by permission from Bonhams.

Similarly, HIV was explored in CONTAGION from many perspectives. The exhibit *Fluid Dialogues* by Basse Stittgen focussed on the lasting social stigma faced by HIV positive individuals across the world. It encouraged visitors to ask critical questions on the skewed global access to healthcare, which was further explored in anthropologist Adia Benton's lecture on the politics of care in Africa and T. Jayashree's film, *A Human Question*. Curator and art critic Girish Shahane took this a step ahead by discussing how the HIV/AIDS pandemic influenced not just the queer movement, but also several contemporary artists who made it a central theme in their art. HIV in the exhibition was not just a virus, but a way to interrogate societal structures that made medical care a privilege, and not a right.

On the other hand, Robert Good's exhibit *2020 Vision* explored the speed at which information—news in particular—is contagious. The Google Search Algorithm was a central tool in the creation of his work. Beyond a masterclass by the artist himself, we also conducted a workshop by Indian Institute of Science's researcher Shreya Chakraborty, who showed how Google Search Trends could become a tool to track contagious information. The World Health Organisation's Global Infodemic Management team, led by Sylvie Briand, also conducted a lecture and masterclass on EARS—Early AI-supported Response with Social listening—which showed how tracking the transmission of fake information was crucial to the management of a pandemic. Workshops were also conducted by the Tactical Tech team where young adults learnt techniques to assess the veracity of information they accessed on the internet. Though the world was inundated with misinformation during the pandemic, CONTAGION provided various ways for the visitor to find their way through it.

CONTAGION was developed with the intent of providing our audience with a safe and engaging space to think about the crisis around them. We approached the theme without a fixed narrative, so that visitors could find their own narratives within it. The exhibits and programmes were developed simultaneously so as to provide visitors with access not just to research, techniques, and methods but also to socio-political contexts, historical evidences, and speculative futures. By rendering the familiar unfamiliar through our exhibits and programming, we believe we were successful in surprising and challenging the public perception of contagion.

Madhushree Kamak
*Programme Manager*

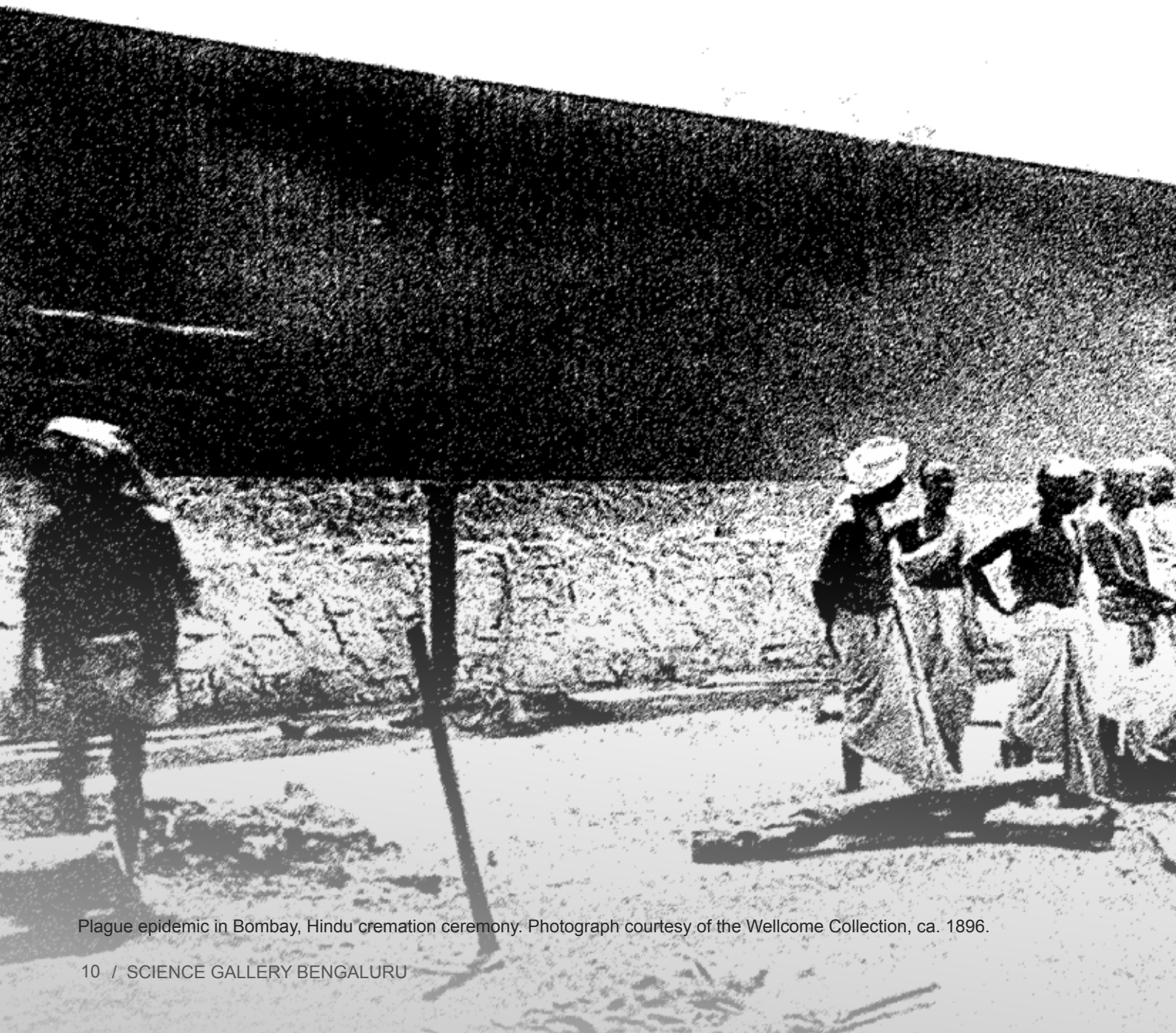
# OVERVIEW

## MEDIA ENGAGEMENT

**92,70,00,000+** Reach
**64,518** Engagements
**60** Press Mentions

## MEDIATORS

**35** Mediators
**18** Institutions
**5** Languages



Plague epidemic in Bombay, Hindu cremation ceremony. Photograph courtesy of the Wellcome Collection, ca. 1896.

# 3,67,000+ EXHIBITION VIEWS
# 09 PARTNERS

## PROGRAMMES

**91** Programmes
**81** Facilitators
**8,100+** Programme participants

## EXHIBITS

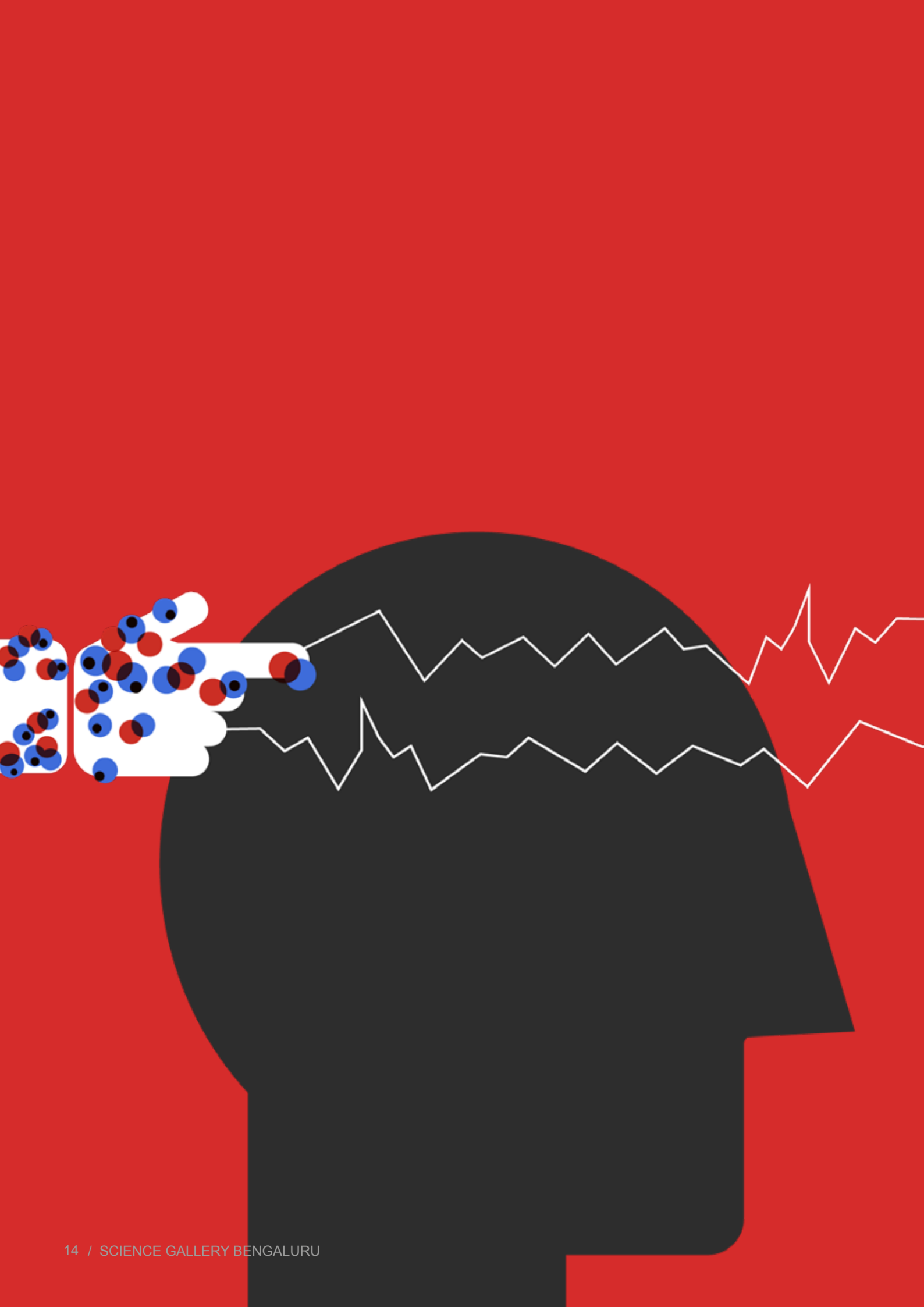
**16** Exhibits
**34** Artists
**11** Institutions
**9** Disciplines

# OPENING EVENT

*Tina Gonsalves, Still from the exhibit The Chameleon Project, ca. 2010.*

**CONTAGION** opened on April 30, 2021 in a special event with

- **E. V. Ramana Reddy**, Additional Chief Secretary to Department of Commerce & Industries and Department of Electronics, Information Technology, Biotechnology and Science and Technology, Government of Karnataka
- **Kiran Mazumdar-Shaw**, Executive Chairperson Biocon Ltd.
- **Sheila Jasanoff**, Pforzheimer Professor of Science and Technology Studies at the Harvard Kennedy School



# TRIGGER

*Where the stories begin*

How do contagious phenomena begin? What can we learn from tracing its origins? Investigating the beginnings of how emotions, trends, and disease spread through a human population, artists and researchers unpacked the source of contagion as a space where stories begin.

**6 EXHIBITS**

**4 LECTURES**

**5 WORKSHOPS**

**1 EVENT**

# EXHIBITS

**“Learning about the history of science puts the present into perspective”**

*- Nishita Patnaik, Programme Participant*


Robert Koch’s drawing of an anthrax pathogen, 1876. Image from Esther Maria-Antao’s exhibit *Contagion in the 21st Century*, 2021. Reproduced by permission from The Robert Koch Institute.

# Contagion in the 21st Century

The science and public health engineering behind controlling past epidemics has profoundly shaped our response to pandemics like COVID-19. Much of the early work around identifying and responding to infectious diseases was done by Robert Koch, a German physician and bacteriologist, who discovered the cycle of the anthrax disease as well as the causative agents of tuberculosis and cholera.

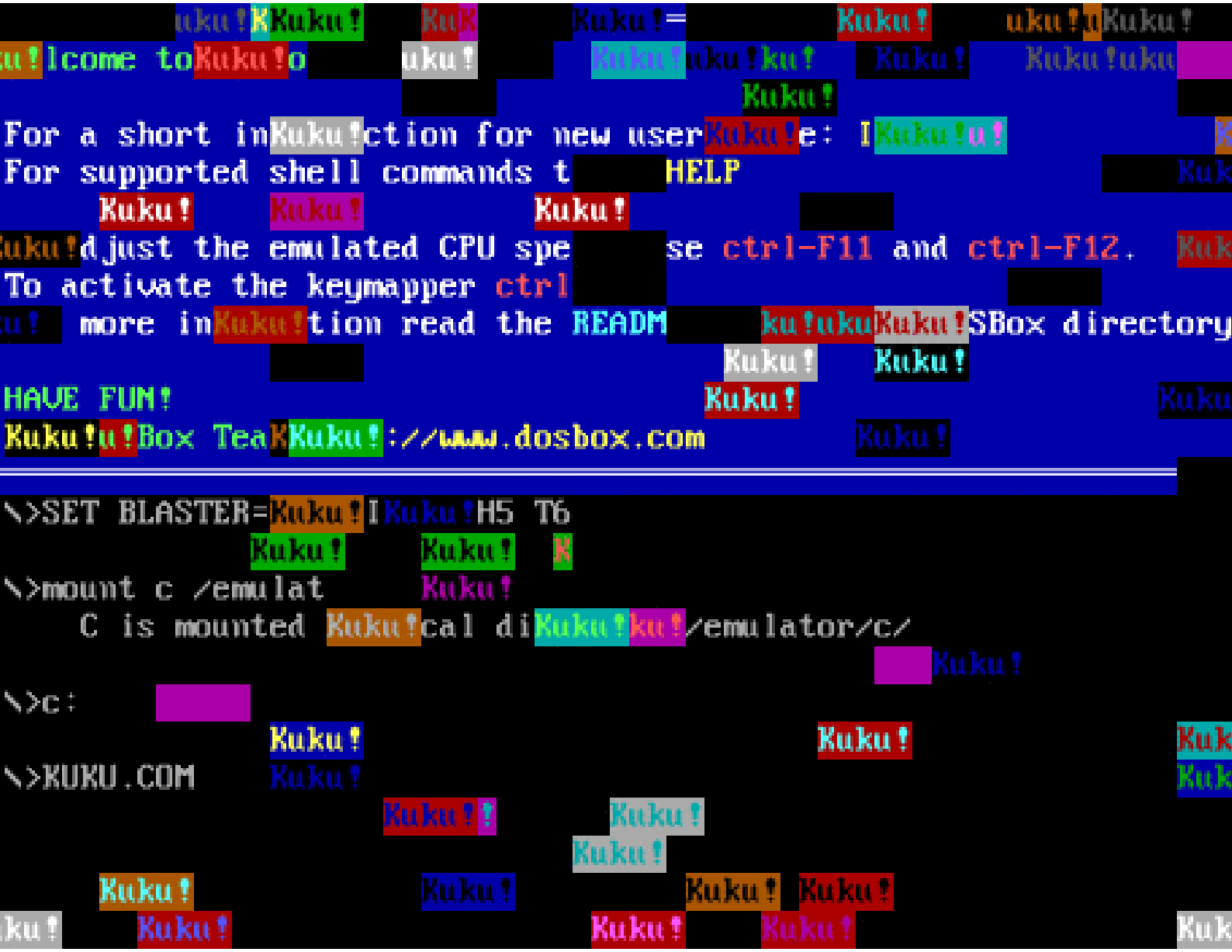
This exhibit contained photographs and simulations courtesy of the Museum at the Robert Koch Institute. It took us through the various places around the world where Robert Koch made his pioneering discoveries, and provoked us to reflect on how our responses to infectious diseases continue to evolve through time.

## About the Scholar

**Esther-Maria Antao** heads the Museum at the Robert Koch Institute and is in charge of the advancement of the Museum in accordance with ongoing developments of the Institute. She communicates with the general and expert public through guided museum tours offered to visitor groups. As part of the project group, Science Communication, she is responsible for visual communication and graphic design, as well as its social media presence and that of the Museum. She has a doctorate in microbiology and has focused strongly on antibiotic resistance communication in the recent past.

**“Through this exhibit I learnt that the word contagion can mean a lot of different things, and it doesn’t necessarily have to have a negative connotation.”**

*- Srinath Sundareswaran, Visitor*




Still from KUKU Malware. Image from Mikko Hyppönen’s exhibit *Malware Museum*, 2021.

# Malware Museum

After the advent of computer systems and related technology, human diseases ceased to be the only contagious and deadly infections plaguing us. Computer viruses have cost us labour hours, money, and privacy. The earliest ones began to crop up in the 1970s; the “Creeper Worm” is largely accepted as the first self-replicating program that spread through the ARPANET (The Advanced Research Projects Agency Network).

While most computer viruses created today are malicious in their intent, many coders in the 1980s and 1990s sought to creatively express themselves or disseminate messages through viruses spread on the MS-DOS (Microsoft Disk Operating System). Mikko Hyppönen, a computer security expert, put together a large collection of interesting malware that now, devoid of any destructive potential, could be safely viewed and admired for their ingenuity, cheek, and imagination.

## About the Scholar

**Mikko Hyppönen** is a computer security expert in Finland. He is the Chief Research Officer for F-Secure, a global cyber security company. He has worked on many of the worst computer virus outbreaks in history. In 2010 he worked on the Stuxnet computer worm which was responsible for damaging parts of Iran’s nuclear program. He is also interested in viruses from the 1980s and 1990s, particularly how they were often created by ‘happy hackers’ and not by organised groups with malicious intent. Many of the viruses in the *Malware Museum* archive come from his personal collection, while others were put together by Jason Scott, an archivist with the Internet Archive.

**“Through this exhibit, I gained a better understanding of past pandemics.”**

*- Shweata N Hegde, Visitor*


Still from Dan McCarey and Sonia Shah's exhibit *Mapping Cholera*, 2014.

# Mapping Cholera: A Tale of Two Cities

The *Mapping Cholera* project looked at two cholera epidemics almost two centuries apart: one in 1832 in New York and the other in 2010 in Haiti. The epidemic in Haiti was the worst cholera outbreak in recent history and it left the country reeling. The spread of the disease, unlike the 1832 epidemic in New York, was diligently documented by Doctors Without Borders and journalist Sonia Shah. The challenge was to digitally map the New York epidemic that took place two decades before John Snow's famous mapping of cholera in London (1854). Shah took historical records from doctors of the time and combined them with 19th century maps of the city, which had been geocoded by the New York Public Library.

In mapping the two cholera outbreaks, this project visualised the spread of cholera, the differences and similarities between the two epidemics, and rendered visible the magnitude and scale of this disease.

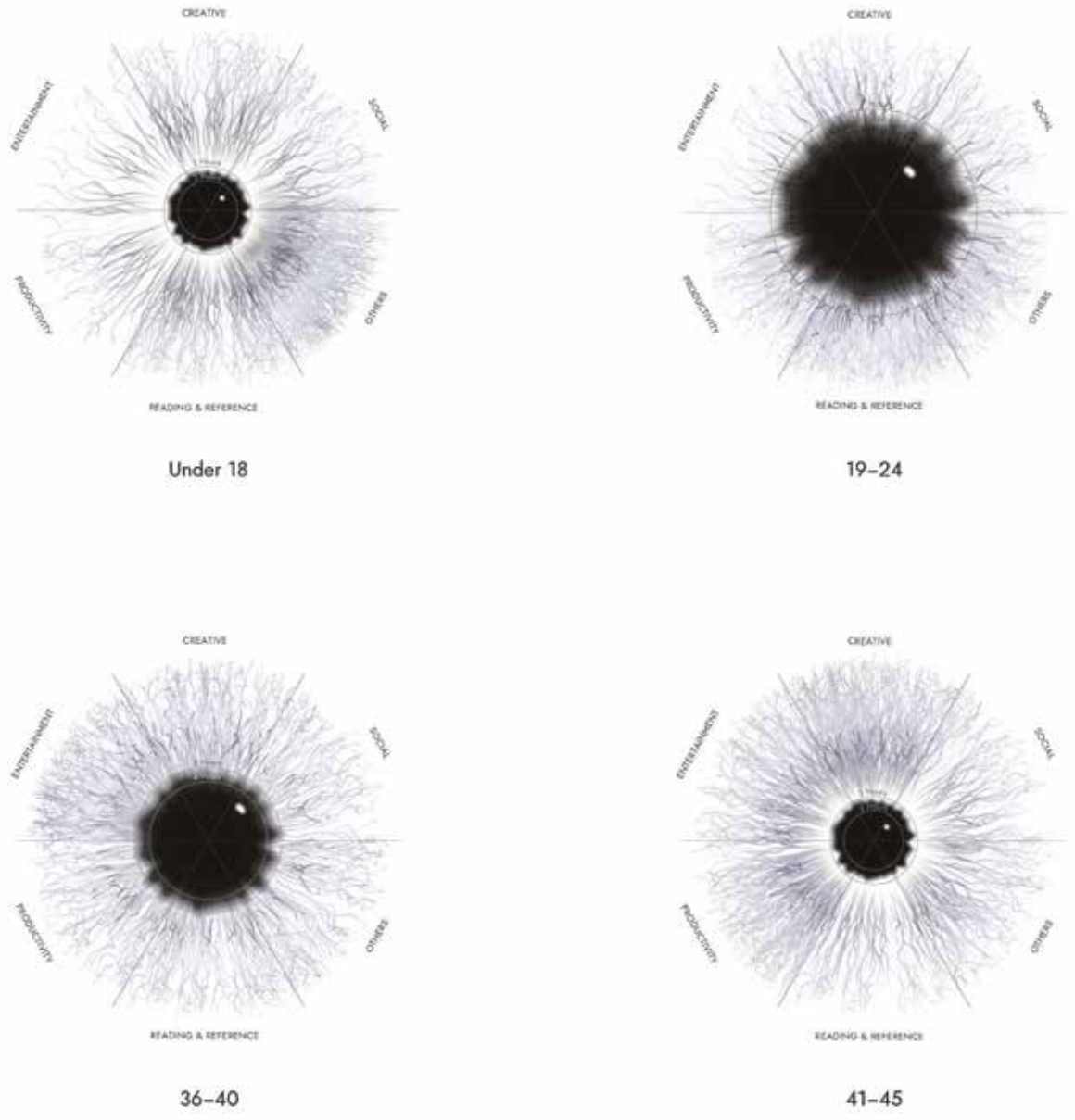
## About the Contributors

**Sonia Shah** is a science journalist and prize-winning author of critically acclaimed research based books on science, politics and human rights. She has lectured in universities and colleges across the United States. Shah is interested in the inequalities that plague societies. Her project *Mapping Cholera* was supported by the Pulitzer Center on Crisis Reporting.

**Dan McCarey** is an information designer in Washington. He is an alumnus of the Pulitzer Center, and has designed and built the *Mapping Cholera* website.

**“The idea of Deepfake Lab was very fascinating, especially considering our current times”**

*- Pakhi Gupta, Visitor*




Still from DensityDesign and Tactical Tech's exhibit *The Glass Room: Misinformation Edition*, 2016.

# The Glass Room: Misinformation Edition

Today we can access information more easily than before, but the veracity of this information is continuously called into question with the rise of deep fakes, algorithms, and bots. "The Misinformation Edition" of *The Glass Room* explored how social media and the web have changed the way we react to information.

The project uncovered how social media platforms are designed to keep us hooked and how they can be used to change our minds. It investigated why finding 'fake news' is not as easy as it sounds, and how the term fake news is as much a problem as the news itself. It dove deep into the world of deep fakes, which are now so realistic that they are virtually impossible to detect.

## About the Contributors

**DensityDesign** is a Research Lab in the Design Department of the Politecnico di Milano. It focuses on the visual representation of complex social, organizational, and urban phenomena.

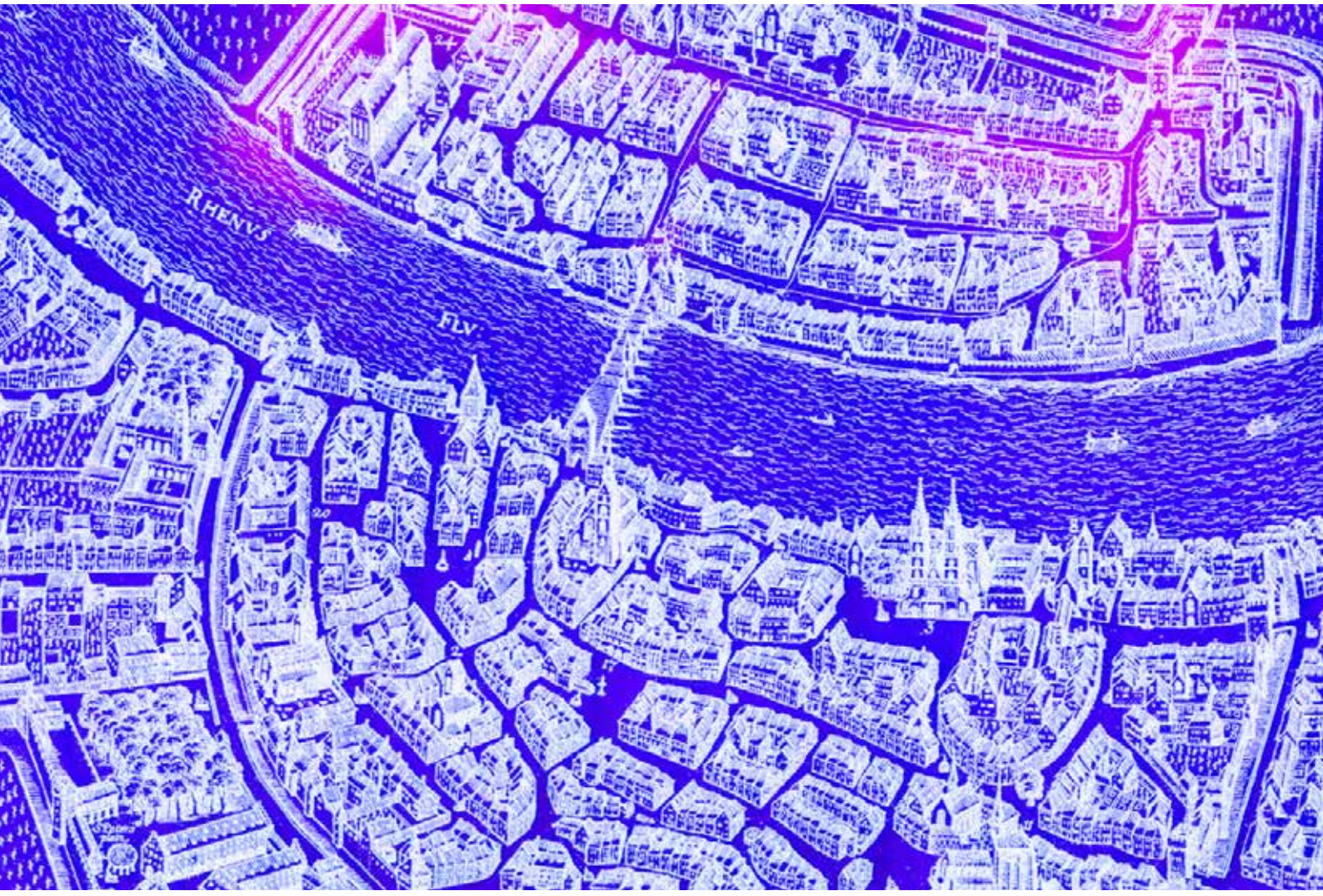
**The Glass Room** is a public intervention that provides an interactive, fun, and challenging experience that brings to life the most pressing problems facing people and the tech industry today. As technology reaches a global scale and becomes embedded in every part of our lives and our environments, The Glass Room examines its impacts and helps visitors explore practical solutions to mitigate them.

The Glass Room was originally conceived and produced in the context of the exhibition Nervous Systems with support from Haus der Kulturen der Welt in the framework of "100 Years of Now", and is based on an original concept developed by Stephanie Hankey and Marek Tuszynski shown in March–May 2016 at the HKW in Berlin, Germany.

**Tactical Tech** is an international NGO that engages with citizens and civil-society organisations to explore and mitigate the impacts of technology on society.

**“THERIAK is a mesmerizing work of art, with its rich historical and cultural background that is bound to leave a lasting impression on its viewers.”**

*- Breanne Coelho, Mediator*




Still from Sarah Craske's exhibit *THERIAK* | *The Disease Map*, 2019.

# THERIAK | The Disease Map

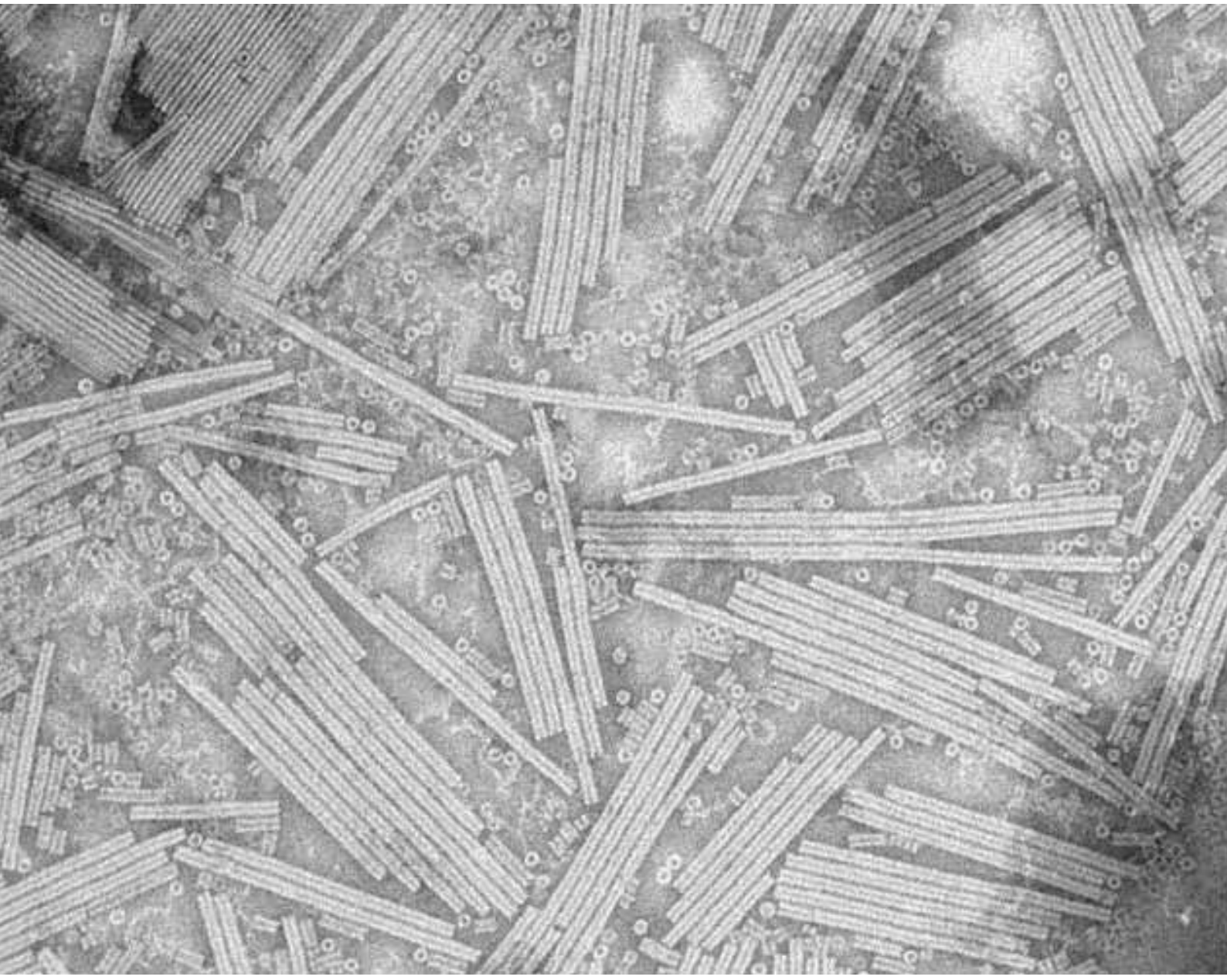
Disease maps are a long-standing scientific tool used to understand the spread of disease across populations. Sarah Craske's *The Disease Map* took an engraving of Basel, Switzerland by Matthäus Merian (1593 –1650), and turned it into a disease map by engraving it onto a custom-made petri dish, within which cholera was painted (onto agar) over several days while also being inhibited with synthetic peptides that Craske designed. This process was recorded using time-lapse photography. This ebb and flow became a metaphor for our relationship with cholera, for the continuous fight against emerging diseases and new strains, and the pressing need to address the global existential crises that antimicrobial resistance presents.

The protocols for this work were designed through collaborative and experimental work with Irene Wüthrich and Steven Schmitt from the Department of Biosystems Science and Engineering (D-BSSE) at ETH Zurich. Through observational inquiry and collaborative discussion while working at the D-BSSE, Craske learnt about contemporary synthetic biological approaches to fighting infectious diseases. Whilst critically reflecting on these approaches, she worked closely with scientists to develop new ideas and practical experiments that combined both scientific and artistic practice.

## About the Artist

**Sarah Craske** works in the liminal, transdisciplinary space between art, science, and technology. Her work explores the Anthropocene through philosophical enquiry into our relationship with various forms of climate breakdown, by drawing on specialist expertise and technologies, and by taking part in research collaborations across the world.

Sarah's recent works include *Biological Hermeneutics,* which was speculatively presented through a site-specific installation at Chethams' Library, Manchester—the oldest public library in the English-speaking world. Her recent awards include the NOVA award (1300 artist applicants) on graduation from Central St Martins (first-class MA Art & Science), an Arts and Humanities Research Council "Science in Culture" Innovation Award, and a Biofaction International artist-in-residency in Switzerland.



Tobacco Mosaic Virus purified and seen under an electron microscope. Image courtesy of Wikimedia Commons.

# Wendell Stanley: Crystallizing Viral History

The Tobacco Mosaic Virus (TMV) was the first virus ever to be crystallized. Wendell Meredith Stanley (1904–1971), a pioneer in the field of virology, conducted research on the TMV at the Rockefeller Institute for Medical Research. Stanley's success forged the symbolic beginnings of molecular biology.

This exhibit encouraged visitors to travel to the mid-1900s and listen to Wendell Stanley talk about the philosophy and chemistry of viruses, and to take a peek at the virus that changed history.

Stanley recognized the significance of viruses, remarking, "The viruses hold the key to the modification—for better or worse—of all life. They hold the key to the secret of life, to the solution of the cancer problem to biological evolution, to the understanding and control of heredity, perhaps to the nature of all future life on earth" (The New York Times, June 16, 1971). Though many viruses were known to science at the time, the nature and chemistry of viruses was still a mystery. Stanley's discovery created ripples through the scientific community further bolstering research on viral genetics and led to a shared Nobel Prize in Chemistry in 1946.

## About the Contributors

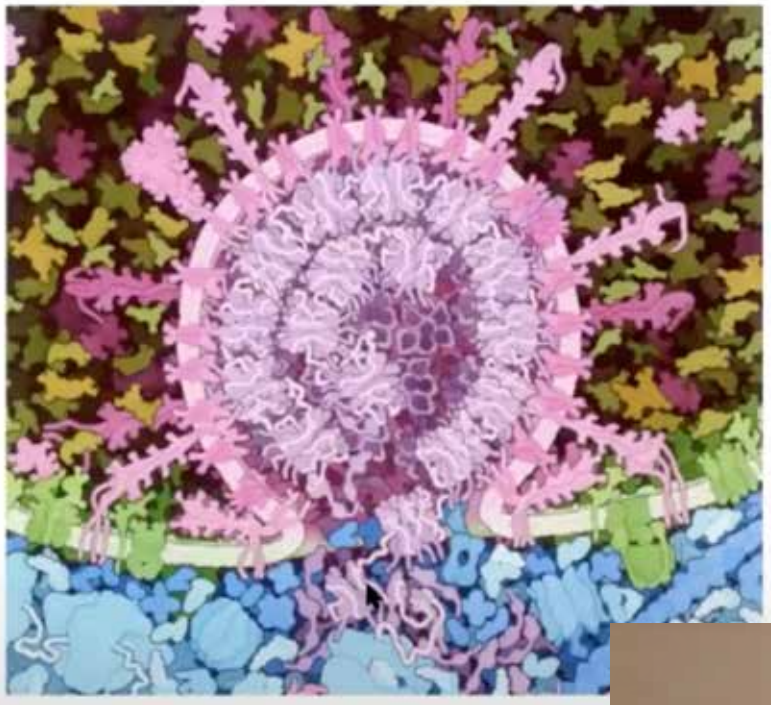
**Hubert Howe Bancroft**, an American historian born in 1832, accumulated an immense collection of manuscripts on the history of California, and later, also acquired histories of other parts of the US. After years of building his collection, he sought a permanent home for them, and so The Bancroft Library was born at the University of California, Berkeley. It now houses rare books, manuscripts, and other unique collections, including the Wendell Stanley papers.

Started in 1951, the **Lindau Meetings** are a series of annual conferences during which various Nobel laureates interact with undergraduate and graduate students who will go on to become the next generation of scientists.

# PROGRAMMES

**“Through this lecture, I learnt more about lineages and would like to understand them better.”**

*- Ankita P, Programme Participant*



Chitra Pattabiraman delivers her lecture "Identifying Variants of SARS-CoV-2 in India."

# Identifying Variants of SARS-CoV-2 in India: What Does It Mean For Prevention And Control Of The Pandemic?

LECTURE

**Chitra Pattabiraman**
**14 May 2021**

Much like other viruses, the coronavirus (SARS-CoV-2) that causes COVID-19 keeps changing and mutating. In this talk, Chitra Pattabiraman shared her work on SARS-CoV-2 variants that were imported and found circulating in Bengaluru between November 2020 and January 2021. Mutations do not always result in drastic changes to the infectivity, transmission, and immune escape of the virus. However, some changes lead to Variants of Concern that must be treated with caution. Pattabiraman spoke about her research as well as some Variants of Concern that were identified over the course of the COVID-19 pandemic.

## About the Virologist

**Chitra Pattabiraman** is an Early Career Fellow at the Department of Neurovirology, National Institute of Mental Health and Neurosciences (NIMHANS), Bangalore. She is interested in viruses that are novel, emerging and/or cause human disease. She obtained her BSc in Microbiology from Calcutta University, an Integrated MSc-PhD in Life Science from the National Centre for Biological Sciences, Tata Institute of Fundamental Research, Bangalore, and was awarded a SERB-Royal Society Newton International Fellowship for postdoctoral work at the University of Liverpool.

**“It’s fascinating to see how plant viruses can be used to combat animal viruses.”**

*- Alan Tripp, Programme Participant*


George Lomonossoff delivers his lecture "Plant Viruses from Adversaries to Allies."

# Contagium Vivum Fluidum: Plant Viruses from Adversaries to Allies

LECTURE

**George Lomonossoff**
**16 May 2021**

Despite recognising the consequences of viral infection, it was not until the late 19th century that the causative agents were identified as a distinctive class of pathogen—a 'contagion vivum fluidum' or 'virus'. However, as they could not be cultured in vitro or observed by light microscopy, the precise nature of viruses remained enigmatic until well into the 20th century. This talk discussed the study of plant viruses as they played a central role in the development of modern molecular biology. George Lomonossoff spoke about their initial characterisation as disease-causing organisms, and their current deployment for combatting animal diseases through the creation of novel vaccines, diagnostic reagents and anti-cancer therapies.

## About the Virologist

**George Lomonossoff** obtained both his BA and PhD from the University of Cambridge and joined the John Innes Centre, Norwich in 1980. His research has focused on the molecular biology of RNA plant viruses and their use in bio- and nanotechnology. In 2012 he was named 'BBSRC Innovator of the year' for his work on plant-made pharmaceuticals and in 2015 delivered the Microbiology Society Colworth Prize Lecture. The transient expression system he developed (CPMV-HT) is used worldwide and is currently deployed by Leaf Expression Systems, Norwich to scale-up production of plant-made products.

**“I learnt that the difference between misinformation and disinformation is intent.”**

*- Soumya Khedkar, Programme Participant*


Photograph courtesy of 3dpete.

# Information…It's Complicated

WORKSHOP

**Louise Hisayasu**
**16 May 2021**

The information ecosystem can be perplexing and complicated. As the infodemic associated with the COVID-19 pandemic spread, this interactive fact-checking workshop by Louise Hisayasu showed us why the term 'fake news' could be misleading. This online workshop dove deeply into the definitions of misinformation and disinformation; using real world examples to explore the difference between the two. Participants had the opportunity to discuss the defining elements of misinformation and were introduced to basic digital investigation techniques to stop the spread of misinformation.

## About the Researcher

**Louise Hisayasu** works as a project coordinator at Tactical Tech, working with remote partners globally to host interactive exhibitions on data and privacy.

Photograph courtesy of Alexander Sinn.

# Creating Computer Viruses

WORKSHOP

**Saurabh Nandedkar**
**22 May 2021**

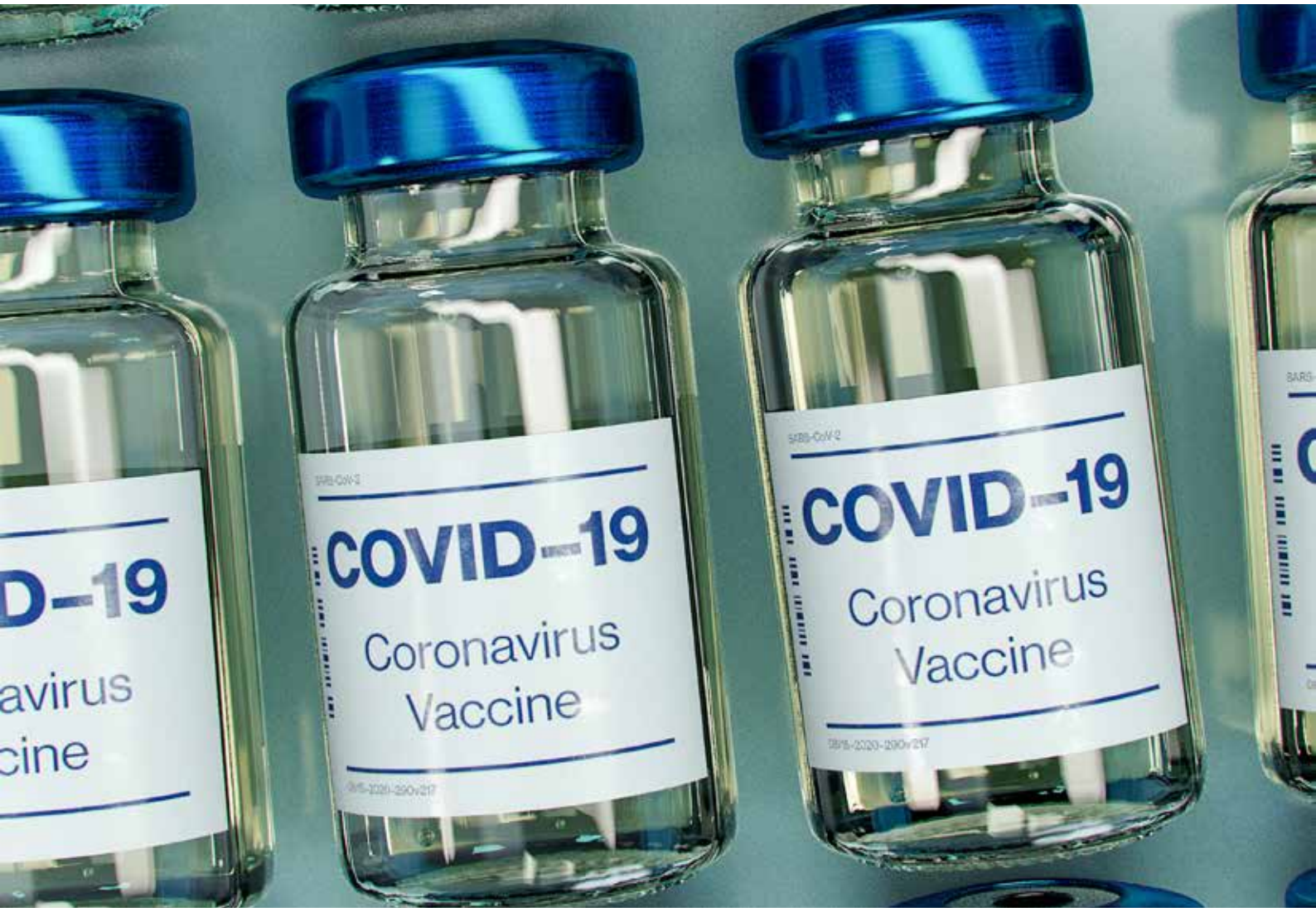
Computer systems are just as vulnerable in the faces of viruses as humans are. Cybercriminals took advantage of the COVID-19 global health crisis by posing as trusted new sites and tricking people into opening malicious attachments. This workshop, facilitated by Security Analyst Saurabh Nandekar, offered participants the chance to battle digital epidemics by guiding them on how to create a computer virus from scratch.

## About the Security Analyst

**Saurabh Nandedkar** is an undergraduate student in the department of Computer Engineering at the National Institute of Technology, Kurukshetra. Since the past year, he has been working as a Security Analyst. Saurabh is also an Open Source contributor.

**“Through the workshop, I learnt that scientific outreach is a complicated process, which needs to be re-assessed continuously with new breakthroughs in research.”**

*- Anshu Raina, Programme Participant*




Photograph courtesy of Daniel Schludi.

# COVID-19 Vaccines: Telling the Story

WORKSHOP

**Hannah Chhoa-Howard**
**30 May 2021**

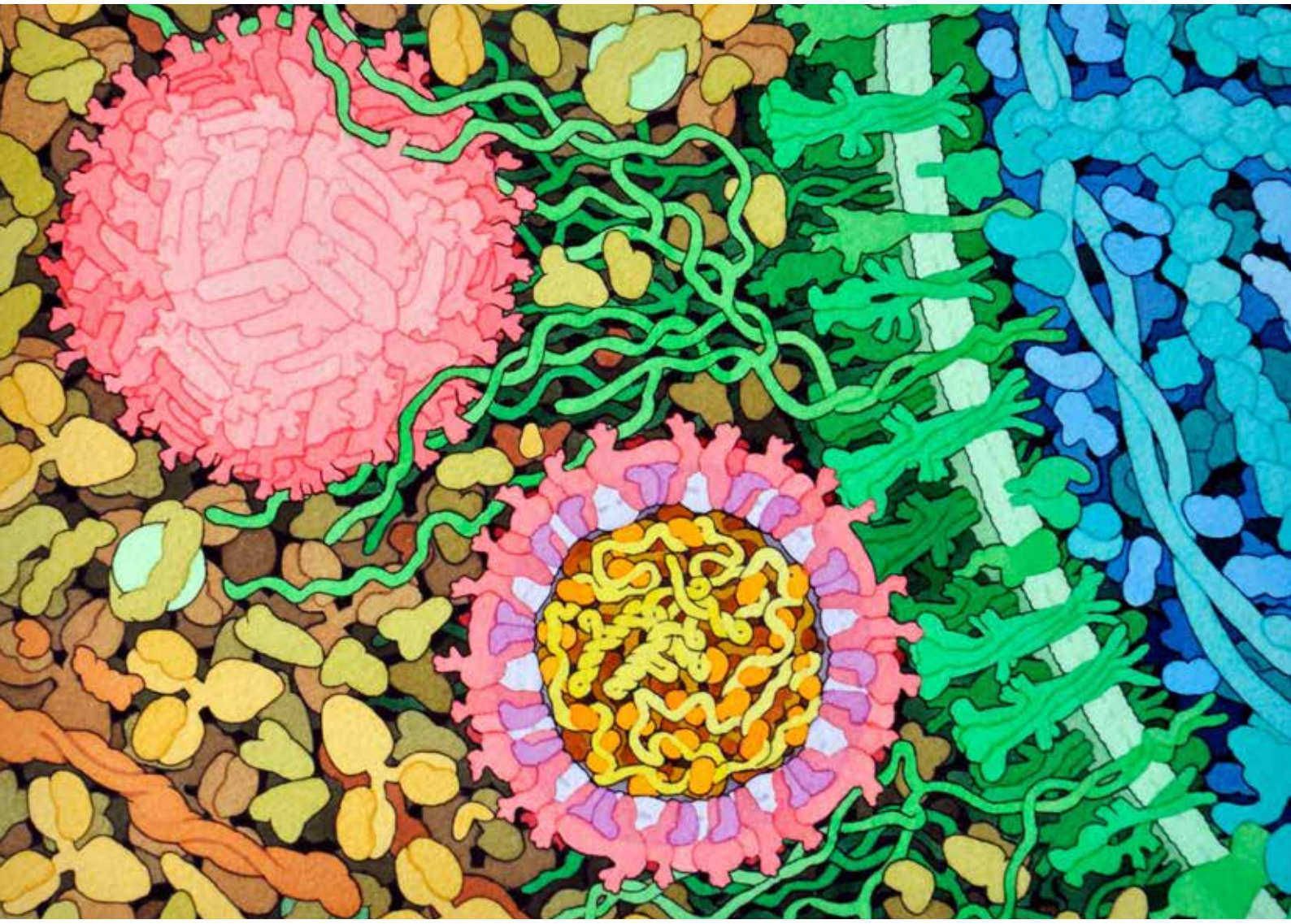
With the example of Wellcome's COVID-19 Vaccine Information Hub, this workshop explored the role of communication and advocacy in the complex space of vaccine discourse during the COVID-19 pandemic. Facilitated by Vaccine Graduate at Wellcome, Hannah Chhoa-Howard, the workshop took participants through the process of creating and running a campaign on vaccines, and also gave them the opportunity to develop ideas on communications or advocacy campaigns on COVID-19 in local communities.

## About the Vaccines Graduate

**Hannah Chhoa-Howard** works at the Wellcome Trust in the Vaccines team. Within Vaccines, she works specifically on policy, advocacy and communications as well as epidemic preparedness. She has a keen interest in Global Health and completed her Bachelor of Science degree in Biomedical Sciences at University College London.

**“The workshop provoked me to think about how design is connected to COVID-19, and how it can help mitigate the effects of the pandemic.”**

*- Samridhi Pandey, Programme Participant*



David Goodsell's illustration of the Zika Virus. Image courtesy of the RCBS Protein Data Bank, 2016.

# Visualizing the Virus: Design as a Medium for Collective Critical Care

WORKSHOP

**Gabriela Aquije Zegarra**
**5 June 2021**

A follow-up to a course held at the National Institute of Design, "Visualizing the Invisible: Art, Design and Public Health" this workshop by Architect and Design Researcher Gabriela Aquije Zegarra facilitated collective dialogue and experiments on how design relates to the social, political and ecological impacts of the COVID-19 pandemic. Through a hands-on, collective exchange using the Miro board tool, the workshop focussed on various objects, relations, and systems that could make the COVID-19 virus visible. It provoked participants to explore notions of critical and speculative design in order to trigger curiosity, care and where possible, action around ideas of contagion.

## About the Design Researcher

**Gabriela Aquije** is a Peruvian Architect and Design Researcher, currently based in Germany. In 2020 she obtained her MSc Design Research as part of the COOP academic partnership between the Bauhaus Stiftung, Hochschule Anhalt, and Universität Humboldt zu Berlin. Through a critical space practice, her work includes projects of landscape architecture, curatorial research and exhibition design, in partnership with architects and art collectives across North and South America, and Europe. As a Future Architecture 2021 Fellow, she's currently focused on the link between bio-regional Food Systems, Urban Commons and Transition Design.



Esther Maria-Antao conducts her event "Walkthrough of the Museum at the Robert Koch Institute."

# Walkthrough of the Museum at the Robert Koch Institute

EVENT

**Esther-Maria Antao**
**12 June 2021**

This event saw Esther-Maria Antao, the Head of the Museum at the Robert Koch Institute, walk participants through the permanent exhibitions displaying the history and current work of the national public health institute in Germany.

## About the Communication Expert

**Esther-Maria Antao** heads the Museum at the Robert Koch Institute and is in charge of the advancement of the Museum in accordance with ongoing developments of the Institute. She communicates with the general and expert public through guided museum tours offered to visitor groups. As part of the project group, Science Communication, she is responsible for visual communication and social media. She has a doctorate in microbiology and has focused strongly on antimicrobial resistance (AMR) communication in the recent past. She currently focuses on COVID-19 communication and will go back to focusing on AMR communication when the pandemic is over.

**“I was exposed to the fascinating world of synthetic microbiology through Sarah’s work.”**

*- Gayatri Indukumar, Programme Participant*

Still from Sarah Craske's exhibit *THERIAK | The Disease Map*, 2019.

# THERIAK: Behind the Scenes in a Lab

WORKSHOP

**Sarah Craske**
**31 July 2021**

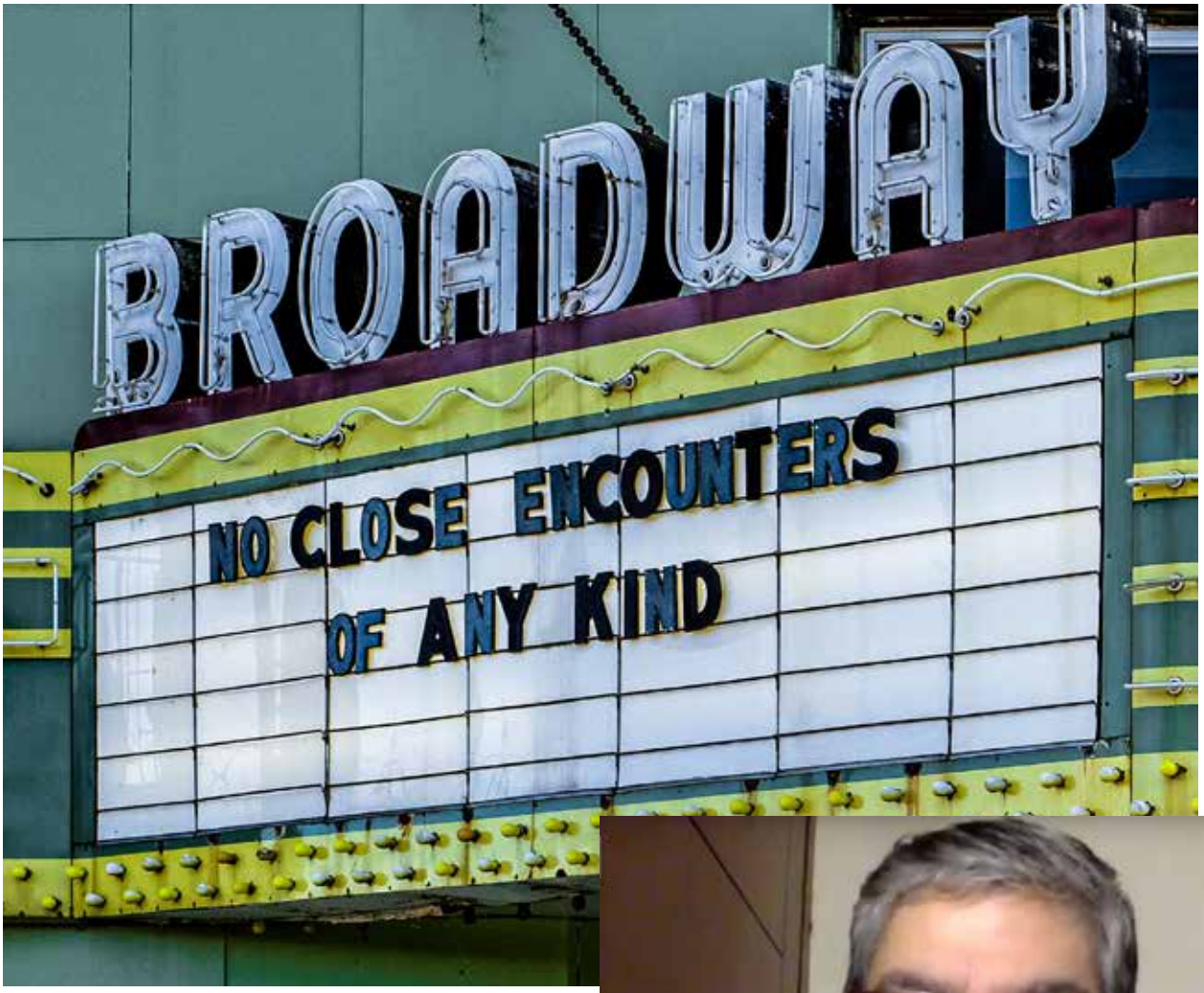
Disease maps are a long-standing scientific tool used to understand the spread of disease across populations. Artist Sarah Craske's *The Disease Map* took an engraving of Basel by Matthäus Merian (1593-1650), and turned it into a disease map by engraving it onto a custom-made petri dish, within which cholera was painted (onto agar) over several days while also being inhibited with synthetic peptides that Craske designed. The process was recorded using time-lapse photography. The protocols were designed through collaborative and experimental work with Dr. Irene Wüthrich and Dr. Steven Schmitt, from the D-BSSE, ETH Zurich.

During the workshop, Craske explained in detail the final protocol that was used to successfully ensure that her synthetic peptide 'THERIAK' inhibited the growth of the vibrio cholerae. Participants learnt how to make the garlic extract, which was used within the agar plate to weaken vibrio cholerae's cell walls.

## About the Artist

**Sarah Craske** works in the liminal, trans-disciplinary space between art, science, and technology. Her work explores the Anthro-pocene through philosophical enquiry into our relationship with various forms of climate breakdown, by drawing on specialist expertise and technologies, and by taking part in research collaborations across the world.

Sarah's recent works include *Biological Hermeneutics*, which was speculatively presented through a site-specific installation at Chethams' Library, Manchester—the oldest public library in the English-speaking world.




Top: Photograph courtesy of Dan Gaken.

Right: Rustom Bharucha delivers his lecture "Thinking through the Pandemic: A Performative Perspective."

## Thinking through the Pandemic: A Performative Perspective

LECTURE

**Rustom Bharucha**
**27 November 2021**

In a freewheeling range of thoughts on the relationship between the pandemic and the practice of theatre and performance, this talk shed light on a number of issues in a dialogical mode of address. This included the rationale behind the global closure of theatres independently of discussion and debate in civil society, and the difference between the present shutdown and earlier pandemics when theatres and cinemas remained open.

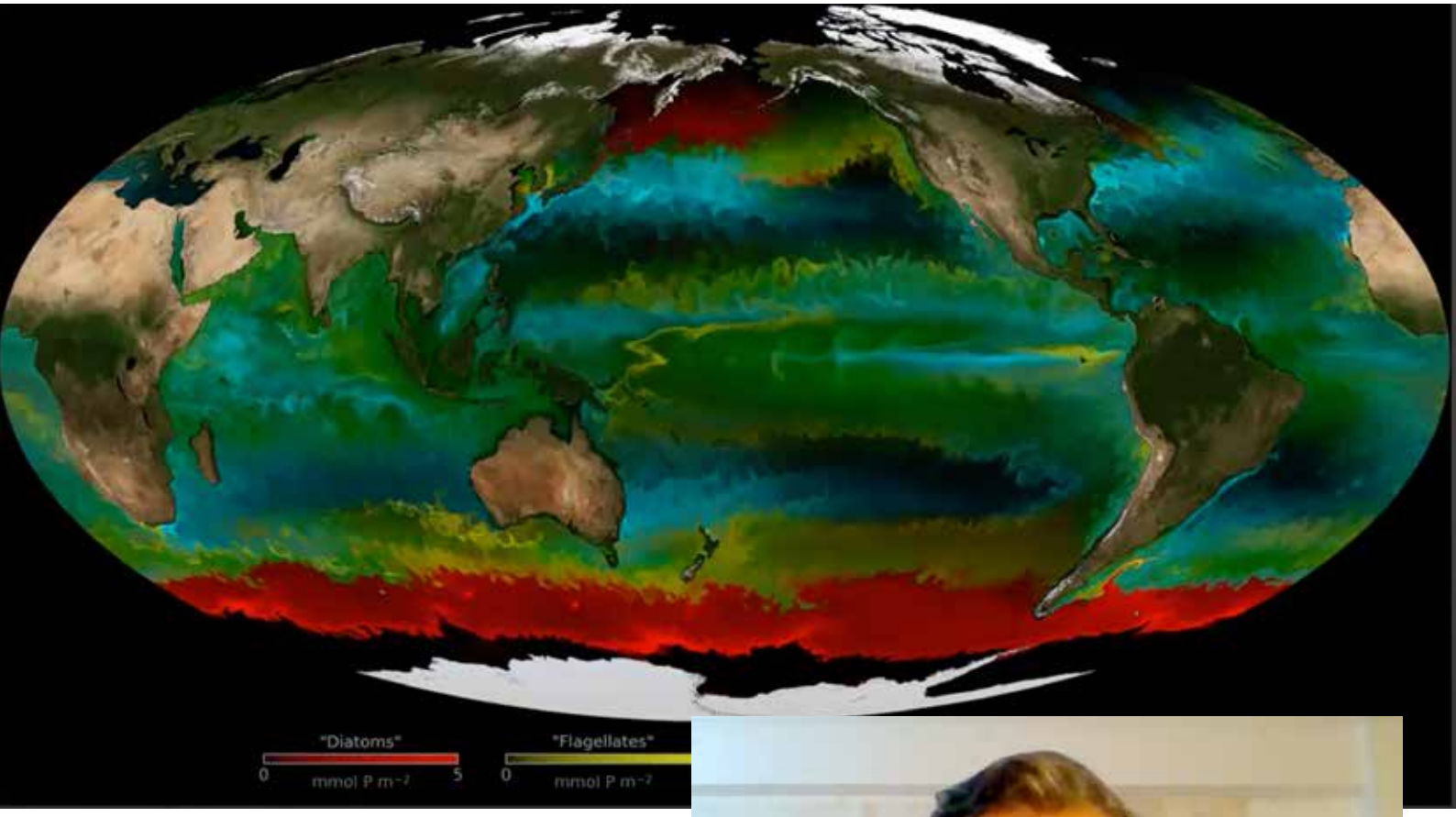
Dramaturg Rustom Bharucha walked us through the ways in which tropes relating to 'contamination' and 'contagion' are treated as metaphors in performative discourse, and the impact of social distancing in initiating new modes of performances in the cultures of everyday life. Finally, the talk touched upon the affirmation of social protest in public assemblies during the time of the pandemic, and the need to arrive at a new concept of care through a renewed attention to the art of breathing.

## About the Dramaturg

**Rustom Bharucha** is the author of *Theatre and the World, The Politics of Cultural Practice, The Question of Faith, In the Name of the Secular, Rajasthan: An Oral History, Another Asia and Terror and Performance*. He is in the process of completing a new monograph on the second wave of the pandemic in India which deals with death, grief, mourning, and extinction.

**Viruses are massively beneficial!**

*- John Mathew, Programme Participant*




Pranay Lal delivers his lecture "The Natural History of Viruses."

# The Natural History of Viruses

LECTURE

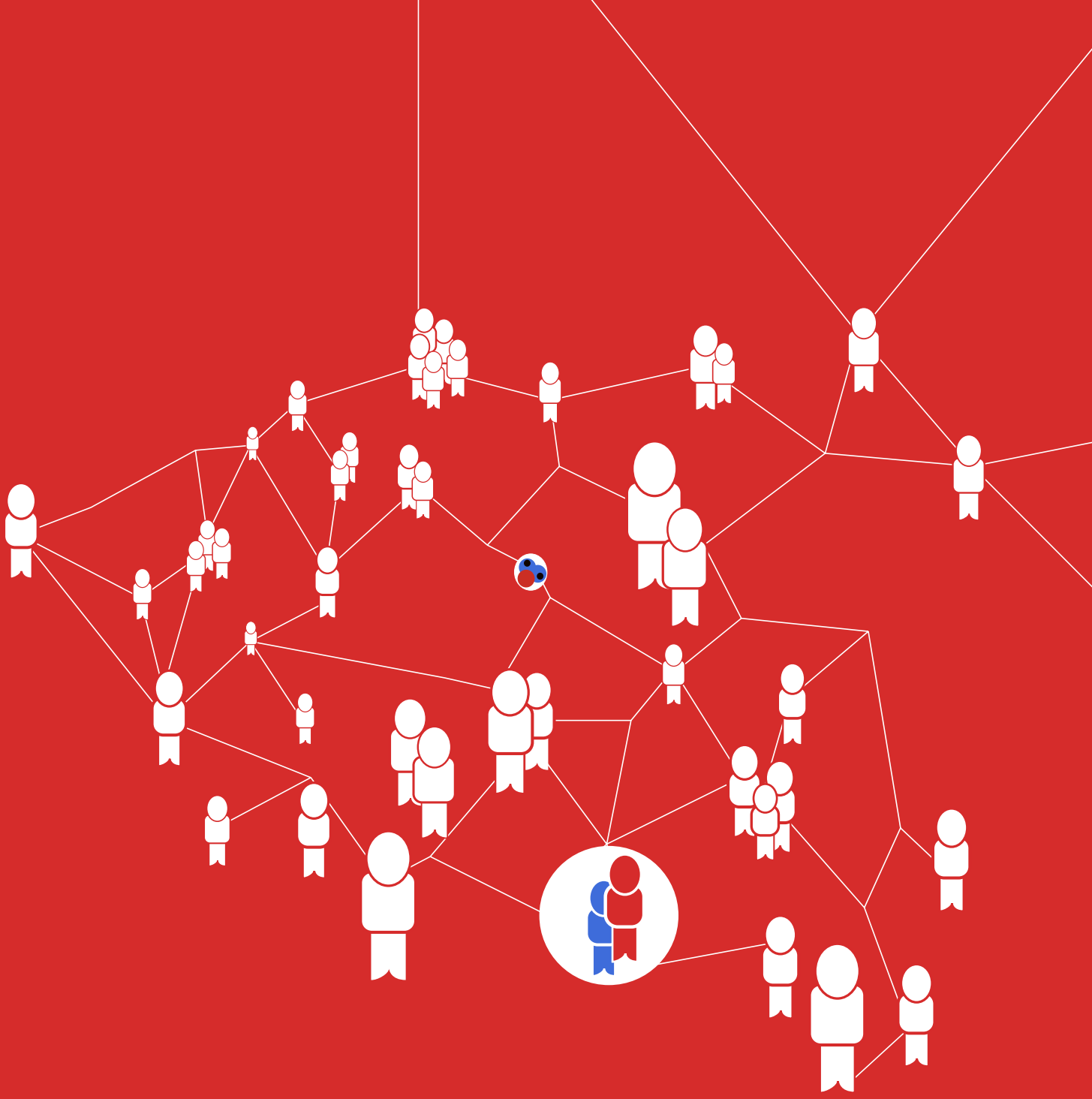
**Pranay Lal**
**11 December 2021**

Microbes are the dark matter of the living world. To view them through the narrow lens of disease and devastation, would be doing an enormous disservice to them. A subsection of microbes, viruses are the largest primary energy producers on Earth, and regulate the bulk of Earth's carbon-oxygen cycle. Viruses are a part of us—billions of diverse microbes and viruses live within our gut, inside our lungs, and skin. Though we have discovered 5600 species of viruses, many more exist; we cannot outnumber or outmatch them.

This talk by Writer Pranay Lal delved into the expansive history of viruses in order to re-configure our relationship with them. Though the COVID-19 pandemic caused us to live in fear of viruses, this talk argued that we have to find a way to make peace with them, and move towards a renewed understanding of their role in ecology and society.

## About the Natural History Writer

**Pranay Lal** is a biochemist by training and works for a non-profit organisation on public health. He has been a caricaturist for newspapers, an animator for an advertising agency, and an environmental campaigner. His first book, *Indica: A Deep Natural History of the Indian Subcontinent* (Allen Lane, December 2016) won the best non-fiction debut award at the Tata Lit Fest in 2017, among other awards. His most recent, *Invisible Empire: The Natural History of Viruses (Viking)* was released in November 2021.



# TRANSMISSION

*How the stories unfold*

How are contagions transmitted? What networks can we unearth while tracing the spread of a contagious phenomena? Artists, scholars, and researchers distilled the transmission process to show how a contagion might unfold.

**5 EXHIBITS**

**8 LECTURES**

**6 WORKSHOPS**

**3 MASTERCLASSES**

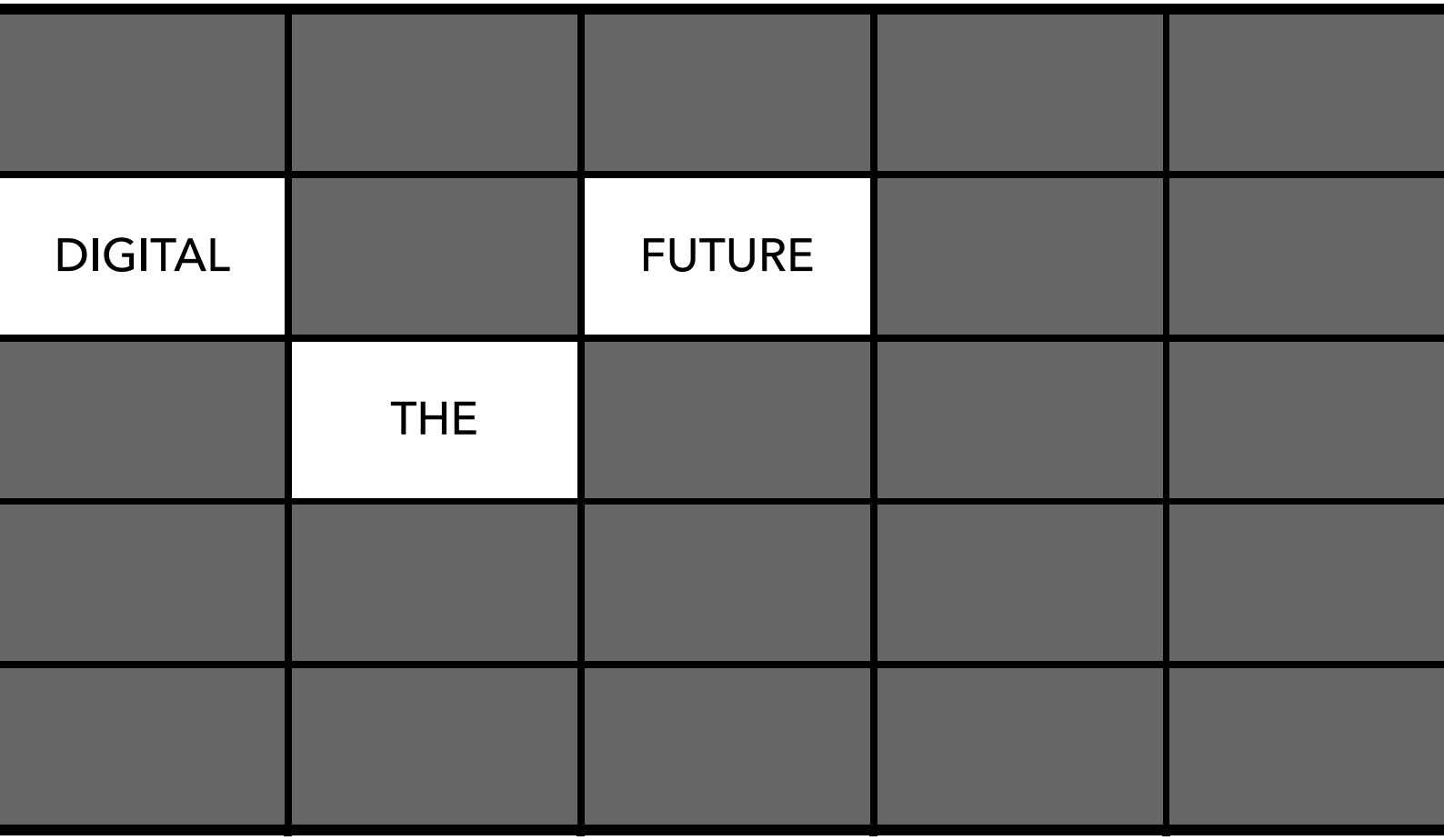
**1 FILM**

**1 EVENT**

# EXHIBITS

**“The *2020 Vision* exhibit revealed an interesting dilemma we face today. I feel more compelled to dive deeper into the articles I read”**

*- Abhishek J, Visitor*




Still from Robert Good's exhibit *2020 Vision*, 2019.

# 2020 Vision

How can we make sense of the digital world as information multiplies exponentially? Online content is proliferating at an astonishing pace that is much faster than we can possibly hope to match. We are constantly bombarded with headlines, clickbait titles, and fake news.

In *2020 Vision*, Robert Good externalised some of this relentless information using animations of headlines to reflect a sense of anxiety as we are besieged with questions, some trivial and some vitally important. These animations grew on the screen like a virus in a Petri dish before gradually receding again.

## About the Artist

**Robert Good** is an artist based in Cambridge, United Kingdom. He is the editor of *A New Dictionary of Art*, and founder and director of the artist collective Art Language Location. His podcast, *Something To Do With Art*, features discussions with experimental artists about what they do and why.

Recurring themes in his work include the limitations of language, the problems of knowledge, and the transition from analogue to digital. He has an ongoing interest in the astronomical sublime. His previous works include 3000 definitions of “Art” for *A New Dictionary of Art* and 13,000 news headlines for *BREAKING*. Other projects include *Dr Good Investigates... What Is Reality?* displayed at Science Gallery Rotterdam in November 2020, and Bookworks at University of West England, Bristol in 2021.

**“I loved the *Cluster of 17 Cases* exhibit, and I learnt how complex epidemiological tracing can be!”**

*- Siddharth Kankaria, Visitor*

Visitor interacts with Blast Theory's *A Cluster of 17 Cases* exhibited at the Museum of the City of New York, *Germ City*, 2019.

# A Cluster of 17 Cases

On the night of 21 February 2003, a 64-year-old doctor from Guangdong, China checked into Room 911 of Hong Kong's Metropole Hotel to attend a family wedding. That night he infected 16 people on the same floor of the hotel. As they checked out, the guests took Severe Acute Respiratory Syndrome (SARS) across the world.

In this interactive exhibit, we virtually entered the Metropole Hotel on that fateful night, and explored the events that took place in the 17 rooms where the first cluster of SARS cases were detected. We embarked upon a journey with epidemiologists to understand how they studied the movements of the guests between each room. This experience revealed how even the most banal action, like touching a handrail, could have unforeseen consequences. In the end, we came away with a renewed appreciation for how public health experts grapple with fear and uncertainty in the face of an unknown disease.

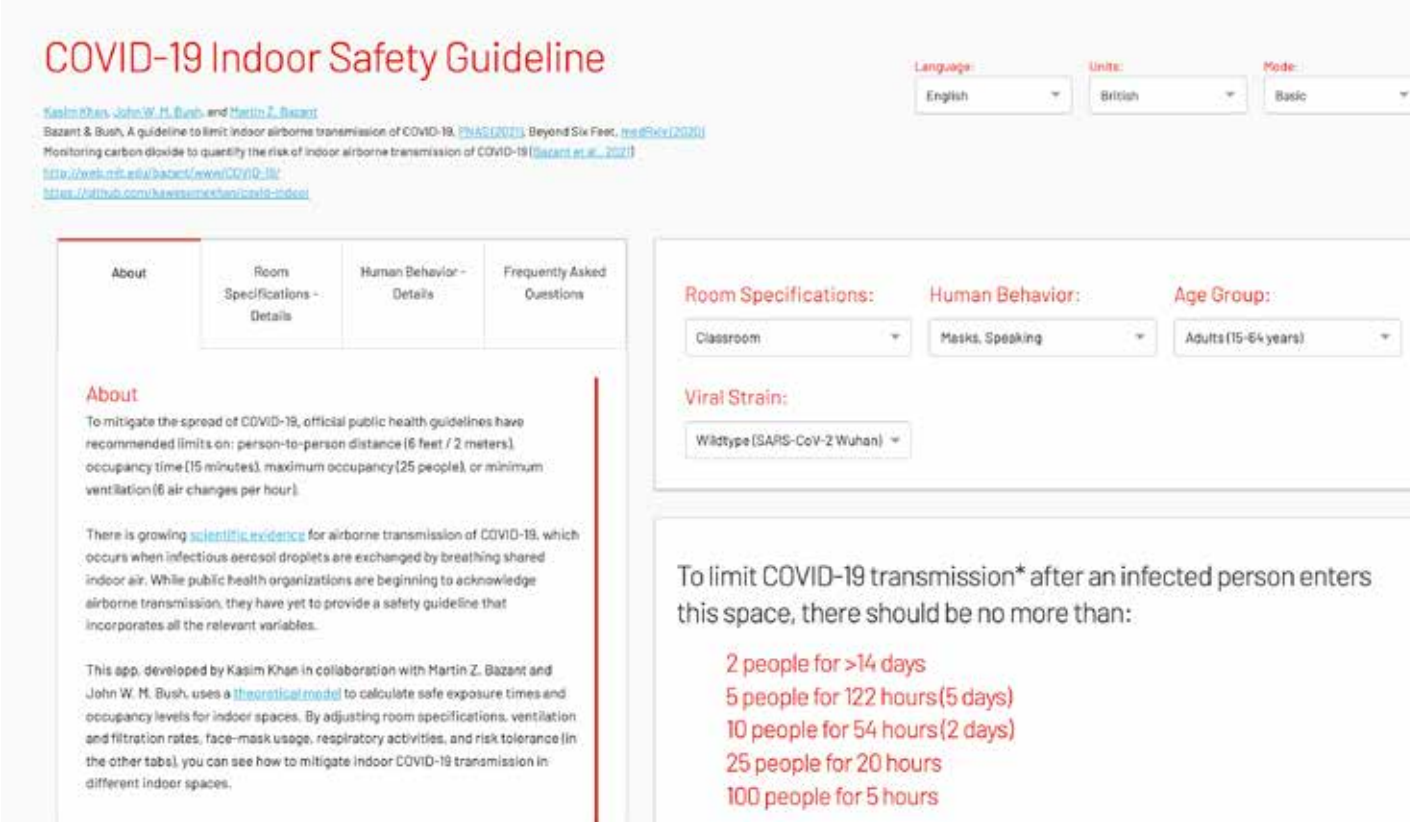
## About the Artist's Group

**Blast Theory** are known internationally as one of the most adventurous artist group using interactive media, creating groundbreaking new forms of performance and interactive art that mixes audiences across the internet, live performance and digital broadcasting. The group's work explores interactivity and the social and political aspects of technology.

Internationally, Blast Theory's work has been shown at the Tribeca Film Festival, Sundance Film Festival, Walker Arts Center in Minneapolis, the Venice Biennale, ICC in Tokyo, the Chicago Museum of Contemporary Art, Sydney Biennale, National Museum in Taiwan, Hebbel Theatre in Berlin, Basel Art Fair, Dutch Electronic Arts Festival, Sonar Festival in Barcelona and the Palestine International Video Festival.

**“The exhibit succinctly describes the precautions we need to take during COVID-19”**

*- Apoorva, Visitor*




Still from John Bush, Kasim Khan, and Martin Bazant's exhibit *COVID-19 Indoor Safety Guidelines*, 2020.

# COVID-19 Indoor Safety Guidelines

Indoor safety is crucial to curtailing the spread of the SARS-CoV-2 virus. How can we protect ourselves in a closed environment? How do we ensure safety in our homes, schools, and other indoor public spaces? The online tool created by Josh W. Bush, Martin Bazant, and Kasim Khan captured the realities of the infectious potential of COVID-19 in indoor spaces. The *COVID-19 Indoor Safety Guidelines* tool allowed a user to tinker with the controls: choosing the room specifications, the number of people, the kind of activity. Once the information was plugged in, the system would tell you how many hours it would take for people to get infected, provided there was one positive case of COVID-19 in the room.

This tool brought data, computing, and research into a user-friendly and comprehensible format, keeping us better informed about the risk of infection in uncertain times.

## About the Contributors

**John W. Bush** is Professor of Applied Mathematics in the Department of Mathematics at Massachusetts Institute of Technology (MIT). A fluid dynamicist, he has worked on geophysical and environmental flows, but he now focuses on surface tension-driven phenomena, their applications in biology, and hydrodynamic quantum analogues.

**Martin Bazant** is Professor of Mathematics at MIT. His research is at the intersection of engineering, physics, and mathematics, motivated by societal needs in energy, the environment, and sustainability.

**Kasim Khan** is a recent Cornell graduate with a background in chemical engineering and business, looking to accelerate the adoption of renewable energy.

**“I really loved the part about emotions being contagious and how we can influence the atmosphere of the environment with our emotions”**

*- Beatriz, Visitor*

Photograph courtesy of Andrea Piacquadio.

# The Chameleon Project

In daily encounters, people automatically and continuously synchronize with the facial expressions, voices, postures, movements of others. Some of these encounters happen in milliseconds. In unconscious mimicry, we forge a bond with each other through our gestures and movements—long before we utter a word. In essence, we are carriers, dancing with each other in harmonized body language, infecting each other with our emotions. *The Chameleon Project* translated the experience of catching emotions from people into a technology-driven video installation.

Artist Tina Gonsalves, social neuroscientist Chris Frith, emotion neuroscientist Hugo Critchley, affective computer scientists Rosalind Picard and Rana El Kaliouby, as well as Professor in Affective Computing, Nadia Berthouz, came together to create a system that could read a person's emotions, and then decide a congruent emotion to reflect back. Drawing on theories of emotional contagion, *The Chameleon Project was* placed at the intersection of multiple research areas such as empathy, social networks, and affective computing.

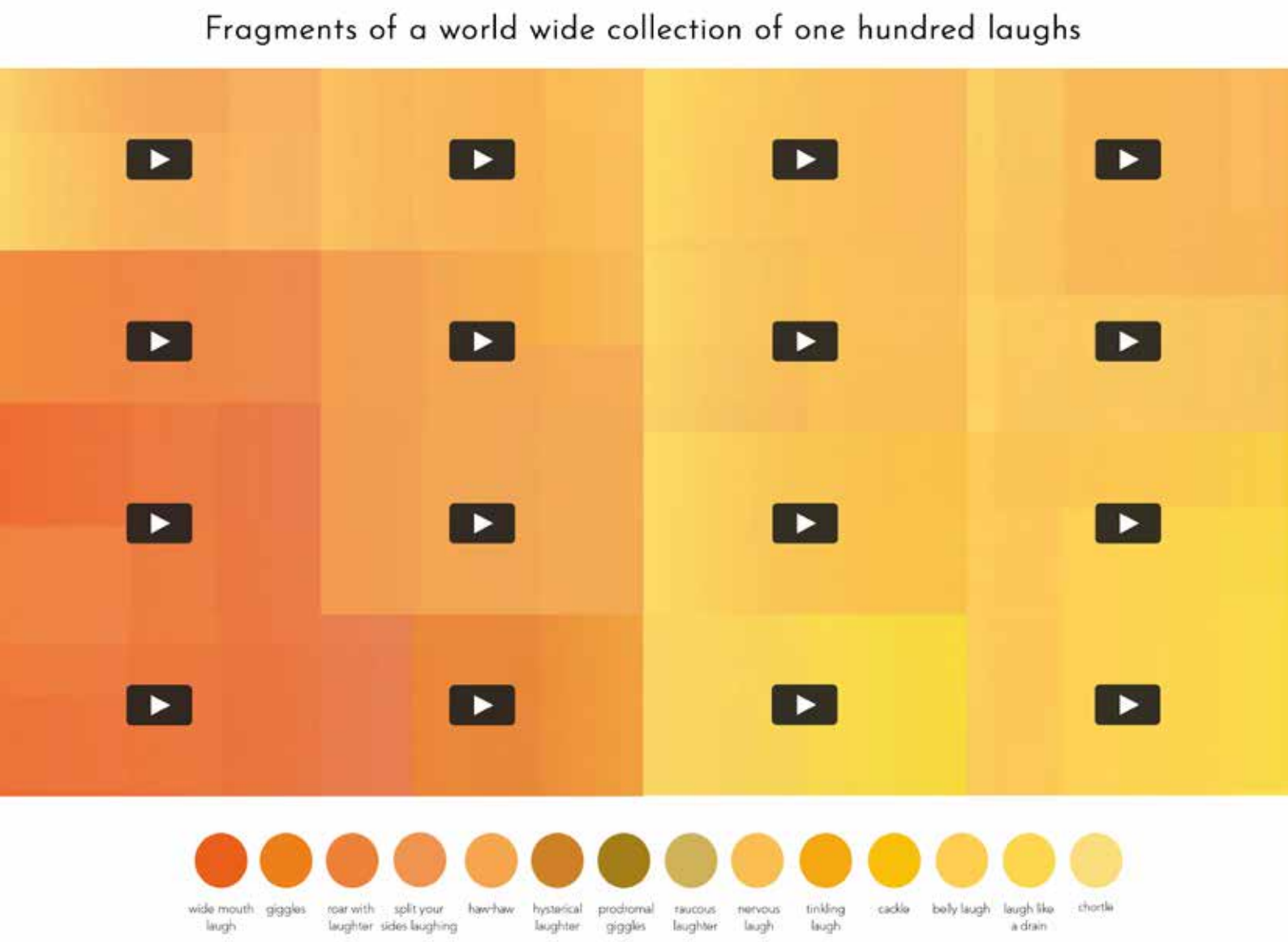
## About the Artist

**Tina Gonsalves** is an artist whose practice integrates science, art, and technology to create embodied, interactive audiovisual experiences. She has been exploring ideas about the emotional body since 1994, first making short films that aimed to translate internal emotional states into an external medium. Finding the basic film format increasingly inadequate, she moved on to installations to look at ways technology could access the emotional signatures of the body.

Tina has been an Artist-in-Residence in the Department of Neuroimaging at University College London (UCL), at the Banff New Media Institute in Canada, the Centre for Contemporary Art in Prague, and many more. Some of the grants she has received include the Arts Queensland Major Grant, the Arts Council England Grant, and the Wellcome Trust Large Art Award.

**“I began to look at laughter in a different way. I had never really thought about laughter much.”**

*- Pokhee Saharia, Visitor*




Still from Anaïs Tondeur's exhibit *When the World Was a Laugh*, 2021.

# When the World Was a Laugh

Laughter is a uniquely human and collective activity. What people find funny might vary by culture, but its contagious nature is obvious.

In an attempt to track down the origins of the most contagious of laughs, Artist Anaïs Tondeur began documenting the sounds of laughter from across the world through an international Call for Laughs.

This investigation was presented as an evolutive video of laughs, which kept growing as visitors contributed their laughter to this work. This video was complemented by the Collection of Laughs gathered during the investigation and presented as a typology of associated emotions and colors. Inspired by the role of laughter in myths around the origin of the universe, this exhibit invited us to share a laugh at a time when the global pandemic disrupted our ways of connecting and being together.

## About the Artist

Merging natural sciences and anthropology, myth-making, and new media, visual artist **Anaïs Tondeur**'s practice is anchored in ecology thought. Creating installations, photographs, or videos, she seeks a new aesthetic, in the sense of a renewal of our modes of perception, to find other conditions of being in the world.

Tondeur has presented and exhibited her work in international institutions such as the Centre Pompidou (Paris), La Gaîté Lyrique (Paris), Serpentines Galleries (London), BOZAR (Brussels), and Biennale Di Venezia, (Lieux Infinis).

## About the Sound Artist

**Floraine Pochon** thinks and writes with sound. She creates sound forms, hybrid forms, but also forms of transmission in active collaboration with French and international artists. Since 2013, she breathes for Phaune Radio, a strange wild creature that emits strange sounds on the web 24 hours a day. Since 2014, she has been crossing sound and literary writings with Alain Damasio for the sound arts studio Tarabust. Since 2016, she has also developed virtual reality audio sites between Montreal and France, with Eric Chahi, for Paper Beast.

# PROGRAMMES

**“I was really impressed to know about the concept of modelling disease and how efficiently we can estimate the upcoming hurdles with COVID-19.”**

*- Nagalakshmi, Programme Participant*


Gautam Menon delivers his lecture "Why and How Should We Model Infectious Diseases?"

# Why and How Should We Model Infectious Diseases?

LECTURE

**Gautam I. Menon**
**01 May 2021**

Pandemics of infectious disease conjure up images of crowded hospitals, medical staff in protective gear, and bodies—loads of them. They certainly don't suggest images of people working at computers or at boards, writing down equations and looking at graphs and figures. However, understanding an outbreak by discerning the probable trajectory of a disease is a problem dealt with by mathematical modelers. In this talk, Gautam Menon discussed the necessity of pandemic models and the insights we can gain from them. He also surveyed some of the existing epidemic models used to understand disease spread.

## About the Biophysicist

**Gautam I. Menon** is a Professor of Physics and Biology at Ashoka University, an adjunct Professor at the Tata Institute of Fundamental Research, Mumbai and a Professor at the Institute of Mathematical Sciences, Chennai. He spent two decades as Professor with the Theoretical Physics and Computational Biology groups at the Institute of Mathematical Sciences, Chennai, where he was the founding Dean of the Computational Biology group. He completed a PhD from the Indian Institute of Science, Bangalore followed by post-doctoral work at the Tata Institute of Fundamental Research, Mumbai and Simon Fraser University in Vancouver. He is a physicist and mathematical modeller by training, with interests in biophysics, disease epidemiology and science communication.

**“This film really portrayed how we often undermine the effects of pandemics on minority communities.”**

*- Supriya Dash, Programme Participant*

Top: A still from the film *Where Birds Dance Their Last*, Lêna Bùi, dir. 2021.
Bottom: Lêna Bùi discusses her film *Where Birds Dance Their Last* with Frédéric Keck.

# Where Birds Dance Their Last

FILM DISCUSSION

**02 May 2021**
Director: **Lên a Bùi**
Discussant: **Frédéric Keck**

Duration: **07:35 mins**
Language: **Vietnamese with English subtitles**
Year of Production: **2012**

Lên a Bùi provided a crucial perspective on the threat of bird flu by following farm workers in a village in north Vietnam, where duck feathers are sorted and sent for export to China. Through this film she highlighted the struggles of farm workers after China placed a ban on importing duck feathers following the avian influenza outbreak of 2005. *Where Birds Dance Their Last* touches upon various questions surrounding our consumption of animals and animal produce, changes in a rural landscape and how disease affects people beyond the aspect of health.

The screening of this film was followed by a discussion between filmmaker Lên a Bùi and anthropologist Frédéric Keck.

## About the Director

**Lên a Bùi** lives and works in Saigon, Vietnam. Her works are sometimes amusing anecdotes and other times in-depth articulations of the impact of rapid development on people's relationship with nature. She reflects on ways that intangible aspects of life, such as faith, death, and dreams influence behaviour and perception.

## About the Anthropologist

**Frédéric Keck** is a Senior Researcher at the Laboratory of Social Anthropology (CNRS-Collège de France-EHESS). After studying philosophy at the Ecole Normale Supérieure in Paris and Anthropology at the University of California at Berkeley, he has investigated the history of social anthropology and contemporary biopolitical questions raised by avian influenza.

**“Infodemiology as a field of study was quite exciting, as were the various resources shared with us.
Truly amazing stuff!”**

*- Amartya Kumar Sinha, Programme Participant*



Sylvie Briand delivers her lecture "Contemporary Face of Epidemics and Pandemics: Dealing with the Infodemic."

# Contemporary Face of Epidemics and Pandemics: Dealing with the Infodemic

LECTURE

**Sylvie Briand**
**02 May 2021**

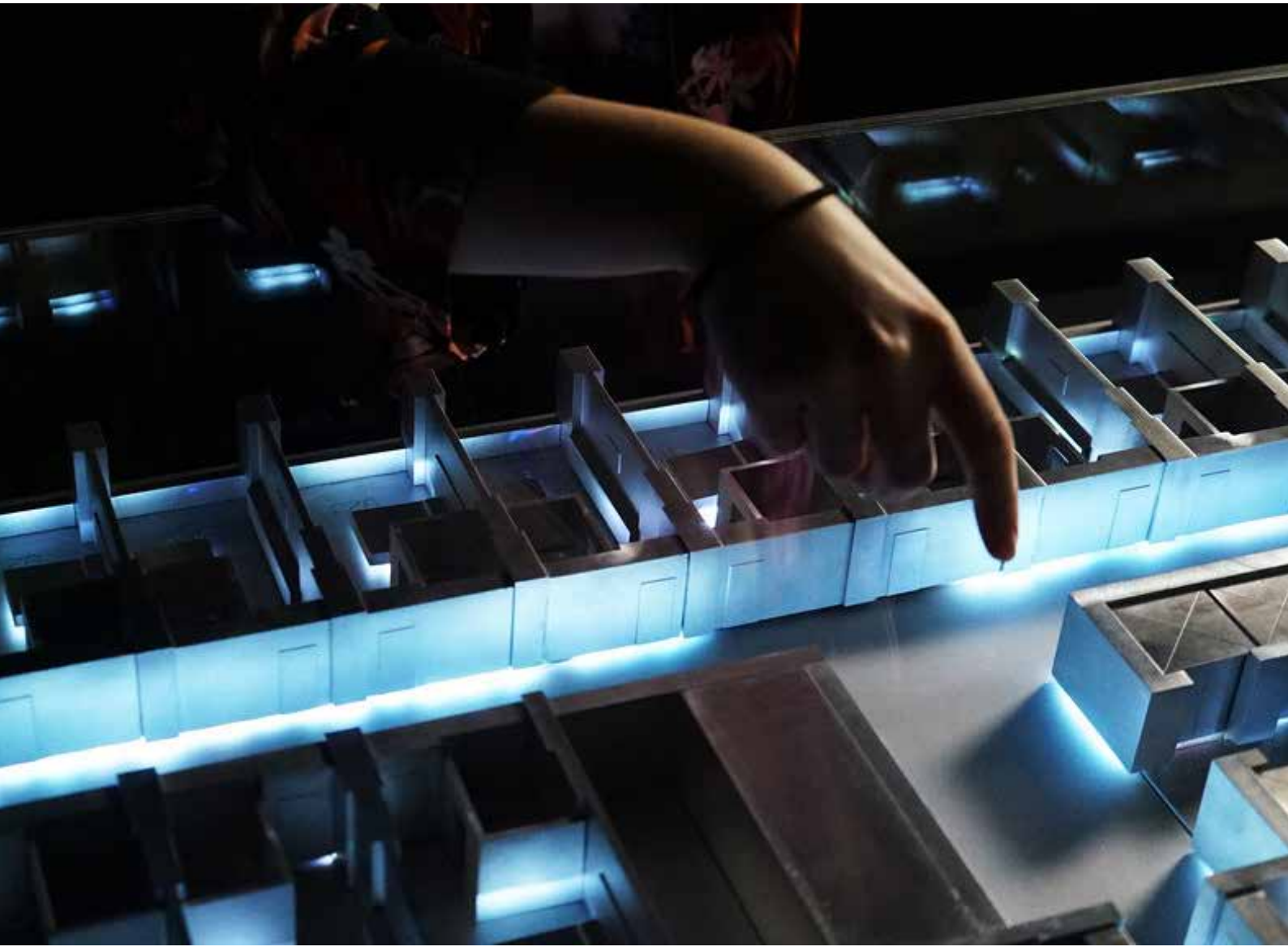
This talk by Sylvie Briand asked questions about the spread of misinformation related to COVID-19. While other pandemics were accompanied by 'infodemics' (defined by the World Health Organization as a proliferation of information, some accurate, some not), the extent of the misinformation that accompanied the COVID-19 pandemic was unprecedented. This talk focused on the causes and challenges of an infodemic. It further covered the management of infodemics using new technologies.

## About the Physician

**Sylvie Briand** (MD, MPH, PhD) is the director of the Global Infectious Hazard Preparedness (GIH), at the World Health Organization (WHO/WHE), in Geneva. GIH advances global efforts to prevent and control existing and emerging infectious diseases by increasing access to evidence-based interventions; fostering impactful innovation; and leveraging technical, operational and strategic partnerships. Since 2001, Briand has been actively involved in the detection, preparedness and response to global threats, leading the scientific and strategic component of the WHO response (COVID 19, avian and pandemic influenza, Ebola, Zika, Plague, yellow fever, cholera, MERS). Before joining WHO, Briand worked as public health project director for different global health agencies in various geographic regions (South America, Africa).

**“The animation and the graphics used in *A Cluster of 17 Cases* video was amazing, and it was a very informative session.”**

*- Khushi, Programme Participant*



Blast Theory's *A Cluster of 17 Cases*, exhibited at the Museum of the City of New York, *Germ City*, 2019.

# Creating Interactive Art about Pandemics

MASTERCLASS

**Matt Adams**
**09 May 2021**

In this Masterclass, Matt Adams, the lead artist of Blast Theory, gave participants a behind the scenes look at the process of making *A Cluster of 17 Cases* — an exhibit inspired by the stories of 17 people who stayed in the Metropole Hotel in Hong Kong, where the first cluster of SARS cases were detected in 2003. Participants learned how the artists collaborated with key staff at the Strategic Health Operations Centre (SHOC), in the World Health Organisation to produce an interactive exhibit.

## About the Artist

**Matt Adams** co-founded Blast Theory, an artists' group making interactive work, in 1991. Blast Theory is renowned for its multidisciplinary approach, using new technologies in theater, games, and visual art. The group has collaborated with scientists at the Mixed Reality Lab at the University of Nottingham since 1997. Blast Theory has shown work at the Venice Biennale, the Sundance Film Festival, and at Tate Britain. Commissioners include Channel 4, the BBC, and the Royal Opera House. The group has been nominated for four BAFTAs and has won the Golden Nica at Prix Ars Electronica.

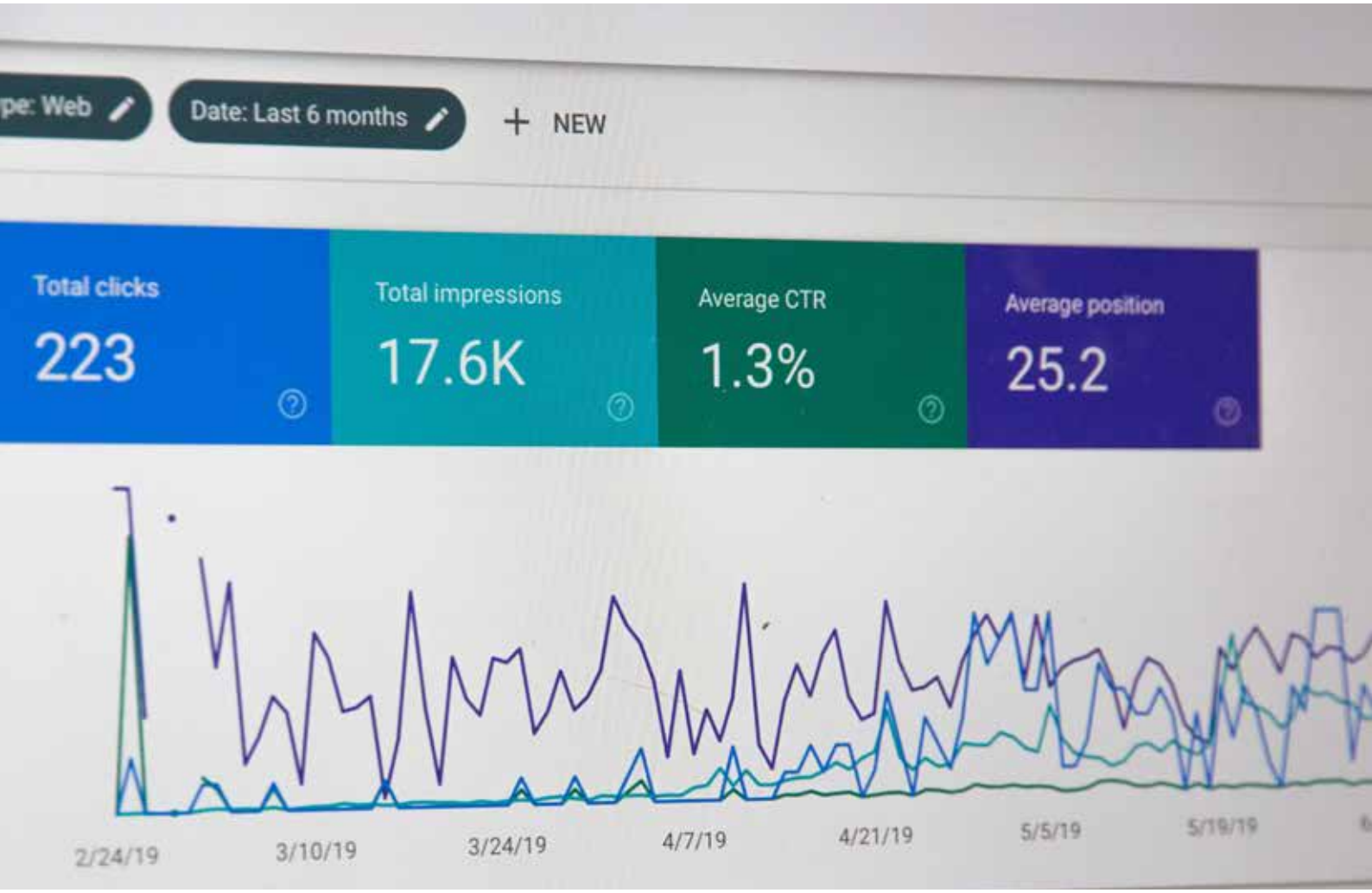



Image courtesy of Stephen Phillips.

# Google Search Trends as a Tool for Surveillance

WORKSHOP

**Shreya Chakraborty**
**15 May 2021**

According to epidemiologists and open data researchers, Google Search Trends can help us predict hotspots of diseases, allocate resources, and prevent outbreaks. In this workshop by research scholar Shreya Chakraborty, participants learnt how Google Search Trends can be mined as a source of open data. This important tool allowed them to grasp how experts track, trace, and predict outbreaks.

## About the Researcher

**Shreya Chakraborty** is a PhD student at the Indian Institute of Science, Bangalore. She's a joint student in both the Institute Mathematics Initiative (IMI) of the institute and the Centre for Brain Research (CBR). She completed her Masters in Statistics from the University of Calcutta and her Bachelors in Statistics from St. Xavier's College, Kolkata. She is currently engaged in learning Statistical Genetics and computational techniques for her research work. She enjoys learning concepts and techniques that could be particularly useful in the domain of public healthcare.

**“I learnt to be more mindful about the anxiety that certain designs induce, thereby forcing us into making choices we don’t necessarily want.”**

*- Andrea Bandelli, Programme Participant*

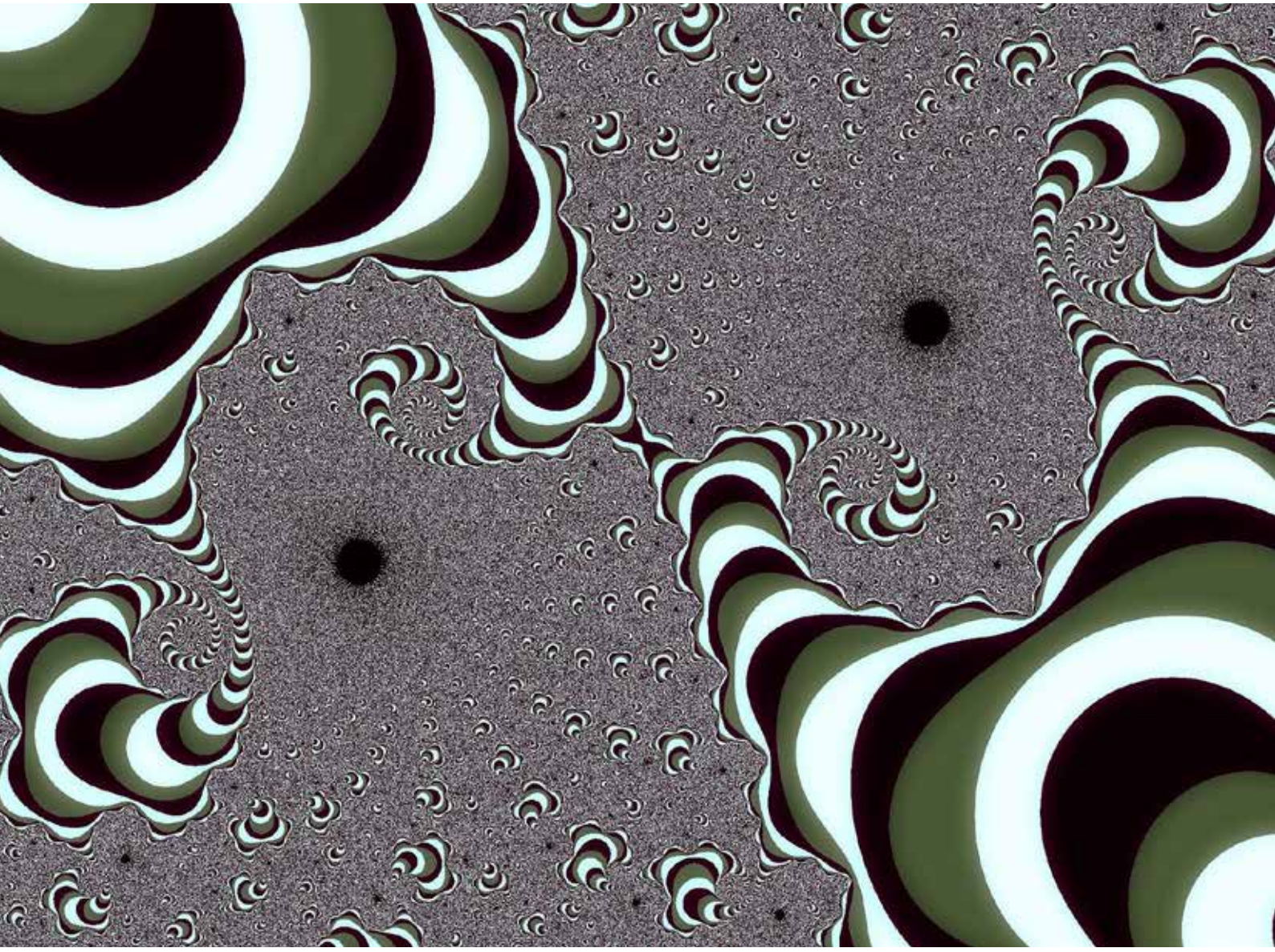


Image courtesy of Astronira.

# Keep Calm and Spot the Design Tricks

WORKSHOP

**Louise Hisayasu**
**15 May 2021**

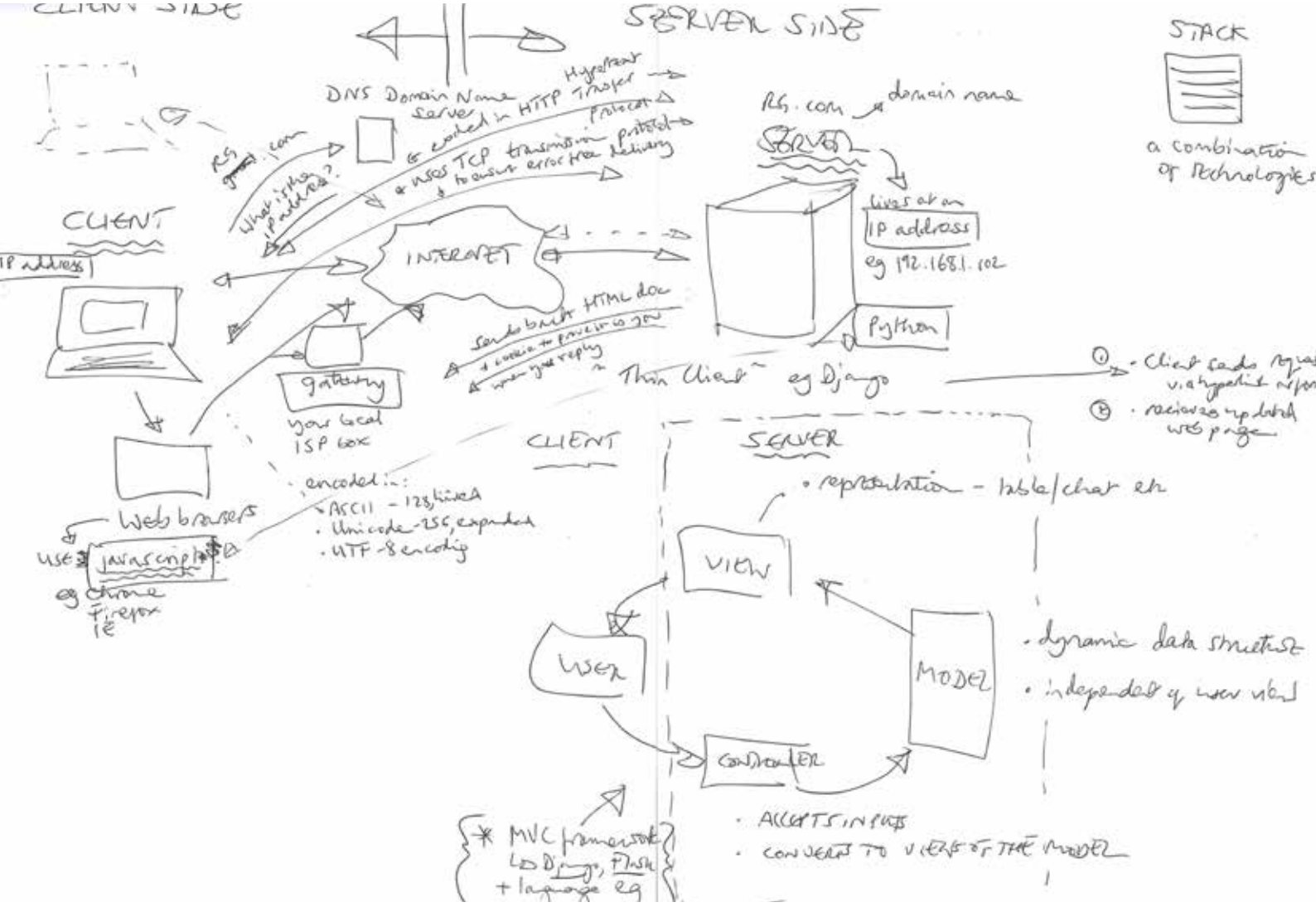
This workshop by Louise Hisayasu from Tactical Tech explored the world of persuasive design and design tricks, which are design decisions on websites, apps, and in advertisements that provoke us emotionally and persuade us to click, share, and buy. By making participants aware of their physical and emotional responses to stressful stimuli, and the persuasive designs of technology which are rooted in basic psychology, this workshop helped people to keep calm and spot the design tricks.

## About the Researcher

**Louise Hisayasu** works as a project coordinator at Tactical Tech, working with remote partners globally to host interactive exhibitions on data and privacy.

**“We are in an age of information overload with little of value to actually appreciate.”**

*- James Coelho, Visitor*




Sketch illustrating the process behind Robert Good's exhibit *2020 Vision*, 2019.

# 2020 Vision: Making Sense of 24/7 Online News

MASTERCLASS

**Robert Good**
**22 May 2021**

This masterclass showed us how we can manage information overload in the age of the internet. It discussed how one can discern real news from fake news. It also explored how artists have responded to the proliferation of disinformation. It concluded with an open discussion, where participants shared how they make sense of the world of information overload.

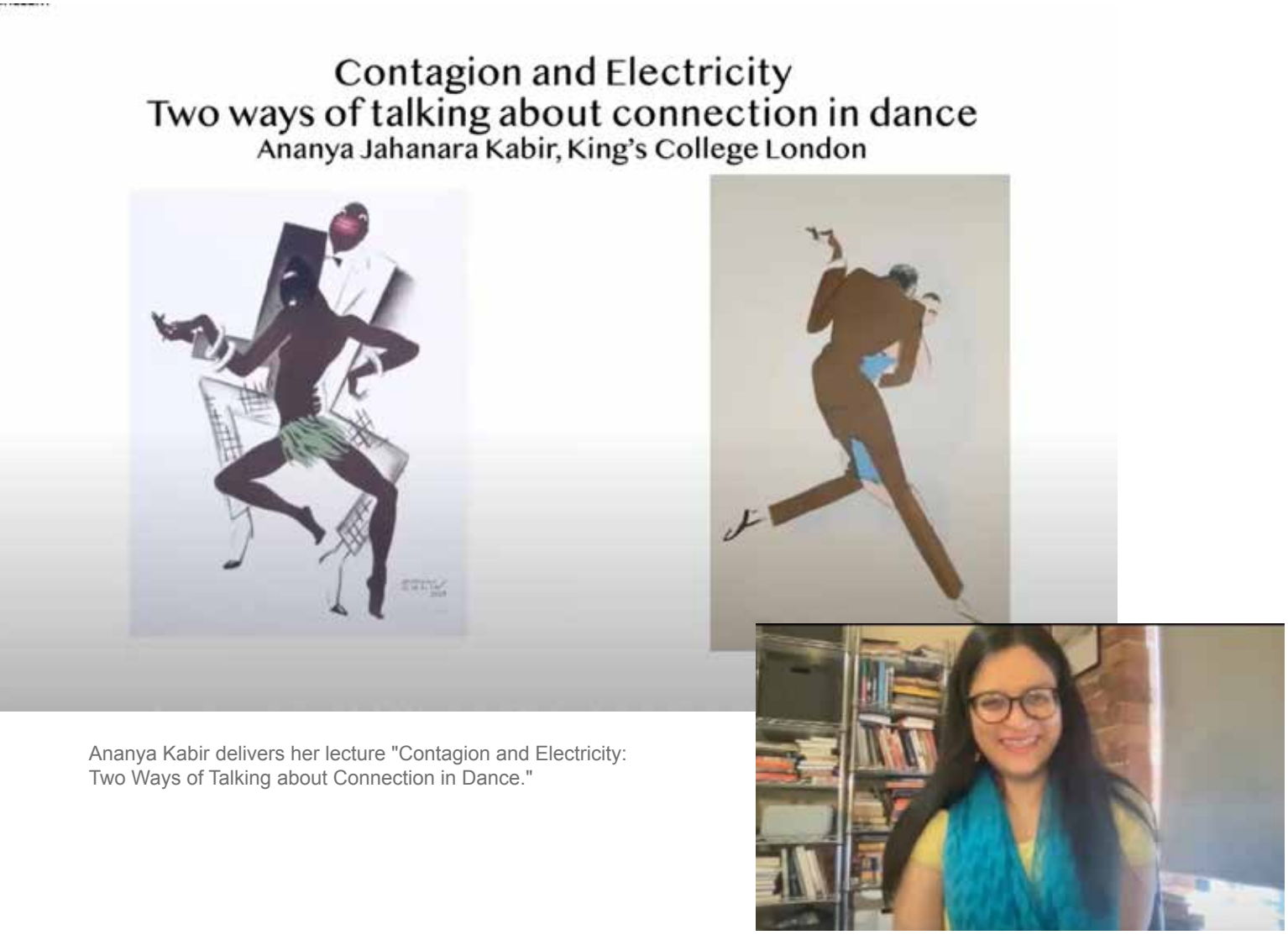
## About the Artist

**Robert Good** is an artist based in Cambridge UK. He is editor of *A New Dictionary of Art* and founder and director of the artist collective Art Language Location. His podcast *Something To Do With Art* features discussions with experimental artists about what they do and why.

Good uses the framework and conventions of contemporary art to offer fresh perspectives. He says: “My work is frequently propositional in nature. I like to analyse a situation, try to understand it and then make work that represents it, reflecting back both the limitations of my understanding and my responses to it. As such, my work functions in some ways like a scientific hypothesis—it is offered for others to consider, validate or falsify.”

**“I appreciate that you would find it important to channel work which is a part of culture that looks ostensibly not really pertinent to or related to the issues that occupy us today in South Asia.”**

*- Ananya Kabir, Speaker*




Ananya Kabir delivers her lecture "Contagion and Electricity: Two Ways of Talking about Connection in Dance."

# Contagion and Electricity: Two Ways of Talking about Connection in Dance

LECTURE

**Ananya Jahanara Kabir**
**23 May 2021**

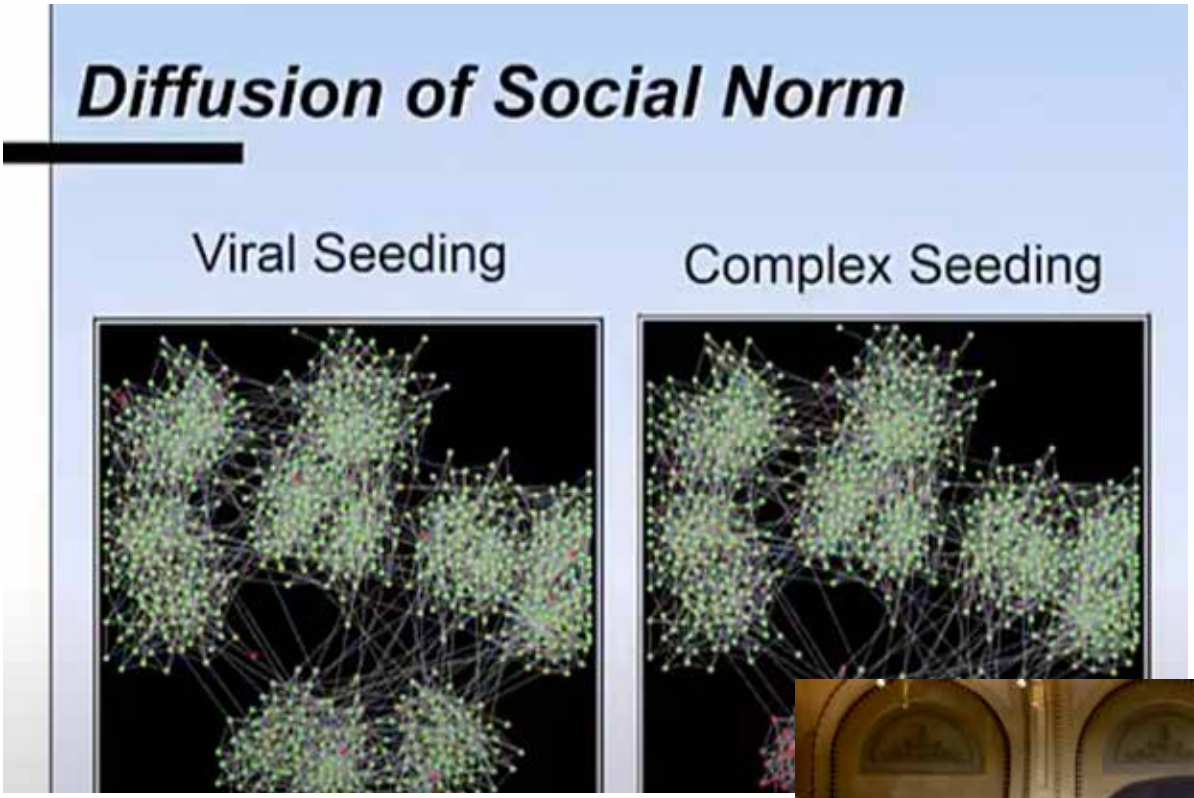
"Es como electricidad / el mambo tiene la chispa" (Mambo is like electricity; it contains a spark): thus sang Afro-Cuban diva Celia Cruz in 1951, in *Mambo del amor*, which celebrated the thrills of this new dance and music genre. From the early 19th century onwards, it was commonplace to explain the connection produced through social dancing as 'electricity'. But as the science of epidemiology developed through the 19th century, another metaphor also began to be used increasingly for that connection: 'contagion.' In this talk, Ananya Kabir spoke about the competition between these metaphors, and their relation to the formation of modernity's social dances.

## About the Literary and Cultural Historian

**Ananya Jahanara Kabir** is Professor of English Literature at King's College London. For her innovative work in the Humanities, she was awarded the Infosys Humanities Prize (2018) and the Humboldt Research Prize (2019). The author of '*Territory of Desire: Representing the Valley of Kashmir*' and *Partition's Post-Amnesias'*, she has researched the connections between dance, modernity, and creolisation through an ERC Advanced Grant. Her new research is on *'Creole Indias'*. In May 2020, she and the Franco-Tamil writer Ari Gautier co-founded the cultural platform *'Le thinnai kreyol.'*

**“Making something viral or known to the public in order to bring change cannot always be dependent on influential people.”**

*- Aparajeeta Sinha, Programme Participant*




Damon Centola delivers his lecture "The Network Dynamics of Social Change."

# The Network Dynamics of Social Change

LECTURE

**Damon Centola**
**26 May 2021**

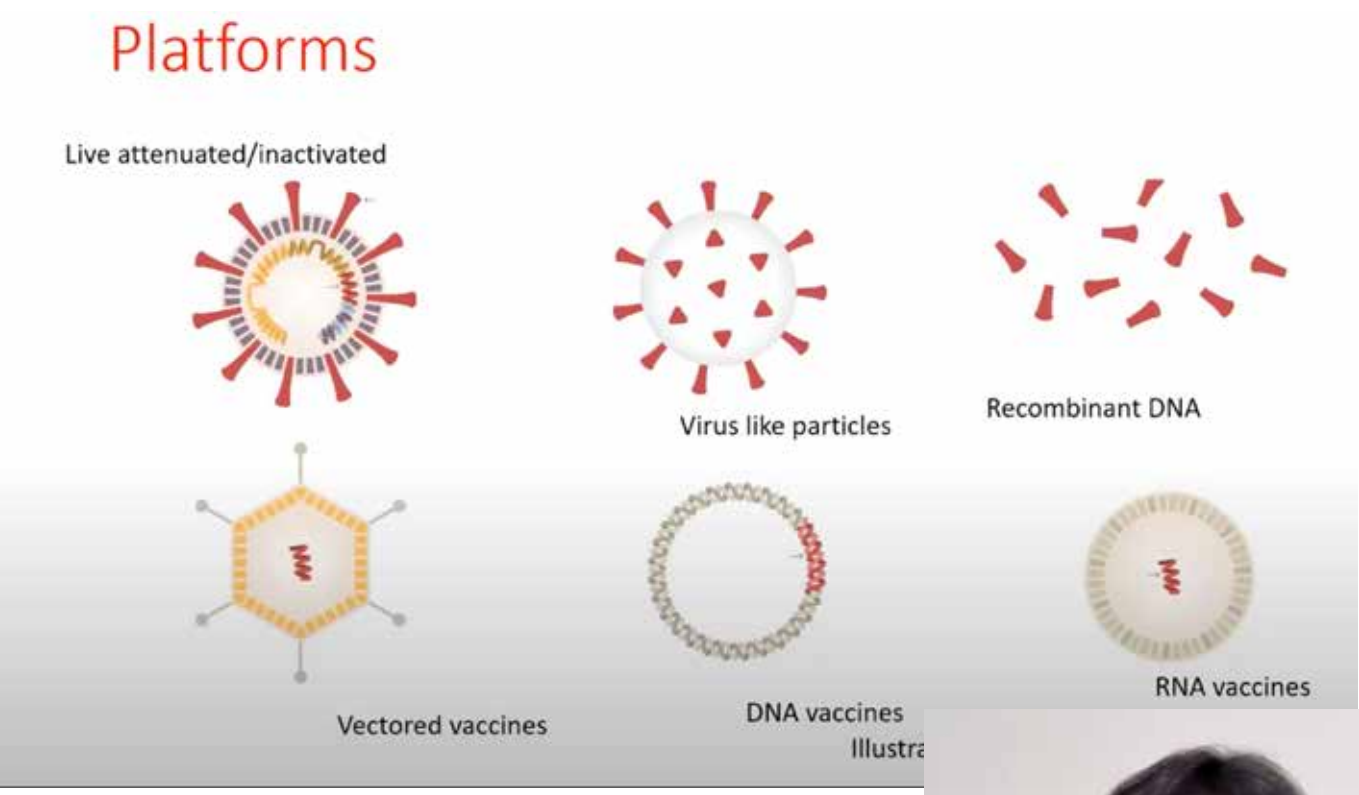
Damon Centola discussed breakthroughs in the science of network diffusion, and the way they have improved understanding of how changes in societal behavior—in voting, health, technology, finance, vaccination, and disease prevention—occur, and how social networks can influence how they propagate. Many accepted ideas about viral spreading have in fact been responsible for causing past diffusion efforts to fail. In this talk, Centola presented new findings that may enable social change efforts to succeed much more effectively.

## About the Academic

**Damon Centola** is a Professor in the Annenberg School for Communication, the School of Engineering and Applied Sciences, and the School of Arts and Sciences at the University of Pennsylvania, where he is Director of the Network Dynamics Group and a Senior Fellow at the Leonard Davis Institute of Health Economics. His research centers on social networks and behaviour change. His work has been published across several disciplines in journals such as Science, Nature Communications, PNAS, American Journal of Sociology, Circulation and Journal of Statistical Physics. Damon received the American Sociological Association's Award for Outstanding Research in Mathematical Sociology in 2006, 2009, and 2011; the Goodman Prize for Outstanding Contribution to Sociological Methodology in 2011; the James Coleman Award for Outstanding Research in Rationality and Society in 2017; and the Harrison White Award for Outstanding Scholarly Book in 2019.

**“Previous failures in research (for instance with the HIV vaccine) can be stepping stones for later successes in research (SARS-CoV-2 vaccines).”**

*- Himani Upadhyaya, Programme Participant*




Gagandeep Kang delivers her lecture "COVID-19 Vaccines: Present and Future."

# COVID-19 Vaccines: Present and Future

LECTURE

**Gagandeep Kang**
**28 May 2021**

The quick development of several COVID-19 vaccines raised questions about their efficacy and safety. To combat some of the hesitancy around COVID-19 vaccination, Gagandeep Kang spoke about the processes behind COVID-19 vaccine development. In doing so, she also answered critical questions on the mechanisms of vaccination as well as its limits—an extremely relevant topic during the global drive for COVID-19 vaccination.

## About the Physician-Scientist

**Gagandeep Kang** is a Professor of Microbiology at Wellcome Trust Research Laboratory, and the Division of Gastrointestinal Sciences at the Christian Medical College (CMC) in Vellore.

She and her team conduct interdisciplinary research on enteric infections and child health. They work on gut infections in children, nutrition, water and sanitation. Their team does everything from geographic information systems to human immunology. They have evaluated vaccines in pre-clinical and clinical phase 1-3 studies for rotavirus and cholera, and are now working on typhoid and SARS-CoV-2.


Photography courtesy of Martin Sanchez.

# Digital Epidemiology

MASTERCLASS

**Vijay Chandru**
**29 May 2021**

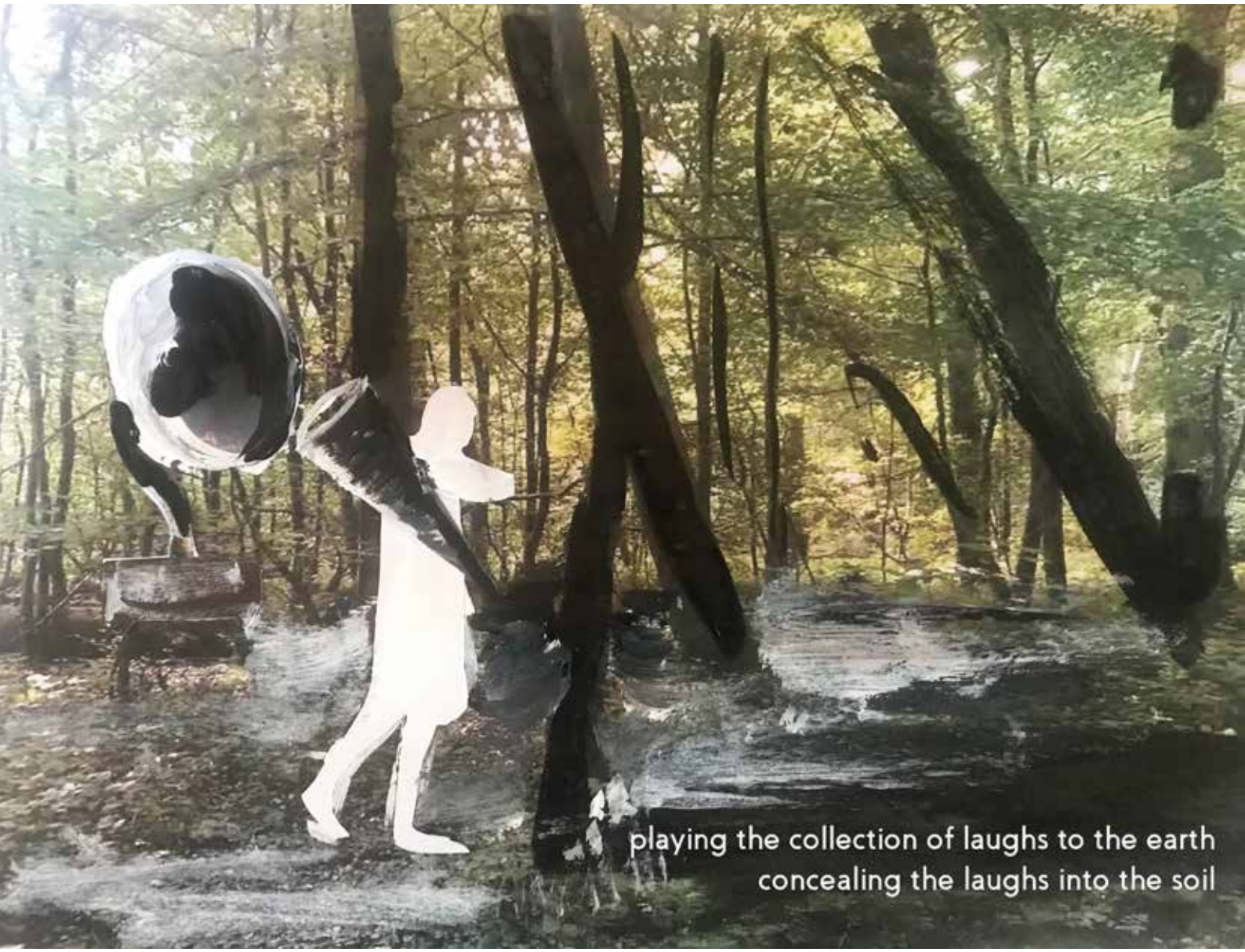
Derived from a course developed for students at the Indian Institute of Science, this masterclass by Vijay Chandru explored how engineered systems such as Google Flu Trends, Flowminder, and Healthmap, among others can be employed to study disease trends and models in populations. It familiarised participants with the concepts and methods of epidemiology in the context of today's digital era.

## About the Academic-Entrepreneur

**Vijay Chandru** is an academic entrepreneur recognized as the 'Technology Pioneer' by the World Economic Forum in 2006. His academic career has spanned over two decades at Purdue University and the Indian Institute of Science. Chandru is the recipient of several awards and honors: Fellow of Indian Academy of Sciences (1996), MCIT Dewang Mehta Award for Innovation in IT (2001), UGC Hari Om Trust award for 'Science and Society' (2003), and the President's Medal of INFORMS in 2006, among others.

**“I didn’t know laughter could be categorised in so many different ways!”**

*- Niyati Parab, Visitor*




Still from Anaïs Tondeur's exhibit *When the World Was a Laugh*, 2021.

# The Shape of a Laugh

WORKSHOP

**Anaïs Tondeur**
**29 May 2021**

Based on Anaïs Tondeur's exhibit *When the World Was A Laugh*, this workshop invited participants to delve into a collection of laughs from across the world, and to explore the making and unfolding of a speculative fiction out of this collection. The participants engaged in performative readings and an experimental modelling of a typology of laughs, through which they were able to reflect on the role of laughter in the social fabric of human relationships and beyond.

## About the Artist

Merging natural sciences and anthropology, myth-making, and new media, visual artist **Anaïs Tondeur**'s practice is anchored in ecology thought. Creating installations, photographs, or videos, she seeks a new aesthetic, in the sense of a renewal of our modes of perception, to find other conditions of being in the world.

She has been an artist-in-residence in several art centers and scientific laboratories, which include LeCentQuatre-Grand Paris Express (2018-19), Artlink (Ireland, 2019), the Museum of Arts et Métiers (Paris, 2018-17), and the National Centre for Space Studies (CNES, Paris, 2016).

**“Getting people across different age groups, different backgrounds, and getting them to understand and arrive at looking at data or specifically pandemic related data and ask questions was a big highlight”**

*- Sriharsha Devulapalli, Facilitator*

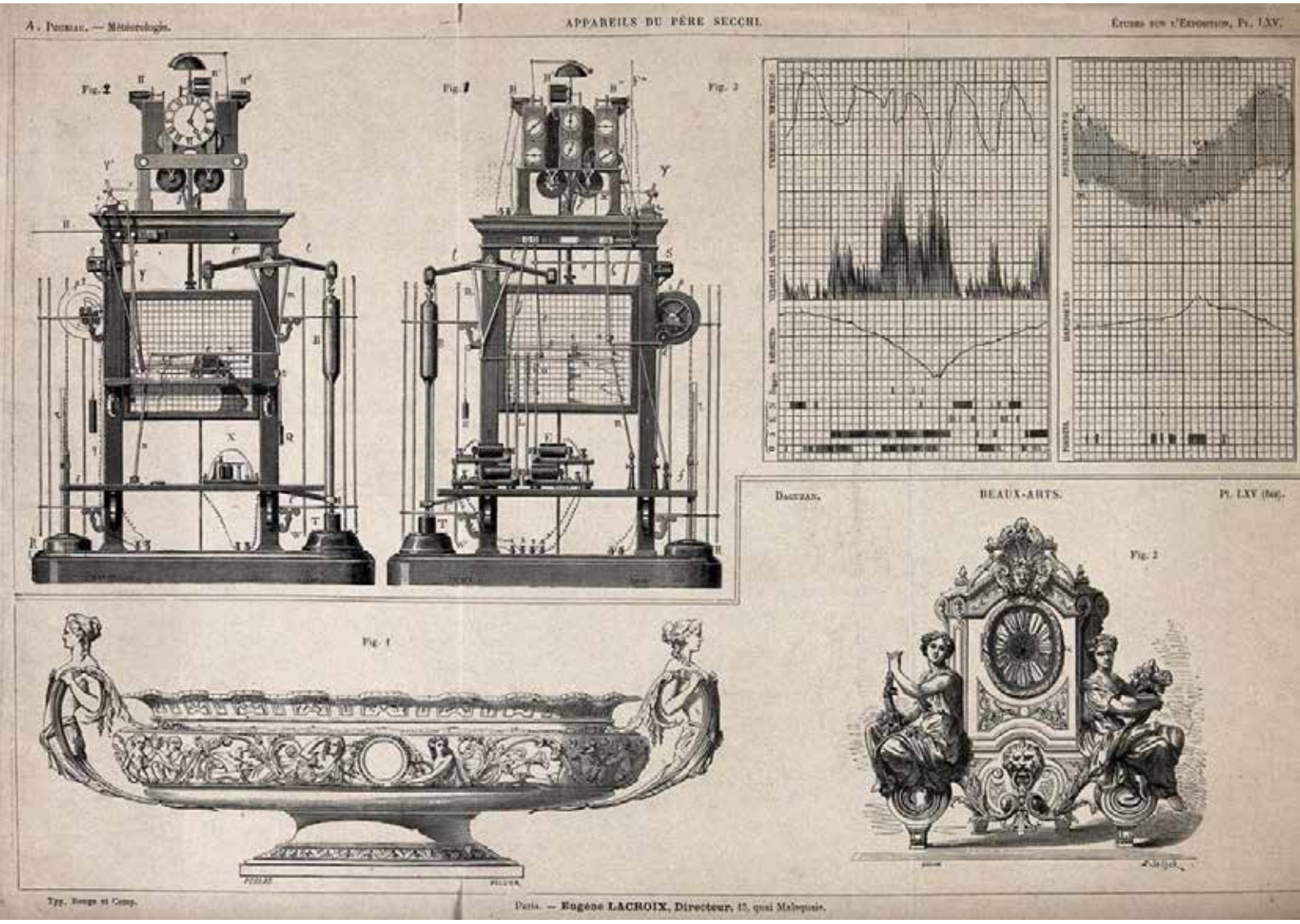



Image courtesy of the Wellcome Collection.

# Contagious Cartography

WORKSHOP

**Rasagy Sharma**
**Sriharsha Devulapalli**
**30 May 2021**

For centuries, humans have been tracking the spread and impact of disease, collecting data, and finding insights to understand the disease. Since the 19th century, maps have been critical in helping us understand the spread of infectious diseases. When the COVID-19 pandemic hit, there was an increased interest in collecting and consuming disease data. This hands-on workshop by information designer Rasagy Sharma, and data journalist Sriharsha Devulapalli, dove deeper into how maps in the past helped us understand diseases. Participants also got to create their own interactive maps to explore and narrate stories about deadly diseases.

## About the Information Designer

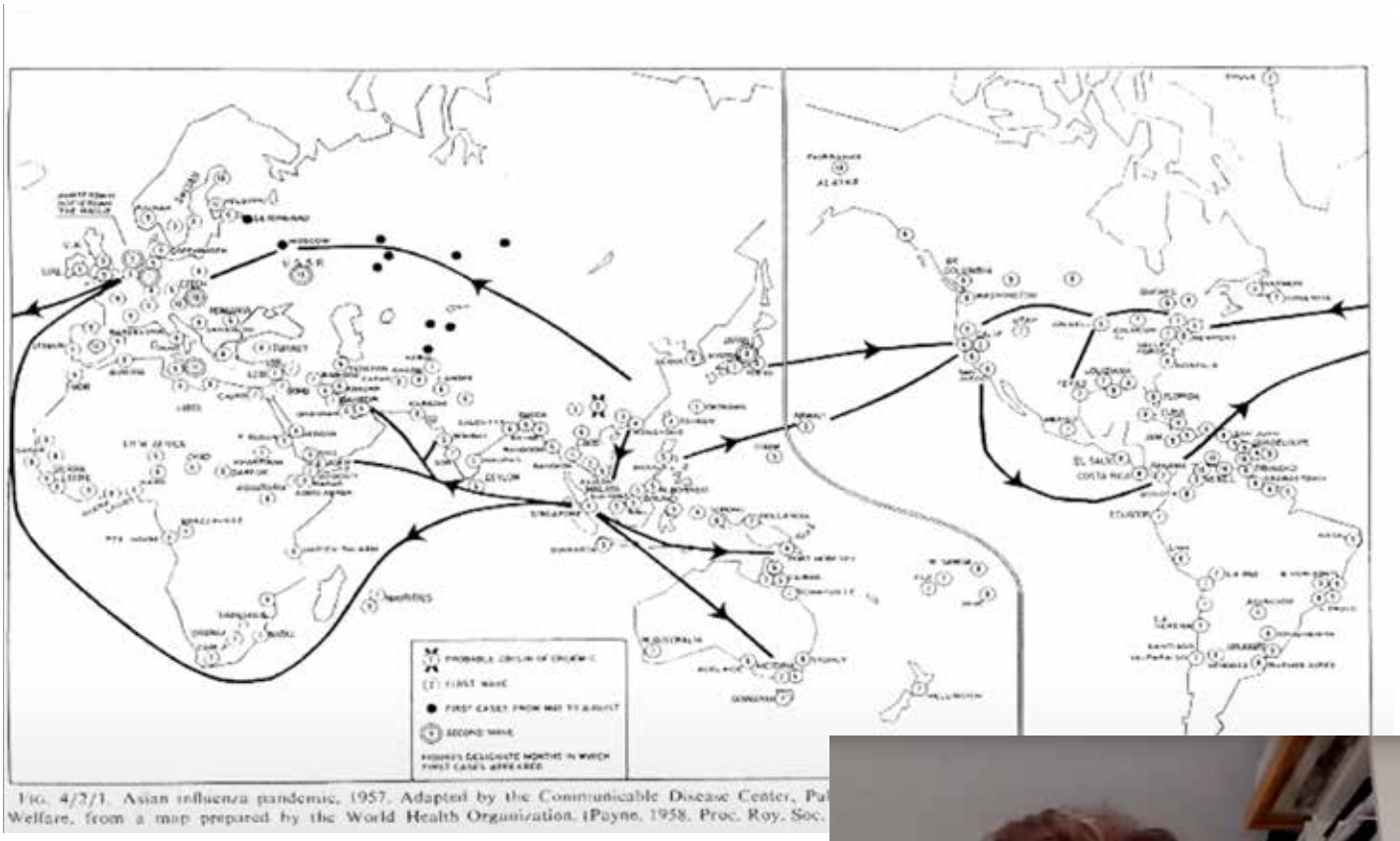
**Rasagy Sharma** is an Information Designer, Data Artist and Compulsive Sketchnoter. He is currently working as a Product Designer at Sundial, and in the past created visualizations and designed products at Gramener, Mapbox, Microsoft and Barclays. He creates data art in search of meaning and uses sketchnotes to listen and comprehend information. He holds a Masters in Design in Information & Interface Design from National Institute of Design, Bangalore and B.E. in Computer Science from Birla Institute of Technology and Science Pilani, Goa Campus.

## About the Data Journalist

**Sriharsha Devulapalli** is the Product Lead at Blue Sky Analytics. Prior to this, he was a data journalist with Mint. He also has worked with the Urban Design Lab, Small Media, and the Hyderabad Urban Lab. He enjoys cities, maps, long walks, and making people curious.

**“I’m definitely more aware about zoonosis.”**

*- Safitry Tomarere, Programme Participant*



Michael Bresalier delivers his lecture "Global Histories and Ecologies of Zoonotic Diseases."

# Contagion Across Species: Global Histories and Ecologies of Zoonotic Diseases

LECTURE

**Michael Bresalier**
**06 June 2021**

The COVID-19 pandemic, caused by a virus that crossed from animals to humans, cast a sharp spotlight on the enormous challenges posed by 'zoonoses'. This talk by Michael Bresalier considered historical perspectives on the changing ways in which zoonoses have been framed and tackled as global problems connected to human interactions with animals. It showed how zoonoses are rooted in growing ecological problems such as rapid changes to the environment and the globalised systems of animal food production and consumption.

## About the Historian of Medicine

**Michael Bresalier** is a lecturer in the History of Modern Medicine and Global Health at Swansea University. His research examines how international health organisations have shaped knowledge and experiences of health and disease in the 20th century. He is especially interested in the role of United Nations agencies in tackling problems of hunger, nutrition, and infectious disease in humans and animals, and how these problems have been crucial to projects of development, human rights, and humanitarianism.

**“It was really interesting to know how ideas spread through social identity and group coherence.”**

*- Ritesh KR, Visitor*

Daniel Richardson conducts his event "How Ideas and Behaviours Spread through a Crowd."

# How Ideas and Behaviours Spread through a Crowd

EVENT

**Daniel Richardson**
**06 June 2021**

This event was a culmination of the live experiment during CONTAGION, conducted in our mediator-led sessions. Experimental psychologist Daniel Richardson spoke about how ideas and behaviours spread through groups of people, how crowds make a good or bad decisions, and how social psychology helps us better understand group behaviours.

## About the Experimental Psychologist

**Daniel Richardson** is a Professor of Experimental Psychology at University College London (UCL). His research examines how individuals' thought processes are related to the people around them. He has authored many scientific articles in cognitive, developmental and social psychology and two popular science books, *'Man vs Mind'* and *'A Dummies Guide to Social Psychology'*. He received three Provost's Teaching Awards from UCL, and has performed shows at the London Science Museum and Bloomsbury theatre combining science, music and live experiments on the group mind of the audience.

Image courtesy of Foeock.

# Fighting the Pandemic with Swords and Magic

WORKSHOP

**Shreya Chowdhury**
**Shreyas Joshi**
**12 June 2021**

In this workshop conducted by research scholars Shreya Chowdhury and Shreyas Joshi, participants explored the "Corrupted Blood" incident in the online game *World of Warcraft*, wherein a pandemic besieged an entire virtual city. They learnt how real-world disease containment strategies such as contact tracing, testing, and quarantine can be deployed to battle virtual pandemics.

## About the Research Scholars

**Shreya Chowdhury** is a research scholar in the department of Chemical Engineering at Indian Institute of Science, Bangalore. She is trained as a Chemical Engineer, and completed her Bachelors from National Institute of Technology Raipur and Masters from Indian Institute of Technology-BHU. Presently, she is working in Narendra Dixit's group on Therapeutic Engineering at the Indian Institute of Science.

**Shreyas Jain** is a chemical engineering graduate, currently pursuing a PhD in Computational Biology from the department of Chemical Engineering at the Indian Institute of Science, Bangalore.

**“I can see youngsters wanting to listen to these lectures. I can see people wanting to use such lectures in their classrooms. I can see researchers looking back to see what we thought were important questions to ask.”**

*- Madhav Marathe, Speaker*


Madhav Marathe delivers his lecture "Real-Time Contagion Science in the 21st Century: The Role of Data and Computing."

# Real-Time Contagion Science in the 21st Century: The Role of Data and Computing

LECTURE

**Madhav Marathe**
**12 June 2021**

Infectious diseases cause more than 10 million deaths a year worldwide. Despite significant advances by scientists and public health authorities that have led to reduced rates of infections and mortality, the world is still unable to respond rapidly and effectively to pandemics.

In this talk, Madhav Marathe argued that pandemics are a complex systems problem that go beyond human health and national boundaries. He discussed how and if recent advances in computing, data, and biological sciences can be harnessed to develop new techniques and engineering principles that can further advance the field and, in the end, help reduce the global burden of infectious diseases.

## About the Computer Scientist

**Madhav Marathe** is a Distinguished Professor in Biocomplexity, the Division Director of the Network Systems Science and Advanced Computing Division at the Biocomplexity Institute and Initiative, and a Professor in the Department of Computer Science at the University of Virginia (UVA).

He is a passionate advocate and practitioner of transdisciplinary team science. During his 25-year professional career, he has established and led a number of large transdisciplinary projects and groups. His research interests are in network and data science, computational epidemiology, AI, foundations of computing and high performance computing. Throughout his career, he has been studying contagion-like phenomena that occur in social and engineered systems.

**“Comics are a repository of COVID-19 experiences, and they have archival value for researchers.”**

*- Joanna Griffin, Programme Participant*


Soha Bayoumi delivers her lecture "What Graphic Medicine Can Teach Us about the Pandemic."

# COVID Comics: What Graphic Medicine Can Teach Us about the Pandemic

LECTURE

**Soha Bayoumi**
**28 October 2021**

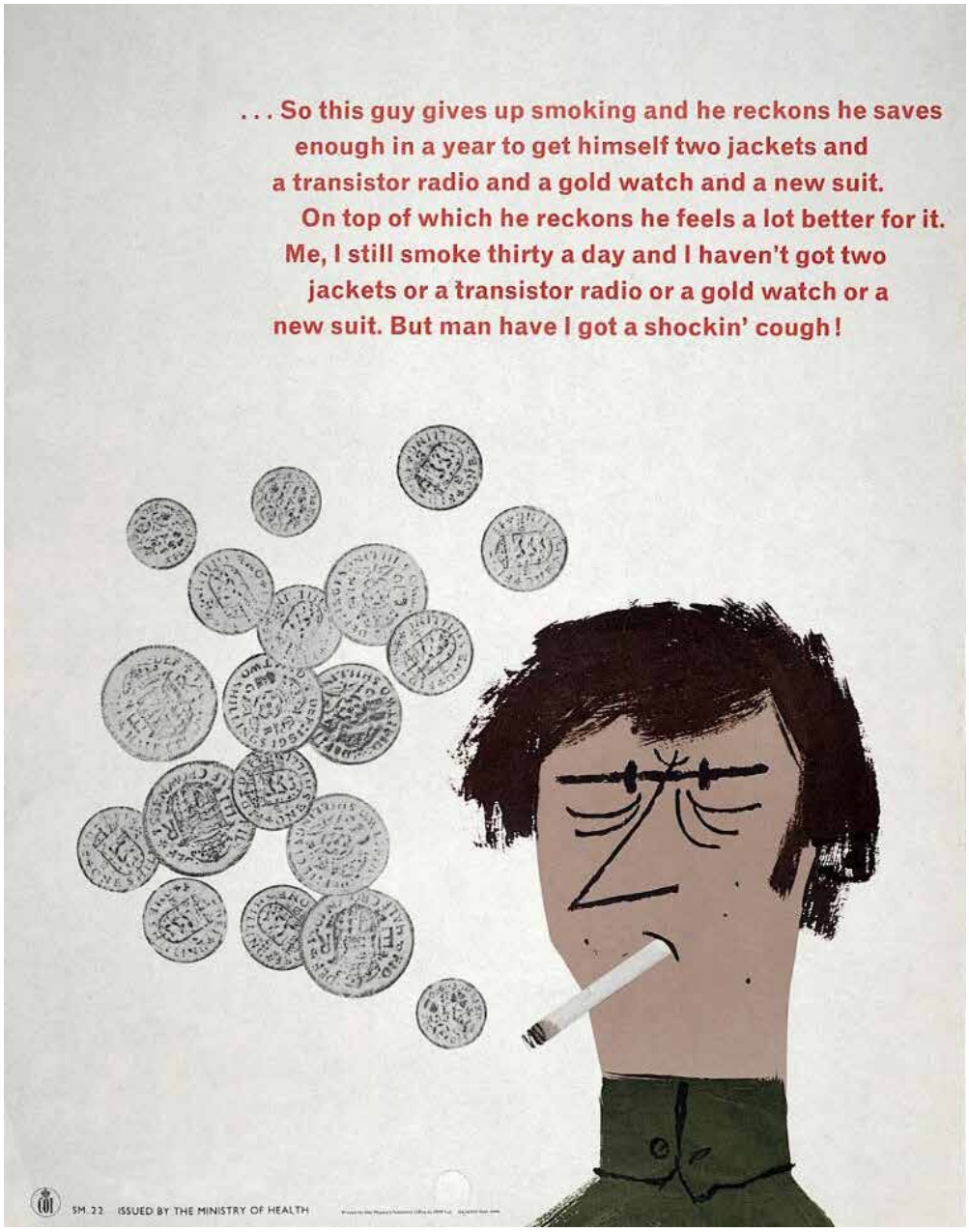
Graphic Medicine is a relatively recent medical humanities field that sits at the intersection of the medium of comics and the discourse of medicine and healthcare. It includes visual pathographies—graphic narratives, autobiographies, zines, pamphlets and other forms of comics that approach the questions of health and illness from various angles. The COVID-19 pandemic caused significant changes to ordinary life, thus allowing for numerous narratives to emerge, including graphic narratives that addressed everything from the cathartic processing of trauma and grief to communicating information about hygiene and vaccines to a wide audience. This lecture explored some of Graphic Medicine's contributions to the ways in which we made sense of the COVID-19 pandemic.

## About the Historian of Medicine

**Soha Bayoumi** is a Senior Lecturer in the Medicine, Science, and the Humanities Program at Johns Hopkins University. Trained in political theory, political philosophy and intellectual history, she works on the question of justice at the intersection of history, political theory, and science, technology and medicine studies. With a focus on medicine and public health, her research addresses the questions of health and social justice, biomedical ethics, and the medicine-politics nexus, with a geographical focus on the Middle East and a special interest in postcolonial and gender studies. Her research interests focus on medical expertise and how it is deployed in different political contexts.

**“I learnt about the concept of unintended consequences from an advertisement.”**

*- Agathyan, Programme Participant*




A man smoking, with silver coins representing the expense of buying cigarettes.
Image courtesy of the Wellcome Collection, 1965.

# The Emotional Business of Communicating Public Health

WORKSHOP

**Hannah J. Elizabeth**
**27 November 2021**

This workshop by Hannah J. Elizabeth explored the power of emotions in communicating public health through visual media. It tracked how different emotions have been used to manipulate public behaviour in the pursuit of public health. By examining a number of examples of public health related visual media, the workshop looked at the history of who creates health messages, who the intended audiences are, and what unintended consequences might arise with the use of emotions to communicate public health messages.

## About the Historian

**Hannah J. Elizabeth** is a cultural historian of public health, sexuality, emotions, and childhood. Their core research focus is on the histories of HIV in Britain, but they have worked on topics as diverse as polio, smoking, and lesbian health activism.

They completed their PhD in 2017 at the University of Manchester. Their dissertation investigated the representation of HIV positive identities to children and adolescents in Britain, 1981–1997. Their current Wellcome funded research investigates HIV-affected family life in Edinburgh. The project is titled "What's Love Got to Do With It? Building and Maintaining HIV-affected Families through Love, Care, and Activism in Edinburgh 1981–2016".

# SPILLOVER
*Into our lives*

What are the fallouts, effects, and responses to any contagion? By examining how we respond to different types of contagion—through art, research, or a mix of the two—we gathered diverse perspectives, contextualised loss and suffering, and prepared for the future.

**5 EXHIBITS**

**7 LECTURES**

**2 WORKSHOP**

**4 MASTERCLASSES**

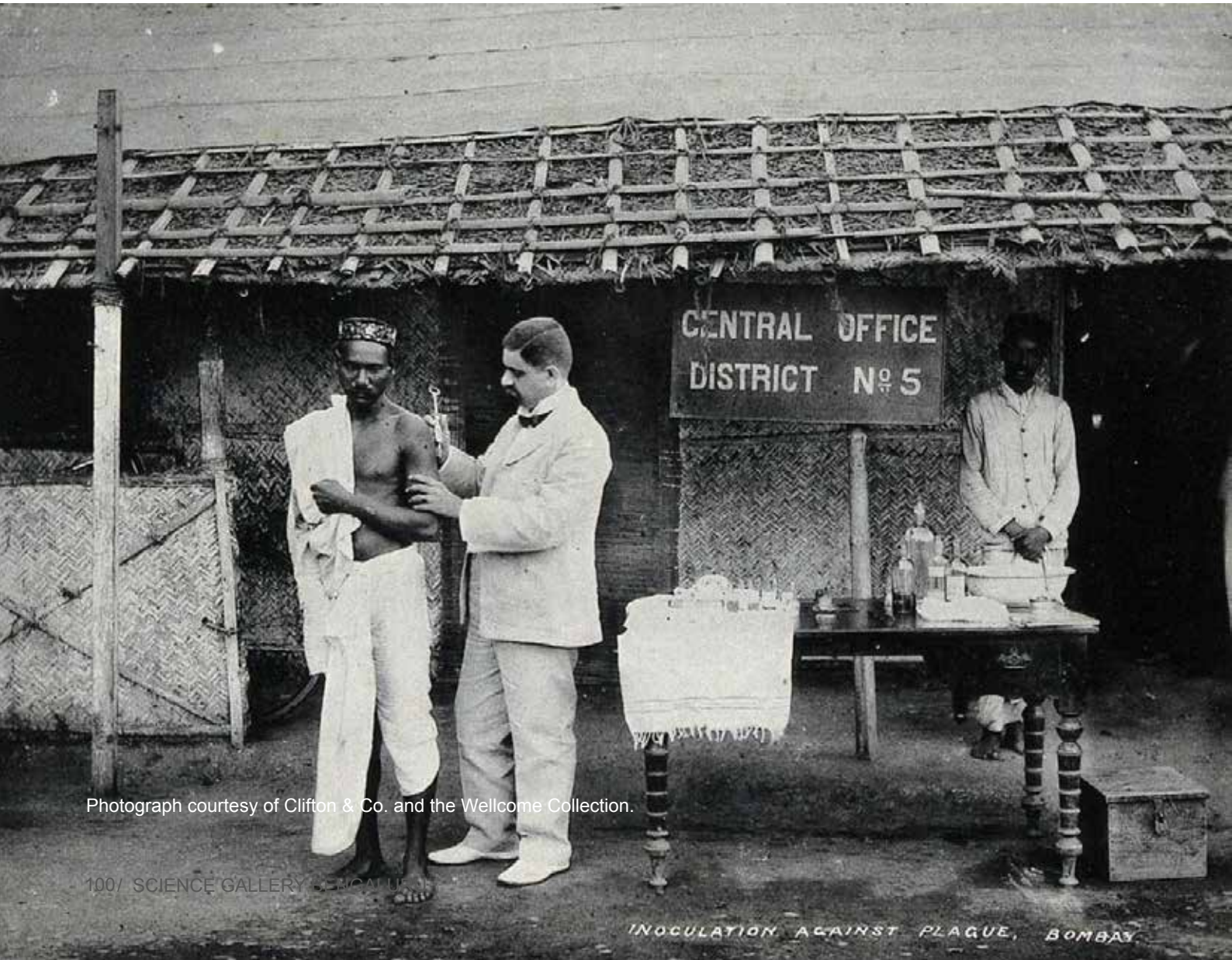
**3 FILMS**

**2 EVENTS**

# EXHIBITS

**“It was interesting to draw similarities between the responses of colonial authorities during the Third Plague Pandemic and the responses of the current governments to COVID-19”**

*- Divyansh Tiwari, Visitor*




Photograph courtesy of Clifton & Co. and the Wellcome Collection.

# Controlling the Plague in British India

The third plague pandemic broke out in Yunnan, China in 1855 and swept across the globe until 1955, causing the death of approximately 12 million people. Apart from being the first bubonic plague epidemic to reach all continents, it was also the first epidemic to be photographed extensively. These photographs provided a visual narrative with diverse perspectives on an epidemic that deeply impacted methods of disease control and response across the world.

An essay written by medical anthropologist Christos Lynteris accompanied this exhibit. It explored the measures taken by colonial authorities in order to control the spread of the Third Plague Pandemic in India. The exhibit also contained photographs courtesy of the research project *Visual Representations of the Third Plague Pandemic* led by Lynteris.

## About the Anthropologist

**Christos Lynteris** is a medical anthropologist. His research focuses on the anthropological and historical examination of epidemics, zoonosis, epidemiological epistemology, medical visual culture, colonial medicine, and pandemics as events posing an existential risk to humanity.

Funded by the Wellcome Trust with an Investigator Award in the Humanities and Social Sciences, Christos' new project, "The Global War Against the Rat and the Epistemic Emergence of Zoonosis" (2019 – 2024), will examine the global history of a foundational but historically neglected process in the development of scientific approaches to zoonosis: the global war against the rat (1898 –1948).

**“*Drawing the Bombay Plague* was a great illustration of how despite the changes brought about due to technology and science, history often repeats itself.”**

*- Elizabeth Yorke, Visitor*


Still from Ranjit Kandalgaonkar's exhibit *Drawing the Bombay Plague*, 2021.

# Drawing the Bombay Plague

The Bombay Plague of 1896 marked a turning point in disease control in India. Strict, authoritarian measures were imposed by a colonial administration that was worried about the plague spreading to Europe through trade routes. In *Drawing the Bombay Plague*, Ranjit Kandalgaonkar combined imagery from two collections: photographs from the Wellcome Collection and satirical cartoons from *HindiPunch*, a monthly magazine archived at the Asiatic Library, Mumbai. He produced archival driven artwork in the form of an interactive online sketch. In doing so, he encapsulated the different imaginations of the plague to recover under-represented facts, figures, and people's voices. Kandalgaonkar imagines the drawing as a record to view the plague through a new lens that could inform future research through validation of some of the lesser known aspects of the plague years.

## About the Artist

**Ranjit Kandalgaonkar** lives and works in Mumbai, and his art practice primarily comprises urbanity and cities. Projects such as *cityinflux, Gentricity, build/browse and Stories of Philanthropic Trusts* map the vulnerability within redevelopment strategies of urbanisation, record anomalous histories, or document timelines and "blindspots"—alternate markers of a city that is unraveling. A study of the combative histories of reclamation and speculation has led to projects such as *Isles amidst reclamation and Seven Isles Unclaimed*, which map ever-diminishing geographies.

Ranjit's awards and grants include the Majlis Visual Arts Fellowship, the U.D.R.I Architectural Fellowship, the Leverhulme Artist Residency, the SAI Harvard University Artist Residency, and a Seed Funding Award from the Wellcome Trust.


Still from Basse Stittgen's exhibit *Fluid Dialogues*, 2021.

# Fluid Dialogues

Contagious diseases pose dangers to our health and also come with the possibility of stigmatization—people are shunned, feared, and discriminated against because of their medical condition. This exhibit juxtaposed interviews of people living with HIV with microscopic footage of their blood to create an intimate moment of reflection on the social implications of living with a contagious disease. The artist provoked visitors to reflect on how social ties and relationships can be damaged through irrational fears of contamination and our impulse to assign blame.

## About the Artists

**Basse Stittgen**'s work is positioned at the intersection of design, art and material research. It stems from a fascination for matter, how it can be created, applied, used, reused and questioned. This approach might lead to investigations into production cycles, or become a tool to unfold hidden narratives and potentials embedded in matter.

**Andrés García Vidal** works as an artist and recordist within the sound studies frame with a focus on aural and oral culture.

**microENVISION** specializes in microphotography and videography, producing refreshing, creative and realistic photos and videos of anything small enough to fit underneath a microscope, with the aim to tell stories and intrigue people with images that spark curiosity for our beautiful microworld.

**Juan Arturo García** is a designer & filmmaker hailing from Mexico City. His work strands along evidence, fiction, and forecast to explore a space between translation and the impossibility of translation.

**T. Jayashree** has written, produced, and directed for international television, radio, feature films and independent documentaries for over two decades. Her award winning work focuses on the intersection between Gender, Sexuality, Law and Public health. Queer Archive for Memory, Reflection and Activism (QAMRA) is an initiative grown out of her vast collection of raw footage on queer life and movement in India.


Glass phial of British Standard Penicillin, London, England. Photograph courtesy of the Wellcome Collection, ca. 1946.

# Moulding Modern Medicine

Alexander Fleming (1881–1955) was a Scottish medical bacteriologist at St. Mary's Hospital Medical School in London. He is most popularly known for his discovery of penicillin as the world's first antibiotic, a revolutionary discovery that saved many lives, particularly during World War II. To this day, penicillin is widely used to fight bacterial infections.

Fleming's short recording presented in this exhibit—a part of his talk for the British Broadcasting Company (BBC) in 1945—was a testament to his wit and scientific calibre as he accurately predicted the dangers of antibiotic resistance. He demonstrated not just his knowledge of microbes and biology, but also his keen understanding of human behaviour in medicine. This audio recording was accompanied by original photos of Fleming's petri dishes, the plates that revolutionized modern medicine.

## About the Contributors

**The Wellcome Library** is a major repository for the study of medical history. The Library was founded on the collections of Henry Solomon Wellcome (1853-1936), originally a pharmaceutical salesman whose interest in the history of medicine led him to collect books and create a Library as well as a Museum. Though he envisaged the Library to be accessible to the public, it was only many years after his death that the collection was formally opened to the public as the Wellcome Historical Medical Library. Today, the Wellcome Library is focused on making these resources available by digitising large parts of its growing collection of manuscripts, videos, images, paintings, and much more.

**The Centre for Agricultural and Bioscience International** (CABI) is an international and intergovernmental organization that provides information and scientific inputs to solve problems related to agriculture and the environment.

**Bonhams** is a privately-owned international auction house, founded in 1793.

**“It was fascinating to see how ants are being used to produce novel antibiotics.”**

*- Ushangari Bhuvaneshwari, Visitor*

Still from John Innes Centre's exhibit *Putting the Ant into Antibiotics*, 2021.

# Putting the Ant into Antibiotics

Scientists at the John Innes Centre (JIC) in Norwich, United Kingdom are turning to a range of ants in the search for new antibiotics. Though humans have been using antibiotics for nearly a century, antimicrobial resistance has become a growing and dangerous concern. The scientists at JIC are investigating the chemical ecology of the ant colonies—and the microbes produced by them—to help us tackle the crisis of antimicrobial resistance. An essay by Adrian Galvin accompanied this exhibit, exploring the work done in this field by Barrie Wilkinson, Matt Hutchings and Victor Soria-Carrasco. This essay was interspersed with photographs of the ants, as well as a live-stream of the ant colony being studied at the JIC laboratory.

## About the Contributors

**Barrie Wilkinson** researches the discovery and biosynthesis of microbial natural products at the John Innes Centre. He is particularly interested in identifying new compounds with antibiotic and antifungal properties, and in characterising the biosynthetic pathways and biochemical mechanisms by which they are made. Wilkinson's research involves investigating the targets for these compounds and elucidating their mode of action.

**Matt Huchings**'s group at the John Innes Centre works on the specialised metabolites made by Streptomyces species and closely related actinomycete bacteria, which include more than half of all known antibiotics. They are particularly interested in the chemical ecology of these bacteria and their natural products.

**Victor Soria-Carrasco** is the Head of the Entomology and Insectary Facility at the John Innes Centre. He aims to expand the capacities of this facility by using genomic approaches to assist with the diagnosis and tracking of population dynamics of pests and pest-associated plant pathogens, the genetic mapping of relevant invertebrate traits, and the eventual development of new pest and plant pathogen control methods using evolutionary approaches and gene editing tools.

**Adrian Galvin** is the Communications and Media Manager at JIC. He is responsible for communications planning and media management for JIC and The Sainsbury Laboratory. He spends his time dealing with public affairs and building relationships with local, national, and international media organisations.

# PROGRAMMES

Still from *The Periwig Maker*, Annette and Steffen Schäffler, dir. 1999.

# THE PERIWIG MAKER

FILM

Director: **Steffen Schäffler**
Producer: **Annette Schäffler**

Duration: **15 Minutes**
Language: **English**
Year of Production: **1999**

London, 1665. The plague has reached its peak. The periwig-maker has sealed himself off from the outside to escape the danger of infection. Through his shop window he observes the dying in the street and reflects on the causes and consequences of the epidemic. When a young girl seeks his help he makes a fateful decision. This Oscar nominated film is loosely based on Daniel Defoe's *A Journal of the Plague Year*, and has been screened at over 100 international film festivals.

## About the Filmmakers

**Annette** and **Steffen Schäffler**, sister and brother, studied at film schools in Germany and founded their production company Ideal Standard Film in 1994. They went on to produce several short films and a 60 minute documentary. In most of their projects Steffen is the director and Annette the producer. The Periwig-Maker was their first animated short film, won more than 30 international prizes and was nominated for a Bafta and an Oscar.

**“The lecture helped me gain insight into why antimicrobial resistance should be studied carefully.”**

*- Neha Rao, Programme Participant*


Jyoti Joshi delivers her lecture "Antimicrobial Resistance: The Pandemic in the Shadows."

# Antimicrobial Resistance: The Pandemic in the Shadows

LECTURE

**Jyoti Joshi**
**07 May 2021**

Antimicrobial resistance (AMR) is a grave and growing danger to human health. Ever since their discovery, antibiotics have dramatically changed the management and treatment of infections in humans and animals. Paradoxically, their use and selective pressure leads to genetic changes in bacteria critical for their survival, and gives rise to antimicrobial resistance. This talk by Jyoti Joshi delineated how AMR has reached pandemic proportions, and showed that unless tackled urgently, the antibiotics we use today will be unavailable to future generations.

## About the Physician

**Jyoti Joshi** MBBS MD (Community Medicine) and MSc (Infectious diseases) is Head of South Asia at the Center for Disease Dynamics, Economics & Policy (CDDEP), and an Adjunct Professor at Amity Institute of Public Health, Amity University, Uttar Pradesh, India. A medical doctor with specialization in Community Medicine and Infectious diseases, Joshi has worked in public health programs for two decades. Her research interests include antimicrobial resistance (AMR), vaccines, infectious diseases, and health systems.

**“The lecture revealed how the ground realities change in retrospective narratives of epidemics or pandemics.”**

*- Supriya Dash, Programme Participant*


Dora Vargha delivers her lecture "After the End of Epidemics: A Cold War View."

# After the End of Epidemics: A Cold War View

LECTURE

**Dora Vargha**
**08 May 2021**

In this talk, Dora Vargha showed how historical research can help us understand how epidemic narratives fuelled and mobilised people and resources in the 20th century. She also covered the approaches we need to consider as we face the uncertain trajectory of many diseases in the 21st century.

## About the Historian

**Dora Vargha** is Senior Lecturer based at the Department of History and the Wellcome Centre for Cultures and Environments of Health at the University of Exeter, as well as co-editor of the journal *Social History of Medicine*. Her work spans everything from the politics of epidemic management to public health systems and access to therapeutics. She has written on the global infrastructure of diphtheria antitoxin, the politics of vaccination in the Cold War, hospital care of disabled children in communist contexts, and shifting epidemic narratives in historical analysis.


Fig. 115. Bacilli of Plague from a Culture. Highly magnified.

David Arnold delivers his lecture "The Visual Technology of Contagion in 19th Century India."

# Science and Seeing: The Visual Technology of Contagion in 19th Century India

LECTURE

**David Arnold**
**15 May 2021**

The technology that we use today allows us to explore the microscopic world in great detail. Before we had cutting-edge gadgets to study medicine and biology, scientists used various other technologies, tools, and methods to advance their knowledge. Using the examples of early light microscopy and photography, this talk by David Arnold explored the microcosm and macrocosm of contagion, the changing role of instruments and imagery in medical science, and the rise of the laboratory in India from the first cholera epidemics to bubonic plague in the 1890s.

## About the Historian

**David Arnold** is Professor Emeritus in History at the University of Warwick, UK, and a Fellow of the British Academy. He has published widely on science, medicine and environment in British and post-Independence India. His books include *Colonizing the Body: State Medicine and Epidemic Disease in 19th Century India* (1993), *Everyday Technology: Machines and the Making of India's Modernity* (2013), *Toxic Histories: Poison and Pollution in Modern India* (2016). He is writing a history of pandemics in India from cholera to COVID-19.

**“Being able to interact directly with the filmmaker and ask them questions was invaluable.”**

*- Jorge Aponte-Gomez, Programme Participant*


Arthur Pratt discusses his film *Survivors* with David Heymann.

# SURVIVORS

## FILM DISCUSSION

Director: **Arthur Pratt**
Discussant: **David Heymann**
**16 May 2021**

Duration: **84 Minutes**
Language: **English and Krio with English subtitles**
Year of Production: **2018**

Through the eyes of Sierra Leonean filmmaker Arthur Pratt, *Survivors* presents a heart-connected portrait of his country during the Ebola outbreak, exposing the complexity of the epidemic and the sociopolitical turmoil that lies in its wake. The film chronicles the remarkable stories of two Sierra Leonean healthcare workers during what is now widely regarded as the most acute public health crisis of the modern era. The film was broadcast on Public Broadcasting Service's award winning series POV and was nominated for Peabody and Emmy awards in 2019.

The screening of this film was followed by a discussion between filmmaker Arthur Pratt and epidemiologist David Heymann.

## About the Director

**Arthur Pratt** is the co-founder of the Freetown Media Centre in Sierra Leone—a hub for local production, media education and professional development—where he serves as Manager in charge of Education and Creative Initiative. He is also a Christian Evangelist and community leader. In 2010, Pratt shot and produced his first short film, *Black Sugar*. Later in the same year, he wrote, directed, and produced the widely acclaimed short film on the Trans-Atlantic slave trade, *They Resisted*, which was screened in Clap Ivoir (Ivory Coast film festival).

## About the Epidemiologist

**David Heymann** is a medical epidemiologist and Professor of Infectious Disease Epidemiology at London School of Hygiene and Tropical Medicine, and is a distinguished fellow at the Centre on Universal Health at Chatham House. He has held various leadership positions in infectious diseases at the World Health Organisation (WHO), and in 2003 headed the WHO global response to SARS in his role as executive director of communicable diseases. In 1976, after spending two years working in India on smallpox eradication, Heymann published over 250 peer reviewed articles and book chapters, is editor of the *Control of Communicable Diseases Manual*, and is an elected member of the UK Academy of Medical Sciences and the US National Academy of Medicine.

**“The lecture exposed the disparity in vaccine distribution across the world.”**

*- Ramya Nadig, Programme Participant*

Achal Prabhala engages with Vasan Samabandamurthy, Jahnavi Phalkey, and Vijay Chandru at his lecture "Everything You Wanted to Know About Non-western COVID Vaccines but Were Afraid to Ask."

# Everything You wanted to Know About Non-western Covid Vaccines but Were Afraid to Ask

LECTURE

**Achal Prabhala**
**21 May 2021**

Achal Prabhala's talk dealt with the geopolitics of vaccine distribution in the context of the COVID-19 pandemic when the entire world faced a shortage of coronavirus vaccines. In order to move the centre of pharmaceutical innovation beyond a handful of western countries, we need to overcome the credibility gap faced by vaccines from China, Russia, and India. This talk addressed the interactions between pharmaceutical companies, patents, and politics.

## About the Public Health Activist

**Achal Prabhala** is a public health activist, the coordinator of the AccessIBSA Project (www.accessibsa.org) and a fellow of the Shuttleworth Foundation. The AccessIBSA project is a tri-continental project set up to expand access to life-saving drugs in the developing world, specifically India, Brazil and South Africa. He has worked to drive change in the legal and policy frameworks that have underpinned the development and manufacture of medicines for decades. Over the course of the pandemic, he has worked on increasing access to coronavirus vaccines in India and other low-income countries in the world, by advocating for intellectual property waivers and transfers of technology, by critically evaluating the vaccine regulatory system and by examining problems in the vaccine manufacturing supply chain.

Adia Benton delivers her lecture "Configuring Care in the Context of AIDS and Ebola Epidemics."

# Detect, Investigate, Diagnose: Configuring Care in the Context of AIDS and Ebola Epidemics

LECTURE

**Adia Benton**
**22 May 2021**

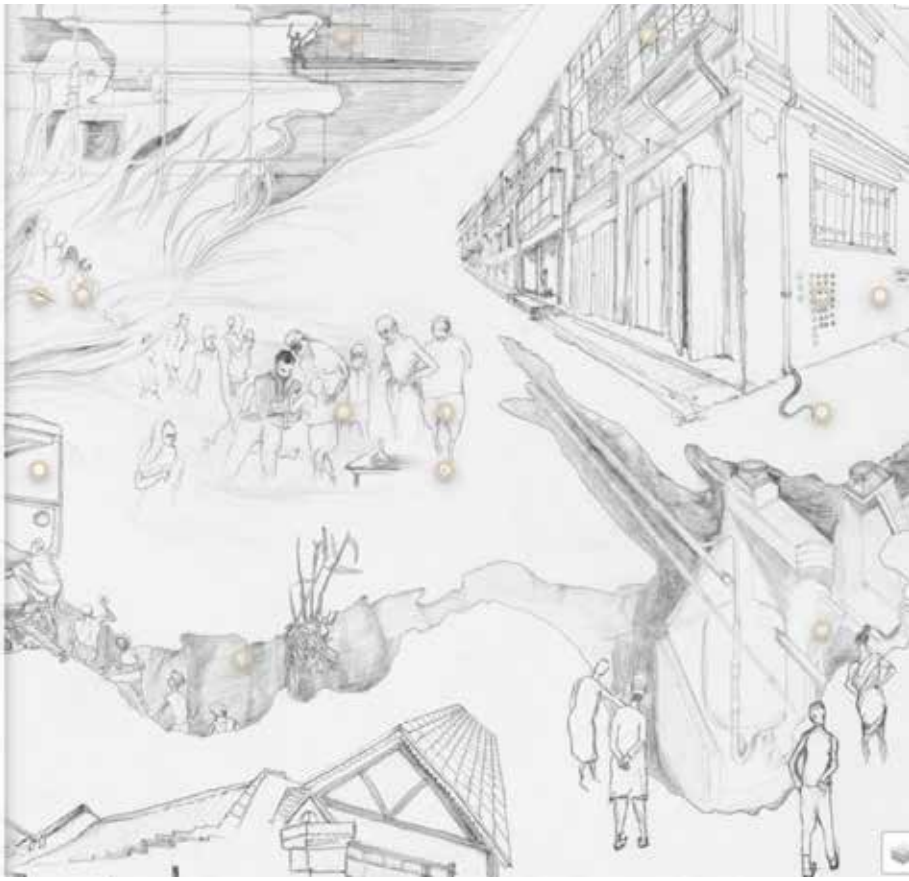
Drawing on ethnographic and historical research on HIV/AIDS care and support and the 2014–16 epidemic of Ebola in Sierra Leone, Adia Benton addressed some political and economic factors underpinning epidemic response, as well as the means by which state and non-state actors configure care during epidemics. She also underlined the urgent need to study histories and anthropologies of epidemics so that we may better prepare ourselves for future pandemics.

## About the Anthropologist

**Adia Benton** is an Associate Professor of Anthropology and African Studies at Northwestern University, where she is affiliated with the Science in Human Culture Program. She is the author of the award-winning book, *HIV Exceptionalism: Development through Disease in Sierra Leone*, and is currently writing a book about the West African Ebola outbreak. More broadly, she studies the political, economic and historical factors shaping how care is provided in complex humanitarian emergencies and in longer-term development projects—like those for health.


The caption chastises the authorities for not enthusiastically supporting Waldemer Haffkine , but there are others as well, such as Dr Acacio Gabriel Viegas (who detected the first case) as well as Nasarwanji Hormusji Choksy (an expert in controlled trials) who worked just as tirelessly behind the scenes.

(Image source: Pickings from the Hindi Punch, April 1898. Asiatic Library, Mumbai)



Obstructions on mooring-lines to stop rats boarding ships

A drawing from a set showing the transmission and effects of plague, especially the role of rats. Drawing by Albert Lloyd Tarter, 1940s.

(Image source: Wellcome Library, London. Reference: L0086446)

Stills from Ranjit Kandalgaonkar's exhibit *Drawing the Bombay Plague*, 2021.

# Drawing (from) the Bombay Plague

WORKSHOP

**Ranjit Kandalgaonkar**
**23 May 2021**

The workshop "Drawing (from) the Bombay Plague" by artist Ranjit Kandalgaonkar gave participants an opportunity to interrogate, discuss and enliven the comparison between a historical pandemic and the unique situation the world found itself in of a pandemic that was unfolding in real-time. The workshop was based on Kandalgaonkar's *Drawing the Bombay Plague*, an image that served as a reminder of the unfortunate arrival and the imagination of the early days of a pandemic. The drawing hinted at the generic mistakes, callous attitudes of government officials, panic of populations unfamiliar with diseases, information about diseases that was not disseminated, and the glaring mistakes that we as society continued to repeat.

## About the Artist

**Ranjit Kandalgaonkar** lives and works in Mumbai, and his art practice primarily comprises a lens directed at the urban context of cities. Projects such as cityinflux, Gentricity, build/browse and Stories of Philanthropic Trusts map vulnerability within redevelopment strategies of urbanisation, record anomalous histories, or document timelines and 'blindspots'—alternate markers of a city that's unraveling. A study of the combative histories of reclamation and speculation has led to projects such as Isles Amidst Reclamation and Seven Isles Unclaimed, which map ever-diminishing geographies.


*Christos Lynteris delivers his lecture "Plague and the Emergence of Epidemic Photography."*

# Plague and the Emergence of Epidemic Photography

LECTURE

**Christos Lynteris**
**29 May 2021**

This talk by Christos Lynteris examined the way in which a new photographic genre emerged in the context of the Third Plague Pandemic (1894-1959): epidemic photography. Differing from medical photography in that it did not focus on symptoms or the pathology of the disease, epidemic photography took as its subject the real or imagined causes of plague outbreaks across the globe. The talk showed how epidemic photography played a key role in establishing the notion and experience of the 'pandemic' in the modern world.

## About the Medical Anthropologist

**Christos Lynteris** is a Senior Lecturer in Social Anthropology at the University of St Andrews. His work examines epistemological and biopolitical aspects of epidemics with a particular focus on zoonotic diseases. He was the PI of the ERC-funded project "Visual Representations of the Third Plague Pandemic", and is currently the PI of the Wellcome Investigator Award "The Global War Against the Rat and the Epistemic Emergence of Zoonosis."


T. Jayshree discusses her film *A Human Question* with Vikram Doctor.

# A HUMAN QUESTION

## FILM DISCUSSION

Director: **T. Jayashree**
Discussant: **Vikram Doctor**
**30 May 2021**

Duration: **53 Minutes**
Language: **German, English, Kannada & Hindi with English subtitles**
Year of Production: **2005**

Tracing the story of the global struggle to make HIV/AIDS drugs more affordable and available, *A Human Question* raises key questions of whether private ownership of knowledge can be at the cost of human life. The film explores the complex world of patents and HIV/AIDS medicines by connecting and contrasting personal narratives with those of international lobbyists and activists. This film makes the case that although AIDS cannot be cured, people can live longer and with a better quality of life given adequate health care and access to drugs, both of which are cause and consequence of social change. This film has been screened at numerous international film festivals including *HIMAL South Asian festival* (2007), and *Globale* (2006).

The screening of this film was followed by a discussion between filmmaker T. Jayashree, and journalist Vikram Doctor.

### About the Director

**T. Jayashree** has written, produced and directed for international television, radio, feature films and independent documentaries for over 2 decades. Her award winning work focuses on the intersection between gender, sexuality, law and public health. Queer Archive for Memory, Reflection and Activism (QAMRA) is an initiative grown out of her vast collection of raw footage on queer life and movement in India.

### About the Journalist

**Vikram Doctor** is a Goa based journalist who has worked with publications like the *Times of India* and *Economic Times* for over 20 years. He was also involved with the GayBombay community support group. He documented the 18 year campaign to decriminalise homosexuality in India, and has written on issues relating to material culture and social change in India, including the effects of epidemics like HIV and Covid.

From top to bottom: Sharifah Sekala, Sanjoy Bhattacharya, and Seye Abimbola at their event "Human Rights and Knowledge during Crises."

# Human Rights and Knowledge during Crises

EVENT

**Sanjoy Bhattacharya**
**Seye Abimbola**
**Sharifah Sekalala**
**11 June 2021**

As countries around the world imposed emergency measures to combat the spread of COVID-19, it became important to interrogate the impact of these measures on vulnerable communities. In this context, human rights offered a framework to guide governments and policy-makers, ensured accountability for their actions, and highlighted the pandemic's role in exacerbating existing inequalities. But who could frame these rights? Who could advocate for them? And who gets to police these rights? This panel discussed how human rights, and the production of knowledge were framed within the COVID-19 global health crisis.

## About the Historian

**Sanjoy Bhattacharya** is Co-Director of the History Department's Centre for Global Health Histories, Professor in the History of Medicine, a Wellcome Trust Senior Investigator and the Head of the WHO Collaborating Centre for Global Health Histories, University of York.

## Health Systems Researcher

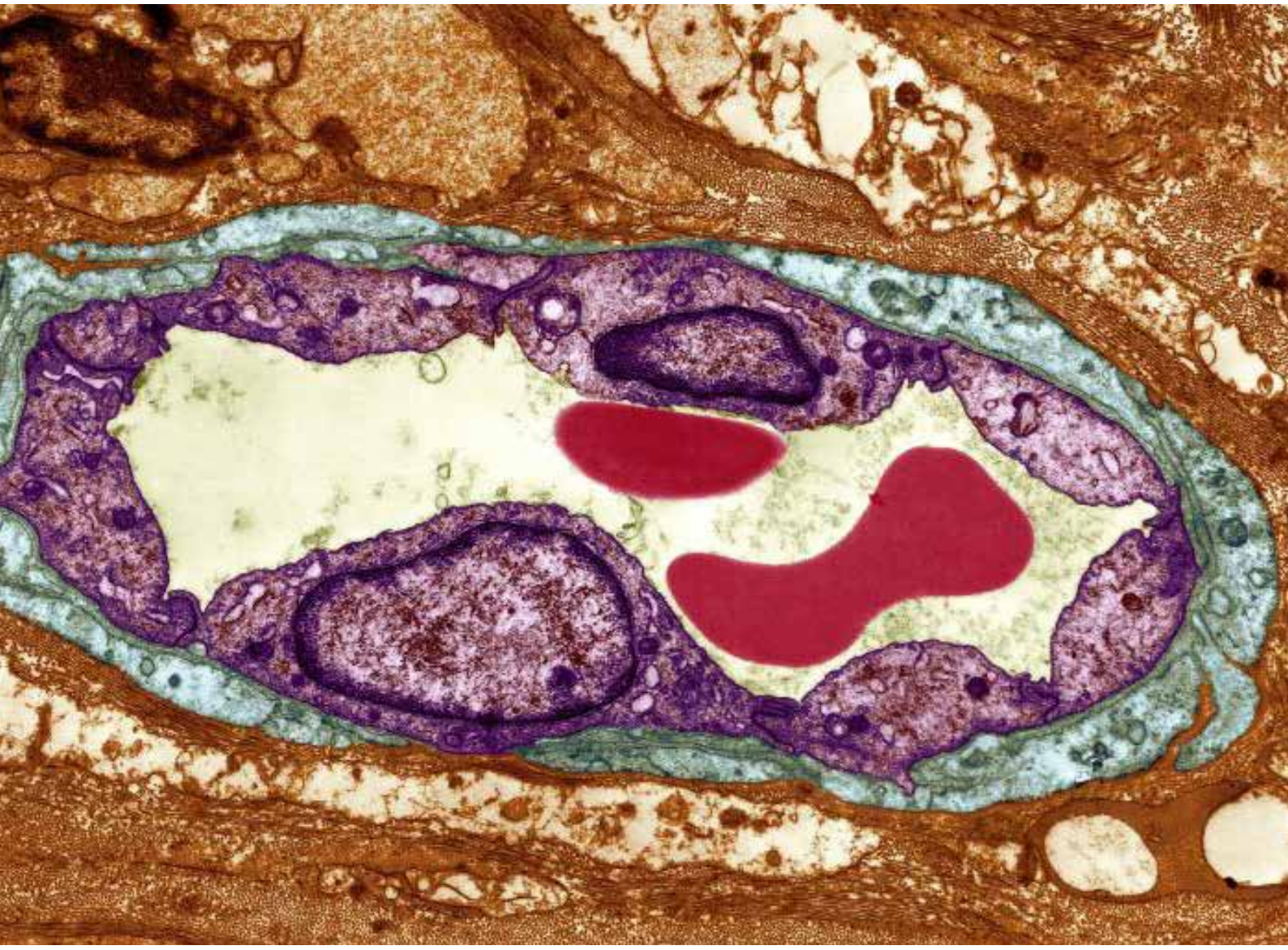
**Seye Abimbola** is a Health Systems researcher and a Global Health scholar. He has held the Prince Claus Chair in Development and Equity at Utrecht University in the Netherlands, and is a Senior Lecturer in Global Health at the University of Sydney in Australia, and the editor in chief of BMJ Global Health.

## Global Health Lawyer

**Sharifah Sekalala** is an Associate Professor of Global Health Law at the University of Warwick. She is an interdisciplinary researcher whose work is at the intersection of international law, public policy, and global health.

**“I learnt that the problems we face are often interconnected or are a part of a larger issue.”**

*- Sai P, Programme Participant*



Capillary with red blood cells. Image courtesy of Rob Young and the Wellcome Collection, n.d.

# Matter Out of Place

MASTERCLASS

**Basse Stittgen**
**11 June 2021**

Blood. It is essential for life, both medically and metaphorically, yet we are repulsed by it. Blood tells many stories, about life and death and a world in between, yet there are stories that remain untold. Derived from Basse Sttitgen's work with blood, this masterclass gave participants insight into his research and creative processes.

## About the Artist

**Basse Stittgen**'s work is positioned at the intersection of design, art and material research. It stems from a fascination for matter—how it can be created, applied, used, reused and questioned. This approach might lead to investigations into production cycles, or become a tool to unfold hidden narratives and potentials embedded in matter.


Photograph courtesy of Gerd Altmann.

# Listening with EARS (Early AI-assisted Response with Social Listening)

MASTERCLASS

**Avichal Mahajan**
**13 June 2021**

An infodemic—surplus of information both fake and legitimate—has plagued the discourse around the COVID-19 pandemic since the beginning of the outbreak. Digital technologies and social media networks have spurred the rapid-growth of real-time information about the disease. This infodemic—if not managed well—can become a serious threat to public health.

In response to this risk, the World Health Organisation (WHO) launched the EARS platform (Early AI-assisted Response with Social Listening), which shows real-time information about how people are talking about COVID-19 online. Led by Avichal Mahajan from WHO, this masterclass helped participants learn about the data and analytics technologies behind EARS, and how new technologies can be leveraged to better manage infodemics.

## About the Economist

**Avichal Mahajan** supports the WHO Information Network for Epidemics (EPI-WIN) platform in managing infodemics during emergencies. He completed his PhD at the University of Geneva where his research focused on the areas of urban economics, development economics and climate change. Prior to his doctoral studies, Avichal worked at the Africa Education Unit and the Development Research Group: Finance and Private Sector Development (DECFP) at the World Bank, Washington DC.

**“I did not know that there were anti-vax people at the time of Jenner too!”**

*- Melody Chew, Programme Participant*


Owen Gower conducts his event "A Guided Tour of Dr Jenner's House."

# The Early History of Vaccination: A Guided Tour of Dr Jenner's House

EVENT

**Owen Gower**
**13 June 2021**

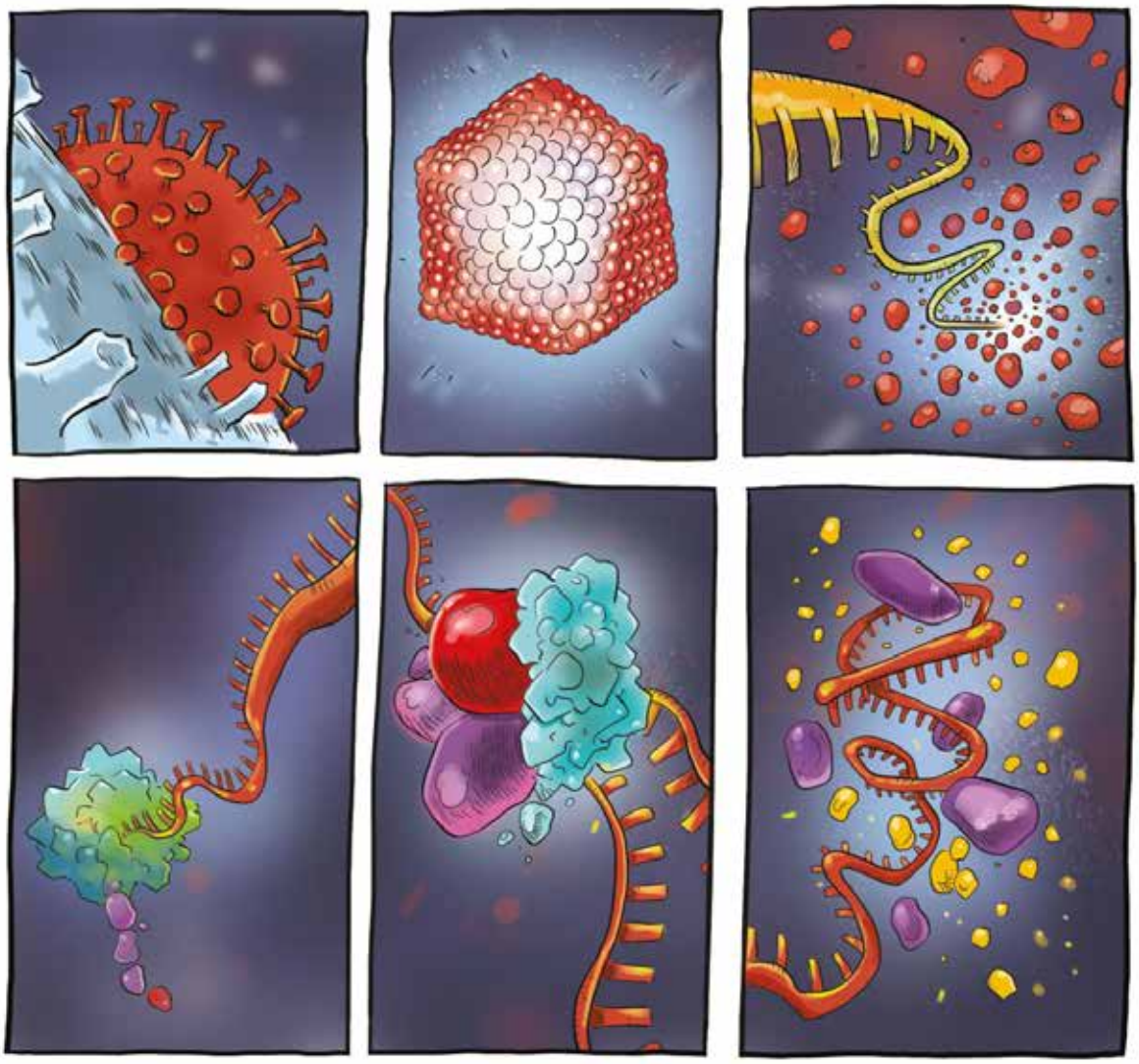
Dr Jenner's House is the former home of vaccine pioneer Edward Jenner, the place from which he encouraged the world to practice vaccination against smallpox, a disease which has now been eradicated. It is now open to the public and shares the long, global history of vaccination. Facilitated by Owen Gower, the General Manager at Dr Jenner's House, this event took participants through a tour of the house and its exhibitions which showed how the very first vaccination changed the world.

## About the Historian

**Owen Gower** is a museum professional and historian. As General Manager at Dr Jenner's House, the former home of vaccine pioneer Edward Jenner, he is responsible for leading the development of the museum and its activities. He has a keen interest in vaccination and regularly speaks on its history, the eradication of smallpox, and the life of Edward Jenner.

**“I learnt more about the value of empathetic media in STEM fields. Graphic Medicine can help us understand the patient’s perspective during and through diagnosis, and doctors should be trained to help them cope with treatment.”**

*- Manasvi D, Programme Participant*



Panel from the graphic novel *The Virus*, 2016. Image reproduced by permission from Aleksandra Bartoszko.

# In Love with the Virus: Reducing Harm and Promoting Dignity through Graphic Narratives

MASTERCLASS

**Aleksandra Bartoszko**
**28 August 2021**

Graphic Medicine uses comics and art to tell stories about health and illness. The graphic ethnography *The Virus* took lived experiences of illicit drug use to encourage testing and treatment of Hepatitis C. In the process of creating this comic, the collaborators—a social anthropologist, a graphic artist, and people sharing their drug use experiences—forged a mode of ethical engagement, action, and activism.

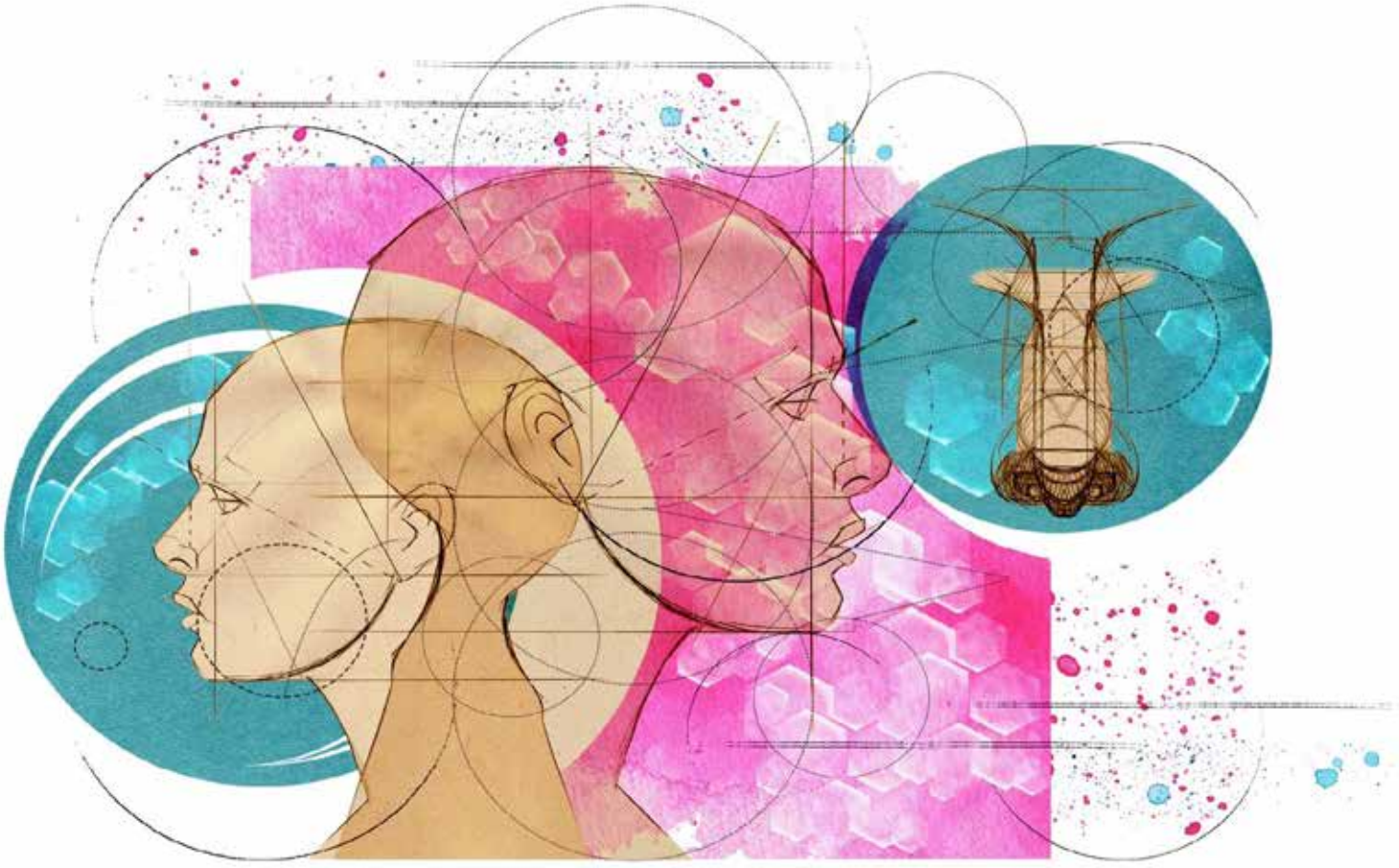
This masterclass with Aleksandra Bartoszko introduced participants to Graphic Medicine and Graphic Ethnography. By sharing her experiences of creating *The Virus*, Bartoszko showed how medicine-related narratives can be presented to destabilize traditional ways of representing suffering and illness, thereby reducing harm and maintaining human dignity.

## About the Social Anthropologist

**Aleksandra Bartoszko** is a Social Anthropologist and Associate Professor at VID Specialized University in Oslo, Norway. She has researched and published on addiction, legality, risk, disability, activism and social policy, with ethnographic fieldwork in Nicaragua and Norway. She developed methods and a new genre within anthropology—Graphic Ethnography and, among others, published an ethnographic comic *The Virus*, on injecting drug use and hepatitis C. She is deputy editor of the *Journal of Extreme Anthropology*. Her monograph *Treating Heroin Addiction in Norway: The Pharmaceutical* Other was published in Routledge Studies in Health and Medical Anthropology.

**“Technology can aid us during a pandemic, but it’s important to study the effects of technology on our society in the long-run .”**

*- Abhishek Jain, Programme Participant*



Still from Tactical Tech's project *Technologies of Hope*, 2021.

# Technologies of Hope: 100 Responses to the Pandemic

WORKSHOP

**Tactical Tech**
**30 October 2021**

This workshop examined how the specific technologies being promoted to combat the COVID-19 pandemic sought to observe, screen, enforce, and attempt to modify humans and the spaces they move within, mediating the relationship between body, architecture, and geography.

Through the introductory talk and following workshop, participants were introduced to the way we unquestioningly accepted technologies into our lives. The workshop prompted participants to think about the ways in which we contain the virus, and whether our efforts curtail our rights and freedom.

## About the Artists

**Stephanie Hankey** and **Marek Tuszynski** investigate the impact of technology on society and its relationship to social, environmental, and political issues. They have been working together producing creative interventions for the past 20 years—exhibitions, art works, films, events, workshops and writing—using the best way possible to tell stories, influence attitudes, and find new ways of seeing. They are the cofounders of 'Tactical Tech', the co-curators of 'Nervous Systems: Quantified Life and the Social Question,' and the award winning touring exhibition, 'The Glass Room,' a museum and street-based art installation presented in Berlin, London, New York, and San Francisco, now transformed into a successful pop-up touring exhibition.

Image courtesy of Wikimedia Commons.

# Art History and the Development of Clinical Skills

MASTERCLASS

**Siobhan Conaty**
**17 December 2021**

This masterclass by art historian Siobhan Conaty delved into Health Humanities, an interdisciplinary field that brings the practice of the arts and humanities into the study of health, care, and well-being. By identifying where art history and medical practice collide, Conaty introduced participants to novel ways of understanding and approaching medical education and clinical practice.

## About the Art Historian

**Siobhan Conaty** is an Associate Professor of Art History at La Salle University. She teaches courses on art and medicine, politics, and gender. Her research and publications focus on art history's transferable skills for health science students and clinicians, and is featured in the *Research Methods in Health Humanities* (Oxford, 2019), the discipline's foundational methodologies text. She was recently selected as a Medical Humanities Scholar in Residence at Pennsylvania State College of Medicine, and holds a number of Health Humanities leadership roles in professional organizations. She is committed to transdisciplinary work in the humanities and health science education and practice.


Image courtesy of Vlad Tchompalov.

# Science, Denialism and Democracy

LECTURE

**Vidya Krishnan**
**18 December 2021**

There was a time, before modern medicine, when doctors arrived at the operating theatre in their street clothes and, without even washing their hands, put on their surgical gowns covered in dried blood and pus and started operating on people. Surgical gloves had not yet been invented. Neither was the microscope around, so the human mind could not comprehend the concept of germs.

In this lecture, journalist Vidya Krishnan shared the almost forgotten story of a man, Ignaz Semmelweis. He was a Hungarian doctor who saved millions of lives and spared countless mothers and newborns, excruciating deaths. For that, he was initially demoted, eventually fired from his job, duped and beaten to death while trying to escape from an asylum. His idea—that little invisible microorganisms—were causing diseases were radical in the early 19th century. Like all radical ideas, they were rejected. This was a talk about the time before modern medicine, science denialism, and the impact it can have on communities.

## About the Writer and Journalist

**Vidya Krishnan** is a writer and journalist. She has extensively written about social justice, especially public health, over the past two decades. Her first book, *Phantom Plague: How Tuberculosis Shaped our History*, will be published by PublicAffairs in 2022.

# HINDSIGHT

## *All the world's a stage*

What can we learn from the aftermath of contagion? Why is it important to look back? Going beyond the immediate, artists and researchers brought together an array of disciplines to contextualise contagion across time.

**9 LECTURES**

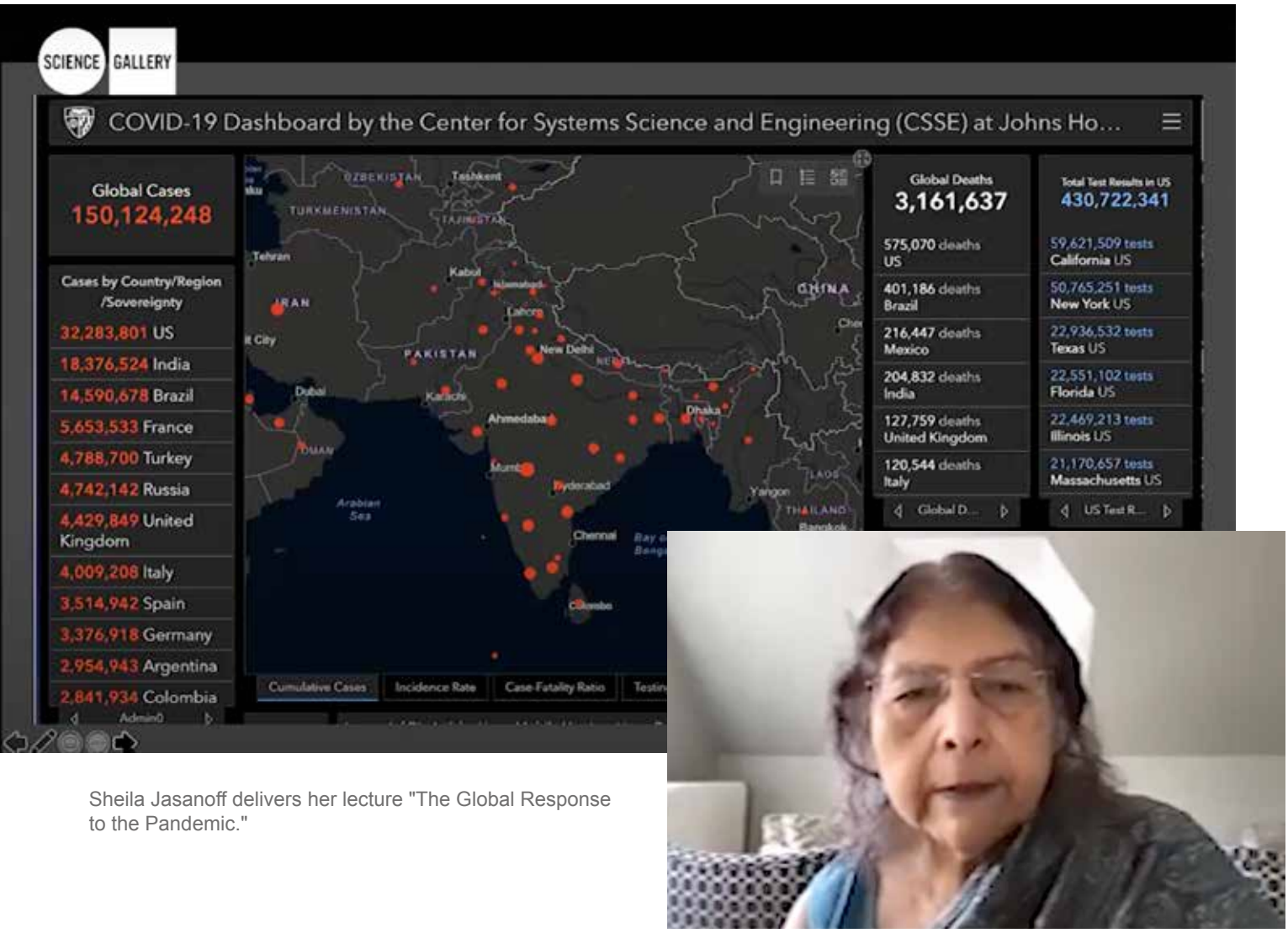
**3 WORKSHOPS**

**1 MASTERCLASS**

**1 FILM**

**5 EVENTS**

# PROGRAMMES




Sheila Jasanoff delivers her lecture "The Global Response to the Pandemic."

# Control, Consensus, Chaos: The Global Response to the Pandemic

LECTURE

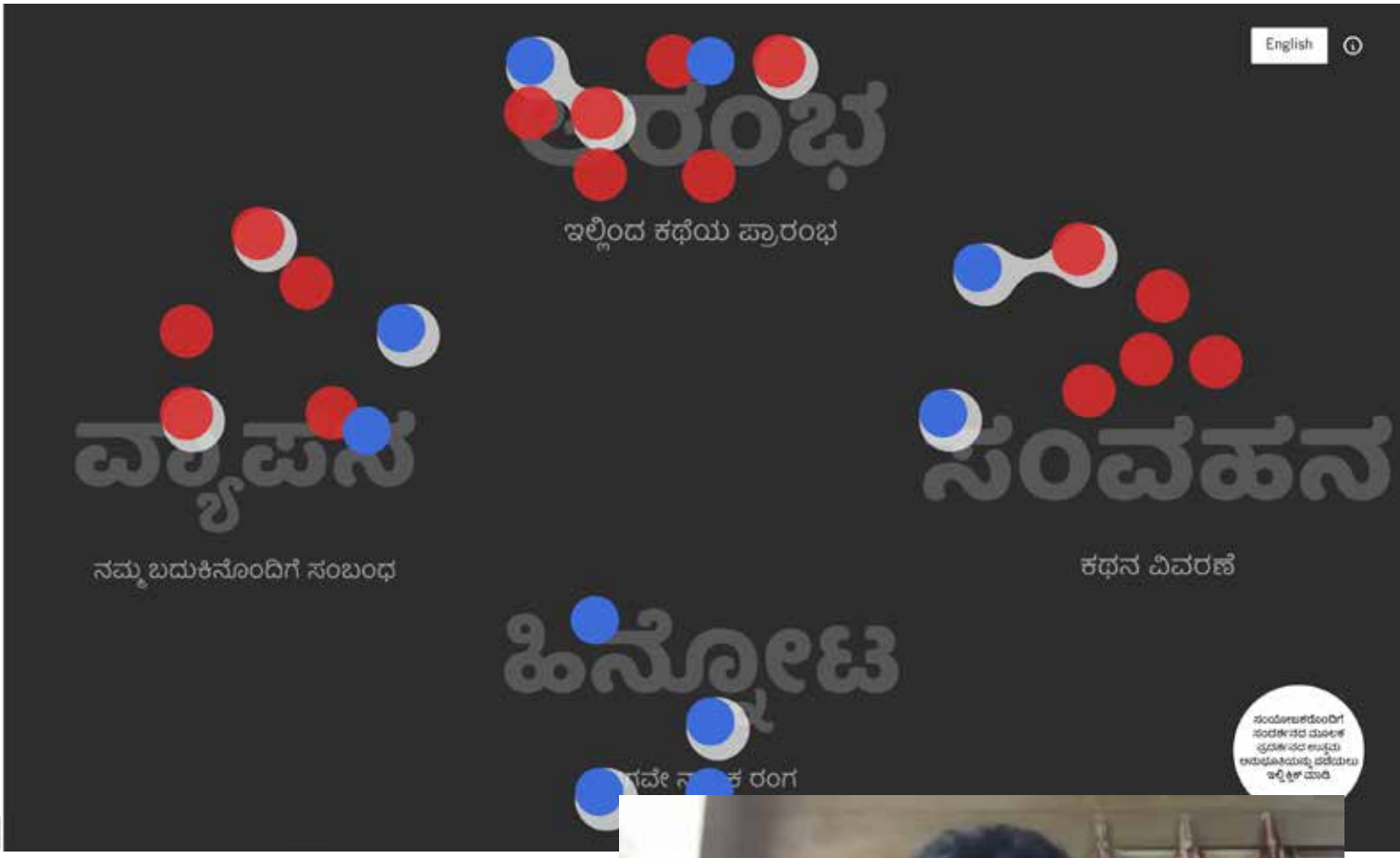
**Sheila Jasanoff**
**30 April 2021**

The COVID-19 pandemic affected numerous countries across the globe. However, some nations managed to contain the virus while others gravely struggled to do so. The wide-ranging responses and impacts of the pandemic spurred research that spanned multiple countries in order to gain deeper insights into the future of pandemic preparedness.

In this talk, Sheila Jasanoff presented a study that compared pandemic responses in eighteen countries. Research teams in each country closely followed the crisis in three interlocking sectors—health, economy, politics—providing vital information on how and why COVID-19 produced such different outcomes. Jasanoff, who co-directed the study, talked about the most surprising findings from this massive undertaking and discussed how they can inform our understanding of the human impacts of a pandemic.

## About the Academic

**Sheila Jasanoff** is Pforzheimer Professor of Science and Technology Studies at the Harvard Kennedy School. A pioneer in her field, she has authored more than 120 articles and chapters and is author or editor of more than 15 books, including *The Fifth Branch, Science at the Bar, Designs on Nature,* and *The Ethics of Invention*. Her work explores the role of science and technology in law, politics, and policy of modern democracies. She founded and directs the STS Program at Harvard; previously, she was founding chair of the STS Department at Cornell.




Top: Still from CONTAGION's exhibition website.

Right: Vishu Guttal speaking at the "CONTAGION Launch in Kannada."

# CONTAGION Launch in Kannada

EVENT

**Vishu Guttal**
**17 May 2021**

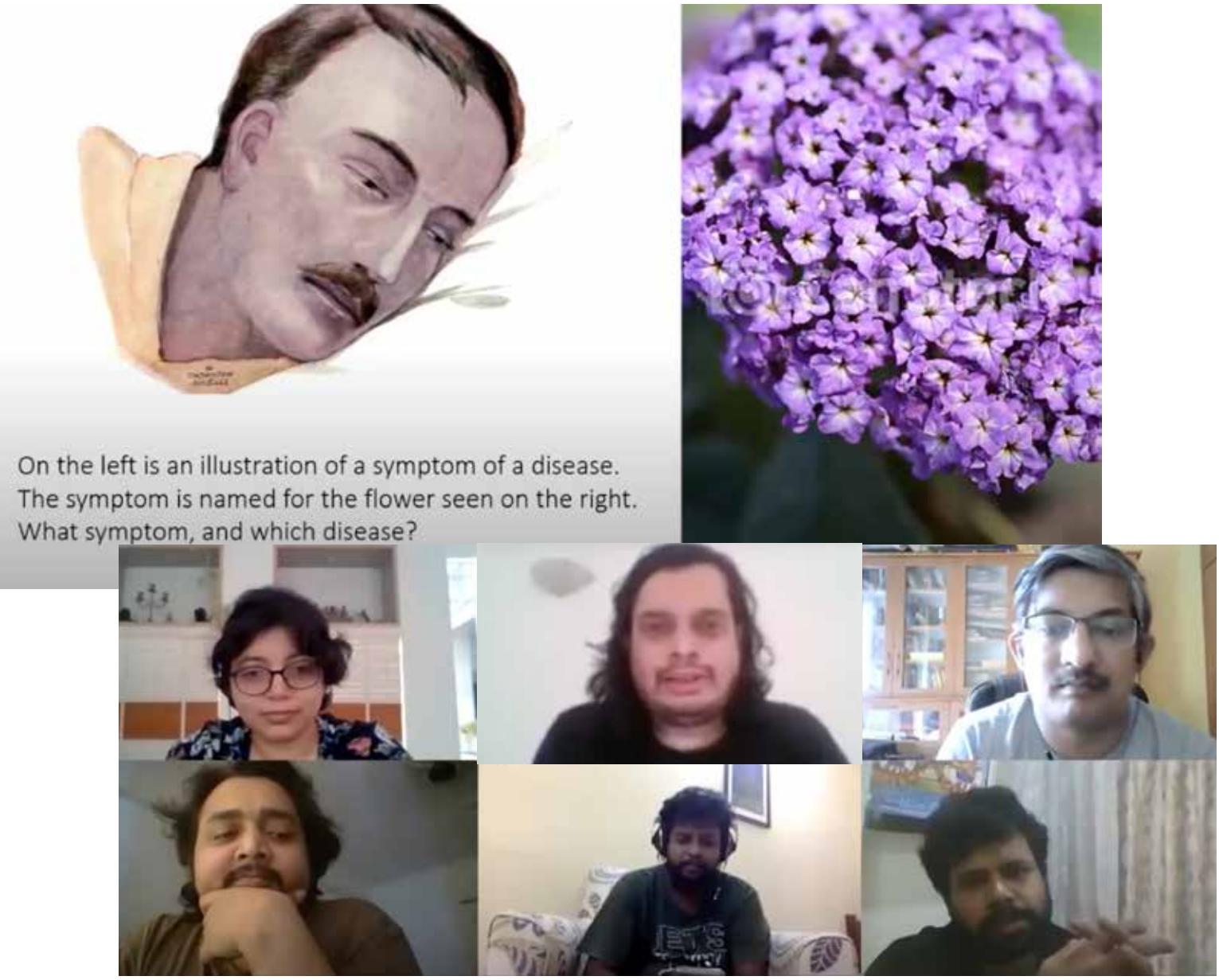
This event formally launched the Kannada version of CONTAGION. It was an interactive session in Kannada with theoretical ecologist Vishu Guttal. Science Gallery Bengaluru's Design Associate Komal Jain introduced the CONTAGION website in Kannada, and oriented participants with the various dimensions of the exhibition.

## About the Theoretical Ecologist

**Vishu Guttal** is an Associate Professor at the Centre for Ecological Sciences, Indian Institute of Science, Bengaluru, India. He is broadly interested in understanding the fundamental principles of self-organisation and stability in ecological systems.

**“Attend quizzes, no matter how much you know!”**

*- Vikash Mittal, Participant*




Participants interact with each other at Thejaswi Udupa's quiz “Knowledge Transmission: A Quiz on Contagions."

# Knowledge Transmission: A Quiz on Contagions

EVENT

**Thejaswi Udupa**
**23 May 2021**

This event featured two exciting rounds that tested people's knowledge on all things contagious. Conducted by quizmaster Thejaswi Udupa, the event evoked enthusiastic participation, with questions around various interesting facts and stories regarding epidemics and contagions.

## About the Quizmaster

**Thejaswi Udupa** is the Chief Technology Officer at RoofandFloor, a digital real estate portal part of The Hindu Group. He has been a quizzer and quizmaster for over two decades, and is actively involved with the Karnataka Quiz Association.

Top: A still from the film *DIS-EASE*, Mariam Ghani, dir. 2018.
Bottom: Mariam Ghani discusses her film *DIS-EASE* with Rashmi Sawhney.

# DIS-EASE

## FILM DISCUSSION

Director: **Mariam Ghani**
Discussant: **Rashmi Sawhney**
**23 May 2021**

Duration: **8 Minutes 45 Seconds**
Language: **English**
Year of Production: **2018**

DIS-EASE looked at the metaphors we use to describe illnesses, and how some diseases become metaphors to describe other phenomena. In particular, it examined the metaphor of the 'war on disease,' and asked how it affects the way we treat people who are sick, how we define the 'public' in public health, and whether it has locked us into militarized national security paradigms for responding to epidemic diseases.

The screening of this film was followed by a discussion between the filmmaker Mariam Ghani and cultural theorist Rashmi Sawhney.

## About the Filmmaker

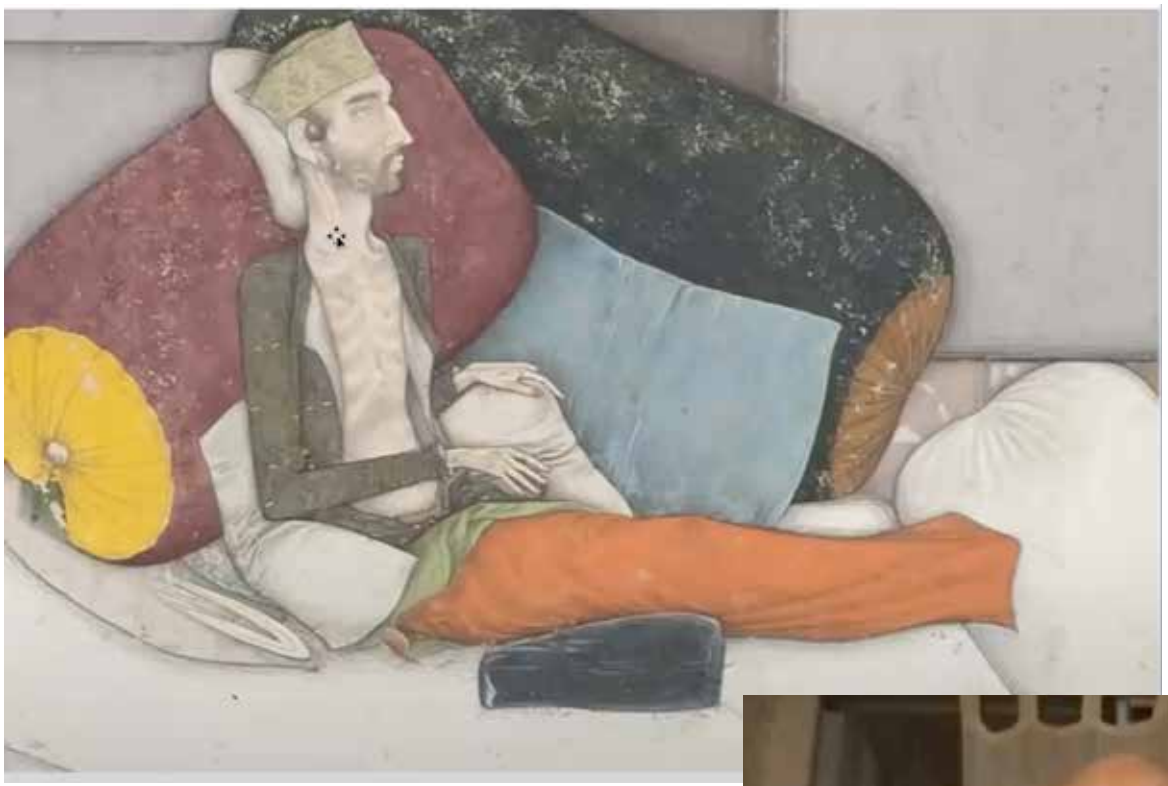
**Mariam Ghani** is an artist, writer, and filmmaker. Her work looks at places, spaces and moments where social, political and cultural structures take on visible forms, and spans multiple disciplines. Her films have screened at the Berlinale, Rotterdam, CPH:DOX, DOC NYC, Sheffield Doc/Fest, SFFILM, Ann Arbor, FIDBA, and Il Cinema Ritrovato, among other festivals. Her work has also been exhibited and screened at the Guggenheim, MoMA, Met Breuer and Queens Museum in New York, and the National Gallery in Washington, D.C., the Saint Louis Art Museum, the Indianapolis Museum of Art, the CCCB in Barcelona, the Sharjah, Lahore, and Liverpool Biennials, the Dhaka Art Summit, and Documenta 13 in Kabul and Kassel, among others.

## About the Cultural Theorist

Rashmi Sawhney is a Bangalore-based cultural theorist and associate professor in Film and Cultural Studies at Christ University. She writes on cinema and the visual arts and is co-founder of VisionMix, an international network of artists, filmmakers and researchers. Curatorial projects include: Future Orbits and Video Vortex XI, both as collaterals of the 2017 Kochi Muziris Biennial; Set.Reset on 'Cinema and Labour' at The House of Inquiry, Goa, 2018; and Loss and Transience, Hong-Gah Museum, Taipei, March-May 2021. Her recent edited volumes include *Women at Work: The Cultural and Creative Industries* (2020) and *The Moving Image: South Asian Trajectories* (2018).

**“It is really good to have a historical sense of pandemics. COVID-19 is so front and centre, so it’s really good to have something that gives us that historical perspective on diseases”**

*- Girish Shahane, Speaker*



Girish Shahane delivers his lecture "The Art of Pandemics."

# The Art of Pandemics

LECTURE

**Girish Shahane**
**30 May 2021**

The COVID-19 pandemic gave rise to a number of artistic enquiries—photographs, zines, digital art, and podcasts were just some of the mediums used to depict these uncertain times. In any crisis, art becomes a vital way through which we might understand and examine humanity's collective experiences of tragedy and triumph.

This talk by Girish Shahane considered artistic responses to past pandemics caused by diseases such as the bubonic plague, smallpox, influenza, and HIV/AIDS. It also touched upon the lack of epidemic-related archives in India, and the related absence of these calamities in our collective memory.

## About the Curator

**Girish Shahane** is an independent writer and curator based in Bombay. He has degrees in English literature from Elphinstone College, Bombay University, and Oxford University, which he attended as a Rhodes Scholar. He was editor and later consulting editor of Art India magazine. He has been a columnist for Time Out magazine, DNA newspaper, Yahoo India, Mint Lounge and Scroll.in. Shahane was Director of the Skoda Prize for Indian Contemporary Art from 2011 to 2013, Artistic Director of Art Chennai 2014, and Artistic Director of the India Art Fair 2015.







The exhibition and programmes team at the event "Behind the Scenes at CONTAGION."

# Behind the Scenes at CONTAGION

EVENT

**Gayatri Manu**
**Komal Jain**
**Sankalp Singh**
**Shweta Jangir**
**Vasudha Malani**
**Jahnavi Phalkey**
Moderator**: Madhushree Kamak**
**29 May 2021**

At the beginning of the COVID-19 pandemic, museums and galleries across the world closed their doors and began moving online. Science Gallery Bengaluru put out an open call inviting the world to submit their proposals for an online exhibition-season that would explore all things infectious. We received submissions from artists, scholars and young people keen to explore the transmission of diseases, behaviours, emotions and information.

Conceptualising, designing and producing a living exhibition like CONTAGION—which explored exciting methods of virtual engagement such as our online mediator sessions, our #TakeItFurther resources, and live experiments—was an exciting, organic and messy process. In this interactive session, the Science Gallery Bengaluru team shared their insights and learnings from the exhibition.

**“Being concise and sure with data before making inferences is crucial in epidemiology. Benchmarking other countries is a great way to acquire effective precautions and ways to control the spread of the virus.”**

*- Jenny Mae O. Decena, Participant*

From L to R: Moderator Sarah Iqbal, speakers Shahid Jameel, Yogesh Kalakonde, Giridhara Badu, Ajit Lalvani, and Aqsa Shaikh at their panel discussion "Unpacking COVID-19: From Evidence to Action."

# Unpacking COVID-19: From Evidence to Action

EVENT

**Ajit Lalvani**
**Aqsa Shaikh**
**Giridhara R Babu**
**Shahid Jameel**
**Yogesh Kalkonde**
Moderator: **Sarah Iqbal**
**04 June 2021**

The COVID-19 pandemic showed that a public health emergency is not a medical problem alone—it affects all spheres of society, and requires scientific cooperation and communication. Collaboration across disciplines and sectors is vital for a comprehensive and inclusive response to the pandemic crisis. This discussion featured a virologist, an infectious disease expert, an epidemiologist, a physician and a professor of community medicine—who together explored how cross-disciplinary research combined with sensitive on-the-ground response are crucial to addressing public health and socio-economic crises.

## About the Community Medicine Expert

**Ajit Lalvani** leads a multidisciplinary programme of public health research to protect the health of the population from the most serious respiratory infections: flu, TB and COVID-19.

## Medical Researcher

**Aqsa Shaikh**, MBBS, MD Community Medicine is an Associate Professor of Community Medicine at Hamdard Institute of Medical Science and Research, Jamia Hamdard, Delhi.

## Public Health Expert

**Giridhara R Babu** is Professor and Head–Life Course Epidemiology at Public Health Foundation of India.

## Virologist

**Shahid Jameel** studied Chemistry at Aligarh Muslim University and Indian Institute of Technology-Kanpur, India and obtained a PhD in Biochemistry at Washington State University, USA.

## Neurologist

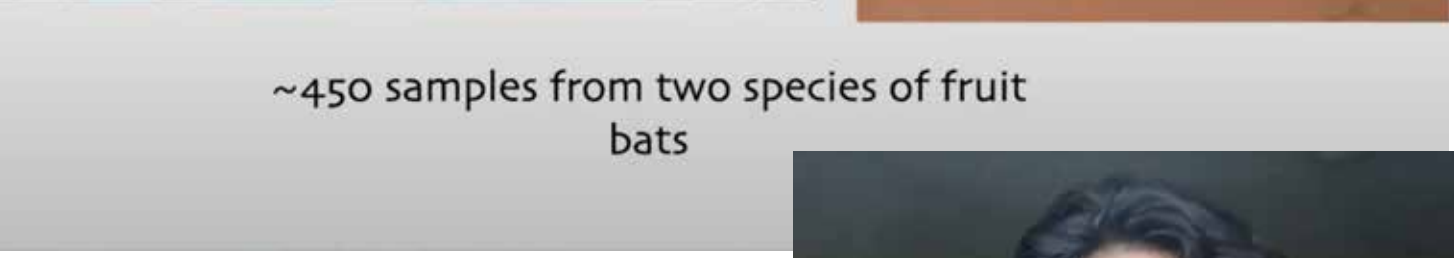
**Yogesh Kalkonde** is a public health researcher and a neurologist.

## Communications Expert

**Sarah Iqbal** trained as a researcher in Life Sciences and is currently a Communications and Public Engagement practitioner in India.

**“Biodiversity has its effect on human health that could be detrimental and must not be neglected.”**

*- Jenny Mae O. Decena, Participant*




Uma Ramakrishnan delivers her lecture "Biodiversity, Humans and Pathogens."

## Biodiversity, Humans and Pathogens

LECTURE

**Uma Ramakrishnan**
**04 June 2021**

70% of the infectious diseases that affect humans, spillover from animals. In this talk, Uma Ramakrishnan explored some examples of spillover. She discussed her studies that investigated spillover in India in two biodiversity hotspots, the Western ghats and Northeastern India. By talking about the role of biodiversity—and specific groups of animals like bats and rats—she argued that a One Health approach is crucial to reducing the outbreak of zoonotic diseases.

## About the Molecular Ecologist

**Uma Ramakrishnan** has spent the last fifteen years studying biodiversity, and how humans are affecting it. She and her team work across habitats and landscapes in India to investigate biogeography, conservation genetics and emerging infectious disease.

**“I learned the importance of One Health, and realized that it requires a lot of effort and coordination to make the right decisions during a pandemic.”**

*- Eva Sharma, Programme Participant*

Photograph courtesy of the National Park Service.

# Decoding OneHealth

## WORKSHOP

### The Bengaluru OneHealth City Consortium and the Echo Network
### 05 June 2021

The COVID-19 pandemic highlighted the disconnect among human, environmental, animal, and wildlife health on the one hand, and implementers, decision-makers, and academia on the other hand. This interactive workshop by the Bengaluru One Health City Consortium and the Echo Network, used expert interactions and gamification to engage participants in the world of OneHealth, a strategy to simultaneously address the health of humans, animals, and the environment.

Participants learnt to recognize the inter-connectedness amongst human, animal and environmental health, identified the need for and use of current One Health strategies, and understood how One Health strategies could be used in local communities to improve human and environmental wellbeing.

## About the Consortium

**The Bengaluru OneHealth City Consortium** is a group of multi-disciplinary scientists, NGO's, municipal bodies and citizens dedicated to promoting One Health through citizen awareness of disease ecology themes, citizen/government participation in science for infectious disease surveillance, and an interdisciplinary approach to studying disease ecology at an urban centre in India. The Echo Network is a social innovation partnership steered by the Principal Scientific Adviser to the Government of India. They have built a 800+ strong international community spanning 10 countries that provides a platform of scientific awareness, exchange, and insight to enable people across the world to generate a shared purpose and take action for the sustainability of India and our planet through science and technology.

**“I realized why it’s important to look at past pandemics, and community-produced knowledge systems during a pandemic”**

*- Bikash Chetry, Programme Participant*

Chinmay Tumbe delivers his lecture "The Age of Pandemics, 1817–1920: How They Shaped India and the World."

# The Age of Pandemics, 1817-1920: How They Shaped India and the World

LECTURE

**Chinmay Tumbe**
**05 June 2021**

Between 1817 and 1920, over 70 million people died in the cholera, plague and influenza pandemics. Over half of these deaths were in the Indian subcontinent alone. Despite the magnitude of lives lost to these devastating diseases, they have largely been forgotten in India's collective memory.

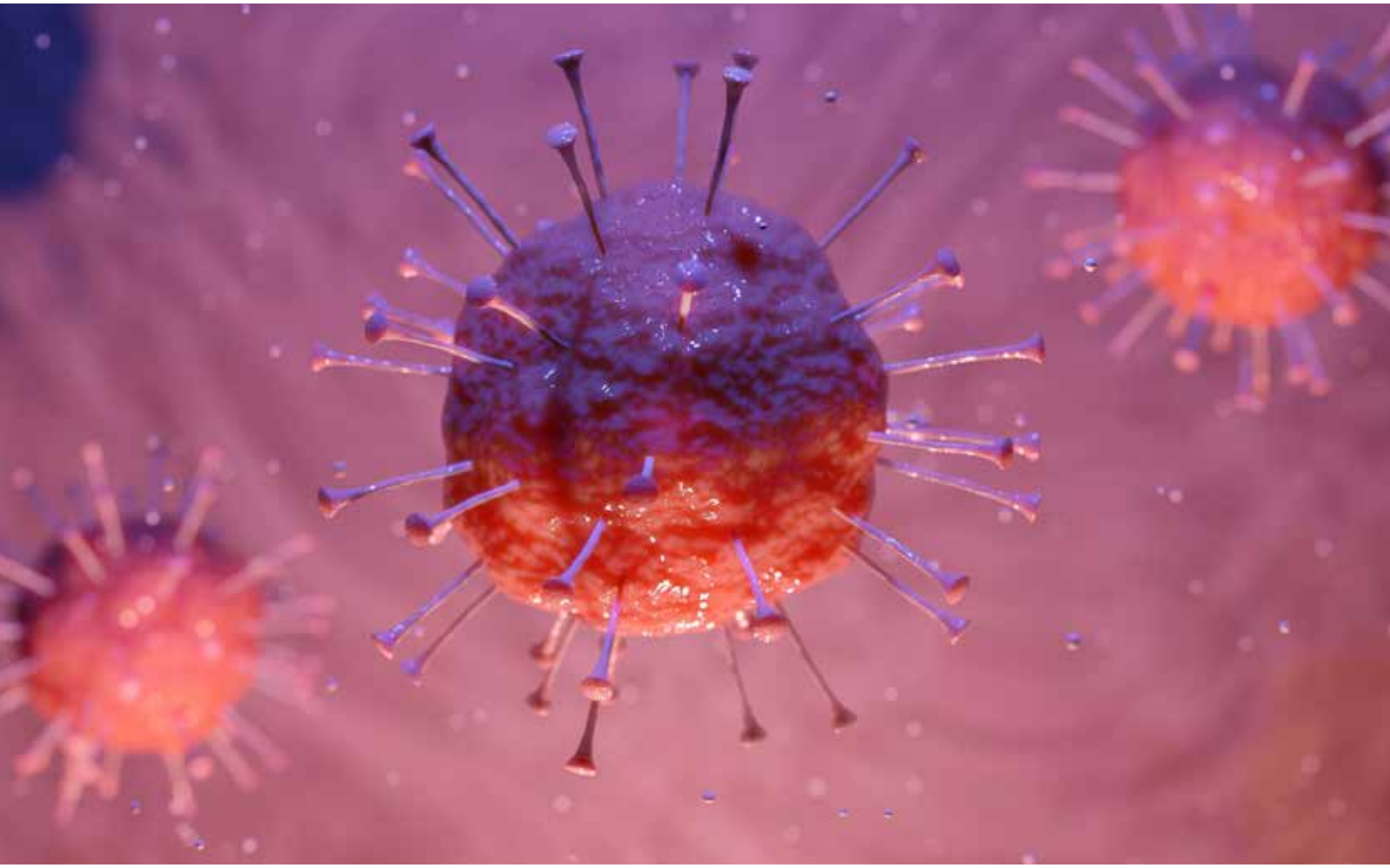
This talk by Chinmay Tumbe looked back at these pandemics to gain insight into humanity's encounters with infectious diseases, as well as to contextualize COVID-19. The talk also showed how these historical pandemics played a role in socio-political developments of the time.

## About the Academic

**Chinmay Tumbe** is a faculty member in the Economics Area of the Indian Institute of Management Ahmedabad. He is the author of *India Moving: A History of Migration* (2018) and *The Age of Pandemics, 1817-1920: How they Shaped India and the World* (2020).

**“Comparing the mutations and protein sequences was really interesting. Visualising it was an amazing experience!”**

*- Preetha R, Programme Participant*



Photograph courtesy of Thor Deichmann.

# Visualising and Interpreting Mutations

WORKSHOP

**Meenakshi Iyer**
**Saurabh Mahajan**
06 June 2021

The word ‘mutations’ became a buzzword during the COVID-19 pandemic, and it is a factor behind the changing nature of contagions.This workshop, facilitated by Professor Saurabh Mahajan and postdoctoral fellow Meenakshi Iyer, asked participants to critically analyze the definition and concept of mutations in the context of its ability to transform any contagion. Using publicly accessible bioinformatics tools, participants explored mutations through genetic sequences, learnt to detect mutations using sequencing technology, and finally mapped them on the sequence/3D structures of the spike protein.

## About the Researcher

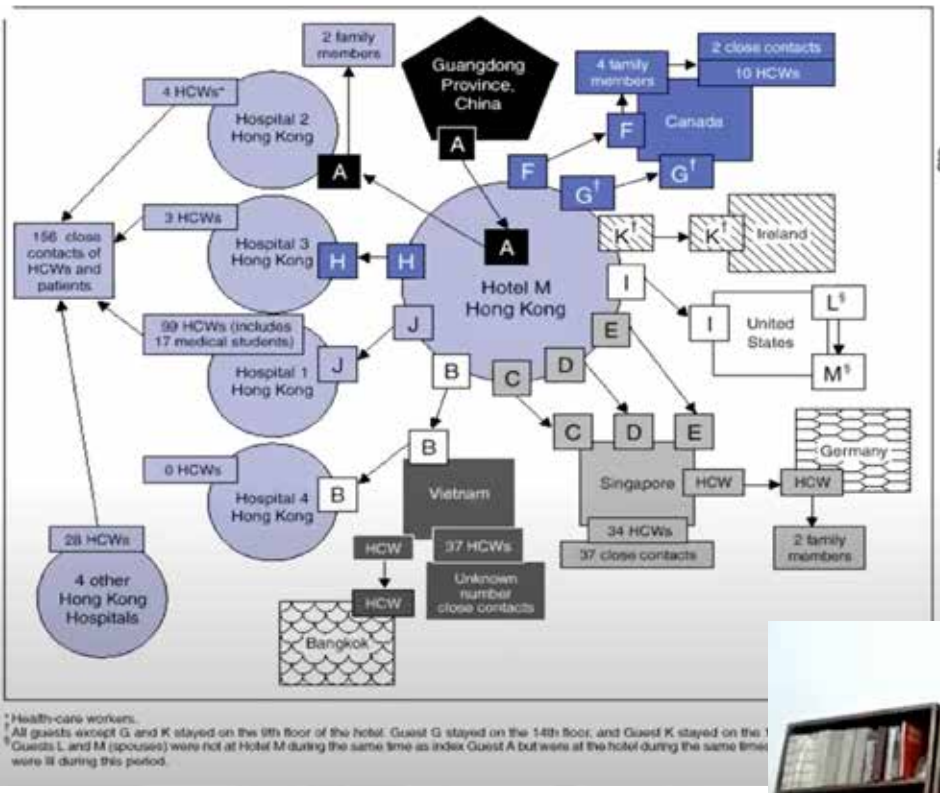
**Meenakshi Iyer** is a postdoctoral fellow in the Indo-Africa consortium for dengue sequencing, vaccine development and capacity building with Prof. Sudhir Krishna at National Centre for Biological Sciences, (NCBS), Tata Institute of Fundamental Research (TIFR) in Bangalore. She works on pathogen genomics and metagenomics studies and genome-wide sequence and structural analysis of viral family proteins. She is broadly interested in application of computational biology to translational health science like pathogen surveillance, evolution and vaccine design.

## About the Academic

**Saurabh Mahajan** is an Assistant Professor of Basic Sciences at Atria University in Bangalore. He is an evolutionary biologist with a fascination and curiosity for the biological past, which he tries to study using the computational analysis of DNA and protein sequences. He is also passionate about teaching undergrads using interactive pedagogical tools, and likes to involve undergraduates in research.

**“The opportunity to engage with young people is always nice, so I think the tutorial was definitely a highlight.”**

*- Thomas Abraham, Speaker*




413 cases globally can be traced back to guests at The Metropole

Thomas Abraham delivers his lecture "The Story of SARS in 2003."

# An Early Warning: The Story of SARS in 2003

LECTURE

**Thomas Abraham**
**06 June 2021**

The world was taken by surprise when COVID-19 erupted in 2019. This talk by Thomas Abraham argued that we should have expected a pandemic of this proportion. From HIV/AIDS to Ebola, we were given many warnings of the damage that previously unknown viral diseases can cause. SARS—which erupted in Southern China in late 2002, and then spread to Hong Kong, Taiwan, Vietnam, Singapore, and Canada—was a precursor of the COVID-19.

This talk looked at what happened during the SARS outbreak, as well as the lessons the world learned, and failed to learn from it.

## About the Academic

**Thomas Abraham** is Adjunct Associate Professor at the University of Hong Kong and a writer on health and disease. He is the author of *Twenty First Century Plague: The Story of SARS and Polio: The Odyssey of Eradication*. He has been an adviser to the World Health Organization.

**“Museums are trusted and perceived as sources of truth, since they’re not perceived as having an agenda, or being driven by anything other than sharing and preserving knowledge.”**

*- Sabrina Sholts, Speaker*


Sabrina Sholts delivers her lecture "The Scientific Collaboration of the Smithsonian's Outbreak Exhibit."

# Working Together for Public Education on Pandemic Risks: The Scientific Collaboration of the Smithsonian's Outbreak Exhibit

LECTURE

**Sabrina Sholts**
**11 June 2021**

In this talk, Sabrina Sholts, the curator of the Smithsonian's exhibit "Outbreak: Epidemics in a Connected World," discussed how she and her team worked with countless experts—from infectious disease physicians like Daniel Lucey (Georgetown University) to expert immunologists and public health advisors like Anthony Fauci (National Institutes of Health)—to help people understand how novel viruses emerge and spread in our interconnected world.

## About the Biological Anthropologist

**Sabrina Sholts** is a Curator of Biological Anthropology at the Smithsonian's National Museum of Natural History in Washington, D.C. She is the Lead Curator of the "Outbreak: Epidemics in a Connected World" exhibition, and a World Economic Forum Young Scientist. As a biological anthropologist, she uses museum collections to study intersections of human, animal, and environmental health in the past and present. She received her PhD in Anthropology at University of California Santa Barbara and completed her postdoctoral work at UC Berkeley in the Department of Integrative Biology and at Stockholm University in the Department of Biophysics and Biochemistry.

Rohini Nilekani, Jeremy Farrar, and Jahnavi Phalkey at the closing event "Science, Innovation and Society: What Have We Learnt from the COVID-19 Pandemic?"

# Science, Innovation and Society: What Have We Learnt from the COVID-19 Pandemic?

LECTURE

**Jeremy Farrar**
**13 June 2021**

The COVID-19 pandemic sent alarm bells ringing throughout the world. This pandemic led the world to confront the glaring gaps in the realm of public health and medicine. While we witnessed great socio-political and economic turbulence during this pandemic, there was also a renewal of trust in science. The public turned to experts in these times of crisis, and there was an acknowledgement of the necessity for scholars and scientists in dealing with the pandemic. Jeremy Farrar talked about the lessons we learnt from the COVID-19 pandemic, and how the role of medicine and healthcare were conceptualized anew in society.

## About the Medical Researcher

**Jeremy Farrar** is Director of the Wellcome Trust—a politically and financially independent global charitable foundation that exists to fund science to solve the urgent health challenges facing everyone. Farrar is a clinician scientist who, before joining Wellcome, was the Director of the Oxford University Clinical Research Unit in Viet Nam for 18 years. He is a Fellow of the Academy of Medical Sciences UK, the National Academies USA, the European Molecular Biology Organisation and a Fellow of The Royal Society. Farrar was knighted in the Queen's 2018 New Year Honours for services to Global Health.

**“One of the highlights of this experience was working with the Science Gallery Bengaluru team on connecting the issues that affect not just the people in Bengaluru but really all over the world.”**

*- Audrey Chang, Facilitator*


Still from Audrey Chang's workshop "Community-centered Pandemic Engagement: Levaraging Open Source Tools."

# Community-centred Pandemic Engagement: Leveraging Open Source Tools

WORKSHOP

**Audrey Chang**
**29 October 2021**

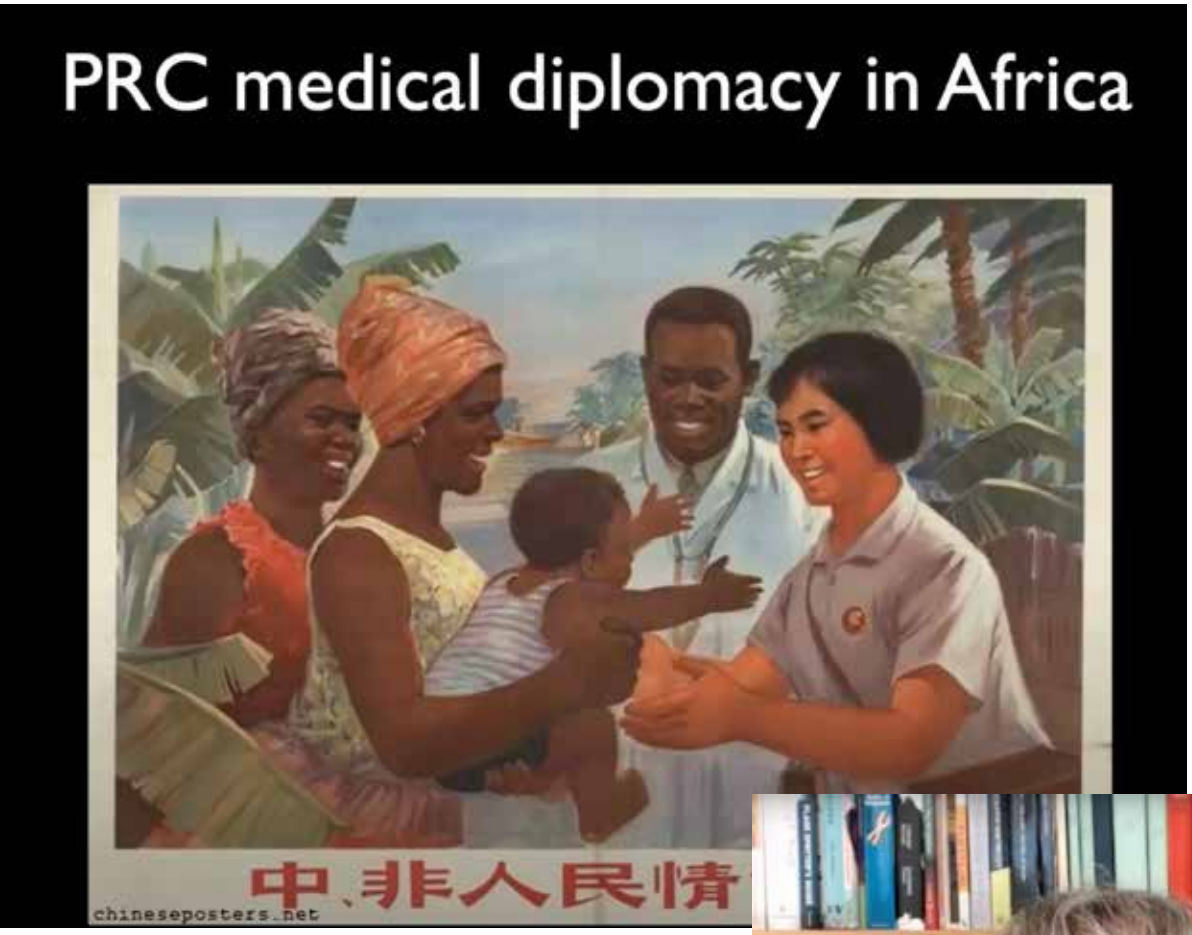
As evidenced by the global events of 2020 to 2021, infectious disease preparedness necessarily involves community-centered education and engagement. In this workshop, participants discussed how to use open source tools to create communication opportunities that could resonate with unique and individual communities. Focused on tools that were free or low cost, participants co-developed creative solutions to broaden conversations on COVID-19, the pandemic, vaccinations, and other topics relevant to 2021 and beyond.

## About the Public Engagement Expert

**Audrey Chang**'s professional portfolio focuses on leadership in higher education and non-profit organizations, strengthening strategic partnerships, operations management, systems integration, organizational design, and people and culture development. Chang is committed to developing workplaces and workforces that are diverse and equitable. She has led multi-functional teams at The Museum of Us, San Diego and at the Smithsonian's National Museum of Natural History. At the Institute for Advanced Analytics at North Carolina State University and at Duke University, she expanded data analytics collaborations between the university and corporate sponsors. She received her PhD in Biology from Duke University.

**“Medical History is crucial to our understanding of present epidemics”**

*- Praveena, Programme Participant*




Mary Brazelton delivers her lecture "China in Global Health Histories: Vaccinating the Nation and the World."

# China in Global Health Histories: Vaccinating the Nation and the World

LECTURE

**Mary Augusta Brazelton**
**29 October 2021**

Public health in China became a global concern as a consequence of the outbreak and spread of COVID-19, yet Chinese physicians and administrators have helped shape concepts and practices of 'global health' since before that term rose to prominence in the 1990s. This lecture by Mary Brazelton examined the historical place of China in international health, focusing on mass vaccination programs. During the Cold War, the People's Republic of China (PRC) promoted the control of infectious diseases, a success to which vaccination programs had contributed, alongside much more well-known rural medical programmes. This rural health care system became a model broadly championed in global health, yet it also helped lay the foundations for forms of bilateral medical diplomacy that remain relevant to contemporary vaccine distribution networks.

## About the Historian

**Mary Augusta Brazelton** is Associate Professor in the Department of History and Philosophy of Science at the University of Cambridge. She is the author of *Mass Vaccination: Citizens' Bodies and State Power in Modern China* (Cornell University Press, 2019). She has published research on the history of medical education, tuberculosis control, penicillin production, and aviation infrastructures in twentieth-century China.

**“Learning about global health and its correlation with the way high and low income countries work together was fascinating.”**

*- Spandana J, Programme Participant*

Photograph courtesy of R.F. Studio.

# Global Health Governance in the Age of COVID-19

MASTERCLASS

**Genevie Fernandes**
**26 November 2021**

The COVID-19 pandemic exposed the lack of global cooperation and highlighted a shift towards nationalistic responses. In this masterclass, Genevie Fernandes discussed what went wrong in the global governance of COVID-19, and highlighted lessons for improved and coordinated action to deal with COVID-19, and possibly prevent the next pandemic. Participants identified key actors in the global health landscape, and understood the key challenges in global health governance for COVID-19.

## About the Researcher

**Genevie Fernandes** is a Research Fellow in Global Health Governance at the University of Edinburgh, where she provides technical and academic support to partners in improving respiratory health policy and practice in South Asia. She has been part of the Royal Society's DELVE group and also leads the COVID-19 research team at the Global Health Governance Programme based in the University of Edinburgh. Over the last 10 years, she has worked in the capacities of research, programme implementation and training in maternal and child health, HIV/AIDS, tobacco control, pandemic response and food security.

**“There is ample opportunity to conduct a historical study on telephones in the context of South Asia!”**

*- Suvobrata Sarkar, Programme Participant*


Amelia Bonea delivers her lecture "Communicating Contagion: Infectious Media and Technologies, 1870–1914

# Communicating Contagion: Infectious Media and Technologies, 1870–1914

LECTURE

**Amelia Bonea**
**10 December 2021**

The many anxieties we found ourselves experiencing first-hand during COVID-19, also beset our nineteenth and twentieth-century predecessors. Bombarded with conflicting information from scientists, politicians and the media (an epidemic of misinformation, not only of disease), we reached for the disinfectant to clean our mobile phones and electronic gadgets even when research suggested that the risk of SARS-CoV-2 transmission by such 'fomites' was low.

This talk introduced a historical perspective into the discussion of anxieties about physical and mental well-being associated with communication technologies. In particular, it focused on debates and experiments conducted in Britain and the US during 1870–1914 to establish whether using telephone instruments, especially in public places, increased the possibility of contracting infectious diseases such as tuberculosis, influenza and diphtheria.

## About the Historian

**Amelia Bonea** is a historian of media, science, technology and medicine, working primarily on modern and contemporary South Asia and Britain. Her first monograph, *The News of Empire: Telegraphy, Journalism, and the Politics of Reporting in Colonial India, c.1830-1900* (Oxford University Press, 2016) was awarded the 2017 Eugenia M. Palmegiano Prize for the best book on the history of journalism by the American Historical Association. Currently based at the University of Heidelberg, she is the PI on a project about the history of palaeosciences in twentieth-century India funded by the German Research Foundation.

Stills from *The Contagion Cabaret*, 2020. Photographs reproduced with permission of The Theatre Chipping Norton.

## The Contagion Cabaret: An Irreverent Look at Plague and Pandemics, Past and Present

EVENT

**17 December 2021**

Chipping Norton Theatre, working alongside researchers, academics, and medical professionals from Oxford University, created an online performance that took the long view on the COVID-19 pandemic. Killer germs, superbugs and pestilential plagues have long fascinated writers and musicians, and *The Contagion Cabaret* was riddled with infectious extracts of plays, poems, journalism and music, past and present.

In a panel discussion that followed the screening of this performance, a cast of actors, scientists, and literary researchers discussed the role of performance and theatre during a pandemic.

### About the Academic

**Sally Shuttleworth** is a Senior Research Fellow at the University of Oxford. She has published extensively on the inter-relations of medicine, science and culture, and between 2014-19 ran the large ERC research project, "Diseases of Modern Life: Nineteenth-Century Perspectives"

### Ecologist

**Raghavendra Gadagkar** heads a school of research at the Centre for Ecological Sciences, Indian Institute of Science, Bangalore. He used the little known eusocial wasp Ropalidia marginata for his original research. The wasp has helped his team showcase new perspectives on the evolution of animals' social lives.

### Physician-Scientist

**Gagandeep Kang** is a Professor of Microbiology at Wellcome Trust Research Laboratory, and the at the Christian Medical College (CMC) in Vellore. With her team, she conducts inter-disciplinary research on enteric infections and child health. She works on gut infections in children, focusing on issues of nutrition, water and sanitation.

Stills from *The Contagion Cabaret*, 2020. Photographs reproduced with permission of The Theatre Chipping Norton.

**Literary Scholar**

**Teja Varma Pusapati** is an Assistant Professor in English at Shiv Nadar University, India. She works on Victorian literature and culture, with a specific focus on gender and the periodical press. In her teaching and research, she aims to examine the striking ability of print culture to shape our understanding of time and timeliness, the momentary and the historical.

**Director**

**John Terry** is Artistic Director of Chipping Norton Theatre, a small independent producing theatre in the UK. John's professional debut was the UK premiere of *Unsent Letters at the Orange Tree Theatre* in Richmond, London.

**Actor**

**Paul Ansdell** is an actor, director and acting tutor. His theatre credits are numerous, including *When the Rain Stops Falling* (Cheltenham/Oxford); *And Then The Dark* (Wolsey, Ipswich) among others. His television credits include *The Crown*, *Rosemary & Thyme*, *Eastenders*, *The Bill* among others. His film credits include *Star Wars: Rogue One*, *Queen and Country* (John Boorman) among others.

**Actor**

**Anna Tolputt** is an actor, director and acting tutor. Her theatre credits include *Connie's Colander* (Human Story), *Twelfth Night*, *King Lear*, *As You Like it* and *The Tempest* (at the Minack Theatre), *Spring Storm* (National Theatre and Northampton Royal & Derngate), and *Fahrenheit 451* (International Tour) among others.

# LIVE RESEARCH

Still from the experiment "How Ideas and Behaviours Spread in a Crowd." Photograph courtesy of Daniel Richardson.

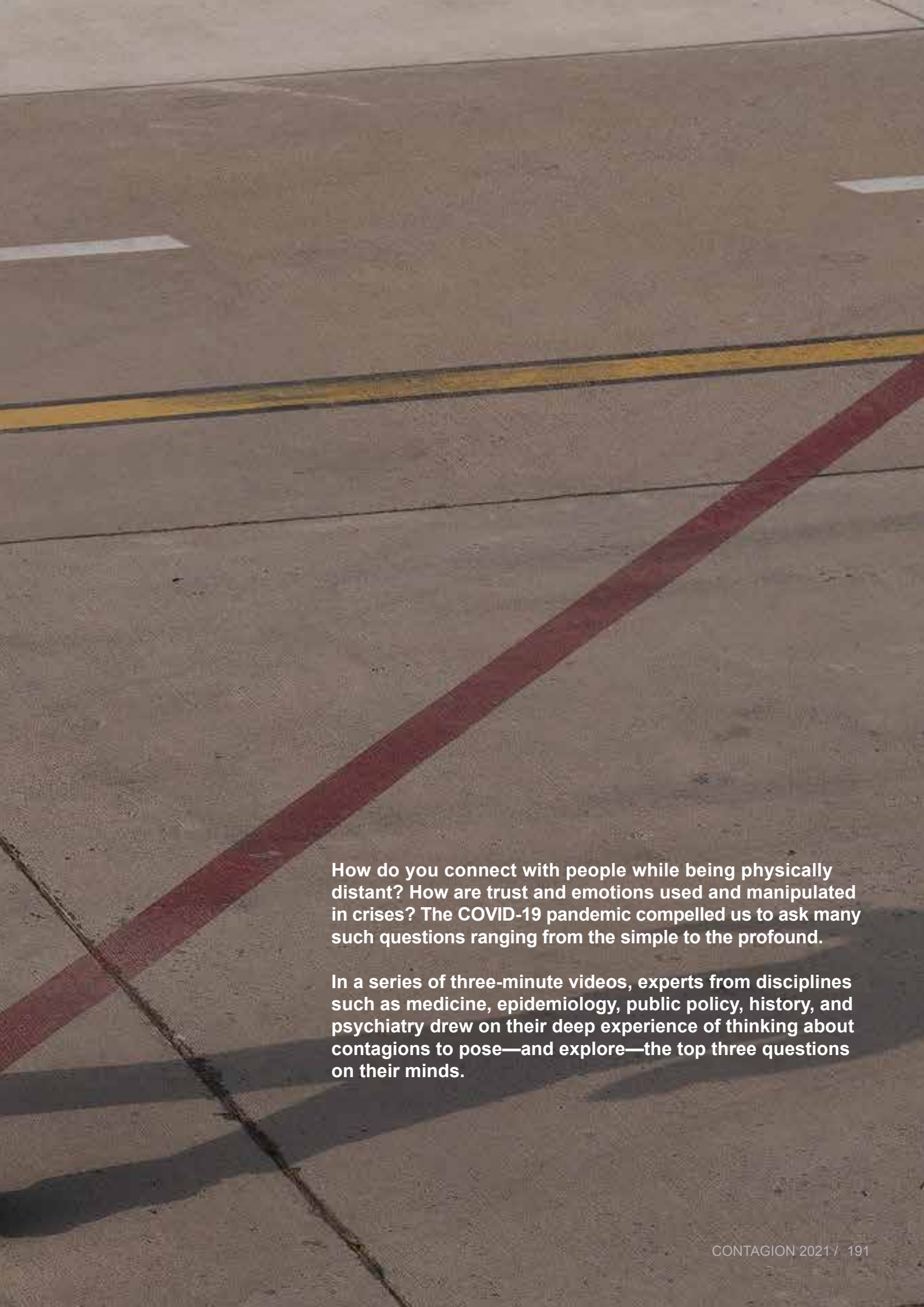
**As part of CONTAGION, we ran a live research experiment in collaboration with psychologists at the University College London (UCL). The researchers aimed to unearth a detailed understanding of the group dynamics of any riot, asking the question—how might individual discontent accumulate into group anger, and what can turn collective action into societal self-harm?**

**With the support of the Nuffield Foundation, they created a game, *Parklife*, to investigate these issues. The game, played by two teams, prompted individuals to build their group's park. They could also act—individually or as a group—to vandalise the other team's park. Crucially, the game was made unfair. One team had to work harder than the other to build the same facilities in this fictional park. This simple game captured the moments of individual frustration that can lead to collective, antisocial action.**

**We ran this experiment with visitors who attended our mediator-led sessions. With about 180 total participants across 45 days of the exhibition-season, we gathered important information to drive this research project forward. The research culminated with a talk by Daniel Richardson, the lead investigator at UCL, who shared the research process as well as some insights from the data collected during CONTAGION.**

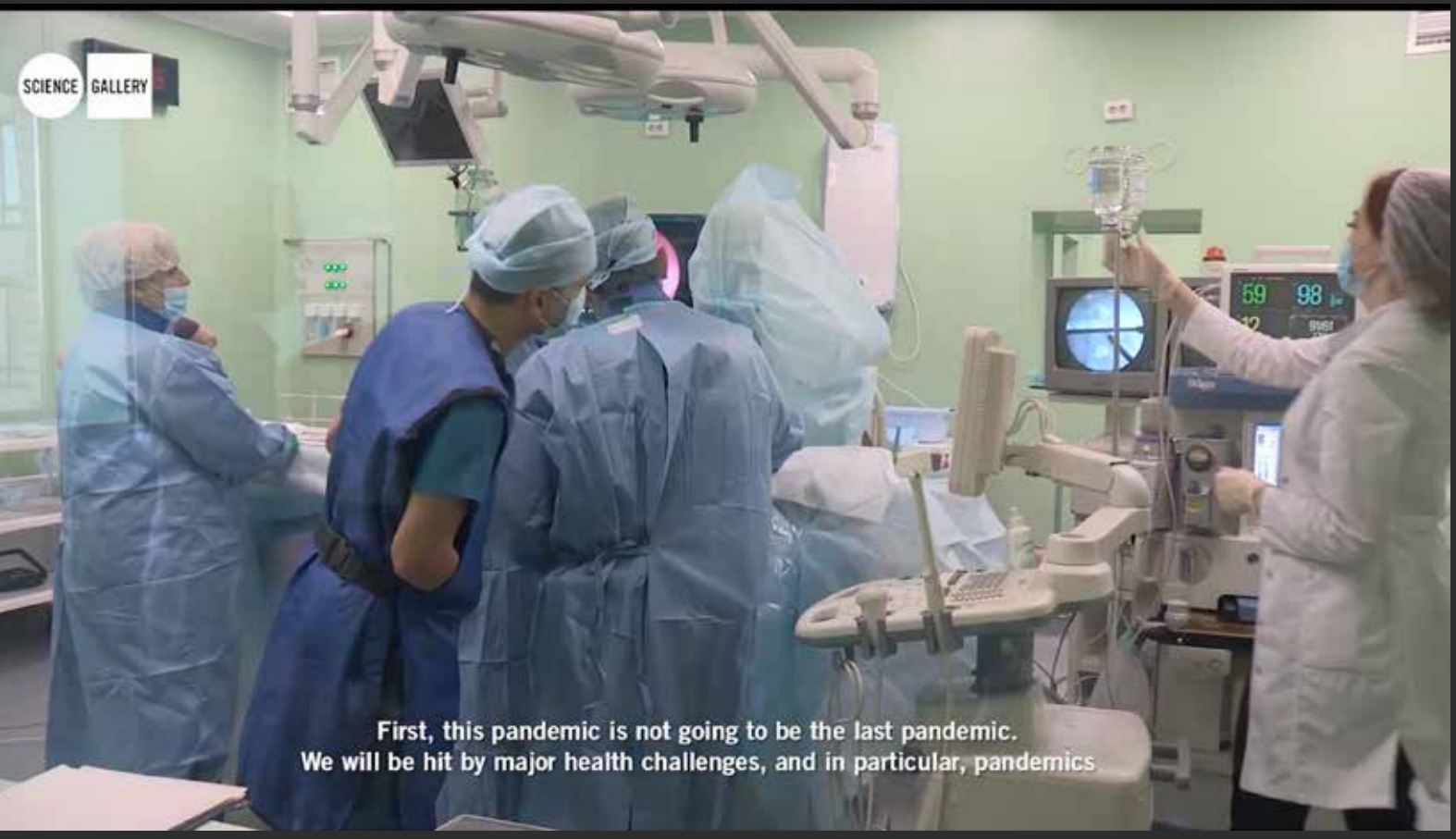
# CO-VIDS

Photograph courtesy of Mario Hagen.



**How do you connect with people while being physically distant? How are trust and emotions used and manipulated in crises? The COVID-19 pandemic compelled us to ask many such questions ranging from the simple to the profound.**

**In a series of three-minute videos, experts from disciplines such as medicine, epidemiology, public policy, history, and psychiatry drew on their deep experience of thinking about contagions to pose—and explore—the top three questions on their minds.**


Stills from Vinod K. Paul's CO-VID "Managing the Pandemic in India."

# Managing the Pandemic in India

Vinod K. Paul
12 February 2021

India faced a tough time when the COVID-19 pandemic hit. However, with cutting-edge research, invention of new biomedical devices, and an ambitious vaccination program, it had potential to become a global leader in the fight against COVID-19. Vinod K. Paul, a member of the National Institution for Transforming India (NITI) Aayog, and Head of the National Task Force Against COVID-19, shared key questions arising from the journey of combating the virus. He also charted the course for a future where India would emerge as a hub for innovative biomedical research.

## About the Paediatrician

**Vinod K. Paul**, a paediatrician by training, was on the faculty of the Department of Paediatrics, All India Institute of Medical Sciences, New Delhi, since 1985, and served as the Head of the Department for nearly a decade. He is a globally recognised medical scientist and public health exponent.

The Government of India appointed Dr Paul as a Member of the National Institution for Transforming India, the NITI Aayog, in August 2017 where he leads the Health, Nutrition and HRD verticals. He has played a pivotal role in formulating the Ayushman Bharat-PMJAY and Ayushman Bharat Health and Wellness Centre Scheme and POSHAN Abhiyaan.



Stills from Lothar H. Wieler's CO-VID "Science and Common Sense in a Pandemic."

# Science and Common Sense in a Pandemic

Lothar H. Wieler
19 February 2021

The COVID-19 vaccine was hailed as a concrete way to combat the pandemic. Lothar H. Weiler, Director of the Robert Koch Institute, spoke about the speed with which these vaccines were developed, as well as the science behind them. However, as the leader of a public health organisation in Germany, he believed that no single intervention could be successful in preventing disease. Stressing on the importance of combining science with common sense, he explained why personal as well as collective responsibility became important in the battle against COVID-19.

## About the Zoonotic Diseases Expert

**Lothar H. Wieler** is president of the Robert Koch Institute in Berlin, the national public health institute in Germany. His research focuses on zoonotic diseases in a One Health concept, i.e., infections that are passed between animals and humans, and account for many of the newly (re-)emerging infectious diseases. He is particularly interested in the molecular mechanisms which enable bacterial zoonotic pathogens such as E. Coli and S. Aureus to infect different hosts, and develop resistance to antibiotics.

He is also an elected member of the German National Academy of Sciences, where he also holds the position of a senator. In 2020 he was nominated to the member board of the One Health Global Leaders Group on Antimicrobial Resistance, launched by the Food and Agriculture Organization of the United Nations (FAO), the World Organisation for Animal Health (OIE) and the World Health Organization (WHO).



Stills from Sridhar Venkatapuram's CO-VID "Health and Justice in a Pandemic."

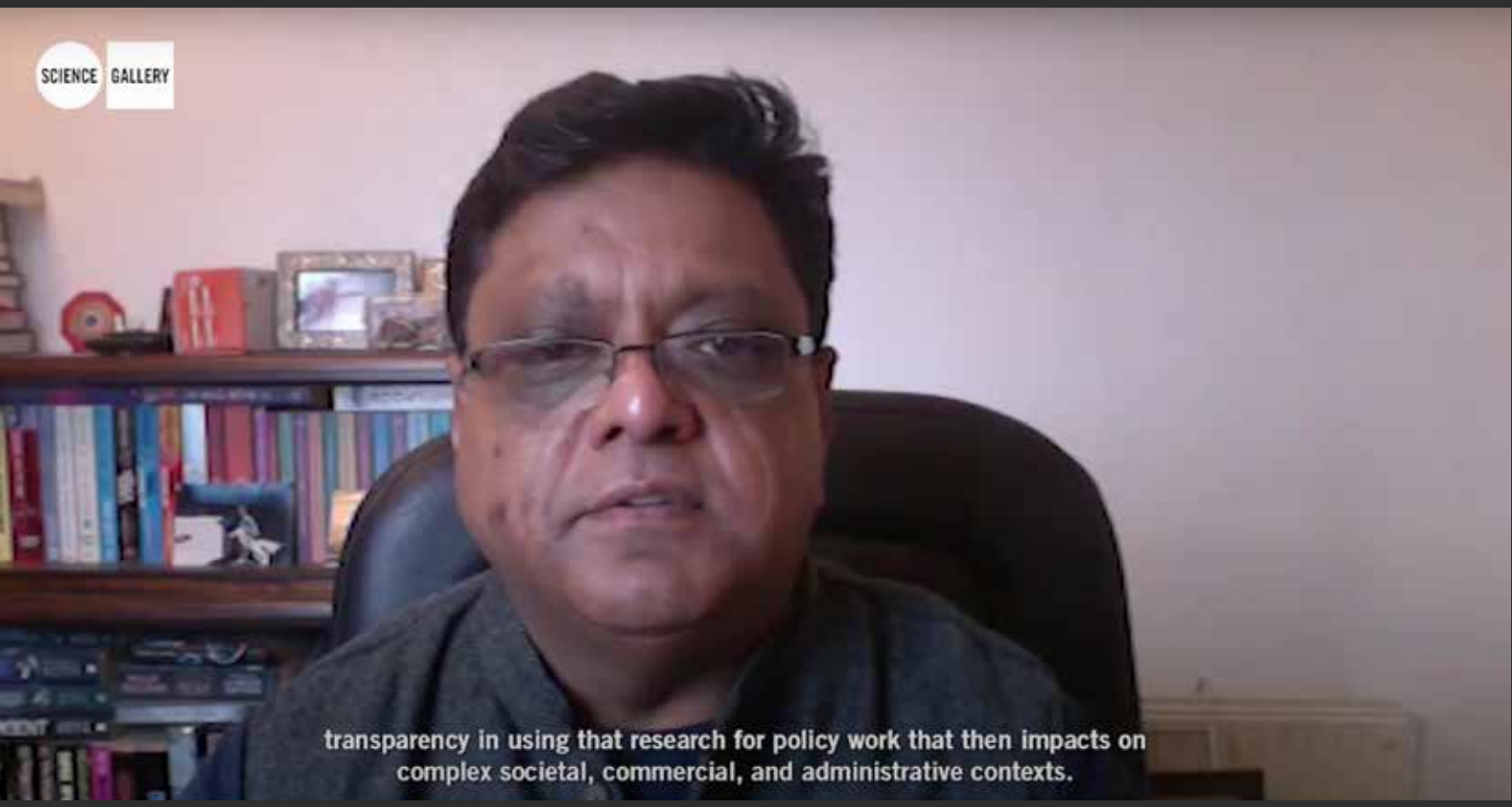
# Health and Justice in a Pandemic

Sridhar Venkatapuram
26 February 2021

Sridhar Venkatapuram brought health-related natural and social sciences together with philosophy to understand and address health inequalities and injustices. After the onset of the COVID-19 pandemic, he began thinking about the systems which allowed the SARS-CoV-2 virus to spread at an unprecedented rate. This line of enquiry challenged us to think beyond the virus as the only cause of the pandemic, and encouraged us to re-examine the socioeconomic systems that played a critical role in both spreading and controlling disease.

## About the Academic Practitioner

**Sridhar Venkatapuram** is an academic researcher, educator, and practitioner in global health and philosophy. His work brings health-related natural and social sciences together with philosophy in order to understand and address health inequalities and injustice. He recently spent one year at the Global Health Ethics Unit of the World Health Organization in Geneva. Venkatapuram's most well known work relates to applying the Capabilities Approach to health and health inequalities, particularly the argument for the moral and human right to the capability to be healthy.





Stills from Sanjoy Bhattacharya's CO-VID "Lessons from the Past in a Pandemic."

# Lessons from the Past in a Pandemic

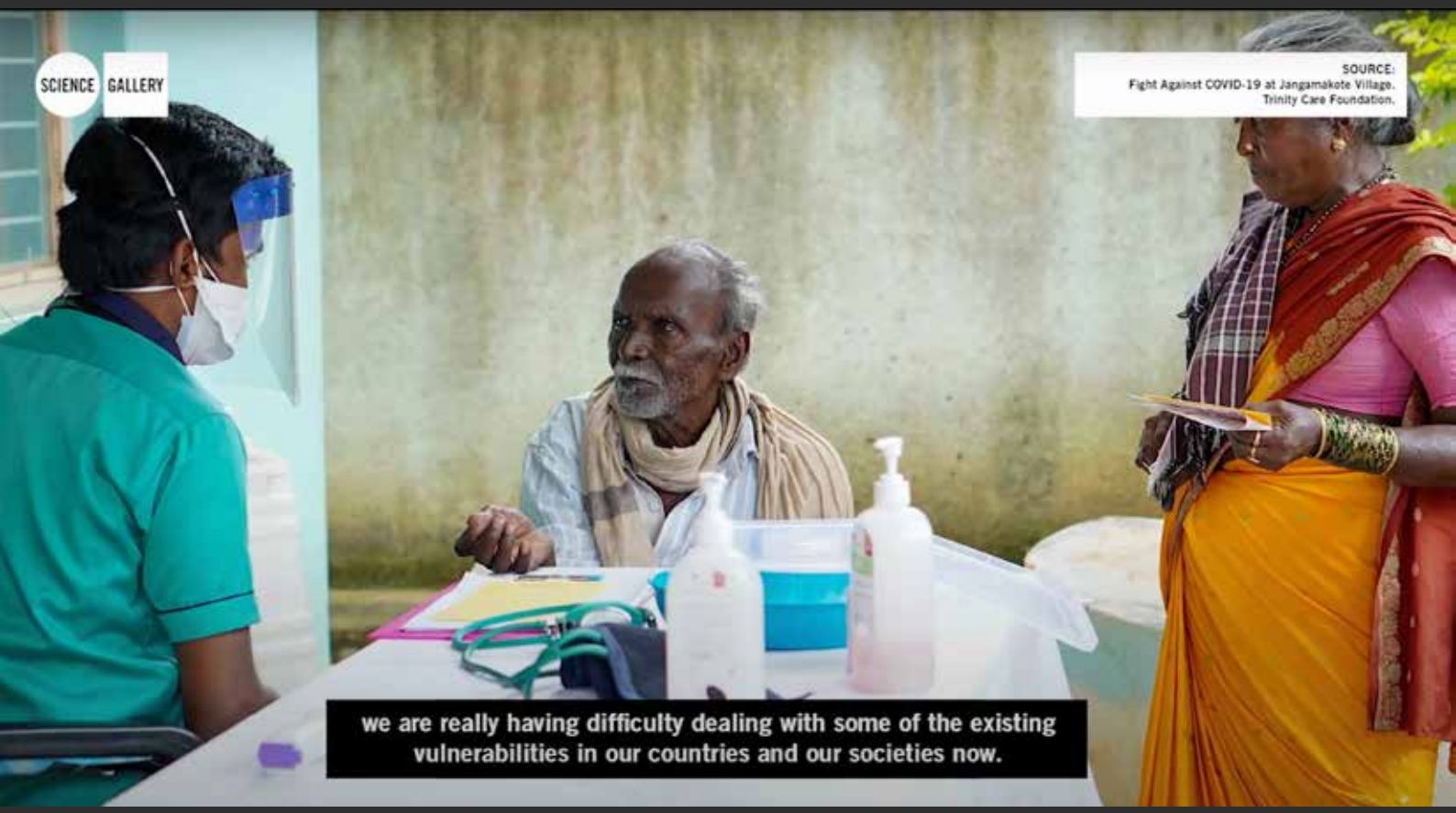
Sanjoy Bhattacharya
05 March 2021

Outbreaks and epidemics have affected humanity throughout its existence, often changing the course of history. Though we have drastically changed the way we respond to epidemics today, some practices and policies from the past remain relevant. Sanjoy Bhattacharya, a historian of medicine and health, was both fascinated and devastated by his experience of living through COVID-19, the worst pandemic in a century. He reflected on how insights from history could help inform contemporary health policy.

## About the Historian of Medicine and Health

**Sanjoy Bhattacharya** is Co-Director of the History Department's Centre for Global Health Histories, Professor in the History of Medicine, a Wellcome Trust Senior Investigator, and the Head of the World Health Organisation (WHO) Collaborating Centre for Global Health Histories at the University of York. He specialises in the health, medical, political, and social history of nineteenth and twentieth century South Asia, as well as the history and contemporary workings of international and global health organisations, and their programmes around the world.

Bhattacharya has always worked in inter-disciplinary ways and within inter-sectoral settings, and remains actively involved in health policy research and evaluation work in national and international agencies. He is a Cofounder of the WHO's Global Health Histories project (GHH), which works across the WHO headquarters in Geneva, WHO Regional Offices in Copenhagen and Cairo, and multiple WHO Country Offices.


Stills from Keiji Fukuda's CO-VID "Good Governance in a Pandemic."

# Good Governance in a Pandemic

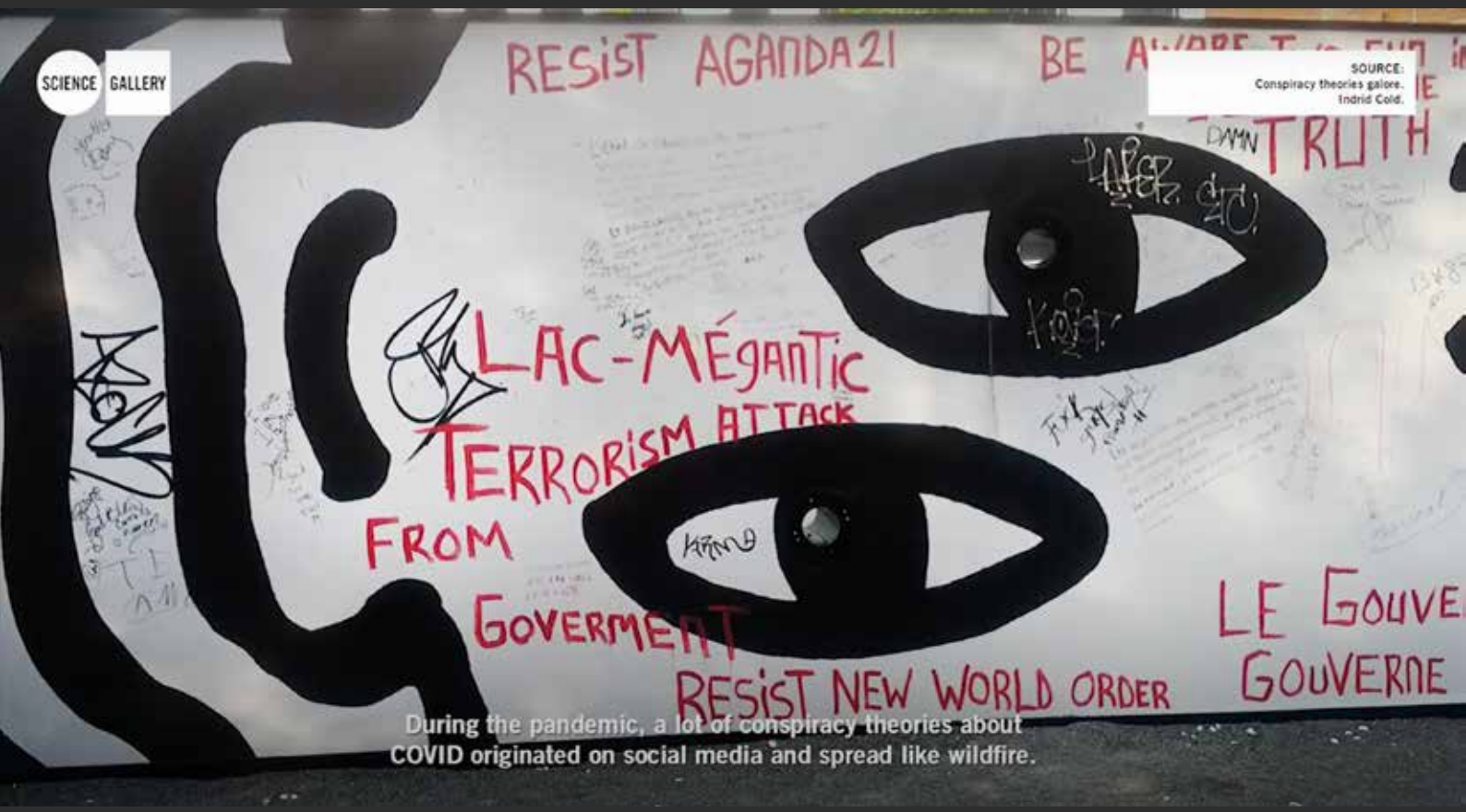
Keiji Fukuda
12 March 2021

The crisis brought about by the COVID-19 pandemic compelled us to reflect on the effectiveness of our governance systems. Governments around the world were confronted with the challenge of controlling a public health emergency while respecting democratic rights and freedoms. Keiji Fukuda—a public health expert who has led global responses against Severe Acute Respiratory Syndrome (SARS), Middle Eastern Respiratory Syndrome (MERS), and Ebola—reflected on how good governance and leadership could help us tackle the pandemic.

## About the Public Health Expert

**Keiji Fukuda** is the Director and a Clinical Professor at The University of Hong Kong School of Public Health. He was previously the Assistant Director-General for Health Security, a Special Adviser to the Director-General for pandemic influenza and for antimicrobial resistance, and was Director of the Influenza Programme at the World Health Organization (WHO) in Geneva.

Before that, he worked at the US Centers for Disease Control and Prevention (CDC) as the Epidemiology Section Chief, Influenza Branch. Fukuda has been a global public health leader in many areas including health security, and has personally led numerous field investigations, global responses, and diplomatic negotiations related to emerging infectious diseases including seasonal, avian, and pandemic influenza; SARS; MERS; Ebola; and antimicrobial resistance. At the WHO, he oversaw the implementation of the International Health Regulations and the Pandemic Influenza Preparedness Framework. He is an adviser to the Hong Kong Government for COVID-19.


Stills from Stephen Lewandowsky's CO-VID "Conspiracies and Trust in a Pandemic."

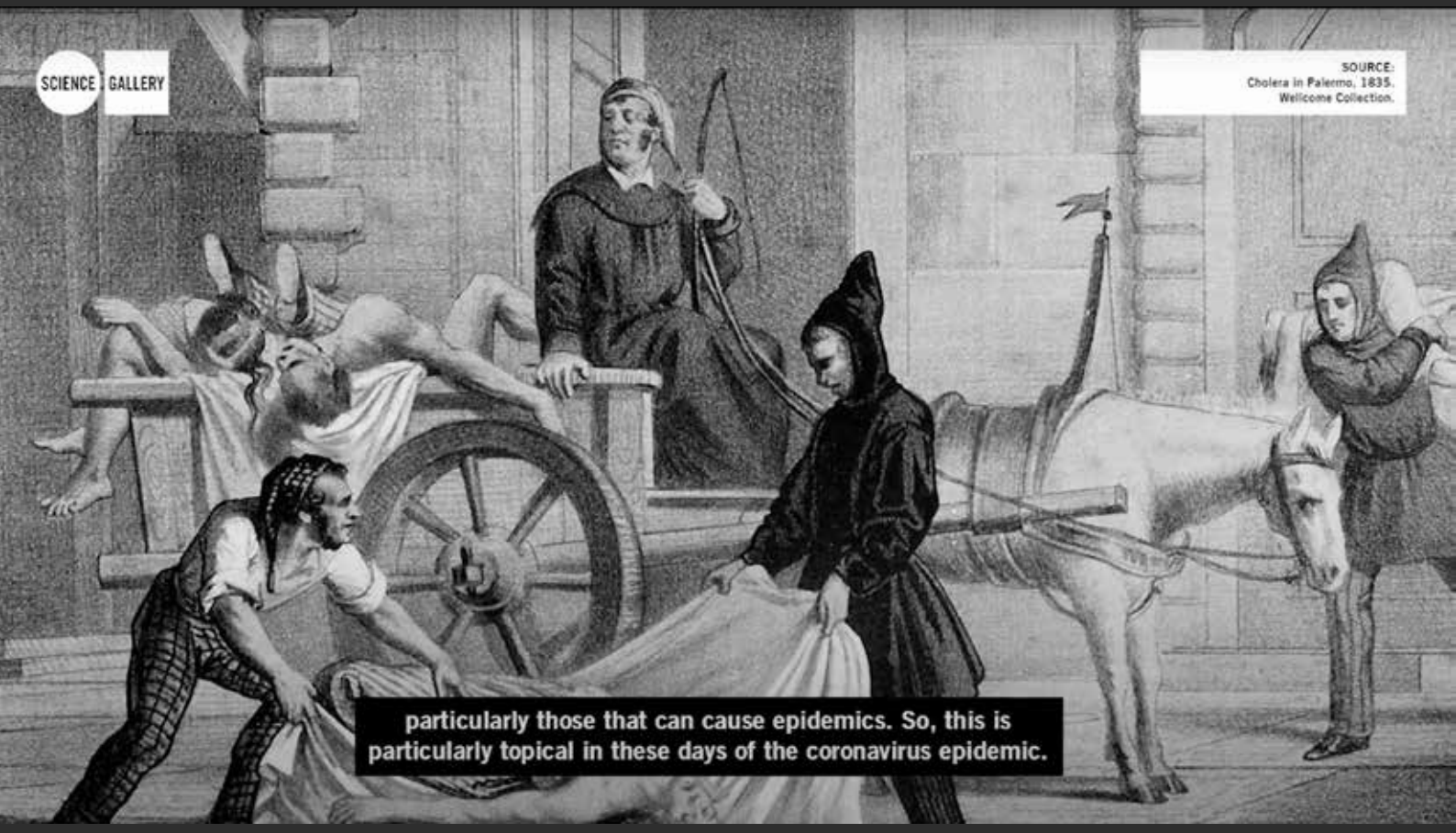
# Conspiracies and Trust in a Pandemic

Stephan Lewandowsky
19 March 2021

The COVID-19 pandemic revealed weaknesses in our society, but it also opened avenues for radical change—for conversations about how science can save humanity, how populism functions in a democracy, and how social media should be governed to prevent the rapid spread of misinformation. Stephan Lewandowsky, a cognitive scientist, investigated how trust and emotions are manipulated during a global health crisis.

## About the Cognitive Scientist

**Stephan Lewandowsky** is a cognitive scientist with an interest in how people update their memories if information they believe turns out to be false. This has led him to examine the persistence of misinformation and spread of fake news in society, including conspiracy theories. He is particularly interested in the variables that determine whether or not people accept scientific evidence, for example evidence surrounding vaccinations or climate science. Because his research speaks to important contemporary events, he contributes to public debate through public engagement and opinion pieces in the media.


Stills from Jimmy Whitworth's CO-VID "Community and Care in a Pandemic."

# Community and Care in a Pandemic

Jimmy Whitworth
26 March 2021

Epidemiology is a branch of medical science that studies the distribution of diseases in human populations and the factors that determine this distribution, chiefly by the use of statistics. With the onset of the COVID-19 pandemic, this discipline saw a steady resurgence in public consciousness as researchers and policymakers attempted to study the what, when, why, and where of the disease. Jimmy Whitwhorth, an epidemiologist at the London School of Hygiene and Tropical Medicine, shared insights gleaned from decades of research about how we as community-members can anticipate, control, and prevent the spread of disease.

## About the Epidemiologist

**Jimmy Whitworth** is a Professor of International Public Health at the London School of Hygiene and Tropical Medicine. He is interested in the epidemiology of infectious diseases, especially those with epidemic potential. He has worked extensively in Africa and Asia, mainly in multidisciplinary research of infectious diseases. He also helped set up the DBT/Wellcome Trust India Alliance, which supports career development for health and biomedical scientists in India.



Stills from Sanjeev Jain's CO-VID "Lessons from History in a Pandemic."

# Lessons from History in a Pandemic

Sanjeev Jain
29 March 2021

Every known civilisation has battled epidemics such as the bubonic plague, cholera, typhoid, and smallpox. Societies' responses to epidemics have shaped our history and continue to influence the way we think of pandemics. Connections between past epidemics and contemporary society intrigue psychiatrists like Sanjeev Jain, who has worked extensively on the history of medicine and mental health in South Asia.

## About the Psychiatrist

**Sanjeev Jain** teaches at the Department of Psychiatry at National Institute of Mental Health And Neurosciences (NIMHANS). There, in addition to being a clinician, he researches the genetic and genomic correlates of psychiatric and neurological diseases using both genetic analyses and model systems. He has an abiding interest in studying the symptoms and outcomes of psychoses as well as their social and biological correlates. He has also studied historical and social responses to mental health issues, including the development of psychiatric care, medical sciences, and health policy in south Asia, from the colonial and postcolonial periods.



Stills from Shahid Jameel's CO-VID "Viruses, Variants, and Vaccines."

# Viruses, Variants and Vaccines

Shahid Jameel
05 April 2021

Viruses are fascinating things: they aren't exactly alive by most definitions, but they aren't inanimate either. They can often turn deadly, as witnessed in the COVID-19 pandemic. However, pandemics aren't just caused by viruses. They are the result of a complex interaction between factors ranging from human-animal interactions to our lived and built environments. Shahid Jameel, a globally regarded virologist, shared his thoughts on why it was important to look beyond SARS-CoV-2 as the singular cause of the pandemic.

## About the Virologist

**Shahid Jameel** studied Chemistry at Aligarh Muslim University and Indian Institute of Technology, Kanpur, India and obtained a PhD in Biochemistry at Washington State University, USA. His postdoctoral work in virology was at the University of Colorado Health Sciences Center, Denver, USA. In 1988 he set up the Virology Group at International Centre for Genetic Engineering and Biotechnology (ICGEB), New Delhi, led it for 25 years and researched human viruses.

He was CEO of the DBT/Wellcome Trust India Alliance from 2013 to 2020 and is now Director, Trivedi School of Biosciences at Ashoka University. Jameel received the Shanti Swarup Bhatnagar Prize and is an elected Fellow of India's science academies.



Stills from Gagandeep Kang's CO-VID "How Pandemics Advance Science."

# How Pandemics Advance Science

Gagandeep Kang
12 April 2021

Gagandeep Kang, a physician and scientist at the Christain Medical College, Vellore, has worked extensively on vaccine research and development. She reflected on key research questions around the human immune response which could potentially shape more efficient and targeted responses to the COVID-19 pandemic.

## About the Physician-Scientist

**Gagandeep Kang** is a Professor of Microbiology at the Wellcome Trust Research Laboratory and the Division of Gastrointestinal Sciences at the Christian Medical College (CMC) in Vellore. She and her team conduct interdisciplinary research on enteric infections and child health. They also work on gut infections in children, nutrition, water, and sanitation. Their team does everything from geographic information systems to human immunology. They have evaluated vaccines in pre-clinical and clinical phase 1-3 studies for rotavirus and cholera, and are now working on typhoid and SARS-CoV-2.



Stills from Heidi Larson's CO-VID "Trust and Fear in a Pandemic."

# Trust and Fear in a Pandemic

Heidi Larson
19 April 2021

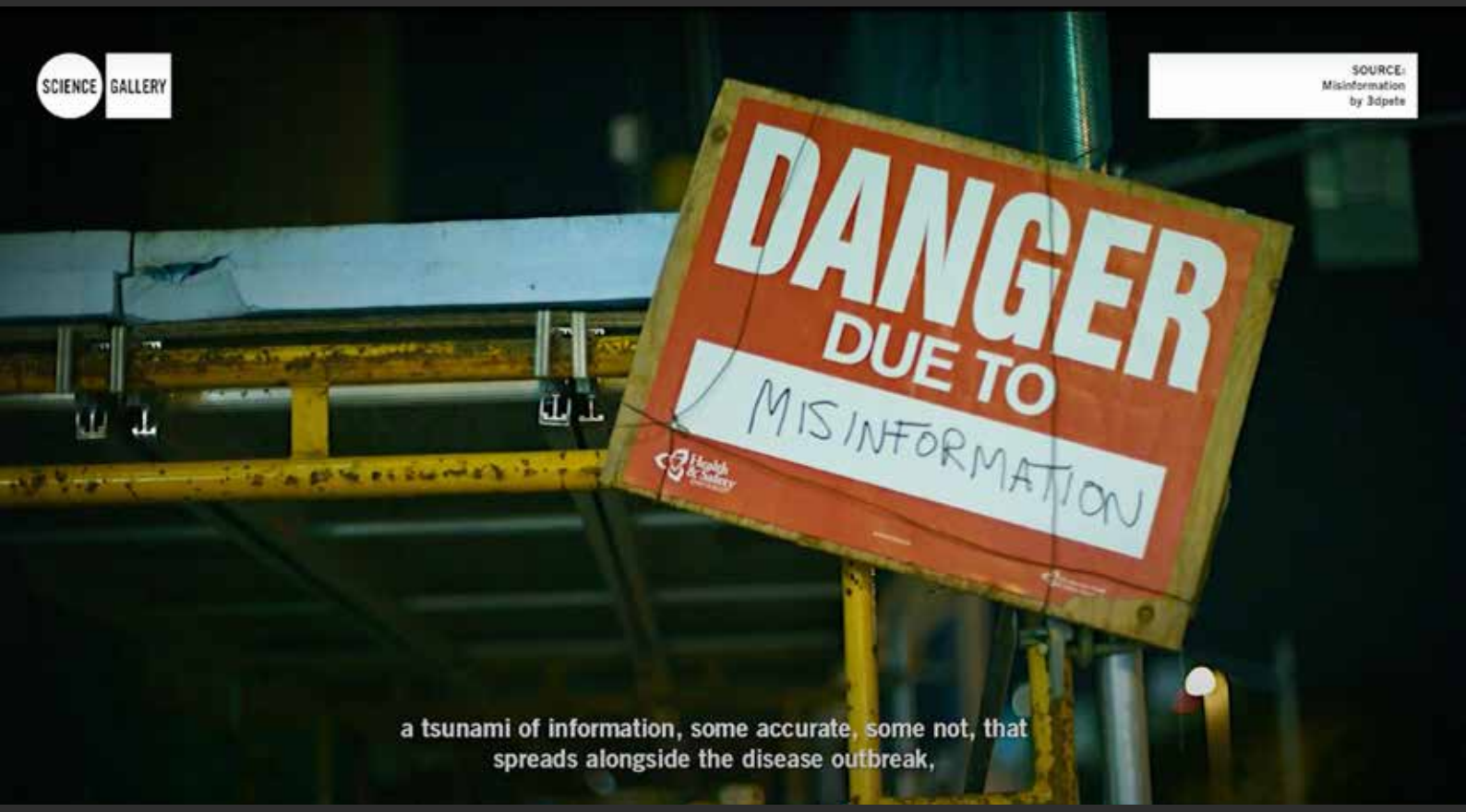
Heidi Larson spent twenty years trying to understand what makes people in various countries hesitant to take vaccines. She created the Vaccine Confidence Project, an interdisciplinary project that brought together experts and citizens across countries and social networks to study how rumours are disseminated. She argued the importance of rebuilding communities' faith and trust in medical information as governments around the world rolled out mass vaccination programmes.

## About the Anthropologist

**Heidi J. Larson**, PhD, is Professor of Anthropology, Risk and Decision Science and is the Founding Director of the Vaccine Confidence Project at the London School of Hygiene & Tropical Medicine. She is also Clinical Professor of Health Metrics Sciences, University of Washington, Seattle, USA, and Guest Professor at the University of Antwerp, Belgium.

Larson previously headed Global Immunisation Communication at United nations Children's Front (UNICEF), chaired Gavi, the Vaccine Alliance's Advocacy Task Force, and served on the World Health Organisation's (WHO) SAGE Working Group on vaccine hesitancy.

Her research focuses on the analysis of social and political factors that can affect uptake of health interventions and influence policies. Her particular interest is on risk and rumour management from clinical trials to delivery, and building public trust.


Stills from Tim Nguyen's CO-VID "Managing Infodemics."

# Managing Infodemics

Tim Nguyen
26 April 2021

The spread of COVID-19 around the world was accompanied by a deluge of mis-information. At a time when reliable and scientific evidence was crucial for public health, fake news, misinformation, and rumours seemed to spread faster than facts. Researchers like Tim Nguyen of the WHO Health Emergencies Programme worked around the clock to counter this infodemic.

## About the Infodemic Manager

**Tim Nguyen** is the Head of the Unit for High Impact Events in the Global Infectious Hazard Preparedness Department of the WHO Health Emergencies Programme (WHE). His team manages the WHO Information Network for Epidemics (EPI-WIN), a platform to unite the work on managing disease infodemics during emergencies; and the strategic global governance of pharmaceutical interventions, including pandemic influenza and smallpox vaccines as well as influenza antivirals. In the COVID-19 pandemic response, he co-managed the “Managing Infodemic” pillar.



Stills from Patricia Kingori's CO-VID "Fakes and Facts in a Pandemic."

# Fakes and Facts in a Pandemic

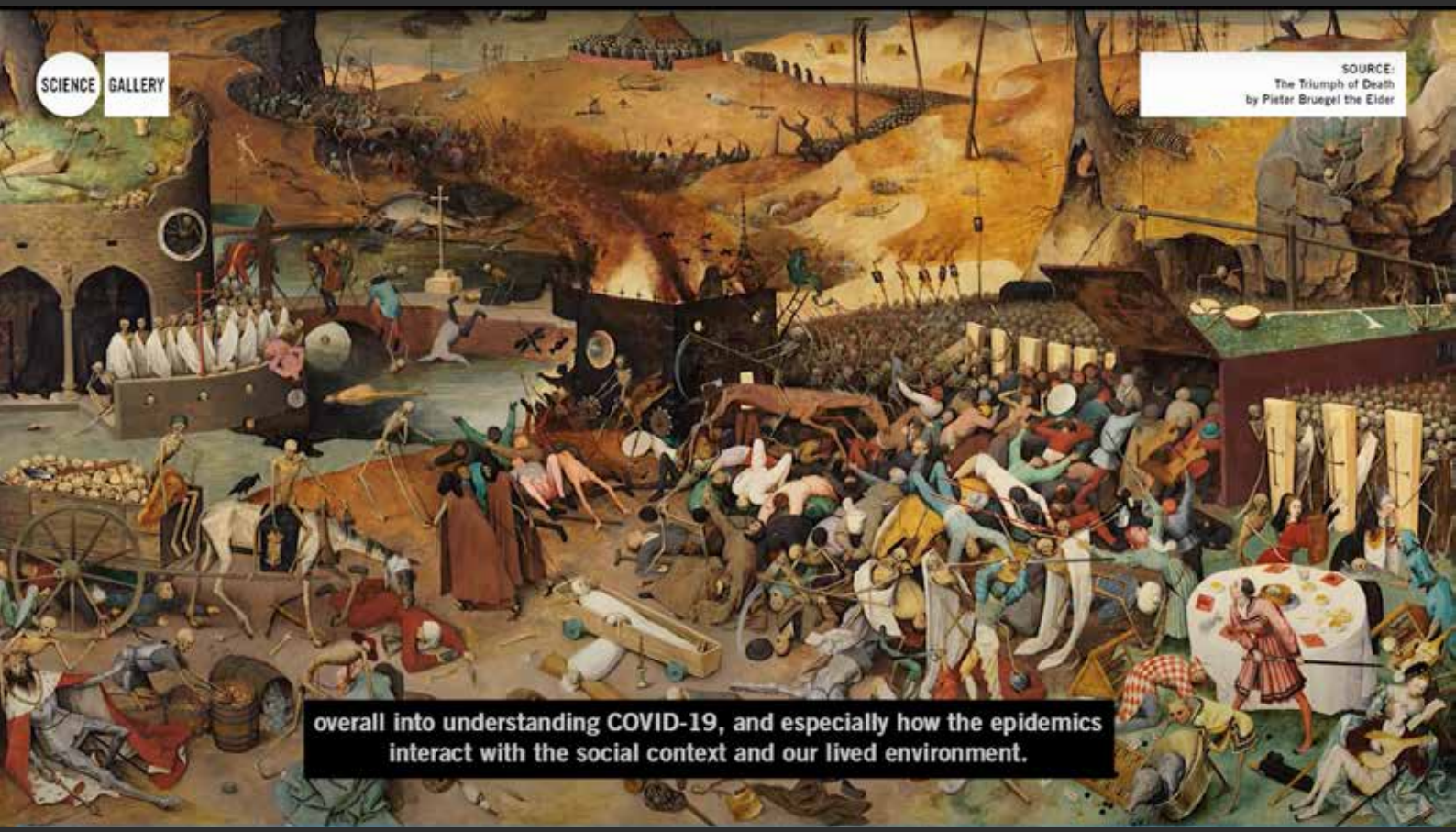
Patricia Kingori
03 May 2021

Fake news was a very serious issue even before the COVID-19 pandemic broke out. But, in the face of COVID-19, this phenomenon became even more dangerous. Whether it was about the origins of the disease, how it spread, or how it could be cured, it became really difficult to determine real from fake. Patricia Kingori, a sociologist deeply committed to understanding the role that authenticity plays across different institutions and actors, reflected on what we could learn from paying attention to fakes, false information, and forgery during a pandemic.

## About the Sociologist

**Patricia Kingori** is a Wellcome Senior Investigator and Associate Professor in Global Health Ethics at the Wellcome Centre for Ethics and Humanities and the Ethox Centre at the University of Oxford. She is also a Senior Fellow at Somerville College, Oxford. Kingori's primary expertise lies in Sociology. Her current research interests intersect the Sociology of Science and Medicine, and a critical examination of ethics in practice.

Her most recent research project seeks to understand how uncertainty and ambiguity about the authenticity of products and activities across a vast array of institutions, actors, and locations are reconciled in real-world settings. It also investigates the moral paradoxes associated with such uncertainty.


Stills from Johanna Hanefeld's CO-VID "Learning from a Pandemic."

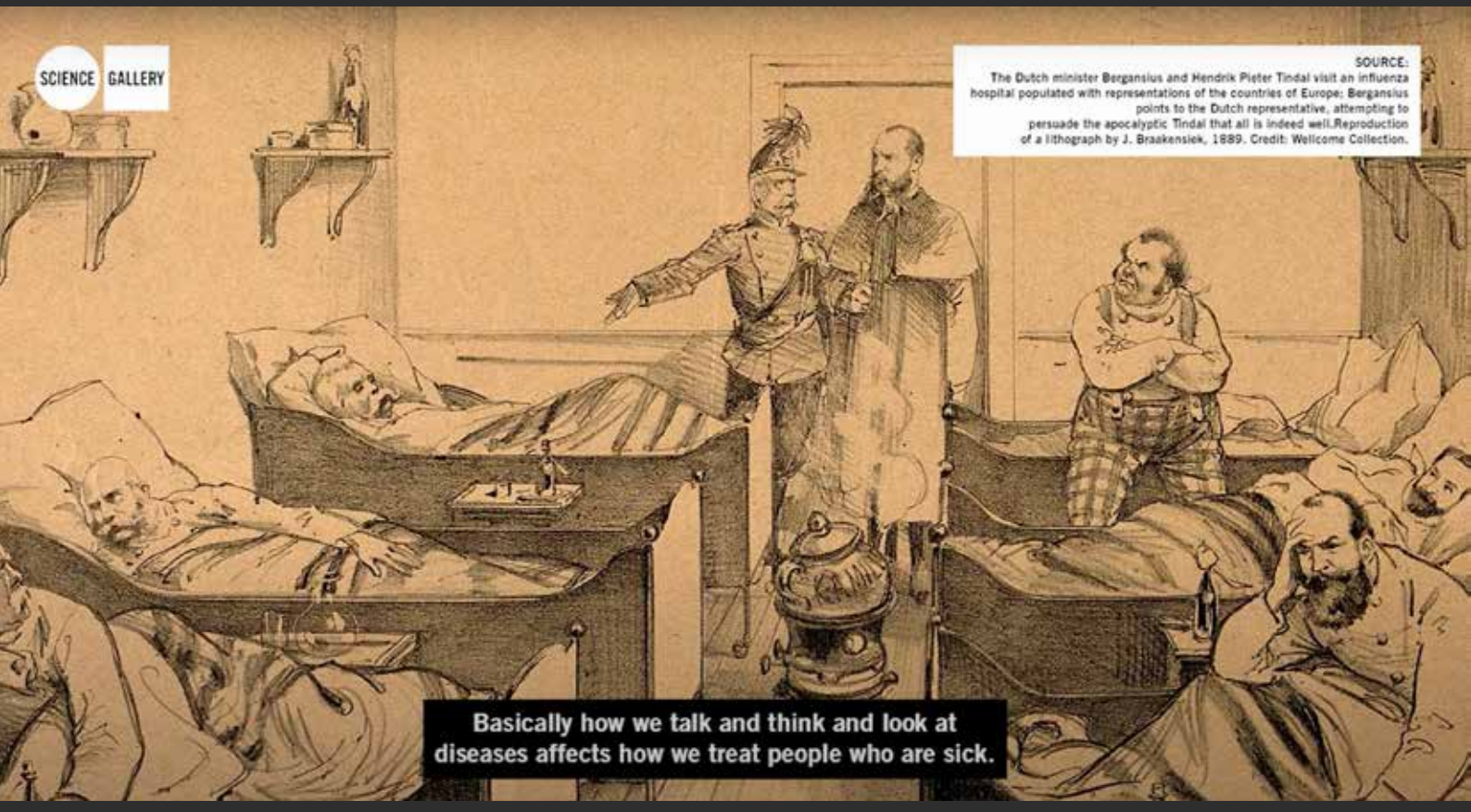
# Learning from a Pandemic

Johanna Hanefeld
10 May 2021

Though COVID-19 was primarily a global health crisis, its ripple effect was felt in various spheres of life. It changed how we work, how we relax, and how we connect with each other. However, the effect of the pandemic varied significantly on a global level, with countries responding in vastly different ways. Johanna Hanefeld, a social scientist at the Robert Koch Institute, who worked on international pandemic preparedness and responses, explored how lessons learned from the COVID-19 pandemic could help us envision a more equitable response to future crises.

## About the Social Scientist

**Johanna Hanefeld** is the Director of the Centre for International Health Protection (ZIG), Robert Koch Institute, Berlin, and an Associate Professor of Health Policy and Systems at the London School of Hygiene and Tropical Medicine.


Stills from Mariam Ghani's CO-VID "The Language of Pandemics."

# The Language of Pandemics

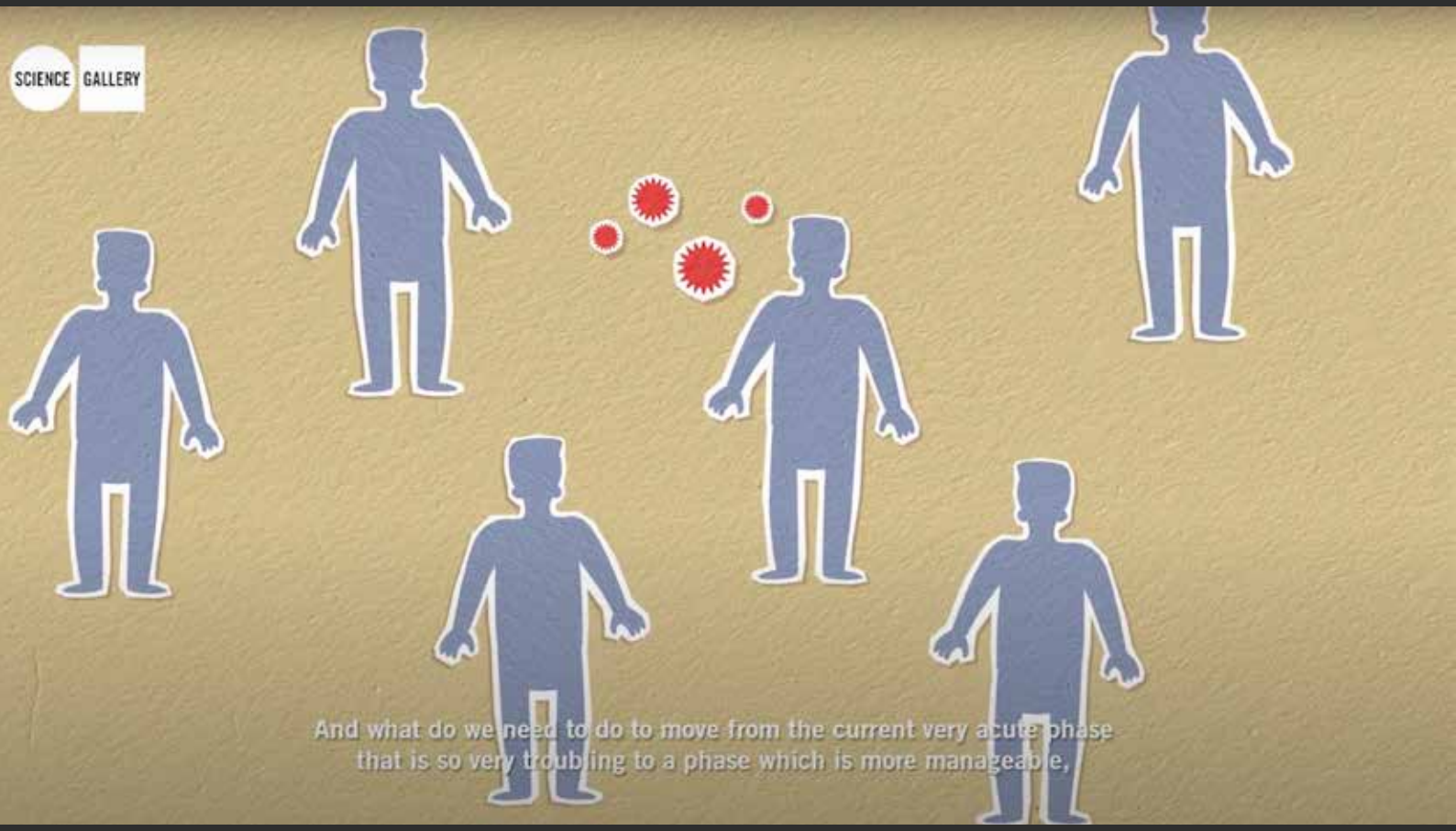
Mariam Ghani
17 May 2021

From “immunogenicity” to “RT-PCR”, COVID-19 made many once-obscure words a part of our everyday conversation. As government bodies, scientists, and medical professionals raced to combat the virus, more such terms were added to our vocabularies to describe new ways of thinking. The language that we used to define the COVID-19 pandemic suggested that it was a cruel enemy that should be defeated through our war rooms and the efforts of our frontline workers. But, were we at war with COVID-19? How did our language and cultural discourse affect the scientific discourse around pathogens? Mariam Ghani, an artist, writer, and filmmaker who has observed the language and metaphors of illness in her latest project, *DIS-EASE*, contemplated these questions.

## About the Artist

**Mariam Ghani** is an artist, writer, and filmmaker. Her work spans multiple disciplines and looks at places, spaces, and moments where social, political, and cultural structures take on visible forms. Her films have screened at the Berlinale, CPH:DOX, DOC NYC, Sheffield Doc/Fest, SFFILM, and Ann Arbor, among other festivals. Her work has also been exhibited and screened at the Guggenheim, MoMA, Met Breuer, and Queens Museum in New York, the National Gallery in Washington, D.C., and the Saint Louis Art Museum, among others. Her early interactive work was preserved by Rhizome for Net Art Anthology, their history of net art in 100 works.

Some of her recent texts have been published in e-Flux, Frieze, Foreign Policy, Triple Canopy, and the readers Assuming Boycott: Resistance, Agency and Cultural Production, and Critical Writing Ensembles, among others. Ghani has received a number of fellowships, awards, grants, and residencies, most recently from Creative Capital, the New York State Council on the Arts, the New York Public Library, and the 18th Street Arts Center in Los Angeles, among others.


Stills from Jeremy Farrar's CO-VID "What We Have Learnt from the Pandemic."

# What We Have Learnt from the Pandemic

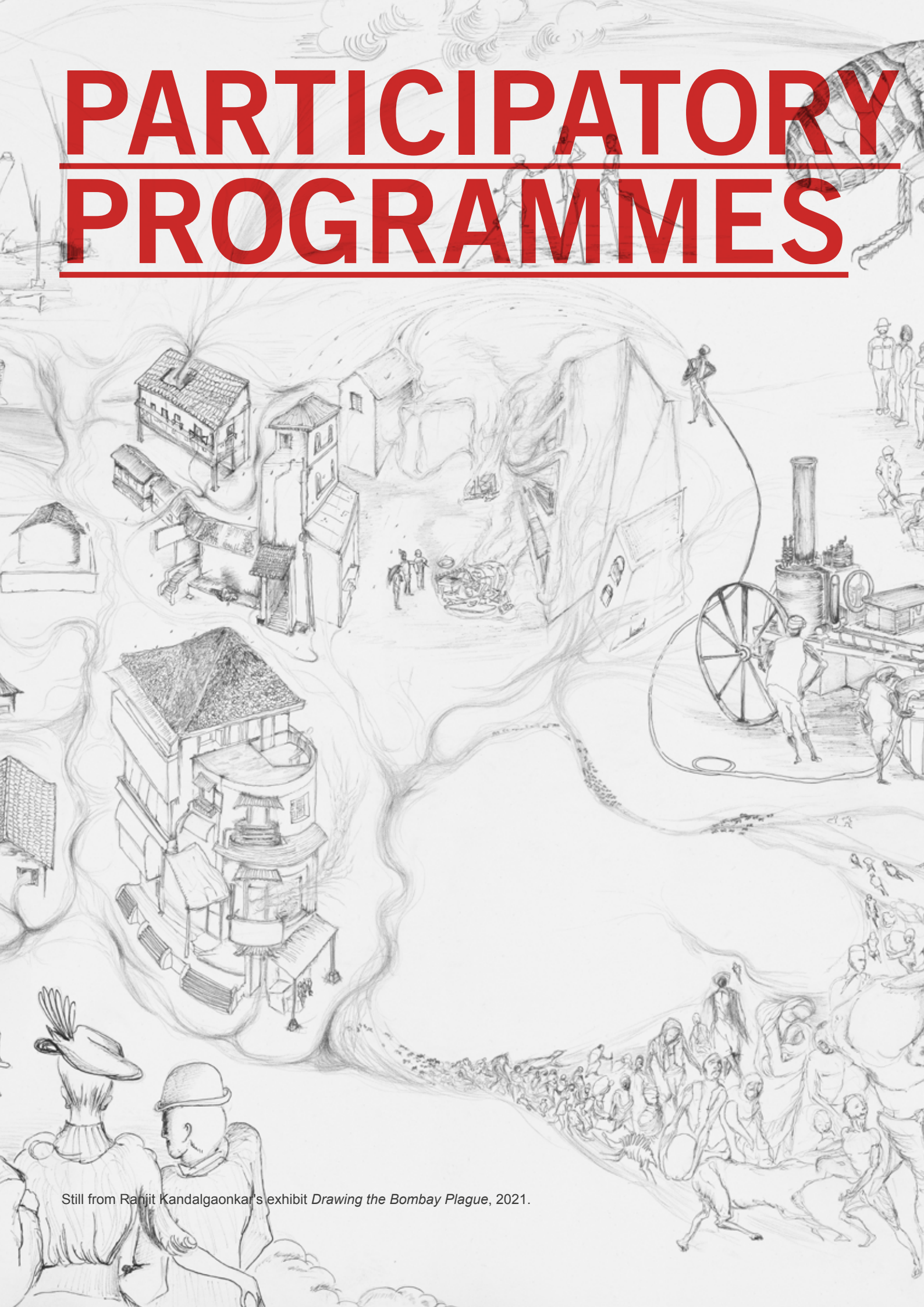
Jeremy Farrar
02 August 2021

The COVID-19 pandemic underlined the critical role of science in our world. Jeremy Farrar, Director of the Wellcome Trust, dissected the role of science in society, bringing together both his expertise in infectious diseases and his commitment to improving global health. With a comprehensive reflection on the pandemic's many consequences, he asked questions on access to care, equity in health, and the role of the public in science.

## About the Medical Researcher

**Jeremy Farrar** is Director of the Wellcome Trust—a politically and financially independent global charitable foundation that exists to fund science to solve the urgent health challenges facing everyone. Jeremy is a clinician scientist who, before joining Wellcome, was the Director of the Oxford University Clinical Research Unit in Vietnam for 18 years. He is a Fellow of the Academy of Medical Sciences UK, the National Academies USA, the European Molecular Biology Organisation and a Fellow of The Royal Society. Jeremy was knighted in the Queen's 2018 New Year Honours for services to Global Health.

# PARTICIPATORY PROGRAMMES



Still from Ranjit Kandalgaonkar's exhibit *Drawing the Bombay Plague*, 2021.

Still from Ranjit Kandalgaonkar's exhibit *Drawing the Bombay Plague*, 2021.

In the run-up to CONTAGION, we conducted participatory programmes inviting written and media submissions from young adults across the world to the prompts that we shared. Their responses were showcased in two sections entitled, “In Your Words” and “Through your Eyes” which documented their experiences, and creative responses to living through the current pandemic.

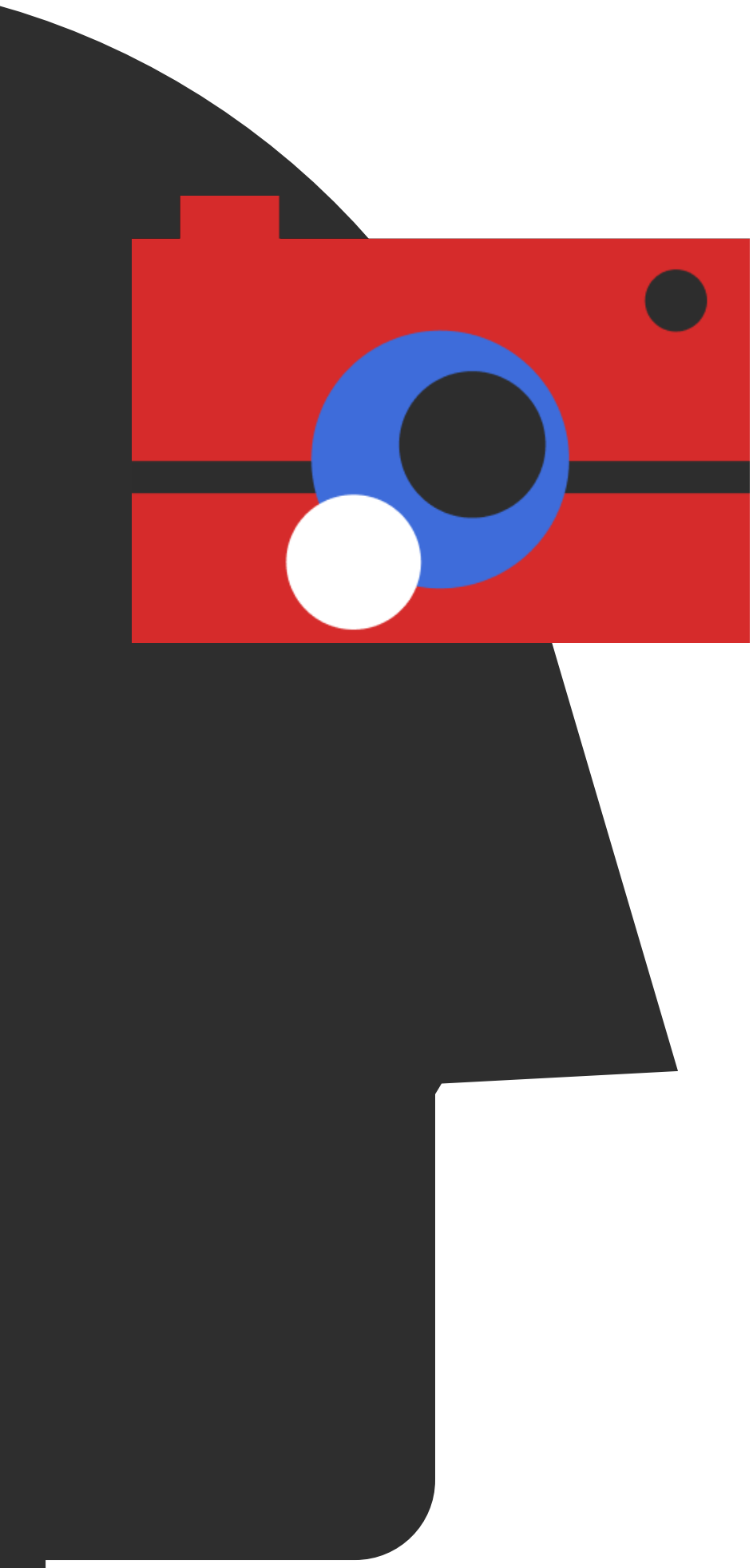
We ran “Through your Eyes” in collaboration with the Chennai Photo Biennale Foundation, where we invited media submissions to four prompts: ‘Home,’ ‘Bubble,’ ‘Isolation,’ and ‘Behind the Mask.’ These prompts were interpreted differently by each participant, with submissions ranging from animations and street photography to portraits and still life. Following the selection of the final submissions, we organised a mentorship session for the participants, which was led by the Chennai Photo Biennale team. In this session not only did the participants get to learn from each other, but also from experienced professionals, who shared tips to strengthen narrative conception and expression through the visual medium.

With “In Your Words,” we offered participants speculative scenarios as prompts ranging from contagious dreams and planet-wide flash mobs to intergalactic quarantines and laughter outbreaks. These prompts offered participants a creative outlet through which they could write about contagious phenomena with some distance from immediate reality.

Through the programmes, we placed collaborative work at the heart of what we do, and involved young adults in the creation of the exhibition. It allowed us to identify new ways to move from passive consumption towards active engagement and co-creation. By asking participants to contribute, the programmes drew upon their backgrounds, local contexts, opinions and dispositions, allowing them to bring their own experiences to bear on the exhibition.

Their responses serve as a repository of various genres of writing and media produced by the young during the COVID-19 pandemic. Archiving visitors’ voices and creativity in this manner dismantles the traditional conception of the cultural institution as an ivory tower of exclusivity, where knowledge is shared in a one-way communication model.

Gayatri Manu
*Programme Associate*



# THROUGH YOUR EYES

The COVID-19 pandemic reduced physical contact between people, and photographs became a crucial way to stay connected, convey emotions, and document unprecedented events in our lives. We asked participants to submit images interpreting our four prompts:

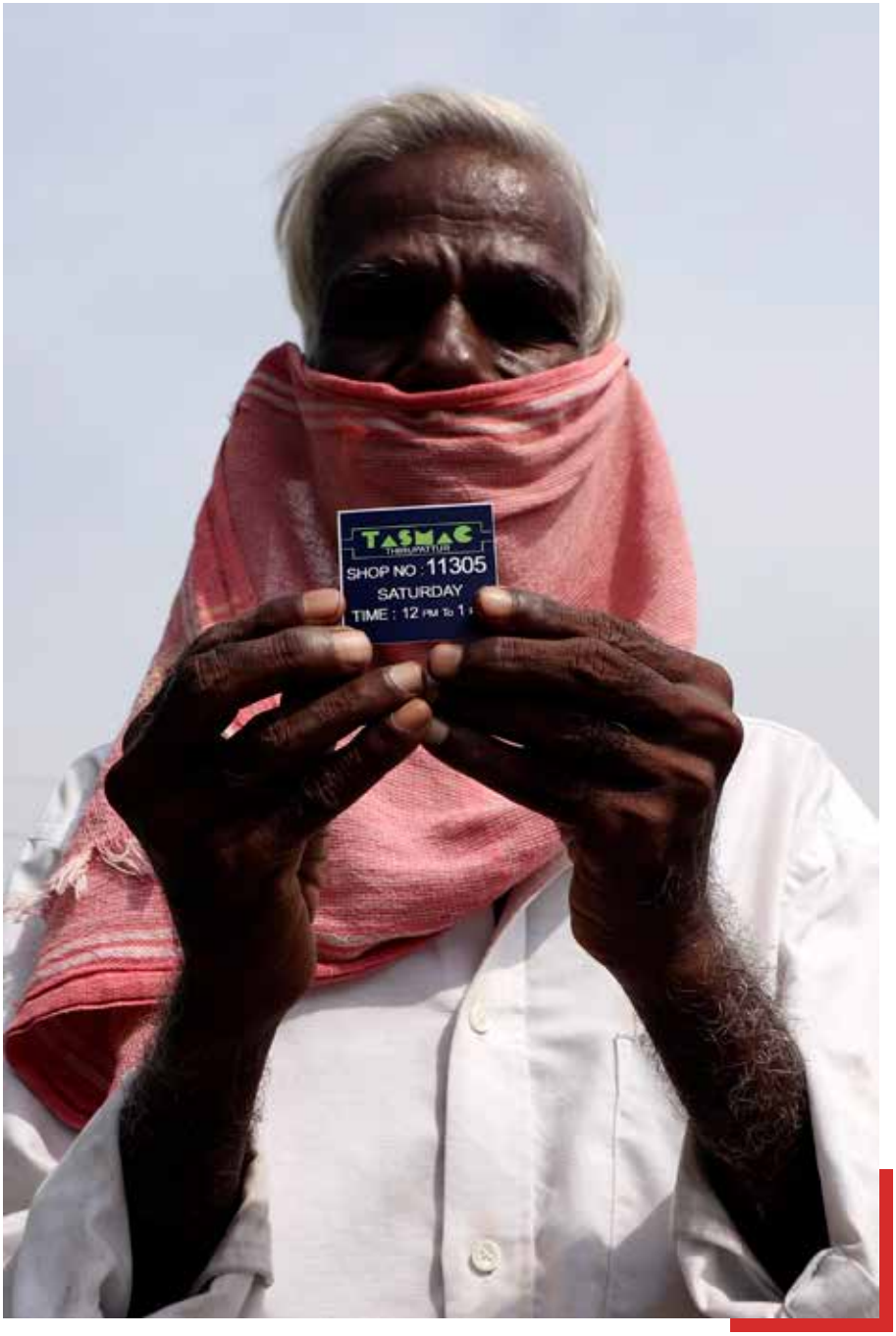
## BEHIND THE MASK

## BUBBLE

## HOME

## ISOLATION

# BEHIND THE MASK




*An old man is seen showing his token to collect wine bottles from Tamil Nadu State Marketing Corporation (TASMAC) during lockdown.*

*Masks have become one of the most important things in our lives. A lot of people still hesitate to wear masks, as shown in this photograph of a fisherman removing his mask.*

## SRI LOGANATHAN VELMURUGAN

Sri Loganathan Velmurugan is pursuing his Bachelor's in Journalism at Madras Christian College. He is also a founding member of Photo Meet Chennai, a Tamil Nadu based photo community that conducts photo walks and various photography-related activities in Tamil Nadu.

*Seems like childhood is no longer the same. I can't imagine a childhood with no school, no summer vacations; having to stay indoors and attend classes online all the time. This photograph seemed to capture all the frustrations and irritation I would feel if I were a young kid during this time.*

**ACHYUT ROKKAM**

Achyut Rokkam is pursuing his Bachelor's in Computer Science at Ashoka University, Sonipat.

*I took this photograph at home using the self timer, a tripod and a study lamp as the light source. I used newspapers as a backdrop to represent the headlines we're being bombarded with lately. The mask on the eyes is to draw attention to how we've physically and mentally withdrawn ourselves from each other during the pandemic.*

**SYONA THOMAS**

Syona Thomas is pursuing her Master's in Botany Master's at St. Joseph's College, Bangalore. Apart from being a full-time student, she loves taking photographs, playing the guitar, watching stars, and questioning the birth and purpose of the universe.

*Like a thin membrane holding a drop of water in a dewdrop, our lives are nothing but a bubble. We all have our set of issues, but the beauty lies in how we play with the bubble; how we face the turbulence. Through every walk of life, we learn a lesson of maturity and discipline. It all depends on us, whether we choose to place a bubble of happiness in one's life or be the pin that bursts another being's bubble!*


**AAKANKSHA SUNIL**

Aakanksha Sunil is a sophomore who believes that the little things matter the most.

# BUBBLE

*This is a photograph from a maternity photoshoot that I did for my sister. When I read the prompt 'Bubble', this photograph suddenly came to my mind. This was the bubble where she kept my nephew safe and sound through a deadly pandemic.*


**KIRANMAYI V**

Kiranmayi V is a freelance photographer based in Tamil Nadu. For Kiranmayi, photography is all about people, places and perspectives.

# HOME

*Like many of us in 2020 I, too, was fascinated by the concept of home. What is it about these boxes we build and shut ourselves in that are so dear to us? For this series, I photograph my apartment, other apartments, and their extended spaces. Objects, characters, and ideas ooze into these shared spaces and take a life of their own. Through these photographs, I hope to ask: can we take better care of ourselves, our surroundings and even our planet, if we rethink the meaning of home?*

## KAMESH BHARADWAJ

Kamesh Bharadwaj is a documentary photographer and filmmaker based in Bangalore. His interests lie primarily in stories related to the environment, culture, and its various intersections in Indian society. Through his photographs, he hopes to engage in conversations around climate change, action, and justice; and document its immediate and indirect effects in the Global South.

*The home is like the womb of our mothers, where we find peace and safety. As the children look into the darkness, they immerse themselves into finding that unknown while the mother awaits her lap to be occupied by her children, as her children find the home. This photograph was taken in Burdwan, West Bengal. It depicts the ruins of an ancient terracotta temple. The children in the photograph are looking at the ruins out of curiosity.*

## AGRONEEL MANDAL

Agroneel Mandal is pursuing his Bachelor's in History at the University Rajasthan College Jaipur, Rajasthan. He believes that photography is the best way of documenting events as they occur.

*2020 instilled new habits and changed concepts of isolation and self reliance. With one parent submerged in healthcare duties, the other parent joined them for complete support and both lived away for most of the year. This left me to take care of a younger sibling and a house with four cats! We'd only meet each other on weekends and rest of the time, it was appreciating forgotten habits like waking up to birds, sunrises, and sun bathing with the cats.*

**JOLLY SAIKIA**

Jolly Saikia is a storyteller by energy and a queer feminist by identity.

*People are seen standing in a queue to collect their tokens to buy liquor from Tamil Nadu State Marketing Corporation (TASMAC) during lockdown.*

## SRI LOGANATHAN VELMURUGAN

Sri Loganathan Velmurugan is pursuing his Bachelor's in Journalism at Madras Christian College. He is also a founding member of Photo Meet Chennai, a Tamil Nadu based photo community that conducts photo walks and various photography-related activities in Tamil Nadu.

# ISOLATION

*"It knows that it is destiny to get caged, even if it is springtime."- translated excerpt from the Last Mughal Emperor, Bahadur Shah Zafar's ghazal about 'Destiny', written in the last days of his captivity.*

*The photograph shows the Eclectus parrot, a native of the Solomon islands, which is held captive for conservation. It is a popular tourist attraction at Jurong Bird Park, Singapore.*


**ANANYA RAO KEDIGE**

Ananya Rao Kedige is pursuing her Master's in Bioinformatics at Manipal School of Life Sciences, MAHE, Manipal. She is currently working on improving her photography skills and her journey so far has been documented on Instagram under the username - @w.i.a.m.o.ss (www.instagram.com/w.i.a.m.o.ss/)

*This photograph was taken in Norway in December, the darkest part of the year in the Arctic. It was possible to walk many kilometers in the wilderness without meeting another person.*

**PURABI DESHPANDE**

Purabi Deshpande is a PhD student studying birds and plants in cities.

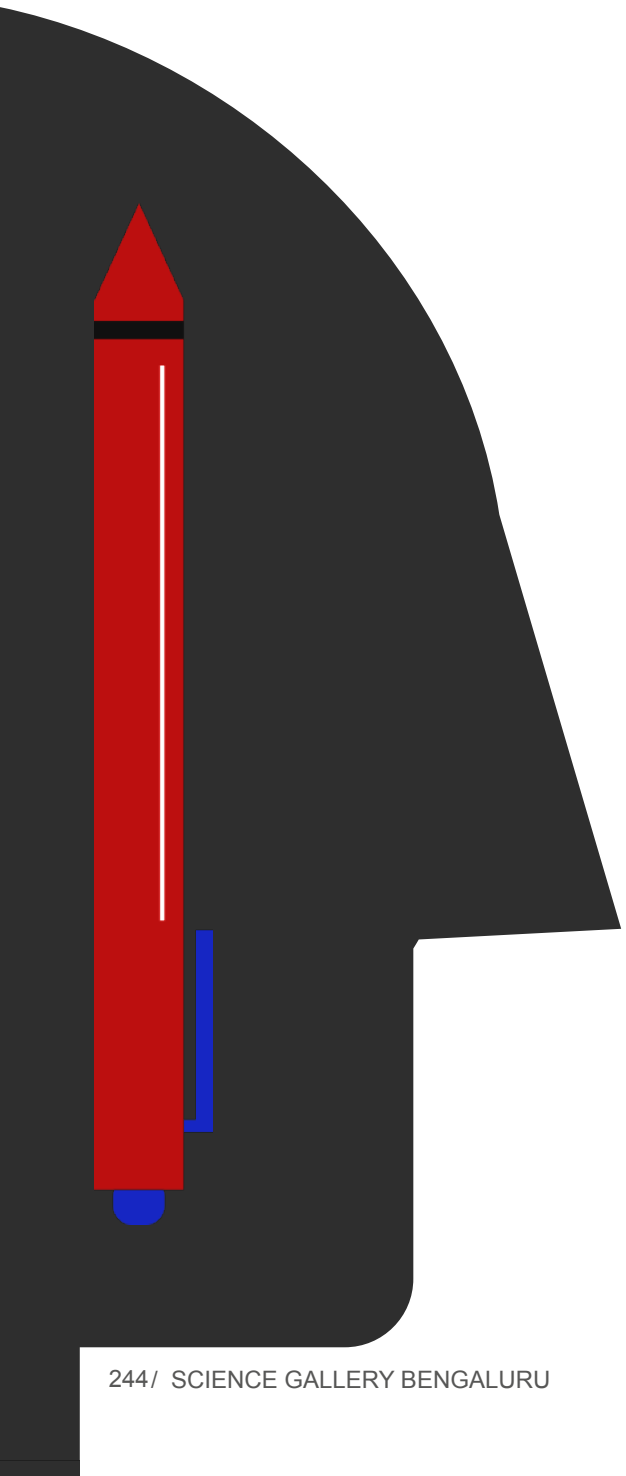
*It has been 56 days since my body found itself in the presence of other bodies.*
*No bumping into someone;*
*No running into someone,*
*No, not even brushing past someone.*
*My hands rummage through a drawer of albums.*
*Shhhhhh. . . I am listening to a photograph in an attempt to relive the past.*
*Squinting as I bring it closer, I try hard to listen, to feel and in some ways relive it.*
*The transmission of sound and energy is very real and in my isolated condition this act offers much solace.*
*I may look stupid to anyone looking at me right now,*
*but there's no one around to judge me.*

## SHYAMLI SINGBAL

Shyamli Singbal is an artist currently based in Goa. Her works traverse a range of mediums including sculpture, installation, video and gifs.

# IN YOUR WORDS

Contagious phenomena surround us—social media misinformation, present pandemics and past epidemics, emotional contagion. Living through the COVID-19 pandemic showed us how even the most speculative scenarios can turn into reality overnight. In the run up to CONTAGION, we invited our audience to submit their responses, in prose or poetry, to our creative writing prompts.



**Last night, your dreams were interrupted by an advertisement. You log into your social media account the next morning and find everyone posting about the same experience.**

## Ad in the Dreams
## By Kaustubh Kulkarni

Kaustubh Kulkarni is a first year BS-MS student at Indian Institute of Science Education and Research, Pune. He is interested in biology, particularly molecular biology and evolutionary biology. He enjoys poetry, writing, chess, cooking, coding and working.

*Last night I slept in my cozy bed,*
*Taking a blanket over my head.*
*Hugging my teddy, soft and cute,*
*In my comfy snug night suit.*

*As usual I had a dream*
*Of random things, no set theme.*
*It was all being fun,*
*My weird dreams on their run.*

*Out of sudden I saw an ad,*
*Which earlier, I never had.*
*For a minute, the ad played,*
*Then suddenly, it did fade.*

*"If a car, you wish to buy,*
*Go for Tesla, anything else why?"*
*This was what the ad said,*
*As it photos of cars displayed.*

*I didn't get why it came,*
*In weird dreams, an ad lame.*
*On waking up I saw the news,*
*Nobody had any clues.*

*Everyone the same dream had*
*With an awkward Tesla ad.*
*Flooded with this were social media;*
*Why it happened, no idea!*

*Whole world having one dream,*
*What was the cause of this thing?*
*Then a gentleman gave a clue,*
*Why did the dream spread like a flu.*

*The man who told this by the dusk,*
*Was none other than Elon Musk.*
*"It was our project," said he,*
*"And we did it successfully."*

*"We connected to internet, every brain,*
*And showed them the ad's pane."*
*"It was me," he said with a wink,*
*"And my company Neuralink!"*

**While attending a music festival, you walk into a venue where the crowd is moving synchronously to something even though the artist on stage does not have any instruments.**

## Silent Dance
**By Ailun Shi**

Ailun Shi recently withdrew from UC Berkeley in order to go on a gap year for the adventure of her life. Her work has been nationally recognized by the Scholastic Art and Writing Awards and published in Helen: a literary magazine, Germ Magazine, Tint Journal, and elsewhere.

*The air stinks of heat and sweat and smoke.*
*I edge around the walls of the room, where there are fewer people jumping up and down to the EDM beat.*
*Still, I keep glancing around, making sure I don't accidentally run into someone. From the stage, beams of neon light shoot out and ricochet around the room. Every so often, one of them would hit me right in the eyes, and I'd have to blink and walk blindly for a few seconds until my sight cleared.*
*The music follows me out the venue. Even when the door closes behind me, I can hear the faint electronics. I think I can even feel the reverberations of everyone's feet slamming down at the same time. It's like a living pulse running through the ground into my soles. It's exhausting.*

*I slink along the side of the wall. It's an indoor music festival, and I'm in the Artistic Renditions building, although I'm not quite sure how neon lights shooting to the beat of a stereotypical EDM beat has anything to do with "artistic" or "rendition." Or maybe my standards are just too high.*
*There are signs next to each door. Kiitos. M-Q. Eons. They're names of artists I don't know.*

*At the end of the hall, a sign reads, "Silent Dance."*
*There's no other information about who the artist might be.*
*I hesitate for a second, but what can it hurt? Silence would be infinitely better than another racket of sound.*
*The room is almost completely dark when I open the door and step in, and for a second, I think the room's empty and abandoned. But no, there's a screen playing onstage, and the dim light illuminates the crowd of swaying, shadowed figures below.*

*Like the sign had suggested, the room is completely silent, despite what seems to be a large crowd of people. The only sounds are coming from people talking in the hallway outside, and those sounds completely disappear when the door closes with a snick.*

*I feel more than see someone step up to me. A security guard, perhaps? Beneath the dim light, I see something offered, and I take it, muttering a quiet thanks, trying not to disturb the silence.*

*It takes a few moments of turning and feeling the object in my hands before I realize what it is. A pair of headphones. I put them on, but no sound emits from them. It's only when I start walking toward the crowd that a low hum starts filling my ears. It's an odd noise. Fizzing and hissing in between lyrical chords.*

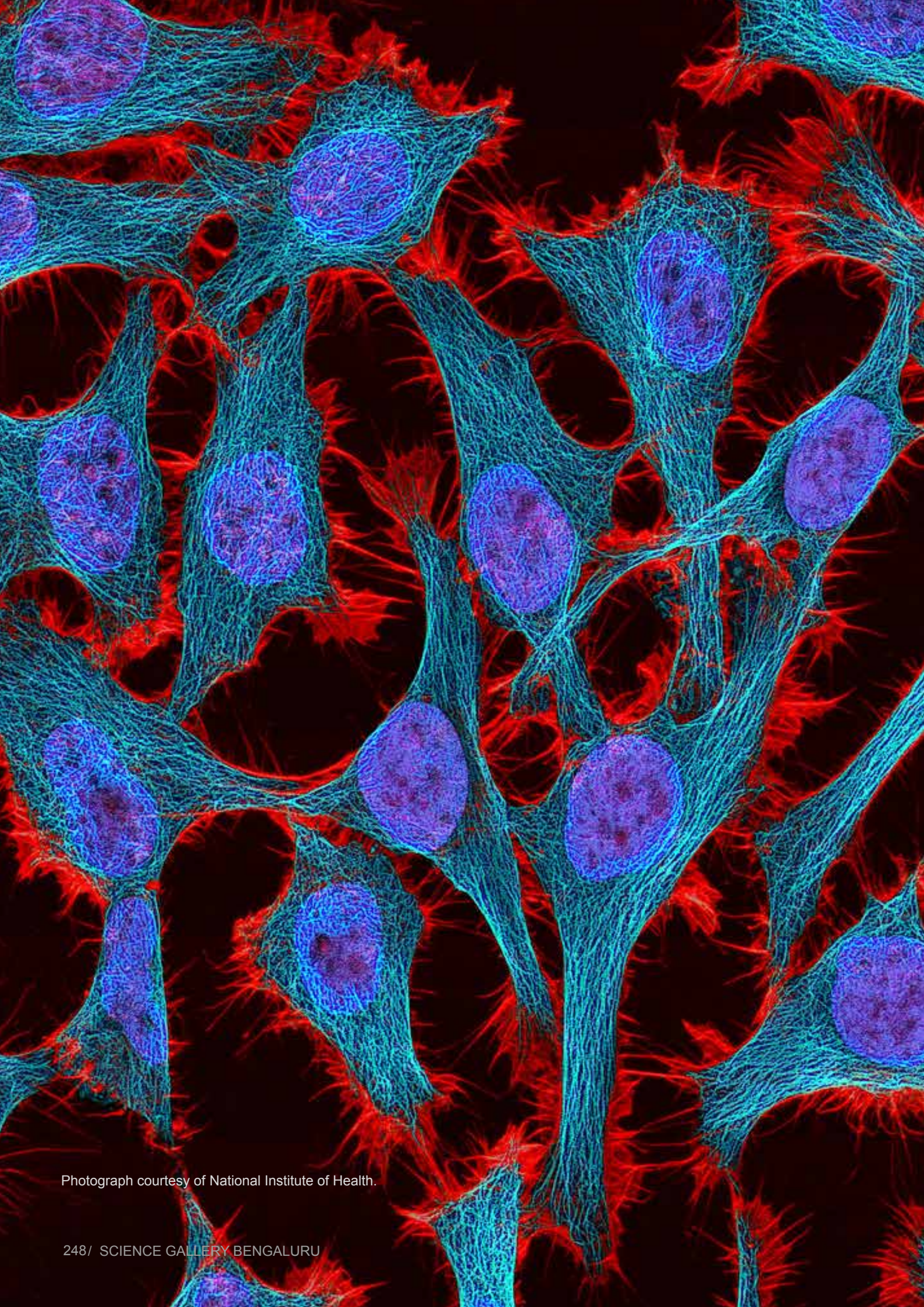
*The crowd, meanwhile, is swaying together. Right, then left, then a clockwise twirl around. Then right, and left, a counterclockwise twirl. Repeat.*

*On the stage, the person I assume to be the artist stands before what looks like a mixer. He, or maybe it's a she—it's hard to tell in the lighting—nods to some unknown beat and occasionally toggles some controls and buttons.*
*Behind that, on the wall, is the screen. Funny, pastel colored bubbles dance across the screen. They sway and twirl. They're pretty.*

*I stare at them for a few seconds, then glance away to look at the audience, and nearly jolt. I glance back up. Then down. The bubbles represent the audience members. Swaying and moving, each bubble corresponded to a person, and the field of bubbles on the screen as a whole moved like a blobby shape, perfectly synchronized and in time.*

*The sound in my headphones has gone silent in the time I've spent standing and staring at the screen, so I shuffle myself closer to the crowd and move along.*

*At first, it's the same fuzzy, static-like sound in my ears. Then, as I start to move in coordination with everyone else, the sound changes. The chords start becoming clearer, the static breaks fade away, until the notes all connect together and turn into music. It's an instrumental dynamite, full of crashing decrescendos, dancing arpeggios—a symphony of noise.*
*I sway with the crowd. Right, left, clockwise twirl. Left, right, clockwise twirl. The music changes just a little if I sway too far, or if I twirl too slowly. Sometimes, a note is held suspended for just a little longer before it blends into the next note. When I catch up to the proper rhythm of the dance, a string of notes are just a little shorter.*



Photograph courtesy of National Institute of Health.

*At some point into the dance, the music starts fading out gradually, and the synchronicity of the crowd stutters and breaks. On the screen, the bubbles start moving in scattered directions.*

*I twist around, bend over, twirl, trying to test out different dance combinations. The chords become clearer when I move my arms in a wave pattern.*

*Soon enough, everyone's testing out dance combinations, their arms and legs all over in the air. Like the EDM venue I had been in before, there's a sense of heat and energy in the room. But it's not overbearing like before. Instead it feels right. It feels... fun.*

*It only takes a few minutes before there's an established choreography to this particular song, which is some odd version of the wave and forward and backward steps. The accompanying music has the beat of drums and a harmony of rainfall. Birds call in the soundtrack.*

*On the screen, the bubbles are a wave tossing left and right as they crash forward before receding. Repeat. repeat. There's an elegance to it, of being in a silent room, the sounds we're all listening to just ever so slightly different based on the minute variations in our movements. It's a dance - individual, collective and joyful, all at once.*
*And even though I can't hear anything other than the music— not the footsteps of everyone I'm surrounded by, not even my own breath... I laugh.*

# SOCIAL ROOMS

Still from the John Innes Centre's exhibit *Putting the Ant into Antibiotics*, 2021.

**The social rooms were a unique part of CONTAGION. Comprising a reading room, an arcade, and a listening room, these virtual spaces became crucial sites of engagement around the phenomenon of contagion. We curated 40 books and graphic novels, four podcast playlists, and five games to give our visitors a multitude of ways to engage with the transmission of diseases, behaviours, and emotions.**

Photograph courtesy of National Institute of Health.

## Listening Room

We put together four audio playlists around each of CONTAGION's themes. This mix of podcasts, online radio, and recordings explored the role of epidemiologists, the spread of pandemic-related misinformation, the stigma around contagious diseases, and much more.

## Reading Room

During physical exhibitions, we collect reading material that complements the exhibits on display. For CONTAGION, we recreated the Reading Room virtually so that visitors could rifle through the (digital) pages of essays, graphic novels, and books—both fictional and historical.

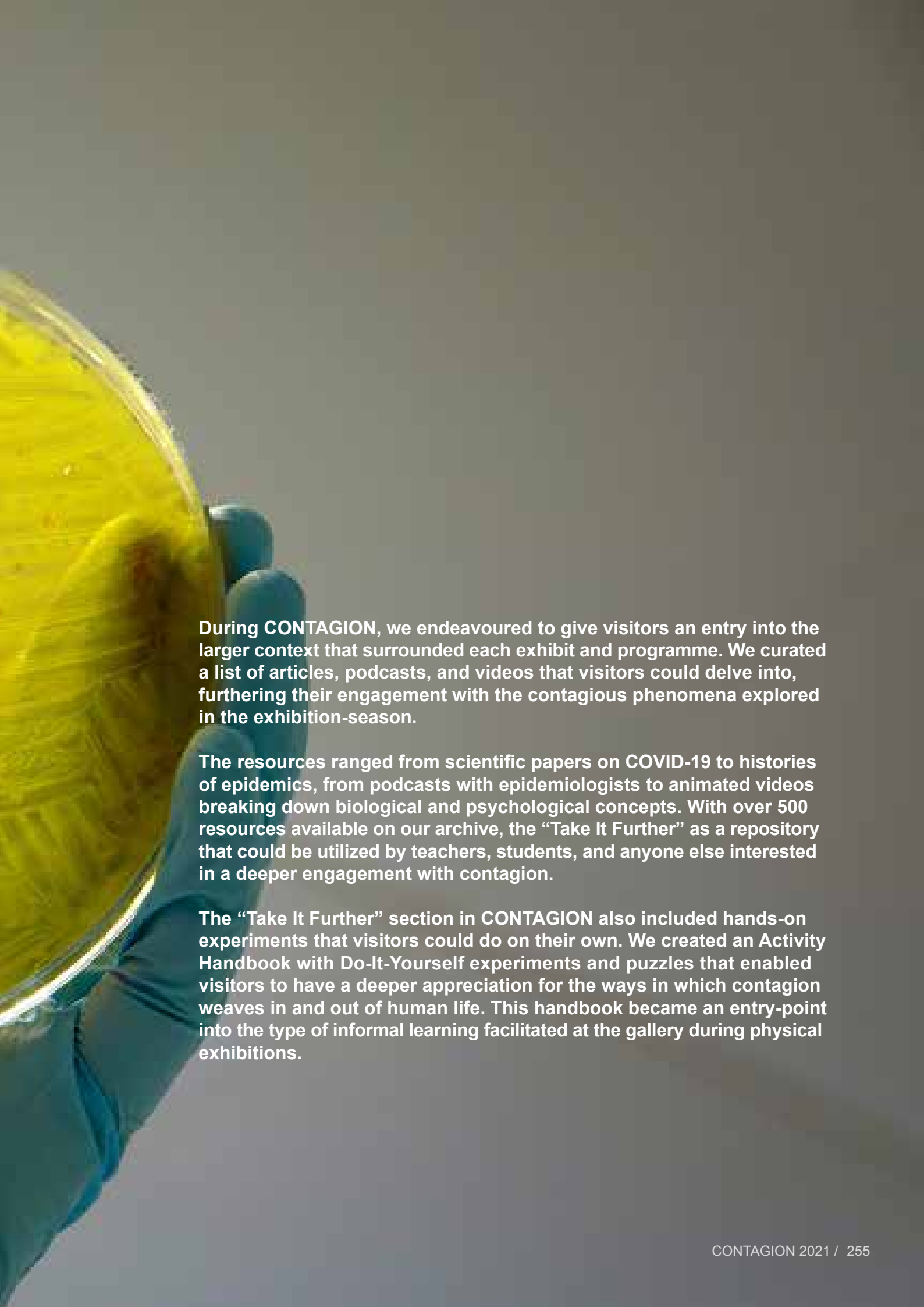
The reading room was divided into three sections: one with open source books that could be accessed on the website itself; one with recommended books to explore contagious phenomena; and a last section with books from our speakers. The books covered topics such as disease stigma, contagious laughter, the psychology behind behavioural contagion, dystopian tales of future epidemics, and much more.

## Arcade

In an attempt to make our exhibition as versatile and open to different modes of engagement, we curated a short list of contagion related games that visitors could play online. In the arcade, visitors could become disease detectives to investigate the spread of an epidemic, or become fake news mongers to understand how misinformation proliferates.

# TAKE IT FURTHER

Photograph courtesy of Wil Crowne.



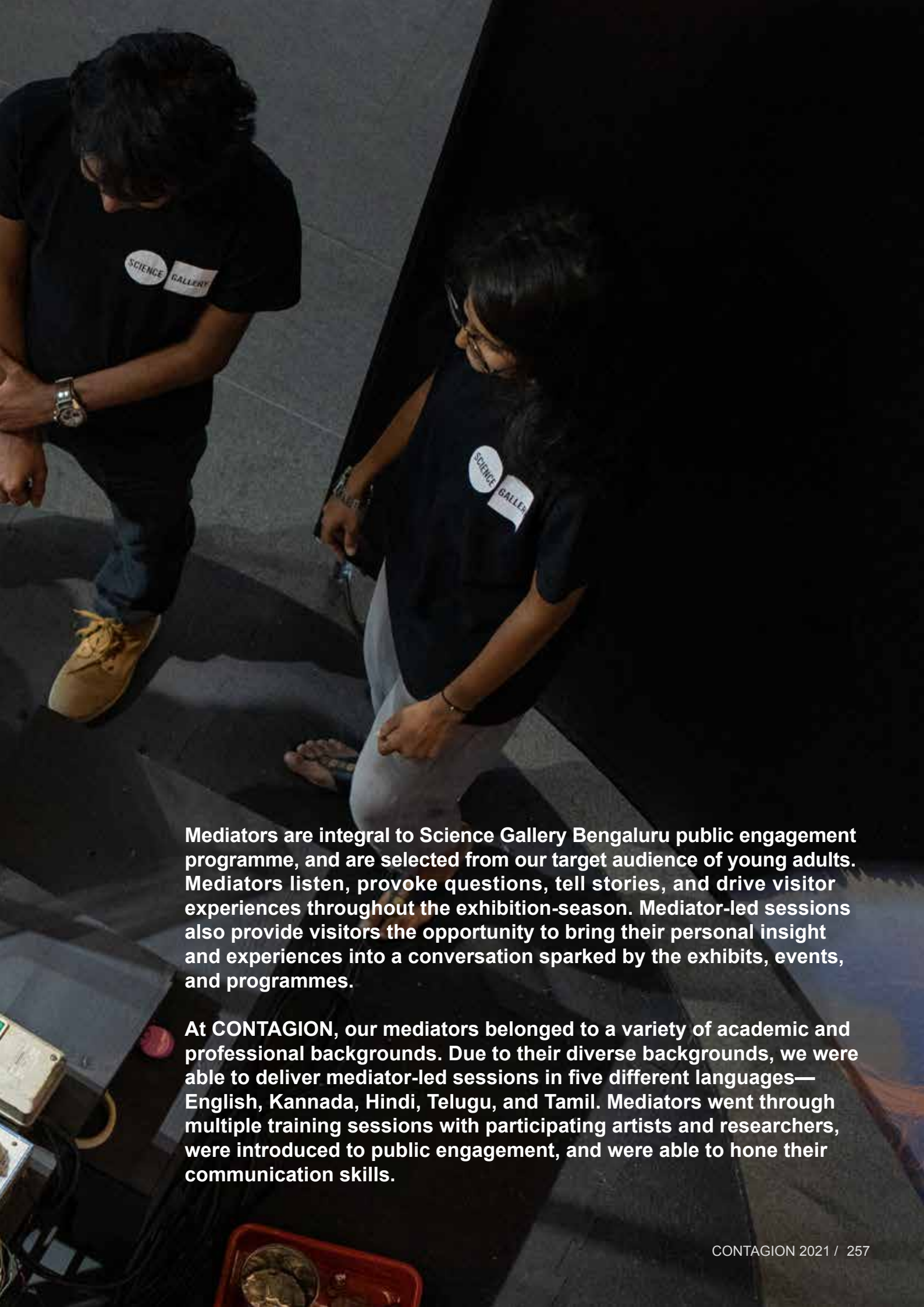
**During CONTAGION, we endeavoured to give visitors an entry into the larger context that surrounded each exhibit and programme. We curated a list of articles, podcasts, and videos that visitors could delve into, furthering their engagement with the contagious phenomena explored in the exhibition-season.**

**The resources ranged from scientific papers on COVID-19 to histories of epidemics, from podcasts with epidemiologists to animated videos breaking down biological and psychological concepts. With over 500 resources available on our archive, the "Take It Further" as a repository that could be utilized by teachers, students, and anyone else interested in a deeper engagement with contagion.**

**The "Take It Further" section in CONTAGION also included hands-on experiments that visitors could do on their own. We created an Activity Handbook with Do-It-Yourself experiments and puzzles that enabled visitors to have a deeper appreciation for the ways in which contagion weaves in and out of human life. This handbook became an entry-point into the type of informal learning facilitated at the gallery during physical exhibitions.**

# MEDIATORS

Mediators interact with visitors at Science Gallery Bengaluru's *SUBMERGE*, 2019.




**Mediators are integral to Science Gallery Bengaluru public engagement programme, and are selected from our target audience of young adults. Mediators listen, provoke questions, tell stories, and drive visitor experiences throughout the exhibition-season. Mediator-led sessions also provide visitors the opportunity to bring their personal insight and experiences into a conversation sparked by the exhibits, events, and programmes.**

**At CONTAGION, our mediators belonged to a variety of academic and professional backgrounds. Due to their diverse backgrounds, we were able to deliver mediator-led sessions in five different languages—English, Kannada, Hindi, Telugu, and Tamil. Mediators went through multiple training sessions with participating artists and researchers, were introduced to public engagement, and were able to hone their communication skills.**








Mediators at CONTAGION (From L to R) Divya Kola, Sumedha Shukla, Harshitha Amar, Pranava Nataraja, Krishna Tadepalli, Shatarupa Sarkar, Priyanka Venkatesh, Kotapati Nithya.

Aakanksha Sunil

Aarathi Parameswaran

Aditya Vijaykumar

Amulya Hosur

Arindam Sarkar

Arkesh Kedar Shenoy

Ayush Kovid

Breanne Coelho

CM Manasvi

D Sudev Madhav

Divya S Kola

Govind Pattila

Harshitha Amar

Harshitha Thammaiah

Kalyani (Anu) Narayan

Karthika Sakthivel

Kotapati Nithya

Krishna Tadepalli

Lishel Pinto

Medha Sharma

Pranava Nataraja

Priyanka Venkatesh

Rahul Keshav

Rajalakshmi Rajesh Narayanan

Rishan Ahamed

Ruchika Gallani

S Partheeban

Sai Bhavani. P

Sathvik Anantakrishnan

Shatarupa Sarkar

Shri Krishna Anand

Sriram Mahadevan

Sumedha Shukla

Syona Baptista Thomas

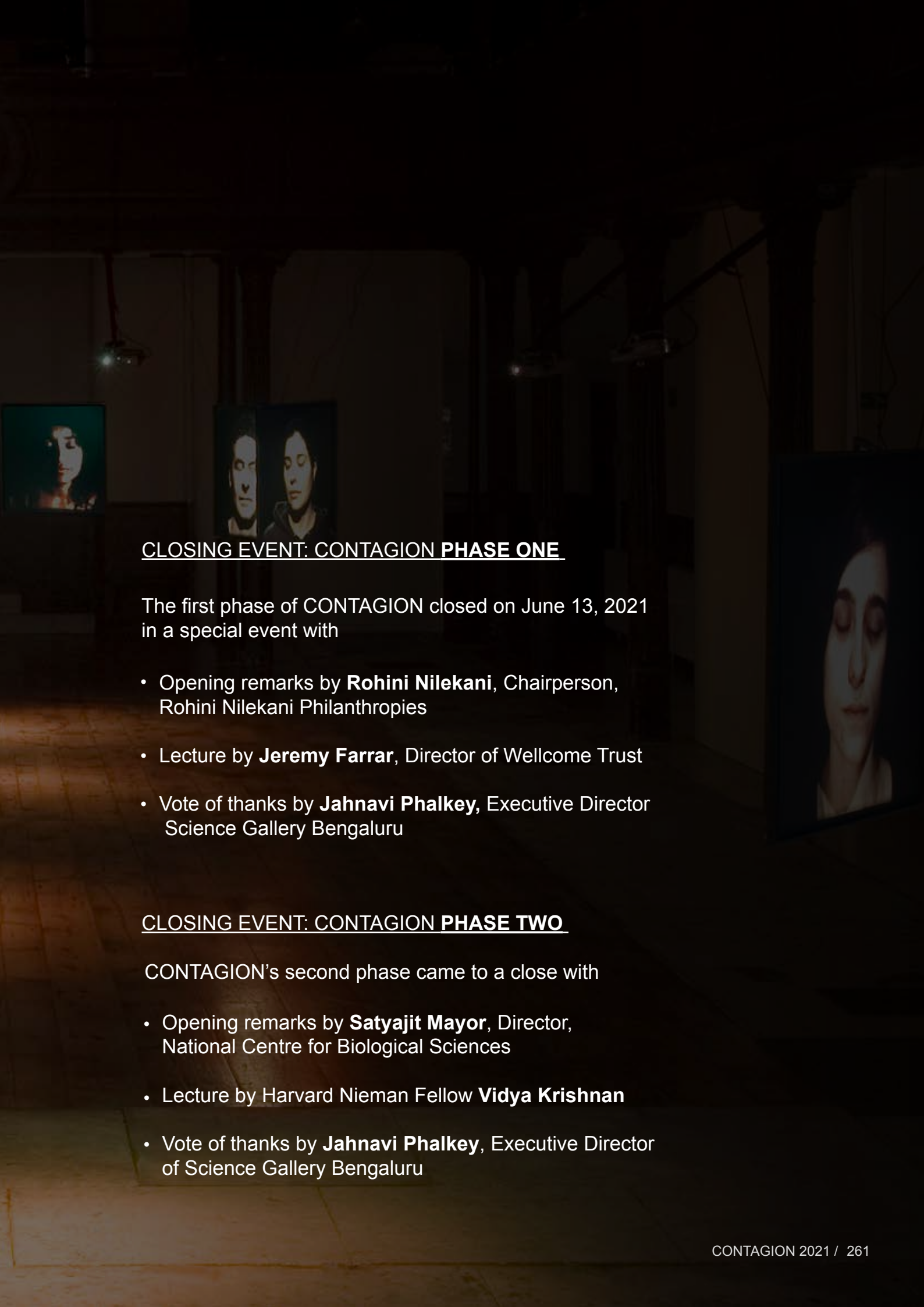
Vaibhavi Kulkarni

**“The views I had on various subjects completely changed after I became a mediator. This was primarily because of the interactions I had with the exhibiting artists, who had combined disciplines that we generally see as disparate. And this brought out an entirely new world of ideas, prompting novel directions of thought.**

*- Arkesh Kedar Shenoy, Mediator*

# CLOSING EVENT

Tina Gonsalves' *The Chameleon Project* exhibited at RMIT Gallery, *Superhuman Exhibition*, 2009.



CLOSING EVENT: CONTAGION **PHASE ONE**

The first phase of CONTAGION closed on June 13, 2021 in a special event with

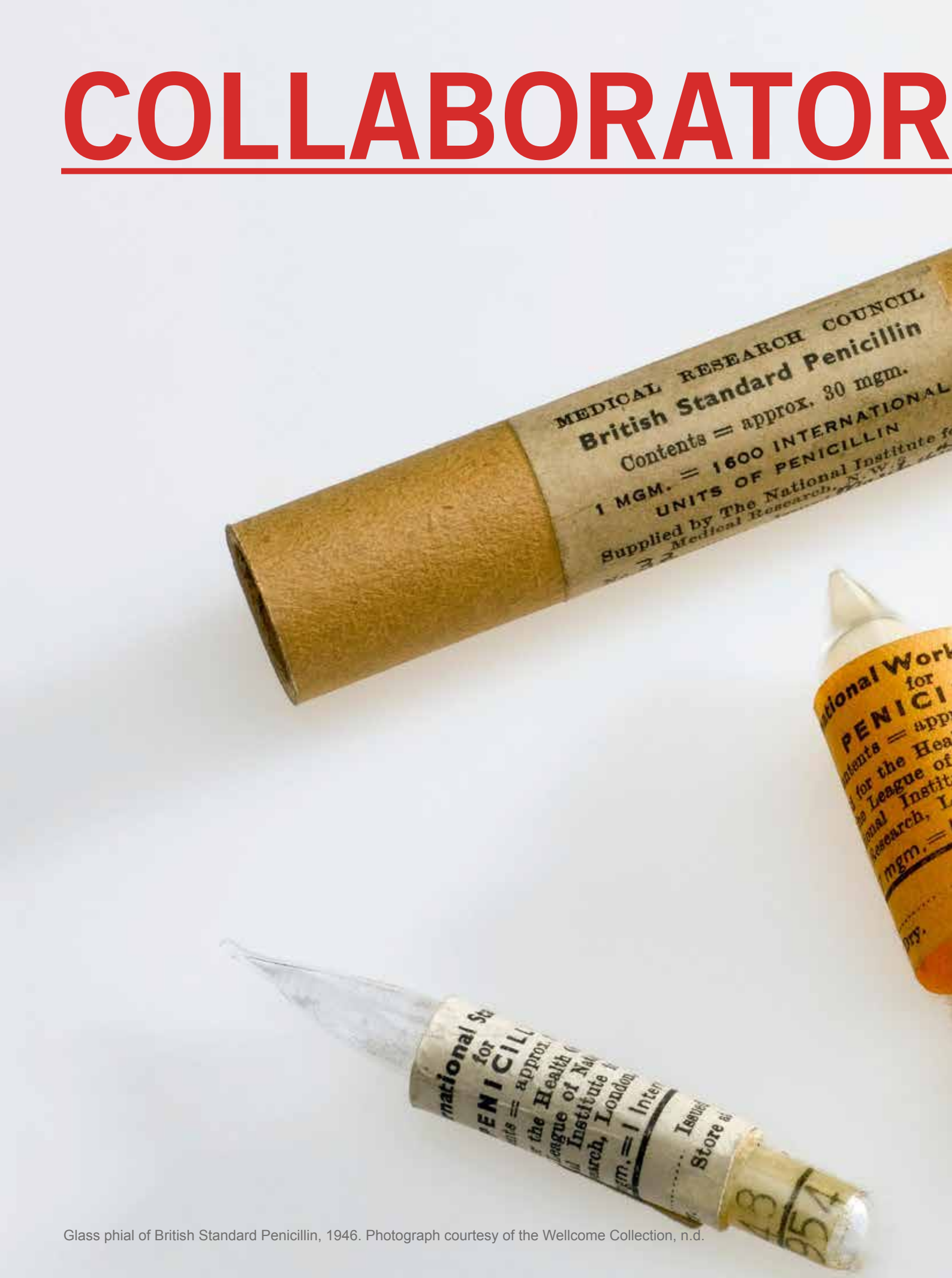
- Opening remarks by **Rohini Nilekani**, Chairperson, Rohini Nilekani Philanthropies
- Lecture by **Jeremy Farrar**, Director of Wellcome Trust
- Vote of thanks by **Jahnavi Phalkey,** Executive Director Science Gallery Bengaluru

CLOSING EVENT: CONTAGION **PHASE TWO**

CONTAGION's second phase came to a close with

- Opening remarks by **Satyajit Mayor**, Director, National Centre for Biological Sciences
- Lecture by Harvard Nieman Fellow **Vidya Krishnan**
- Vote of thanks by **Jahnavi Phalkey**, Executive Director of Science Gallery Bengaluru

# COLLABORATOR




Glass phial of British Standard Penicillin, 1946. Photograph courtesy of the Wellcome Collection, n.d.

# S

## CONTENT PARTNERS

John Innes Centre
Unlocking Nature's Diversity

ROBERT KOCH INSTITUT

## PROGRAMME PARTNERS

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Wellcome Library

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Tim Nguyen
Vinod K. Paul
Jeremy Farrar

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Ananya Kabir
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Damon Centola
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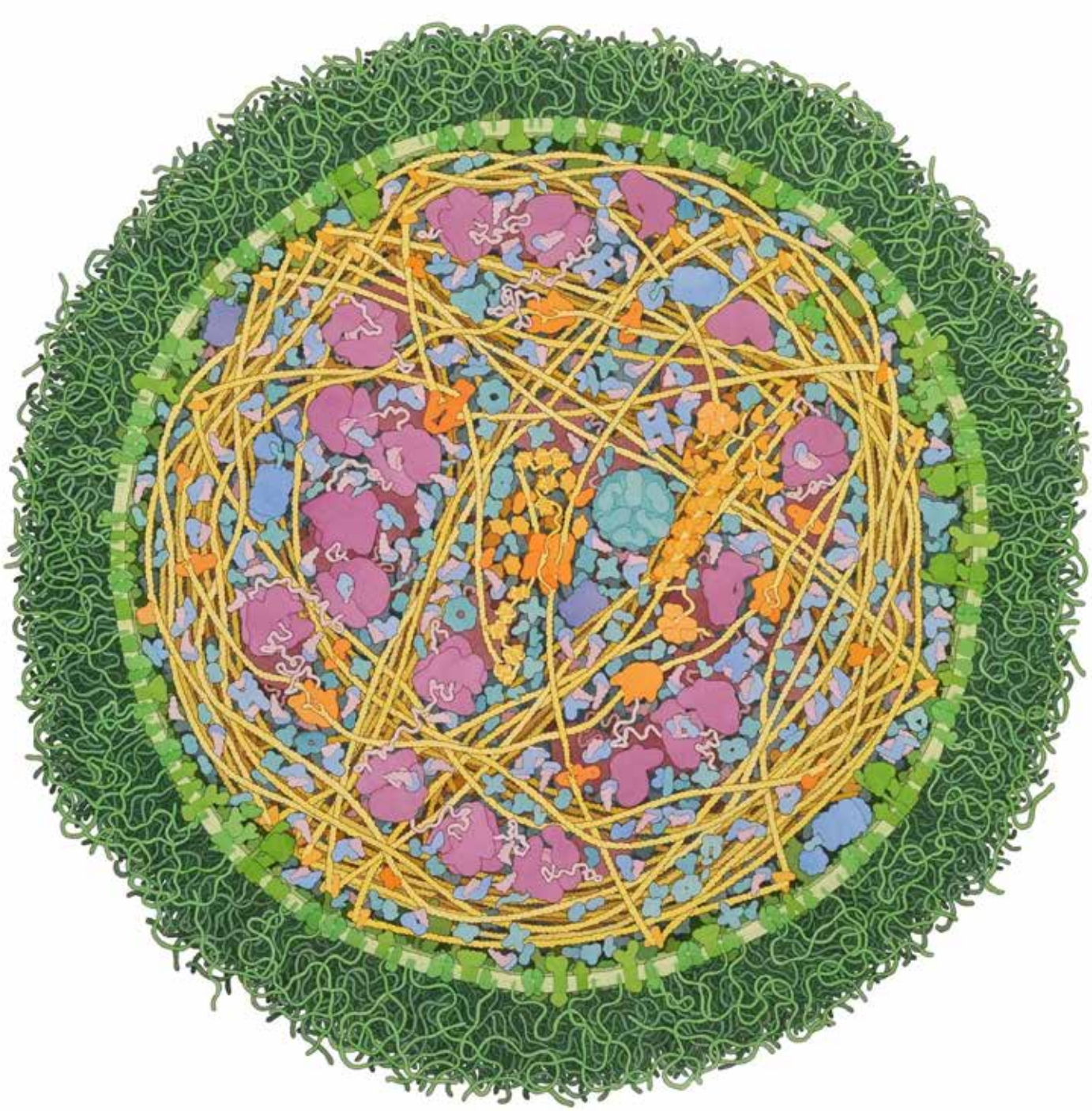
Soha Bayoumi
Sylvie Briand
Thomas Abraham
Uma Ramakrishnan
Vidya Krishnan



David Goodsell's illustration of Mycoplasma Cell, 2011. Photograph courtesy of the Protein Data Bank.

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# CONTAGION

VISIT THE EXHIBITION ARCHIVE AT
https://bengaluru.sciencegallery.com/contagion

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