

# INNOVATION IN THE AGE OF BIODESIGN



## Abstract

Since the dawn of humanity, nature has inspired and ignited curiosity in human, to design and invent solutions that imitate the aesthetics and efficiency of nature. As the age of machine arise, this symbiotic relationship between human and nature has been putting aside. The exponential increase in computational power according to Moore's law and the Internet in last 50 years have fuel many milestone discoveries from human genomic sequencing to renewable energy. By connecting these knowledge, new paradigm of thinking that re-focus on understanding the genius behind biological processes and applying them to create sustainable solution, such as biomimicry, bioengineering, biofabrication have emerged. In the session, we will discuss how biological design and thinking will reshape the future of innovation, economy, and our life from the perspective of scientist, artist, architect, designer, and entrepreneur.

## Speakers



### Pat Pataranutaporn (Chair)

*Cofounder, Director of Innovation at Humanity X and BioX  
Researcher at Biodesign Institute, Arizona State University, United States of America*

Pat Pataranutaporn is a creative biologist, artist, designer, coder and an student at College of Liberal Arts & Sciences, Arizona State University. His work examines a range from environmental biotechnology to virtual reality and machine learning at the intersection of biology, humanity, and computation. Currently, he is a research fellow at the Biodesign Institute, School of Art, Media + Engineering, and also the cofounder of two award winning technology startups, Humanity X and BioX.



### Galina Mihaleva

*Assistant Professor at the school of Art, Design and Media,  
Nanyang Technological University, Singapore*

Galina Mihaleva's work and research deal primarily with the dialogue between body and dress, driven by the idea of having both a physical and a psychological relationship with a garment as a responsive clothing - wearable technology. Prior to joining NTU, Galina taught costume design at Arizona State University for more than 15 years and designed for world renown choreographers in USA, Asia and Europe. She is the founder of Galina Couture in Scottsdale Arizona, where her team develops exclusive collections of one of kind designs. Her art and design work has been shown in festivals, galleries and museums across the United States, Asia, Central and South America and Europe.



### Werasak Surareungchai

*Director, Founder of Sensor Technology Laboratory,  
King Mongkut's University of Technology, Thailand*

Werasak Surareungchai is a brainchild scientist who has developed novel techniques and technology in the field of biosensors, electroanalytical chemistry, and nanobiotechnology. His research focus on ultrasensitive, simultaneous, system-integrated chemical sensors and biosensors, in particular, transducing electrochemical and optical readouts for real-sample detection. With problem-oriented research interest, the sensing platforms aim for a wide spectrum of applications in healthcare, agricultural, food, and environmental monitoring sectors. Werasak Surareungchai is awarded with the prestigious “the most outstanding technologist of Thailand” in 2016.



### Massimo Ingegno

*lecturer at the Design, Business & Technology Management (DBTM)  
International Program at Thammasat University, Thailand*

Massimo Ingegno is International Expert in sustainability, design and development. Prior to joining Thammasat University, Massimo worked at UN-Habitat NY Office (USA) and the Indian Institute for Human Settlements (IIHS) in Bangalore (India). His expertises are ecodesign Innovation, urban morphology, perceptual dimension of urban design, placemaking and urban acupuncture.



### Smitt Loha-Unchit

*Founder and Design Director at CAL-X Studio Co., Ltd.  
Adjunct Professor at School of Architecture and Design,  
King Mongkut's University of Technology, Thailand*

Smitt Loha-Unchit is a Thai architect, who has grown up in 3 different continents. His area of expertise is in applying biomimicry and digital fabrication techniques to architectural design process. He was a fellow at Design Research Lab, Architectural Association School of Architecture, where he to push the boundary of creativity in his works. His philosophy is to not think outside the box, because he can barely see the box long ago. He enjoys arts, music, movie, and also to exchange conversation to get to know people, to learn something new. He consider himself to be in between gen-x and gen-y, right and wrong, art and science.