

PRESS RELEASE

Women's reproductive longevity the focus for new NUS research

Bia-Echo Asia Centre for Reproductive Longevity and Equality will study ways to advance female fertility, lifespan and health-span

For immediate release

Singapore, 9 February 2021 – The Centre, to be established at the Yong Loo Lin School of Medicine at the National University of Singapore (NUS), was made possible by a US\$8 million gift from the Bia-Echo Foundation, based in the USA, whose founder is attorney and entrepreneur Nicole Shanahan.

Research initiatives at the Centre will be led by scientists and clinicians from NUS Medicine and other institutions here as well as the Asia-Pacific, US and Europe, and specialising in women's reproductive health, ageing, and digital medicine. (See Annexe A). The effort will seek to find ways to improve and lengthen female reproductive health and longevity, helping women to preserve and improve their reproductive systems for conception and general health, potentially enabling women to conceive safely in their later years.

Declining fertility and associated health risks

The issue of female fertility has come into sharp focus in recent years, with more women getting married later and having children later in life. In Singapore, the number of women giving birth in their 40s has almost doubled in the last three to four decades, according to data from Singapore's Department of Statistics.

The number of births per 1000 women aged between 40-45 was 9.9 in 2019, nearly double the number recorded between 1980 to 1989. However, conception is an uphill task for women above 40 as fertility declines with age. The chances of natural conception fall to less than 5% and this also often comes with serious health risks and complications, such as miscarriages and premature live births, and higher chances of having a child with Down's Syndrome.

Furthermore, as women in their 40s approach menopause, they also face increasing health issues such as metabolic diseases, neurocognitive decline, osteoporosis, and poor urogenital health, which result in poorer general health. Current medical approaches to assist conception include the use of fertility drugs, as well as reproductive assistance technologies. Their efficacy, however, remains limited as the woman ages.

The work to be done

These obstacles that women confront comprise the focus of the work to be done at the Bia-Echo Asia Centre for Reproductive Longevity and Equality. Specifically, the Centre will aim to:

- **Lead female reproductive biology research** in the Asia-Pacific Region

- Translate basic discoveries to **enhance female reproductive success and mitigate menopause-associated functional decline**
- Establish a **Global Network** dedicated to understanding the **health consequences of reproductive health and longevity in Asian women**
- **Construct partnerships and collaborations** with Academic and Private Sector entities to push the boundaries of reproductive longevity and women's long-term health
- **Advocate and Lead in Reproductive Equality** in Asia-Pacific through sustainable pipelines of public health messaging through governmental, professional and advocacy groups, leading to evolving public policy change

“It was during my time as a study abroad student at NUS Law school that I came to realise the unique position Singapore is in to be a pioneer in science and governance for this generation of innovators. I couldn't be happier to support NUS Medicine's leadership in women's reproductive longevity and equality. Professor Chong Yap Seng has long been a leader in reproductive health in Singapore, and has created a world class team of researchers and scientists that are connecting the fields of women's health and longevity. Expanding the reproductive lifespan of women is an investment that I know will serve generations to come, will have a positive and everlasting effect in how we approach women's health, and provide greater confidence to families as they plan for the future. I hope that we can ameliorate the pain and fear so many women face today of losing reproductive capacity in their 30's. As overall lifespan is increasing, so should reproductive lifespan,” said Ms Nicole Shanahan.

The vision of the US-based Bia-Echo Foundation, a private enterprise founded to accelerate social change to establish a fair and equitable society for generations to thrive, aligns with that of the NUS medical school, said its Dean, Professor Chong Yap Seng.

“The reproductive health of women is paramount to the well-being and progress of a nation. The field of women's reproductive health has not progressed much beyond *in-vitro* fertilisation and hormone replacement therapy and there is a pressing need for us to re-imagine approaches and possibilities in this field, especially with fast ageing population in many Asian societies, including Singapore,” said Professor Chong Yap Seng, Dean of the Yong Loo Lin School of Medicine, NUS.

“We are deeply appreciative of the generous gift from the Bia-Echo Foundation, whose vision aligns with our work in women's health. With this gift paving the way forward in the study of fertility and reproductive ageing, I believe the Centre is uniquely positioned to lead this conversation and, in time to come, shift the needle in enhancing the reproductive longevity and reproductive health of Asian women across generations.”

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About the Bia-Echo Foundation

Bia-Echo Foundation of Palo Alto, California, is a private foundation that aims to accelerate social change in order to establish a fair and equitable society for future generations to thrive. Founded by Nicole Shanahan, the foundation invests in changemakers at the forefront of innovation who are tackling some of the world's greatest challenges.

About the National University of Singapore (NUS)

The National University of Singapore (NUS) is Singapore's flagship university, which offers a global approach to education, research and entrepreneurship, with a focus on Asian perspectives and expertise. We have 17 faculties across three campuses in Singapore, with more than 40,000 students from 100 countries enriching our vibrant and diverse campus community. We have also established our NUS Overseas Colleges programme in more than 15 cities around the world.

Our multidisciplinary and real-world approach to education, research and entrepreneurship enables us to work closely with industry, governments and academia to address crucial and complex issues relevant to Asia and the world. Researchers in our faculties, 31 university-level research institutes, research centres of excellence and corporate labs focus on themes that include energy; environmental and urban sustainability; treatment and prevention of diseases; active ageing; advanced materials; risk management and resilience of financial systems; Asian studies; and Smart Nation capabilities such as artificial intelligence, data science, operations research and cybersecurity.

For more information on NUS, please visit www.nus.edu.sg

About the NUS Yong Loo Lin School of Medicine (NUS Medicine)

The NUS Yong Loo Lin School of Medicine is Singapore's first and largest medical school. Our enduring mission centres on nurturing highly competent, values-driven and inspired healthcare professionals to transform the practice of medicine and improve health around the world.

Through a dynamic and future-oriented five-year curriculum that is inter-disciplinary and inter-professional in nature, our students undergo a holistic learning experience that exposes them to multiple facets of healthcare and prepares them to become visionary leaders and compassionate doctors and nurses of tomorrow. Since the School's founding in 1905, more than 12,000 graduates have passed through our doors.

In our pursuit of health for all, our strategic research programmes focus on innovative, cutting-edge biomedical research with collaborators around the world to deliver high impact solutions to benefit human lives.

The School is the oldest institution of higher learning in the National University of Singapore and a founding institutional member of the National University Health System. It is Asia's leading medical school and ranks among the best in the world (Times Higher Education World University Rankings 2019 by subject and the Quacquarelli Symonds (QS) World University

Rankings by Subject 2019).

For more information about NUS Medicine, please visit <https://medicine.nus.edu.sg/>

ANNEXE A

List of Principal Investigators at the Bia-Echo Asia Centre for Reproductive Longevity and Equality

Professor Brian Kennedy
Director, Healthy Longevity Translational Research Programme
Yong Loo Lin School of Medicine, NUS
Director, Centre for Healthy Longevity, NUHS
Research interests: Science of Ageing, Applied Research

Professor Rong Li
Head, Mechanobiology Institute, NUS
Research interests: Cellular Dynamics and Mechanics, Ageing

Professor Zhang Cuijin
Department of obstetrics & Gynaecology
Yong Loo Lin School of Medicine, NUS
Research interests: Genetic and Nutritional Epidemiology

Professor Dean Ho
Director, Institute for Digital Medicine (WisDM)
Yong Loo Lin School of Medicine, NUS
Director, N.1 Institute for Health,
Head, Department of Biomedical Engineering
Research interests: AI, Personalized Dosing

Dr Huang Zhongwei
Clinician-Scientist, A*STAR
IVF specialist, NUHS
Adjunct Assistant Professor, MBI, NUS
Investigator, N.1 Institute of Health, NUS
Research interests: Translational and Clinical Research, Reproductive Ageing

Key Tracks at the Bia-Echo Asia Centre for Reproductive Longevity and Equality

1. Ovarian Biology and Senescence

Professor Brian KENNEDY, Dr Zhongwei HUANG, Professor Rong LI, Professor Dean HO

2. Translational and Clinical studies (including Artificial Reproductive Techniques (ART))

Professor Brian KENNEDY, Professor Dean HO, Dr Zhongwei HUANG

3. Population Health studies

Professor Cuijin ZHANG and team

4. Public Health Education and Outreach

Prof Cuijin ZHANG and Dr Zhongwei HUANG)