

## Curriculum vitae



### 1.0 Personal details

Name: Maude Elvira **Phipps**

Gender: Female

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Nationality: Malaysian

### 2.0 Career summary/ Personal profile

Internationally recognised Asia Pacific biomedical and higher education expert with links to global education, research networks and industry. Dynamic professor with 30 years of teaching experience in undergraduate, postgraduate and specialist courses on local and international levels. Passionate and globally regarded human genomics and health researcher with publications in Nature, Science, AJHG, Public Health, and other leading journals. Transformer of basic research into stem cell transplant matching technologies and pioneer of molecular DNA diagnostics for patients and families in Malaysia and the region. Evolving educator and faculty trainer who embraces change, recognises transdisciplinary knowledge, innovates and adapts to new challenges in the shifting education and healthcare landscape. Womens' empowerment mentor and advocate of public engagement in the understanding of genetics, precision medicine, bioethics and marginalised indigenous communities. My work thus far has contributed to four predominant UN sustainable development goals #3 Good Health and Wellbeing, #4 Quality Education, #5 Gender Equality and # Partnerships for the goals.

## Keywords/Areas Of Interest

Human genetics, population genetics, genomics, epidemiology, immunogenetics, autoimmunity, infectious diseases, type 2 diabetes, evolution, anthropology, indigenous health, microbiomes.

## 3.0 Education

### Formal academic qualifications

1994 Ph.D. (Human Molecular Genetics), University of Cambridge, United Kingdom – Doctoral dissertation titled “Physical mapping of Chromosome 3p for Von Hippel Lindau and Chromosome 3p- Syndrome”

1989 B. Sc. Hons. Genetics (Class 1), University of Malaya, Malaysia – Honours thesis titled “Plasmid mediated antibiotic resistance in Eschericia coli isolated from sewage”

### Other qualifications

2008 Graduate Certificate in Medical Education (Part 1), Monash University, Malaysia

2009 Graduate Certificate in Bioethics (Part 1), Monash University, Centre for Human Bioethics, Monash University, Australia.

## 4.0 Appointments (Academic and Professional)

### Current appointments

#### Academic

Since 2011 Professor of Human Genetics, Jeffrey Cheah School of Medicine and Health Sciences, Monash University (Malaysia)

#### Professional

Since 2020 Expert for Asia Pacific, Future Proofing Healthcare initiative (International)

### Previous appointments

#### Academic

2008-2010 Associate Professor, Jeffrey Cheah School of Medicine and Health Sciences, Monash University (Malaysia)

2008-2010 Visiting Consultant, Molecular Immunogenetics and Transplantation Laboratory, UMMC Diagnostics, University of Malaya Medical Centre, Kuala Lumpur, Malaysia.

1999-2008 Head, Molecular Immunogenetics and Transplantation Laboratory, UMMC  
Diagnostics, University of Malaya Medical Centre, Kuala Lumpur, Malaysia

1999-2008 Associate Professor, Biomedical Sciences, Faculty of Medicine, University of Malaya  
(UM), Malaysia

1995-1999 Lecturer, Biomedical Sciences, Faculty of Medicine, University of Malaya (UM),  
Malaysia

1991-1993 Demonstrator, Cambridge Programme for Industry, Department of Pathology,  
University of Cambridge, United Kingdom.

1989-1990 Research assistant, Institute of Postgraduate Studies and Department of Medical  
Microbiology, Faculty of Medicine, University of Malaya, Malaysia.

### Professional

2012-2015 Founding and Executive member of the National Bioethics Council of Malaysia

2006-2010 Academic Advisor, Malaysian Genomics Resource Centre, Malaysia

2005-2009 Chair, Policy Review Board, Human Genome Organization, Pan Asia SNP Consortium

2005-2013 Academic Advisor, StemLife Malaysia (<https://www.stemlife.com/en/>)

2001-2006 Editor & Chief Editor, Asia Pacific Journal of Molecular Biology and Biotechnology

Life Member and former Deputy President, Genetics Society of Malaysia.

### Other Positions/Designations held periodically

#### **Visiting Professor / Scholar**

2020 Hamad Khalifah University, Qatar

2019-2020 Darwin College, Cambridge

2019-2020 Clinical School and Addenbrookes Hospital, University of Cambridge, UK

2019 Wellcome Trust Sanger Institute, UK

2019 European Bioinformatics Institute, UK

2019 Max Planck Institute for Evolutionary Anthropology, Germany

2018 Beijing Genomics Institute, China

2013, 2015, 2017, 2018 University of California (San Francisco), USA

2015, 2018 University of California (Berkeley), USA

2017 University Pompeu Fabra, Spain

2015 Wellcome Trust Centre for Human Genomics, Oxford University, UK

2015 Stanford University, USA

2012 National Institute of Genetics, Japan  
 2012 University of Tokyo, Japan  
 2010 Centre for GeoGenetics, University of Copenhagen, Denmark  
 2009 University of Calgary & Genome Canada, Canada  
 2008 University of Philippines, Philippines  
 2006 Eijkmann Institute of Molecular Biology, Indonesia  
 2006 Institute of Biomedical Sciences, Academia Sinica Taiwan, China  
 2005-2009 Genome Institute of Singapore, Singapore  
 2004 Chinese Academy of Sciences, Shanghai, China  
 2002 American Society for Histocompatibility and Immunogenetics, USA  
 2002 Department of Surgery, University of Cambridge, UK  
 1997 University of Western Australia, Australia  
 1996 Oxford Transplant Centre, University of Oxford, UK

#### **4.0 UNIVERSITY AND PUBLIC SERVICE (selected)**

University Service/Engagement experience from 2009-2022\*

**Monash Mentoring Programme** - Direct mentoring of academic staff and early career researchers  
<https://staff-intranet.monash.edu.my/Units/Human-Resources/Staff-Development/Campus-Mentoring-Scheme/Pages/default.aspx>

**Womens' Empowerment Network** – Founding Executive Committee member, Co-Chair and Advisor  
<https://sites.google.com/monash.edu/mum-wen/home>

**Professors Advisory Group** –provided periodic advice to Pro Vice Chancellor and Deputy Pro Vice Chancellors on a variety of issues affecting university academics, pioneered Pecha Kucha multidisciplinary lunchtime talks by academics across schools within the Malaysian campus

**Sir John Monash Public Lecture Series** 2021, 2018, 2016, 2015 - Speaker selector, Moderator and Panelist, involved since inception of this well received and public outreach lecture series in Sunway Campus. <https://www.monash.edu.my/news-and-events/talks-and-lectures/sir-john-monash-lectures>

**Academic Staff Development Committee** - represented the School of Medicine and Health Sciences in this committee chaired by the Pro-Vice Chancellor, entrusted with duties ranging from administering the PVC Awards for Excellence and Innovations in Teaching, Research and Administration to reviewing applications for and outcomes of Overseas Study Programmes / Sabbaticals

**Monash University Human Research Ethics Committee (MUHREC)** member and resource person for Sunway Campus

Chair of Monash University **Campus Human Research Ethics Committee**

**Research Skills Development (RSD) Framework Initiative** - Steering Committee

**Accreditation Committees** for MBBS, MD, M.Biomed Sc. and B.Sc. Biomedical Science degree programme accreditations by Australian Medical Council, Malaysian Medical Council, Sri Lankan Medical Council, Institute for Biomedical Sciences UK

Chair of Medicine and Health Sciences Working committee for **Discipline Based Rating System (D-Setara)** in Higher Education Systems in Malaysia

**Discipline Coordinator** and tutor trainer for Theme 1 Ethics actively involved in academic content, assessments, reviewing, contextualization curriculum, training and management of Sunway tutors in MD, M.Biomed.Sc and Ph.D Postgraduate programmes

**Discipline Coordinator** for Theme 3 Genetics/Biochemistry actively involved in academic content, assessments, reviewing, contextualization curriculum

**Research Committee**, Jeffrey Cheah School of Medicine and Health Sciences

**Early Years Working Group**, Jeffrey Cheah School of Medicine and Health Sciences

#### Public / External Engagement Service Experience (recent)

2021-2022 Chief Internal Auditor, **Malaysian Research Assessment Instrument (MyRA) Accreditation**, Ministry of Higher Education, Malaysia. This is a comprehensive developed to assess research capacity, performance and rate Higher Education Institutions (HEIs) in Malaysia.

2019-2022 Global Trainer **for Wellcome Connecting Science, Human Genomics Specialist Programmes** <https://www.wellcomegenomecampus.org/aboutus/connecting-science/>

2016-2020 Experts Working Committee (EWC) of **World Diabetes Foundation-National Diabetes Institute** strategic nationwide project on Type 2 Diabetes Education and Prevention focussed on Indigenous and Rural Communities.

2015-2021 Grant reviewer for **Fundamental Research Grant Scheme (FRGS)**, Ministry of Higher Education, Malaysia

2012-2015 Founding and Council member of the **National Bioethics Council of Malaysia**

*\*Experience prior to 2009 will be provided upon request*

#### **5.0 HONORS AND AWARDS** (selected)

2021 Monash University Vice Chancellor's Special Commendation Award for Diversity and Inclusion, Womens' Empowerment Network

2021 Outstanding Supervisor Award from Monash University Postgraduate Student Association

2018-2019 UBiome Inc. USA Research Award for Microbiomes of the Indigenous People of Peninsular Malaysia

2011, 2010, 2009 Monash University Pro Vice Chancellor's Award for Excellence in Research

2009 Best 'New Initiatives' Research award from Faculty of Medicine, Nursing and Health Sciences, Monash University, Australia

2009 'Great Women of Our Times' Award (Science and Technology) by ACP press for research excellence and promotion of the public understanding of genetics

2009 Faculty of Medicine, Nursing and Health Sciences Staff Travel Award, Monash University

2007, 2006, 2004, 2000, 1999 University of Malaya Vice Chancellor's Excellence Service Awards

1998 UNESCO Human Genome Fellowship Award

1996 British Council CICHE Award

1990 Cambridge Commonwealth Trust PhD Scholarship Award

1986-1988 Book Prize and Outstanding Student Award, Faculty of Science, University of Malaya

## 5.0 Research overview

My passion for genetics and biomedical research began during my undergraduate project in University of Malaya (UM) when I first investigated the origins of multiple antibiotic resistance in *Escherichia coli*, a common bacteria isolated from sewage treatment plants in Malaysia. It was exciting to discover that these virulent bacteria contained genes coded by plasmids, independently replicating circles of DNA that conferred various mechanisms to resist antibiotic action. I also reported antibiotic resistance in *Salmonella typhi* that was conferred by similar mechanisms and that in vitro transfer of these plasmids made antibiotic sensitive bacteria, resistant.

Being fascinated by The Human Genome Project in 1990s and supported by a full scholarship from the Cambridge Commonwealth Trust, I pursued doctoral training at Darwin College and the Department of Pathology, University of Cambridge, UK. At the time, geneticists did not know how large a human genome was and we were just beginning to map disease genes to specific chromosomal locations. The goals were to obtain specific DNA sequences, characterise the human genome which was the 'blueprint' for human life. My challenge was to determine the critical regions/ chromosomal locations of Von Hippel Lindau tumour suppressor gene and 3p- syndrome. A number of good papers were published from our discoveries.

I was invited to return to Malaysia in 1995 to help establish the first Biomedical Science undergraduate programme and spearhead research in human genomics and biomedical science at the UM. It was an exciting time to engage our bright, eager undergraduate, postgraduate students and faculty as well to re-establish local networks. To answer the needs of local patients and do more relevant research, I was encouraged by my mentors to switch fields and research autoimmunity and

hematopoietic stem cell transplantation instead. I was initially devastated to leave familiar research but decided to embrace change, learn new things and adapt. A serendipitous moment during the presentation my research results and specialist training in Oxford Transplant Centre and University Western Australia led to the establishment of a new molecular typing transplantation service at the UM Medical Centre. The first of its' kind in Malaysia that combined molecular biology, computation and information technology. I began collaboration with Academia Sinica Taiwan, we published work on pharmacogenetics and my local R&D reputation began to spread

In 2003, I decided to explore genomics and health of our indigenous tribes in collaboration with anthropologists and clinicians. It was a tremendous privilege to engage with the kindest, most underserved yet fascinating Orang Asli and Pribumi communities, unique to Malaysia and true custodians of our natural ecosystems and sustainability. Perhaps this is when I began to gain a regional and international reputation. In 2005, I was invited to join Human Genome Organization's Pan Asia SNP Consortium as chair of its' Policy Review Board (PRB) and national Principal Investigator. This consortium comprised 91 multidisciplinary researchers working in 40 institutions in China, India, Taiwan ROC, Japan, Indonesia, Malaysia, Korea, Singapore, Philippines and the USA. Our PRB ensured that the right policies and frameworks in place to support a worthy and long-term scientific endeavour. It was a great honour and educational experience to work with Asia and USA's best researchers. In 2009, we published our seminal work 'Mapping the Genomic History of Asia' in Science and created a free publicly accessible HUGO-PASNP database of ~50,000 SNPs in 70 Asian ethnic groups. This was the largest and most comprehensive genomics resource for academia and industry interested in Asian populations. There were more publications that followed this and in other subsequent research areas.

In recent years, my international projects include South East Asian Genomics and Prehistory, Origins of Austro-Asiatic Languages and Peoples, Aboriginal Australian Genomics, and Oceanian Genome Variation in collaboration with Universities of Cambridge and Oxford, UK; UC (San Francisco), Stanford University, Icahn School of Medicine, USA; Max Planck Institute, Germany, National Institute of Genetics, Japan; National Institute of Biomedical Genomics, India; Chinese Academy of Medicine; CInvestave, Mexico; and others. Local projects include Dengue, Oral, Gut and Nasal Microbiomes in Indigenous communities, Host Pathogen Immunogenetics and Intestinal Nematodes and Olfactory Receptors with collaborators in University Malaya, University Sabah, UITM, USM and others.

There is no substitute for integrity and good collaborations with mutual trust, respect and complementarity. I have been tremendously blessed to have committed students and collaborators. My research has spanned 30 years and I see tremendous value in being able to influence and shape the future of healthcare and policy in Asia Pacific. I firmly believe that we must engage more

stakeholders live and 'online' and address equity and diversity issues in the advancement of science and medicine for a better and more sustainable present and future.

## 6. Publications

### a) Selected journal publications (indicating impact, breadth and translational research)

1) McColl, H., Racino F, Venner, L., *et al.* 2018. **The prehistoric peopling of Southeast Asia.** *Science* 361 : 88-92 (2018) DOI: [10.1126/science.aat3628](https://doi.org/10.1126/science.aat3628)  
Impact Factor 41.1 <https://science.altmetric.com/details/44542199>

*Significance : This is the first paper transdisciplinary paper that analyses ancient human samples with those from modern populations. It dispels 100 years of controversy about human habitation of Southeast Asia. Broadcast as news in mainstream media, BBC, ABC, Guardian and other websites.*

2) Malaspinas, AS., Westaway, M., Muller, C. *et al.* **A genomic history of Aboriginal Australia.** *Nature* **538**, 207–214 (2016). <https://doi.org/10.1038/nature18299> 5

Impact Factor 40.14 <https://nature.altmetric.com/details/12123905>

*Significance : High impact publication and world first to provide a comprehensive timeline of migration and genetic legacy of Aboriginal Australians publicised on BBC, ABC, The Guardian and other websites.*

3) The HUGO-PANSP Consortium (2009) **“Mapping Human Genetic Diversity in Asia”** *Science*, **326** | 1541-1545 DOI: [10.1126/science.1177074](https://doi.org/10.1126/science.1177074)  
Impact Factor 41.84 <https://science.altmetric.com/details/749853>

*Significance : A first massive effort to catalog genetic variation among Asians has just weighed in on the peopling of that vast continent. The work of a 40-institution consortium for Asians, by Asians and of Asians has concluded that Asia was initially settled by a single wave of migration out of Africa along the coastal routes.*

4) Timothy A. Jinam, Lih-Chun Hong, Maude E. Phipps, Mark Stoneking, Mahmood Ameen, Juli Edo, HUGO Pan-Asian SNP Consortium, Naruya Saitou **Evolutionary History of Continental Southeast Asians: “Early Train” Hypothesis Based on Genetic Analysis of Mitochondrial and Autosomal DNA Data**, *Molecular Biology and Evolution*, Volume 29, Issue 11 (2012), Pages 3513–3527, <https://doi.org/10.1093/molbev/mss169>  
Impact Factor 16.24 <https://oxfordjournals.altmetric.com/details/806824>

*Significance :*

*Proposed “early train” wave(s) of migration originating from South China or Indochina during late Pleistocene to early Holocene (30,000–10,000 YBP), predating the Neolithic expansion from Taiwan, that contributed to the genetic diversity in all Austronesian groups, particularly those west of the Wallace line. In conclusion, we demonstrate a more intricate migration history than that generally accepted of a two-wave hypothesis regarding the peopling of island Southeast Asia, after the initial Out of Africa migration.*

5) David Reich, Nick Patterson, Martin Kircher, Frederick Delfin, Madhusudan R. Nandineni, Irina Pugach, Albert Min-Shan Ko, Ying-Chin Ko, Timothy A. Jinam, Maude E. Phipps, Naruya Saitou, Andreas Wollstein, Manfred Kayser, Svante Pääbo, Mark Stoneking,



**Denisova Admixture and the First Modern Human Dispersals into Southeast Asia and Oceania**, The American Journal of Human Genetics, Volume 89, Issue 4, 2011, Pages 516-528, ISSN 0002-9297, <https://doi.org/10.1016/j.ajhg.2011.09.005>.

Impact Factor 13 <https://plu.mx/plum/a/?doi=10.1016/j.ajhg.2011.09.005&theme=plum-science&hideUsage=true>

*Significance* : Southeast Asia was settled by modern humans in multiple waves: One wave contributed the ancestors of present-day Onge, Jehai, Mamanwa, New Guineans, and Australians (some of whom admixed with Denisovans), and a second wave contributed much of the ancestry of present-day East Asians and Indonesians. This scenario of human dispersals is broadly consistent with the archaeologically-motivated hypothesis of an early southern route migration leading to the colonization of Sahul and East Asia. A Southeast Asian location for the Denisovan admixture suggests Denisovans were spread across a wider ecological and geographic region—from the deciduous forests of Siberia to the tropics—than any other *hominin* with the exception of modern humans.

6) ME Phipps, M.E. et. al. (2014) **Cardio-Metabolic Health Risks in Indigenous Populations of Southeast Asia & Influence of Urbanization**. BMC Public Health (2015) 15: 47. <https://doi.org/10.1186/s12889-015-1384-3>

Impact Factor 2.69

*Significance* : This is the first comprehensive description of cardio-metabolic risk factors of seven indigenous communities in Malaysia. We report variable prevalence of obesity, cholesterol, hypertension and diabetes in the OA in contrast to the larger ethnic majorities such as Malays, Chinese and Indians in Malaysia. These differences are likely to be due to socio-economic effects and lifestyle changes. In some sub-tribes, other factors including genetic predisposition may also play a role. It is expected that the cardio-metabolic risk factors may worsen with further urbanization, increase the health burden of these communities and strain the government's resources

7) Chai, H.C., Phipps, M.E. and Chua, K.H., 2012. **Genetic risk factors of systemic lupus erythematosus in the Malaysian population: a minireview**. Clinical and Developmental Immunology, 2012. <https://doi.org/10.1155/2012/963730>

Impact Factor 3.06

*Significance* : SLE is an autoimmune disease that affects many populations worldwide. In contrast to local Malays and Indians, the Chinese seem to be most affected. SLE is characterized by deficiency of body's immune response, production of autoantibodies and failure of immune complex clearance. In this paper we combine our findings with other reports and summarize the association of several candidate genes with risk for SLE in the Malaysian population. We reveal the genetic heterogeneity that exists locally in Asians and in comparison with SLE in Caucasians.

8) Mun-Kit Choy, Maude E. Phipps, **MICA polymorphism: biology and importance in immunity and disease**, Trends in Molecular Medicine, Volume 16, Issue (2010), Pages 97-106, ISSN 1471-4914 <https://doi.org/10.1016/j.molmed.2010.01.002>.

Impact Factor 11.95

*Significance* : MICA is the member of the non-classical class I family that displays the greatest degree of polymorphism. MICA alleles can be divided into two large groups explained by a possible polyphyletic origin that is in line with recent findings from evolutionary, population and functional studies of this gene. MICA polymorphisms are associated with a number of diseases related to NK activity, viral infection, cancer and allograft rejection or graft-versus-host disease

(GVHD). *The MICA-induced humoral response has attracted interest recently because of its possible role in graft rejection in solid organ transplantation. The genetics and biology of the MICA gene and its products, and their importance in disease is discussed*

9) Gan, G.G., Phipps, M.E., Lee, M.M.T. *et al.* **Contribution of VKORC1 and CYP2C9 polymorphisms in the interethnic variability of warfarin dose in Malaysian populations.** *Ann Hematol* **90**, 635–641 (2011). <https://doi.org/10.1007/s00277-010-1119-6>  
Impact Factor 3.16 <https://link.springer.com/article/10.1007/s00277-010-1119-6/metrics>

*Significance : This paper was among the first in Malaysia demonstrating the importance of pharmacogenomics i.e. VKORC1 and CYP2C9 polymorphisms that contributed to the different warfarin dose requirements amongst Chinese, Malay and Indian patients treated for venous thromboembolic disease.*

10) Yih, P.T., Phipps, M.E. and Bosco, J.J., 1999. **Molecular HLA typing for bone marrow transplantation in Malaysia.** *Asia Pacific Journal of Molecular Biology and Biotechnology*, 7(1), pp.29-38.

*Significance : This research project that was conducted on local patients and their families led me to establish the first molecular typing laboratory service in Malaysia. Our lab at University of Malaya Medical Centre had a turnaround time of 5 working days. Prior to that, adult and paediatric patients awaiting critical bone marrow/stem cell transplants had to wait up to 6 weeks to be matched using conventional immunological methods at a government facility.*

11) Crossey, P.A., Foster, K., Richards, F.M. Phipps, M.E., *et al.* **Molecular genetic investigations of the mechanism of tumourigenesis in von Hippel-Lindau disease: analysis of allele loss in VHL tumours.** *Hum Genet* **93**, 53–58 (1994). <https://doi.org/10.1007/BF00218913>  
Impact Factor 5.07 (5 yr recent)

*Significance : Von Hippel-Lindau (VHL) disease is a dominantly inherited familial cancer syndrome characterised by the development of retinal and central nervous system haemangioblastomas, renal cell carcinoma (RCC), pheochromocytoma and pancreatic tumours. The VHL disease gene maps to chromosome 3p25-p26. We demonstrated that VHL disease gene functions as a recessive tumour suppressor gene and that inactivation of both alleles of the VHL gene is the critical event in the pathogenesis of VHL neoplasms.*

12) Phipps, M.E., Latif, F., Prowse, A., *et al.* **Molecular genetic analysis of the 3p — syndrome,** *Human Molecular Genetics*, Volume 3, Issue 6, Pages 903–908 (1994) <https://doi.org/10.1093/hmg/3.6.903>  
Impact Factor 6.134 (5 year recent)

*Significance : The 3p deletion syndrome in humans results from deletion of portion of the short (p) arm of the chromosome 3. This leads to intellectual disability, developmental delay, and abnormal physical features. The loss of sequences centromeric to D3S1317 is not required for expression of the characteristic 3p- syndrome phenotype. The most extensive deletions had cardiac septal defects suggesting that a gene involved in normal cardiac development is contained in the interval D3S1250 and D3S18. The PMCA2 gene is contained within this region and deletion of this gene may cause congenital heart defects*

Appendix A for publications #13-64

## b) Book Chapter

1) Jobling, M.A., Hurles, M., & Tyler-Smith, C. (2004). Human Evolutionary Genetics: Origins, Peoples and Disease (1st ed.). Garland Science.  
<https://doi.org/10.1201/9780203487211>

2) ME Phipps, TA Jinam, HL Chun, Health Status and Genomic Analysis in Four Indigenous Groups in Malaysia. Genetic and Dental Profiles of Orang Asli of Peninsular Malaysia (Penerbit USM)

### **c) Significant Policy documents / Reports that have had national and international impact**

1) **“Getting to Personalised Healthcare in APAC” 2021.**

<https://www.futureproofinghealthcare.com/en/knowledge-base/getting-personalised-healthcare-apac>

My appointment as Asia Pacific expert in healthcare and education as part of the Future Proofing Healthcare international initiative, has resulted in the publication of this whitepaper. Personalised Health Index findings have been informed by expert insights from across Asia-Pacific coordinated by the Copenhagen Institute for Futures Studies and includes key policy recommendations based on the Index findings to help accelerate this personalised healthcare transformation in the region.

2) **Biosafety Act 2007 (Act 678)**

<https://www.ummc.edu.my/files/ethic/MCHRS/8%20Genetic%20Research/Act%20678%20Biosafety%20Act.pdf>

Whilst at University of Malaya I was invited to numerous meetings at Ministry of Science, Technology and Innovation, Malaysia and other agencies to provide input, contribute and discuss the formulation of this act. It was a time of great specialist and public concern about the latest biotechnologies i.e. genetic engineering, cloning and transgenic organisms. I was also invited by Ministry of Foreign Affairs to provide a lecture outlining the science and ethical issues of Human Reproductive Cloning and to consult held before Malaysia as a member state, took a decision at UNESCO to ban human reproductive cloning. Biosafety Act 678 was passed in 2007 and has undergone several amendments over the years.

3) **WHO Report : Genomics and World Health**

World Health Organization, 2002. Genomics and world health: Report of the Advisory Committee on Health Research. World Health Organization.

[https://apps.who.int/gb/archive/pdf\\_files/EB112/eeb1124.pdf](https://apps.who.int/gb/archive/pdf_files/EB112/eeb1124.pdf)

I was invited by the WHO advisory committee on health research to a regional meeting in Bangkok for a consultative meeting to address the ethical, legal and social implications of genomics. In May, 2002, under the auspices of its Advisory Committee on Health Research, WHO released *Genomics and World Health*, a report that assessed genomics research and its future possibilities. The report addressed

issues of equitable sharing of benefits between low-income and high-income countries, ethical concerns, and integration into delivery of health services, and gave recommendations to ameliorate the problems identified.

#### **d) Media and Social Media engagement (selected)**

- 1) “Malaysia : How ready are we in advancing personalized healthcare”. A national webinar designed to introduce the Personalized Health Index APAC and to engage various stakeholders in academia, government agencies, public institutions, healthcare industry, NGOs and patient advocacy groups. <https://www.youtube.com/watch?v=gvgq-lmCTzps>  
<https://codeblue.galencentre.org/2021/09/22/how-to-boost-personalised-health-care-in-malaysia/>
- 2) The Orang Asli Health and Well-Being international online conference series organised by in collaboration with Special Collections & Archives Division, Keene State University explores the health challenges facing the Orang Asli, the indigenous peoples of Peninsular Malaysia. My presentation in Session 2 is entitled ‘Orang Asli History, Genetics, and Health’ and was recorded on Nov 10, 2020.  
<https://www.youtube.com/watch?v=cowoRnagjXo>
- 3) I was interviewed by Monash Lens on my research and work life at Monash University Malaysia and took this opportunity to highlight the support of my academic womens group.  
<https://lens.monash.edu/@medicine-health/2018/03/08/1327941/malaysian-geneticist-prefers-the-human-connection>
- 4) Bioethics is an area I am passionate about and over the years have trained local and international faculty to teach bioethics. Introducing Values Exchange: A New Tool to Assess Bioethics Education for Teachers and Students – Prof. Maude Phipps, Monash University, Kuala Lumpur, Malaysia; AUSN Visiting Professor of Genetics and Bioethics.  
<https://www.youtube.com/watch?v=jrJtqz9rYcY>
- 5) In 2015, I was invited to give a lecture “Genetics and health of indigenous populations (Orang Asli) of Peninsular Malaysia” at the Center for Computational, Evolutionary and Human Genomics (CEHG), Stanford University, USA.  
<https://www.youtube.com/watch?v=OoVx8nBidC4>
- 6) My research has been supported by government and institutional grants. Therefore, apart from contributing to knowledge and publishing, it is useful to engage the public with correct information. Researchers must be unafraid to defend their findings without fear or favour. It came to my notice that some of the discoveries I made in collaboration with my colleagues, was misused and misrepresented in an article published in The Malay Mail, a local newspaper. I took immediate action by writing a rebuttal that was published within 20 minutes of emailing the editor. <https://www.malaymail.com/news/what-you-think/2018/08/04/rebutting-zaharah-sulaiman-on-malay-genes-second-oldest-in-the-world-maude/1659038>
- 7) Reporter N Rama Lohan of Science and Technology division of The Star, a national newspaper interviewed me about what shaped my interests as a researcher.  
<https://www.thestar.com.my/lifestyle/living/2015/05/17/maude-hipps-goes-from-cosmos-to-genomes>
- 8) Henry Kim, producer of Korean Broadcasting System (KBS) and his team came to my laboratory and interviewed me in 2014 for KBS Panorama documentary “Korean Eve”: Key to the Secret Sundaland”. They were keen to know how my work had contributed to

understanding human migrations into Asia.

<https://www.youtube.com/watch?v=0JG4YDtLHng>

9) It was a pleasant surprise to be nominated for the Great Women of Our Time 2009 Award by ACP press and even more of surprise to have won it for the Science and Technology category. I would be glad if this award inspired more girls and women to take up STEM studies and careers. <http://wewantmww.blogspot.com/2009/12/malaysian-women-honoured.html>

## 7. Research grants (PI and Co-Investigator & duration)

1. FRGS-MOHE- Healthcare utility among Orang Asli: Developing an ecological healthcare rationality model **RM100,200.00** (2020-2022)

2. Leakey Foundation USA - Exploration of olfaction abilities and genetics in Asian indigenous communities **USD 15,000.00** (2019-2022)

3. FRGS - Ministry of Education (MOHE) Malaysia for Host-pathogen immunogenetics in Orang Asli individuals infected with intestinal nematodes. **RM 165,800.00** (2018-2022)

4. FRGS-MOHE Deciphering the Genomics and Adaptation to Dive-Induced Hypoxia in Sea Nomads of South East Asia **RM 166,000.00** (2019-2022)

5. Tropical Biology and Medicine Platform for Human Genomics **RM72,000/-** (2018), **RM 80,000/-** (2017)

6. WDF-NADI Project Health Education and Intervention in Orang Asli and Rural Communities - **RM 420,000/-** (2016-2020)

7. Lundbeck Foundation Denmark Indigenous research grant **RM31,000/-** (2016)

8. erBiotek Ministry of Science, Technology and Innovation (MOSTI) for **Genomic** Variations and their Importance in understanding evolution, migration and health in Multi-Ethnic Population in Malaysia **RM1,400,000/-** (2010-2015).

I lead a multi-university team comprising Monash University Malaysia, University ITM, Universiti Malaysia Sabah and Universiti Sains Malaysia

9) Monash University Grant **RM 150,000/-** for Genomics of Systemic Lupus Erythematosus (2010-2012)

[Appendix B for grants before 2010](#)

### b) Total number of research students at Honours, Masters and Doctoral levels = 30

My research philosophy encompasses providing quality supervision to students and training them to be responsible, competent and confident researchers. This means establishing a professional supervisory relationship from the outset of the research programme. I have spent/spend significant amounts of time with each of them to ensure each he/she understands

the big picture of what lies before them and timelines. Before their projects begin, they are grounded in research ethics, good laboratory practice and desirable professional behaviour.

They also learn soft skills to engage effectively with participants, whether they be patients or indigenous communities. Once the students embark on their projects, I give them the liberty to work freely and try ideas fit, without micromanaging. Regular meetings are scheduled to provide support and ensure they remain on track. They are encouraged to present their work at local and international conferences and to publish. I have kept in touch with former students who have gone on to become successful academics, researchers and professionals in Malaysia, Japan, UK and USA.

## 8.0 Teaching

The joys of my life include interacting with students of all ages, genders, faiths, ethnicities, nationalities, interests and being part of their educational journeys and achievements, as much as they have been a part of mine. To date, I have 30 years of teaching experience in undergraduate, postgraduate and specialist courses on local and international levels. My contributions have ranged from course design, implementation, innovation, delivery and training younger faculty. The years have brought familiarity with high education standards and accreditation processes by professional bodies such as Institute of Biomedical Sciences UK, Malaysian Medical Council, Sri Lankan Medical Council and Australian Medical Council. The Covid19 pandemic challenged me to acquire and master new skills required for online teaching and engagement. My hope is that I have made/am able to make a positive difference in learners lives, train minds to think, to serve humanity and respect nature.

### Monash University (Malaysia & Australia)

2019-present Bachelor of Medical Science and Doctor of Medicine (BMedSc/MD), Band 9  
Australian Qualifications Framework (AQF 9)

2017-present Postgraduate Diploma in Biomedical Science (PgDipBiomedSc)

2013-present Master of Biomedical Science (MBioMedSc)

2009-present Doctor of Philosophy (PhD)

2018-2015 Bachelor of Medicine and Surgery (MBBS Hons) AQF 8

2014-2008 Bachelor of Medicine and Surgery (MBBS) AQF 7

2010-2014 Bachelor of Pharmacy (BPharm)

<https://www.monash.edu.my/study/undergraduate>

<https://www.monash.edu.my/jcsmhs/courses/postgraduate>

Hamad Bin Khalifa University (Qatar)

2020 GPM602 - Clinical Applications in Genomics and Precision Medicine –  
Postgraduate course module

University of Malaya (Malaysia)

1995-2008 Bachelor of Biomedical Sciences Honours (BBiomedSc Hons)

2002-2008 Masters in Clinical Oncology (MCO) <https://medicine.um.edu.my/master-of-clinical-oncology-mco>

2004-2008 Masters in Psychological Medicine (MPM) <https://medicine.um.edu.my/master-of-psychological-medicine-mpm>

Wellcome Connecting Science

2019-2022 External Faculty /Global Trainer for Wellcome Connecting Science, Human Genomics Specialist Programmes  
<https://www.wellcomegenomecampus.org/aboutus/connecting-science/>

Subject expertise

Biomedical and Research Ethics

Genomics and Precision Medicine

Human Genetics

Immunogenetics

Indigenous Health

Molecular Biology and Recombinant DNA Technology

Pharmacogenetics

Population Genomics

**9.0 Strategic Leadership experience**

2019-2022 Co-Chair, Advisor and Founding member, Women's Empowerment Network (WEN), Monash University Malaysia.

Recognising the need to support and empower the women across the university from academics to professionals to students, we established WEN in 2019. This is a strategic inclusive forum to help women thrive and address issues, challenges and opportunities. As a founding member, previous Co-Chair and current Advisor, I am delighted that we have built a strong and united community of women who confidently take charge of our development, support and help each other flourish. In 2021, WEN was

awarded the Vice Chancellor's Excellence Award Special Commendation for Diversity and Inclusion.

<https://sites.google.com/monash.edu/mum-wen/home>

2005-2009 Co-Chair, Policy Review Board, Human Genome Organization, Pan Asia SNP Consortium

The consortium comprised multidisciplinary researchers from 40 institutions and 10 countries. I was honoured to be appointed Co-Chair our policy review board (PRB) that set the standards for ensuring that all investigators from each country had obtained their respective IRB approvals and informed consent procedures were adhered to. Procedures were also set as to data sharing arrangements and guest-host partnerships. This required expertise in human genetics research and appreciation of how different countries operated as 'one size did not fit all'. I developed the ability to engage the very best researchers in the region and elicit their cooperation.

1999-2008 Head, Molecular Immunogenetics and Transplantation Laboratory, UMMC Diagnostics, University of Malaya Medical Centre, Kuala Lumpur, Malaysia.

Whilst researching autoimmunity at the Medical Faculty at University of Malaya, I became acutely aware of the needs of many patients suffering from hematopoietic malignancies and the toll it took on their families. Adult and paediatric patients awaiting critical bone marrow/stem cell transplants had to wait up to 6 weeks to be matched using conventional immunological methods at a government facility. Through the latest publications, I realised that there were newer and better ways to match transplant donors and recipients to improve posttransplant outcome. I requested time off to do short laboratory attachments and train in Oxford and Australia and then established the first molecular typing laboratory service at University of Malaya Medical Centre. This was the first in Malaysia with had a turnaround time of 5 working days. For nine years, I was entrusted with most responsibilities from preparing annual expenditure budgets CAPEX and OPEX; reporting to the hospital director and board; training, managing and motivating lab staff; enforcing standard operating procedures, liaising with suppliers, internal and external clients; income generation and effecting continuous improvements.

2005 Head of Biomedical Science Division, Faculty of Medicine, University of Malaya

I assumed this position for a year and obtained the experience of running an academic division at the faculty. In addition to administrative responsibilities of budgeting and expenditure, academic year planning, staff management, reporting at faculty meetings, I also developed and maintain good working relationships with faculty from other departments such as Anatomy, Biochemistry, Medicine, Medical Microbiology, Pathology, Pharmacology, Physiology, Nuclear Medicine, etc who taught into our courses and where our students were placed for the final year specializations and projects.

2002-2004 Chief Editor, Asia Pacific Journal of Molecular Biology and Biotechnology (APJMBB)



The Journal was committed to promote research in all relevant areas of molecular & cellular biology in prokaryotic & eukaryotic organisms and biotechnology in Malaysia and the Asia Pacific region through publication of research articles, both basic and applied. During my term as Chief Editor, I made several strategic decisions supported by our editorial board to improve the quality of the journal and set a higher benchmark. I embarked on online publication of the journal to reduced dependence and wastage on hard copy production. We then appointed several regional editors based in Australia, Indonesia, Thailand and Mexico who facilitated the initial assessments of manuscripts. The international advisory board was trimmed and streamlined, retaining scientists of the highest quality and dedication. Finally, cooperate sponsorship was obtained to help us maintain the current nominal subscription and publication rates.

<http://www.msmbb.my/index.php/archive-issues>

## 12.0 Professional affiliations and memberships

2017-2022 American Society of Human Genetics

2017-2022 Asia Pacific Bioethics Network (APBEN)

2004-2018 Human Genome Organization

2015-2022 Global Alliance for Genomics and Health

1995–present Life member, Genetics Society of Malaysia

1996-present Life member, Malaysian Society for Molecular Biology and Biotechnology

## 13.0 Invited lectures at conferences and seminars (selected)

2020 College of Health and Life Sciences, Hamad bin Kalifa University seminar entitled "**Population genomics and Precision medicine : Approaches to cardiovascular, metabolic and neurological conditions**", Doha, Qatar.

2019 Max Planck Institute for Evolutionary Anthropology Seminar entitled "**Engaging indigenous communities and last hunter gatherers of Malaysia: A multidisciplinary perspective**", Leipzig, Germany.

2019 Asia Pacific Bioethics Network Meeting lecture entitled "**GenEthics : Engaging Indigenous Communities in Biomedical Research**", Hong Kong SAR, China.

2018 1<sup>st</sup> AsiaEvo Conference invited lecture entitled "**Genomic Insights Into the Peopling of Southeast Asia**", Shenzhen, China  
<https://academic.oup.com/nsr/article/5/5/614/5032811>

2016 The Professor IS Puvan Memorial Lecture entitled "**Editing Humanity**" delivered at the International Congress of The Obstetrical & Gynaecological Society of Malaysia, Kuala Lumpur

2015 EvolGenome Seminar entitled "**Genetics and health of indigenous populations (Orang Asli) of Peninsular Malaysia**", Center for Computational, Evolutionary and Human Genomics (CEHG), Stanford University, USA.

2008 Genome Canada invited lecture entitled “**Navigating the Changing Landscape in Population Genetics Research – Lessons from the HUGO PASNP initiative**”, Calgary, Canada.

## 14.0 Referees

### 1. Professor Dr. Neil Risch

Lamond Family Foundation Distinguished Professor in Human Genetics, Epidemiology and Biostatistics, University of California San Francisco (UCSF). Previously Director of the Institute for Human Genetics UCSF and 2015 President of the American Society of Human Genetics, USA.

Email : Neil.Risch@ucsf.edu

### 2. Professor Dato Dr. Anuar Zaini Md Zain

Professor of Medicine, Jeffrey Cheah School of Medicine and Health Sciences (JCSMHS), Monash University Malaysia, Former Head of JCSMHS and Vice Chancellor, University of Malaya, Malaysia.

Email : Anuar.Zaini@monash.edu

### 3. Professor Dr. Pascale Allotey

Director of the United Nations University International Institute for Global Health (UNU-IIGH), UNU-IIGH Building, Kuala Lumpur, Malaysia

Email : pascale.allotey@unu.edu / unu.iigh.director@unu.edu