

catalyst



ACCELERATING RESEARCH

November 2009

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Research, Videotapes
and Long Nights
**Daniel Fung of
IMH shares his
thoughts about his
research**

TCR Flagship Programme on

Metabolic Disease

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Singapore Clinical Research Institute (SCRI), an Academic Research Organisation, provides a range of clinical research and scientific expertise in a collaborative manner so as to support high quality, innovative, patient orientated research. Find out more about the services of SCRI.

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Dr Zee Ying Kiat (Associate Consultant, Department of Haematology-Oncology, National University Health System, Singapore) received the NHG Investigator-Clinician Award in 2009. Dr Zee's research is based at Christie Hospital and the Paterson Institute for Cancer Research in Manchester, United Kingdom. He shares his passion for research. His focus is on cancer-related clinical pharmacology and biomarker research.

8 Reaccreditation of the Human Subjects Protection Program (HSPP)

In March 2010, NHG will be going for the reaccreditation, which is an excellent international platform to further demonstrate NHG's commitment in pursuing scientifically and ethically sound research within our institutions. All preparatory materials can be found in www.b2bresearch.nhg.com.sg

Research & Development Office



Adding years of healthy life

Editorial team

Zawiyah, Wenald, Renuka, Norsalleha, Malini, Kin Poo, Karabee, Hwee Hian, Farah and Adeline

From The Editor-in-Chief

Dear Colleagues and Readers,

Hope you have enjoyed reading the past two issues of NHG Research Newsletter where we had tried to bring to you interesting information on various research activities within and outside NHG.

In this issue we bring you behind the scenes information of the third Translational and Clinical Research (TCR) Flagship Program award on Metabolic Disease (to find out more on other TCR projects you may refer to the previous two issues of Catalyst). You can learn more about the challenges that led the researcher to put together this proposal and eventually receive the TCR grant and how will the results change the habits of the community and thus benefit the population as a whole.

Looking ahead, with the greater integration of academic research with clinical translation, more researchers like A/Prof Chong Yap Seng, A/Prof Daniel Fung and Dr Zee Ying Kiat will be at the forefront of innovation in healthcare. With the closer collaboration with academia and industry, we will be well-poised to achieve our vision of translating research into quality patient care.

On 27 March 2007, the US-based Association for the Accreditation of Human Research Protection Programs (AAHRPP) announced the successful Full Accreditation of the National Healthcare Group. It was a resounding testimony to the collective



efforts made by NHG's research community in transforming our ethics review process, engaging our investigators and study coordinators in the proper conduct of research, and improving the quality of our research.

After 2 years of continuous efforts in the area of human subject protection, NHG is going for AAHRPP Re-accreditation in March 2010. Achievement of the re-accreditation would once again demonstrate NHG's commitment in the conduct of scientifically and ethically sound research involving human subjects.

We plan to use this newsletter as our vehicle to share interesting newsworthy articles, findings, developments and changes to research environment with our local cohort of researchers. We hope you will enjoy reading this issue and we welcome your feedback on any aspect of the newsletter.

With best regards,

Kin Poo

Your Newsletter, Your Comments

Do you have any of these:

- Research articles to share?
- Research topics that you want covered?
- Comments/Feedbacks on published contents of this newsletter?
- Comic strips/cartoon illustrations that is science/research-related that can bring smiles to your colleagues?

If you have answered "YES" to any of the above, we invite you to write in and share with us your thoughts, feedback on published articles or cartoon clips (original materials, jpeg format please).

And if your contribution is accepted for print, we will send you a token of

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appreciation, with compliments from the Editorial team!

Do remember to add in your contact details, where applicable, for our future communications with you.

The Editorial Team

Translational & Clinical Research (TCR) Flagship Programme on Metabolic Disease

Developmental pathways to metabolic disease

Lead PI: A/Prof Chong Yap Seng

Senior Consultant, Department of Obstetrics & Gynaecology,
National University Health System

Metabolic disease in Asia has features that distinguish it from that seen in most western countries and shows ethnic differences not yet understood or explainable by genetics alone. The majority of diabetics in the world are Asian. Yet most research is done in the West despite the phenotype (physical and behavioral characteristics) of Asian diabetes being very different – for example, there are different relationships between body fat and cardiovascular risk in Indians and Chinese compared to Caucasians.^{1,2,3}

Singapore has one of the highest incidences of diabetes in the developed world, a matter of considerable societal, economic and strategic concern. Further, there are clear ethnic differences across the three major Singaporean ethnicities in terms of propensity for metabolic disease. Thus, research in Singapore to understand the particularities of diabetes causation, prevention, and therapy offer unparalleled opportunities for translational research and subsequent application. The focus of this programme is on the developmental pathways that increase the risk of Type 2 Diabetes and its associated diseases, particularly obesity.

It is estimated that by 2025 the number of Type 2 Diabetics in the world will exceed 300 million, with the majority in Asia.⁴ The rising incidence of Type 2 Diabetes, obesity, and its associated disorders is a global challenge that is particularly marked in Asia and of real concern in Singapore. Here the prevalence of Type 2 Diabetes has increased fourfold from 1.9% in 1975 to 8.2% in 2004.⁵ This is associated with a falling age of onset of Type 2 Diabetes, which constituted less than 5% of all childhood diabetes 15 years ago but accounts for one third of all childhood diabetes in Singapore currently. Furthermore, half of all adolescent-onset diabetes is now Type 2. Similarly, the prevalence of childhood obesity is rising in Singapore with 12.7% of children being overweight in

2006 compared to 10.2% in 1999. Diabetes is a factor in 9.3% of all deaths in Singapore, and is the sixth most common cause of death.⁵

Present Treatment Shortcomings

Attempts at modifying lifestyles to prevent or reduce diabetes, obesity, and cardiovascular disease have had a limited impact. Present strategies for the management of diabetes are focused on the prevention of secondary complications rather than primary disease. While there is little doubt about the benefits of exercise and healthy diets in improving overall health, it is evident that additional approaches must be explored to improve the long term effectiveness of interventions.^{6,7}

**TCR Flagship Programme on Metabolic Diseases
– Objective of research**

This TCR Flagship Programme is designed to exploit the internationally highly competitive advantages of the infrastructure, capabilities, and capacities across disciplines and institutions in Singapore in partnership with highly ranked international collaborators to address the growing epidemic of metabolic disease.

This research programme addresses an emerging area of science that could profoundly influence the way metabolic disease, which has unique Asian features, is considered, prevented, and treated. Besides defining the developmental component of causation, this programme seeks interventions that will, in time, inform public health policies and guide clinical care of the rapidly growing populace with, or destined to be affected by, Type 2 Diabetes and its related diseases.

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1. McKeigue PM. Metabolic consequences of obesity and body fat pattern: lessons from migrant studies. *Ciba Found Symp* 1996;201:54-64.
2. Whincup PH, Gilg JA, Papacosta O, et al. Early evidence of ethnic differences in cardiovascular risk: cross sectional comparison of British South Asian and white children. *Br Med J* 2002;324 635.
3. Zhang X, Shu XO, Yang G, et al. Abdominal adiposity and mortality in Chinese women. *Arch Intern Med* 2007;167:886-92.
4. Wild S, Roglic G, Green A, Sicree R, King H. Global prevalence of diabetes: estimates for the year 2000 and projections for 2030. *Diabetes Care* 2004;27:1047-53.
5. Ministry of Health. National Health Survey 2004. In. Singapore; 2005.
6. Pickering TG. Lifestyle modification and blood pressure control: is the glass half full or half empty? *JAMA* 2003; 289:2131-2132.
7. Wilfley DE, Stein RI, Saelens BE, Mockus DS, Matt GE, Hayden-Wade HA, Welch RR, Schechtman KB, Thompson PA, Epstein LH. Efficacy of maintenance treatment approaches for childhood overweight: a randomized controlled trial. *JAMA* 2007 Oct 10;298(14):1661-73.



NHG Researchers: Sharing thoughts about research

Research, videotapes

Research to me is about a journey, not a destination. I am still on this road and learning many new things with many new mentors.

A/Prof Daniel Fung

Chief, Child and Adolescent Psychiatry, IMH
Adjunct Associate Professor, Duke NUS Graduate Medical School and NTU

My interest in research really happened by chance. When I was a medical student, I wasn't taught to ask questions. At least I felt that if I did ask a question, I must know the answer, otherwise I would get a snide remark, or worse, a sarcastic rebuke. I was embarrassed on numerous occasions by some of my tutors who seem to relish watching us squirm under our lab coats as we were asked countless clinical questions. Who has the time or inclination to ask questions of our own?

My first exposure to research was meeting a gentle doctor by the name of Anne Merriman. She was working at the department of social medicine and public health at that time, and according to my google research, she is now heading a hospice care organisation in Uganda. It was perhaps my most enjoyable posting as a medical student and it taught me the rudiments of developing a research project from the point of asking a question to the bit of collecting data and getting doors slammed in our faces.

As a new trainee in psychiatry in 1993, I had very little exposure to research. This was not surprising since I was told that research was only to be done at the University by an older (but perhaps not so wise) fellow trainee. However, I was impressed by some of my first supervisors such as Prof Wong Kim Eng who had her name quoted for a study on

schizophrenia in the Oxford Textbook of Psychiatry. But I remember one senior psychiatrist who responded to my question of how to do research, by pointing to the library and asking me to go and read a journal. He also added that research is an extracurricular activity and not part of clinical work.

Generally, I did not feel encouraged to do research. A year into my postings, I was doing my rounds in Tan Tock Seng Hospital when I happened to meet an old classmate of mine. He was a Family Medicine trainee at that time and we somehow got to talking about child abuse, an early area of interest. We decided that because child abuse was a social problem, an understanding of how doctors viewed it and how they would approach it would be important. We started reading into the subject and happened to chance upon a study by the Singapore Children's Society.

From there, we approached one of the junior investigators (coincidentally is now a clinical psychologist in IMH), who gave us insights into the study methodology and we started developing our research



question. We even found a mentor in Prof Goh Lee Gan. He gave us insights on what it meant to do research as he offered to meet us at midnight in his office to discuss the study.

Nonetheless, we successfully negotiated the problems, hindrances and the lack of funds. We actually came up with \$200 of our own money to print the questionnaires and eventually completed the study, presented it and had it published. My next brush with research came up when I went to Toronto in 2000 for my HMDP (not holiday meant for deserving people but health manpower development plan!) and started a project on studying children with selective mutism.

It was there that I realised how tedious and time consuming the entire process



and long nights

of getting the logistics, support of allied professionals and clearing of ethics committees could be. Just obtaining consent for videotaping consisted of several back and forth replies and queries from the ethics committee. The last part of the research process, which is probably also the most critical, is of course, communicating it in the form of writing for publication. The challenge of doing this and having to develop patience, “thick skin” from multiple rejections and rewrites can be disheartening at times but there is always light at the end of the tunnel eventually, if we persist.

One of the reasons that I was attracted to child psychiatry was the early work of Professor Sir Michael Rutter. His early studies of childhood epidemiology in the Isle of Wight and later in a London borough gave me an idea that we really needed to understand the prevalence of mental health disorders among the youths in Singapore. I started speaking with schools and the Ministry of Education (MOE) in 2001 and spent many hours sitting with MOE management explaining the need for a mental health survey (and I was fortunate to have a team of like minded psychiatrists like Dr Cai Yiming and Dr Bernardine Woo).

Initially, our efforts were rebuffed by the schools as unnecessary. A common refrain from school principals were, “Parents will never agree to a mental health survey on their children in Singapore.” It was only in 2002 when we obtained official approval and with MOE’s help, a sample of 18 primary schools, that

we could get started. We managed to get an NMRC grant of \$59,000, even though we asked for \$100,000. We were excited and jubilant because it was the largest grant we had obtained and looking back, it certainly pales in comparison with what researchers can garner today. Running a community school survey on one research assistant and a motley crew of temporary and poorly paid undergraduates was a new challenge and made me realise the importance of proper budget planning. Fortunately we had some help and guidance from senior researchers such as Prof Ng Tze Pin and excellent statistical support from Prof Chan Yiong Huak.

Learning Points

- Research needs good mentors (those you seek and those that are thrust upon you)
- Research needs training and experience (those you apply for and those you chance upon)
- Research requires administration skills (those you work with and the monies you manage)

Research to me is about a journey, not a destination. I am still on this road and learning many new things with many new mentors. Although the discovery on this journey is not always planned, it is always relevant. I sometimes wonder why we need to have terminologies like clinician-scientist to reflect the dual roles that doctors play.

Shouldn’t all clinicians be scientists? There is a constant need for medicine and its practitioners to question application of established knowledge and improve the lives of the patients we hold dear.



Vision, Miss Direct

ion and ion of SCRI

Prof Augustus John Rush, M.D.
CEO, Singapore Clinical Research Institute (SCRI)
Professor and Vice Dean for Clinical Sciences,
Duke-National University of Singapore

Singapore Clinical Research Institute (SCRI), an Academic Research Organisation, provides a range of clinical research and scientific expertise in a collaborative manner so as to support high quality, innovative, patient orientated research.

Formed in 2008, SCRI evolved from the Clinical Trials and Epidemiology Research Unit (CTERU) which conducted investigator-initiated single and multisite clinical trials, epidemiological and other related studies. SCRI currently manages over 20 investigator-initiated NMRC funded studies, half of which are multisite studies with international sites located in Asia and beyond.

SCRI's mission is to develop core capabilities, infrastructure and intellectual leadership for clinical research. Core capabilities include personnel with the expertise required to conduct clinical research; infrastructure provides the organisation, facilities and processes necessary to effectively support the research; and intellectual development is key to strengthening the scientific leadership in the therapeutic and quantitative sciences.

SCRI is based in Biopolis and is an independent organisation working in close collaboration with

clinical investigators and scientists in Singapore's health care system, educational institutions, the Singapore government and private industry.

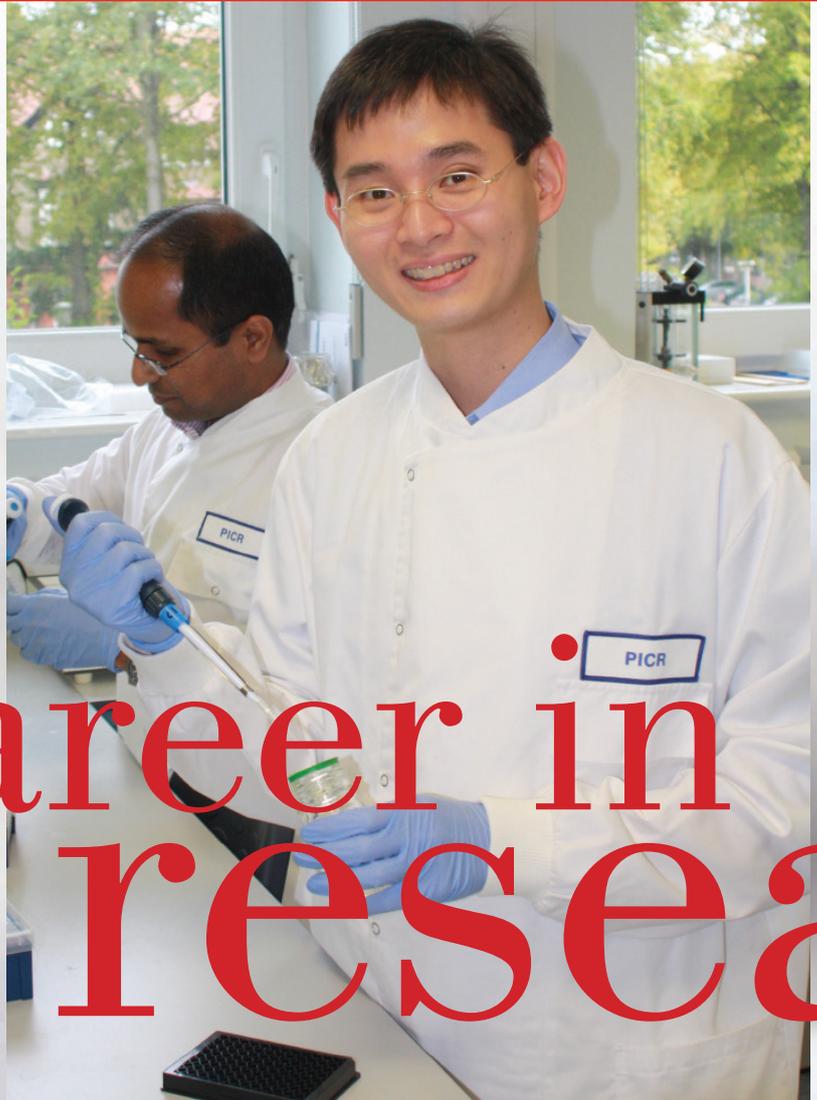
With a team of experienced Biostatisticians, Epidemiologists, Project Managers, Data Managers, Site Monitors and other clinical research staff, SCRI's expertise includes systematic reviews, study design, project execution, data management, data analysis, training and communication of research findings.

There are a variety of ways to engage SCRI. Our Biostatisticians and Epidemiologists conduct regular scientific consultations catering to general research queries ranging from study design advice, analytical issues, guidance for publication or report drafting, or discussions on initial exploratory research ideas. SCRI also provides expertise in project management, data management, site monitoring, staff training and medical writing. SCRI provides collaboration and expertise on a case-by-case basis depending on the scope and quantity of work required.

SCRI provides consultations and collaborations to Principal Investigators preparing grant applications. Our staff will help to enhance the research proposal and will give guidance and advice as appropriate. In addition, SCRI has in the region of 20 national and international Scientific Advisors who can be called upon for consultation regarding study protocols and grant applications. All advisors are recognised experts in their fields and their areas of expertise include Cardiology, Infectious Disease, Psychiatry, Health Services Research, Biostatistics and Epidemiology.

SCRI provides training to clinical research staff covering a range of topics that can be tailored to your needs. Topics include evidence review and synthesis, clinical and epidemiologic design, clinical trial planning and logistics and Good Clinical Practice (GCP).

For more information on SCRI please visit our website at www.scri.edu.sg. For enquires please email contact@scri.edu.sg. We strongly encourage you to contact SCRI as early as possible, ideally during the conceptual phase of study development.



My career in research

Dr Zee Ying Kiat

Associate Consultant, Department of Haematology-Oncology,
National University Health System, Singapore

While a career in medicine had been a childhood ambition of mine, the same cannot be said for research. After two pre-clinical years at medical school in London, when many peers opted to read for a BSc or in several cases a PhD, before returning to complete the clinical component of their undergraduate training, it was not particularly taxing for me to choose otherwise. My interest in research eventually developed as a third-year student, in tandem with that in oncology. During an oncology posting at University College Hospital, I was inspired by the thriving academic practice with clinician-scientists and clinicians working closely together to improve treatment, which at the time involved mostly conventional chemotherapy. Importantly, it introduced me to the concept of translational research.

Upon graduation, the reality of life as a junior doctor in the United Kingdom meant that the notion of research took a back seat to hospital work and obtaining the MRCP, although I kept active with

clinical audits. When I commenced training in medical oncology at the Royal Marsden Hospital, tremendous advances in our knowledge of tumour biology had begun to open doors to novel targeted therapies, creating a myriad of opportunities to fill the gap between basic science and clinical medicine. Most UK trainees in medical oncology would have pursued an MD or PhD, almost as a right of passage. Instead, the arrival of our newborn son prompted a big decision by my wife and me to leave the UK for Singapore with baby in tow, where I completed specialist training at the National University Hospital. The irony was not lost upon me after qualifying as a medical oncologist, when I was offered the opportunity to return to the UK for training in clinical pharmacology and biomarker research – a few months prior to the birth of my second child. Nevertheless, this was the best chance to pursue my interest in research. Thankful for the support of my family, I embarked on a fellowship at The Christie Hospital and Paterson Institute for Cancer Research in Manchester.

There exists a formidable partnership between The Christie, which runs one of the largest early phase clinical trials units in Europe, and the Paterson, which is a leading cancer research institute. Working with Professors Gordon Jayson and Caroline Dive, my focus is on early clinical trials of novel anti-angiogenic agents that incorporate imaging as well as circulating biomarker research. Apart from analysing traditional safety,



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tolerability, pharmacokinetic and pharmacodynamic endpoints, many early phase studies now integrate biomarker exploration with the eventual aim of identifying and validating new markers of drug activity that correlate with outcome, so that treatment can be tailored to individual patients. Some of my research is centred on the discovery of robust biomarkers that identify patients who would benefit most from anti-angiogenic therapy. Circulating biomarkers of particular interest to me are circulating endothelial cells (CEC) and circulating free DNA (cfDNA). CEC measurement has been proposed to monitor anti-angiogenic drug activity and treatment efficacy whereas cfDNA has the potential to enable non-invasive detection of cancer specific mutations. Through this valuable experience, I hope to develop a rigorous and insightful approach to research, and the ability to relate my research to clinical medicine for the eventual improvement of health.

This snippet of personal history illustrates the important, possibly life-changing, decisions that many clinicians who are interested in research have to make at some stage in their career. Perhaps it even highlights some of the perceived disincentives to the investigator-clinician track, where family, financial and promotional prospects are concerned. Although the path to a successful career as a clinician-scientist has no shortage of challenges, my experience so far leads me to believe that those who embark on this journey will be rewarded for their efforts.

Dr Zee Ying Kiat received the NHG Investigator-Clinician Career Development Award in 2009. Dr Zee's research is based at The Christie Hospital and the Paterson Institute for Cancer Research in Manchester, United Kingdom. His focus is on cancer-related clinical pharmacology and biomarker research. In particular, he conducts early phase clinical trials of novel anti-angiogenic drugs as well as laboratory-based circulating biomarker research involving circulating endothelial cells and circulating free DNA. To communicate with Dr Zee on his research and collaborative work, please email him at ying_kiat_zee@nuhs.edu.sg.

Reaccreditation of the NHG Human Subjects Protection Program (HSPP)

NHG, AH and NUHS achieved reaccreditation in March 2007. Being the first public healthcare institutions outside of North America to be awarded full accreditation was a remarkable achievement. Accreditation assured a robust human research protection program, regulatory compliance, and built public trust in our research institutions. Accreditation is an important approach to ensure that human subjects are protected while encouraging researchers to engage in innovative research.

In March 2010, NHG, AH and NUHS would be going for the re-accreditation, which is an excellent international platform to further demonstrate the institutions' continuous commitment in pursuing scientifically and ethically sound research within the institutions. The reaccreditation site visit is expected to be in January 2010.

1. What is AAHRPP?

The Association for the Accreditation of Human Research Protection Programs, Inc. (AAHRPP) promotes high quality research through an accreditation process that helps organisations worldwide strengthen their Human Subjects Protection Programs (HSPPs). AAHRPP adopts a voluntary, peer-driven, educational model to ensure that HSPPs meet rigorous standards for quality and protection. To earn accreditation, organisations must provide tangible evidence – through policies, procedures, and practices – of their commitment to scientifically and ethically sound research and to continuous improvement. More information about AAHRPP can be found at www.aahrpp.org.

2. What Is NHG Human Subjects Protection Program (HSPP) And Does Your Research Fall Under The Program?

The NHG HSPP aims to promote high quality and ethical research, and to ensure protection of human subjects participating in research in NHG institutions, AH and NUHS. The NHG HSPP covers all human subjects' research involving patients, staff, premises, or facilities of NHG, AH, NUHS. Such researches are under the ethical oversight of the NHG Domain Specific Review Board (DSRB), and NHG Research Quality Assurance program. Human subjects' protection is a shared responsibility and all parties engaged in human subjects' research play important roles, including investigators, the institution, DSRBs, Sponsors as well as research participants.

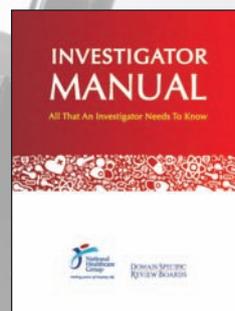
3. Who Will Be Involved In The AAHRPP Reaccreditation Site Visit?

Individuals who are involved in human subject research at institutions under the oversight of NHG DSRB, in various roles, including governance of research, conduct of research, and administration of research will be involved in the site visit.

AAHRPP will choose individuals for a face-to-face interview, closer to the site visit. Individuals who will be interviewed include DSRB chairs, members, staff, research investigators and research team member. Site visitors also interview key organisational officials - CEO, the Chairmen Medical Boards, the Directors of Research, Manager of research offices, those who review contracts, and those who provide legal advice.

4. If you are interviewed, what types of questions will they ask?

The content of the site visit is not based on specific research protocols, but on how the protection of human research subjects at our site is accomplished. The site visitors will ask questions to determine whether compliance and education programs are in accordance with accreditation standards and principles, such as the researchers understanding of the principles of research ethics, research governance, institutional policies for conduct of research etc.



5. How should you prepare for it?

You should be familiar with your research responsibilities and DSRB's ethical requirements and guidelines. You should also be familiar with general principles of research ethics, research governance, and institutional policies for the conduct of research etc. You are encouraged to refer to the revised NHG DSRB Investigator Manual and the NHG

Proper Conduct of Research SOPs, and many other useful reading materials available at www.b2bresearch.nhg.com.sg. Alternatively, you may contact your research offices for the relevant materials.

6. Who can you contact for more information about the Reaccreditation process and site visit?

NHG Research & Development Office @ 6471 3266 / rdo-qa@nhg.com.sg

Catalyst Feature

The programme recognises the local gaps in knowledge and skills and focuses on building research capacity and human capital resource by partnering with world-class experts in the field and incorporating the training of junior researchers into the programme. The aim is to develop clinician investigators as future leaders in translational and clinical research for Singapore, conducting internationally competitive and high impact research in this important area of health and disease.

Studies that will be conducted –

Molecular, genomic and epigenetic methodologies will be combined with physiological and clinical approaches:

1. GUSTO (Growing Up in Singapore Towards Healthy Outcomes) Study: Mothers will be followed up from early pregnancy to document the pregnancy conditions and growth patterns of their babies and these will be correlated with the epigenetic changes detected in the placenta and umbilical cord of their babies at birth, along with their body composition. The team will assess how these and genomic variation relate to subsequent growth and developmental patterns that predispose to metabolic disease later on. Mothers for this study will be recruited mainly from KK Women's and Children's Hospital and from the National University Hospital.
2. SAMS (Singapore Adult Metabolism Study): Studies in adults with diabetes and obesity will evaluate the relative importance

of developmental and genetic pathways in contributing to individual risk and to the efficacy of weight loss interventions. These studies will also allow us to examine mechanisms underlying insulin resistance and ethnic differences in metabolic disease risk. These studies will be conducted in investigational medicine units in NUS and SGH.

Through these studies, the programme aims to:

- Understand pregnancy and early childhood factors that cause epigenetic changes increasing the risks for later metabolic disease. This may lead to better ways of managing pregnancy and feeding newborns and infants (public health guidelines). Applications in the pharmaceutical and food industries are also envisaged.
- Identify epigenetic marks at birth that indicate increased risk for metabolic disease (biomarker and pathway discovery) allowing us to tailor interventions for individuals at risk as well as better understanding the mechanisms of these diseases.
- Discover effective prevention and early intervention strategies, which may be in the form of simple lifestyle and nutritional interventions or even prophylactic drugs.

The TCR Team

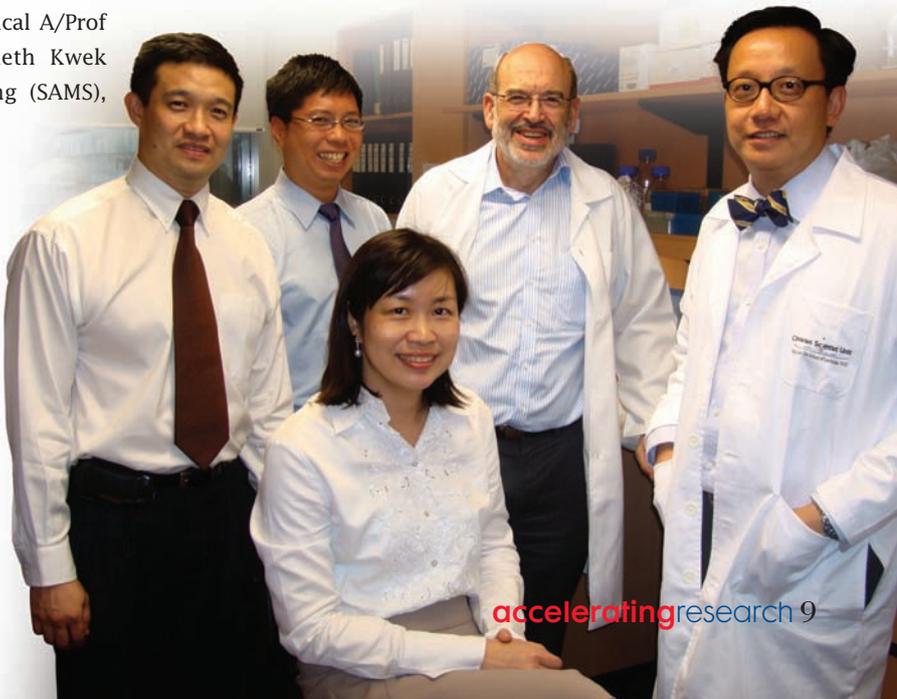
Associate Professor Chong Yap Seng, from the Department of Obstetrics and Gynaecology, NUHS, leads this team of TCR Flagship Programme researchers. He is an experienced clinical researcher and academic obstetrician with particular interest in early childhood nutrition.

The Co-Principal Investigators are:

Professor Sir Peter D Gluckman & Dr Jerry Chan (basic science studies), Dr Jerry Chan, A/Prof Saw Seang Mei & Clinical A/Prof Kenneth Kwek (GUSTO study), Clinical A/Prof Kenneth Kwek (KKH), A/Prof Tai E Shyong & A/Prof Lee Yung Seng (SAMS), A/Prof Lee Yung Seng (Paediatrics, NUHS & SICS)

The other local researchers come from NUS, the major hospitals, SICS and the A*STAR research institutes, the Health Promotion Board (HPB) and the Ministry of Health. Key international committed partners and collaborators include the Liggins Institute, University of Auckland, the Medical Research Council Epidemiology Resource Centre and Centre for Developmental Origins of Health & Disease, University of Southampton; and the Department of Pathology, University of Cambridge. Prominent international investigators include Professors Anne

Ferguson-Smith (Cambridge), Michael Meaney (McGill), Keith Godfrey, and Mark Hanson (Southampton). The proposed programme has already been successful in bringing together basic science and clinical investigators from NUHS and the two Singapore hospital clusters, National Healthcare Group and SingHealth, across universities (NUS, Duke, Duke-NUS Graduate Medical School, Auckland, Southampton, Cambridge, McGill), local research infrastructure, and A*STAR institutes.



Honouring the Best in Research

The 8th NHG Annual Scientific Congress was held on 16 and 17 October 2009. In conjunction with the Congress, the best in research were honoured at the NHG ASC Scientific Competition.

Over 500 scientific abstracts were submitted to vie for the respected awards in various categories such as the Best Oral and Best Poster Presentation Awards, the Young Investigator Awards, and the NHG-NUHS Doctor Award.

In comparison to previous year's submissions, A/Prof Manuel Salto-Tellez, Chairman, Scientific Committee expressed that

“the standard is improving exponentially each year and these research studies have yielded results which have significant impact on healthcare provision.”

Dr Dan Yock Young, Dept of Medicine, NUHS, won the NHG-NUHS Doctor (NHGD) Gold Award, which is the highest award, for his research entitled Liver Stem Cells for Cellular Transplantation. The Award is an acclaimed recognition for Dr Dan's outstanding performance in interweaving clinical practice with pioneering research.

The following is the list of the 8th NHG ASC Scientific Competition award winners. For further information on the awards, please visit www.asc.nhg.com.sg.

	Presenting/First Author	Department	Institution	Award
Young Investigator Award	NHG – NUHS Doctor Award			
	Dr Dan Yock Young	Medicine	NUHS	Gold
	A/Prof Leonard Ang	Ophthalmology	NUHS	Silver
	Dr Gilberto Lopes	Oncology	JHS-IMC	Bronze
	Dr Sim Kang	General Psychiatry	IMH	Bronze
	Dr Colin Tan	Ophthalmology	The Eye Institute	Bronze
	Basic Science / Translational Research			
	Dr Narasimhan Kothandaraman	Obstetrics & Gynaecology	NUHS	Gold
	Dr Citra Mattar	Obstetrics & Gynaecology	NUHS	Silver
	Mr Wu Kan Xing	Microbiology	NUS	Bronze
Dr Edmund Chiong	Urology	NUHS	Merit	
Young Investigator Award	Clinical Research			
	Dr Reuben Wong	Gastroenterology & Hepatology	NUHS	Gold
	Dr Aung Lele	Paediatrics	NUHS	Silver
	Dr Niyati Jauhar	General Medicine	AH	Bronze
	Dr Soo Wern Miin	Cardiology	NUHS	Merit
	Quality, Health Services Research			
	Dr Khoo Chin Meng	Medicine	NUHS	Gold
	Dr Gerald Tan	Urology	TTSH	Silver
	Dr Khoo Chin Meng	Medicine	NUHS	Bronze
	Dr Foo Chik Loon	Emergency Department	TTSH	Merit
Best Oral Presentation Award	Allied Health			
	Ms Lindsey Weller	Physiotherapy	TTSH	Winner
	Ms Lim Su Lin	Dietetics	NUHS	Merit
	Ms Pradha Rajoo	Physiotherapy	TTSH	Merit
	Basic Science			
	Dr Zhang Zhiyong	Mechanical Engineering	NUS	Winner
	Dr Jason Chan Yongsheng	Pathology	NUH	Merit
	Dr Seet Li Fong	Ocular Wound Healing Group	SERI	Merit
	Primary Care			
	Mr Joshua Thia Jin Ping	Family Medicine	NUHS	Winner
Ms Huang Weiting	Medicine	NUS	Merit	
Dr Colin Tan	Ophthalmology	The Eye Institute	Merit	
Best Oral Presentation Award	Medical Disciplines			
	Dr Andrea Rajnakova	Gastroenterology & Hepatology	NUHS	Winner
	Dr Charumathi Sabanayagam	Ophthalmology	NUS	Merit
	Dr Sim Kang	General Psychiatry	IMH	Merit
	Nursing			
	Ms Siti Zubaidah Mordiffi	Nursing	NUHS	Winner
	Ms Dong Liang	Paediatrics	NUHS	Merit
	Mr Arumugum Govindasamy	General Psychiatry	IMH	Merit
	Quality, Health Services Research			
	Dr Dan Yock Young	Medicine	NUHS	Winner
Dr Kurumbian Chandran	Medicine	NUHS	Merit	
Ms Jin Jing	Office of Biomedical Research	NUHS	Merit	
Dr Vernon Lee	Centre For Health Services Research	NUS	Merit	
Best Poster Presentation Award	Surgical Disciplines			
	Dr Colin Tan	Ophthalmology	The Eye Institute	Winner
	Dr Andrew Ow	Oral & Maxillofacial Surgery	NUS	Merit
	Dr Gerald Tan	Urology	TTSH	Merit
	Allied Health			
	Mr Gary Lee Jek Chong	Biomedical Informatics and Engineering	Temasek Polytechnic	Winner
	Ms Lim Zihui	Laboratory Medicine	NUH	Merit
	Ms Shazana Binte Mohamed Shahwan	Research	IMH	Merit
	Basic Science			
	Ms Quah Phaik Ling	Paediatrics	NUHS	Winner
Ms Chen Silin	Wound Healing and Ocular Inflammation Group	SERI	Merit	
Mr Wong Wei Jiat Allen	Surgery	NUHS	Merit	
Dr Zhou Lei	Proteomics Group	SERI	Merit	
Best Poster Presentation Award	Primary Care			
	Dr Matthias Paul Toh Han Sim	Clinical Services	NHGP	Winner
	Dr Cheong Seng Kwing	Family Medicine	NUHS	Merit
	Dr Kamran Mehedi	Epidemiology And Public Health	NUS	Merit
	Medical Disciplines			
	Dr Effie Chew	Medicine	NUHS	Winner
	Dr Fareed Khawaja	Medicine	NUHS	Merit
	Ms Sen Yin Ping	Anatomy	NUS	Merit
	Nursing			
	Ms Chui Kui Lin Winnie	Nursing	AH	Winner
Ms Ang Neo Kim Emily	National University Cancer Institute Singapore	NUHS	Merit	
Ms Philomena Anthony	Nursing	TTSH	Merit	
Best Poster Presentation Award	Quality, Health Services Research			
	Ms Wong Lai Yin	Health Services and Outcomes Research	NHG	Winner
	Ms Robyn De Verteuil	Health Services and Outcomes Research	NHG	Merit
	Dr Joseph Antonio Molina	Health Services and Outcomes Research	NHG	Merit
	Surgical Disciplines			
	Dr Edmund Chiong	Urology	NUHS	Winner
	Dr Fong Sau Shung	Surgery	TTSH	Merit
	Dr Low Shiong Wen	Neurosurgery	NUHS	Merit