



this is
our story!



NUHS Clinician
Scientist Academy

Yearbook 2022



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The Team



Head
Prof Roger Foo Sik Yin



Deputy Head
Asst. Prof Su Xinyi



Senior Manager
Ms. Elaine Tan



Senior Assistant Manager
Ms. Sophrienne Yang



Assistant Manager
Ms. Wee Yu Ting



NUHS Clinician
Scientist Academy

Our Mission



To foster an exciting
ecosystem for research
among clinicians in NUHS

Our 3 Pronged Approach



Support

We **SUPPORT** young talents by providing research grants for them to embark on their research journey and build up their research portfolio and momentum. The Research Support Unit (RSU) provides professional training for biostatistics, systematic review and medical/scientific communication.

ENable

The CS Academy also conducts regular talks and workshops to train and equip our young clinician scientists with knowledge and skills, to enhance their research capabilities and **ENABLE** progress in their research career.

Nurture

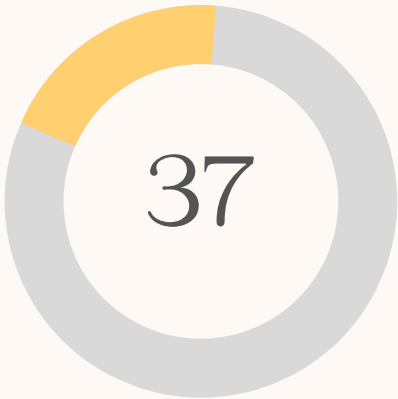
Talented young clinicians are matched to and **NURTURED** by committed and enthusiastic mentors based on research interest, clinical practice and their area of expertise. We also organise Meet and Greet sessions, providing a dialogue platform for young clinician scientists to interact with and get inspiration from experienced clinician scientists.

CS Definition

(As defined by NMRC to date)

	<u>Definition</u>	<u>Group</u>
National CS	Ongoing PIs of NMRC Human Capital Awards (STaR, CSA, HCSA, CIA)	STaR; CSA (SI); CSA (INV); HCSA (SI); HCSA (INV); CIA (SI); CIA (INV)
Cluster CS	<p>Not supported under the NMRC Human Capital Awards (STaR, CSA, HCSA, CIA), and meet all three of the following criteria:</p> <p>i) Holds a MD/MBBS/BDS (for a doctor/dentist) or PhD (for those trained as Nurses, Pharmacists, and Allied Health Professionals*, and</p> <ul style="list-style-type: none"> •are in clinical practice, or •doing research in clinical settings, or •doing research with clinical and healthcare applications/relevance). <p>ii) Ongoing independent PI of at least 1 national/international grant of IRG-level (e.g. CS IRG, PHRG, NHIC I2D) or has funding from private (e.g. industry funding) / philanthropic sources. The grant should not be TA, NIG, YIRG or equivalent level of award.</p> <p>iii) Spends at least 50% FTE in research, except for Lead/Corresponding PIs with ongoing TCR Flagship/OF LCG grants.</p> <p>^Lead PIs only. Team PIs are classified as Institutional PI</p>	<p>Lead PIs of ongoing TCR Flagship /OF LCG grants^</p> <p>CS-IRG (>50% research FTE)</p> <p>HSRG (>50% research FTE)</p> <p>OF-IRG</p> <p>IAF-PP^</p> <p>IAF-ICP^</p> <p>NRF CRP^</p> <p>MOE Tier 3^</p> <p>MOR Tier 2</p>
Institutional CS	<p>Clinicians who only fulfil criteria 1 of cluster CS and hold other internal or external competitive grants are classified as Institutional CS.</p> <p>Institutional CS also include CS in NUH Top 10% for research index (publication and/or grant performance) & NUS EX grading for research for 3 consecutive years.</p> <p>~NUH Top 10% for research index (publication and/or grant performance) & NUS EX grading for research – 3 out of 3 years</p>	<p>CS-IRG (<50% research FTE)</p> <p>PHRG (<50% research FTE)</p> <p>TA*</p> <p>CIDA*</p> <p>Leads, Theme PIs and Core PIs of Centre Grants</p> <p>~NUHS top 10%</p> <p>MOE Tier 1*</p> <p>NUHS Seed Fund*</p> <p>JAFS*</p> <p>AF*</p> <p>JAF*</p> <p>OF-YIRG*</p> <p>CNIG*</p> <p>HNIG*</p> <p>RTF*</p> <p>NCSP*</p> <p>Exxon Mobil*</p> <p style="text-align: right;">*Pipeline CS</p>

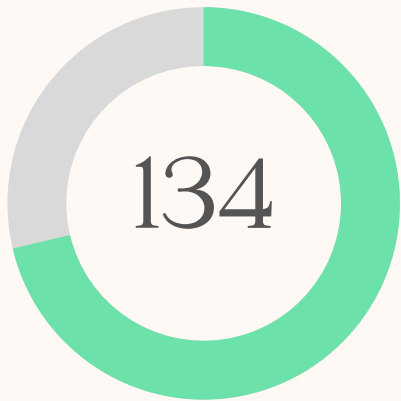
NUHS CS Numbers



National CS



Cluster CS



Institutional CS



Total: 188

and 34 others who are current CS residents, MBBS-PhD A*STAR scholars, MCI and PhD grad students

*CS numbers are updated as of 31 Dec 2022

2022 at a Glance

JAN Meet & Greet with Prof Howard Bauchner

MAR A*STAR MBBS-PhD Scholars Engagement

MAY Launch of NCSP2.0 May Grant Call

JUL NUHS CS Academy Residency Open House

SEP Scientific Writing Workshop + Bootcamp with Dr George Gopen

NOV Launch of CS Academy Coffee Chat

Firechat by Dr Fidah Alsagoff (Temasek International)

Saturday Research Training Series throughout the year

FEB CS Academy Research Training Series

APR ExxonMobil-NUS Research Fellowship Apr Grant Call

JUN STATA Course: Basic & Intermediate Biostatistics (Stata) Course

AUG CLINICIAN SCIENTIST

OCT Launch of CS Spotlight

DEC NCSP2.0 Dec Grant Call

Meet & Greet with Prof Joseph Sung

Academy Roadshow to AH

NUHS CS PhD Engagement

NUHS CS PhD Engagement Event



ExxonMobil-NUS Research Fellowship

(Revamped)



2022

Funding Structure

\$116K per awardee

- 60% protected time (up to \$8,000 per month)
- \$20,000 consumables funding for supervisor/mentor

2023

(To be launched)

Funding Structure

\$100K per awardee

Option 1

- 20% protected time (up to \$2,500 per month)
- \$70,000 consumables funding for mentor to support awardee research project

Option 2

- 40% protected time (up to \$5,000 per month)
- \$40,000 consumables funding for mentor to support awardee research project

✓ Revamped funding structure allows for more flexibility on the use of funds. Fellowships last for a period of **1 year**.

ExxonMobil-NUS Research Fellowship

April 2022 Grant Call Awardees

CONGRATULATIONS



Dr Benjamin Tan Yong Qiang

**Associate Consultant
NUH, Department of Medicine**

"Investigating the clinical and genetic profile of young stroke patients with intracranial arterial stenosis (ICAS) in Singapore"



Dr Daryl Chia Kai Ann

**Service Senior Resident
NUH, Department of Surgery**

"Development of Humanized mouse peritoneal metastasis model for immunotherapeutic biology and drug discovery"



Dr Chris Lim Hong Long

**Senior Resident
Department of Ophthalmology, NUH**

"Evaluation ocular inflammation in response to microplastics and nanoplastics exposure"

NIHS Clinician Scientist Programme

NCSP v2.0

Funding Structure

\$400K per awardee

- Grant Funding (Manpower, Equipment & Consumables, Training): \$130K per annum[^]
- *Award to Department: \$50K per annum (Backfill up to 40%)
- *Award to Mentor: \$20K per annum

[^]\$30k can be vired to Award to Department for up to 40% backfill for 2023 application onwards

** Flexibility to vire grant funding*

Funding Period

2 years

Eligibility Criteria

Committed to fulfill the following:

- Successful completion of a post-graduate research related degree such as Master of Clinical Investigation (MCI), Master of Public Health (MPH) or Doctor of Philosophy (PhD)
- Apply for national level competitive research grants or talent awards at the completion of NCSP (E.g. NMRC CS-NIG, Transition Award etc)
- Publish at least 1 paper in the top 10% of journals in your field



To support young talent with funding to embark on their research, build their research portfolio to eventually compete and clinch a national level competitive research grant or talent award, and pursue a higher degree.

NUHS Clinician Scientist Programme 2.0

May 2022 Grant Call Awardees

CONGRATULATIONS



Dr Mayank Dalakoti

Associate Consultant
Division of Cardiology/ Department of Medicine, NUHC
"Multidisciplinary phenotyping of subclinical cardio-metabolic-hepatic-neurovascular disease and exploration of heart health coaching in the delivery of lifestyle interventions"



Dr Wendy Wong

Associate Consultant
Department of Ophthalmology, NUH
"Establishment of the NUH Asian-Centric Clinico-Genomic Bio-bank for Inherited Retinal Diseases"

Dr Wendy Wong

Dr Wendy Wong

NUHS Clinician Scientist Programme 2.0

Sep 2022 Grant Call Awardees

CONGRATULATIONS



Dr Chan Gek Cher

Consultant
Division of Nephrology/Department of Medicine, NUH

"ACCESS-DKD: Association of Circulating MicroRNA and Proteins with Rapid Progression of Diabetic Kidney Disease."



Dr David Chen Ziyou

Associate Consultant
Department of Ophthalmology, NUH

"Evaluation of novel presbyopia treatments using a non-human primate model"



Dr Ellie Choi Ci-En

Associate Consultant
Division of Dermatology/ Department of Medicine, NUH
"Development and Testing of a Digital Psychological Tool to improve Symptom Burden in Dermatology Patients"



Dr Hong Wei Zhen

Consultant
FAST Medicine; Chronic Programme, AH
"An integrated collaborative nurse-led physician-supported multimorbid CKD care model (INTEGRATE-CKD)"

Dr Wendy Wong



Dr Low Jia Ming

Associate Consultant
Division of Neonatology/Department of Paediatrics, NUH
"Immunoprofiling and Microbiome Analysis of Gestational Immunity For Transfer Cohort"

NUHS Clinician Scientist Programme 2.0

Dec 2022 Grant Call Awardees

CONGRATULATIONS



Dr Sharon Tan

Research Fellow
Saw Swee Hock School of Public Health, NUS
"Financial Incentives to Encourage Uptake of Preventive Dental Care Services Among Adults"



Dr Shawn Lee Hsien Ren

Consultant
Department of Paediatrics, NUH
"Profiling and featurizing the T-cell receptor repertoire across the somatic genomic landscape and its role in phenotypes and outcomes of childhood acute lymphoblastic leukemia"



Dr Sim Ming Ann

Associate Consultant
Department of Anaesthesia, NUH
"Blood-based Biomarkers in Neurocognition and Aging"



Dr Velda Han Xinying

Consultant
Department of Paediatrics, KTP UCMI, NUH
"Multi omics analyses of paediatric drug resistant epilepsy of unknown etiologies"



Dr Widanalage Sanjay Prasad De Mel

Consultant
Division of Haematology/Department of Haematology - Oncology, NUH
"Evaluating the Prole of Tumor-Associated Macrophages in the Response to Anti-CD38 Monoclonal Antibody Therapy in Multiple Myeloma"

Programmatic Grants in NUTS

Singapore Translational Research Investigator Awards (STaR)



Cancer Research

"Understanding and Targeting High-Risk Myeloma"

- Prof Chng Wee Joo

"Targeting transcription factor pathways in liver cancer"

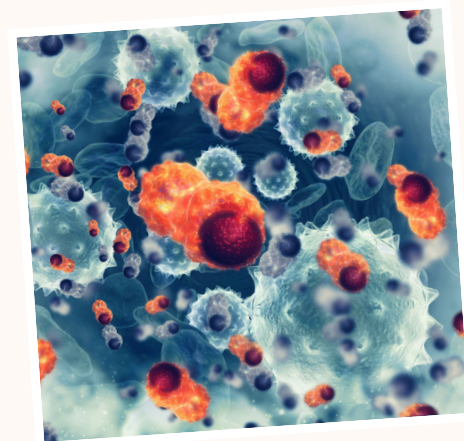
- Prof Daniel G. Tenen

"Advancing therapeutics against squamous cell carcinoma of the head and neck and endemic nasopharyngeal carcinoma"

- Prof Goh Boon Cher

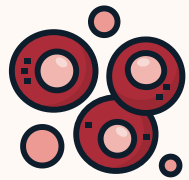
"Cell Therapy of Cancer"

- Prof Dario Campana



Programmatic Grants in NUHS

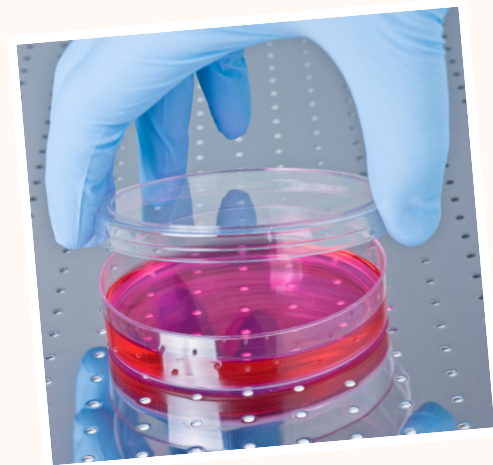
Singapore Translational Research Investigator Awards (STaR)



Stem Cell Research

"Expansion of hematopoietic stem cells by the modulation of mitochondrial metabolism"

- Prof Toshio Suda



Human Potential

"Personalizing Sleep Recommendations Across the Lifespan Using Large Scale Device Data"

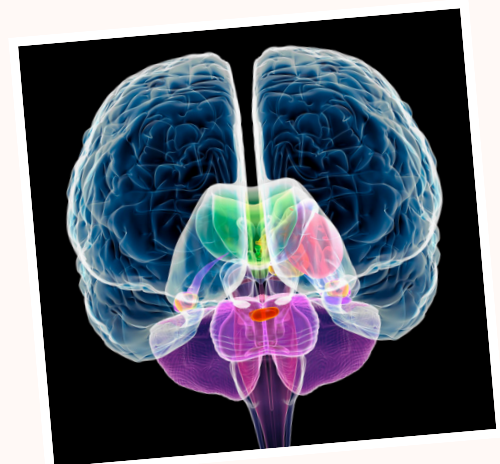
- Prof Chee Wei Liang, Michael



Neuroscience

"Validating Existing and Emerging Multi-modal Biomarkers of Vascular Cognitive Impairment"

- A/Prof Christopher Chen Li Hsian



Programmatic Grants in NUHS

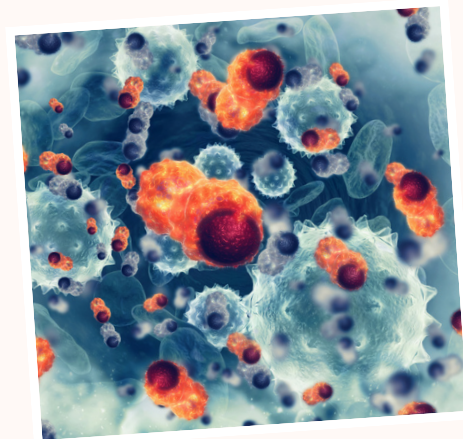
NMRC Large Collaborative Grants (NMRC LCG)



Cancer Research

"Singapore Gastric Cancer Consortium - Bringing Discoveries to Patients"

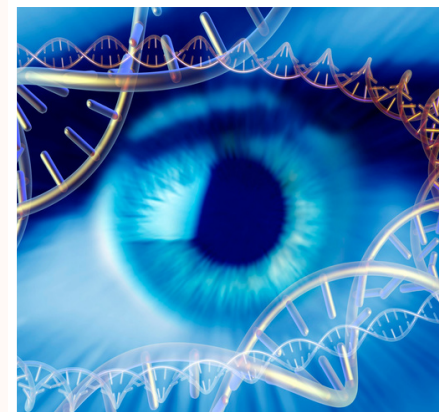
- Prof Yeoh Khay Guan



Eye Research

"Translational Asian Age-related macular degeneration Program (TAAP)"

- A/Prof Chee Ka Lin Caroline



Precision Medicine

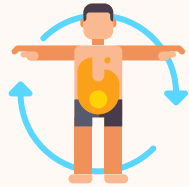
"Advancing precision medicine for cardiovascular disease and diabetes in Asian populations"

- Prof Tai E Shyong



Programmatic Grants in NUHS

NMRC Large Collaborative Grants (NMRC LCG)



Human Potential

"Metabolic Health in Asian Women and their Children"

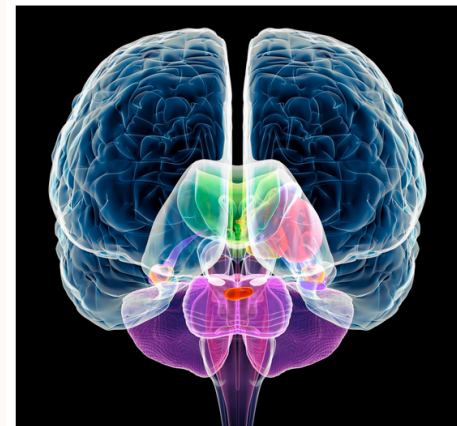
- Prof Chong Yap Seng



Neuroscience

"Prevention of and Biomarkers for Vascular Cognitive Impairment"

- A/Prof Christopher Chen Li Hsian



Programmatic Grants in NUHS

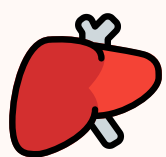
NMRC Large Collaborative Grants (NMRC LCG)



Infectious Diseases

"Integrated Innovations in Infectious Diseases (I3D)"

- Prof Tambyah Anantharajah Paul



Hepatology

"Achieving Functional Cure of Chronic Hepatitis B"

- Prof Lim Seng Gee



Programmatic Grants in NUHS

MOE Tier 3 Awards

Eye Research

"Endomembrane System Architecture, Dynamics, and Functions in Aging Cells and Tissues"

- Asst. Prof Su Xinyi



Cardiovascular Research

"M2CardAGE: Molecular and Mechanobiology Underpinning Cardiac Ageing"

- Prof Roger Foo Sik Yin



Programmatic Grants in NUHS

NMRC Centre Grants (NMRC CG)



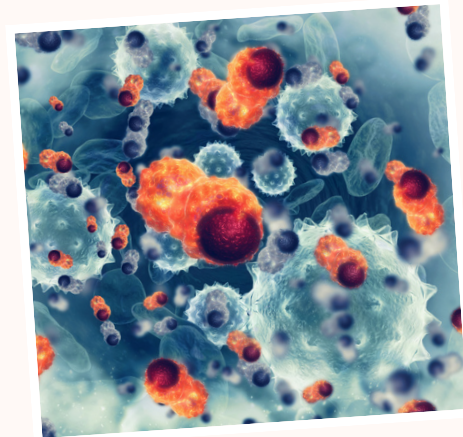
Cancer Research

"Development of Novel Therapeutics and Biomarker-Directed Strategies in Refractory Solid Tumors and Haematological Malignancies"

- Prof Lee Soo Chin

"TargEted TheRApy for blood Cancer II (TETRAD II)"

- Prof Chng Wee Joo



Infectious Diseases

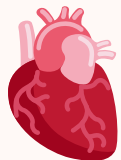
"Collaborative Solutions Targeting Antimicrobial Resistance Threats in Health Systems (CoSTAR-HS)"

- A/Prof Hsu Li Yang



Programmatic Grants in NUHS

NMRC Centre Grants (NMRC CG)



Cardiovascular Research

"MOlecular Markers, MEchaNisms and their TherapeUtic Manipulation in CardioVascular Disease, MOMMENTUM CVD"

- Prof A. Mark Richards

"IMplementing a PArtnership for Cardiovascular Trials-2 (IMPACT-2)"

- Prof A. Mark Richards



Precision Medicine

"Transforming Clinical Care of Patients with Chronic Disease through Precision Medicine, Person-Centred Care and Complex Interventions"

- Dr Khoo Chin Meng



Programmatic Grants in NUHS

NMRC Centre Grants (NMRC CG)



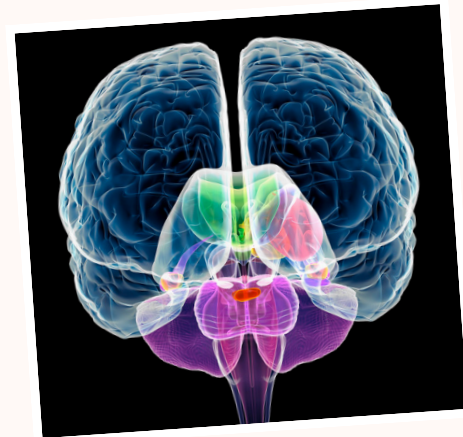
Neuroscience

"INTEgRating bRain, Eye And Cardiac Research (INTER-REACH): How the Scarecrow found a Brain, the Lion Vision to locate Courage and the Tin Man a Heart"

- A/Prof Christopher Chen Li Hsian

"The SALIENCE Programme: A Singapore Alliance towards an Integrated rEsearch platform for NeuroCognitive DisEases"

- A/Prof Vijay Kumar Sharma



Oral Health

"Singaporean Oral Health Surveillance Platform and Capacity Building"

- Prof Patrick Finbarr Allen




Engagements



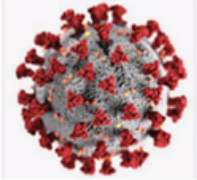

A*STAR MBBS-PhD Scholars Engagement on **26 May and 22 June 2022**

My 4-year experience in the Neurodegeneration Research Laboratory at NNI (2018 – 2022)

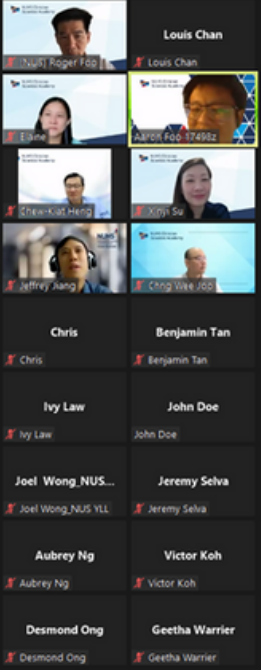


5th year Neurosurgery Resident (2018)

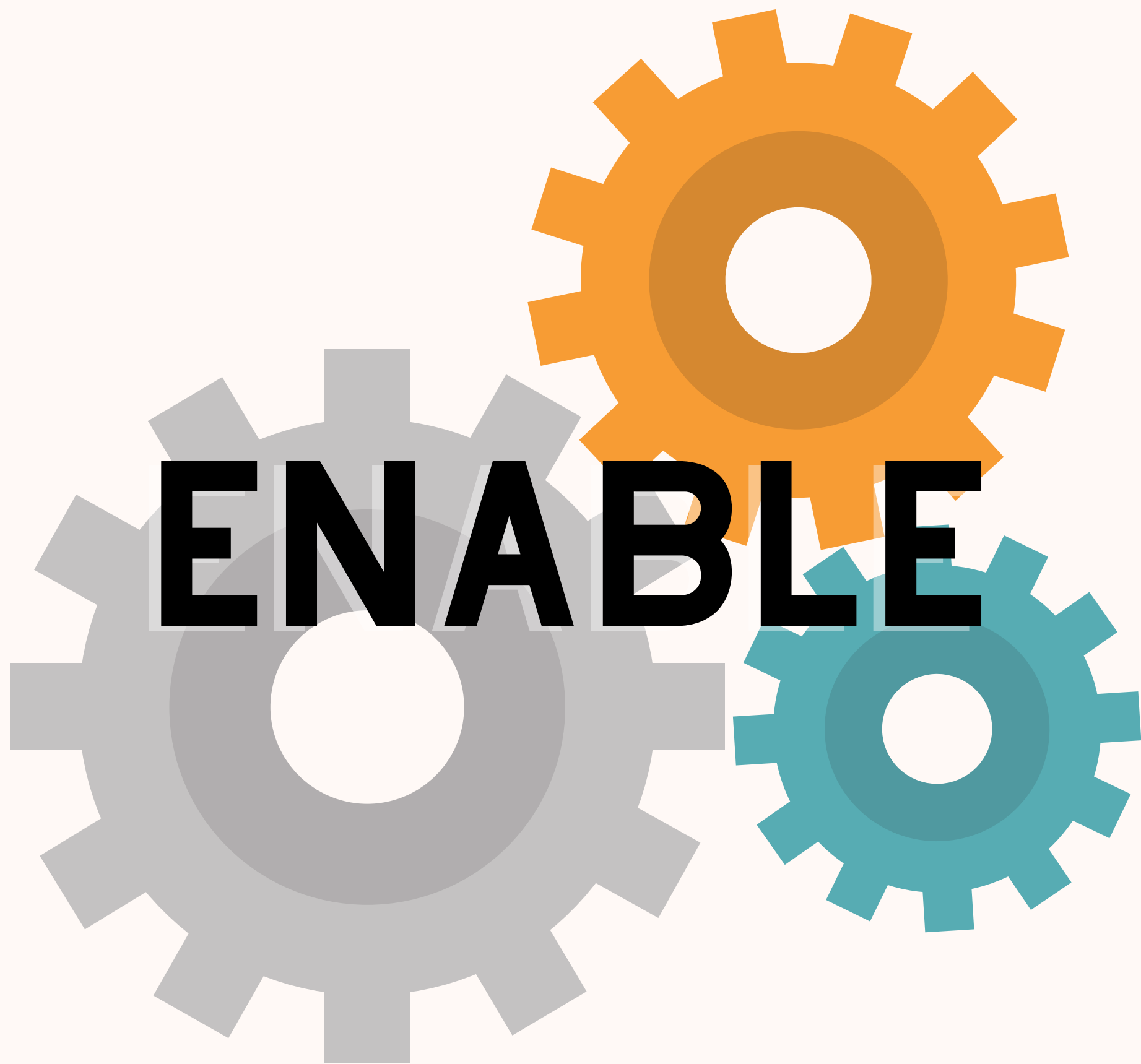
A Translational Neuroscience Ph.D. through pandemic times

Final year Ph.D. candidate, Dept of Physiology (NUS) Neurodegeneration Lab (NNI) (2022)



NUHS CS PhD Engagement on **25 June 2022**



Saturday Research Training Series 2022



About the Research Training Series

Introducing a fresh look to our training lectures and webinars from May 2022! Directed towards medical students and clinicians aspiring

Upcoming Lect

Here is a preview of some of the upcoming lectures for 2022. Stay tuned



Conducted **every 2nd and 4th Saturday**, this series of talks/lectures (aligned to NMRC RIE 2025 goals) aims to equip medical students and clinicians with the necessary knowledge and skills to conduct and publish good research.

Transforming and Protecting Health

Explore novel research tool-kits and expand your research horizons, to accelerate towards impactful clinical research.

Maximising Economic Value

Discover how to translate and commercialise your research to generate economic and value capture.

Advancing Human Potential

Focus on translational and clinical research to derive both health and economic outcomes for Singapore.

Equipping Research Skills

Learn practical skills necessary for quality research. Topics include biostatistics, paper writing and IACUC applications.



How to Pitch for VC Funding
Dr. Tan Yar
Chief Executive



The Drug Process
Prof. Ashok Venkitaraman
Director, Cancer Science Institute of Singapore Centre (NHIC)



Health Economics
A/Prof. V.
Associate Professor, Public Health



How to Land Grants
Prof. Tina W.
Executive Director, Centre (NHIC)



For enquires, contact us at cs_academy@nus.edu.sg

Basic and Intermediate

Biostatistics (Stata) Course

statistical analysis using Stata and interpret the findings of the results obtained.

STATA BASICS

Session 1 (6th June)

- Setting Up a Database in Stata
- Importing Excel into Stata
- Merging Files
- Basic Descriptive
- Graphs
- Computing & Recoding

INTRO TO RESEARCH DESIGNS

Session 2 (7th June)

- Randomised Controlled Trials
 - Parallel vs Crossover
 - Randomisation & Blinding
- Epidemiological Studies
- Sample Size Calculations

BASIC BIOSTATISTICS

Session 3 (8th June)

- Univariate Analysis
 - Quantitative Data Analysis: Parametric vs Non-Parametric Tests
 - Qualitative Data Analysis: Chi-square & Fisher's Exact Tests

INTERMEDIATE BIOSTATISTICS

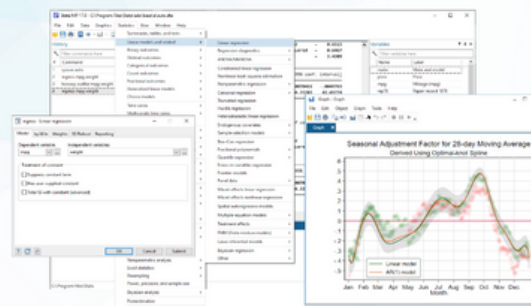
Session 4 (9th June)

- Multivariate Regression
 - Linear Regression
 - Randomisation & Blinding
 - Survival Analysis: Kaplan Meier & Cox Regression

statistical software for data science

ur data
e of statistical features
n-quality graphics
d reporting
Python integration
roducible research
mentation

e
ow with
tomate
tend
programming
multicore support
y-contributed features
s technical support
form compatible
sd
nsive resources
mmunity



50
participants



Conducted by Dr Chan Yiong Huak (Biostatistics Unit, NUS YLLSOM) from **6- 9 June 2022** via Zoom, the course aimed at equipping participants with the knowledge and skills to design a database, understand clinical trials and epidemiological designs, sample size calculations and being able to perform statistical analysis using STATA to interpret findings of the results obtained.

Scientific Writing Workshop 2022

by Prof George Gopen



131
participants

✓ To improve grant writing and publication success



Speaker: Prof. George Gopen

Jointly organized by NUHS CS Academy and Clinician Scientist Development Unit (CSDU), *Scientific Writing from the Reader's Perspective*, a scientific writing workshop conducted by Prof George Gopen from Duke University, was held on **14-15 September 2022** at the NUHS Tower Block Auditorium.



CS Bootcamp 2022



31
participants

✓ Jointly organized by Clinician Scientist Development Unit (CSDU) and NUHS CS Academy, the *CS Bootcamp 2022* was held on **16-17 September 2022** at Village Hotel Katong.

CS Bootcamp 2022



Fireside chat with invited guest, **Dr Fidah Alsagoff** (Head, Life Sciences and Joint Head, Enterprise Development Group, Temasek International)



To equip budding clinician-scientists with the skills and training to succeed in their research



CS's "speed-date" networking



Fireside chat with invited guest, **Prof Yeoh Khay Guan**

Meet & Greet in 2022



Meet & Greet with **Prof Howard Bauchner**, Professor of Paediatrics and Public Health, and 16th Editor in Chief, JAMA



Meet & Greet with **Prof Joseph Sung**, Dean of LKC Med School, NTU

✓ Dialogue sessions for small group of CS to hear from, engage with and be inspired by giants in the field.

NUGGETS OF WISDOM

The more selfless you are,
the more you will achieve.



Prof Joseph Sung

Distinguished University Professor
Dean, Lee Kong Chian School of Medicine
Senior Vice President (Health & Life Sciences)
Nanyang Technological University, Singapore

CS Academy Coffee Chat



CS Academy Coffee Chat

How can I get research protected time?

Who can be my mentor?

When should I start my PhD?

Do you have similar questions on your mind?

Join us for a 1-1 chat with Prof Roger Foo (Head, CS Academy) / Asst. Prof Su Xinyi (Dy Head, CS Academy) to address your queries.

Date: 2nd and 4th Wednesday of each month
Time: 5pm
Location: Zoom (2nd Wednesday)
NUHS TB (4th Wednesday)
Open to: NUH MO, residents, senior residents, AC, C and SC

Strictly by appointment only. Please email Ms Elaine Tan @ thke22@nus.edu.sg.

**Note: Please indicate your preferred date and required time slot (15mins, 30mins, 45mins or 1hr) in the email.

REGISTER NOW

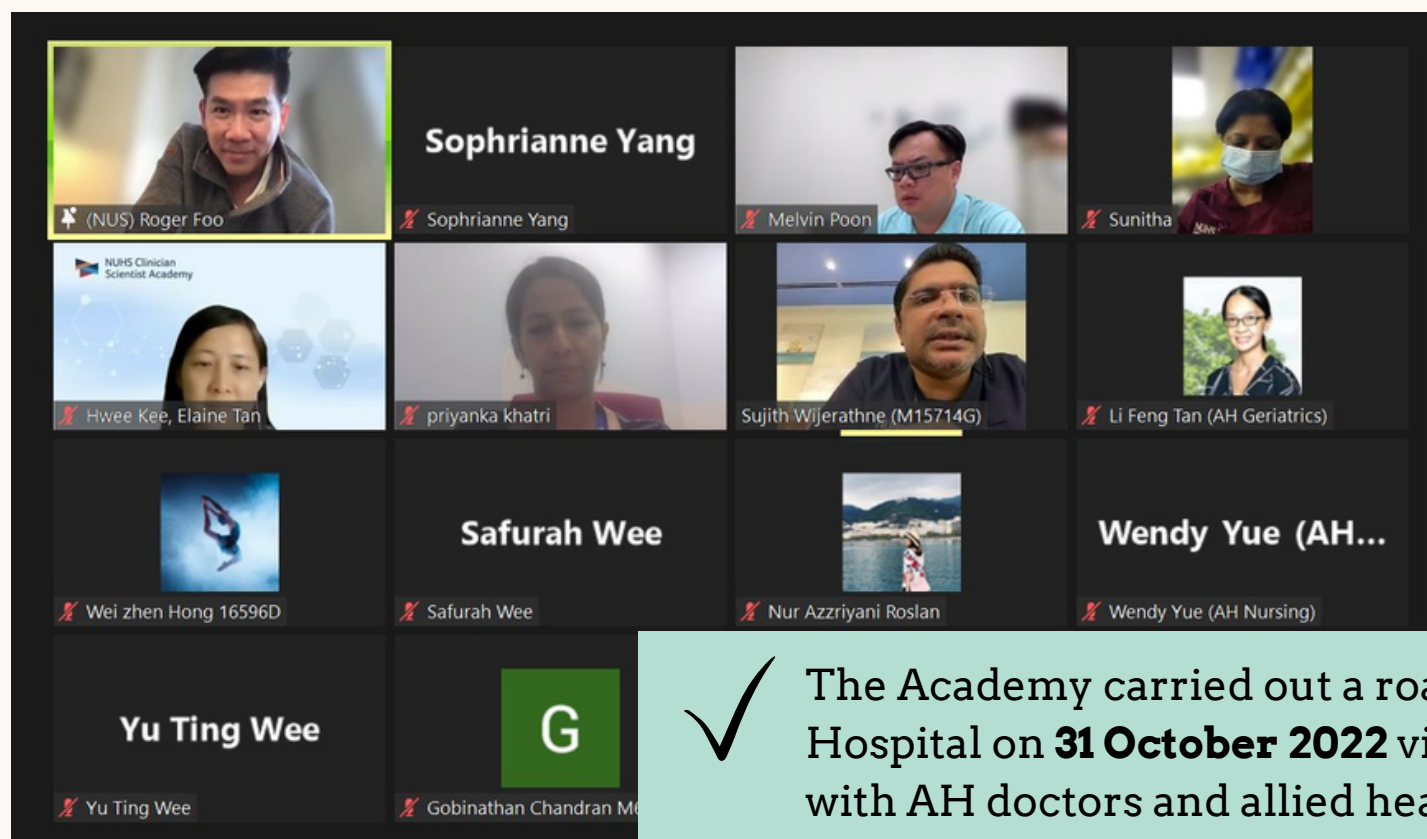


On **every 2nd and 4th Wednesday** of the month, interested clinicians may arrange for 1-to-1 consultations with the Head or Deputy Head of CS Academy for discussion about undertaking research in their career.





Academy Roadshow @ AH



The Academy carried out a roadshow @Alexandra Hospital on **31 October 2022** via Zoom to connect with AH doctors and allied health professionals and showcased CS Academy's initiatives to offer research support.

There is now a plan to extend the roadshow to NUP and NTFGH.



CS Survey 2022

CS ACADEMY SURVEY 2022

We'd love to hear from you!

You may access the survey via the QR code or through the link below.



THANK
YOU!

Link: <https://tinyurl.com/CSAsurvey2022>



Conducted from **September to November 2022**, the survey aimed to obtain community views to help the CS Academy plan our 2023 initiatives.

CS Spotlight



✓ Initiated since **October 2022**, this is a monthly feature of our own clinician scientists, where they share their research journeys and some interesting, lesser known facts about themselves.



NUHS CS academy

Created

11/30/2019 7:56 PM



CS Whatsapp Groupchat

Source: Nature 576, 210-212 (2019) | DOI: 10.1038/d41586-019-03751-y

KEY CHARACTERISTICS



- False or misleading information (e.g. website or e-mails often present contradictory statements, exaggerated impact factors, incorrect addresses, false claims of indexing or membership of associations and misleading claims about the rigour of peer review)
- Lack of transparency in operational procedures (e.g. how editorial decisions are made, fees applied and peer review organized)
- Editors and members of their editorial boards unverifiable
- Aggressive, indiscriminate solicitation (e.g. repeated email, use of flattering tone)
- Deviation from best editorial and publication practices. (e.g. not having a retraction policy, requesting a transfer of copyright when publishing an open-access article and not specifying a Creative Commons licence in an open-access journal)

Some of us have become very aware of this issue in the academic world recently.. posting this here (prepared by our academy team)... For increased awareness among us 🙌💪👏

4:13 PM

An obvious will be a journal who values the fee more than the scientific rigour ...of course. And the review process for some of these is very patchy

4:15 PM

Forwarded

In praise of research in fundamental biology

Science funders must remember the value of addressing the intrinsic biological questions that help to explain the natural world.

How did eukaryotic life – the domain that includes humans – evolve? A decade or so ago, this was the question occupying Thijs Ettema and his colleagues. They found the answer in the genomes of previously undiscovered microorganisms collected from deep in the Atlantic Ocean. Lurking in those sequences were hallmarks of cells from two different types of organism – archaea and eukaryotes. The former describes a group of single-celled organisms that lack a nucleus; the latter, organisms whose cells contain a membrane-bounded nucleus and other organelles. Ettema, now at Wageningen University & Research in the Netherlands, and his colleagues were surprised to find microbes that combined characteristics of both cell types. Microbes that forgo a living in the hot waters surrounding underwater vents also have uses in the laboratory. They have yielded a host of hardy enzymes. These are stable at high temperatures and resistant to degradation, and have become staples in molecular biology labs and biotechnology companies worldwide. Each newly identified microbe found thriving in extreme environments offers a fresh opportunity to discover more enzymes – but this was not Ettema's goal.

When researchers report fundamental discoveries, their papers frequently include a sentence or more about the potential applications of their work. This is often a condition of certain types of grant. But even when it isn't, there's an expectation among funders (and journals, too) that fundamental science will be they in the clinic, in business, or that a 'radical team' might provide the focus. (Both of these have consequences for fundamental science.)

It cannot be stressed enough that fundamental science takes time and patience.

science has a wider impact. One 2018 study⁴ found that a US\$10-million boost in funding from the US National Institutes of Health (NIH) resulted in more private-sector patents that cite NIH work, says study co-author Pierre Azoulay, who researches innovation at the Massachusetts Institute of Technology in Cambridge.

Some fundamental research represents a landmark in its field. Take four papers published in September⁵⁻⁸ describing the isolation of fossil fishes from the Silurian period, more than 400 million years ago. Often, only fragments of such fossils are uncovered, but these were more intact and provided researchers with a more complete picture of the early evolution of jawed vertebrates.

Fundamental discoveries can also form unexpected turning points. In 2020, a team made a detailed study of more than 20 transcription factors – proteins that can bind to DNA and switch genes on. One might expect any distortion in the usual DNA-binding site of a particular transcription factor to negatively affect how well the protein binds to the DNA. However, the researchers found that such distortions sometimes improve DNA-protein binding, and, in the process, provide insight into the energetics of interactions between proteins and DNA. It cannot be stressed enough that fundamental science takes time and patience. In 2020, five years after Ettema and his colleagues reported their discovery of Asgard archaea through sequencing the DNA in seawater, a separate group of researchers who had collected undersea samples near Japan revealed that they had become the first to grow such microbes in culture⁹.

But it had taken a full 10 years – starting in 2006 – for that team to grow the Asgard archaea to sufficient quantities to study them, meaning that the researchers started their cultures before the microbes had even been identified. In fact, the scientists had been looking for ways to isolate previously uncultivated deep-sea microbes, to explore the unknown. They painstakingly nurtured their cultures for years – many deep-sea microbes are accustomed to harsh conditions and scarce nutrients, and grow at a painfully slow rate – waiting to see what they would find.

Nature has been publishing curiosity-driven research for more than 150 years, and readers will not need convincing of the work's value. But we implore colleagues in the wider

✓ A platform for all in the community to share research related thoughts and resources. The chat also provides updates on research relevant talks, workshops and conferences. Interesting articles and papers of interest are also posted here.

Nice article science.

Especially relevant for those of us who take half a year to set up a project, 3-4 years to execute and analyse, and another year to find a home.

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Some of our thoughts
about 2022



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If you want to get
the things you've
never had, you'll
have to do the
things you've never
done.

”

Prof Roger Foo

“

As future leaders of science, dream a vision to create change. Don't be afraid of minor setbacks. As a person who has never made a mistake, has never tried anything new!

”

Asst Prof Su Xinyi

“

When you are on a roller coaster ride, hold on tight, breathe, trust, off you go and see what happens.

”

A/Prof Ng Siok Bian

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A year of learning
to maximize the
new zoom-friendly
collaborative space
that the pandemic
left us.

”

Asst Prof Anand D Jeyasekharan

“

We must learn to "eat" setbacks for breakfast. While we rarely win in this academic journey, we must never forget to learn n grow.

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A/Prof Tan Ker Kan

“

2022 for me gave new meaning to the word "opportunistic infections", citations for Covid related research were astronomical! I'm thankful that me and my research group managed to ride the wave with several timely publications.

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Dr Leonard Yeo

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2022 is about escalating costs, speaking out against misinformation, and nurturing the next generation of clinician-scientists. And in this environment, our next generation is our beacon of hope.”

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A/Prof Catherine Ong

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In the years to come, 2022 will be seen as the year of emergence and rebirth for not only Clinician-Scientists, but most of the world. Renewal of pre-pandemic levels of collaboration, scientific enquiry and travel has marked this year, after 2 years of lockdowns and COVID driven research."

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Asst Prof Raghav Sundar

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“If you run you stand a chance of losing, but if you don't run you've already lost. There is no excuse for not trying”

2022 started at 100% bitter, but definitely ending at 200% sweetness for me!

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Dr Chan Gek Cher

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The MACC's achievements in 2022 are from work performed in the darkest days of the pandemic. It's really made me appreciate not just the resilience and passion of our patients and our researchers but also the support from our institutional leadership who wisely balanced risks and benefits during the most fearful and irrational times. We are now showing the benefits of allowing important research work to proceed with appropriate safeguards. The important point being that clinician scientists cannot flourish without a supportive environment.

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A/Prof Christopher Chen Li-Hsian

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2022 was an incredibly busy year involving the initiation of new research projects and preparations for our department's first in-person academic conference, and for me it meant stepping up into a new leadership role, juggling even harder and appreciating the non-research skills it takes to promote academia.

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A/Prof Citra Nurfarah Zaini Mattar

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It is another exciting year for our CS. We launched our new version of the clinician scientist program and awarded them to an outstanding set of candidates. We had our first bootcamp which was very successful and we have a large number of young clinician scientists winning the NMRC Research Training Fellowship and Transition Award. I am very excited for our pipeline and the future of CS at NUHS

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Prof Chng Wee Joo

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2022 may be seen as a kind of watershed year for academic medicine in Singapore and beyond especially from the point of view of someone who does clinical research on respiratory viruses. There has been an explosion of publications including many from Singapore but at the same time, there have been concerns about scientific integrity, conflicts of interest and the major research questions about the pandemic virus remain unanswered. To this day, no one knows for sure why children do not get severe disease, how important is the airborne route of transmission or even which animal was the proximal host of the original virus as it emerged out of Wuhan. There are plenty of opportunities for bright young clinician scientists in 2023 and the years to come

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Prof Paul Anantharajah Tambyah

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