Biodiversity Genomics in the Pacific Rim:

Challenges and Future Opportunities

Pacific Rim nations harbour a substantial proportion of the Earth's nine million species, including several biodiversity hotspots. Genome analysis is now recognised as a fundamental tool in understanding this incredible biodiversity and assisting with its preservation. Although genome sequencing at scale is becoming more affordable, significant challenges remain in achieving the goal of sequencing all known species and deriving useful biological information from these data.

This symposium, hosted by the **University of Sydney** and the **Chinese University of Hong Kong**, marks the launch of the Association of Pacific Rim Universities (APRU) Biodiversity Program, which seeks to enhance cooperation and synergies among its members in the field of biodiversity and related sciences. This inaugural event brings together leading genomics experts from Pacific Rim nations to discuss progress in this area, the challenges they face, and how collective action can advance biodiversity genomics in the region.

This webinar will be beneficial to academics and industry partners, we welcome the participation of all students and staff alike.

Date/Time:

Americas	Monday 29th November 2021 - **16:00 – 18:00 US Pacific Time/Bogota Time**
Asia	Tuesday 30th November 2021 - **7:00 – 9:00 (Bangkok & Jakarta)**
	Tuesday 30th November 2021 - **8:00 – 10:00 China/HKT**
Australia	Tuesday 30th November 2021 - **11:00 – 13:00 AEDT**

Check Date/Time: Using Time Zone Converter

Zoom Registration Link: Register Here

Tuesday 30th November 2021 AEDT 10:45 – 13:00 (AEDT)	
Acknowledgement of Country, Introduction of Symposium, Overview of APRU	
11:00 – 11:05 (AEDT)	Biodiversity Genomics Symposium Co-Chair: **Professor Nathan Lo**, Professor of Evolutionary Biology, School of Life and Environmental Sciences, Faculty of Science, University of Sydney.
Keynote Speaker	
11:05 – 11:25 (AEDT)	**Professor Harris A Lewin,** Robert and Rosabel Osborne Endowed Chair and Distinguished Professor of Evolution and Ecology and at the University of California, Davis. **Title: The Earth BioGenome Project: Science at the Nexus of the Global Biodiversity and Climate Crises** Two Minute Q&A
Speaker Two	
11.25 – 11.35 (AEDT)	**Professor Andrew J Crawford,** Associate Professor, Dept. of Biological Sciences, Universidad de los Andes, Colombia. Bogota, D.C. **Title: Biodiversity genomics in Colombia, South America: challenges and solutions** Two Minute Q&A
Speaker Three	
11:35 – 11:45 (AEDT)	**Dr Carolyn Hogg,** Senior Research Manager for the Australasian Wildlife Genomics Group in the Faculty of Science at the University of Sydney. **Title: Australian Biodiversity Genomics** Two Minute Q&A
Speaker Four	
11:45 – 11:55 (AEDT)	**Dr Herawati Sudoyo,** Deputy for Fundamental Research of Eijkman Institute for Molecular Biology, Jakarta, Indonesia, and an Honorary Associate Professor from Sydney Medical School, The University of Sydney. **Title: Indonesian Biodiversity Genomics: Challenges and Opportunity.** Two Minute Q&A
Speaker Five	
11:55 – 12:05 (AEDT)	**Assistant Professor Balaji Chattopadhyay,** Evolutionary Biologist, Trivedi School of Biosciences, Ashoka University, India **Title: Climate change and evolution in the tropics: a genomic perspective** Two Minute Q&A
Speaker Six	
12:05 – 12:15 (AEDT)	**Professor Subha Bhassu,** Head Animal Genetics and Genome Evolutionary Biology Lab, Institute of Biological Science, Faculty of Science, University Malaya. **Title: Advent of Genetics and Genomics paving way to manage the Malaysian biodiversity resources from 2021-2030** Two Minute Q&A

Speaker Seven	
12:15 – 12:25 (AEDT)	**Assistant Professor Hayde F. Galvez,** Institute of Crop Science, College of Agriculture and Food Science, University of the Philippines Los Baños. **Title: Coconut genomics initiative in the Philippines: updates and opportunities for biodiversity data integration and further genomics research collaboration** Two Minute Q&A
Speaker Eight	
12:25 – 12:35 (AEDT)	**Biodiversity Genomics Symposium Co-Chair** **Associate Professor Jerome Hui,** Director of Biology Programmes, School of Life Sciences, The Chinese University of Hong Kong. **Title: Genomes of Cnidarians and Non-Insect Arthropods** Two Minute Q&A
12.35 (AEDT)	**Photo**
12:35 – 12:58 (AEDT)	**Q & A Moderated by Co-Chairs**
12:58 – 13:00 (AEDT)	**Close of Symposium by Biodiversity Genomics Symposium Co-Chair Prof Jerome Hui**

Participant Biographies in order of appearance

Professor Nathan Lo, Professor of Evolutionary Biology, School of Life and Environmental Sciences, Faculty of Science, University of Sydney.

Prof Nathan Lo is an evolutionary biologist interested in genome evolution, molecular ecology, and phylogenetics of arthropods. He has research programs on the evolution of social behaviour in termites and the symbionts of arthropods. After joining the School of Life and Environmental Sciences at The University of Sydney in 2009, he was an Australian Research Council (ARC) QEII Research Fellow from 2010-2014 and is currently an ARC Future Fellow (2017-2021). He was Biodiversity Research Initiative Leader at the Australian Museum, Sydney from 2008-2009. He has published over 140 scientific papers, which have been cited over 8500 times.

Professor Harris A Lewin, Robert and Rosabel Osborne Endowed Chair and Distinguished Professor of Evolution and Ecology and at the University of California, Davis

Prof Harris A. Lewin is the Robert and Rosabel Osborne Endowed Chair and Distinguished Professor of Evolution and Ecology and at the University of California, Davis where he also holds joint appointments in the School of Veterinary Medicine and the John Muir Institute for the Environment. From 2011-2016, he served as the UC Davis Vice Chancellor for Research. Prior to that he spent 27 years at the University of Illinois at Urbana-Champaign, where he held the E.W. and J.M. Gutgsell Endowed Professorship in Immunogenetics, with a primary appointment in the Department of Animal Sciences and was a member of the Center for Advanced Study. Lewin served as Director of the University of Illinois Biotechnology Center, Founding Director of the W.M. Keck Center for Comparative and Functional Genomics, and Founding Director of the Institute for Genomic Biology. Lewin's current research interest is in mammalian genome evolution as it relates to adaptation, speciation, and the origins of cancer. In 2017, Lewin co-founded the Earth BioGenome Project (EBP) and currently serves as the Chair of the EBP Working Group. He is a Fellow of the American Association for the Advancement of Science and was elected as a foreign member of the Royal Swedish Academy of Agriculture and Forestry. In 2011, Lewin was awarded the Wolf Prize in Agriculture, and in 2013 he was elected to the U.S. National Academy of Sciences.

Professor Andrew J Crawford, Associate Professor, Dept. of Biological Sciences, Universidad de los Andes, Colombia. Bogota, D.C

Andrew J. Crawford received his PhD in Evolutionary Biology from the University of Chicago with Marty Kreitman after completing a dual undergraduate degree in Zoology & German at UC Berkeley with David Wake in the Museum of Vertebrate Zoology. He then joined the Smithsonian Tropical Research Institute in Panama as an NSF International Programs Postdoctoral Fellow followed by a Smithsonian Postdoctoral Fellowship in Molecular Evolution with Biff Bermingham. In 2009 he became a Professor of Biology at the Universidad de los Andes in Bogotá, Colombia, where he is currently Associate Professor and Director of the Museo de Historía Natural C.J. Marinkelle. Andrew is Executive Council member of the Vertebrate Genomes Project (VGP) and representative of the Earth BioGenome Project (EBP) Colombia. His laboratory explores the origins, adaptations, and conservation of amphibians and other vertebrates in Tropical America using genetics, genomics, physiology, spatial analyses, and natural history collections.

Dr Carolyn Hogg, Senior Research Manager for the Australasian Wildlife Genomics Group in the Faculty of Science at the University of Sydney.

Dr Carolyn Hogg has been working on the conservation of threatened species for over twenty-five years both in Australia and overseas. She is currently the Senior Research Manager for the Australasian Wildlife Genomics Group in the Faculty of Science at the University of Sydney and the Science Lead for the Threatened Species Initiative, which is generating genomic resources for Australia's threatened species. Dr Hogg has been working with the Save the Tasmanian Devil Program for the past ten years; in addition to other species such as orange-bellied parrots, koalas, bilbies, and woylies. Working closely with both her academic and conservation management partners Dr Hogg's vision is to create a conservation legacy for Australia by changing the way we integrate science, management, and policy; to proactively promote species' resilience in the face of a changing world. She is achieving this by developing better tools and technologies to integrate molecular genetics into real-time conservation management decisions.

Dr Herawati Sudoyo, Deputy for Fundamental Research of Eijkman Institute for Molecular Biology, Jakarta, Indonesia, and an Honorary Associate Professor from Sydney Medical School, The University of Sydney.

Dr Herawati Sudoyo is the Deputy for Fundamental Research of Eijkman Institute. She is also the head of Forensic DNA Laboratory and Principal Investigator at Genome Diversity and Diseases Laboratory. She specializes on mitochondria DNA as a powerful genetic marker for population studies. She has specific interests on fundamental information concerning the formation of functional mitochondrial to understand mitochondrial diseases and its diagnostic and therapeutic implications. Herawati also has big passion on studying the genetic diversity of Indonesian populations, particularly on its association with disease resistance and susceptibility as well as tracing human migration. Her research team is dubbed "Gene Hunter" and has been collecting samples from many places throughout the archipelago, including very remote areas. Using DNA markers, Herawati also played significant role in perpetrator identification of the 2004 Australian Embassy bombing case which subsequently led her to establish the Forensic DNA Laboratory in Eijkman Institute. She also initiates research on Indonesian wildlife forensics and population studies.

Herawati is an active member of various local and international organization, consortium, and scientific panel on forensics DNA, biorisk and biosafety, human genetics, and molecular biology network.

Assistant Professor Balaji Chattopadhyay, Evolutionary Biologist, Trivedi School of Biosciences, Ashoka University, India

Balaji Chattopadhyay is an Assistant Professor at the Trivedi School of Biosciences, Ashoka University. He completed his PhD from Madurai Kamaraj University and pursued postdoctoral research at the National Centre for Biological Sciences, India, and the National University of Singapore, Singapore. Balaji is an evolutionary biologist whose research aims to integrate biodiversity conservation and human health. Balaji provided one of the earliest evidence of the susceptibility of natural populations to urbanisation. His research incorporates high-throughput genomic data alongside biological and ecological data to understand the effects of climate change on wildlife and investigate the potential link between wildlife endangerment and zoonotic infections. Balaji is also interested in understanding host-pathogen coevolution, specifically regarding the evolutionary dynamics of the bat immune system and bat-borne viruses.

Professor Subha Bhassu, Head Animal Genetics and Genome Evolutionary Biology Lab, Institute of Biological Science, Faculty of Science, University Malaya.

Prof Dr Subha Bhassu is currently Head of Animal Genetics and Genome Evolutionary Biology Lab, which is affiliated to Institute of Biological Science, Faculty of Science, University Malaya. In her 25 years of teaching and research in genetics and genomics and use this expertise to address biodiversity problems arise in Malaysia. With use of molecular markers as a tool to address ecological, conservation, management in biodiversity such as addressing the forest species, animal species, aquatic species, and insect species. There are many ways to give insights to raise awareness of the public on biodiversity, currently we will use predictive models on assessing the impact of invasive alien species, EDNA metagenomics to access the aquatic biodiversity in freshwater ecosystem to ensure the research will be used by policy makers and attempt to govern the freshwater ecosystem in a sustainable manner in line with SDGs (Sustainable Development Goals).

Assistant Professor Hayde F. Galvez, Institute of Crop Science, College of Agriculture and Food Science, University of the Philippines Los Baños.

Dr Hayde F. Galvez is an Assistant Professor, Institute of Crop Science, College of Agriculture and Food Science, University of the Philippines Los Baños. Completed PhD in Molecular Genetics and Plant Breeding in 2004 from the University of Melbourne, her work experience include Fulbright Advance Research Fellow on Bioinformatics at the Boyce Thompson Institute for Plant Research, Cornell University, USA (2011-2012); Molecular Marker Specialist at AVRDC – The World Vegetable Center, Taiwan (2009-2010); and Junior Plant Breeder at East West Seed Co. Inc. (1991-1995). She has completed and on-going research projects on crop molecular genetics, breeding, genomics, and agricultural biotechnology. Publications of research outputs are presented on journals, and local and international scientific fora/conferences.

Associate Professor Jerome Hui, Director of Biology Programmes, School of Life Sciences, The Chinese University of Hong Kong.

Prof Jerome Hui is the Associate Professor at The Chinese University of Hong Kong. He is also the Director of Biology Programme, and members of Cell and Molecular Biology Programme, Environmental Science Programme, and Molecular Biotechnology Programme of the School of Life Sciences. He received his DPhil from the University of Oxford, and postdoctoral training from University of Manchester and University of Oxford. As an evolutionary biologist and zoologist, he has keen research interests on arthropods, cnidarians, invertebrates, cross-kingdom interactions, biotechnology, genomics, molecular ecology, and conservation of biodiversity. Further information can be found at the following webpage: https://www.sls.cuhk.edu.hk/index.php/faculty-and-staff/teaching-staff/26-sls/faculty-and-staff/teaching-staff/105-professor-hui-ho-lam-jerome