



## ***Changing the World: Community, Science and Engagement with Big History***

The International Big History Association in collaboration with  
Symbiosis School for Liberal Arts, Symbiosis International University,  
Viman Nagar, Pune, Maharashtra, India.

*1<sup>st</sup> to 5<sup>th</sup> August 2021*

The theme of the IBHA's Fifth Global Conference, in collaboration with SSLA, will focus on *Changing the World: Community, Science and Engagement with Big History*. The IBHA has held conferences on meaning, teaching and research, and now addresses issues of community and change around our planet.

***!! This is a special virtual / digital online event of participants worldwide !!***

India is a powerhouse of innovative development, with cultural and intellectual traditions reaching back thousands of years. Symbiosis is an embodiment of this heritage and enterprise, a truly modern synthesis. Situated along the Mula-Mutha River, its nine campuses in the city of Pune lie on the Deccan Plateau, 600 meters above the Arabian Sea. Founded in 1971, it celebrates its Golden Jubilee this academic year, fifty years of changing lives in the world!

Symbiosis serves 30,000 students, who come from more than 85 countries, so, appropriately, its Sanskrit motto is वसुधैव कुटुम्बकम् – Vasudhaiva Kutumbakam – *The World is One Family*. The Symbiosis School for Liberal Arts (SSLA) is one of the university's most innovative programmes. Launched in 2011, SSLA was the first liberal arts school in an Indian university and remains the

only four-year degree and honours programme. This is the 50<sup>th</sup> anniversary for Symbiosis and the 10<sup>th</sup> year celebration for SSLA, so it is fitting the IBHA's 5<sup>th</sup> World Conference is held here!

SSLA is home to the India Association for Big History (IABH), which formed in 2016. Two years later, the first course in Big History in South Asia began at SSLA, growing out of its Anthropology Department. Today, the course is taught as *Humanity and Big History: Our Challenge for Survival* and is a required course for all third-year students.

Other co-sponsors of the 2021 Big History conference are the Asian Big History Association, the Eurasian Center for Mega-History & System Forecasting, and the Indian Association for Big History.



For any questions, please contact  
conference coordinator Barry Rodrigue at  
<[rodrigue@archinets.org](mailto:rodrigue@archinets.org)> or <[barry.rodrigue@ssla.edu.in](mailto:barry.rodrigue@ssla.edu.in)>  
Mobile / WhatsApp: +91 83780 43910





## ***!! Our Global Virtual Event !!***

Our conference theme is, *Changing the World*, so we will be engaging with each other to consider how our world is changing and how we can adapt. Although we are talking about change, we are also the agents of change. What future do we want to create? What future is possible?

One way that our big history community is changing is for us to meet digitally. In the digital world, geography is less important. The digital format for our conference will offer us ways to learn from each other, speak with each other, and see each other, as we exchange and develop our ideas.

The IBHA had been planning to adopt a digital strategy to facilitate our global connectivity for the last few years. Now, given that people across the globe are reaching out to each other in new and creative ways in the face of the coronavirus crisis, we decided to speed up the process of creating a more structured digital network for Big History.

We have adopted the Airmeet virtual event platform for the conference. Our IT coordinator is Shawn Kimball, a digital impresario. Shawn will organize your presentations into Airmeet and then manage the live breakout sessions with his technical team. For technical questions, you may contact him at <shawn.t.kimball@gmail.com>.

### ***Format of Panels***

The panel presentations will run 90 minutes (for three people) / 120 minutes (for four people)

The individual presentations will be for 15 minutes and need to be pre-recorded, then be sent to Shawn to upload onto the Airmeet platform.

These recordings must be delivered to Shawn by July 25<sup>th</sup>.

There will then be 15 minute live discussion between panellists followed by a 30-minute live discussion with the audience.

Between the panels, there will be breakout sessions – ‘conversations’ – with tables that can accommodate up to fifty people. One table will be devoted to the previous panel, for those who want to continue that discussion. The others are for people to meet folks from around the world and talk about whatever they want. Make new friends!

In all of this, we will be exploring how to globally live and network together in new ways. We are excited that the internet gives us the choice of how we will consider and plan to engage with community, science, and big history – and change the world.

Once you are fully registered for the conference, you will be given an access code for our Airmeet platform. This code will allow you to come and go as you choose over the conference days.

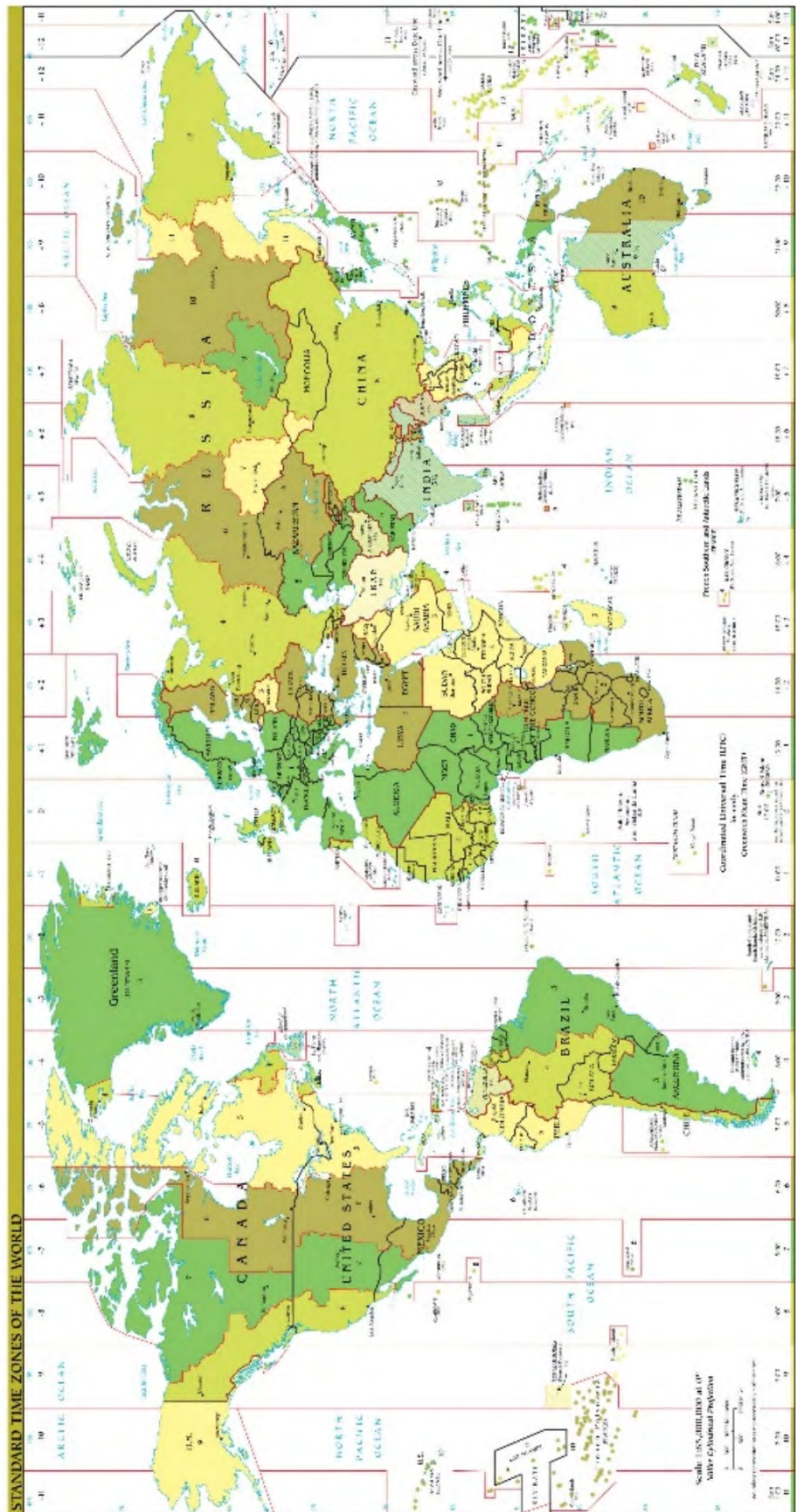
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# World Time Zones



*Dates and times in this programme are given in Indian Standard Time*



**Sunday, 1 August 2021**

9:00 to 11:00 AM

***Inaugural Session***



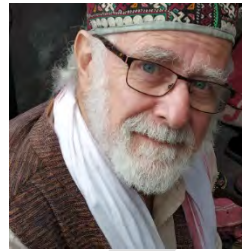
**Afshan Masjid**, SSLA, Moderator  
Coordinator, India Association for Big History

- **S.B. Mujumdar**, Chancellor, Symbiosis International [Deemed University]
- **Vidya Yeravdekar**, Pro-Chancellor, Symbiosis International [Deemed University]
- **Rajani Gupte**, Vice Chancellor, Symbiosis International [Deemed University]
- **Anita Patankar**, Director, Symbiosis School for Liberal Arts
- **Hirofumi Katayama**, Vice Dean, College of Arts & Science, J.F. Oberlin University (Japan)
- **Lucy Laffitte**, President, International Big History Association (USA)
- **Nubuo Tsujimura**, President, Asian Big History Association (Japan)

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11:00 AM to 12:00 noon

*Welcome to SSLA, India ... and the Cosmos!*

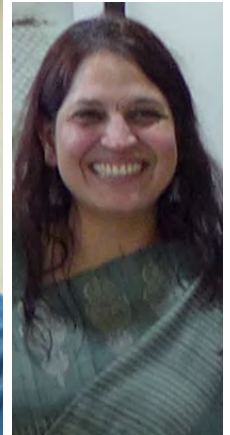
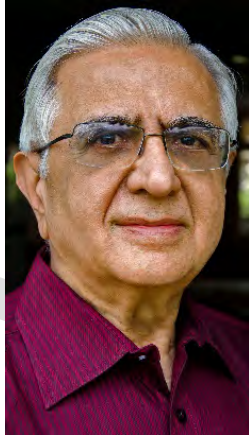


Anita Patankar, Director, SSLA, Pune, Maharashtra  
Barry H. Rodrigue, SSLA, IBHA and ABHA, Pune, Maharashtra

**\*\*Tea and conversations – 12:05 to 12:25 PM\*\***

12:30 to 2:30 PM

*Orientation to South and Central Asia*



**Vaidyanatha Gundlupet, Moderator**

*Who is a 'Good Protester?'*

*Supreme Courts Judgments on Anti-Citizenship Amendment Act Agitations and Farmers' Protests*  
Faculty, Symbiosis School for Liberal Arts, Pune, Maharashtra

**Kishan Rana**

*India: How Might Past Glory and Current Challenges Shape the Future?*  
Professor Emeritus, DiploFoundation  
Diplomat and Ambassador (ret), Indian Foreign Service, Delhi

**Lucy Kurien**

*Giving Life and Empowerment to India's Most Vulnerable People*  
Founder and Director, Maher Ashram, Pune, Maharashtra



**Radhika Seshan**

*Community and Science in India: A Large Historical Perspective*  
Historian and Faculty, SSLA, and Head, Department of History (ret.),  
Savitribai Phule Pune University, Pune, Maharashtra

**Shweta Sinha Deshpande**

*Constructing the Present from the Past: Archaeology, History, Identity in India*  
Deputy Director and Faculty, SSLA, Pune, Maharashtra  
Founding President, Indian Association of Big History

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**\*\*Tea and conversations – 2:35 to 2:55 PM\*\***

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3:00 to 4:00 PM

**Special Guest Speaker**



**Lewis Dartnell**

Faculty, Department of Life Sciences,  
University of Westminster, London, England (UK)

***Origins: How the Earth Shaped Human History***

When we talk about human history, we focus on great leaders, revolutions, and technological advances. But how has the Earth itself determined our destiny? How has our planet made us? As a species we are shaped by our environment. Geological forces drove our evolution in East Africa; mountainous terrain led to the development of democracy in Greece; and today voting behaviour

in the United States follows the bed of an ancient sea. The human story is the story of these forces, from plate tectonics and climate change, to atmospheric circulation and ocean currents. By taking us through millennia of human history, and billions of years into our planet's past, Professor Lewis Dartnell tells us the ultimate origin story. When we reach the point where history becomes science we see a vast web of connections that underwrites our modern world and helps us face the challenges of the future. From the cultivation of the first crops to the founding of modern states, *Origins* reveals the Earth's awesome impact on the shape of human civilizations. (Photograph by Catherine Frawley).

**\*\*Tea and conversations – 4:05 to 4:25 PM\*\***

### **Big History After Hours (Indian Time) & Around the Globe**

As the Earth rotates, our Asian homes enter deep night, while the sun rises in western landscapes. In order to allow all of us to share panels and events around the world, our friends and colleagues will continue to present panels and discussions convenient to their times. These will be recorded and be put up online, so our slumbering friends can share in the events.

Universal Panel 1

4:30 to 6:00 PM (India)

#### ***Engendering Big History & Envisioning Common Futures***

Richa Minocha, Aishi Mitra, Neha Dadke

Moderator:



Gender is integral to all dimensions of human life. Environment, religion and cultural aesthetics intersect with gender to create vulnerabilities, taboos and marginalization on one hand, and with identities, roles and knowledge on the other. Can we represent and re-present gender so that it addresses the synergies and symbiotic relationships of the cosmos as well as concerns for conservation of ecology and heritage? Also can the modalities of daily living be articulated within a gendered landscape? This panel engages these questions in the context of Big History. The purpose is to enable us to develop an understanding of the gaps that need to be bridged, so we can understand the significance of peace, along with diversity and sustainability.

**\*\*Tea and conversations – 6:05 to 6:25 PM\*\***

Universal Panel 2

6:30 to 8:00 PM (India) / 8:00 to 9:30 AM (Chicago)

***Big History and the Current Evolutionary Crisis:  
The Questions of Meaning, Purpose, and a New Worldview***

Benjamin Bishop, Ken Gilbert, Peter J. Whitehouse

Moderator: Barry Wood



Humanity is facing a period of rapid change and evolutionary crisis that demands difficult choices. In Big History, we discuss the evolutionary nature of threshold events, and it is increasingly evident that we are in the midst of one of those threshold moments. From its unique vantage point and with its profound perspectives, can Big History help humanity break free of conventional thinking and respond to the critical challenges and opportunities we face? Contributing to a transformative worldview has never been more important. How might the innovative possibilities of Big History help provide us with a framework to successfully cross the threshold into a new evolutionary era? Enhanced transdisciplinary learning in social change, the role of linguistics in a macrocosmic context, and comparing transformational approaches to evolutionary theory across different fields of study are approaches that we explore.

**\*\*Tea and conversations – 8:05 to 8:25 PM\*\***

Universal Panel 3

8:30 PM to 10:00 AM (India) / 12:00 noon to 1:30 PM (Rio) /

1:00 to 2:30 AM (Sydney) / 8:00 to 9:30 AM (Portland) / 6:00 to 7:30 PM (Moscow)

***Big History Models and Human Existence***

Maximillian Barnett, Daniel de Pinho Barreiros, and Nick Nielsen

Moderator: Andrey Korotayev



Approaching human existence through the study of war and peace, threats to levels of complexity, and the natural history of communities, all conceived over the *longue durée* and on the scales of time employed in big history, this panel will discuss perspectives on the foundations of our present situation and prospects for change in the future.

**\*\*Tea and conversations – 10:05 to 10:25 PM\*\***

10:30 PM to 12:30 AM (India) / 10:00 AM to 12:00 noon (Oakland)

***Liberating Big History:***

***Explorations in Community Engagement and Environmental Justice***

Carl C. Anthony, Sydney Merrill, Vijaya Nagarajan, Val Lopez

Moderator:



This roundtable explores the liberatory potential of Big History in addressing the fundamental challenges of race, class, gender and intergeneration divides that exist in the midst of the world's sixth great extinction and climate crises. The year 2050 has become a benchmark for warnings about the global environment and economy. By then, people of color will be the collective majority and leaders in the United States and throughout the world, but they have been historically excluded from primary systems of Western knowledge-generation. We propose a decolonized approach to Big History with cross-cultural application by changemakers. After a history of injustices suffered by disadvantaged groups, this re-evaluation offers opportunity to repair past wrongs and transition to more healthy, just and sustainable communities. Examples are shared by frontline workers from several global and multicultural activist organizations.

**\*\*Tea and conversations – 12:35 to 12:55 AM\*\***



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**Monday, 2 August 2021**

Universal Panel 5  
7:30 to 9:00 AM

*Fossils, Stories, Design and India's Deep History*  
Nigel Hughes and Sekhar Mukherjee  
Moderator:



This team engages with the big history of scholarship and the grand vision of creativity needed to make it meaningful in the world around us. Both Nigel and Sekhar work in the Himalayas to discover our lifeworld origins in fossils. Not content just to discover and engage in academic discourse, they bring their work to life for the people around them. Nigel has produced a picture book and online performance about fossil wood in his *Monisha and the Stone Forest* in Bangla and English, while Sekhar has produced a study of whale origins and other lifeforms in his montage, *Evolution and the Subcontinent*. This teamwork shows what big history should be all about!

**\*\*Tea and conversations – 9:05 to 9:25 AM\*\***

Universal Panel 6

9:30 to 11:00 AM (India) / 12:00 noon to 1:30 PM (Taiwan)

***Big History in Action:***

***Explorations in Multimodal Communication Strategies for Different Audience***

Gavin Lee 李佳達, Stephen Ko 柯泉宇, Albert Wang 汪大久

Moderator: Grace Huang 黃致潔



Multimodal Communication focuses on communicating effectively by sizing up the situation based on the target audience and context. Big History, as a powerful narrative, can also learn from Multimodal Communication. Big History provides learners a mnemonic to understand and remember details of science and history from the Big Bang to the complexity of the future. However, in pragmatic environments, such as most East Asian countries, students learn for the purpose of achieving better exam scores, while lifelong learners learn for the purpose of getting a raise or a promotion. Against this backdrop, we propose a new learning objective of ‘making the world relevant again’ and adopt effective Multimodal Communication strategies to help learners achieve these goals. This panel explores different Big History education practices in Taiwan, including applying VR/AR technology and art for high schoolers, adopting problem-solving competency training with Big History scenarios for lifelong learners, and employing the self-organizing system and emergence theory to guide organizational change for business leaders.

**\*\*Tea and conversations – 11:05 to 11:25 AM\*\***

Universal Panel 7

11:30 AM to 1:00 PM

***Big History Author’s Roundtable***

Moderator: Afshan Majid



David Christian

*Origin Story: A Big History of Everything*, Boston: Little, Brown, 2018

David LePoire and Andrey Korotayev

*The 21st Century Singularity and Global Futures: A Big History Perspective*, New York: Springer, 2020

Spencer Striker

*History Adventures, World of Characters*, Doha: History Adventures, 2020

**Lunch and conversations – 1:05 to 1:25 PM**

Universal Panel 8

1:30 to 3:00 PM (Mumbai) / 9:00 to 10:30 AM (London) / 5:00 to 6:30 PM (Tokyo)

***Forests, Classrooms, Streets: Homes for the Love of Learning***

Kenji Ichikawa, Christopher Lloyd, Jahnvi Pandya

Moderator: Anita Patankar



Education can take place in many venues and in many styles. Our panellists describe innovations they have pioneered in England, Japan and India with their expanded views of human existence. Their surroundings have included city streets, island nature preserves, and historical panoramas. Share their joy of opening young minds to the cosmos within and around them.

**\*\*Tea and conversations – 3:05 to 3:25 PM\*\***

Universal Panel 9

3:30 to 5:30 PM (Pune) / 6:00 to 8:00 AM (Boston) / 3:45 to 5:45 PM (Kathmandu)

***Transforming the World: Visions of a Pluriverse***

Priyadarshini Karve, Ashish Kothari, Vandana Singh, Hem Sagar Baral

Moderator: Priyadarshini Karve



Changing the world is not a process that can be accomplished by the snap of a finger or a strategy imposed by a national leader or a global NGO. It is a grassroot set of efforts that needs to be shared by everyone on the planet, one that begins with self-awareness and social creativity. Ideas for this plural approach to transformation is shared by our friends from India and Nepal who are engaged in these efforts.

**\*\*Tea and conversations – 5:35 to 5:55 PM\*\***

Universal Panel 10

6:00 to 8:00 PM (Bombay) / 9:30 to 11:30 PM (Kyoto) / 5:30 to 7:30 AM (San Francisco)

***What We Are and Who We Are: Yesterday, Today and Tomorrow***

John Clammer, Shubhangi Swarup, Masako Sakata, Nigel Hughes

Moderator: John Clammer



Our grandparents used candles, we use electric lights ... all in the space of a century. When deeper time is considered, the changes are more profound. If, like our presenters, we consider fossils, biomes, Nature and civilizational transformation, then complexity, creativity and diversity are seen to abound over time and space. What does this mean in how we perceive and live our lives?

**Dinner and conversations – 8:05 to 8:25 PM**



8:30 to 9:30 PM

## Special Guest Speaker



**Priyadarshini Karve**

Director, Samuchit Enviro Tech and  
Visiting PhD Faculty at the Symbiosis School for Liberal Arts

### *Big History and the Century of Sustainability Crisis*

A confluence of several chains of events over the course of human history is impacting the planetary systems on Earth today. The delicate balance of the atmospheric system that was best suited for human evolution and survival is getting irreversibly disturbed, the geography and geology of the planet are irrevocably being transformed, and the web of life is losing vital strands through mass extinction of plant and animal species. Humans seem to be the root cause of all the imbalances in the planetary mechanisms. Human existence itself is under threat in this century as a result of these transformations. Solutions and course corrections are possible, and scattered efforts are happening across the world. On the other hand, some so-called solutions are further threatening not only planet Earth but also other planetary bodies in the solar system! We can only solve a problem that we fully understand. It is therefore important to grasp the various cause-effect-feedback processes that have come together to create this extraordinary sustainability crisis. A Big History perspective is critically important to make sense of this complex reality and avoid making a bad situation worse through an incomplete understanding of the crisis.

**\*\*Tea and conversations – 9:35 to 9:55 PM\*\***

# Big History After Hours (Indian Time) & Around the Globe

## Universal Panel 11

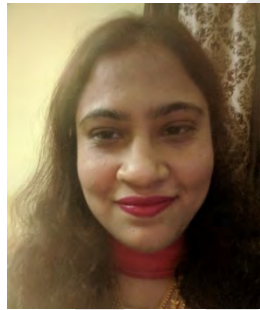
10:00 PM to 11:30 (Kolkata) / 7:30 to 9:00 PM (Moscow)

9:30 to 11:00 AM (Los Angeles)

### *Life and its New Directions*

Paul Jean Narguizian, Baijayanti Chatterjee, Anton Grinin

Moderator:



How do we identify life and our role in it? Our panellists discuss education, history and future studies. We learn how understandings of life has developed from recent scientific networking, such as the explorations and encouragement of global connectivity by botanist Joseph Banks. For recent generations, integration of mechanisms in life has led to new applications and theories of cyborgization. In the framework of Big History, this trajectory is profound. A key question is: What does it mean to be human and able to place oneself within the context of the universe, and more specifically within the context of being born and evolved from the Earth?

**\*\*Tea and conversations – 11:35 to 11:55 PM\*\***

## Universal Panel 12

12:00 midnight to 1:30 AM (India) / 9:30 to 11:00 PM (Moscow) / 8:30 to 10:00 PM (Turin)

### *Grand Scales: Understanding Earth, Life, Civilization and the Cosmos*

Leonid Grinin, Claudio Maccone, \*

Moderator: Andrey Korotayev



How does RNA, bacteria, humanity and society fit together? How does Earth life link to life on exoplanets? This presentation discusses the advances in understanding the grand scheme of the cosmos and our place in it.

**\*\*Tea and conversations – 1:35 to 1:55 AM\*\***

Universal Panel 13

5:30 to 7:00 AM (Bombay) / 8:00 PM to 9:30 PM (Orlando)

***Work + Love + Play + Community = Well-Being***

Imogene Drummond, Prashant Olalekar, Orla Hazra

Moderator:



Was Sigmund Freud correct when he said that the two sources of meaning for humans are love and work? We propose to update his idea by including play and community to form an integrated approach to well-being. Although essential to a flourishing life, the notions of love, play and community are often undervalued in the world's increasingly competitive and technological modern cultures. We view love as caring for self, family, community and the universe; play as a catalyst for joy, empowerment and healing; and community as interconnected belonging. We will explore how, when creativity activates these four elements, we can envision and co-create a more sustainable, compassionate and mutually beneficial world where all can survive and thrive.

**\*\*Tea and conversations – 7:05 to 7:25 AM\*\***



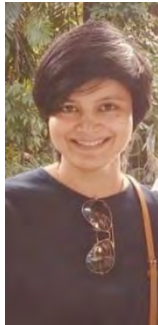
**Tuesday, 3 August 2021**

Universal Panel 14  
7:30 to 9:00 AM (India)

***Finding Hope in the World***

Jahnavi Pandya, Renu Vinod, Gayatri Mendanha

Moderator:



Hope is a rare and sometimes costly emotion in the world. Three presenters from India share their efforts to find hope, meaning and compassion. Not just talk, their actions and teaching inspire new directions in a globality being dominated by systems-thought and commodification. They show we can all affect change, successful and meaningful change that gives us heart to make a new world inside of ourselves and around our homes and the planet.

**\*\*Tea and conversations – 9:05 to 9:25 AM\*\***

Universal Panel 15  
9:30 AM to 11:00 AM (India)

***Big History of Access to Water : The Indian Context***

Himanshu Kulkarni, Sanjay Subodh, Shailaja Deshpande

Moderators: Priyadarshini Karve and Afshan Majid



Water is the basic need of all life. The diversity of India's waterscapes, landscapes and societies has led to diverse water uses throughout its history. This dynamic panel considers questions, quandaries and solutions around water access, confronted by today's rapidly transforming world.

**\*\*Tea and conversations – 11:05 to 11:25 AM\*\***

Universal Panel 16

11:30 AM to 1:00 PM (India) / 7:00 to 8:30 AM (England) / 2:00 to 3:30 PM (Malaysia)

***Managing Crisis in the World***

Richa Minocha, Shobha Rao, H. Sudarshan, Shamshuddin Jusop

Moderator:



Crisis is a by-product of globality and our increased interactions around the planet. Tensions that we do not even recognize impact our day-to-day lives. How do we manage this tension?

**Lunch and conversations – 1:05 to 1:25 PM**

Universal Panel 17

1:30 to 3:00 PM (Assam) / 4:00 to 5:30 PM (Manila)

***Indigenous and Tribal Society***

Yangkahao Vashum, Angela Ingty, Theyiesnuo Kreditsu, Tongam Rina

Moderator: Walter Fernandes



Indigenous and tribal societies exist all around our planet. They have cared for their lands and their families since the beginnings of humanity. Often ignored by high-tech visionaries of industrial and urban society, they hold the knowledge to revitalize a global society facing collapse. These

scholars and activists from North East India share their experiences with many backgrounds of their tribal communities.

**\*\*Tea and conversations – 3:05 to 3:25 PM\*\***

Universal Panel 18

3:30 to 5:00 PM (India) / 12:00 PM to 1:30 PM (Amsterdam and Milan)

***The Little Big Histories Approach***

Esther Quaedackers, Kartik Anilkumar and Diviya Makhija, Chiara Codetta Raiteri

Moderator: Esther Quaedackers



Little Big History is a 21<sup>st</sup> century approach that was pioneered by the Esther Quaedackers at the University of Amsterdam. It has been used to understand everyday items from Coca Cola and Cheetos to complex social problems. Esther shares her new uses for Little Big History as vital components in research and pedagogy, while Kartik and Diviya discuss their Little Big History about the human body and identity, and Chiara demonstrates a local big history from Italy.

**\*\*Tea and conversations – 5:05 to 5:25 PM\*\***

Universal Panel 19

5:30 to 7:30 PM (India)

***ReVisioning our World***

David Christian, Nagarjuna Gadiraju, Andrey Korotayev, Anil Menon

Moderator: David Christian



Before we move much more forward into the catastrophes unfolding in our new century, we should sketch out some ideas for the routes to explore in our travels into the future. Our panellists

consider these directions from their vantage points of big history, social planning, macro-anthropology and speculative thought and creativity.

**Dinner and conversations – 7:35 to 7:55 PM**

8:00 to 9:00 PM

### **Special Guest Speaker**



**Hirofumi Katayama**

Faculty, Oberlin Big History Movement  
J.F. Oberlin University, Tokyo (Japan)

#### ***An Asian Approach for Big History***

Western forms of Big History tend to focus on issues of complexity and collective learning. This formulation sees the history of the universe, life and humans as one of increasing complexity, in which modern society is the highest state of evolution. This paradigm presents serious difficulties for critiquing global problems, mainly because of its anthropocentric approach. In contrast, Chinese philosopher Wang Dongyue provides a new way of understanding existence by applying Laozi's Taoist philosophy to the evolution of the universe. Wang regards the evolutionary process as a lessening in the *potency of being*, an intrinsic measure of stability. As potency decreases, a system becomes more unstable and its lost essence is supplemented by growth in complexity and new attributes. From this viewpoint, expansion of complexity and knowledge represent a loss, which now leads humanity to its present crises. Wang's perspective suggests not only a way to overcome the difficulties of Western Big History but also an alternative Asian approach for constructing a more harmonious and multi-civilizational vision.

**\*\*Tea and conversations – 9:05 to 9:25 PM\*\***

# Big History After Hours (Indian Time) & Around the Globe

Universal Panel 20

9:30 to 11:30 PM (Calcutta) / 12:00 noon to 2:00 AM (Boston) / 9:00 to 11:00 AM (San Diego)

## *Four Scientists Walk into a Bar and Search for Intelligence in Unconventional Places*

Lucy Laffitte, Seth Shostak, Sisir Roy, Steve Kerlin, Tradd Cotter

Moderator: Lucy Laffitte



What happens when a big historian, a SETI scientist, a theoretical physicist, an aquatic ecologist, and a mycologist sit down with a beer to talk about the nature of intelligence? Find out in this transdisciplinary conversation.

**\*\*Tea and conversations – 11:35 to 11:55 PM\*\***

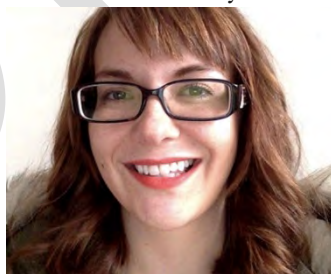
Universal Panel 21

Midnight to 1:30 AM (India) / 8:30 to 10:00 PM (Rotterdam) / 1:30 to 3:00 PM (Montgomery)

## *Starting Points for Integrating Big History into Education*

Jos Werkhoven, Helen Kaibara, Anne-Marie Poorthuis

Moderator: Lucy Laffitte



Big Historical thinking and teaching does not automatically align with an existing educational approach. This panel will address issues, challenges, and strategies for introducing Big History into a curriculum. Starting points provide scope for research and to prepare a new learning environment where students have tools and resources to begin navigating a study in Big History.

**\*\*Tea and conversations – 1:35 to 1:55 AM\*\***



Universal Panel 22

2:00 to 3:30 AM (India) / 3:30 to 5:00 PM (Omaha)

*From the Depths of Bigotry to the Heights of Science & Creativity*

Roy Pereira, Edward Gordon Simmons, Robert Dalling

Moderator:



Big History promotes intellectual and spiritual journeys that raise people above the hum-drum of daily activities and out of narrow vision that leads to bigotry and racism. These presentations begin with a pilgrimage into neuroscience and song and lead to views from the mountain top found in Big History as a philosophy of our existence. The presentations end by pointing to how a course on Big History offers stepping stones to the soaring discovery of human genetic kinship that leads away from violence founded on racial bigotry. Come explore the heights and vistas of Big History from three novel and lofty vantage points.

**\*\*Tea and conversations – 3:35 to 3:55 AM\*\***

Universal Panel 23

4:00 AM to 5:30 AM (India) / 6:30 to 7:30 PM (Philadelphia)

*Meaning, Action and Narrative: Many Paths, One Goal*

Ken Baskin, David Blanks, David LePoire

Moderator: David Blanks



How do we talk about what is meaningful in a scientific way? And in a way that makes space for other cultures and other viewpoints – even ones that may not share all of the modern, scientific assumptions about how the universe operates, what is real, what is not, what matters, and what doesn't? This panel explores the limits of scientific objectivity in pursuing our shared goals of global enlightenment and environmental activism, as, for example, in the way we continue to craft our origin story. How do we work from within different traditions in pursuit of these aims without abandoning our scientific foundations?

**\*\*Tea and conversations – 5:35 to 5:55 AM\*\***

Universal panel 24

6:00 to 7:30 AM (India) / 10:30 AM to 12:00 noon (Sydney)

8:30 to 10:00 PM (Raleigh) / 8:30 to 10:00 AM (Hong Kong)

***Our Anthropocene Legacy***

Emlyn Koster, David Christian, Alexis Lau

Moderator: Wai Hin Aidan Wong



The intersection of science and humanities intersects the field of Big History. The International Big History Association formed in 2010 and is arguably the most transdisciplinary of fields, with its pursuit of an integrated history of the cosmos, Earth, life, and humanity. However, today's hyper-specialization in academia hinders our understanding of Big History and the Anthropocene in their complementary ability to raise awareness of the Earth's natural origin and human-caused crises. With the Anthropocene regarded as the eighth and latest threshold in the Him cosmos, how might these fields become better known to illuminate this critical juncture in Earth history?

**\*\*Tea and conversations – 7:35 to 7:55 AM\*\***



## Wednesday, 4 August 2021

Universal Panel 25

8:00 AM to 9:30 AM (India) / 10:30 to 12:00 midnight (Boston)

### *Speculative Futures: Facts and Fictions*

Vandana Singh, Anil Menon, Shubhangi Swarup

Moderator:



Imagination is a way for us to contemplate not just our past but also our future. Three of our brilliant authors share thoughts and readings from their works.

**\*\*Tea and conversations / 9:35 to 9:55 AM\*\***

Universal Panel 26

10:00 to 11:00 AM (India)

### *Hidden Paths Forward – New Ways of Seeing*

Joel Regala, Bob Sylvester

Moderator:



Embedded in the world around us are ways of knowing and ways of doing that can help us understand problems we face today. Two field workers discuss traditional ecological knowledge and predictive geo-modelling from opposite sides of the Pacific Ocean, from the archipelagos of the Philippines and Alaska.

**\*\*Tea and conversations – 11:05 to 11:25 AM\*\***

Universal Panel 27

11:30 AM to 1:30 PM (Bangalore) / 3:00 to 5:00 PM (Tokyo) / 2:00 to 4:00 PM (Manila)

***Big History & Global Actions***

Nobuo Tsujimura, Juhi Pandey, Siddhartha,  
Rubeth Ronquillo-Hipolito and Edcel John S. Canlas  
Nobuo Tsujimura, Moderator



The actions needed to transform ourselves are myriad and diverse. Our presenters share their backgrounds and motivations to share empowerment.

**Lunch and Conversations – 1:35 to 1:55 PM**

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2:00 to 5:00 PM

***Creativity and Social Engagement***

Sulakshana Sen, NADDM, Artist of Ceremony  
Suchetana Banerjee, SSLA, Stage Manager

**Kachchh Ensemble**

*Kesariya Balama* (Welcoming to our Land)



Bhuj, Kachchh, Gujarat

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**Pallav Pandya, Mumbai**  
*Changing the World: One Note at a Time*



**Varenyam, Pallav and Jahnavi Pandya**  
*Jilo Jeevan Ji Bharke / Live Life at the Fullest*

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**Gary Lawless**  
*Global Salon: Poetry of the Multiverse*



Beth and Gary Lawless along the Bosphorus

Gary Lawless, Damariscotta Lake, Maine  
Garret Potter, Ann Arbor, Michigan

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**Yoshihiro Takishita**

*Kinship: Humanity and Nature in Shiguchi-do*



Architect / Director, Association for Preservation of Ancient Japanese Farmhouses  
Kamakura, Kanagawa (Japan)

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**Mark Hartman**

*Images and Reflections / New York to New Delhi*



Artist / Photographer, Brooklyn, New York, USA

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**Justin Scarimbolo**  
*Music and Meanings / Soundscapes of Pune*



Ethnomusicologist, SSLA, Pune, Maharashtra, India

**Dinner and conversations – 5:05 to 6:00 PM**

IBHA Members Meeting  
6:00 to 7:30 PM





*Conference end ... and new beginnings ...*

DRAFT





## Individual Abstracts

**Kartik Anilkumar and Diviya Makhija**

*A Little Big History of the Body:*

*Tracing its Separation from Nature*

What is ‘body’? The idea that my ‘self’ stops at the boundaries of my skin leads to a notion of the individual being separate from the environment. This reduction of bodies to their biological bases has led, among other things, to a controlling of sexuality in law and the fetishization of queer identities. While Gender Studies allows a reclaiming of identity, Big History expands space and time by allowing for an origin story. This paper addresses the question – when did our bodies start to be seen, structured and studied as being separate from nature and the cosmos that produced them? The subject of ‘body’ today constitutes a state of map-lessness across disciplines, owing to the hierarchical position assumed by medicine and the life sciences. Although a new field of study, Big History is a vehicle of older ideas, such as the observation by 16<sup>th</sup> century historian Jean Bodin that ‘those who study the maps of regions before they have learned accurately the relation of the whole universe and the separate parts of it to each other and to the whole are going wrong.’ Big History signifies a return to this unified understanding of reality and gives us an opportunity to adapt society to that reality.

**Maximillian Barnett**

*Breaking the Cycle:*

*Alternative Models for Mapping Change in Human Complexity*

This paper uses the tools of Big History to present an alternative model for measuring and classifying changes in human complexity. It engages with *longue durée* theories about the rise and fall of societies and suggests a more nuanced model for understanding changes in complexity. In order to map society’s success for preventing a decline in complexity, this paper proposes a model

that uses six categories to define changes in complexity. This is an adaptation of future-studies scholar James Dator's "Four Futures" model. The first two futures, growth and decline, align well with *longue durée* models, which forecast 200 to 300 year cycles of major rise and fall in complexity. There are cases where societies have acted to disrupt such cycles to preserve complexity for extended periods, and the next two categories, discipline and transformation, are employed to understand these exceptions. The last two classifications, collapse and extinction, cover situations where a society declines so significantly that it cannot recover for centuries, if at all. This model provides a means to analyse how and why a society was successful or not in responding to threats to its complexity. It also provides a mechanism for connecting the lessons of the past to our approach to future challenges. Although this modelling is applied to human systems, the paper will discuss potential applicability to all complex systems.

**Daniel de Pinho Barreiros**

*Red Blood, White Flag:*

*Archetypes, Evolution and a Big History of Warfare and Peace*

Conventional historiography has harboured some important debates over hawkish and dovish approaches to war and peace, but rarely escaped from paying a heavy tribute to the moral and political philosophy of the seventeenth and eighteenth centuries. Naturally, this is not a problem per se, but when war and peace studies are faced with the play of scales endorsed by Big History, most of these studies' conclusions appear as short-sighted. Big History transdisciplinarity empowers historians to question how phenomena in different timeframes interact to produce the reality we live in. Resorting to primatology and human evolution studies, on one side, and to complex psychology on the other, this work investigates the deep ethological / unconscious foundations of intersocietal coalitional violence, as well of prosociality and its interactions with culture and institutions. War and peace, in a deeper level, are products of behavioural phenomena created by the interaction between cognitive algorithms fixed by natural selection in some branches of the Primate order, in a Big History Threshold 5 context, while human cultural and narrative structures emerged after Threshold 6.

**Ken Baskin**

*Thoughts on Healing the Damage Created by our Cosmological Crisis*

Humanity stands on the liminal ledge separating a way of thinking of the world that no longer allows us to address our most serious challenges – the Newtonian worldview – and an emerging worldview that is only now becoming clear. While elements of this new worldview is developing in fields ranging from neurobiology to complexity science, judging from human history, the only

way for it to replace its Newtonian predecessor is for it to become the cosmology of the 21<sup>st</sup> century, enhancing what biologist E.O. Wilson called the ‘evolutionary epic’ of the Universe’s story, starting with the Big Bang. This presentation examines David Christian’s challenge to complete this story, beginning with a definition of cosmology as the epistemology with which any society enculturates its people to meet its deepest challenges. It then examines the evolutionary epic in terms of its history and the unintended consequences that make it so difficult for us to address those problems today. Finally, this presentation will explore how reinvigorating the current narrative with the emerging worldview has the potential to enable humanity to step off its ledge and out into a new way of responding to challenges that often seem insoluble.

### **Benjamin Bishop**

#### *The Evolution of Language in Macrocoscopic Terms*

The evolution of language echoes that of biological entities at a number of levels, including the eventuality of change and the influence of external factors, from biome dynamics and society to weather and climate. This study proposes that the central tenets of Big History’s neo-Darwinistic approach to development of the universe show repeated elements, such as the inverse relationship between relative size and energy use. These tenets extend beyond the biological realm, as outlined in astrophysicist Eric Chaisson’s work in *Cosmic Evolution*. A linguistic example of this may be seen in the phonemic diversity of language as it spreads. This complexity may further be seen via understanding energy as an element of tonality, wherein greater entropy and energy use is apparent in languages with a smaller phonemic index. Further, fractal structures appear in the morpheme-like organization of languages at various levels. Taking these concepts into consideration, we see that a neo-Darwinian conceptualization of language is the result of grand processes that extends beyond the biological world to the wider universe.

### **David Blanks**

#### *The History of Disenchantment:*

#### *Nietzsche, Jung and the Return of Apollo and Dionysus*

When Nietzsche wrote in *The Gay Science* (1882) that ‘God is dead’, he was thinking about what sociologists Max Weber later called ‘the disenchantment of the world’, that is, the loss of meaning that came with the scientific overthrow of religious belief in the late nineteenth and early twentieth centuries. But as we in big history know, that search for meaning is alive and well, even among those scientists and historians who consider themselves thorough-going materialists. And indeed it is celebrated by many other big historians whether they are pantheists or monotheists. The point is that big history appeals to a wide variety of people with varying and often incompatible religious

positions. By looking at the history of disenchantment through philosophy and psychoanalysis, this panel shows that the tensions we are finding within big history can be reconciled if we can learn to celebrate difference and accept that these seemingly opposing worldviews are needed if we are to reach the existential and environmental goals that we share.

### **Baijayanti Chatterjee**

*Science and the Shared Global Community:*

*Sir Joseph Banks and the Botanical Exploration of the World*

This paper presents a case study in the formation of humanity's collective knowledge. Naturalist Joseph Banks created a consolidated body of botanical knowledge based on his scientific and worldwide explorations. His voyages led to the discovery of many new plants and documentation of their uses, which he collected in Newfoundland and Labrador (1766), around the world with Captain James Cook (1768–1771), and in Iceland (1772). He helped to internationalise science and shared his information generously. Banks became president of the Royal Society, and his work inspired the botanical gardens in Calcutta, modelled on Kew Gardens in London. He stood at the helm of a knowledge network that connected major parts of the globe and initiated transfers of knowledge about the flora and fauna. He entered into collaboration with Alexander von Humboldt, which was a founding event of Big History. This paper focuses on Banks' role in the distribution commercial species, particularly in the context of India. In this way, Banks was a pioneer of scientific globalization and sharing of collective knowledge.

### **Carl Johan Calleman**

*Is Big History Based on One or Many Sciences?*

Big History is a name for the evolution of the universe from the Big Bang to the present time and includes knowledge from many different disciplines. In accordance with the dominating viewpoint of modern science, an underlying assumption is then that this evolution includes events that seemingly are random, such as the eight thresholds that traditionally have been studied by different scientific disciplines. These distinct evolutionary processes are not presented as parts of a coherent time plan, despite the fact that the background to several of these crucial events apparently need to have been coordinated to have led to our current world. An alternative way is to look at the evolution of the universe as a result of cosmic quantum shifts, which can be seen taking place in accordance with the calendar system of the ancient Maya. This postulation, which goes by the title of *Macrocosmic Quantum Theory*, is supported by prodigious empirical evidence and is essentially a description of the evolution of consciousness. In this framework, nine self-similar cosmic quantum waves with separate frequencies bring different states of consciousness to life. This formulation is

enough to describe all aspects of the evolution of life, ranging from before the Big Bang to the ongoing digital revolution. This theory, among others, explains the increasing complexification and speed-up of time during the course of evolution of the universe. It also dispenses with the idea of randomness as an integral part of evolution and, most importantly, it transforms Big History from being based on many different sciences to be just one unified conceptualization.

**David Christian**

*Learning to Manage a Planet*

We live at a turning point in the 4.5 billion year history of Planet Earth. And it is human beings who are, collectively, changing everything. Suddenly, in my lifetime, we have acquired so much control over the biosphere that what we do in the next fifty years will shape the future for our descendants and millions of other species for millions of years. We have to learn very fast how to manage a planet, and manage it well! To do that, young people will need the wide-angle lens of Big History, because only on the scales of Big History can we see clearly what is happening on Planet Earth right now.

**David Christian**

*Seeing the Anthropocene*

The idea of the Anthropocene has not gained as much traction as it should, in part because of the blinkers imposed on most scholars in most disciplines in most countries by hyper-specialization. One of the many virtues of Big History is that it widens the lens to include many disciplines, so that a concept like ‘the Anthropocene’ fits naturally within Big History narratives. With the Anthropocene occupying just a geological nanosecond but regarded as the eighth and latest threshold in the development of the Cosmos, how might the Anthropocene and Big History become jointly better known to spread awareness of the Earth’s natural origin and human-caused crises?

**Neha Dadke**

*Living Spaces, Gender and Aesthetics in Big History: Politics of Place*

Continuity and change are intrinsic to Big History, especially as they impact humanity’s ever-growing collective knowledge. Our species has moved from a life in trees to structures with roofs and hearths, then to dwellings that incorporate complex aesthetics. Living spaces embody the social organisation of classes, gender, and cultures. The exclusion of women from segments of society, for instance, is often seen in their physical restriction to homes. The living space is imbued with symbolic language and art that supports this curtailment of action. Optimal child-rearing and

food provision take place in the home. The contrast between the emotional-social life of family and the externally-built environment may be understood through the symbolic ornamentation of homes. Moreover, it shows how the inhabitants of these domestic spaces lose agency in terms of gender and organised living. As civilisations expand and merge, it becomes harder to isolate such pronouncements about living space and gender expression. This presentation questions the relationships between human and gendered spaces, focusing on how gender and living spaces have co-evolved to present a modern, nuanced judgement of design. In other words, given trends of more complex understandings, how will this affect our future living spaces and social realities?

### **Shailaja Deshpande**

#### *Conserving Urban Rivers*

The need to restore our urban rivers is of ultimate importance. Challenges for conserving these waterways are complex and multi-directional. Urban populations are, sadly, almost totally ignorant about their rivers – on the surface, where they flow, let alone at subsurface levels, where much life exists. Our safety (in terms of floods), our security (in terms of available water) and our health (in terms of water quality) all depend on the rivers along which the human settlements originated and exist. This basic, core need for water and its natural system is typically not well understood or appreciated. Restoring these rivers with people's participation is therefore a big challenge. I will share the work of our river-preservation NGO, Jeevitnadi, and its volunteers, who connect urban residents and citizens with this knowledge. Jeevitnadi's success is living proof that change is possible, locally and globally.

### **Robert Dalling**

#### *How a Big History Course Reduces Racism and Bigotry*

A Big History course discusses the major stepping stones that brought us from the Big Bang to today's human society and civilization, a modernity filled with business, government, and religion. Biological stepping stones brought us from single-cell life to fish, amphibians, reptiles, mammals, primates, and human beings. Our biological heritage includes both our anatomy and our behaviour. Each of us today is born with the same set of emotions that began as our biological ancestors became parenting mammals and social primates, and this means that every person that you pass has the same feelings, emotions, and impelling cares as do you. Two human beings who are strangers share 99.9 % of their genes and so are only 0.1 % genetically different. Two siblings differ by half of that = 0.1 %. We human beings are a bunch of genetic clones – with a wide range of personalities. We share identical limbs, livers and emotions, and differ only in cultural details. Culture consists of our recipes for how to do everything in life, and it involves tens of thousands

of details that fit in the brain of each person – so we are each very smart. As we grow, we learn the local culture with fierce conviction, strive to do exactly as our group members, and we might ridicule anyone doing something differently – especially strangers. Public acts of hatred between strangers has been on the rise. Big History courses include sufficient descriptions of the identical nature and varying culture of human beings for students to understand themselves and each other. Therefore, just the teaching of Big History reduces bigotry and racism!

### **Shweta Sinha Deshpande**

*Constructing the Present from the Past:  
Archaeology, History and Identity in India*

National identity uses the language of archaeology, history, and culture. The process is one of choice, which, by necessity, ignores many narrative details. The ‘Idea of India’ emphasizes a returning of the past to the people, but India’s identity has been contested since the early decades of the Freedom Struggle, a process that continues today. India and its people are connected and disconnected with each other and their geography through at least three broad strands of history. The first is the folklore history of the *Puranas* and *Epics (Itihaas)*, a narrative first developed during British rule. The second is that of an immigrant and conquering tribe – the Aryan identity, which pushed the original inhabitants, the *Dravida*, to the southern part of the Subcontinent. This led to a dual identity that grips political and cultural memories even now. The third, which is essentially archaeological, outlines a native evolution in the rise of cultures and communities from the Palaeolithic onwards. To this we can add genetic studies, which have yet to be fully assimilated by nationalists. Cultural scholars are often expected to explain: ‘Who are we?’ or ‘Where do we come from?’ as a people. But the past does not provide simple answers. I would rather change it to: ‘How did we become who we are?’ It is a form of inquiry that also resonates in Big History.

### **Imogene Drummond**

*Art Sparks: Igniting Creativity in a Big History Context*

Art Sparks is a unique expressive arts programme that ignites individual inspiration in a Big History context. Designed for ages 8–12, it provides a bridge between creativity and personal growth. Through a focus on self-worth, ingenuity and the cosmos, the interdisciplinary curriculum results in increased student engagement, esteem, and empowerment. Art Sparks provides an awareness that an evolving dynamic happens all over the cosmos and is happening in each of us. It has demonstrated significant benefits in private and public classrooms in the United States and Italy since 2012. In this presentation, participants learn Art Sparks’ techniques, methodology and the key to its success, as demonstrated by a 10-year-old boy at San Miguel Academy in Newburgh,

New York (USA). Through intentional acts of self-expression, he transformed so dramatically from an anxious loner to a warm, relaxed student – with significantly improved learning and social skills – that his teacher now calls him ‘the poster child for Art Sparks’ therapeutic results.’

### **Nagarjuna Gadiraju**

*Predominance of Halting Actions:*

*A Peculiar Human Condition that Gives Access to Big History*

What are the ontological and epistemic conditions of being Human that we could engage and speculate about big history? How could a part have cognitive access to the structure and dynamics of the whole? We engage with the above broad questions by conducting a grounded speculation about our roots in biological, cognitive and social layers of Being. In this narrative, we present an account of how *halting habits*, called *memets*, provide access to time (memory). The peculiarities of some of our habits, called memets, develop autonomy through syntactical disengagement, leading to a capacity to create and recreate traces (symbolizing), facilitating participation in a rule-based encoding and decoding (e.g., language). Through these cultural traces of memets we reconstruct a history of our own, called *memetat*. This halting-action space provides access by involution of an otherwise evolving world.

### **Ken Gilbert**

*Big History and the Current Evolutionary Crisis:*

*Towards a Unifying Theory and a New Worldview*

Big History has the opportunity to develop a transdisciplinary and comprehensive evolutionary theory, one based on how characteristic types of consciousness emerge and empower creative and transformative change. This takes place at each threshold of increasing complexity, from the Big Bang to the present day. An integrated perspective that includes the evolution of consciousness illuminates this new origins story from within. It enhances our understanding of the intimate connection between the inner and outer aspects of the unfolding universe in the evolutionary process and broadens the scope of Big History. We discover how such an innovative approach is synchronistic with and complementary to the revolutionary changes currently taking place in many scientific fields, leading to the emergence of a holistic, integrative, and transformative worldview.

### **Ken Gilbert**

*Big History and India's Vedic Tradition*

In honor of our conference being in India this year, we explore how the wisdom of India's original Vedic tradition offers Big History a spiritual context and a meaningful pattern for reflecting on



the emerging discoveries and insights of modern science and philosophy, which are related to consciousness and the evolutionary process. Certain significant concepts and symbols from India's revered *Sanatana Dharma* help us to bind together the natural, the experiential, and the spiritual dimensions of existence into a unified theory. During this time, now riven by conflicts and crises, we may find hopefulness in a new universal origins story and encouraged by the profound unity from which our world was once envisioned to have arisen.

### **Anton Grinin**

#### *Crossing the Threshold of Cyborgization*

Cyborgization is a widely discussed topic today. It is an intriguing process, which is still the subject of futuristic novels and at the same time is a reality. This paper discusses the development of cyborgization in the framework of the Big History, its background and future directions, as well as the problems and risks of this process.

### **Leonid Grinin**

#### *Evolution of the Early Solar System in Terms of Big History and Universal Evolution*

The history and evolution of our early Solar System has long been a matter of great interest to humanity. In the past few decades, astronomers have considerably advanced our knowledge about its structure, history, and evolution. But one can hardly speak about a proper narrative; we more often are working with hypotheses. This paper outlines the history of the Solar System in the first hundred million years of its existence, when most of the major transformations took place. Then it shows how we can derive evolutionary laws and rules from this history. There are few consistent and brief surveys about the history of the Solar System that include the latest achievements in astrophysics and cosmology, so this descriptive history is itself novel. In addition, the evolutionary rules we derive from this history of the Solar System allow us to observe common features that are characteristic for each stage of Big History. This gives us the ability to conceive of the integrity of Big History and appreciate its ability to detect general laws, patterns, and mechanisms.

### **Vaidyantha Gundlupet**

#### *Who is a 'Good Protester?'*

#### *Supreme Courts Judgments on Anti-Citizenship Amendment Act Agitations and Farmers' Protests*

Dissent is an integral part of political life. Liberal democracies protect the right by enshrining the freedom of speech and expression in their constitutions. In practice, the protection of these rights is substantially conditioned by the existing political discourse and what judges think of individuals seeking legal recourse to protect their rights. In contemporary India, similar agitations have been

dealt with differently by the courts – variations that have been affected by what the judges think of the protester. This paper enquires into the image of a ‘good protester,’ as seen in judgments relating to the agitations against the Citizenship Amendment Act (2019) and the Farm Bills (2020). The Supreme Court’s handling of cases was different. On the one hand, it refused to stay the CAA and has not even begun hearings relating to its constitutional validity. On the other, the court ‘stayed the implementation’ of the three laws farmers opposed on grounds questioned by legal experts. What is noteworthy is the image of the ‘protester’ in these judgments. This issue of image is important because it has significant impact on public debate and influences lower courts’ approach to similar cases.

### **Lowell Gustafson**

#### *Coming of Age: Big History and Development*

Historian David Christian has explained how Big History can serve as an origin story, answering the question of how we got here. Big History also can serve other important purposes, which can be considered as a coming of age story. It provides stories and explains processes providing a context for an individual’s maturation. One is associated with sexual maturity during puberty: To whom / to what am I attracted and why? Then there is the realization of our mortality, death, and extinction. What does it mean that I not only have an origin, but that I will have an ending? What does it mean that species, including my own, become or will be extinct? A third type is the realization of the independent existence of others and a self-conscious ability to relate to them as distinctly different than me. What does it mean that I am not the centre of the universe, or at least that everyone and everything else is also a centre? Big History has shown how Earth, life and humanity has led to me, but it has also led to every single other person, species, planet, galaxy, and maybe an infinite number of universes. To answer this, perhaps Big History needs to expand its purpose from the study of an ‘integrated history of the Cosmos, Earth, Life, and Humanity’ to other possible universes, galaxies, planets, and all life forms. What does it mean that much of the cosmos is going on without reference to humanity, and that it will do so long after we are gone?

### **Ma. Rubeth Ronquillo-Hipolito and Edcel John S. Canlas**

#### *Decolonizing Science and History Education:*

#### *Reflections on Teaching, Studying and Researching Big History in the Philippine Setting*

Big History shatters the strict disciplinary boundaries of physical sciences, life sciences and social sciences in its telling of the grand narrative of our origins. It is a *histoire totale* of humankind and the cosmos, one that includes the present and projects itself into the future. In the Philippines, Big History was first taught at Holy Angel University in 2018, where it is seen as a bridge among

all subjects, including general education and professional courses. However, Big History is not excused from the tendencies of academe to focus on Western thought. We will look at Big History through a decolonial approach and analyse how this discourse can better its content, teaching and research. Our presentation will provide a short background on Big History in the Philippines, along with the issues, approaches and perspectives provided by decolonial studies. We will then reflect on how decolonization can be applied in Big History in general.

**Nigel C. Hughes**

*Listening to the Past: Using Fossils as Storytellers*

In a time of rapid global environmental change, understanding how our planet responds to the profound changes induced by human activity is vital. We can approach this issue directly through a science-based understanding of the cause and effect governing physical and chemical systems, and we can test these ideas by looking into the Earth's past history of rapid environmental change – a series of 'natural experiments' chronicled in the record of the Earth's previous experience. This chronicle is the layers of sedimentary rock and the fossils they contain that are preserved all over the Earth. Ancient episodes of rapid global change were not human-induced, but nonetheless have important information to tell us about how our planet will respond in the present crisis. But to learn from the Earth's past requires accepting that our science-based understanding is correct and that its history is real. Fortunately, over the last two centuries, we have acquired a tremendous wealth of data about the Earth's past and its critical relevance to current issues. Earth's history is dramatic, exciting, and truly wonderful. It is also profoundly relevant to making informed policy decisions. But this information should not be restricted only to those in positions of influence. Rather, our mission should be to share the profound story of the Earth's past with all its current citizens. And those best placed to receive this story are those who are in contact with the Earth itself – particularly those citizens living in rural communities in which contact with the natural world is immediate. In recent years, a group of friends and I have been involved in scientific outreach in India and Bangladesh based on the Indian subcontinent's unique and magnificent heritage of fossils. This has involved place-based stories that explain fossils and environmental change through published media, local-language outreach programs in educational centres, schools and madrasahs, and dramatic performances. We are expanding our scope, and planning to produce graphic novels and animation. This science-based history is one in which all citizens can experience wonder and pride. It is an essential part of our fleeting heritage as Earth's inhabitants.

**Kenji Ichikawa**

*Finding "Hidden Big History"*

This presentation will share concepts used for social-studies field trips by Aletheia Shonan Junior High School in Kamakura (Japan), which serve as examples of ‘Hidden Big History.’ The idea of a ‘hidden’ Big History refers to how regular school studies already use Big History concepts, without them being called by that name. I examine our field trips by the three key characteristics of Big History – 1) dealing with long time periods, 2) engaging various academic disciplines, and 3) observing facts along with imagination and feelings. Enoshima is a small island of less than half a square kilometre and a population of 350 people that is located five kilometres from our school. It has a history of 20 million years. This experience shows that there are many Big Histories all around us and that Big History is already being conducted in education, but is often well hidden inside existing curriculums. By examining educational efforts from the perspective of Big History, we can reconfirm the overall picture of the efforts and improve the accuracy of education. In the future of school education, we will emphasize the importance of not only spreading the ideas of Big History, but also learning to find ‘hidden’ Big History.

### **Shamshuddin Jusop**

#### *Changing Landscape of Southeast Asia: A Big History of Survival*

The geology of Southeast Asia was relatively stable in the Quaternary period, from 2.6 million years ago to the present. One of the noticeable changes took place in coastal areas. The highest sea level in Southeast Asia was 50 meters above the present, while the lowest was 100 meters below it. A sea level drop about 40,000 years ago caused extensive erosion, resulting in riverine terraces that can be observed in Peninsular Malaysia, Thailand and Cambodia today. This marked change was not due geological movement. About 20,000 years ago, the Earth’s polar regions were covered by ice during the last glacial maximum. As the Earth’s temperature started to slowly go up during the following interglacial, a global sea level rise took place. The highest in Southeast Asia occurred during the Holocene epoch about 4300 years ago, when it was 3–5 meters above the present height. During that time, much of the low-lying areas on the seaside plains were flooded by sea water, which changed the mineralogy of the affected sediments. The drop in sea level that followed resulted in the formation of a series of sandy beach ridges of decreasing height, forming the conspicuous landscape of the coastal plains of the countries facing the South China Sea. By using a big history perspective, we see how the fluctuating sea level not only changed the littoral landscape, but affected soil fertility, agriculture production, and human life.

### **Helen Kaibara**

#### *Strategies and Challenges in a Big History Approach to World History*

This paper highlights the challenges of incorporating a Big History approach into existing university curriculums. In my case, I adjusted a World History sequence that articulated with a general education requirement on American History / Western Civilization. Some of the challenges included breaking up the human-centric focus of the existing courses, while still utilizing the traditional expertise of the faculty. It required engaging with university officials to allow a course with such a long scope of time as Big History to be made equivalent to its partner courses. Some strategies included asking committee members to give lectures on agriculture within their geographic expertise, so as to tie Big History to a ‘civilization’ theme without extra burdens.

**Stephen Ko 柯泉宇**

*Applied Big History to Problem-Solving Competency Training*

Big History is not only a scholastic endeavour but a powerful thinking tool that provides multiple viewpoints on decisions across different timeframes and scales. For lifelong learners, they look for inspirations and insights to improve their decision-making and enhance their quality of life. Big History can provide such a framework for understanding and solving the challenges of our time. It helps us learn how to zoom into details and zoom out to a big picture. This presentation explains how we adopt Big History scenarios in problem-solving competency training for lifelong learners. We will share an example from our class discussion of a hypothetical political reform movement in 19<sup>th</sup> century China after the failure in the First Opium War (1839–1842). Participants role-play the Grand Minister of State, the Minister of War, and also the Chinese Emperor. As a result of this exercise, students are able to define the ‘right problem’ that China faced at the time, establish a goal for reform, and identify constraints to overcome and major obstacles to be removed. As a result, they tackle the historical problem from different perspectives and scales, and can then extrapolate the exercise into their own lives in the modern world.

**Andrey Korotayev**

*The 21st Century Singularity in a Big History Perspective: New Calculations*

Futurist Ray Kurzweil postulated in his book, *The Singularity Is Near* (2005), that a pattern could be foreseen in an analysis of events, starting with the emergence of our galaxy and ending with the decoding of DNA. This pattern has been described by a simple mathematical function (not known to Kurzweil), with a singularity occurring around 2029. In addition, a similar time series was composed by Russian physicist Alexander Palov. Another time series is described by a mathematical function with a singularity in about 2027. These theories can be accurately described by simple mathematical functions, whereas the singularity point can be interpreted as the indication of an inflection point, after which the pace of global evolution will begin to slow

systematically in the long term. We offer new calculations that provide a better interpretation of the mathematical functions that describe the evolution of complexity on our planet over the course of a few billions of years.

### **Emlyn Koster**

#### *Transformation in a Geologic Nanosecond*

In 1948, astronomer Fred Hoyle of Big Bang fame anticipated that the first photos of the Earth from space would transform the course of history. Two decades later, NASA's missions to the Moon raised public awareness of the Earth's beauty and potential fragility. In 2002, atmospheric chemist Paul Crutzen, a Nobel Laureate for discovering ozone depletion, voiced concern about humanity's escalating disruption of the Earth's natural state and proposed the Geologic Timescale term Anthropocene to 'guide society.' Since 2004, the Great Acceleration, a graphical summary of two dozen adverse environmental and socioeconomic trends, conveys the extent of anthropogenic impacts. In geology's search for the Anthropocene's stratigraphic base at the same worldwide moment, the emerging choice is a distinct lake deposit recording fallout from mid-20<sup>th</sup> century nuclear explosion tests. This would be an ironic coincidence with the UN's first resolution in 1946 for the peaceful use of atomic energy.

### **Ashish Kothari**

#### *Radical Ecological Democracy: Towards Justice and Sustainability*

As multiple crises engulf humanity and the planet, we are groping for ways out. How can we tackle the climate and biodiversity crises, the abysmal chasm between rich and poor, the continued deprivation of a billion people from dignified life, and geopolitical conflicts that threaten to annihilate life on earth? Quiet work across the world is showing that these issues are not unsurmountable. 'Ordinary' people are finding pathways towards sustainability, equality, justice, through means and visions that have the potential to be truly transformatory. They are not content with band-aids like 'green economy' and 'sustainable development', but are challenging concentration of power manifested in patriarchy, capitalism, statism, racism, and other concentrations of power. From the re-assertion of indigenous worldviews like *buen vivir* to the emergence of more recent alternatives like ecofeminism and degrowth, from new interpretations of leftist / Marxist revolution to Gandhian concepts like *swaraj*, and much else, we are slowly finding answers. This presentation focuses on alternative practices and visions emerging from the South Asian context, and draw links with movements elsewhere.

### **Himanshu Kulkarni**

### *India's Aquifer Typology:*

#### *Understanding Socio-Hydrogeological Diversity through a Historical Lens*

India has been as much a groundwater civilisation as it has been a river-valley civilisation. Use of wells driven by human or animal power goes back many centuries, as does access to natural springs. Traditional *rahats*, *mhots*, *chadases*, *dhoklas* and *tendlas* as well as the Indian versions of distribution systems such as the *qanats* or *karezes* are all still in use in parts of Modern India. While traditional means and mechanisms of groundwater usage continue, many have disappeared or seem to persist only as relics of our long-standing civilisation. This transition is not just about modernisation of groundwater extraction but it represents a huge socio-ecological shift around perceptions and practices of groundwater sourcing and access. The transition from community practices to the 'individualisation' of the resource has brought about a plethora of problems over the last seventy years, a period during which groundwater usage has increased more than twenty times! India is the largest user of groundwater in the world today, a seemingly remarkable fact that hides nuances of social disparity, iniquitous competition, hidden conflict, and the tension between traditional and modern life. What is even more intriguing is how this story has unfolded across India's variable geographies that host a range of societies on the surface along with one of the most diverse aquifer settings below. A transdisciplinary analysis of India's groundwater could well pave the way for its effective management and governance.

### **Lucy Kurien**

#### *Giving Life to India's Most Vulnerable People*

A tragic set of events inspired Lucy Kurien to set up Maher Ashram in 1997. Its mission is to help destitute women, children and men from all over India exercise their right to a higher quality of life, irrespective of gender, caste, or faith. Maher has established fifty homes across India, offering refuge to the most destitute, supporting education for children, including college and beyond, skill-training for men and women, and much more. They have brought thousands of abused and destitute women, children, and men the opportunity to become rehabilitated, free and happy. Maher achieved Consultative Status with United Nations in 2017. Holding to values of interfaith practice, gender equality and caste-free life is the best way for families and communities to stay united and thrive. In the climate crisis, there will be large numbers of traumatized individuals who have experienced catastrophic losses. Understanding how Maher has helped rebuild lives could provide a model for successfully rebuilding communities for India in those coming days.

### **Lucy Laffitte**

#### *The Drive towards Equilibrium*

How do we link the thresholds we see in the evolution of the Cosmos, Earth, Life, and Humanity with a single narrative theme in Big History? Astrophysicist Eric Chaisson uses increasing energy density as a unifying method, while social philosopher Wang Dongyue uses his theory of weakening compensation and environmental scientists Tyler Volk uses combogenesis and alphakits. In this presentation, I suggest *the drive towards thermodynamic equilibrium* is a narrative theme to link the thresholds in Big History.

**Gavin Lee 李佳達**

*How to Make History of Everything Relevant to Everyone?*

‘How is Big History relevant to me?’ is the most frequently asked question I’ve received since I started teaching Big History in 2018. According to scholar-activist David Perkins, the purpose of education, instead of just building a vast reservoir of information, is to bridge the gap between knowledge and the lives that learners will lead. In this light, identifying specific learning themes for different groups, so as to make Big History relevant, is highly important. For high schoolers, this translates into creating a framework of cross-disciplinary knowledge that demonstrates the science of learning, so that they can deeply process knowledge via diverse media. For business leaders in my Executive MBA class, I help them picture an organization’s complexity and facilitate discussion about structural change. This presentation demonstrates how VR/AR technology, digital art and theatre are applied to enrich experiences in science under a Big History narrative. I will showcase a mobile app used in the EMBA program that simulates the emergence of a complex social system and drives a discussion of how to build corporate self-organization, one that is adaptable to uncertainty and capable of forming new complexity.

**David LePoire**

*Big History Around Us*

While reading a book on Big History gives many details concerning Big History, there are reminders all around us of items and events in Big History. We start with an ordinary photo in a house and then, like a detective, search out the Big History clues in the photo. These everyday items have very interesting histories that are explored in the context of Big History. The topics include Universe History – hydrogen, antimatter, cosmic microwaves, galaxies, stars, elements, planets; Life History – salt, iron, land, wood, oil / coal, flowers, grasses; Human History – fire, dogs, pottery / brick, beer; Civilization History – alphabet, metals, calendar, Hindu / Arabic numerals, watches, glasses, newspaper, clothes, electricity, radio, cars, smart phone.

**Christopher Lloyd**



*The Five Wows: Developing a Lifelong Love of Learning*

What's the real point of education? Why do so many kids hate school? What are the best and worst things that can happen as young people grow up? Why do so many teenagers seem to be suffering mental health issues? These questions, and many more, go to the heart of a new educational and learning philosophy being developed by journalist, educationalist and best-selling world history author Christopher Lloyd. After his eldest daughter Matilda got chronically bored at school. Chris and his wife Virginia tried to find out what was going wrong in their daughter's classroom. According to him, the ultimate purpose of education is not about passing exams. Or even learning to read and write. There is only one goal that really matters. It is simply about nurturing a lifelong love of learning. That way every moment of every day is its own adventure. Chris notes that if you finish your education and do not have a love of learning, you have been failed. 'The good news is that you can easily tell if someone is in love with learning. That's because it reveals itself through a simple three letter word – universally expressed in every culture throughout the world – WOW!' In this talk he Chris will outline a personal philosophy of how to generate the feeling WOW for all pupils and students, using a simple five-step guide, based on a unique blend of personal experience and evolutionary biology.

**Davidson Loehr**

*Religion in Ordinary Language*

At its best, theology tries to find the deepest, most challenging and fulfilling principles, values and highest commands laid on us by the soul of healthy and compassionate life. While it usually puts these in some sort of God-talk, theologians and preachers can and should be required to take their beliefs out of jargon and put them in ordinary language. If they can't do that, no matter how captivating their feelings are, they literally don't know what they're talking about. With Big History bringing dozens of religions and other spiritual paths to the table, this demand is extended to all. While most religions have rituals and other emotionally expressive practices that aren't simply translations of things easily be put into words, they also have their distinctive stories and teachings about who, at our best, we're expected to become, and how we should live, so that when we look back we can be glad we lived that way. Those expressions can and should be translated into plain talk. With this paper, I'm opening the door on this discussion and invite others in.

**Claudio Maccone**

*Evolution, SETI, Big History, and Mathematics*

In 2021, Springer Science published Claudio's study, *Evo-SETI: Life Evolution Statistics on Earth and Exoplanets*. A mathematical description for evolution of life on Earth, from RNA to modern

human societies, this theory also can be used to model evolution of life on exoplanets, thus intersecting with the Search for Extraterrestrial Intelligence (SETI). The resulting Evo-SETI theory can be used to elaborate further hypotheses on the development of civilizations, the possibility of extra-terrestrial life, and when computers might take over the reins from us humans, generating a singularity. In this respect, it serves as an amplification on the Snooks-Panov Vertical.

### **Gayatri Mendanha**

#### *Rending the Veil*

When one holds onto a narrow sectarian identity, as a final truth that needs to be protected, believing it to be real and solid, there will be cruelty and violence. When an elaborate ego-identity is constructed, we weave the veil of *maya* (illusion) over all we see. In this collective constructing, the delusion as truth is maintained and rewarded. In turning the fierce gaze inward rather than outward, one confronts the labyrinths of one's mind. Our seemingly solid reality shifts moment to moment in its own impermanence, pointing to the construction and dismantling of the deep delusions in the way the mind sees, makes meaning, and engages with the world. In accessing the *nirgun*, the non-essence of emptiness or *shoonya*, the notion of 'self' and 'other' disappear. At the peak of emptiness, all ego-identities dissolve. The outer mirrors the inner and the inner mirrors the outer. The transformation has to occur first within the individual for there to be change outside in the socio-political world. We are primarily transcendent beings meant to transcend the limitations of self to drink from a single well, a kinship with seekers through the ages. This paper will be guided by Buddhist insights and the mystic poetry of Lal Ded and Kabir to find a way out of bigotry to love.

### **Anil Menon**

#### *Imaginative Resistance: What Stories Can and Cannot Do*

The protean nature of fiction has long been noted. One indication of its mutability is its resistance to being defined, or even, categorized. Though the imagination resists classification, and is therefore an instrument of freedom, a liberator from history, as it were, it is also true that throughout history, humans have found ways to resist the imagination. This talk looks at our dual-faced relation to stories.

### **Richa Minocha**

#### *Gender, Livelihoods and Food: Contexts for Big History*

Big History engages with 'who does what and who has been doing what?' in the context of ecological conservation and sustainable livelihoods. Hence, gendered contexts need to be

foregrounded, as current development scenarios are leading to acquisition of rural and urban commons and the loss of resources for women. This presentation is based on circumstances in the state of Himachal Pradesh in India, as well as in the Pune District of Maharashtra. In Himachal, land acquisition and development, from hydro-power projects to limestone quarrying, have significantly impacted livelihoods. Women traditionally kept their households together through their knowledge of sustainable agriculture, but this family dynamic has undergone much change. In Pune, urbanisation is impacting the livelihoods of women and minority communities who have / had been practicing small and sustainable agriculture in the rural-urban peripheries. The paper will discuss alternate models in taking into account ecological issues and women's livelihoods.

### **Aishi Mitra**

#### *Big History Futures: Women's Reproductive Health and Religion*

Big History considers the interactions of many components in the universe, an interaction that has brought us to better social understandings of humanity and our common future. Two of these components are human biology and religion, which have been intertwined since at least Neolithic civilization. Women, as child-bearers, carry forward the human lineage, which makes it imperative to understand the complex issues of reproductive health. At the same time, religious practices also have been central to governing reproductive health. This presentation will discuss the relationship of reproductive issues in regards to Hinduism, one of the world's oldest and most established religions, especially as to how beliefs and practices of ancient texts have been reinterpreted to solidify the existing patriarchal structure of Indian society. It also looks at how India's Supreme Court has tried to address biases by setting new precedents. With the modernisation of society through of science, such interpretations have been changing, so it is important to understand how we got to our present situation, so we can move forward more successfully into the twenty-first century.

### **Paul Narguizian**

#### *The Story of Life: A Big History Science Perspective*

Science is a search for evidence, but the history of life on Earth is a search for meaning. What makes life on Earth so special? How do you explain its diversity? And what exactly is it? How life emerged or (the origin of life) remains a mystery, but we know that it possesses four qualities: (1) It can metabolize, (2) self-regulate, (3) reproduce, and (4) adapt. We also know that life is fragile in the face of gradual and sudden changes to the environment. Just ask the dinosaurs! The story of life is more than just a body of scientific facts and evidence. It is about the journey of who we are, how we got here, and where we are headed. All life on Earth, past and present, belongs to a

dynamic unfolding universe that inspires wonder, awe, and creativity. The story of life also utilizes and integrates the ancient literary wisdom of the Earth in the form of the oral and written traditions found among the various indigenous peoples of the Earth. This enables the reader/learner to better understand ‘what does it mean to be human and to be able to place oneself within the context of the Universe, and more specifically within the context of being born and having evolved from the Earth.’

**J.N. ‘Nick’ Nielsen**

*Applied Big History: The Nature and Role of Communities*

The concept of community is reviewed in the context of biology and the social sciences, and the relationship between these two senses of ‘community’ are explored. The neuro-cognitive basis of both biological and non-biological communities is considered by use of Dunbar’s number and evolutionary psychologist Robin Dunbar’s social brain hypothesis. Human biological communities have grown in complexity until they have crossed a threshold beyond which cities and civilizations are non-biological. Institutional relationships have increasingly replaced biological relationships, often with an increasing formalization of social relationships. Formal social groups constitute the infrastructure of civilization – the largest, longest-lived and most complex are human, but civilization itself has not been formalized in the same way. Alternative social groups that are not civilizations but which mediate among civilizations are considered. Networks that mediate among civilizations on a planetary scale are communities that can be drivers of historical change. Institutions of knowledge also constitute communities that mediate among civilizations, and Big History can play a distinctive role in making them a driver of historical change.

**Prashant Olalekar**

*Cosmic Oneness: An Alternative Perspective*

We are all becoming increasingly aware of the severity of climate change, rapid extinction of species, toxic pollution, and the environmental devastation leading to the brink of planetary disaster. From local to global levels, the evils of terrorism and nationalism rear their violent heads to create an atmosphere of hate and fear. The universe story reveals our oneness in an interconnected, interdependent universe. The holistic perspective that balances masculine and feminine approaches to reality offers us hope to heal a world plagued by the evils of patriarchy and dualism – a harmonious symphony and cosmic dance that engage our creativity in the formation of a healthy, wholesome planet. The feminine lens and approach can contribute much to a more holistic way of life. We are being challenged to look beyond religious texts and national constitutions with their anthropocentric bias. We need to consider more inclusive documents like

the Earth Charter so that we take joint responsibility for Earth, our common home. Awareness of our cosmic oneness and common commitment to cosmic compassion will help to sow the seeds of harmony and peace for all of creation.

### **Juhi Pandey**

*The Alchemy of Indigo: The Oldest Natural Dye of India*

The first evidence of textiles goes back to when humans lived in a closer relationship with the earth, water, and sky. The fibres from plants were ingeniously extracted, creatively hand-spun, and carefully woven into cloth for clothing, nets, baskets, and shelter. The creative thinking of humans made them curious about everything around them, so, when they saw colour in nature, they found ways to extract it for use. Indigo is the oldest natural dye in the world. Its name is derived from the Greek, *ινδικὸν φάρμακον*, which means 'dye from India'. Dyers claimed indigo was a mysterious process that relied on taste, appearance, smell and feel, especially because indigo reveals its true colour only after the fabric/yarn emerges from the dye pot. Each culture found ways to reduce the pigment to dyestuff, using local ingredients like dates, molasses, yeast, wine, jaggery, rice spirit, henna leaves, madder, and tamarind juice. Indigo also has been a part of shaping political history of countries in Asia and Africa; it was a material embedded in the social, economic and ecological history of communities. This little big history of indigo helps us understand the past, today, so as to help us shape a sustainable future for tomorrow.

### **Pallav Pandya**

*Ensemble of Change*

Changing the world. Anyone can do this. It is powerful but can be simple. It begins with starting to help people, those who need our help, and what we do must be in our possibility zone. If one person does it for one other, it can begin to cover the entire world. Being a musician, in a family of musicians from Gujarat and living in Mumbai, we follow this same pathway. For three years, I have been using Facebook Messenger as a platform for my school of music, All India Keyboardists, Musicians & Singers (AIKMS). The mission of this academy, which currently has 15,000+ students, is to promote values of compassion, self-development. Poor and needy students learn music and use it as a second option for income. They are living examples of how this change can happen. Similarly every person can do this in their respective fields. We must all work together to change the world ...

### **Pallav, Jahnvi and Varennyam Pandya**

*Jilo Jeevan Ji Bharke / Live Life at the Fullest*

This song was composed in the spirit of giving hope to those in despair. It uses lyrics that were made with the help of a team of doctors and psychologists who work in suicide prevention. It has reached 100,000 people and is used by NGOs in India.

### **Roy Pereira**

*Depths of Bigotry to Heights of Science & Creativity through Neuroscience & Music*

Bigotry exists all over the world, sometimes overtly but often hidden. Moving away from bigotry allows for the flourishing of science and creativity. It makes a human fully alive and allows them to enjoy a life in abundance. This can be done using science and the creativity found in the arts. For this presentation, I use neuroscience to see how mirror neurons can assist us in our tasks, along with the creativity of music. We will see music in its effect to bind people together as well as a metaphor. In this way we will move towards the heights of creativity.

### **Ann Pizzorusso**

*Paradise Bejewelled: The Gems of Dante's Divine Comedy*

In honour of the 700th anniversary of the death of Dante Alighieri (1265–1321), his poem, *Divina Commedia* [The Divine Comedy], will be analysed from a gemmology standpoint, for his work is a veritable treasure trove of references to jewels. Most of these references are in the section of 'Paradiso', The Canticle of Light, in which Dante uses reflection, refraction and shadow to convey metaphors. The first faceted gems arrived in Venice from India and the Far East following the fall of Constantinople in 1204. Dante was living nearby in Ravenna at the time and had the opportunity to study these gems and learn of their cultural attributes – spiritual, metaphysical and medicinal. He combined the knowledge of a physicist with the words of a bard.

### **Anne-Marie Poorthuis**

*Making School with Big History:*

*Moving with the Changing World and Taking Care Development*

The world is constantly changing through everything that lives and moves. Humans also play a role in this process and questions arise about their influence: How do we relate to everything and how can we take co-responsibility for this relationship? To be able to do that requires an overview of time and space. Based on the *Lines of Life*, we introduce a framework to organize the knowledge of the origin, past, present and future of life. This paradigm shows us the time (age) of the child ( $\pm 10$  years), culture ( $\pm 10,000$  years), humanity ( $\pm 10$  million years), and the universe ( $\pm 13.8$  billion years). In addition to the division into timelines, we also see four layers in this thinking model that show total space. Each subsequent layer is created in the last centimetre of the line and

has both its own and a joint past, present and future. We can consider the lines and layers on their own but also sequentially, in interaction and as a whole. This creates a framework with which we can observe, investigate, build, and learn the totality of space and time.

### **Esther Quaedackers**

#### *How Little Big Histories Can Help Us Understand Complex Societal Problems*

Little Big History has been used to understand many things, from Cheetos to items of more impact on our history, such as grasses, gold, and buildings. People also have written Little Big Histories about complex social problems, from climate change and resource shortage to geopolitical tension. Such studies reveal that this approach can help us more fully understand complex problems. This presentation will discuss two ways that this potential can be better developed: 1) Local Big History Projects, in which students from various European universities have jointly investigated how their own identities are shaped by 'shared' Big History processes, and 2) Research Projects that assess how the *Little Big History Approach* stimulates students to think in new ways about the United Nation's Sustainable Development Goals.

### **Kishan Rana**

#### *India: How Might Past Glory and Current Challenges Shape the Future*

What have been the principal elements in India's foreign policy over the past seven decades, from a Big History perspective? If we believe that this is an 'Asian Century', what role is the world's second most populous country, might play in global affairs? The establishment of colonial rule over India ended the final, faltering stages of the Mughal Empire and the centuries in which the country had been a global economic powerhouse, supplying products to distant markets, producing over 20% of the world's GDP. How might India rise to those dreams in the decade of 2020? Any country's foreign influence is rooted in domestic prowess, reflecting principally the genius of the country's people, not so much its endowment of natural resources or material wealth, though that helps. In India we witness a paradox, a disconnect between an innate capacity for innovation and pursuit of excellence, and stunted achievement. Since Independence in 1947 a gap has persisted across the economy and society between the latent and the delivered. Looking to the country's agriculture, education, health, industry, S&T, and other sectors of its polity, we encounter a comparative failure of governance, of great starts that falter and do not deliver on expectations. And yet, there is no lack of talent, entrepreneurship and across-the-board capabilities. I examine this in relation to India's foreign policy and its role in world affairs.

### **Shobha Rao**

### *Sustainability and Spirituality*

Sustainability means meeting our own needs without compromising the ability of future generations to meet theirs. Sustainability is not merely environmentalism but also encompasses social and economic aspects and has moved from a mere buzzword in the margins some decades ago to nearly all areas of our society today. Spirituality, on the other hand, is an amorphous concept, that lacks a consensual definition, but, its central theme is a sense of oneness, unity and interconnectedness with humanity, nature, and the cosmos. In a world rife with inequality, poverty, social injustices, violence and ecological degradation and collapse, the idea that spirituality is central to sustainability remains under-appreciated. I reflect on the interconnectedness of these concepts and how spirituality may be critical to sustainability.

#### **D. Venkat Rao**

*Ancestrality, Relationality, and the Ruses of the Narrative:*

*Rethinking (from) Indian Traditions*

There can be cultures without religion but one cannot think of a culture without stories. Stories are often treated as origin sources of a culture. In a religious culture, stories conflate explanatory and interpretative accounts about the world. An obligation to find meaning of life and in the universe seems to drive the narrative ethos. Such an ethos lends itself to a schism between explanatory and interpretive accounts. Such a schism can be seen in the recent science wars (Big History perhaps being an offshoot of the schism). In the context of such a narrative ethos, is the narrative imperative a cultural universal? What would be the status of stories in a culture where all origins and ends are only varied repetitions? This paper develops the notion that the coherence of Indian performative and reflective traditions can be traced in their persistent engagement with formational and non-formational forces. This presentation explores the coherence of Indian traditions by focusing on three compositions of ‘ancient’ and ‘medieval’ India – the *Brhat Jataka* (Cosmic Genealogies), *Brhat Sambhita* (Colossal Assemblage), and *Brhat Katha* (Great Narrative).

#### **Joel S. Regala**

*Indigenous Knowledge: Shaping the Science of the Common Folk*

Whenever early Filipinos looked into the sky, they would see not just stars but also their own civilization. This was famously noted by Dante Lacsamana Ambrosio, an anthropologist and pioneer of ethnoastronomy. Since the cosmos was part of their environment, indigenous people conjoined their culture to it and in return formed a dynamic worldview. This is why they have terms like *Balatik* (a hunting trap for wild boar) for the constellation Orion or *Bubu* (a fish cage trap) for the Big Dipper. Early Filipinos had named these celestial bodies long before Westerners



arrived 500 years ago. The colonizers thought native peoples had no civilization, so indigenous knowledge and local science were relegated to the category of ‘superstition.’ This presentation will underscore the significant role of indigenous knowledge. In 2013, for example, Filipinos were struck by the super-typhoon Haiyan, one of the most powerful and deadly cyclones ever recorded, an event intensified by climate change. Haiyan killed over 6000 people in the Philippines and laid waste to the homes of 11 million residents in Micronesia and the South China Sea. The effects could have been reduced in the Philippines if the government had used the indigenous word *humbak* instead of ‘storm surge,’ which was not familiar to villagers. Such indigenization in teaching Big History is vital to understanding our intricate environment. As we advance in trying to resolve our societal and global problems, we also need to step back ... to rediscover and reclaim our basic knowledge and humanity.

### **Masako Sakata**

#### *How to Overcome the Global Crisis of Biodiversity*

Biodiversity provides us human beings with the basic services that form the foundation of our lives. It is a fact that we little appreciate in our daily lives. We are now facing a tremendous crisis, in which about a million species are threatened with extinction within a few decades, because of our behaviour. In order to escape this crisis, it is necessary for us to rebuild connections between human beings and Nature. We must answer fundamental questions: *What is biodiversity?* And: *How is biodiversity related to our existence as humanity?* Perhaps the most important solution to this crisis lies in *cultural diversity*, which has been woven in wide range of relationships between humans and other living things. I share some of the challenges and focus on cultural diversity in the hope that we can still make a difference.

### **Radhika Seshan**

#### *Community and Science in India:*

#### *A Historical Perspective*

Over the past centuries, science has shifted to be primarily that which is laboratory oriented. Colonialism, with its emphasis on ‘scientific enquiry’, often negated the role of science as practised in communities, to dismiss it as ‘traditional’. It is in this context that the paradigms of Big History become valuable, for it brings back to the centre the idea of multiplicity – of approach, of practice, of connections, and of transcending boundaries. I illustrate this through a case study focusing on a much ignored dimension of Indian history – the role of practical science and technology, and its place in community practices over time. Specifically, I focus on weaving, weavers, and dyeing, in what is called the ‘medieval’ period of Indian history, from approximately the 10<sup>th</sup> to the 16<sup>th</sup>

centuries. The notion of community underpins all cloth making, and includes aspects as diverse as the correct wood for making the loom, the methods of making standing/pit/treadle looms, the sourcing of the dyes, and, of course, the markets for the finished cloth. Along with these are the two institutions of temple and state.

### **Edward Gordon Simmons**

#### *Big History as a Philosophy of History*

Big History as presented by David Christian will be compared with the histories of philosophy of G.W.F. Hegel and Karl Jaspers. Hegel and Leopold von Ranke conceived of world history as a history of the West. Jaspers presented a philosophy for a universal history and found within Eurasian history an Axial Period that was a foundation for human history that came afterwards. David Christian presents a truly universal history by starting with the origin of the universe. Each of these authors presents a dynamic driving history forward that is a key to a philosophical view of the nature of history and of human awareness of history. The potential and limits of world history as a field of study and philosophy will be explored.

### **Vandana Singh**

#### *Science, Imagination and Empowerment in an Entangled World*

Climate change threatens human civilization as we know it, as well as the biosphere as a whole. Yet the climate crisis cannot be seen in isolation from historical and socioeconomic forces; it is in fact a symptom, rather than the disease. How did we come to this moment? How are we to find a way out of the climate crisis to a just, equitable world in which we heal our rift with the rest of Nature? Science as we know it has its roots in a specific sociocultural context, and its origins are closely entwined with the colonial imperative. But it is science that has woken modern civilization to the reality of climate change. Can science rescue us from climate change? Science by itself in its current form cannot do so, and our way through this crisis involves multiple agents and multiple transformations, including a transformation of science-as-we-know-it. We are going through a global paradigm-shifting period and imagination can free us from conventional ways of thinking about climate change. But this cannot happen without us learning from anticolonial and other movements around the world, including those of indigenous people and local communities that have a radically different relationships to their lands, and whose struggles for survival, dignity and self-determination have not only kept tons of carbon dioxide from entering the atmosphere, but also provide us with alternative paradigms for how to live on this Earth.

### **Spencer Stiker**

*History Adventures: Digital Learning in a World of Characters*

*History Adventures, World of Characters* is a next gen, fully interactive, digital learning series, nominated for Best Educational App at the 2020 Reimagine Education Awards. This multimodal learning experience combines mobile entertainment technology with the power of narrative design – bringing the pages of history to life. *History Adventures* foregrounds the power of story, narrativizing the experiences of people who lived in past centuries – in different epochs and locations around the globe. From Apple Books to Chromebooks, iOS, Android and Kindle Interactive – *History Adventures* is accessible on every device and platform found at home and in the classroom. Both released in 2020, ‘Empires & Interconnections (1450–1750)’ and ‘Revolutions & Industrialization (1750–1900)’ explore major themes in world history. While the forthcoming ‘Global Pandemics’ will uncover five major pandemics in world history – plague of Athens, black death, smallpox, Spanish flu, and HIV/AIDs – with the goal to provide context for students and the broader public about the challenges COVID-19 has presented to people around the world.

**Sanjay Subodh**

*Nature, Water and Medieval Society: History in the Present*

Water is an essential need of any civilization, and humans have found many ways of meeting this requirement. Water sustenance was not limited to maintenance of groundwater but extended to irrigation, structural cooling, and defence of important places. India is made up of diverse climate zones, so the methods of preservation and conservation varied. The care of water started at its source and continued to the desired point, where it was distributed. Society understood the vital role of Nature and so people developed methods in consonance with Nature. Arid zones had different conservation strategies than watered lands and used different techniques. This discussion examines water use in medieval India and the role of Nature in the functioning of hydrological systems. We ask how modern society can take a lesson from the past, which brings the relevance of history to the present.

**Shubhangi Swarup**

*Big History in the Time of Navel-Gazing:*

*An Artist’s Attempt at Writing a Big History Novel*

Over time, novels have evolved into a myopic enterprise, centred around singular human actions, limited by political borders, identity politics, and, even worse, a plot. The cause and effect within a plot is restricted to its characters, devoid of the appreciation and continuations within a larger universe. In an increasingly polarised and isolating world, the human imagination has been trapped in rooms of its own creation. If the reader views life from just one window, then I, as a novelist,

want to tear down all the windows and walls, and bring down the roof. I want to pull the entire structure down till the reader is standing under an immense sky and looking at the infinity we call a horizon. For in that infinity, human history is only a tiny slice of the Earth's history, and the evolution of life doesn't begin with our ancestors leaving Africa, but the birth of the first unicellular organism, or perhaps the Big Bang. For only when we have grounded ourselves in this way can we appreciate the vastness of our own lives. The narrative thread of my novel is a faultline. All the stories are grounded in geology, and connected by forces of Nature. In difficult and intense moments, the characters are forced to return to similar moments in the evolution of life. *Latitudes of Longing* is my attempt at a creation myth based on science. My paper presents the practical lessons learned and insights gained in the process of writing.

### **Robert Sylvester**

#### *What Does Big History Say About Disaster Preparedness for Long-Term, Certain Catastrophes*

In the near future, a major earthquake (possibly 9.2 on the Richter scale) will disrupt a sizable portion of the Pacific Northwest coast of the USA and Canada. Scientists are studying a recently discovered geologic fault off the Pacific Ocean coast of the Northwest USA. They estimate that without mitigation, thousands will die and many billions of dollars of damage will result from the tsunami and earthquake that will result from a major movement of the Cascadia Plate subduction zone. Federal, State and local planners, scientists and politicians from all affected areas now meet regularly to plan a response to this event. Meanwhile, approximately 900 miles to the north, Juneau, Alaska, a city of 30,000 and Capital of Alaska has made no effort to ready their community for this event. This is despite the fact that Juneau is an isolated city. almost wholly dependent for 95 per cent of its food, and virtually all of its supplies of manufactured goods from the Seattle area. Such a disruption in the supply chain for Juneau could leave the residents of Juneau and the surrounding small villages with no operating supply lines for months. This paper explores the reasons why there is a reluctance of local Juneau officials to address this threat. Additionally, it examines how thinking from a Big History perspective would enable officials to address this problem and other peripheral issues in a thorough and successful manner.

### **Yoshihiro Takishita**

#### *The Beauty of Minka:*

#### *Living Witness of Self-Sustainable Society*

The minka, ancient Japanese farmhouses, are an unique architecture of the Edo period (1600~1868). It was a time when Japan was an agricultural society, self-sustainable and peaceful. But in modern Japan, these country farmhouses began to be destroyed, because of a lack of

understanding about their invaluable legacy, and so they began to disappear from the landscape. Preservation of these cultural treasures is very important, so we started to rescue them fifteen years ago, when we organized the Association for the Preservation of Traditional Japanese Farm Houses. Our way of preserving the minka is to invite university students to our renovated farmhouses and let them feel the beauty and comfort of the minka space. We believe seeing and experiencing is the best education. As a result, a new generation started to live in the county and use the old farmhouses – not as farms but as offices, restaurants, ryokans, and cafés. We learned from minka-preserving activities how much our ancestors worshiped Nature and lived harmoniously with Nature. Our efforts embody the Japanese adage: “To Know when it is Enough”.

**James Tierney**

*Changing the World, While the World Changes*

23 Millennia Ago

*Gender*

23 Centuries Ago

*Maine*

23 Years Ago

*The World is  
One Family*

23 Days Ago

*Pandemic  
Collective Learning*

I use 23 increments of time as a reference because it allows me to speak to three issues that are current now and, I suspect, were current in the past. I develop these issues at critical junctures in a piece of history that I like best. I present our species as the guardians/librarians of information on which Nature is dependent as she drives natural selection to wherever evolution is taking us. My focus is on social behaviours within a dramatically changing environment that needs all of us to rise above that which inhibits our functioning as a team. Those issues are temperature, gender, and collective learning.

**Yangkahao Vashum**

*Indigenous Values and Sustainability: Possible Linkages to Big History*

Christianity and Western scientific knowledge have dominated academic research and its disciplinary education. Indigenous knowledge and religious traditions, on the other hand, have largely been dismissed as invalid as a way-of-knowing by the Western world. Since tribal systems cannot always be quantified, they are often dismissed as ‘superstitious,’ ‘primitive,’ and ‘unreliable.’ However, recent work by Indigenous peoples around the world have resulted in a growing recovery of Indigenous knowledge for the benefit of both Indigenous and non-Indigenous scholars. This presentation looks at Indigenous values and practices as alternative ways that have

been sustaining people for centuries, in close relationship with Nature. In the context of the present-day ecological crisis and global warming, we must seek sustainable development, especially by learning about Indigenous values and practices. This discussion brings out some of those important traditions from the tribal peoples of North East India. Of interest to this paradigm shift is how the inclusive ways of tribal knowledge occasionally intersect with big histories' inclusiveness, especially in its Asian formulation.

### **Renu Vinod**

*Countering Power and the Collective Interpretation of Reality from Below:*

*A Sociology of History*

History is replete with social groups attempting to influence shared understandings of reality. When socially acceptable reality becomes a taken-for-granted 'truth', it poses important questions about power and privilege. The 20<sup>th</sup> and 21<sup>st</sup> centuries have seen many movements try to counter dominant ideologies of race, class, caste, gender, science, history and practically everything that make collective life possible. We are at a historical moment when these counter-movements have spurred aggressive reactions from those enjoying dominant interpretations of reality. An important question is: Are the counter-movements capable of transformations or are they a flash-in-the-pan? This presentation shares sociological interpretations of transformative, though not necessarily inclusive, movements and lessons they teach us.

### **Albert Wang 汪大久**

*The Far Transfer of Learning Outcomes from a Big History Course*

Mingdao High School was the first to adopt Big History as an elective in Taiwan. As a result, we have seen the challenges and opportunities for promoting Big History throughout the country. Taiwan's educational system is an intellectual meritocracy that is exam-driven, so it's difficult to engage students in any subject not in the General Scholastic Ability Test for university entrance. However, the average satisfaction rate for our Big History course has been 4.8 out of 5 since its inception, and students are willing to spend extra hours studying for the course, in spite of tight schedules in other subjects. Furthermore, through word-of-mouth, Big History has become one of the most popular elective courses among students. In this presentation, we analyse the latest student surveys and interviews to unveil how they transfer learning outcomes into their daily lives and cultivate their minds to deal with problems in real life. We also provide examples of students' follow-up projects, which are impacted or inspired by the Big History narrative.

### **Jos Werkhoven**

*Maria Montessori as an Example for Big History*

Maria Montessori started her work in India during the Second World War with ‘cosmic education’, which she described in 1947 in *To Educate Human Potential*. She wrote: ‘Let's give the child a vision of the entire universe. The universe is an impressive reality and the answer to all questions. We want to walk this path of life collectively, because all things are part of the universe, all connected to each other in a comprehensive unity. This image helps the mind of the child to concentrate, to stop walking in an aimless search for knowledge.’ Montessori had thought cosmically since 1909, but did not give it specific words for thirty more years. On that basis, we consider Maria Montessori a developer of Big History.

### **Peter Whitehouse**

*Towards Transdisciplinary Wisdom:*

*Foraging Ecotonic Ideas and Rooting Deeper Values for Bold Action in the Next Epoch*

Dramatic transformations in the intellectual foundations, ethical values, and ecosystem impacts of human societies are needed in our epoch of climate change, injustice, political unrest, and extinctions. Transdisciplinarity is an intellectual force to address such complex, interconnected challenges. Focusing on boundary areas of disciplines and levels of reality, transdisciplinarity looks at subjectivity and objectivity in a new light and with a moral commitment to the needs of society. It seeks to return science to a more natural philosophy and to a future of new interpretations. In my field of medicine, bioethics focuses on technological progress and limits its view to value concerns. Bioethics needs to be reconceptualized to link research, clinical, public health and environmental ethics in a new transdisciplinary form. In general, we need to ask questions about what it means to be a human in relationship to others living beings. I illustrate this process with two examples: 1) Our cognitive limitations of aging and dementia, and 2) Our relationships with trees and forests. We need an anthropology beyond humans. Both these examples, dementia and forests, could be sources of new healthier narratives about our relationships to each other and Nature. These stories can inspire intergenerational solidarity and intergenerative storytelling.

### **Barry Wood**

*India in Gondwana: Linking Evolution with Plate Tectonics*

The histories of Earth and life can be treated separately but together they provide interesting new perspectives. Before colliding with Asia, India was part of several supercontinents: Ur, Rodinia, Gondwana, and Pangea. Gondwana was made up of today's southern continents and 98 percent of India's evolutionary past occurred before it separated and drifted northward to join with Eurasia. What is true for India is true of every continent. Almost all evolutionary advances (with the exception of humans in Africa) occurred while the present continents were part of a different

landmass located somewhere else on Earth. With landmass movements of a few millimetres per year, each continent drifted an estimated distance of 16,000 kilometres. This accounts for features of polar glaciation on land masses in temperate or tropical locations and tropical-species fossils located in polar regions. The addition of plate tectonics to the evolutionary history of life integrates the Earth and Life phases of Big History into a single narrative.

DRAFT





## Biographies

**Kartik Anilkumar** is pursuing a degree at the Symbiosis School for Liberal Arts (SSLA) in Sociology, with a minor in Women & Gender Studies. Having an interest in poetry and performance, he was Secretary of the SSLA Poetry Club (It Could Be Verse), as well as a member of the Gender Committee and various SSLA theatre productions. He has written for *Zeitgeist*, a publication run by SSLA's Queer Qrew, which deals with issues pertaining to various queerisms and queerness and its social, historical, political and cultural aspects. His presentation on 'Queer Movements in South Asia,' with a fellow classmate, was awarded Best Presentation at SSLA's annual Red Carpet awards and they received a Director's Special Mention (2021). They're working on a paper that looks at the construction of the self in the Northern/Sanskritic Kinship organization in India. Kartik may be reached at <[kartik.anilkumar@ssla.edu.in](mailto:kartik.anilkumar@ssla.edu.in)>.

**Rashida Atthar** is a social scientist who is deeply involved with work on nature and ecology. After graduating in psychology and sociology from St. Xavier's College, Mumbai, she pursued an MSW and took employment with an international NGO in the field of health care. Her advanced research certificate is in the area of development, a specialty for which she has produced papers on sustainability, communication, and global NGOs for national and international conferences. Rashida has also presented papers in the field of botany, based on her observations and study of the Mumbai forest. Her work blends theory, practice, and research. At present, she is conducting workshops along with educational and awareness programmes about environment and climate change, with an emphasis on the science and solutions to their problems.

**Hem Sagar Baral** is a writer, conservationist and family man who lives in Kathmandu, Nepal. Studying low-country, grassland birds for his PhD, he worked as CEO for both BirdLife Nepal

<<https://www.birdlife.org/asia/partners/nepal-bird-conservation-nepal-bcn>> and Himalayan Nature <<https://www.himalayannature.org/>>. Amongst his initiatives, he introduced Special Conservation Site and Trees for Tomorrow concepts to manage biodiversity sites and nature restoration. Hem promoted socially responsible natural-history tours in Nepal and India in the early 1990s, and has popularized animal-watching amongst local people, including the production of local-language field guides, such as *Wild Mammals of Nepal* (2008). He has been involved in Red List Assessment of various taxa in Nepal, setting up the world's first community-managed 'vulture restaurant' in Chitiwan, as a safe feeding station for rapidly declining vultures. He also established Nepal's first bird-ringing centre, the Kosi Bird Observatory. Together with his wife, Kalpana, he founded the Autism Care Nepal Society in 2008, the largest centre to serve differently-abled people in the country. Currently, he leads a team of nearly two-dozen people for the Zoological Society of London's Nepal Office. Hem's email <[hem.baral@gmail.com](mailto:hem.baral@gmail.com)>.

**Maximillian Barnett** is a PhD Student, Department of History and Archaeology, Macquarie University, Sydney, Australia. He currently teaches and aids in curriculum development in the fields of world history and law. He graduated with a Masters of Research in Big History and writes on the fields of demography, geography, anthropology, world history, and future studies. The current working title for his PhD is *The Fork in the Road: Mapping Alternative Responses of Human Societies to Threats to their Complexity*. His digital gateway is via <[maximillian.barnett@gmail.com](mailto:maximillian.barnett@gmail.com)>.

**Daniel Barreiros** is Associate Professor at the Institute of Economics, Professor at the Graduate Program in International Political Economy, and a researcher at the Bioethics and Applied Ethics Center, Federal University of Rio de Janeiro, Brazil. He received his Ph.D. in Social History from Fluminense Federal University, Niterói (Brazil) and is an alumni of the Institute on United States Foreign Policy (USA). Daniel is also a member of the Brazilian Association for Defence Studies and the Brazilian Historical Association. His research centres on the Big History of intersocietal conflict / cooperation, which includes geopolitics and future warfare scenarios. He can be reached at <[daniel.barreiros@ie.ufrj.br](mailto:daniel.barreiros@ie.ufrj.br)>.

**Ken Baskin** is an independent researcher whose work integrates insights from complexity science, neuro-anthropology, and big history. After earning a PhD in English Literature in 1977, he spent fifteen years writing public-relations material for major firms. His books include *Corporate DNA* (1998), an examination of how to think about organizations as living things rather than just mechanisms, and *The Axial Ages of World History* (2014), an exploration of the similarities between the Axial Age and Modernity that he co-wrote with Moscow anthropologist Dmitri Bondarenko.

Ken is currently reinterpreting religion as a way that human groups can know and adapt to the powerful forces that surround us. He lives in Philadelphia, Pennsylvania, and can be reached at <baskinman47@yahoo.com>.

**Perpetua Bih** is a first grade teacher at the Government Bilingual Primary School in Bastos, Yaoundé, the capital of Cameroon. With a background in administration and business management, she taught a year in Kuwait City and then returned to teach in Cameroon. She is a founding member of the African Big History Association.

**Benjamin Bishop** is a Masters candidate in Linguistics and Teachers of English to Speakers of Other Languages (TESOL) and from Ball State University in Muncie, Indiana (USA). During his tenure at Ball State, he instructed at the Intensive English Institute, served as President of the Graduate Student Advisory Board, and founded the Linguistics Club. He has presented extensively on the linguistics of Pop Culture, as well as structuralism in literature. He may be reached at <benbishop100@gmail.com>.

**David Blanks** is Professor of History, Arkansas Tech University, Russellville, Arkansas, USA. A medievalist by training, specializing in religious and social history, he lived in Egypt for more than twenty years while teaching at the American University in Cairo. His published work has examined heresy and anti-clericalism in fourteenth-century Languedoc, Christian-Hindu encounters in sixteenth-century Vijayanagara, and Muslim-Christian encounters in the early modern Mediterranean. After expanding his field of study to include world history, at the 14th Annual World History Association conference in Ifrane, Morocco in 2005, David turned to Big History the following year and served as Executive Secretary of the African Network in Global History / Réseau Africain d'Histoire Mondiale. He is on the board of the IBHA and is Editor in Chief of the *Journal of Big History*. He may be reached at <dblanks@atu.edu>.

**Carl Johan Calleman** focuses on the evolution of consciousness as a driving factor behind the history of the universe. He gained his PhD in physical biology from the University of Stockholm in 1984 and became Senior Researcher at the Department of Environmental Health at the University of Washington in Seattle and served as an expert on chemical carcinogens for the United Nation's World Health Organization. In 1993, he began work to ascertain the meaning of the Mayan calendar and has since published seven books on this topic that have been published in fourteen languages. His current focus is on Macrocosmic Quantum Theory, which he considers

to be a way to help us understand the nature and timing of events in Big History. Carl Johan may be reached at <carljohan.calleman@gmail.com>.

**Edcel John S. Canlas** is Faculty at Holy Angel University in Angeles City, Philippines. He teaches Big History 1, Big History 2, The Contemporary World, and Readings in Philippine History. He received his degree from the University of the Philippines – Baguio, *cum laude*. He is an elected member of The Honor Society of Phi Kappa Phi and Pi Gamma Mu International Honor Society. He is a member of The Asosasyon ng mga Dalubhasa, May-Hilig at Interes sa Kasaysayan (ADHIKA) ng Pilipinas. His research is on big history, decolonial studies, social history, legal history, 21<sup>st</sup> century education, gender rights and issues, and Indigenous studies.

**Baijayanti Chatterjee** is Assistant Professor of History at Seth Anandram Jaipuria College Calcutta University. She completed her PhD from Jawaharlal Nehru University, New Delhi in 2018 and was Charles Wallace Fellow to London in 2016. Her area of specialization, broadly, is environmental history and her recently published papers include ‘Ecology and Imperium: State Formation in Early Colonial Bengal’, *Indian Historical Review*, vol. 47, no. 2, December 2020.

**David Christian** is founding director of the Big History Institute, Macquarie University, Sydney, Australia. Originally a scholar of Russian history, he wrote *A History of Russia, Central Asia and Mongolia* (1998). He became an early advocate of macro-studies in the social sciences and has provided seminal frameworks for these narratives, as in his book, *Maps of Time: An Introduction to ‘Big History’* (2004). He also co-authored the text *Big History: Between Nothing and Everything* (2014). David is an active lecturer at the World Economic Forum in Davos-Klosters (Switzerland) and elsewhere. He served as founding president of the International Big History Association and was co-founder, with Bill Gates, of the Big History Project, a free online syllabus of Big History for high schools.

**John Clammer** is Distinguished Visiting Professor at Kyoto University (Japan). A sociologist and anthropologist, he has taught and researched in the United Kingdom, Germany, Singapore, Australia, Argentina, South Korea, and India. He was Professor of Development Sociology, Institute of Sustainability and Peace, United Nations University, and, for almost twenty years, Professor of Comparative Sociology and Asian Studies at Sophia University in Tokyo. John has published extensively on culture and development, including books on art, religion, sustainability, urbanism, ethnicity, and Eastern/Western social theory. He may be reached at <jrclammer@jgu.edu.in>.

**Tradd Cotter** is a microbiologist, mycologist and organic gardener who has been tissue culturing, collecting native fungi in the south-east USA, and cultivating fungi for over two decades. In 1996, he co-founded Mushroom Mountain, a company that explores applications for mushrooms in various industries and maintains over 300 species of fungi for food production, myco-remediation of environmental pollutants, and natural alternatives to chemical pesticides. Tradd wrote the best-selling book, *Organic Mushroom Farming and Mycoremediation* (2014). He has won recognition for his work, including the Clemson University Entrepreneur of the Year Award (2013) and the EPA GRO-U Fellowship Award (2011). He is an experienced lecturer about fungi and their use in agriculture and medicine. He may be reached at <myceliumtradd@gmail.com>.

**Neha Dadke** is pursuing her degree at the Symbiosis School for Liberal Arts (SSLA) in Sociology, with minors in Women & Gender Studies and History. She is a research intern for SSLA's Gender and Ecology Studies and an officer for Community Outreach & Extension. Neha is a member of SSLA's Gender Committee and helped formulate university initiatives and academic policy. She has worked as a research intern for the Association of Asia Scholars (New Delhi) and as an editorial intern for SSLA's *Confluence: Journal of Interdisciplinary Studies*. A writer, she has published with *Collision Literary Magazine*, University of Pittsburgh (Pennsylvania), and has debated through the Indian Schools Debating Society and at the National Academy of Legal Studies & Research. She is presently the Secretary of the Community Outreach Cell at SSLA. Neha may be reached at <neha.dadke@ssla.edu.in>.

**Robert Dalling** taught his first Big History course in 2003, using his book, *Human Nature, Worth, and Civilization*. This course is a celebration of our species. To create the fifty-hour video version of the course <www.HumanismWeb.net>, he travelled to fifty nations to record 3D videos of people and places, while relying on the kindness of strangers every few minutes. He lived in West Berlin in 1973 and worked on an engineering project in Ceausescu's Romania in 1983. His Ph.D. is in physics with engineering courses in fluid mechanics and nuclear engineering. Robert has written eight books, including *Workbook and Solutions Manual for Quantum Mechanics*, *Mathematical Physics*, and *Special Relativity*. He has other presentations and publications in chaos, heat flow, laser spectroscopy, and relativistic quantum mechanics, as well as a patent for a method of calculating the Lyapunov exponent in chaotic systems. Before teaching, he spent thirteen years writing bookkeeping and database software for retail tractor dealerships. This taught him how major corporations, franchises, and small businesses operate. His hobbies are teaching precious students and watching Barfi and other Bollywood movies with them, learning Hindi, traveling our world,

learning and listening to music from every nation, and watching movies from every nation. He is teaching his sixteenth year at The Louisiana School for Math, Science and the Arts and can be reached at <rdalling@lsmsa.edu>.

**Lewis Dartnell** is an astrobiology researcher based at the University of Westminster (London), studying how microbial life, and signs of its existence, might persist on the surface of Mars. Alongside his research he writes regular science articles in newspapers and magazines, and appears in TV shows such as *BBC Horizon*, *Wonders of the Universe*, and documentaries on National Geographic, and the Discovery and History channels. Both *Origins: How the Earth Shaped Human History* and his previous book, *The Knowledge: How To Rebuild Our World After An Apocalypse*, are *Sunday Times* bestsellers. Lewis may be contacted at <lewis.dartnell@gmail.com>

**Shailaja Deshpande** is certified in sustainable management and conservation from the Ecological Society of Pune, holds diplomas in field botany from the Agharkar Research Institute, and has trained in groundwater resources from the Advanced Center for Water Resources Development & Management. In 2013, she worked on a catchment basin project, funded by Global Forest Watch in Pune. Her conservation work continued from there. She was a founder of the Jeevitnadi Living River Organization and serves as its director. The members of Jeevitnadi come from diverse backgrounds and work to revive the rivers of Pune. They raise public awareness and participation by encouraging the elimination of pollution through toxic-free lifestyles, developing scientific and ecological management plans, and seek project and river sustainability. In 2017, Shailaja received the Green Hero Award from the Energy & Resources Institute (New Delhi) and, in 2020, the India River Forum conferred her with its Bhagirath Prayas Samman award. She may be contacted at <shailajadesh@gmail.com>.

**Shweta Sinha Deshpande** is Associate Professor, Symbiosis International University, Pune, India. An archaeologist, educator and ceramic analyst, her studies deal with cultural interactions in central and western India during the third and second millennia BCE. This has resulted in publications such as 'Human Response to Holocene Climate Changes in Western India between 5th and 3rd Millennium BCE' (2004), as well as the co-authored book, *Mesolithic Bagor: Independent Beginnings of Sedentism and Ceramics, a Prelude to the Ahar Culture of South East Rajasthan, India* (forthcoming). She has also taught at Deccan College and done statistical analysis for major government initiatives at institutes like the Yashwant Rao Chavan Academy for Development Administration in Pune. She presently serves as Deputy Director of the Symbiosis School of

Liberal Arts (SSLA) and as Co-Coordinator of the Indian Association of Big History, which is based at the SSLA.

**Imogene Drummond**, MFA, MSW, ACSW, is an internationally collected painter, award-winning filmmaker, artist/educator, author of articles on cultural transformation, and former psychotherapist. Her experience, talent, and vision converge in the Art Sparks Creativity Programme. Her article 'Options for the Future' is the closing piece in the thought-provoking anthology, *The Rule of Mars* (2006), endorsed by Pulitzer Prize-winning scientist and author Jared Diamond. Due to her painting expeditions around the world, Drummond was invited to join the Society of Woman Geographers, whose membership includes explorers of ideas as well as geography, among them Eleanor Roosevelt, Amelia Earhart, and Jane Goodall. She may be reached at <imogenedrummond@gmail.com>.

**Ken Gilbert** has been engaged in a synthesis of knowledge since his 1960s undergraduate days at MIT. His academic background includes master's degrees from the California Institute of Integral Studies (CIIS) and Wayne State University along with postgraduate research at the University of Edinburgh and Emory University. He has participated in conferences of the Templeton Foundation as well as at those of the World History Association of Texas and the IBHA. Ken's thesis at CIIS, *The Wisdom of the Veda*, was published by the Sri Aurobindo Ashram Press in Puducherry, while his paper from the 2012 IBHA inaugural conference was included in *Teaching and Researching Big History: Exploring a New Scholarly Field*. He believes in the prospects for Big History contributing towards a timely transformation of our consciousness, culture and civilization via a grand unifying theory of evolution, along with an emerging cosmic story for global education and human unity. He is currently working on *The Great Origins Story: Awakening to the Spirit of Universal Evolution*. He may be reached at <tgdrlen@gmail.com>.

**Eric Nganfon Goubissih** is a teacher at Amity International College, Primary Section, Grade 6, in Yaoundé (Cameroon). Teaching fulfilled his desire to help improve the world community. And so he became one of the founding members of the African Big History Association and serves as its first President. He may be reached at <nganfonic945@gmail.com>.

**Anton Grinin** is Senior Research Fellow, International Center for Education and Social and Humanitarian Studies, Moscow, Russia. With a Ph.D. in biology, his academic interests include bioethics, evolutionary and future studies, the history and philosophy of technology, and globalization. He specializes in the technological revolution unfolding in the 21st century,

especially in cybernetics. These events will result in the profound transformation of the economy and society, posing ethic-legal and other risks. Anton also investigates correlations between the Cybernetic Revolution, Kondratieff waves, and issues of global ageing. The author more than fifty publications in Russian and English, including two monographs, he has won the Gold Kondratieff Young Scholars Medal and the Alexander Belyaev Literature Award. He may be contacted at <algrinin@gmail.com>.

**Leonid E. Grinin** is Director of Uchitel Publishing, Volgograd, Russia. Beginning as a teacher in rural schools, he founded his publishing firm to develop educational materials in the 1980s. He then completed a Ph.D. at Moscow State University and expanded Uchitel to serve a global market in Russian and English. A sociologist, philosopher of history, and economist, his work focuses on identifying regularities of macroevolution. Among his thirty monographs are *From Confucius to Comte: The Formation of the Theory, Methodology and Philosophy of History* (2012, in Russian); *Macrohistory and Globalization* (2012); and *The Big History of the Universe's Development: Cosmic Evolution* (2013, in Russian). Leonid co-authored *Great Divergence and Great Convergence: A Global Perspective* (2015) and co-edits the international journals, *Social Evolution and History* and *Journal of Globalization Studies*. A founding member and Deputy Director of the Eurasian Center for Megahistory & System Forecasting, access to his portal, *Social Studies*, is found at <<http://www.sociostudies.org/>>.

**Vaidyantha Gundlupet** has a PhD in Political Science from the University of Chicago and is Assistant Professor for Political Science at the Symbiosis School for Liberal Arts. His research and teaching interests focus on political rhetoric, international relations theory and international security issues, particularly the impact of nuclear proliferation on strategic stability and diplomatic practice. He may be reached via e-mail at <vaidya.gundlupet@ssla.edu.in>.

**Lowell Gustafson** is Professor of Political Science at Villanova University in Pennsylvania (USA). His course on 'Our Social Nature' uses a Big History approach, and he has also taught it at the Graterford maximum security prison near Villanova. He is currently researching how science explains the origin and development of polity. His publications include *The Sovereignty Dispute over the Falklands (Malvinas) Islands* (1988), *The Religious Challenge to the State* (1992 with Matthew Moen); *Economic Development under Democratic Regimes: Neoliberalism in Latin America* (1994); *Thucydides' Theory of International Relations: A Lasting Possession* (2000); *Ancient Maya Gender Identity and Relations* (2002 with Amelia Trevelyan); *Economic Performance under Democratic Regimes in Latin America in the Twenty-First Century* (2003 with Satya Pattnayak), as well as many book chapters and articles. He has served



as secretary, vice-president, and president of the International Big History Association (IBHA), and as editor of the *Journal of Big History*.

**Mark Hartman** is a photographer and director based in New York City. He is known for his portraits and documentary images, which explore the relationship between humans and their place in local, global and universal settings. Mark has an intuitive ability to connect with people in front of his lens and put them at ease. His photography has been featured in publications such as *The New Yorker*, *The New York Times*, *Time*, *The Guardian*, and *Vogue*.

**Orla O'Reilly Hazra** grew up in Canada, Ireland, California, Thailand, Okinawa, and Singapore. Her early adulthood was also a time of movement, living in the divided states of Ireland, Germany, and Korea. Raised as a Cartesian dualist, this reinforced her sense of homelessness. In 2009, she completed a PhD in Religious Education at Fordham University in New York, while working in an addictions unit. Her narrative research broke with Cartesian logic, as she integrated the complex ways that science, religion, indigenous peoples and women see the world. Orla recently returned to Sarasota, Florida, after ten years of living in Mumbai. Her husband is from Kolkata, so she continues collaborations with Tarumitra: Friends of Trees in Patna, Bihar, as well as with The Deetime Network, while writing her magnum opus on the religion and poetic testimony of Big History pedagogy. Her e-mail is: <ohazra@aol.com>.

**Ma. Rubeth Ronquillo-Hipolito** is Assistant Professor at Holy Angel University in Angeles City, Philippines. She handles Philosophy subjects such as Ethics, Logic and Humanities along with Big History 1 and Big History 2. She has been in the teaching profession for eighteen years. Having served as the School of Arts and Sciences' Big History Coordinator for 2019–2020, she represented the university during the Asian Big History Symposium held at J.F. Oberlin University in Tokyo, Japan in November of 2019. Rubeth received her Bachelor of Arts in Philosophy at the University of Santo Tomas and pursued her Master of Arts in Teaching to prepare her for a life in academe. Currently, she is the Coordinator for Region 3 under the International Organization of Educators and Researchers (IOER). In the future, she intends to foster Big History as a unique discipline and a valuable research endeavour. She may be reached at <rhipolito@hau.edu.ph>.

**Grace Huang 黃致潔** is founder of Ithaca Language Consulting and a professional meeting facilitator, an emcee, and a Mandarin-English conference interpreter based in Taipei, Taiwan. With her wealth of experience, Grace has worked with heads of state, corporate leaders as well as renowned global organizations at home and abroad. She is fascinated by Big History and is a

certified Big History trainer by Worldviews Academy, Taiwan. Grace can be reached at <ithacalc@gmail.com>.

**Nigel Hughes** is Professor, Department of Earth and Planetary Sciences, University of California, Riverside, USA. He has published widely on Himalayan geology, as well as on the biology of trilobites and other fossil creatures, as with ‘The Cambrian Palaeontological History of the Indian Subcontinent’ (*Earth Science Reviews*, 2016). Nigel teaches Earth Sciences in novel ways in his ‘Testament of Time’ and ‘At Home in the Universe’ classes that have commonly featured visitors from India. Bangla and English versions of his book, *Monishbar Pathorer Bon / Monisha and the Stone Forest* were published in Kolkata (India) in 2012 by Monfakira Press. He was recently a Fulbright-Nehru Senior Scholar at the Indian Statistical Institute in Kolkata. His hobbies include writing stories about geological subjects, playing the ukulele, and trying to improve his Bengali. Nigel may be reached via his e-mail at <nigel.hughes@ucr.edu>.

**Kenji Ichikawa** is a teacher at Aletheia Shonan Junior and Senior High School in Chigasaki, Kanagawa, Japan. He teaches world history and began the first high-school Big History class in Japan in 2016. As an extension of his teaching, he organizes field trips to nearby Enoshima Island, which provides students with important experience with which to understand the world and the cosmos. In 2019, he gave a report about his teaching of Big History and the liberal arts at the first international Big History symposium held in Japan, at J.F. Oberlin University in Tokyo. He may be contacted at <fumimaya@jcom.zaq.ne.jp>.

**Shamshuddin Jusop** grew up in a farming community in the east coast state of Kelantan, Malaysia. He graduated with a degree in Geology from the University of Malaya, Kuala Lumpur. He then went to Newcastle University (England) for an M.S. and studied for his doctorate at Ghent University in Belgium. Working at Universiti Putra Malaysia (UPM) since 1972, he taught soil science to both undergraduate and graduate students. Now he is now a Senior Research Fellow at the Faculty of Agriculture, UPM. Shamshuddin is past-president of both the Malaysian Society of Soil Science and the East and Southeast Asia Federation of Soil Science Societies; he is also an Honorary Member of the Belgian Royal Academy for Overseas Sciences. In 2014, he was elected as a Fellow of the Academy of Sciences Malaysia and the prestigious Science & Technology Award was conferred on him by the Malaysia Toray Science Foundation. His e-mail address is <shamshud@upm.edu.my>.

**Helen Kaibara** is an Assistant Professor of Modern Asian History, with a focus on Japan, at Jacksonville State University in Jacksonville, Alabama (USA). She received her Ph.D. in East Asian History from Michigan State University and was a Fulbright-Hays scholar at Rikkyo University in Tokyo (Japan). Her dissertation traced the transpacific origins of the Japanese-American ‘model minority’ myth in the early twentieth century. Her teaching fields are in East Asian History, General Asian History, Asian-American History, and World History. Her work has appeared in *Transnational Migration and Asia: The Question of Return* (2015), as well as in the journals *Studies on Asia*, *The Virginia Review of Asian Studies*, and *Rikkyo American Studies*. She may be contacted at <helen.kaibara@gmail.com>.

**Priyadarshini Karve** is Director of Samuchit Enviro Tech and Visiting PhD Faculty at the Symbiosis School for Liberal Arts (SSLA) in Pune. After working for ten years in the academic, research and non-profit sectors, she started her own enterprise in 2005, which promotes environmentally sustainable energy and lifestyle products. Priya has invented solid biomass cooking devices, decentralised biofuel technologies, and methodologies for effective adoption of renewable energy by intended beneficiaries. In 2010, she developed a personal carbon footprint calculator for urban residents throughout India and conducted climate friendly lifestyle workshops for urban communities. Among her many educational initiatives, she is co-editor of a Marathi bi-monthly journal on science and education for teachers in Maharashtra. She co-developed and co-taught the first course on Big History in South Asia at SSLA in the spring semester of 2018 and continues with this pioneering work. Priya may be reached at <pkarve@samuchit.com>.

**Hirofumi Katayama** is a professor at J.F. Oberlin University, Tokyo, where he specializes in environmental economics. He organized and teaches the first big history course in Japan <<http://obhp.org>>. In 2019, he and Nobuo Tsujimura organized the first Japanese Big History symposium, *Big History and Liberal Arts*, hosted by J.F. Oberlin University. Hiro’s goal is to construct a ‘Buddhist Big History’, which is based on the respect for all life and existence. His publications include *Politics of Climate Change over the Arctic: Preliminary Thoughts on the Global Commons* (Bunshindo 2014) and *Free Market and the Commons: An Introduction to Environmental Finance* (Jichosha 2008). His e-mail address is <katayama@obirin.ac.jp>.

**Steve Kerlin** is Director of Education at Stroud Water Research Center in Avondale, Pennsylvania (USA). The center conducts research on freshwater resources, restores watersheds, and educates about freshwater ecology. It is one of the few such centres in the world devoted to understanding, preserving, and protecting fresh water. Steve has a PhD in Curriculum and Instruction from

Pennsylvania State University. His publications include ‘Uncharted Waters: Sustaining a Meaningful Student Teaching Experience Amidst a Global Pandemic via an Online STEM Curriculum’ (2020) and *Model My Watershed: Curriculum and Teacher Guide*. He may be reached at <skerlin@stroudcenter.org>.

**Stephen Ko 柯泉宇** is a senior corporate trainer of human resources in Taiwan. With more than a decade of experience in management, he specializes in competence-based training and individual development planning. In 2021, he joined Worldviews Academy and began a ten-week online educational program known as ‘Competency Navigator.’ The core of the program is to develop generic and transversal skills, such as mastery in learning science, problem-solving, Big History and complex systems. He may be reached via his email <ke.chuanyu@gmail.com>.

**Ashish Kothari** is a founder-member of Kalpavriksh, an Indian environmental NGO, and helps coordinate the Vikalp Sangam (Alternatives Confluence) process in India. A sociologist by training, he has taught environmental studies at the Indian Institute of Public Administration and served as guest faculty at a variety of universities, institutes, and colleges. Ashish has served on the Indian Government’s Environmental Appraisal Committee on River Valley Projects, and on Expert Committees to formulate India’s Biological Diversity Act and National Wildlife Action Plan. He was a member of the Steering Committees of IUCN's World Commission on Protected Areas and Commission on Environmental, Economic, and Social Policy, served on the Board of Directors of Greenpeace International and as chair of Greenpeace India’s Board, and is part of the core team coordinating the Global Tapestry of Alternatives. He has been active with a number of people’s movements, including Narmada Bachao Andolan (Save Narmada Movement – a major river in central India) and Beej Bachao Andolan (Save the Seeds Movement). He is the (co)author / (co)editor of over 30 books, including *Alternative Futures: India Unshackled* (2017) and *Pluriverse: A Post-Development Dictionary* (2018), and over 400 articles. He may be contacted at <ashishkothari@riseup.net>.

**Andrey V. Korotayev** is Head, Laboratory for Monitoring Destabilization Risks, National Research University Higher School of Economics, and Professor, Faculty for Global Processes, Moscow State University, Russia. Beginning as an historian of Arabia, he made focused studies, such as seen in ‘Two Social Ecological Crises and Genesis of Tribal Organization in the Yemeni North-East’ (1996). Andrey researches topics in quantitative cross-cultural anthropology and seeks to understand biological and social macroevolution, as in ‘A Compact Macromodel of World System Evolution’ (2005) and ‘Mathematical Modeling of Biological and Social Phases of Big

History' (2014). He is a founding member of the Eurasian Center for Megahistory & System Forecasting and founder of *Evolution*, an almanac dedicated to the study of Universal Evolution, and thus is closely linked with Big History. Most recently, he has produced, with David LePoire, a collective monograph, *The 21st Century Singularity and Global Futures: A Big History Perspective* (2020). He serves as a board member of the International Big History Association. His point of contact is <akorotayev@gmail.com>.

**Emlyn Koster** was born in Egypt and has UK, Canadian and US citizenships. A geologist, museologist and humanist, he has been the CEO of the Royal Tyrrell Museum of Palaeontology, Ontario Science Centre, Liberty Science Center, and the White House-recognized North Carolina Museum of Natural Sciences. He has chaired the Geological Association of Canada, Giant Screen Theater Association and the Institute for Learning Innovation boards and been a board member with the Association of Science-Technology Centers and the Challenger Center for Space Science Education. For the IBHA board he chairs its planning task force. He is also an ambassador for the International Coalition of Sites of Conscience and an adjunct professor of Marine, Earth and Atmospheric Sciences at North Carolina. His honours include Humanitarian of the Year by the American Conference on Diversity and Doctoral Alumnus of the Year by the Faculty of Science at Canada's University of Ottawa. Transdisciplinary in approach, his research, publications and advocacy focus on the Anthropocene, which recognizes humanity as the predominant species and which, in a geological nanosecond, has ecologically detached itself from the Earth System.

**Nikolay N. Kradin** (D.Sci., Russian Academy of Sciences, St. Petersburg; Ph.D., Academy of Sciences of the USSR, Vladivostok) is Director, Institute of History, Archaeology and Ethnology, Far East Branch, Russian Academy of Sciences. His research focuses on the archaeology, history and anthropology of Inner Asian nomads, political anthropology, and world-system analysis. Nik is organizer of and participant in many archaeological and ethnological expeditions to Mongolia, Siberia, and the Russian Far East. Author of more than 500 scholarly publications, including *Nomadic Societies* (1992), *Xiongnu Empire* (1996, 2002, 2012), *Political Anthropology* (2001), *Chinggis Khan Empire* (2006, co-author), *History of Khitan Empire Liao* (2014, co-author), and *Nomads of Inner Asia in Transition* (2014).

**Himanshu Kulkarni** is a hydrogeologist who has worked on aquifers and groundwater issues across India's diverse landscape for nearly 40 years. He obtained a PhD from Pune University, where he worked for thirteen years, as well as in the corporate sector. In 1998, he founded the Advanced Center for Water Resources Development & Management (ACWADAM), an NGO

that seeks to bring communities closer to their aquifers and manage groundwater as a common resource. Through ACWADAM's collaboration with educational institutions, Himanshu also works as adjunct faculty and advisor at Shiv Nadar University (Uttar Pradesh) for the MSc degree in Water Science and Policy and is visiting faculty and member of the Board of Studies at the Tata Institute of Social Sciences, in Mumbai, where he supervises PhD scholars. He has been an advisor to the Government of India, a research scholar with the Indian Council of Scientific and Industrial Research, a UNESCO scholar, and a Fulbright Fellow. He may be reached at <\*>.

**Lucy Kurien** is founder of Maher Ashram (Mother's Home), an interfaith haven of hope, love and belonging that is based in Pune, Maharashtra. She and Maher work to identify the root causes of violence and despair in communities, then develop projects to deliver services to address these issues and their effects, so that women, children and men can become healthy, happy and self-reliant. Sister Lucy have been showered with local, national and international awards, such as the 2015 *Nari Shakti Puraskar* (Woman Power Award) from the President of India and the 'World's 100 Most Inspiring People' from *Oooms Magazine* in 2019. She and Maher Ashram may be reached at <maher@maherashram.org>.

**Lucy Laffitte** teaches science in its widest contexts. She has a baccalaureate in natural science from the University of Oregon, a master's in adult education/instructional design, and a doctorate in environmental resource management from North Carolina State University. She developed courses at the Oregon Museum of Natural History, the North Carolina Museum of Natural Science, and the Rachel Carson Institute, among others. She writes a newspaper column, founded an environmental radio program, created educational certificate programs, and developed digital learning for public television. Lucy has been teaching Big History to undergraduates and middle school students since 2015. She currently serves as President of the International Big History Association and may be reached at <lucy.laffitte@gmail.com>.

**Gavin Lee 李佳達** is founder of Worldviews Academy, the first private institute to focus on providing Big History education in Taiwan. With a background in law and decisional science, he is a cross-sector leader in Taiwan. He has served multiple roles, including chief legal officer of a listed solar company, spokesperson of several national environmental campaigns, special assistant to the Prime Minister, and youth leader in the United Nations Development Program summit. As a Big Historian, Gavin has published books that cover diverse areas: about Chinese immigrants in the 19<sup>th</sup> century (2011), the 1904 Russo-Japanese War (2013), and the maritime silk road and world trade (2018). Gavin was a visiting scholar at Harvard and the University of California, Berkeley.

He has dedicated himself to Big History education since 2018, and has brought Big History to five high schools, two Executive MBA programs, corporate training, and one of the largest Buddhist organizations in Taiwan. He may be reached at <lee@worldview.asia>.

**David LePoire** researches, develops and applies science principles in environmental issues, Big History evolutionary trends, and particle scattering. He has a BS in physics from CalTech, a Ph.D. in computer science from DePaul University, and over thirty years experience at the Argonne National Laboratory in the development of scientific analyses, software, training, and modelling. His research includes Big History synergistic trends among energy, environment, organization, and information. Dave can be reached via email at <david.lepoire@gmail.com>.

**Davidson Loehr** wanted a profession that could help him seek answers to two of life's biggest questions, so he earned a PhD that bridged theology, the philosophy of religion, science and language at the University of Chicago. He served for 23 years as a Unitarian minister and became a Fellow in the ground-breaking Jesus Seminar. He also engaged in the vocations of woodworking and photography. He got involved with Big History in 2014, most recently contributing a chapter on 'The Nature of Humans, Science and Religion' to the book, *Science, Religion and Deep Time* (2021). His pursuit of life's two biggest questions is still underway – Who, at our best, are we? and How should we live, so that when we look back we can be glad we lived that way? He may be contacted at <davidsonloehr@gmail.com>.

**Christopher Lloyd** graduated in History from Peterhouse, University of Cambridge, England. In 1991, he joined the *Sunday Times* and became its Technology Editor. Five years later, he served as editorial lead in creating the first *Times* and *Sunday Times* Internet Editions and co-founded *LineOne*, an online joint venture between News International, BT, and United News & Media. In 2000, he became CEO of the Oxford-based start-up, Immersive Education, a publishing company. After helping home-educate his two daughters, Chris grew frustrated with the highly unintuitive and fragmented nature of traditional education systems (divided into subjects, timetables and curriculums), so he decided to resume his writing career with a book that aimed to connect all knowledge from the beginning of time to the present day. *What on Earth Happened? The Complete Story of Planet, Life and People* (Bloomsbury 2008) went on to sell more than a half-million copies. Out of the proceeds, Chris founded, What on Earth Publishing, in 2010. Its explicit goal was to create a range of engaging, visual, non-fiction resources for children, teachers and parents that puts knowledge back together and helps children learn through their natural curiosity. The business started with a series of Big History timelines, known as 'Wallbooks', which tell giant

stories of world history, nature, science and inventions in fold-out form with more than 1000 pictures. He then wrote a children's version of his big history book, *What on Earth Happened?*, called *Absolutely Everything! A History of Earth, Dinosaurs, Rulers, Robots and Other Things Too Numerous to Mention* (What on Earth Books 2018). Since publication in October 2018, it has sold more than 100,000 copies in ten languages. His latest partnership is with Britannica, makers of the famous encyclopaedia, to launch a range of new non-fiction books for children, beginning with the *Britannica All New Children's Encyclopedia – What We Know and What We Don't*. The encyclopaedia is not divided into a traditional A-Z format but takes readers on a journey through big history in eight chapters. Since its launch in October 2020, it has sold more than 120,000 copies worldwide in fifteen languages. Chris divides his time between managing the business, writing books and giving lectures all over the world. He may be contacted at <chris@whatonearthbooks.com>.

**Claudio Maccone** is an Italian SETI astronomer, space scientist, and mathematician. He started his career in 1972 with a Physics MSc at the Università degli Studi di Torino, in his hometown of Turin. After a second MSc in Mathematics, he moved to London, where, in 1980, he obtained his PhD at King's College in Mathematics. Five years later, aerospace manufacturer Alenia Spazio hired him to design space projects. He has published five mathematical books and, notably, developed the *Focal* mission to magnify radio-wave images, using the Sun as a gravitational lens. Asteroid 11264 was named in his honour – *Claudiomaccone* – because of his pioneering efforts in this research and, last year, a \$2 million grant was awarded by NASA to its Jet Propulsion Laboratory for further studies. In 2010, he made a presentation at the United Nations Committee on the Peaceful Uses of Outer Space about a plan for reserving the Farside of the Moon for astronomical and scientific research. Elected to the International Academy of Astronautics, in Paris, Claudio took a deep interest in the Search for ExtraTerrestrial Intelligence, as he envisioned how contact with ET civilizations would profoundly change the course of human history. He was elected Chair of the IAA SETI Permanent Committee in 2012 and significantly increased its number of members. In 2019, Claudio chaired the Big History symposium on SETI in Milan. His contact points are <clmaccon@libero.it> and <claudio.maccone@gmail.com>.

**Diviya Makhija** is a student at the Symbiosis School for Liberal Arts (SSLA), pursuing a degree in English, with a double minor in Sociology and Law. She is a member of SSLA's Gender Committee and is Head of the Theatre Club (The Natak Society). Diviya served as an editor for *Sutradhar*, a cultural affairs magazine, and has been an active part of SSLA Presents, an annual theatre production. She also works as a volunteer with U&I Trust, an Indian educational NGO to help disadvantaged children, where she looks after fundraising, recruitment, and curriculum



development. Diviya is the Communications and Media Head of the IBHA-SSLA Big History Conference 2021, and can be reached at <diviya.makhija@ssla.edu.in>.

**Gayatri Mendanha** holds MAs in both Philosophy and English. She is an Assistant Professor at the Symbiosis School for Liberal Arts in Pune, where she teaches courses in Literature and Philosophy, from Creative Writing and Literature to Religion and Women Philosophers. She has also taught at the Jnana Deepa Institute for Philosophy and Theology, and at FLAME University. She may be reached at <gayatri@ssla.edu.in>.

**Anil Menon** received his Ph.D. from Syracuse University, New York (USA) in Computer Science, specializing in evolutionary computation. He spent about nine years working as a research engineer in a variety of start-ups, editing the volume, *Frontiers in Evolutionary Computation* (2004), before shifting to writing fiction. His most recent work *Half Of What I Say* (2015) was shortlisted for the 2016 Hindu Literary Award. Along with Vandana Singh, he co-edited *Breaking the Bow* (2012), an international anthology of speculative fiction inspired by the Ramayana. His debut novel, *The Beast With Nine Billion Feet* (2009) was shortlisted for the 2010 Vodafone-Crossword Children's Fiction Award and the 2010 Carl Baxter Society's Parallax Prize. His short fiction has appeared in a variety of international magazines, including *Interzone*, *Interfictions*, *Jaggery Lit Review*, *Lady Churchill's Rosebud Wristlet*, and *Strange Horizons*. His stories have been translated into more than a dozen languages including Hebrew, Igbo, and Romanian. Anil's contact is at <anilm411@gmail.com>.

**Richa Minocha** was born in Simla, a small town in the predominantly rural state of Himachal Pradesh in North India. She completed her Master's degree from Himachal Pradesh University and went to Jawaharlal Nehru University in New Delhi for her doctorate. Her post-doctoral work at the London School of Economics & Political Science (UK) focused on ecological, cultural and religious linkages. She first taught at Himachal Pradesh University in Simla and was the founding member of Jan Abhiyan Sanstha, a grassroots organization promoting conservation, livelihood, gender, and social development. In 2017–18, Richa served as core Indian faculty for environment under the initiative, 'Rethinking Food Security: Agriculture, People and Politics', a program of the School of International Training (USA). She is Associate Professor with the Symbiosis School for Liberal Arts. where she works on women's issues, ecology, and anthropology. She is a member of the Forum for Crèche & Child Care Services, the Pakistan-India Peoples' Forum for Peace & Democracy, and Egalitarian Trails. She may be reached at <richa.minocha@ssla.edu.in>.

**Aishi Mitra** is a student at the Symbiosis School for Liberal Arts (SSLA), where she is pursuing a degree in International Relations, with a double minor in Economics and Media Studies. She has worked as a research intern with Bharatiya Agro Industries Foundation in Pune, the Center for Land and Warfare Studies in Delhi, and United Religions Initiative, a global grassroots interfaith network. At SSLA, she was an editorial intern for *Confluence: Journal of Interdisciplinary Studies* and, as a member of SSLA's Gender Committee, she helped to draft the gender policy for the university. Aishi is a professional Kathak dancer. She can be reached at <aishi.mitra@ssla.edu.in>.

**Paul Narguizian** is Professor of Biological Science and Science Education at California State University, Los Angeles. His Big History Science Education research lab develops curricula for non-science and science majors with examples from the Big History and Journey of the Universe projects, popular films, science fiction, the nature and history of science, and data from scientific research. His students explore key research questions such as: What are the major milestones in biological discovery that expand our knowledge of life? What role should the grand narrative of the formation of the universe play in biology education? How can museum objects and natural history collections help us better understand Big History? Paul presented on the future of biology education at the 2019 IBHA symposium in Milan and published 'Considering Grand Challenges in Undergraduate General Biology Education in the *Journal of Big History* (2020). He may be reached at <pnargui@calstatela.edu>.

**J.N. 'Nick' Nielsen** is an independent scholar from Oregon who studies emergent complexity, especially as it relates to civilization and its future in the context of big history. He has spoken about the future of civilization at several conferences (100YSS, Icarus Interstellar, SSoCIA), including the 2014 IBHA conference in San Rafael, the July 2019 IBHA symposium in Milan (where he spoke on 'Peer Complexity during the Stelliferous Era'), and the 2020 webinar, *Being A Good Ancestor* (speaking on 'Scientific Approaches to Civilization'). He may be contacted at <john.n.nielsen@gmail.com>.

**Prashant Olalekar** is a Jesuit from Bombay who completed his Doctor of Ministry in Peace Studies at the Graduate Theological Union, Berkeley, California in 2006. Recently retired as Head of the Department for Interreligious Studies, he was also Adviser of the All India Catholic University Federation unit at St. Xavier's College, Mumbai. Prashant coordinated *Jagruti* (Awakening), an experiential value education programme for junior college students, which included exposure trips to slums and rural areas of India. He was Novice Director and Coordinator for Formation of the Bombay Jesuit Province, Episcopal Vicar for Religious of Vasai Diocese,

and Director of Pasayadaan Holistic Spirituality Centre, Vasai, and Retreat House, Bandra. Co-founder of *Samanvaya* (Harmony), a network for grassroots research scholars to collaborate for community peace, Prashant also founded InterPlay India and organized Peace Pilgrimages to India from the USA and Australia. InterPlay and Movement Meditation workshops are popular with professionals, students, teachers, as well as marginalized groups like the tribal community, the differently-abled, sex workers, and slum dwellers. He has facilitated Movement Meditation retreats in India, the United States, and Ireland. An active member of the Big History movement, he makes presentations on topics related to Cosmic Spirituality for the World Union of Jesuit Alumni, the Jesuit Educational Association of South Asia, and Fireflies Ashram in Bangalore. He may be reached at <olalekar@gmail.com>.

**Juhi Pandey** is Technical Head, Nila House, Lady Bamford Foundation. An initiative in corporate social responsibility (CSR) for Joseph Cyril Bamford Excavators (JCB India), Nila House is based in Jaipur and serves as a centre of excellence for projects related to natural indigo, dyes and fibres. An alumni of the National Institute of Fashion Technology (NIFT) – Chennai and the National Institute of Design (NID) – Ahmedabad, Juhi has worked in social development projects across India for the past ten years. Her special focus is on human-centric and process-based design in communities so as to understand traditional knowledge systems and find solutions relevant to the modern world. In 2010–2015, she co-founded Tara Trust in Goa, an organisation for women and children seeking creative, holistic development. In 2016–2018, Juhi served as Director of Khamir Craft Resource Center, in Kutch, Gujarat, where she helped revive the regional sheep-wool value chain. She has contributed her expertise in craft enterprise at the Barefoot College, Tilonia and been regular visiting faculty at the NID – Ahmedabad, and NIFT – Mumbai. Her e-mail is <juhi.pandey@lbfjaipur.com>.

**Jahnvi Pandya** is a psychologist in Mumbai who works with orphans, juvenile delinquents, and students. She helps them deal with issues of impulse control, aggression, stress, depression and rejection through empathy and compassion-building therapies. She has reached more than 50,000 students through her stress management seminars in more than sixty schools around India and 800,000 students through her YouTube channel – *Jahnvi Pandya*. Recipient of the 2019 Nari Ratna award of Gujarat, Jahnvi is also a national award-winning archer and musician. She has adapted the *Bhagavad Gita* into English verse, then set the verses to Indo-Western tunes, so the text would appeal to today's youth. She may be reached at <jahnavipandya11@gmail.com>.

**Pallav Pandya** is a singer, musician, and naturopath. Starting his career at age nine, he performed for old-age homes, including Mother Teresa's ASHA Daan for abandoned children in Mumbai. This inspired him to compose socially-empowering songs about AIDS awareness, for those with emotional challenges, and for suicide prevention. A virtuoso, Pallav has performed in forty countries, including the Royal Albert Hall in London. In addition, he and his wife, Trupti Pandya, counsel people on domestic issues. Pallav believes that music can change the world and should be accessible to everyone. He uses Facebook Messenger as a global online music school with more than 15,000 students, while his YouTube channel has over 10,000 followers. His 'train the trainer' program is increasing the number of teachers so that it is now a 24/7 world-wide institute of music. Ragamony is Pallav's system for professional musicians to learn to apply harmony in Indian ragas. These initiatives are online for free. His contact is <musicwithpallav@gmail.com>.

**Roy Pereira** served as Provost/Vice-Principal (Academics) of St. Xavier's College (Autonomous) in Mumbai, where he taught in the Department of Chemistry and began a programme in Neuroscience from 1993. He was awarded two research fellowships at the Berkeley Campus, Santa Clara University (2016) and at St. Louis University (2017) in the United States. Roy's current research considers the effects of cell phones, internet use and social media on the brain, on which he spoke at Google Headquarters. His research also involves understanding the mind-body link, the effect of meditation on health outcomes, and ways of dealing with stress in our lives. In this connection, he spoke at Harvard University in 2017. He also has Masters Degrees in Chemistry, Philosophy and Biblical Theology. His presentations are interactive and strive to explain complex concepts of Neuroscience in easy-to-understand ways through use of multimedia, music and the piano. He joined Creighton University in February 2020, teaching in the School of Medicine. Roy may be contacted at <roy@jesuits.net>

**Ann C. Pizzorusso** is a geologist and Italian Renaissance scholar. She experienced many aspects of geology, from her Arizona University field-mapping days in the Grand Canyon to oil drilling, gem hunting, and cleaning contaminated soil and water. As Director of Environmental Affairs for Philips Electronics, she managed corporate compliance in the USA and Mexico, for which they received the World Environmental Center Award for Corporate Excellence. She then entered graduate studies in the Italian Renaissance at New York University, where she began art-science research projects that led to books and articles on da Vinci, Dante, and the geological patrimony of Italy. A native of New Haven, Connecticut, Ann divides her time between New York City and Italy, where she continues to write and lecture about the Earth and its beauty. She can be reached at <tweetingdavinci@gmail.com>.

**Anne-Marie Poorthuis** is an independent researcher who works on the organizing of local society in relationship to all its points of contact. She developed these programs and published them via the networked-learning-school, LOOK, Open University (2011, in Dutch). She integrates Big History and Montessori education in her work. In 2016, she published her research about the education of Maria Montessori as an example of Big History. Together with Jos Werkhoven, Anne-Marie developed a framework for teachers in primary education from a Big History perspective. They coordinate the platform, Big History, in primary education in the Netherlands. Her point of contact is <annemariepoorthuis@gmail.com>.

**Esther Quaedackers** is Lecturer in Big History at the University of Amsterdam, where she has been coordinating and teaching Big History since 2006. She has also developed and taught Big History courses at Amsterdam University College, the Eindhoven University of Technology, the Free University, and Utrecht University. In addition to educational approaches, Esther is developing ways to use Big History for research purposes. Among other efforts, she has been writing articles, chapters and a book about the *Little Big History Approach*, in which relatively small subjects are connected to aspects of Big History, in order to generate new ideas about how these subjects came to be the way they are. Esther may be reached at <E.Quaedackers@uva.nl>.

**Kishan S. Rana** is a retired senior Indian diplomat. His 35-year career in the Indian Foreign Service included heading missions as Ambassador and High Commissioner for Algeria, Czechoslovakia, Kenya, Mauritius and Germany, Consul General in San Francisco (USA), and serving on Prime Minister Indira Gandhi's staff. He took a second career in the late 1990s as a scholar and instructor of diplomacy. A Professor Emeritus at DiploFoundation, he has written 11 books, 150 articles, and a 100 book reviews. His major interests include diplomatic process, foreign ministry comparative studies, and economic diplomacy, with a special focus on China affairs. His webportal is at <https://kishanrana.diplomacy.edu/>.

**Shobha Rao** is an Independent Consultant working on human rights and sustainability issues. She hails from Karnataka in South India. Holding a Masters of Laws (LLM) in Human Rights, she is currently pursuing a Masters in Sustainability Studies from Cambridge University (England). Shobha has worked on human rights issues as well as refugee and humanitarian law concerns with the United Nations and NGOs in areas of conflict and fragile contexts in Asia (Afghanistan, India, Indonesia, Timor Leste) and the Horn of Africa (Sudan and South Sudan). She can be reached at <shobharao@yahoo.com>.

**Joel S. Regala** is Assistant Professor and former Chair of the General Education Department, School of Arts & Sciences, Holy Angel University, Angeles City (Philippines). He finished his BSEd in History, Magna Cum Laude, at the Holy Angel University, then obtained his MA in Philippine Studies at the Asian Center, University of the Philippines, Diliman. Joel sits as a Vice President of ADHIKA (Asosasyon Ng Mga Dalubhasa May Hilig at Interes Sa Kasaysayan) Ng Pilipinas Inc. He attended the Big History Summer Institute at the Dominican University of California in 2017. He may be contacted at <jregala@hau.edu.ph>.

**Barry H. Rodrigue 罗柏安** is Professor of Anthropology, Symbiosis School for Liberal Arts, Symbiosis International University. He began his ethnographic work in Alaska, establishing the international journal, *Archipelago*, as a vehicle for networking communities around the North Pacific. He holds a PhD in Geography from Université Laval (Quebec), along with post-graduate degrees in Archaeology, History, and Folklore. His efforts for global cooperation include work with the Chinese Academy of Social Sciences, the Australian National University, the US Open World Leadership Program, and the Russian Academy of Sciences. Barry developed the first core curriculum course and the first online course in Big History. As co-founder and global coordinator of the International Big History Association and the Asian Big History Association, he co-taught the first university course in Big History in South Asia in 2018. His co-edited collection with Andrey Korotayev and Leonid Grinin, *From Big Bang to Galactic Civilizations: A Big History Anthology* (2015–2017), brought together 100 scholars from 25 nations. His e-portal is found at <www.rodrigue-global.org/>.

**Sisir Roy** is Senior Homi Bhabhha Fellow and visiting professor at the National Institute of Advanced Studies at the Indian Institute of Science campus in Bengaluru, Karnataka. He is a theoretical physicist and served as Professor, Indian Statistical Institute, Kolkata for more than thirty years. At present, he researches and teaches about interdisciplinarity, including consciousness studies. Among his publications are *Demystifying Akasha: Quantum Vacuum and Conciousness* (2010), *Understanding Space, Time, and Causality: Modern Physics and Ancient Indian Traditions* (2020), and *Microbial Communication* (2020). He may be reached at <sisir.sisirroy@gmail.com>.

**Masako Sakata** is Head of 虔十の会 (Kenju no Kai / Kenju Association), a conservancy that works to protect Mt. Takao's ecology. She is a nature guide on this mountain, which is famous for its biodiversity, despite being located in the western suburbs of Tokyo. She serves as the Representative of the Japan Civil Network for the United Nations Decade on Biodiversity (JCN-

UNDB) and an Executive Board Member of Communication, Education and Public Awareness, Convention for Biological Diversity <<http://cepajapan.org/about/whatis/>>. Masako has participated in the Convention for Biological Diversity's Conference of Parties (COP) since COP 10 (2010) at Nagoya-City, Aichi Prefecture, Japan. In 2012, she participated in the Earth Summit (Rio+20) as a member of JCN-UNDB. Presently, she and the Kenju Association are developing a post-2020 global biodiversity framework, which will be adopted at COP 15 in Kunming, China. She may be reached at <[kenjusakata@yahoo.co.jp](mailto:kenjusakata@yahoo.co.jp)>.

**Radhika Seshan** is Professor and Head of the Department of History (ret.), Savitribai Phule Pune University, Maharashtra. Her work has focused on medieval Indian economic studies, especially maritime and urban history. This resulted in her publication of books like *Trade and Politics on the Coromandel Coast, Seventeenth and Early Eighteenth Centuries* (2012); *Ideas and Institutions in Medieval India, Eighth to Eighteenth Centuries* (2013); and *Constructions of the East in Western Travel Narratives, 1300 CE to 1800 CE* (2020) She has also delivered lectures at higher education academies as part of continuing education for teachers throughout India. She is presently a faculty member in the Department of History at the Symbiosis School of Liberal Arts.

**Seth Shostak** is Senior Astronomer and Institute Fellow at the SETI Institute, in Mountain View, California. He has an undergraduate degree in physics from Princeton University, and a doctorate in astronomy from the California Institute of Technology. For much of his career, he conducted radio astronomy research on galaxies and has published approximately sixty papers in professional journals. Seth has written 600 popular magazine, newspaper and web articles on various topics in astronomy, technology, film, and television. For a decade, he chaired the International Academy of Astronautics' SETI Permanent Committee and co-authored a college text on astrobiology, *Life in the Universe*. He weekly hosts the SETI Institute's science radio show, 'Big Picture Science,' and he has written, edited and contributed to a half-dozen books. His most recent being *Confessions of an Alien Hunter: A Scientist's Search for Extraterrestrial Intelligence* (National Geographic 2009).

**Siddhartha** is an author, journalist and social activist who writes on ecological, cultural and social issues for leading Indian and international publications. He studied law in India and sociology in Paris and participates in many global organizations, including as international coordinator of the Ecumenical Institute for the Development of Peoples – International, Paris (INODEP), a centre of alternative education founded by Paulo Freire. He is a board member for the Asian Cultural Forum for Development (ACFOD) Bangkok, one of the oldest and most active organizations for ecological and social issues and is a former international committee member of the World Social

Forum. For the past twenty years, Siddhartha has organised ecological and cultural workshops in many countries in the Asia-Pacific region on sustainable development. He founded Fireflies Ashram, outside Bangalore, India in 2001. A major international centre for ecological and cultural activities, it encourages inter-cultural dialogue. Its website is at <<http://www.fireflies.org.in/>>.

**Edward Gordon Simmons** teaches history part-time at Georgia Gwinnett College just northeast of Atlanta, Georgia (USA). His career as a college professor was interrupted by the military draft during the Vietnam War, after which he spent thirty-two years as a consultant and management trainer, working with the top management levels of Georgia's largest human services agency. In retirement, he returned to his original career, combining history, science, and religious studies. He is the author of *Talking Back to the Bible: A Historian's Approach to Bible Study* (winner of the 2016 Illumination Award for Spirituality). He wrote two chapters in the best-selling book, *The Spiritual Danger of Donald Trump: 30 Evangelical Christians on Justice, Truth, and Moral Integrity* (ed. Ronald Sider, 2020). His next book, *Values, Truth, and Spiritual Danger: Progressive Christianity in the Age of Trump* (forthcoming, Wipf & Stock Publishers). Edward may be reached at <[esimmon1@ggc.edu](mailto:esimmon1@ggc.edu)>.

**Vandana Singh** is Professor of Physics at Framingham State University near Boston (Massachusetts). As part of a program award from the American Association of Colleges and Universities, she developed a case study about climate change in university education, for which she travelled to Alaska to understand climate issues at the intersection of science, policy, indigenous culture, and justice. Her current project is a transdisciplinary study of the climate crisis as experienced by marginalized communities in India at the leading edge of the climate shift, with a special emphasis on the Himalayas. Vandana is a Fellow of Arizona State University's Center for Science and the Imagination, and is also a science-fiction writer and speculative futurist. Her newest short-story collection, *Ambiguity Machines and Other Stories* (2018) was shortlisted for the Crossword Book Award and the Philip K. Dick Award. Her point of contact is at <[vsingh@framingham.edu](mailto:vsingh@framingham.edu)>.

**Sudarshan** has worked most of his life with the Soliga people in Karnataka. As a physician, he has incorporated indigenous medicine into his medical practice and health centres. In 1981, he set up the Vivekananda Girijana Kalyana Kendra (VGKK), a sustainable development program, with most decisions made by the tribal people themselves. Five years later, he founded the Karuna Trust as 'Health Care for the Unreached', providing primary health care via public / private partnerships to 1.5 million people in the remote and hilly tribal areas in six of India's states. In 1994, Swedish Parliamentarians awarded Sudarshan the Right Livelihood Award 'for showing how



tribal culture can contribute to a process that secures the basic rights and fundamental needs of indigenous people and conserves their environment'. In 2000, he received the Padma Shri, one of the highest awards in the Republic of India. Dr. Sudarshan is also a student of the Vedas and tribal spirituality. His e-mail is at <drhsudarshan@gmail.com>.

**Priya Sundarrajan** is Associate Professor, Department of Life Science and Biochemistry, St. Xavier's College – Autonomous, Mumbai. She also serves as Director of the Caius Research Laboratory and is Member Secretary of its Institutional Biosafety Committee. As a geneticist and biotechnologist, her main research focus is on bioethanol and biofuel production, especially using yeasts, enzyme biotechnology and human genetics. Priya teaches cell biology, biotechnology, genetics, molecular biology, and environmental science to undergraduate and graduate students. She has a particular interest in integrative and multidisciplinary approach to teaching and learning. She may be contacted at <priya.s@xaviers.edu>.

**Spencer Striker** is Associate Professor-in-Residence for Communication, specializing in Digital Media Design, at Northwestern University in Qatar. His creative scholarship is organized around digital design that embraces interactivity for media, learning, and entrepreneurship. He has taught at the American University in Dubai (as Coordinator of the Digital Media Program), the University of Wisconsin at Whitewater (co-founding the Media, Arts and Game Development Program), and Indiana University at Bloomington. Spencer's projects have received awards in the digital media field, including the Webby, and his work has been featured at national / international conferences, including the 2017 Web Summit in Lisbon, the 2018 Step Conference in Dubai, and the 2019 Tokyo Slush Start-up Showcase. He may be reached at <spencer.striker@northwestern.edu>.

**Robert Sylvester** is an commentator and activist whose work bridges human ecology and natural history. Trained as a rural sociologist, he is a retired civil servant of the Alaska Department of Community & Regional Affairs and the Alaska Department of Health & Social Services. An active outdoorsman, he has experienced the rigors of the commercial fishing trade and was a long-time member of the Juneau Mountain Rescue group. Bob has travelled widely, spending time with activists in Ecuadorian jungles and along the Peruvian Andes as well as in the urban landscapes of Myanmar and China. An avid white-water rafter, he enjoys the Tatshenshini and other wild rivers in Canada. His writing has appeared in the *Southeast Alaska Archipelago*, and he presently works with Mihael Blikshteyn Photography in Tacoma, Washington (USA). Bob may be contacted at <hikeak@yahoo.com>.

**Sanjay Subodh** did his PhD on Aligarh historiography from Panjab University in Chandigarh. He then joined Kurukshetra University and, in 2005, the University of Hyderabad, where he is Professor in the Department of History. He has been twice recipient of Best Research Paper Award from the Indian History Congress, and has served as President of the Medieval India section of the Indian History Congress, the Andhra Pradesh History Congress, and the Punjab History Conference. Since 1995, Sanjay has researched Medieval structures, their architecture and technology of construction. He is interested in understanding the functional part of a structure and the technology that makes it operational. He sees history as a practicing discipline and his researches are of an interdisciplinary nature. He authored *Historiography of Medieval India* (2003) and a number of research articles. Sanjay can be reached at <san\_sahay@yahoo.com>.

**Shubhangi Swarup** is author of the critically acclaimed novel, *Latitudes of Longing*, a passionate story of Love, Geography, Asia, and Big History. It won the Tata Lit Live! Debut Fiction prize and was shortlisted for the JCB prize and the Hindu prize for fiction. In 2020, it will be released by Penguin Random House and translated into ten global languages. Shubhangi herself received the Sushila Devi Woman Writer of the Year award. She holds an MSc in Violence, Conflict and Development from the School of Oriental and African Studies, University of London, and was the Charles Pick Fellow of Creative Writing at the University of East Anglia. She lives in Mumbai and may be contacted at <shubhangi.swarup@gmail.com>.

**Yoshihiro Takishita** is Founding President of the Association for the Preservation of Traditional Japanese Farm Houses. Born in the mountains of Gifu Prefecture, on Honshu, the main island of Japan, his first project of moving and reconstructing an old farmhouse took place in 1965, while he was still a college student at Waseda University, where he later trained as an architect. Since then, he has preserved more than 35 centuries-old rural Japanese dwellings, reconstructing them in new locations as modern homes (four of them outside Japan). Yoshi's book, *Japanese Country Style: Putting New Life into Old Houses*, was published in 2002. His work is celebrated in Japan and abroad, being featured in numerous magazine and television reports, including *Architectural Digest*, the *Wall Street Journal*, *New York Times*, *Nihon Keizai Shimbun*, *Mainichi Shimbun*, 1VHK-TV, and a variety of international broadcasters. He has lectured in Japanese and English at many Japanese universities, Colby College, Harvard University, the Foreign Correspondents Club of Japan, and the Japan Societies of Boston and New York. In 2012, Yoshi received the Cultural Distinction Award of the Japan Society of Boston. He can be contacted at <from1734@sea.plala.or.jp>.

**Jim Tierney** is a social worker, retired, in the State of Maine (USA). He earned a bachelor's degree in government from St. Michael's College in Colchester, Vermont, followed by a Master's of Social Work at the University of Connecticut. He served as Regional Director of the Portland Office of the Maine Department of Human Services (MDHS) from 1967 to 1977 and taught for five years at the University of Southern Maine's Department of Social Welfare. During the 1990's, he worked with the American Child Welfare Association in Texas to help build a federally-mandated child-welfare information system, then helped to build a similar system in Maine. He finished his state service as Supervisor of the Adoption Unit at MDHS in Lewiston. An active family man, Jim enjoys back-country skiing, river-paddling, reading and gardening, and serves on the Brownfield Historical Society's Board of Directors. Active in Big History since the IBHA's inception, Jim has made presentations at all its conferences. He may be reached at <run437@hotmail.com>.

**Nobuo Tsujimura** is adviser and webmaster for the Oberlin Big History Movement at J.F. Oberlin University, Tokyo <<http://obhp.org/>>. President of the Asian Big History Association, he convened its first panel at the IBHA's 2018 conference and, in 2019, co-organized the first international big history symposium at J.F. Oberlin University with Professor Hirofumi Katayama. During the 2010s, Nobuo developed a series of Japanese books on Big History with the Institute for Global and Cosmic Peace, wrote a commentary for David Christian's book *Origin Story* in its Japanese edition, and is now writing an introductory book about Big History. He may be contacted at <palettehole@gmail.com>.

**Yangkahao Vashum** is Professor of Systematic Theology and Tribal Theology at the Eastern Theological College in Jorhat, Assam (India). He is also the Dean of the Tribal Study Centre and Executive Editor of the *Journal of Tribal Studies*. Ahao has also served as Head of the Department of Theology and Dean of Post-Graduate Studies. He received his ThM from the Princeton Theological Seminary (New Jersey) and his PhD from the Iliff School of Theology and Denver University (Colorado) in the United States. He has authored, edited and co-edited a number of books including *Tribal Theology and the Bible* (2011); *Peacemaking in Northeast India* (2012); *Search for a New Society* (2012); and *The Quest for Harmony* (2013). His *Christology in Context: A Tribal-Indigenous Appraisal of North East India* received the J. G. Frank Collison Award for Outstanding Contribution to Theological Research in India in 2017. His latest, *Faith Seeking Transformation: Rethinking Faith, Theology and Mission in North East India* was published in 2020. He has written many scholarly papers nationally and internationally. Ahao can be reached at <yvashum@gmail.com>.

**Renu Vinod** is Adjunct Faculty at SSLA, where she teaches Sociology. She obtained her PhD from Jawaharlal Nehru University, Delhi, where her research focused on participatory democracy movements in India. She continued her work in the development sector in Delhi and then at Savitribai Phule Pune University. Her research and advocacy deal with issues of informal sector livelihoods, the right to information, participatory democracy, and corporate social responsibility. Renu was recipient of the Erasmus Mundus Scholar Grant to the University of Groningen (Netherlands) and to Uppsala University (Sweden) in 2013. She received the Erasmus Mundus's Experts4Asia Consortium Grant for postdoctoral research at Uppsala University in 2016. She published this research as a chapter on first-generation white-collar Indian immigrants to Sweden in *India Migration Report* (Routledge 2019). Renu has other publications in the areas of the digital divide in education, informal livelihoods, and the clash of modern and traditional values in India. She headed the research team which wrote the Indian Central Information Commission's first Annual Report, which was tabled in the Indian Parliament in the year 2007. She is currently writing a textbook on the *Sociology of Modernity in India*. Renu may be reached at <renu.vinod@ssla.edu.in>.

**Albert Wang** 汪大久 has served as the principal of Mingdao High School in Taiwan for twenty years. Established in 1969, Mingdao is one of Taiwan's prominent private schools, with 7300 students. After the national K-12 curriculum reform in 2019, Mingdao became the first high school to adopt a course in Big History. Previously, Albert had been a software engineer in Silicon Valley and a system engineer at AT&T Bell Labs in the USA. He is Chairman of the Mingdao Cultural and Educational Foundation, which aims to broaden the horizons of education by incorporating advanced curriculum with global reach and local impact, such as Sustainable Development Goals and Big History.

**Jos Werkhoven** is a retired Montessori teacher, counsellor, and educator. He has been an educational publisher and developer since 1995, having produced *The Lines of Life* (1997). His main focus is on Cosmic Education (Montessori) and Big History. With Montessori teachers and trainers, and others from a wide range of expertise, Jos established a *Platform for Big History in Primary Education*. Together they study the possibilities of giving Big History a basic place outside of Montessori education. Based on *The Lines of Life* and the work of the Platform, he and his wife, Anne-Marie Poorthuis, developed the *Framework for Development*. Work is currently underway to make a guide for teachers to work with this Framework. Jos also writes 'Big History stories' for children from the age of six. You can reach him at <werkhoven@dearend.nl>.

**Peter J. Whitehouse**, MD, PhD is Professor of Neurology at Case Western Reserve University and Professor of Medicine at the University of Toronto. He received his MD/PhD in Psychology from Johns Hopkins University as well as a faculty appointment. In 1986, he moved to Case Western Reserve University to develop an Alzheimer programme. Thirteen years later, he and his wife, Catherine, founded the Intergenerational School, a multiage, community-based project <[www.tisonline.org](http://www.tisonline.org)>. His fields of endeavour are cognitive/brain health, integrated health care, intergenerational learning, interprofessional practice, deep bioethics, organizational aesthetics, narrative epistemology, transmedia performance arts, civilization transformation, and play. He also performs as the 'Tree Doctor,' a shamanic practitioner who asks what humans can learn from trees about their health. Currently, he leads InterHub in the Presencing Institute, Cambridge, Massachusetts. A forthcoming book is *American Dementia: Brain Health in an Unhealthy Society*.

**Barry Wood** is a Canadian with degrees from the University of Toronto and the University of British Columbia. He then earned an interdisciplinary doctorate in English and American literature, humanities and religious studies at Stanford University. While in graduate school, he published two books, conducted a seminar with Zen writer Alan Watts on his houseboat in Sausalito Bay, spent a summer hitch-hiking across the United States and Canada, and earned his certification as a white-water river guide in the Pacific Northwest. He has taught at eight universities in four nations. With almost fifty years of service at the University of Houston in Texas (USA), he is promoting his Big History course, *Cosmic Narratives*, and working to enhance understanding of rapidly increasing environmental problems.

## Conference Logos



*The symbol for our conference, Changing the World, embodies the four-fold aspects of Big History – Cosmos, Earth, Life, Humanity – represented by the moon and sky, tree and leaves, trail tracks, and ground. all in a kind of yin / yang representation of nature / harmony. In the grooves of the tree bark are the Japanese kanji for yasumu. Yasumu means rest, and joy. It is an ancient and complex imagery, being made up of 人 hito - humans and 木 ki - tree. The combined kanji symbols for people show they are supporting each other beneath a tree. It reminds us that to change the world, we must acknowledge that change comes from engagement, mutualization and symbiosis with each other and with nature, around the world and in the multiverse.*

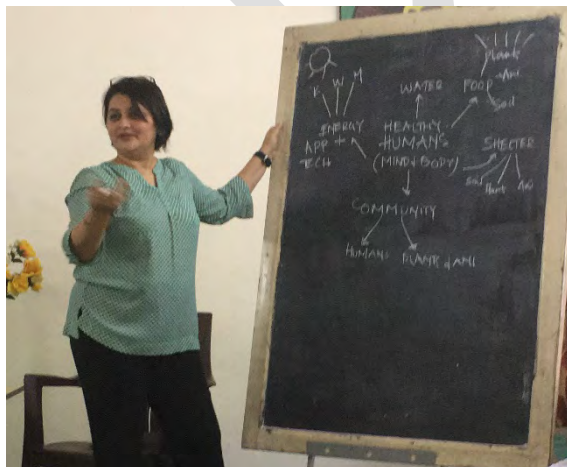
*Appreciation to Yoshihiro Takishita of Kamakura, Japan for the concept and ideas and to our artist, Ishikba Jain, of the Symbiosis School for Liberal Arts, Pune, Maharashtra.*



*Artist and graphic designer Nancy Crowe created this four-panel representation of Big History with geologist Walter Alvarez and IT designer Roland Saekow at the University of California Berkeley in 2010–2011. Her Big History tetraptych represents the Cosmos, Earth, Life and Humanity.*

## Ecology Initiative / Conference Carbon-Pollution Offset

SSLA is committed to sustainable and innovative practices. As part of our Big History conference, we have established a programme to mitigate and offset the negative effects of greenhouse gas emissions, pollution and energy use generated by our efforts to meet together. We will be doing an energy audit, but have established an on-going project in Pune that will surpass the offset. We have partnered with the Society of Christ Jesus, a Catholic NGO in Pune, to develop soil, plant, water and wildlife rehabilitation. We are working with the Sisters to set up a permaculture area on their large campus, which will be used in an ecology workshop for slum residents that the Sisters are developing with SSLA and activists and technicians in Pune. The focus is to carry green development into slum communities, self-managed by the residents. This initiative will continue by SSLA's social ecology programme and provide service-learning opportunities for students in future semesters. A book and online materials will be developed from this exciting effort!



## Yoga & Meditation Sessions



During the conference, we will have yoga and meditation sessions available for those who are interested. They will be coordinated by Mona Pereira from Pune. Her programme of Natural Living Yoga is a holistic approach that integrates traditional Yoga Asanas, Pranayama (breath control) and Meditation to achieve individual and social well-being. Mona completed her undergraduate and master's degrees at Delhi University and Mumbai University with a focus on human fitness and society. As part of her work, she trained in the various techniques of Yoga, learning traditional forms at the Bihar School of Yoga in North India.

Mona works with all people, from children to senior citizens, in classes and with individuals, as well as a focus on women's and men's health. She teaches online, an especially important form of outreach, which has allowed her to engage with a global audience. Natural Living Yoga gives people hope and makes them physically strong and mentally fit to face life's challenges. It helps people strengthen their joints and spine through restorative poses and stretches to improve blood circulation, remove fatigue, and calm the mind. Deep, mindful breathing helps to gently massage the internal connections of the body, allowing relaxation and revitalization.

Each individual is different, Yoga postures have to be adapted in ways that suit them best. People who have found it difficult to do daily chores because of aches and pain find Natural Living Yoga well suited to their needs, whether on a floor mat, a chair, or even on a bed. It also includes lifestyle changes in food habits and attitude. Mona's holistic approach allows people build a confident and positive personality that helps them welcome abundance, good health, and success into their lives. Teaching Yoga and helping people achieve a healthy and peaceful life is a passion that Mona strives towards with the utmost sincerity and dedication. She may be contacted for additional information.

Contact for Mona Pereira:  
E-mail: <naturalliving3011@gmail.com>  
Telephone: +91 9970162556





## Conference Committees

### General Conference Coordinator

Barry Rodrigue  
with Oishika Neogi  
and Shawn Kimball

### SSLA

Anita Patankar (Director)  
Shweta Sinha Deshpande (Deputy Director)

### IBHA

Lucy Laffitte (President)  
Lowell Gustafson  
David Blanks

### Asian Big History Association

Nobuo Tsujimura (President)  
Katayama Hirofumi  
Jahnvi Pandya

### Indian Association of Big History

Afshan Majid (Coordinator)  
Priyadarshini Karve

### International Community Organizers

Sulakshana Sen

Midori and Dan Batten  
Orla Hazra  
Vandana Singh

Conference Ecology Project  
(Society of Christ Jesus)  
Wilhelmine Ferreira  
Rufina Soreng  
Vijaya Vilas:

**SSLA Student Teams**

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Vedanti Poddar

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Isha Banerjee  
Mathew Mammen  
Prerna Chakraborty

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Diya Mathur  
Ishika Paruthi  
Kulsimran Bedi  
Mayurika Das  
Ria Wadikar  
Simran Sood  
Soujanya Bhattacharyya

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Kashish Gupta (coordinator)  
Ahaan Azavedo

Amarabati Bhattacharya

Ananya Moorthy

Atreyi Mitra

Diti M.

Gunjan Periwal

Misinam Mize

Naushi Mathur

Ruchira Paul

Ruthu Ganesh

***Creative & Design Team***

Ishika Jain (coordinator)

Purvi Prajapati

Sanjana Shetty

Tishya Kacker

Trisha Nair

***Ecology Team***

Sudev Madhav (general coordinator)

Vanshika Prasad (publication coordinator)

Dhwani Shrotriya

Karthik Anil Kumar

Onam Wadhwa

Kriti Arya

Mayumi Oseng Apang Nongrum

Misinam Mize

Sharika Bhan

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Ria Iyer

Roshni Raheja

***IT Team***

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Gargi Tupkar

Archi Kulkarni

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Muskaan Narvani  
Sharika Bhan

*Virtual Pune Tour*  
Gargi Tupkar (director)



DRAFT