Assisted Reproduction Programme 40th Anniversary Symposium

ART: From Foundational Discoveries to Precision Medicine

31 October – 1 November 2026

Cheung Kung Hai Lecture Theatre 1,
William M.W. Mong Block, 21 Sassoon Road, Hong Kong



Supporting Organisation

香港大学深圳医院
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Programme

31 October 2026 (Saturday)

Time	Session
08:00 – 08:30	**Registration**
08:30 – 08:55	**Welcome & Opening Ceremony** **Welcome Remarks** **Professor Raymond Hin Suen LIANG** *Chairperson of Council on Human Reproductive Technology* **Welcome Remarks** **Professor Gordon Tin Chun WONG** *Associate Dean of Li Ka Shing Faculty of Medicine, The University of Hong Kong* **Welcome Remarks** **Dr. Theresa LI** *Cluster Chief Executive of Hong Kong Island Cluster, Hospital Authority* **Welcome Remarks** **Professor Karen Kar Loen CHAN** *Chairperson and Clinical Professor, Department of Obstetrics and Gynaecology, The University of Hong Kong* **Opening Remarks** **Professor Raymond Hang Wun LI** *Chairperson of ART 40th Anniversary Symposium*

Programme

Time	Session
*Chairperson: **Professor Kui LIU**, The University of Hong Kong, Hong Kong, China; and **Professor Tianren WANG**, The University of Hong Kong, Hong Kong, China*	
08:55 – 09:40	**<u>Keynote Address I:</u> Evidence-based Practice in IVF** ***Professor Ernest Hung Yu NG*** *The University of Hong Kong, Hong Kong, China*
09:40 – 10:40	**Session 1: Ovary I**
	Determinants and Prediction of IVF Outcome ***Professor Emre SELI*** *Yale School of Medicine, United States of America* **Rejuvenation of Aged Oocytes Through Exposure to a Young Follicular Microenvironment** ***Professor Rong LI*** *National University of Singapore, Singapore*
10:40 – 11:10	**Coffee Break & Networking**
*Chairperson: **Professor Pengtao LIU**, The University of Hong Kong, Hong Kong, China; and **Dr. William Wai Ki SO**, The University of Hong Kong, Hong Kong, China*	
11:10 – 11:55	**<u>Loke Foundation Lecture:</u> Cutting-Edge Live Imaging and Genome Editing of Human Embryos Reveals the Timing and Mechanisms Regulating Embryogenesis** ***Professor Kathy NIAKAN*** *University of Cambridge, United Kingdom*
11:55 – 12:55	**Session 2: Embryo & Implantation I**
	Time-lapse Assessment: Is it Better than Morphological Method? ***Professor David Yiu Leung CHAN*** *The Chinese University of Hong Kong, Hong Kong, China* **Use of Omics in Embryo Selection: Is it the Future?** ***Dr. Andy Chun Hang CHEN*** *The University of Hong Kong, Hong Kong, China*

Programme

Time	Session
13:10 – 14:10	**Lunch Symposium *(Sponsored by Organon)*** *Chairperson: **Professor Raymond Hang Wun LI**, The University of Hong Kong, Hong Kong, China; and* ***Dr. Carmen Shu Man NG**, The University of Hong Kong, Hong Kong, China* **Integrating Science and Humanity in the Fertility Journey** ***Dr. Raelia LEW*** *Women's Health Melbourne and Melbourne IVF, Australia*
*Chairperson: **Dr. Anita Sik Yau KAN**, The University of Hong Kong, Hong Kong, China; and **Dr. Judy Fung Cheung CHOW**, The University of Hong Kong, Hong Kong, China*	
14:15 – 15:00	**<u>Keynote Address II:</u> Spatiotemporal Transcriptome Atlas of Human Embryos After Gastrulation** ***Professor Hefeng HUANG*** *Zhejiang University School of Medicine, China*
15:00 – 16:00	**Session 3: Preimplantation Genetic Testing**
	Underrecognized Genome-wide Uniparental Disomy and Triploidy in Human Blastocysts Revealed by a Concurrent PGT Method ***Professor Richard Kwong Wai CHOY*** *The Chinese University of Hong Kong, Hong Kong, China* **Clinical Application of Preimplantation Genetic Testing for Aneuploidy Origin** ***Professor Yanwen XU*** *First Affiliated Hospital, Sun Yat-Sen University, China*
16:00– 16:30	**Coffee Break & Networking**

Programme

Time	Session
Chairperson: ***Professor Calvin Kai Fai LEE****, The University of Hong Kong, Hong Kong, China; and* ***Professor Jennifer Ka Yee KO****, The University of Hong Kong, Hong Kong, China*	
16:30 – 17:00	**Introductory Remarks** ***Professor Sophia Siu Chee CHAN*** *The University of Hong Kong, Hong Kong, China*
	Dr. Josephine Lai Chun Ng Memorial Lecture: **How Psychological Support Helps in the Journey of Fertility Treatment** ***Professor Celia Hoi Yan CHAN*** *The University of Melbourne, Australia*
17:00 – 18:00	**Session 4: Stem Cell**
	Human Expanded Potential Stem Cells in Reproductive Medicine: Embryo Modeling and Fertility Preservation ***Dr. Qingqing ZHANG*** *The University of Hong Kong, Hong Kong, China* **Manipulation of Endometrial Niche for Endometrial Repair** ***Dr. Rachel Wah Shan CHAN*** *The University of Hong Kong, Hong Kong, China*
19:00	**Faculty Dinner (By Invitation Only)**

The programme is subject to change without prior notice.

Programme

1 November 2026 (Sunday)

Time	Session
08:00 – 08:30	**Registration**
	Poster Oral Presentation *Adjudicators: **Professor Kui LIU**, The University of Hong Kong, Hong Kong, China; and **Professor Kathy NIAKAN,** University of Cambridge, United Kingdom*
*Chairperson: **Professor Raymond Hang Wun LI**, The University of Hong Kong, Hong Kong, China; and **Dr. Flora Oi Shan TANG**, Hong Kong Sanatorium & Hospital, Hong Kong, China*	
08:30 – 09:15	**Keynote Address III: Infertility Treatment of Advanced Aged Women** ***Professor Jie QIAO*** *Peking University Third Hospital, China*
09:15 – 10:15	**Session 5: Sperm**
	Basic Semen Analysis: Is There Any Improvement? ***Dr. Kevin Ka Wai LAM*** *The University of Hong Kong, Hong Kong, China* **Using the Oocyte's Perspective for Sperm Selection in Clinical Assisted Reproduction** ***Professor Philip Chi Ngong CHIU*** *The University of Hong Kong, Hong Kong, China*
10:15 – 10:45	**Coffee Break & Networking**

Programme

Time	Session
Chairperson: ***Professor Ernest Hung Yu NG****, The University of Hong Kong, Hong Kong, China; and* ***Dr. Qingqing ZHANG****, The University of Hong Kong, Hong Kong, China*	
10:45 – 11:30	**Keynote Address IV: Mitochondria as Determinants of Ovarian and Reproductive Aging: From Biology to Fertility Treatment** ***Professor Emre SELI*** *Yale School of Medicine, United States of America*
11:30 – 12:30	**Session 6: Ovary II**
	The Ovarian Stroma as a Therapeutic Target for Premature Ovarian Insufficiency (POI) and Diminished Ovarian Reserve (DOR) ***Professor Kui LIU*** *The University of Hong Kong, Hong Kong, China* **Poor Ovarian Responders: Any Effective Treatment Available?** ***Professor Tianren WANG*** *The University of Hong Kong, Hong Kong, China*
12:45 – 13:45	**Lunch Symposium** **(Sponsored by Ferring Pharmaceuticals Ltd)** *Chairperson:* ***Professor Jennifer Ka Yee KO,*** *The University of Hong Kong, Hong Kong, China; and* ***Dr. Heidi Hiu Yee CHENG,*** *The University of Hong Kong, Hong Kong, China* **Ovarian Stimulation Strategies: Balancing Success and Safety Across Different Responder Profiles** ***Dr. Maria Victoria Romualdez TAN*** *Repro Optima Center for Reproductive Health, Philippines*

Programme

Time	Session
*Chairperson: **Professor William Shu Biu YEUNG**, The University of Hong Kong, Hong Kong, China; **Professor Philip Chi Ngong CHIU**, The University of Hong Kong, Hong Kong, China; and **Professor Pak Chung HO**, The University of Hong Kong, Hong Kong, China*	
14:00 – 14:45	**Introductory Remarks** ***Professor Pak Chung HO*** *The University of Hong Kong, Hong Kong, China*
	<u>Professor Pak Chung Ho Lecture:</u> The Endometrium - From Bench-To bed-To the Hands of Women ***Professor Kristina GEMZELL-DANIELSSON*** *Karolinska Institutet, Sweden*
14:45 – 15:45	**Session 7: Embryo & Implantation II**
	Simulation of Human Embryo Implantation in vitro ***Professor Kathy NIAKAN*** *University of Cambridge, United Kingdom* **Could Artificial Intelligence Identify Embryos with Implantation Potential?** ***Professor Yuanhua HUANG*** *The University of Hong Kong, Hong Kong, China*
15:45 – 16:15	**Coffee Break & Networking**
*Chairperson: **Dr. Sue Seen Tsing LO**, The Family Planning Association of Hong Kong, Hong Kong, China; and **Dr. Carina Chi Wai CHAN**, The University of Hong Kong, Hong Kong, China*	
16:15 – 17:15	**Session 8: Reproductive Health**
	What is the Significance of Chronic Endometritis? ***Professor Tin Chiu LI*** *The Chinese University of Hong Kong, Hong Kong, China* **The Future of Emergency Contraception** ***Professor Raymond Hang Wun LI*** *The University of Hong Kong, Hong Kong, China*

Programme

Time	Session
*Chairperson: **Professor Kristina GEMZELL-DANIELSSON**, Karolinska Institutet, Sweden and; **Dr. Yu LI**, The University of Hong Kong-Shenzhen Hospital, China*	
17:15 – 18:15	**Session 9: Endometrial Receptivity**
	Single Cell Analysis for Endometrial Receptivity Assessment ***Dr. Dandan CAO*** *The Hong Kong University - Shenzhen Hospital, Shenzhen, China* **How to Assess Endometrial Receptivity in Clinical Practice?** ***Dr. Cherie Yin Lau LEE*** *The University of Hong Kong, Hong Kong, China*
18:15 – 18:30	**Closing Remarks and Award Presentation** **Award Presentation by** **Professor Ernest Hung Yu NG**, *Tsao Yin-Kai Professor in Obstetrics and Gynaecology and Clinical Professor, Department of Obstetrics and Gynaecology, The University of Hong Kong* **Closing Remarks by** **Professor Ernest Hung Yu NG**, *Tsao Yin-Kai Professor in Obstetrics and Gynaecology and Clinical Professor, Department of Obstetrics and Gynaecology, The University of Hong Kong*

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Speakers' Biographies and Abstracts

Keynote Address I

Evidence-based Practice in IVF

Professor Ernest Hung Yu NG

The University of Hong Kong, Hong Kong, China

Professor Ng is a Clinical Professor at Department of Obstetrics & Gynaecology, The University of Hong Kong. His main research interests are clinical trials in assisted reproduction technology, endometrial receptivity, assessment of ovarian reserve, the use of three-dimensional ultrasound, acupuncture in reproduction medicine, stem cells, psychological care in assisted reproduction and fertility preservation. He has published over 400 papers in international refereed journals.

He also serves as an editor of European Journal of Obstetrics, Gynaecology and Reproductive Biology and Reproductive Biomedicine Online. He is a regular reviewer of many international journals.

Speakers' Biographies and Abstracts

Session 1: Ovary I

Professor Emre SELI

Yale School of Medicine, United States of America

Professor Emre Seli, MD, is Professor and Chief of Reproductive Endocrinology and Infertility at Yale School of Medicine. He is also the Chief Scientific Advisor of March of Dimes and Scientific Director of Reproductive Medicine Associates (RMA). Professor Seli's laboratory has been instrumental in characterizing the mechanisms that regulate translational activation of gene expression in the oocyte. Additionally, his research contributions have significantly advanced our understanding of ovarian aging, oocyte and embryo developmental competence, and the role of mitochondria in regulating these processes. Professor Seli has mentored over 100 pre- and post-doctoral fellows, authored more than 200 scientific articles, and edited five books, including the 9th and 10TH editions of "Speroff's Clinical Gynecologic Endocrinology and Infertility". Recognized for his contributions, Professor Seli has received prestigious accolades such as the "Ira and Ester Rosenwaks New Investigator Award" from the American Society for Reproductive Medicine (ASRM), and the "President's Achievement Award" from the Society for Reproductive Investigation (SRI).

Speakers' Biographies and Abstracts

Session 1: Ovary I

Professor Emre SELI
Yale School of Medicine, United States of America

Determinants and Prediction of IVF Outcome

Over the past four decades, assisted reproductive technology (ART) has undergone a profound transformation, shifting from a focus on achieving pregnancy in a single treatment cycle to maximizing the cumulative likelihood of live birth from a single ovarian stimulation. This evolution has been driven by major advances in laboratory and clinical practice, including optimization of extended embryo culture, widespread adoption of oocyte and embryo cryopreservation, and the increasing use of preimplantation genetic testing for aneuploidy (PGT-A). Together, these advances have substantially improved implantation rates and established euploid embryo yield as a central measure of IVF success, reflecting the number of transferable euploid embryos generated per treatment cycle and serving as a key determinant of cumulative pregnancy and live birth rates.

This presentation will review the scientific and technological milestones that have shaped modern IVF and examine the biological factors that ultimately determine euploid embryo yield. Particular emphasis will be placed on the interplay among ovarian reserve, embryo developmental competence, and chromosomal euploidy, recognizing that these interdependent factors collectively define reproductive potential rather than acting in isolation. Understanding these relationships provides the contemporary framework for counseling patients, individualizing treatment strategies, and identifying modifiable factors that may improve reproductive outcomes.

Finally, the talk will explore emerging innovations that are poised to shape the next generation of IVF. Advances in artificial intelligence are transforming oocyte and embryo assessment by integrating clinical characteristics, embryology data, morphokinetics, imaging, and genomic information to improve prediction of euploidy, embryo viability, and overall treatment success. Increasing automation of laboratory and clinical workflows has the potential to improve standardization, reduce costs, and expand access to IVF worldwide. Advances in reproductive cell biology, including stem cell-derived gametogenesis, are opening new possibilities for de novo gamete generation and may ultimately redefine therapeutic options for individuals with severe infertility. In parallel, novel ovarian rejuvenation strategies seek to address the fundamental constraints imposed by ovarian aging, with the goal of preserving or restoring reproductive potential. Together, these developments reflect a common objective: to better preserve, predict, and ultimately enhance reproductive outcomes. As ART enters its fifth decade, the convergence of reproductive biology, engineering, and computational science promises to shift the field from optimizing existing biological potential to expanding reproductive potential, continuing the evolution of IVF toward increasingly personalized, accessible, and effective reproductive care.

Speakers' Biographies and Abstracts

Session 1: Ovary I

Professor Rong LI

National University of Singapore, Singapore

Professor Rong Li came from Johns Hopkins University where she served as the Director of the Centre for Cell Dynamics in the Johns Hopkins School of Medicine. She was recruited to NUS in 2019 as the second Director of Mechanobiology Institute (MBI).

Professor Li is a globally respected leader in the study of cellular dynamics and mechanics. Her interdisciplinary research integrates genetics, quantitative imaging, biophysical measurements, mathematical modelling, genomics and proteomics — to understand how eukaryotic cells transmit their genomes, adapt to the environment, and establish distinct organisation to perform specialised functions.

The diverse projects in Professor Rong Li's lab contribute to two main research thrusts: cell and tissue aging; cellular and organismal adaptation. The study on aging focuses on understanding dynamic changes of crucial cellular components during the aging process and how these changes alter the mechanical functions of cells and tissues. The insights gained will be applied to the development of new methods for prolonging healthy aging and the repair and regeneration of deteriorated functions. The study of adaptation aims to understand the dynamics of genetic and epigenetic determinants of cells and tissues under acute or chronic stress which lead to adaptive behaviors ultimately beneficial or detrimental to the fitness of the organism. A potential application of the discoveries in this area is the prevention of cancer associated with chronic inflammatory diseases.

Speakers' Biographies and Abstracts

Session 1: Ovary I

Professor Rong LI
National University of Singapore, Singapore

Rejuvenation of Aged Oocytes Through Exposure to a Young Follicular Microenvironment

Age-associated female infertility is due mainly to the decline in the quantity and quality of the female gamete – the mature oocyte, or egg. During the process of maturation and fertilization, the oocyte undergoes asymmetric meiotic cell divisions to generate a fertilized egg and two small polar bodies. This dynamic process involves intricate cytosolic mechanics and is energetically expansive and thus sensitive to age-associated metabolic dysfunction. Follicular somatic cells (FSCs) play key roles preparing the oocyte for successful maturation and subsequent developmental processes. Our recent study aims at understanding how aging affects the stromal environment in the ovary and the interaction of FSCs with the oocyte within the follicle. Our work strives to develop an innovative method for restoring the quality of aged oocytes through an engineered young-like FCS environment.

Speakers' Biographies and Abstracts

Loke Foundation Lecture

Professor Kathy NIAKAN

University of Cambridge, United Kingdom

Kathy Niakan is Mary Marshall and Arthur Walton Professor of the Physiology of Reproduction and Director of the Loke Centre for Trophoblast Research at the University of Cambridge. She is also Co-Chair of the Cambridge Reproduction Interdisciplinary Research Centre. Kathy is an Honorary Group Leader at the Babraham Institute and Affiliate Member of the Cambridge Stem Cell Institute. Kathy obtained a B.Sc. in Cell and Molecular Biology and a B.A. in English Literature from University of Washington. She obtained her PhD at University of California, Los Angeles, supported by a National Institutes of Health Pre-doctoral Training Grant, Paul D. Boyer Fellowship and a Chancellor's Dissertation Year Fellowship. She undertook postdoctoral training at Harvard University where she developed an interest in early human development. She was a Loke Centre for Trophoblast Research Next Generation Research Fellow at University of Cambridge. In 2013 she started her laboratory with a focus on mechanisms regulating early human development at the MRC National Institute for Medical Research and subsequently the Francis Crick Institute. Kathy was elected to EMBO membership (2024), awarded the Genetics Society Mary Lyon Medal (2024) and a Blavatnik Award UK Finalist in Life Sciences (2019). Kathy's laboratory pioneered approaches to investigate the function of genes that regulate early human development and the molecular mechanisms that direct cell fate in human embryos. Her laboratory obtained the first nationally regulated approval to genetically modify human embryos in research which attracted widespread policy interest. This research licence was acquired as part of the permanent collection at the Science Museum in London, where scientific objects from the laboratory have also been exhibited.

Speakers' Biographies and Abstracts

Loke Foundation Lecture

Professor Kathy NIAKAN
University of Cambridge, United Kingdom

Cutting-Edge Live Imaging and Genome Editing of Human Embryos Reveals the Timing and Mechanisms Regulating Embryogenesis

Understanding human embryogenesis is foundational for human health, disease, and fundamental principles of human biology. What drives our research is a fascination with lineage specification and mechanisms that regulate human embryogenesis. Our laboratory has optimised approaches to investigate gene function in human embryonic development. We obtained the first nationally regulated research licence to perform CRISPR-Cas9 genome editing in human embryos. We have employed protein depletion and signalling perturbation methods to uncover the timing and mechanisms underlying the first and second cell fate decisions in humans. We have used novel single-cell multi-omics, comprehensive protein expression and genome editing approaches to discover gene regulatory networks specific to human embryos. We have used single-cell and functional studies to define mechanisms that are evolutionarily conserved across mammals. We have applied novel technologies including light-sheet microscopy and machine learning-based image analysis of labelled human embryos to demonstrate de novo mutations at late stages of development, which has implications for clinical screening. These discoveries validate that, despite the immense challenges, there is a need to study human embryos directly. We have improved human stem cell culture media by leveraging insights from functional analysis of human embryos to more closely recapitulate physiologically relevant conditions.

Speakers' Biographies and Abstracts

Session 2: Embryo & Implantation I

Time-lapse Assessment: Is it Better than Morphological Method?

Professor David Yiu Leung CHAN
The Chinese University of Hong Kong, Hong Kong, China

Professor David Chan is currently an assistant professor and IVF lab director in The Chinese University of Hong Kong (CUHK), Reproductive medicine Unit, Department of Obstetrics & Gynaecology. He obtained his D.Phil in University of Oxford in 2011. He trained as clinical embryologist in University of Hong Kong, Queen Mary Hospital in 2012. He joined CUHK as a Research Assistant Professor in 2016, certified as Senior Clinical Embryologist by European Society of Reproduction and Embryology (ESHRE) in 2019 and become the director of the IVF laboratories Unit in Prince of Wales Hospital in 2020. Certified as High-Complexity Laboratory Director (HCLD, ABB) in 2024. He has published over 75 international peer-reviewed journals and obtained many external competitive grants and funding, totally granted amount more than 30 million HKD since joining the CUHK. He is the council member of the Hong Kong Society of Reproductive Medicine (HKSRM). He is also the deputy head of the Special Interest Group (SIG) of Andrology, Education committee member and country representative of Hong Kong in the Asia-Pacific Initiatives for Reproduction (ASPIRE).

Speakers' Biographies and Abstracts

Session 2: Embryo & Implantation I

Dr. Andy Chun Hang CHEN

The University of Hong Kong, Hong Kong, China

Dr. Andy Chen is currently a Research Assistant Professor in the Department of Obstetrics and Gynaecology at the University of Hong Kong. His research investigates the role of microRNAs in early trophoblast development and their regulatory mechanisms in embryo-maternal interaction during implantation. His research contributions have been featured in prominent peer-reviewed journals, including Advanced Science and Nature Protocols.

Speakers' Biographies and Abstracts

Session 2: Embryo & Implantation I

Dr. Andy Chun Hang CHEN
The University of Hong Kong, Hong Kong, China

Use of Omics in Embryo Selection: Is it the Future?

Despite technical progress in assisted reproduction, the live birth rate of IVF remained limited at around 30% worldwide. The contributing factors include advanced maternal age and age-related decline in oocyte quality. However, the primary bottleneck is the inability to identify embryos with genuine implantation potential for transfer among those produced in an IVF treatment cycle. Conventional morphological grading correlates poorly with sustained pregnancy, and time-lapse morphokinetic analysis have not improved pregnancy rates in clinical trials. Another emerging technique is the detection of cell-free biomaterials such as microRNAs (miRNAs) in embryo spent culture medium (SCM). Embryo-secreted miRNAs in SCM represent functional biomarkers of embryo competence, yet published profiles display marked inconsistencies due to analytical platform heterogeneity and low target abundance. To overcome these sensitivity limits, we established a workflow utilizing droplet digital PCR for precise quantification of minute embryo-secreted miRNAs in SCM. Using this approach, we identified a targeted SCM miRNA panel that demonstrates superior predictive accuracy for pregnancy outcomes than conventional morphological grading by embryologists. In summary, this robust, non-invasive platform provides an objective molecular approach that could refine embryo selection and enhance clinical IVF outcomes.

Speakers' Biographies and Abstracts

Lunch Symposium (Sponsored by Organon)

Dr. Raelia LEW

Women's Health Melbourne and Melbourne IVF, Australia

Dr Raelia Lew is the Medical Director of Women's Health Melbourne and Melbourne IVF. Dr Raelia is a Royal Australia and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) Board Certified CREI Fertility Specialist, and is President Elect of the Australia and New Zealand Society of Reproductive Endocrinologists and Infertility Specialists (ANZSREI). Dr Raelia Lew is also an active member of the RANZCOG CREI Subspecialty Committee and Host of Knocked Up Podcast.

Dr Raelia Lew graduated from Monash University Medical School with honours in 2004. After gaining experience as a junior doctor at the Alfred Hospital in Melbourne and Royal North Shore Hospital in Sydney, Raelia embarked on specialist vocational training as a Gynaecologist and Obstetrician at Sydney's Royal Prince Alfred Hospital. Raelia completed her Masters of Medicine in Reproductive Health Science and Human Genetics at The University of Sydney in 2009 and commenced her PhD in Preconception Health Promotion and Reproductive Genetics.

During her PhD study Dr Raelia also spent time at the University of Cambridge as a visiting research fellow. Here she continued her exploration in Preconception Genetic carrier Screening and applying IVF for the purposes of pre-implantation genetic diagnosis, a field of interest that remains a significant passion.

Once Dr Lew qualified as a specialist Obstetrician and Gynaecologist, she undertook 3 further RANZCOG (Royal Australia and New Zealand College of Obstetricians and Gynaecologists) accredited years of training to attain Certification in Reproductive Endocrinology and Infertility (CREI) across several clinical settings at different IVF units. CREI is the highest possible post-graduate qualification in the field of IVF and Assisted Reproductive Technologies in Australia and New Zealand, currently held by fewer than 2% of practicing Australian Obstetricians and Gynaecologists.

Dr Raelia Lew is highly specialised in egg freezing and remains a leading academic researcher in the field. She is also the author of the ANZSREI (Australian and New Zealand Society of Reproductive Endocrinologists and Infertility Subspecialists) Consensus Guideline on elective oocyte cryopreservation. Raelia has developed effective, forward-thinking strategies to maximise each patients' treatment success, so you can feel confident in our care.

Now the Founder and Medical Director of Women's Health Melbourne and Melbourne IVF, Dr Raelia Lew is a respected industry leader.

Speakers' Biographies and Abstracts

Lunch Symposium (Sponsored by Organon)

Dr. Raelia LEW
Women's Health Melbourne and Melbourne IVF, Australia

Integrating Science and Humanity in the Fertility Journey

Integrating Science and Humanity in the Fertility Journey explores the evolving landscape of fertility care in an increasingly digital, informed, and patient-centered era. Presented by Dr Raelia Lew, the session highlights how modern infertility management is moving beyond traditional clinician-led models toward shared decision-making, personalized treatment strategies, and greater patient empowerment.

The presentation examines the growing influence of digital platforms and accessible health education, including the role of the Knocked Up podcast in improving fertility literacy and reducing stigma around reproductive health. It emphasizes that today's fertility patients are better informed, expect individualized care, and seek treatment plans that align with their personal values, family-building goals, lifestyles, and risk tolerances.

Clinical discussions focus on key principles of contemporary assisted reproductive technology (ART), including comprehensive infertility evaluation, holistic optimization of health and lifestyle factors, personalized ovarian stimulation protocols, fertility preservation, embryo banking, and the strategic use of fresh versus frozen embryo transfer. Emerging approaches such as planned-start IVF cycles, freeze-first philosophies, and flexible treatment scheduling are reviewed as methods to improve both clinical outcomes and patient experience.

The presentation also highlights the importance of balancing scientific excellence with emotional intelligence, transparency, and realistic goal setting. By tailoring treatment to individual reproductive goals and life circumstances, healthcare professionals can optimize cumulative live birth outcomes, enhance patient satisfaction, and support patients throughout the physical and psychological demands of fertility treatment. Ultimately, the session advocates for a model of fertility care that integrates evidence-based medicine with compassionate, personalized engagement to achieve the best outcomes for patients and their families.

Integrating Science and Humanity in the Fertility Journey explores the evolving landscape of fertility care in an increasingly digital, informed, and patient-centered era. Presented by Dr Raelia Lew, the session highlights how modern infertility management is moving beyond traditional clinician-led models toward shared decision-making, personalized treatment strategies, and greater patient empowerment.

Speakers' Biographies and Abstracts

Keynote Address II

Professor Hefeng HUANG

Zhejiang University School of Medicine, China

Professor Hefeng Huang is an Academician of the Chinese National Academy of Sciences, a member of the World Academy of Sciences, a Fellow Honoris Causa of the Royal College of Obstetricians and Gynecologists of the UK, and a member of the Chinese Academy of Medical Sciences. As an academic leader, Professor Huang has led many state-funded research programs, including the 973 Science Projects, the 12th Five-Year-Plan in Science and Technology, 863 Research Projects, and the Center for Basic Research of the Chinese National Science Foundation, etc. Her lab works on female reproduction and the embryonic origin of health and disease. She has published >450 papers, many of which appeared in high-impact journals including Lancet, Nature, Nature Medicine, and BMJ. She has received numerous awards, including the National Award for the Advancement of Science and Technology that she received in 2010 and 2021, respectively, the highest honor bestowed upon researchers and scientists in China, and 2023 Fuller W. Bazer SSR International Scientist Award.

Speakers' Biographies and Abstracts

Keynote Address II

Professor Hefeng HUANG
Zhejiang University School of Medicine, China

Spatiotemporal Transcriptome Atlas of Human Embryos After Gastrulation

Human organogenesis is orchestrated by precisely coordinated spatial and temporal gene-regulatory programs, yet a systematic molecular framework spanning the major stages of early human embryonic development has remained incomplete. Here, we constructed a comprehensive spatiotemporal transcriptomic atlas of post-gastrulation human embryos by applying Stereo-seq to 77 sagittal sections from 13 euploid embryos spanning Carnegie stages 12–23, corresponding to approximately 4–8 weeks after conception, and integrating these data with single-nucleus RNA sequencing. The resulting atlas resolved the developmental landscapes of 50 organs and anatomical regions, 198 molecularly distinct substructures and 68 major cell types, enabling systematic reconstruction of organ-specific transcriptional trajectories and gene-regulatory networks during human organogenesis.

Across developmental stages, we identified dynamic transcriptional programs underlying progressive tissue specialization and cellular differentiation and delineated lineage-specific regulatory trajectories in multiple organs. In the developing heart, high-resolution mapping of 26 cardiac substructures resolved chamber-specific and conduction-system regulatory programs. Focusing on the sinoatrial node, we identified KIAA1324L and RORA as previously underappreciated regulators of pacemaker-cell development. Their spatial localization was validated by in situ hybridization, and CRISPR–Cas9 perturbation of their orthologues in zebrafish reduced pacemaker-cell numbers and heart rate, supporting their functional roles in cardiac conduction. In the developing nervous system, we characterized progressive regionalization and neuronal diversification and identified HMGA2 as a stage- and region-specific regulator of radial glial cell maintenance. HMGA2 activity became enriched in the pallium ventricular zone during later embryonic stages, particularly in $PAX6^{+}FOXG1^{+}$ radial glial cells, whereas perturbation analysis indicated that loss of HMGA2 promotes neuronal and glial differentiation at the expense of progenitor maintenance. Cross-species comparisons further revealed human–mouse divergence in the spatial and temporal deployment of developmental regulators, highlighting limitations of extrapolating selected disease mechanisms directly from model organisms.

The atlas also provides a framework for investigating the developmental origins of disease. Spatial mapping of developmental-disorder genes and viral-entry factors identified stage- and organ-specific windows of susceptibility to congenital disorders and prenatal infection. Finally, analysis of allele-specific transcription identified genes showing cross-organ allelic imbalance, including 20 known imprinted genes, revealing spatially structured allelic regulation during embryogenesis. Together, this atlas establishes a whole-embryo molecular reference for human organogenesis and provides a framework for connecting developmental gene regulation with congenital disease, infection susceptibility and human-specific developmental biology.

Speakers' Biographies and Abstracts

Session 3: Preimplantation Genetic Testing

Professor Richard Kwong Wai CHOY

The Chinese University of Hong Kong, Hong Kong, China

Professor Richard Choy is a Professor in the Department of Obstetrics & Gynaecology, and the founder of the Preimplantation Genetic Testing Laboratory (PGT) and the Prenatal Genetic Diagnosis Centre (PGDC) at Chinese University of Hong Kong (CUHK). In 2021, he established the Fertility Preservation Research Centre to enhance the outcome of in-vitro fertilization pregnancies.

Professor Choy is a preeminent scientist whose dedication and pioneering work in Genetics and Genomics have profoundly shaped the landscape of prenatal diagnosis and reproductive medicine, not only in Hong Kong but across Asia and internationally. His works had been translated into clinical services, contributed enormously to various aspects of genetic diagnostic services in Hong Kong and in Asia. He has over 245 publications in international peer-reviewed journals, with several landmark papers uncovering the contribution of CNVs in fetuses with structural malformations, and an H-index of 48. He received the Association of Chinese Geneticists in America (ACGA), Excellence in Genetics Education Award in 2023. In 2025, Prof Choy was conferred Honorary Fellow of the Hong Kong College of Obstetricians and Gynaecologists. He is the Chairman of the Hong Kong Society of Medical Genetics, Vice-President of the Hong Kong Society of Genetic Counselling and a Board Member of the Preimplantation Genetic Diagnosis International Society (PGDIS), International Society for Prenatal Diagnosis (ISPD) and ASPIRE Reproductive Genetics SIG committee Chair.

Speakers' Biographies and Abstracts

Session 3: Preimplantation Genetic Testing

Professor Richard Kwong Wai CHOY
The Chinese University of Hong Kong, Hong Kong, China

Underrecognized Genome-wide Uniparental Disomy and Triploidy in Human Blastocysts Revealed by a Concurrent PGT Method

Concurrent preimplantation genetic testing (PGT) enhances embryo selection by simultaneously detecting monogenic disorders (PGT-M) or structural rearrangements (PGT-SR) and aneuploidy (PGT-A). However, the detection of triploidy and genome-wide uniparental disomy (gwUPD), two genome- wide abnormalities causative for severe pregnancy outcomes, is not routinely included in conventional PGT platforms and thus remains underrecognized at the preimplantation stage. To address what is the incidence of triploidy and gwUPD in human embryos that are currently undetected by conventional preimplantation genetic testing (PGT), we conducted a three phases: Phase I validated the detection capability of a new sequencing based concurrent PGT (PGT-Plus) on cell lines with previously ascertained genetic abnormalities; Phase II performed retrospective clinical validation on leftover trophectoderm69 biopsy whole-genome amplification (WGA) samples, including 65 for PGT-M, 67 for PGT-70 SR, and 130 for PGT-A received during January 2019 and July 2023; Phase III was prospective implementation of PGT-Plus under a diagnostic setting on 529 blastocysts received from August 2023 to June 2024. Additionally, a cohort consisting of 258 embryo transfers,73 previously ascertained as euploid by conventional PGT-A methods but associated with unfavourable outcomes, were retested by PGT-Plus which identified previously undetected cases of gwUPD or triploidy. Triploidy and gwUPD were detected in 0.8% (8/105) and 1.34% of blastocysts, respectively. Notably, 3.5% (9/258) of the embryo transfers, initially classified as "euploid" but associated with unfavourable outcomes, would have otherwise been prevented if triploidy and gwUPD had been detected. This newly established PGT-Plus approach additionally detected gwUPD and triploidy in preimplantation embryos. It explained another 3.5% of "euploid" transfer failures. Detection of these anomalies at the preimplantation level could lower the risk of hydatidiform mole, miscarriages, and pregnancy-related complications, thereby improving overall reproductive outcomes.

Speakers' Biographies and Abstracts

Session 3: Preimplantation Genetic Testing

Professor Yanwen XU

First Affiliated Hospital, Sun Yat-Sen University, China

Professor Yanwen Xu works at the reproductive medical center of the First Affiliated Hospital of Sun Yat-sen University. She got the first successful PGD live birth in 2000 in China. Her main research interests include preimplantation genetic testing, reproductive genetics, and function of circadian clock in female reproduction. She has published more than 100 papers, and her h-index in 2025 was 30. Currently, she is the member of the standing committee of Chinese Society of Reproductive Medicine (CSRM), group leader of the embryologist group of CSRM, and the vice chairman of Society of Reproductive Medicine in Guangdong Province.

Speakers' Biographies and Abstracts

Session 3: Preimplantation Genetic Testing

Professor Yanwen XU
First Affiliated Hospital, Sun Yat-Sen University, China

Clinical Application of Preimplantation Genetic Testing for Aneuploidy Origin

Chromosomal mosaicism mainly arises from postzygotic mitotic errors, except for few events from rescued meiotic errors. Preimplantation genetic testing for aneuploidy origin (PGT-AO) can distinguish meiotic errors from mitotic errors, however, the clinical value of PGT-AO remains to be explored.

We retrospectively analyzed parental and cell-division origins of 391 blastocysts classified as euploid-aneuploid mosaic by SNP array. The overall meiotic error rate was only 3.9%. Meiotic origin was associated with advanced maternal age, blastocysts with high-level mosaicism, and maternal-origin mosaicisms. Pregnancy outcomes following ET with mitotic errors were compared with matched euploid embryo transfers at a 1:3 ratio using propensity score matching. Clinical outcomes were comparable between METs and euploid embryo transfers, with no significant difference in LB/OPR (47.9 *vs.* 52.8%, *P*=0.409).

To assess the real mosaicism, single-cell DNA sequencing was conducted on 314 cells separated from 7 donated blastocysts (4 high-level mosaicism, 2 meiotic aneuploid, and one low-level mosaic), which exhibited highly variable mosaic levels, ranging from 8.7 to 100% reproducibility of initial mosaic abnormalities at the single-cell level.

Taken together, PGT-AO analysis demonstrated a low prevalence of meiotic errors in human blastocysts with mosaic results. PGT-AO is recommended for patients with advanced maternal age, embryos with high-level mosaicism and of maternal origin mosaicism in PGT cycles.

Speakers' Biographies and Abstracts

Dr. Josephine Lai Chun Ng Memorial Lecture

Professor Celia Hoi Yan CHAN

The University of Melbourne, Australia

Professor Celia Chan is Professor in the Melbourne School of Health Sciences at the University of Melbourne, and Honorary Professor in the Department of Obstetrics and Gynaecology at The University of Hong Kong. She is currently Coordinator for China and Hong Kong of the International Infertility Counseling Organization and Chair of the Special Interest Group on Psychology and Counselling at ASPIRE.

Specialising in psychology and counselling in reproductive medicine, Professor Chan's work focuses on the psychosocial aspects of infertility, assisted reproduction, and pregnancy loss. As the first infertility counsellor in HK, she established the psychosocial counselling service at the Centre for Assisted Reproduction and Embryology, QMH-HKU, in 2001. She has been involved in developing psychological assessment and counselling models for individuals and couples navigating infertility, assisted reproductive technologies, donor assisted conception, and different pathways to family formation. Her work also extends to integrated perinatal bereavement care for those experiencing pregnancy loss or reproductive trauma.

She has conducted clinical trials examining the effectiveness of psychosocial interventions for people undergoing IVF and those affected by pregnancy loss. In addition, she has contributed to fertility awareness education projects that aim to enhance public understanding of sex and reproductive health, as well as the development of digital interventions, including apps, websites, and self-care materials. To build the capacity in the field, she established the first Certificate Course in Infertility Counselling in China and HK that trained several cohorts of healthcare professionals, and has conducted professional training on infertility counselling, reproductive counselling, and perinatal bereavement care.

Speakers' Biographies and Abstracts

Dr. Josephine Lai Chun Ng Memorial Lecture

Professor Celia Hoi Yan CHAN
The University of Melbourne, Australia

How Psychological Support Helps in the Journey of Fertility Treatment

Infertility is now recognized as a significant source of psychological distress, with rates of anxiety and depression among individuals undergoing fertility treatment comparable to those seen in people managing serious chronic illness. Yet psychological care remains inconsistently integrated into reproductive medicine, often positioned as an optional add-on rather than a core component of the treatment pathway. This presentation examines the current evidence base for psychological support in fertility treatment and outlines a contemporary, biopsychosocial approach to addressing it.

The presentation begins by mapping the psychological demands of the fertility treatment journey, from diagnosis through repeated treatment cycles, and, for some, through pregnancy loss or the decision to terminate treatment. Distress at each stage is shaped by distinct stressors: uncertainty and loss of control at diagnosis, cumulative strain across treatment cycles, and grief that is frequently disenfranchised or unacknowledged following unsuccessful cycles or miscarriage. Understanding these stage-specific needs is essential to designing support that is timely rather than generic.

Drawing on the Integrative Body-Mind-Spirit (IBMS) model and related research, the presentation then presents an evidence-based framework for psychological intervention in reproductive medicine. This framework moves beyond a narrow focus on anxiety reduction to address meaning-making, body-mind connection, and existential concerns that arise when biological parenthood is uncertain. Data from clinical and research studies will be presented to demonstrate measurable improvements in psychological wellbeing, and in some cases treatment engagement, when structured psychological support is embedded alongside medical care.

Particular attention will be given to three contemporary developments in the field. First, the shift toward biopsychosocial and culturally responsive models of care, which account for the different meanings that infertility and family-building carry across cultural and social contexts. Second, the expansion of psychological support beyond the patient to include partners, whose distress is well documented but frequently overlooked in clinical practice. Third, the growing role of digitally delivered and low-intensity interventions, which extend psychological support to patients who cannot access, or would not otherwise seek, face-to-face counseling, and which allow services to scale within resource-constrained clinical settings.

The presentation will conclude by considering what these developments mean for clinical practice in reproductive medicine departments today. This includes practical recommendations for integrating routine psychological screening into treatment protocols, training multidisciplinary staff to recognize and respond to psychological distress, and building referral pathways that make psychological support a standard part of the fertility treatment journey rather than a service patients must seek out on their own.

Speakers' Biographies and Abstracts

Session 4: Stem Cell

Human Expanded Potential Stem Cells in Reproductive Medicine: Embryo Modeling and Fertility Preservation

Dr. Qingqing ZHANG
The University of Hong Kong, Hong Kong, China

Qingqing Zhang is a Research Assistant Professor at the School of Biomedical Sciences at the University of Hong Kong. Qingqing Zhang received a Ph.D. from the Department of Obstetrics and Gynaecology at the University of Hong Kong. Dr. Zhang did her postdoc training for reproductive ageing and placental ageing at the Department of Obstetrics and Gynaecology, HKU.

Speakers' Biographies and Abstracts

Session 4: Stem Cell

Dr. Rachel Wah Shan CHAN

The University of Hong Kong, Hong Kong, China

Dr. Rachel Chan graduated from the University of Melbourne and obtained her PhD at Monash University, Australia. She is a Research Officer at the Department of Obstetrics & Gynaecology, the University of Hong Kong. Her research areas include women's health, uterine regeneration and endometrial stem cells. She has published more than 25 SCI articles in international journals. Dr. Chan's main contribution to the field include: the first to demonstrate the existence of adult stem cells in human and mouse endometrium; identification of stem cells in ovarian endometriomas; understanding the niche factors regulating endometrial stem cells; and its therapeutic use for women with thin endometrium. Her research work has been supported by various research funds, including the Shenzhen Knowledge Innovation Programme of the Shenzhen Science and Technology Innovation Commission, the National Natural Science Foundation of China and the Hong Kong Research Grants Council's General Fund.

Speakers' Biographies and Abstracts

Session 4: Stem Cell

Dr. Rachel Wah Shan CHAN
The University of Hong Kong, Hong Kong, China

Manipulation of Endometrial Niche for Endometrial Repair

The human endometrium is the mucosal lining of the uterus that serves as the interface for embryo implantation and undergoes cyclic changed during women's reproductive age. Although the distinct regenerative capacity of the endometrium can sufficiently respond to physiological or acute pathological stress, severe or repetitive damage can result to irreversible changes. In vitro fertilization can overcome infertility caused by various factors in many patients. However, once the endometrium is severely damaged, the endometrium is severely damaged, the effect of IVF will be hindered as the final destination of the embryo has been impaired.

Increasing evidence shows that the rapid regeneration of the endometrium after menstruation is mainly due to the existence of endometrial mesenchymal stem cells (eMSCs). Primary eMSCs are a rare population of cells located in the basalis and functionalis. Since eMSCs originate from tissue with high regenerative capacity, they are excellent candidates for therapeutic use.

Considering the cyclical phenomena of the human endometrium, a well-orchestrated network of signalling pathways, paracrine signals and structural support are involved in the menstrual cycle events. Understanding the microenvironment factors which regulate the biological activities of eMSCs can improve the regenerative of the tissue. New advances in technologies have changed the way research is being conducted and introduced possibilities for exploration into the complexities of eMSC functions and regulation by the niche. The more we understand the complex milieu that supports repair and regeneration, the faster eMSCs can be used in regenerative medicine. The details of the regulator process of the niche on endometrial stem cells fate will be discussed in this presentation.

Speakers' Biographies and Abstracts

Keynote Address III

Infertility Treatment of Advanced Aged Women

Professor Jie QIAO

Peking University Third Hospital, China

Professor Jie Qiao, is an academician of Chinese Academy of Engineering, Executive Vice President of Peking University, President of Peking University Health Science Center. She is an academician of American Academy of Arts and Sciences (IHM), honorary fellow of Royal College of Obstetricians and Gynecologists.

For more than 30 years, Qiao has been engaged in clinical service, basic research and translational research related to maternity and reproductive health. She has led the team to achieve a number of technical and theoretical breakthroughs in infertility causes and clinical treatments, the protection and preservation of female fertility, the molecular mechanism of human gametogenesis and embryo development as well as developing new pre-implantation diagnosis methods, protecting the health of women and children throughout their life cycle. As the first or corresponding author, she published a number of achievements with international influence. She won awards in China's Top 10 Scientific Advances in 2014,2015,2023 and National Award for Progress in Science and Technology, etc.

Speakers' Biographies and Abstracts

Session 5: Sperm

Dr. Kevin Ka Wai LAM

The University of Hong Kong, Hong Kong, China

Dr. Kevin Lam is a Clinical Embryologist. He obtained his PhD degree in the field of Reproductive Biology at the University of Hong Kong. He is a certified Senior Clinical Embryologist under the European Society of Human Reproduction and Embryology (ESHRE). Currently, he is the Embryologist-in-charge and the IVF Laboratory Director at the Centre of Assisted Reproduction and Embryology, the University of Hong Kong, Queen Mary Hospital and Kwong Wah Hospital. He is appointed as the Honorary Assistant Professor at the Department of Obstetrics and Gynaecology, The University of Hong Kong.

Speakers' Biographies and Abstracts

Session 5: Sperm

Dr. Kevin Ka Wai LAM
The University of Hong Kong, Hong Kong, China

Basic Semen Analysis: Is There Any Improvement?

Basic semen analysis has remained the cornerstone of male fertility assessment for decades and represents the first-line laboratory investigation for infertile couples worldwide. Despite multiple revisions of the World Health Organization (WHO) laboratory manual and advances in laboratory standardization, questions remain regarding the clinical utility and predictive value of conventional semen parameters in contemporary reproductive medicine.

The presentation will review the evolution of semen analysis guidelines, with particular emphasis on the changes introduced across successive WHO manuals and the rationale underlying current reference limits. While semen volume, concentration, motility, and morphology have traditionally been regarded as key indicators of male reproductive potential, increasing evidence suggests that these parameters provide only a limited assessment of sperm function and fertility potential. The predictive value of conventional semen analysis for both natural conception and assisted reproductive technologies (ART) will be critically examined. Although severe abnormalities in sperm concentration and motility remain clinically relevant, numerous studies have demonstrated substantial overlap in semen parameters between fertile and infertile men. Furthermore, the ability of conventional semen analysis to predict outcomes following intrauterine insemination (IUI), in vitro fertilization (IVF), and intracytoplasmic sperm injection (ICSI) appears modest at best.

Particular attention will be devoted to sperm morphology, one of the most debated components of semen analysis. Morphology assessment is characterized by considerable observer variability and limited reproducibility between laboratories. Recent evidence has challenged the long-held assumption that morphology is a robust predictor of natural fertility or ART outcomes. In many clinical scenarios, morphology appears to contribute little additional prognostic information beyond other semen parameters, raising questions regarding its continued role in routine fertility assessment.

The presentation will also discuss the inherent limitations of conventional semen analysis, including biological variability, methodological inconsistencies, and the inability to evaluate critical aspects of sperm function. Emerging approaches will be reviewed as potential strategies to enhance the evaluation of male fertility.

In conclusion, while basic semen analysis remains an indispensable and accessible diagnostic tool, its capacity to predict reproductive outcomes is increasingly being questioned. Current evidence suggests that conventional semen parameters, particularly sperm morphology, should be interpreted cautiously and within the broader clinical context. Future advances will likely require a shift from descriptive semen assessment toward more objective and functionally relevant measures of male reproductive potential.

Speakers' Biographies and Abstracts

Session 5: Sperm

Professor Philip Chi Ngong CHIU

The University of Hong Kong, Hong Kong, China

Professor Philip Chiu is an Associate Professor in Obstetrics and Gynecology at the University of Hong Kong (HKU) and Deputy Chair of Reproductive Medicine at the HKU-Shenzhen Hospital. He serves as a Principal Investigator at three institutions: the Key Laboratory of Fertility Regulation in Shenzhen, the Hong Kong Advanced Biomedical Instruments Centre, and the Reproductive Medicine Centre at the HKU-Shenzhen Hospital, and is a council member of the Chinese Society for Immunology. With over 20 years in reproductive biology, his expertise spans fertilization, placental development, and endometrial function. Professor Chiu has led over 40 research projects and published 110+ SCI-indexed papers. He has served as the first or corresponding author in premier journals such as "Science", "Science Advances" and "Advanced Science", and has been invited to write review papers for esteemed journals like "Nature Reviews Urology" and "Human Reproduction Update". An esteemed scientific leader, he is a past President of the Hong Kong Society of Endocrinology, Metabolism and Reproduction. He reviews for over 40 journals and international grant committees, and is an invited nominator for the Nobel Prize in Physiology or Medicine. Dedicated to mentorship, he has supervised over 50 postgraduate researchers. In addition, he co-founded Axile Life, an HKU startup focused on automating clinical assisted reproduction processes.

Speakers' Biographies and Abstracts

Session 5: Sperm

Professor Philip Chi Ngong CHIU
The University of Hong Kong, Hong Kong, China

Using the Oocyte's Perspective for Sperm Selection in Clinical Assisted Reproduction

Background: Sperm morphology evaluation is critical for diagnosing male infertility and guiding assisted reproductive technology (ART). Traditional microscopic assessment using WHO criteria is highly subjective and heavily prone to observer variability, limiting its ability to predict fertilization outcomes. Even modern deep learning models struggle to predict ART success because they are trained on these same inherently flawed, human-annotated datasets. Currently, no morphological standard exists that is based on true sperm biological function. To bridge this gap, we propose using sperm binding to the zona pellucida (ZP) as a benchmark. As the critical first step in fertilization, ZP binding acts as a natural screening mechanism that rigorously selects for normal morphology, intact chromosomes, and functional competence, making it the ideal biological standard for a new, predictive evaluation model.

Objective: To develop a deep learning-based algorithm capable of identifying spermatozoa that can initiate fertilization by binding to the ZP of human oocytes.

Design, Setting, and Participants: Semen and donated oocytes were collected from patients attending family planning and infertility clinics. Using a validated co-incubation assay, we isolated acrosome-intact, ZP-bound spermatozoa. To establish a comparison group, ZP-unbound spermatozoa were collected from normozoospermic samples exhibiting documented ZP-binding defects, defined by total fertilization failure post-IVF and the complete absence of oocyte-bound sperm. Images of these two distinct sperm populations were then used to fine-tune a VGG-13 convolutional neural network, enabling the model to distinguish between ZP-bound and ZP-unbound spermatozoa based on morphology.

Results: We fine-tuned a VGG13 model to identify ZP-binding spermatozoa from morphological features, achieving exceptional diagnostic accuracy (96.7%), sensitivity (97.6%), and specificity (96.0%). The model demonstrated robust, low-variance performance across subgroups, utilizing the sperm head and mid-piece as primary predictive features. Clinical validation on over 33,000 sperm images across three fertilization groups confirmed the model's discriminative power and strong generalization; notably, the predicted proportion of ZP-binding spermatozoa strongly correlated with actual fertilization rates. By establishing a clinical threshold of 4.9% ZP-binding sperm to define defective binding (sensitivity: 90.0%; specificity: 89.3%), the model successfully outperformed conventional embryologist-assessed semen analysis in predicting conventional IVF failure among a cohort of 30 patients.

Conclusion: We developed a novel AI-based approach that adopts the oocyte's perspective for sperm quality assessment by evaluating ZP-binding morphological features undetectable by conventional methods. This deep learning model provides diagnostic information regarding the fertilization potential of spermatozoa independent of standard semen analysis parameters, enabling improved clinical decision-making regarding IVF versus ICSI treatment selection. Future directions include integration with live-cell imaging microscopy using free-space angular-chirp-enhanced delay technology for real-time, stain-free analysis of live spermatozoa at ultra-high throughput, coupled with microfluidic-based isolation of fertilization-competent sperm. Extension of these AI and imaging approaches to oocyte maturation staging and embryo quality assessment are also underway.

Speakers' Biographies and Abstracts

Keynote Address IV

Professor Emre SELI

Yale School of Medicine, United States of America

Professor Emre Seli, MD, is Professor and Chief of Reproductive Endocrinology and Infertility at Yale School of Medicine. He is also the Chief Scientific Advisor of March of Dimes and Scientific Director of Reproductive Medicine Associates (RMA). Professor Seli's laboratory has been instrumental in characterizing the mechanisms that regulate translational activation of gene expression in the oocyte. Additionally, his research contributions have significantly advanced our understanding of ovarian aging, oocyte and embryo developmental competence, and the role of mitochondria in regulating these processes. Professor Seli has mentored over 100 pre- and post-doctoral fellows, authored more than 200 scientific articles, and edited five books, including the 9th and 10TH editions of "Speroff's Clinical Gynecologic Endocrinology and Infertility". Recognized for his contributions, Professor Seli has received prestigious accolades such as the "Ira and Ester Rosenwaks New Investigator Award" from the American Society for Reproductive Medicine (ASRM), and the "President's Achievement Award" from the Society for Reproductive Investigation (SRI).

Speakers' Biographies and Abstracts

Keynote Address IV

Professor Emre SELI
Yale School of Medicine, United States of America

Mitochondria as Determinants of Ovarian and Reproductive Aging: From Biology to Fertility Treatment

Mitochondria play a central role in determining oocyte quality, embryo developmental competence, and reproductive longevity. Beyond their fundamental function in ATP production, mitochondria regulate cellular metabolism, calcium homeostasis, redox balance, apoptosis, and epigenetic programming, making them essential determinants of cellular homeostasis and aging. In the female reproductive system, mitochondrial function underlies folliculogenesis, oocyte maturation, fertilization, and early embryonic development. Accumulating evidence indicates that age-associated mitochondrial dysfunction contributes to declining ovarian reserve, impaired oocyte competence, increased meiotic errors, and reduced embryo developmental potential, establishing mitochondrial health as a fundamental biological driver of reproductive aging and fertility.

This presentation will first examine how advances in mitochondrial biology are reshaping the diagnosis of reproductive competence. Particular emphasis will be placed on the relationship between mitochondrial function, chromosomal segregation, embryo developmental competence, and reproductive aging, and on the potential for mitochondrial biomarkers to complement existing assessments of ovarian reserve, embryo morphology, and preimplantation genetic testing. Integrating measures of mitochondrial function may provide a more comprehensive evaluation of oocyte and embryo health and improve prediction of reproductive outcomes.

The talk will then review emerging therapeutic strategies aimed at preserving or restoring mitochondrial function. Approaches including metabolic optimization, pharmacologic modulation of mitochondrial pathways, enhancement of mitochondrial quality control, and mitochondrial transfer technologies will be discussed in the context of improving oocyte competence, embryo development, and IVF outcomes, particularly for women with age-related infertility or diminished ovarian reserve. Current evidence, biological rationale, and remaining scientific and clinical challenges will be critically evaluated.

Finally, the presentation will examine the key challenges that must be overcome to translate mitochondria-targeted therapies into clinical practice. Particular emphasis will be placed on identifying biologically actionable mitochondrial defects, aligning therapeutic strategies with developmentally appropriate reproductive endpoints, and selecting interventions based on the timing and mechanisms of mitochondrial dysfunction. The importance of biologically informed patient stratification, rigorous evaluation of efficacy and safety, and long-term assessment of pharmacologic and mitochondrial replacement approaches will also be discussed. As advances in mitochondrial biology, biomarker discovery, and precision reproductive medicine converge, mitochondria are poised to emerge not only as biomarkers of reproductive aging but also as therapeutic targets. Realizing this potential will require evidence-based, mechanism-driven strategies that integrate diagnosis, targeted intervention, and personalized patient selection to meaningfully improve reproductive outcomes.

Speakers' Biographies and Abstracts

Session 6: Ovary II

Professor Kui LIU

The University of Hong Kong, Hong Kong, China

Professor Kui Liu obtained his Ph.D. from Umeå University, Sweden in September 1999. Following his postdoctoral training at Harvard Medical School, United States of America, he was appointed assistant professor at Umeå University in 2003. He subsequently became full professor at Umeå University in 2010 and at the University of Gothenburg, Sweden, in 2011. In 2018, he joined the University of Hong Kong as a professor.

Professor Liu's research is primarily focused with germ cell development, with particular emphasis on the development, physiology, and pathology of ovarian follicles. His 2008 publication in Science (Reddy et al., 2008) was the first to establish that the PI3K signalling pathway plays a critical role in the activation of primordial follicles, thereby initiating the molecular-level investigation of primordial follicle development.

His 2026 Science paper (Lin et al., 2026) proposed a paradigm shift from a follicle- and oocyte-centered perspective toward the ovarian stroma, proposing the ovarian stroma as a potential therapeutic target. Over the past years, his research group has been published in leading journals including Science, PNAS, Nature Medicine, The EMBO Journal, Current Biology, and Cell Research. These studies not only represent significant contributions to fundamental research but also hold translational potential for the development of novel therapeutic strategies for infertility.

Speakers' Biographies and Abstracts

Session 6: Ovary II

Professor Kui LIU
The University of Hong Kong, Hong Kong, China

The Ovarian Stroma as a Therapeutic Target for Premature Ovarian Insufficiency (POI) and Diminished Ovarian Reserve (DOR)

Currently, no effective treatment exists for infertility associated with premature ovarian insufficiency (POI), as affected patients lack hormone-responsive antral follicles. By screening an FDA-approved drug library, we identified finerenone, a kidney disease medication, as a promising candidate for restoring fertility in POI. Oral administration of finerenone stimulated follicle development in aged mice and, more importantly, restored antral follicle development in patients with POI, leading to mature oocytes and viable embryos. Mechanistically, finerenone reduced fibrotic deposition in the ovarian stroma, alleviating collagen-mediated physical and biochemical suppression of follicular growth. This stromal-centric mechanism shifts the therapeutic paradigm from targeting follicles to modulating the ovarian microenvironment. Building on this insight, we identified additional FDA-approved oral anti-fibrotic drugs with similar potential for treating POI-related infertility. Our findings highlight the ovarian stroma as a key, previously overlooked therapeutic target and offer promising leads for repurposing existing safe drugs as non-invasive treatments for POI. Given their established safety profiles, these agents hold potential for rapid clinical translation, addressing a critical gap in reproductive medicine.

Speakers' Biographies and Abstracts

Session 6: Ovary II

Poor Ovarian Responders: Any Effective Treatment Available?

Professor Tianren WANG
The University of Hong Kong, Hong Kong, China

Professor Tianren Wang graduated from China Medical University and Peking University, China, obtaining her M.D. in 2007 and Ph.D. in 2014. She completed her postdoctoral research training at Yale School of Medicine from 2014 to 2017. She currently serves as clinical assistant professor, Obstetrics and Gynecology, The University of Hong Kong and Associate Consultant at the University of Hong Kong Shenzhen Hospital, Reproductive Medicine Center, Shenzhen, China.

Her clinical and research expertise includes fertility preservation, mitochondrial function, ovarian aging, and embryo development. She has led several clinical and translational research projects supported by three grants from the National Natural Science Foundation of China. To date, she has published more than 40 peer-reviewed papers in prestigious journals, including Science, Nature Communications, Aging Cell, and Human Reproduction.

Professor Wang has been recognized with several awards, including the In-Training Research Award (2016) from the American Society for Reproductive Medicine (ASRM) and the President's Presenter Award (2017) from the Society for Reproductive Investigation. She also serves as a member of the editorial boards of the European Journal of Obstetrics and Gynecology and Reproductive Biology.

Professor Wang is currently a Committee Member-at-Large for the Global Health Committee of ASRM and holds various committee roles within reproductive medicine organizations in China.

Speakers' Biographies and Abstracts

Lunch Symposium (Sponsored by Ferring Pharmaceuticals Ltd)

Dr. Maria Victoria Romualdez TAN

Repro Optima Center for Reproductive Health, Philippines

Dr. Maria Victoria Romualdez Tan, MD, MSc, FPOGS, FPSRM, is a reproductive medicine specialist and the CEO and Medical Director of Repro Optima Center for Reproductive Health in Cebu City, Philippines. She also serves as Scientific Director of Mindanao IVF and ACCU-ART Fertility Center, a member of the Alpha IVF Group-Philippines, and Associate Professor at Cebu Doctors University Hospital.

Dr. Tan obtained her Medical Degree through the highly selective Integrated Arts and Medicine (INTARMED) program at the University of the Philippines College of Medicine. She undertook her residency in Obstetrics and Gynecology and fellowship in Reproductive Medicine at the University of the Philippines–Philippine General Hospital (UP-PGH), followed by a clinical observership at Kobe University in Japan. She later earned a Master of Science in the Biotechnology of Human Assisted Reproduction from the University of Valencia, Spain.

Her clinical and scientific interests encompass assisted reproductive technology, ovarian stimulation, fertility preservation, reproductive genetics, stem cells, and in-vitro gametogenesis. Her work includes a peer-reviewed publication on Modelling In-vitro Gametogenesis Using Induced Pluripotent Stem Cells, a published report of the First Pregnancy and Live Birth from Cryopreserved Oocytes in the Philippines, and the development and clinical evaluation of the MARCH-D ovarian stimulation protocol.

Dr. Tan is a Fellow of the Philippine Obstetrical and Gynecological Society and the Philippine Society of Reproductive Medicine. She serves on the boards of the Philippine Society of Reproductive Medicine, the Philippine Society for Fertility Preservation and the Philippine Society for Regenerative Medicine. She also completed Harvard Medical School's Global Clinical Scholars Research Training program with distinction, receiving first place in the Capstone Awards.

Speakers' Biographies and Abstracts

Lunch Symposium (Sponsored by Ferring Pharmaceuticals Ltd)

Dr. Maria Victoria Romualdez TAN
Repro Optima Center for Reproductive Health, Philippines

Ovarian Stimulation Strategies: Balancing Success and Safety Across Different Responder Profiles

Controlled ovarian stimulation is central to assisted reproductive technology, yet no single response target is appropriate for every patient. Ovarian response reflects the interaction of age, ovarian reserve, body weight, endocrine characteristics, gonadotropin sensitivity, and previous treatment history. Patients may present as predicted low responders, unexpected hypo-responders, normal responders, or high responders, and each profile poses a different clinical challenge. In low and hypo-responders, the priority is to obtain enough competent oocytes without relying on ineffective dose escalation. In high responders, treatment must limit excessive follicular recruitment and reduce the risk of ovarian hyperstimulation syndrome. For normal responders, the aim is an efficient, synchronized response with minimal unnecessary treatment burden.

This lecture examines how ovarian physiology can guide individualized stimulation across these responder profiles. It reviews the roles of follicle-stimulating hormone and luteinizing hormone activity in follicular recruitment, theca-cell androgen production, aromatization, steroidogenesis, follicular synchronization, and oocyte maturation. It also considers how age-related changes, altered gonadotropin sensitivity, profound pituitary suppression, and asynchronous follicular development may affect the choice and timing of stimulation medications. Particular attention is given to the distinction between predicted and observed ovarian response, recognizing that ovarian reserve markers alone do not fully determine a patient's response to treatment.

The discussion then presents practical stimulation priorities for low, hypo-, normal, and high responders, including individualized gonadotropin dosing, the selective use of luteinizing hormone activity, prevention of premature ovulation, trigger selection, and freeze-all strategies when indicated. Advanced maternal age is considered a modifying factor that may occur across responder categories and requires attention to both oocyte yield and developmental competence.

The lecture concludes by describing the clinical circumstances that led to the adoption of progestin-primed ovarian stimulation at our center and the subsequent development of the MARCH-D protocol. MARCH-D combines medroxyprogesterone acetate, individualized follitropin delta, clomiphene citrate, human menopausal gonadotropin, and diclofenac. The physiologic purpose of each component, as well as the protocol's dosing, monitoring, trigger, and cryopreservation framework, will be discussed. Local clinical experience and performance indicators will be presented to explore whether this approach may offer a versatile and adaptable stimulation framework for heterogeneous patient populations. The lecture emphasizes the continuing need to balance adequate ovarian response and treatment success with patient safety, cycle efficiency, and scientific caution.

Speakers' Biographies and Abstracts

Professor Pak Chung Ho Lecture

Professor Kristina GEMZELL-DANIELSSON

Karolinska Institutet, Sweden

Professor Kristina Gemzell Danielsson is professor, and Chair of the Department of Women's and Children's Health, Karolinska Institutet (KI) and senior consultant in Obstetrics, Gynecology and Reproductive medicine at the Karolinska University Hospital. She is head of the research group at the WHO collaborating centre for Research and Research training in Human Reproduction at KI and Honorary Professor at Hong Kong Univeristy. Her research is translational "from bench-to bed-to the hands of women" with a focus on reproductive medicine (endometrial function, embryo implantation, comprehensive abortion care, emergency contraception and development of new contraceptive technology.

Speakers' Biographies and Abstracts

Professor Pak Chung Ho Lecture

Professor Kristina GEMZELL-DANIELSSON
Karolinska Institutet, Sweden

The Endometrium - From Bench-To bed-To the Hands of Women

Despite remarkable advances in reproductive biology, genomics, and precision medicine, the human uterus remains one of the least understood organs in biomedical science leaving hundreds of thousands of women underserved with no or outdated diagnostics and treatment. Disorders of uterine function including infertility, recurrent implantation failure, heavy menstrual bleeding, endometriosis, ectopic pregnancy, and unintended pregnancy affect more than one billion women worldwide during their reproductive lives. As fertility rates continue to decline globally and the demand for assisted reproductive technologies increases, limited mechanistic understanding of endometrial biology has become a major barrier to developing effective diagnostics, therapeutics, and preventive strategies. Beyond their biological complexity, these conditions are shaped by persistent gender disparities in research investment, healthcare inequities, and the historical neglect of women's reproductive health.

The human endometrium represents one of the most remarkable regenerative tissues in the body. It undergoes cyclic regeneration, extensive tissue remodelling, immune adaptation, and vascular reorganization while maintaining the capacity to support embryo implantation and pregnancy. Yet the molecular mechanisms governing endometrial regeneration and the establishment of endometrial receptivity remain incompletely understood. Infertility affects approximately 17% of individuals of reproductive age, and nearly one-third of couples remain unsuccessful despite repeated fertility treatments. A dysfunctional or thin endometrium remains one of the few major causes of infertility for which no effective targeted therapy currently exists.

Recent technological advances provide an unprecedented opportunity to transform our understanding of human endometrial biology. Integrating spatial transcriptomics with single-cell multiomics enables comprehensive mapping of the cellular composition, signalling networks, and regulatory circuits that orchestrate endometrial regeneration, endometrial receptivity and the window of implantation. These high-resolution approaches allow the identification of cell-type-specific interactions that cannot be captured using conventional molecular techniques. Importantly, patient-derived endometrial assembloids faithfully recapitulate the multicellular architecture and functional dynamics of the human endometrium, providing powerful experimental platforms to validate molecular discoveries, model disease, and accelerate therapeutic development.

Translation of these discoveries into clinical applications has the potential to reshape reproductive medicine. A deeper mechanistic understanding of endometrial function may enable the development of regenerative therapies for implantation failure and infertility, while also identifying novel targets for non-hormonal contraception. One promising example is the selective progesterone receptor modulator mifepristone. Beyond its established clinical indications, emerging evidence suggests that low-dose mifepristone may prevent embryo implantation by selectively disrupting endometrial receptivity without relying on conventional oestrogen- or progestin-based contraceptive mechanisms. Such an approach could provide women with an innovative contraceptive option while potentially offering additional non-contraceptive health benefits, including a reduced risk of breast cancer and bleeding.

Advancing endometrial research from bench-to bed-to the hands of women is not only a scientific imperative but also an essential step toward improving reproductive autonomy, fertility care, and women's health across the lifespan.

Speakers' Biographies and Abstracts

Session 7: Embryo & Implantation II

Professor Kathy NIAKAN

University of Cambridge, United Kingdom

Professor Kathy Niakan is Mary Marshall and Arthur Walton Professor of the Physiology of Reproduction and Director of the Loke Centre for Trophoblast Research at the University of Cambridge. She is also Co-Chair of the Cambridge Reproduction Interdisciplinary Research Centre. Kathy is an Honorary Group Leader at the Babraham Institute and Affiliate Member of the Cambridge Stem Cell Institute. Kathy obtained a B.Sc. in Cell and Molecular Biology and a B.A. in English Literature from University of Washington. She obtained her PhD at University of California, Los Angeles, supported by a National Institutes of Health Pre-doctoral Training Grant, Paul D. Boyer Fellowship and a Chancellor's Dissertation Year Fellowship. She undertook postdoctoral training at Harvard University where she developed an interest in early human development. She was a Loke Centre for Trophoblast Research Next Generation Research Fellow at University of Cambridge. In 2013 she started her laboratory with a focus on mechanisms regulating early human development at the MRC National Institute for Medical Research and subsequently the Francis Crick Institute. Kathy was elected to EMBO membership (2024), awarded the Genetics Society Mary Lyon Medal (2024) and a Blavatnik Award UK Finalist in Life Sciences (2019). Kathy's laboratory pioneered approaches to investigate the function of genes that regulate early human development and the molecular mechanisms that direct cell fate in human embryos. Her laboratory obtained the first nationally regulated approval to genetically modify human embryos in research which attracted widespread policy interest. This research licence was acquired as part of the permanent collection at the Science Museum in London, where scientific objects from the laboratory have also been exhibited.

Speakers' Biographies and Abstracts

Session 7: Embryo & Implantation II

Professor Kathy NIAKAN
University of Cambridge, United Kingdom

Simulation of Human Embryo Implantation in vitro

Understanding human embryogenesis is foundational for human health, disease, and fundamental principles of human biology. What drives our research is a fascination with lineage specification and mechanisms that regulate human embryogenesis. Our laboratory has optimised approaches to investigate gene function in human embryonic development. We obtained the first nationally regulated research licence to perform CRISPR-Cas9 genome editing in human embryos. We have employed protein depletion and signalling perturbation methods to uncover the timing and mechanisms underlying the first and second cell fate decisions in humans. We have used novel single-cell multi-omics, comprehensive protein expression and genome editing approaches to discover gene regulatory networks specific to human embryos. We have used single-cell and functional studies to define mechanisms that are evolutionarily conserved across mammals. We have applied novel technologies including light-sheet microscopy and machine learning-based image analysis of labelled human embryos to demonstrate de novo mutations at late stages of development, which has implications for clinical screening. These discoveries validate that, despite the immense challenges, there is a need to study human embryos directly. We have improved human stem cell culture media by leveraging insights from functional analysis of human embryos to more closely recapitulate physiologically relevant conditions.

Speakers' Biographies and Abstracts

Session 7: Embryo & Implantation II

Professor Yuanhua HUANG

The University of Hong Kong, Hong Kong, China

Professor Yuanhua Huang is an Associate Professor in the School of Biomedical Sciences at the University of Hong Kong (HKU), with a courtesy appointment in the School of Computing and Data Science. Before joining HKU in late 2019, he served as an EBPOD Research Fellow at the University of Cambridge and the European Bioinformatics Institute (EMBL-EBI). Professor Huang earned his BEng in Automation from Tsinghua University (2013) and his PhD in Informatics from the University of Edinburgh (2017). His research operates at the intersection of machine learning, cellular genomics, and biomedicine, where he develops advanced statistical and AI methods to decode complex cellular systems in both development and disease.

Speakers' Biographies and Abstracts

Session 7: Embryo & Implantation II

Professor Yuanhua HUANG
The University of Hong Kong, Hong Kong, China

Could Artificial Intelligence Identify Embryos with Implantation Potential?

The low success rate per embryo transfer in *in vitro* fertilization (IVF) remains a great challenge to clinical practice and may be related to our inability to select embryos with good implantation potential by traditional morphology grading. Recently, multiple deep learning-based methods have been introduced to improve embryo selection, while existing methods only achieve limited prediction power and generally ignore the repeated embryo transfers from one stimulated IVF cycle. To improve the deep learning-based models, we introduce Embryo2live, which assesses the multifaceted qualities of embryos from static images taken under a standard inverted microscope, primarily in vision transformer frameworks to integrate global features. We first demonstrated its superior performance in predicting Gardner's blastocyst grades with up to 9% improvement over the best existing method. We further validated its high capability of supporting transfer learning using a large in-house clinical dataset. Remarkably, when applying Embryo2live to our clinical dataset for embryo prioritization, we found that among patients with two embryo transfers, it can reduce the number of embryo transfers to live birth in 75.0% of patients with a risk of delay in 7.3% of patients, consistent with patients with three or more transfers. The validation with 1,369 total blind test data further confirmed the effectiveness of our Embryo2live.

Our preprint is available:https://www.medrxiv.org/content/10.1101/2024.10.28.24316259v1

Speakers' Biographies and Abstracts

Session 8: Reproductive Health

Professor Tin Chiu LI

The Chinese University of Hong Kong, Hong Kong, China

Professor Tin Chiu Li is the Head of the Reproductive Medicine Centre at Union Hospital, Hong Kong. He holds honorary professorships at the University of Hong Kong, The Chinese University of Hong Kong, and Capital Medical University in Beijing.

A leading figure in reproductive medicine, Professor Li is a Past President of the Asia Pacific Initiative on Reproduction (ASPIRE) and serves as a Section Editor for Reproductive BioMedicine Online. He has made significant academic contributions to the field, with more than 450 SCI-indexed publications and four edited books on assisted reproductive technology (ART) and reproductive surgery.

Professor Li's clinical and research interests focus on uterine factors in reproduction, miscarriage, and reproductive surgery. His work has contributed substantially to advancing understanding and treatment in reproductive medicine across Hong Kong, the Asia-Pacific region, and internationally.

Speakers' Biographies and Abstracts

Session 8: Reproductive Health

Professor Tin Chiu LI
The Chinese University of Hong Kong, Hong Kong, China

What is the Significance of Chronic Endometritis?

Chronic endometritis (CE) is a controversial and contemporary topic. The main underlying reason for the controversy is the lack of agreement on the diagnostic criteria, despite it is widely accepted that identification of plasma cells in the endometrium is the preferred method. A proposed criteria based on reference ranges derived from fertile subjects will be discussed. It is recognized that endometrial biopsies taken at different parts of the menstrual cycle may influence diagnostic accuracy. Conditions associated with chronic endometritis include recurrent miscarriage and recurrent implantation failure. Doxycycline is often used in literature reports for the treatment of this condition. Broad spectrum antibiotics for 2 weeks generally results in ~90% histological conversion. LB in subjects with histological conversion appears better than those with persistent CE despite antibiotic therapy. In one study, women who had antibiotic treatment did not have a higher LB rate although miscarriage rate was lower than control subjects. The dilemma of who should have screening for CE will be discussed.

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Speakers' Biographies and Abstracts

Session 8: Reproductive Health

Professor Raymond Hang Wun LI

The University of Hong Kong, Hong Kong, China

Professor Raymond Li is a Specialist in Obstetrics and Gynaecology, and Subspecialist in Reproductive Medicine. He is currently Clinical Associate Professor at the Department of Obstetrics and Gynaecology, The University of Hong Kong. He is Honorary Consultant at Queen Mary Hospital and Kwong Wah Hospital, Hong Kong. He is also Honorary Specialist at The Family Planning Association of Hong Kong.

He is a member of the Reproductive Medicine Subspecialty Board, Hong Kong College of Obstetricians and Gynaecologists, and Honorary Secretary of The Hong Kong Society for Reproductive Medicine. His clinical and research interests are in reproductive endocrinology, subfertility and family planning.

Speakers' Biographies and Abstracts

Session 8: Reproductive Health

Professor Raymond Hang Wun LI
The University of Hong Kong, Hong Kong, China

The Future of Emergency Contraception

Emergency contraception (EC) is a useful back-up method in cases of failure or omission of one's regular contraception to reduce the likelihood of unplanned pregnancies. Oral EC pill and copper intrauterine contraceptive device (Cu-IUD) are the two main forms of EC. The regimen containing levonorgestrel (LNG) only was first reported in a study in Hong Kong in 1993 to have significantly lower side effect profile than the Yuzpe regimen, and subsequent studies confirmed its better efficacy, making it the most popular EC method worldwide. Meanwhile, mifepristone has been studied as an EC since the 1990s, but its availability at the EC doses (25-50mg) is only limited to few countries. Since the early 2010s, ulipristal acetate (UPA) has emerged as a newer EC option with superior efficacy and extended action up to five days after unprotected sexual intercourse. Both LNG and UPA, however, still have a failure rate of about 1-3%. They mainly act by inhibiting or postponing ovulation, and have little effects when administered post-ovulation.

Continual efforts have been made to explore more effective methods for EC. Theoretically, an EC method with post-ovulatory in additional to pre-ovulatory actions should offer better overall efficacy. Cyclooxygenase (COX) inhibitors have been explored as a useful adjunct in this regard. COX inhibitors reduce the production of prostaglandins which mediate a number of reproductive processes like ovulation, fertilisation and embryo implantation. Studies in animals and human have suggested that some COX inhibitors (such as meloxicam and celecoxib), either used alone or in synergy with LNG or UPA, could contribute to inhibition of ovulation. The first randomised, placebo-controlled trial on the use of piroxicam, a long-acting COX inhibitor, in combination with the LNG-EC pill, was published in 2023. It showed that LNG-piroxicam combination had significantly lower failure rate (0.2%) than that of LNG alone (1.7%). The percentages of pregnancies that could be prevented by LNG with and without adding piroxicam were 95% and 63% respectively, significantly higher in the former. There was no significant difference in the adverse effect profile.

Insertion of a Cu-IUD serves as an EC with the highest efficacy, and the device can be retained for ongoing long-term contraception. The first randomised controlled trial comparing LNG-IUD with copper IUD for EC was published in 2021, confirming its non-inferiority. Future studies of larger sample size may hopefully provide more robust data to support the use of LNG-IUD for this purpose.

There have been growing evidence supporting that If there are recurrent episodes of unprotected intercourse within the same cycle, a repeat dose of LNG or UPA can be used, but the same agent should be used to avoid possible drug interaction. This infers that current EC regimens can be developed as on-demand pericoital contraceptives, particularly for couples with low coital frequency.

Speakers' Biographies and Abstracts

Session 9: Endometrial Receptivity

Dr. Dandan CAO

The Hong Kong University - Shenzhen Hospital, Shenzhen, China

Dr. Dandan Cao is an Assistant Investigator at the Reproductive Medicine Center of The University of Hong Kong - Shenzhen Hospital and an Honorary Assistant Professor in the Department of Obstetrics and Gynaecology at the University of Hong Kong (HKU). She received her Bsc from Wuhan University and Ph.D. in Biomedical Sciences from the Chinese University of Hong Kong (CUHK) in 2018.

Dr. Cao's research interests include endometrial receptivity, embryo implantation, and reproductive failures. Her research lies at the interface between cellular genomics particularly single-cell and spatial omics, bioinformatics and reproductive biology to decode molecular mechanisms underlying female infertility.

Dr. Cao has published over 40 peer-reviewed articles in high-impact journals, including Nature Communications, Nature Cell Biology. She has served as a reviewer for several SCI-accredited academic journals. As a Principal Investigator, she leads multiple national and provincial grants, including the National Natural Science Foundation of China (NSFC). She is dedicated to advancing precision reproductive medicine through interdisciplinary innovation.

Speakers' Biographies and Abstracts

Session 9: Endometrial Receptivity

Single Cell Analysis for Endometrial Receptivity Assessment

Dr. Dandan CAO
The Hong Kong University - Shenzhen Hospital, Shenzhen, China

Background: Endometrial receptivity (ER) is a dynamic, multicellular process that requires appropriate temporal coordination between the endometrium and the developing embryo. However, conventional approaches based on tissue-level molecular profiles may not fully capture the cellular heterogeneity and temporal dynamics underlying receptivity. Single-cell transcriptomics offers an opportunity to characterize these processes at cellular resolution and identify potential dysregulation in recurrent implantation failure (RIF).

Methods: We integrated single-cell transcriptomic datasets spanning the menstrual cycle and early decidua to characterize endometrial cellular composition and molecular dynamics. Assisted by a focused analysis of precisely dated samples collected from LH+3 to LH+11, epithelial and stromal gene sets with distinct temporal expression patterns associated with ER were collectively identified. Their relevance to ER was evaluated by 1) comparison with previously reported receptivity signatures, 2) assessment of their expression patterns across the menstrual cycle, 3) examination of their coordinated expression in single-cell data from RIF and control samples, and 4) assessment of their enrichment in bulk RNA data from patients with and without succesful implantations. Immune-cell transcriptional profiles and single-cell-based menstrual phase prediction were further explored to identify potential abnormalities associated with RIF.

Results: Integrated analysis revealed menstrual cycle-associated changes in endometrial cell abundance and distinct temporal molecular programs in epithelial and stromal cells, whereas immune cells exhibited comparatively modest changes. Epithelial cells exhibited gradual transcriptional transitions across the WOI, whereas stromal cells showed a two-stage decidualization pattern. The proposed epithelial and stromal ER gene sets displayed distinct expression patterns during the WOI and across the menstrual cycle supporting their relevance to receptivity-associated processes. In RIF, single-cell analysis revealed reduced expression of selected epithelial gene sets normally upregulated during or after the WOI, alongside increased expression of a epithelial gene set normally suppressed during the mid-secretory phase. In patients with and without successful implantation, bulk RNA-sequencing data analysis showed significant difference in one proposed epithelial ER gene set further supported its relevance to ER. In addition, increased inflammatory signatures were observed in selected natural killer, T-cell, and macrophage subsets in RIF patients. Single-cell phase prediction identified transcriptional profiles inconsistent with the expected menstrual phase in 5 out of 21 RIF samples, suggesting potential temporal misalignment.

Conclusions: Single-cell analysis provides a framework for defining cell-type-specific molecular dynamics associated with endometrial receptivity and identifying disease-associated deviations in RIF. The findings suggest that RIF may involve dysregulation of epithelial receptivity-associated programs, altered immune states, and potential temporal misalignment. Further spatial and functional validation is needed to establish the mechanistic and clinical significance of these abnormalities.

Speakers' Biographies and Abstracts

Session 9: Endometrial Receptivity

Dr. Cherie Yin Lau LEE

The University of Hong Kong, Hong Kong, China

Dr. Cherie Lee is currently a Scientific Officer in the Department of Obstetrics and Gynaecology at The University of Hong Kong. She is a developmental and reproductive biologist focusing on research of early embryonic development and embryo-maternal interactions. Her research decodes the molecular mechanisms of early human implantation and stem cell lineage specification using human pluripotent stem cells and trophoblastic spheroid models. Her team has established human Expanded Potential Stem Cell (hEPSC) lines and demonstrating their superior trophoblast differentiation capacity. She has also successfully derived a blastocyst-like surrogate from human pluripotent stem cells that resembles human blastocysts to predict endometrial receptivity and IVF outcomes, validated through clinical trial. In her recent work, she has collaborated with artificial intelligence experts to create prognostic models that forecast IVF success rates. With more than 50 publications in SCI-indexed journals, including Nature Protocols, Advanced Science, Environment International, Fertility and Sterility and Human Reproduction, her work connects basic stem cell science directly to clinical challenges in infertility, implantation failure, and pregnancy success.

Speakers' Biographies and Abstracts

Session 9: Endometrial Receptivity

Dr. Cherie Yin Lau LEE
The University of Hong Kong, Hong Kong, China

How to Assess Endometrial Receptivity in Clinical Practice?

Infertility is affecting more than 15% of couples worldwide. Although in vitro fertilization (IVF) is the most effective assisted reproduction method to help infertile couples conceive, the success rate remains suboptimal. Achieving a successful pregnancy depends heavily on the synchronized interaction between a high-quality embryo and a receptive endometrium during the brief and precisely defined Window of Implantation (WOI). While embryo selection has improved substantially with advances in culture techniques and preimplantation genetic testing, there's still no reliable clinical method for evaluating endometrial receptivity.

Over the past seven decades, the clinical assessment of endometrial receptivity has undergone a recurring cycle of diagnostic innovation, clinical enthusiasm followed by rigorous evaluation. For nearly a half century, the field relied on histological dating to evaluate endometrial receptivity. The persistent reliance was largely attributed to the ground-breaking recognition that implantation is restricted to a defined and narrow window. It later shifted from tissue dating to incorporate non-invasive ultrasound parameters and candidate molecular biomarkers. The 2000s genomic era introduced molecular classifiers, in particular transcriptomic tools aiming of guiding personalized embryo transfer. However, early clinical enthusiasm was tempered by rigorous randomized controlled trials showing that routine use of transcriptomic-guided timing had no beneficial effect on improving live birth rates in IVF.

To address these diagnostic challenges, our research group has developed translational models and cell-based functional assays to study early human implantation dynamics. We established a human embryonic stem cell–derived trophoblastic spheroid that resemble human trophectoderm during early implantation for studying the cellular mechanisms governing human implantation and identifying key determinants of reproductive success. Utilizing this platform, our group demonstrated that the physical attachment of spheroids to endometrial epithelial cells correlated with cumulative live birth in IVF, while impaired stromal cell invasion towards the trophoblastic spheroids characterizes repeated implantation failure. Building upon these mechanistic insights, our group recently developed a deep learning model that integrates artificial intelligence with clinical assessment to predict reproductive outcomes from digital endometrial histology.

Looking forward, the assessment of endometrial receptivity is transitioning toward a multidimensional, data-driven paradigm that integrates advanced in vitro implantation models, high-resolution imaging, and AI-powered digital pathology. Clinical translation of these technologies holds great potential to overcome the limitations in endometrial diagnosis, aiming at developing evidence-based, patient-specific interventions to improve implantation success and live birth rates in IVF.

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16	Factors Influencing Multipronuclear Fertilization in IVF: A Retrospective Case-Control Study	Ms. WANG Xiyang
20	Multi-Omics CLEAR-CLIP approach defines the miRNA-mRNA targetome in trophoblast differentiation for early detection of preeclampsia	Ms. GUO Yanjie
21	Modeling Maternal Metabolic Stress: Chronic Glycemic Extremes Disrupt Autophagic Homeostasis and Lineage Specification in Human Trophoblast Stem Cells	Ms. LEE Chloe
22	Heterotopic triplet pregnancy with concurrent tubal ectopic gestation following letrozole-induced ovulation in a patient with antiphospholipid syndrome and polycystic ovary syndrome: a case report and literature review	Dr. LIU Xiaoning
23	Blood Lead and Cadmium Levels in Relation to Ovarian Reserve among Reproductive-Aged Women: Based on NHANES (2017–2023)	Ms. XIA Xinru
24	Metformin Delays LPS-Induced Preterm Birth Through the Regulation of Placental Senescence	Mr. MA Tianyi
25	A Novel Role for AOC1 in Trophoblast Differentiation and Its Implications for the Pathophysiology of Preeclampsia	Ms. DUAN Yuhan
27	Investigation into the epigenetic regulatory network during endometrial receptivity establishment through high-throughput single-cell 5hmC and RNA sequencing	Ms. SHANG Ye
28	Association Between Clinical factors and Live Birth Outcomes in Preimplantation Genetic Testing Cycles: A Multi-Centre Study in Guangdong Province, China	Ms. YU Li
30	Reproductive Genetic Counselling for Multi-locus Inherited Neoplasia Allele Syndrome (MINAS): Points to Consider Based on a Case	Mr. HUI Lok Chung
32	AMOT is Essential for Extravillous Trophoblast Lineage Commitment in the Human Placenta	Ms. LI Yimeng
34	Protecting mitochondrial function in ovarian stromal cells attenuates cryopreservation-induced tissue injury and improves follicular survival after transplantation	Ms. YANG Jingdi
37	Expanding Reproductive Autonomy or Preserving Traditional Family Values? The Regulatory Paradox of Elective Egg Freezing Reform in Hong Kong	Mr. AU Ka Yui

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42	Influence of Advanced Maternal Age on Human Embryonic Development and Transcriptomics During Preimplantation	Dr. HUA Renwu
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47	Posthumous Reproduction in Hong Kong and the United Kingdom: A Comparative Analysis	Professor NGAN Olivia
48	HLA-G Programs Endometrial NK Cell Quiescence via the CDC42 Axis during Early Embryo Implantation	Ms. WANG Sidong
50	Investigating the Role of ALCAM in CD8+ T Cell Dysregulation in Patients with Repeated Implantation Failure	Ms. WU Chunyan
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59	Comparison of age-specific serum anti-Müllerian hormone levels between infertile women with and without anti-thyroid antibodies	Dr. WONG Ka Yan
60	JS-K improves receptivity in human endometrial epithelial cells through production of Nitric Oxide via activation of Glutathione S-Transferase P1 (GSTP1) activity	Mr. SZE Ching Ho

Symposium Information

Symposium Venue
Cheung Kung Hai Lecture Theatre 1, William M.W. Mong Block, 21 Sassoon Road, Hong Kong

Registration and Information Desk
The registration and information desk operates during the following hours:
31 October 2026 (Saturday) 08:00 – 18:00
1 November 2026 (Sunday) 08:00 – 18:00

Catering Arrangement
Refreshments will be served during the breaks in the Cheung Kung Hai Lecture Theatre Foyer.

E-Posters' Display
Electronic posters are displayed throughout the Symposium at the e-signages in Cheung Kung Hai Lecture Theatre Foyer.

Language
The official language of the Symposium is English.

Local CME / CNE Accreditation
Please signify your attendance at the service desk located at the Registration Area for CME / CNE accreditation.

Certificate of Attendance
E-certificate of attendance will be sent to those attended the Symposium by email within one week after the Symposium.

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The organizers will not be liable for personal accidents, or any loss or damage of private property during the Symposium. Participants should make their own arrangements with respect to personal insurance.

Disclaimer
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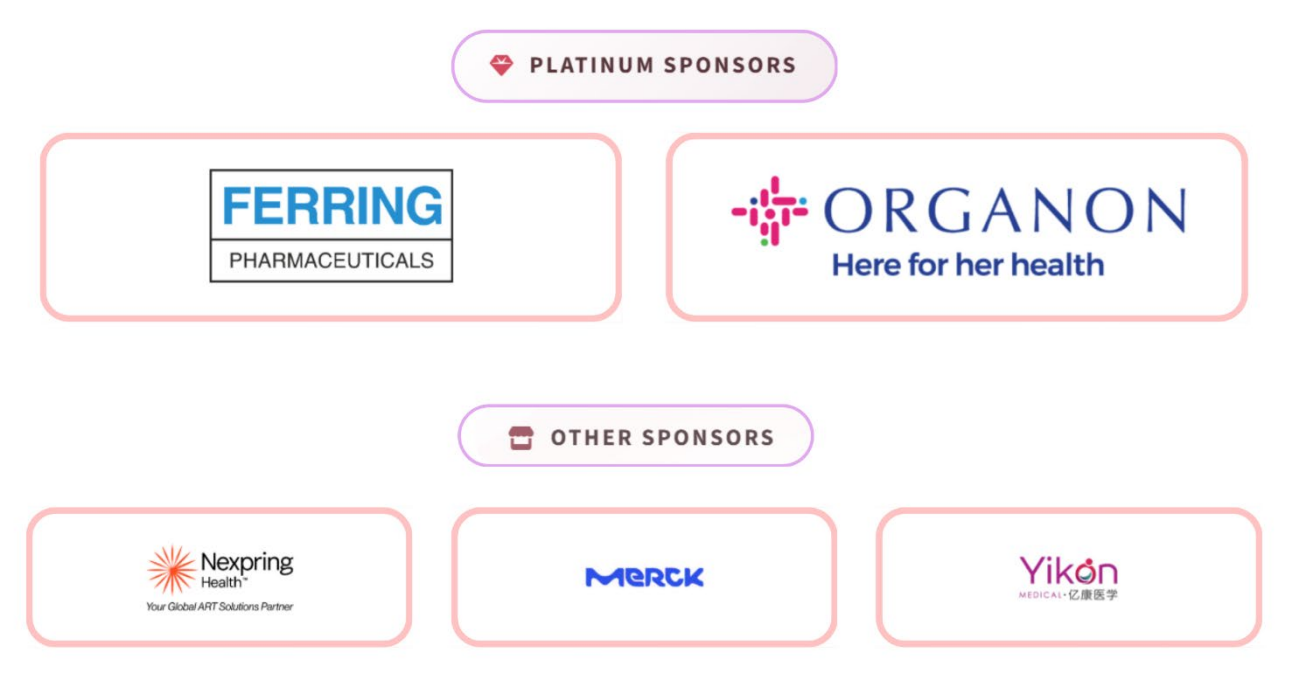
Academic Accreditation - CME Accreditation

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CME Accreditation				
The Hong Kong College of Anaesthesiologists	14.50	7	7.50	RC-NA
Hong Kong College of Community Medicine	10	6	6	PP-PP
The College of Dental Surgeons of Hong Kong	Pending			
Hong Kong College of Emergency Medicine	12	6	6	CME-PP
The Hong Kong College of Family Physicians	10	5	5	OEA-5.02
The Hong Kong College of Obstetricians and Gynaecologists	5	5	5	PP-PP
The College of Ophthalmologists of Hong Kong	N/A			
The Hong Kong College of Orthopaedic Surgeons	8	5	5	PP-B
The Hong Kong College of Otorhinolaryngologists	Pending			
Hong Kong College of Paediatricians	10	6	6	E-PP
The Hong Kong College of Pathologists	14	7	7.50	CME-PP
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