



(MDG5102) Techniques in Biomedical Research

AY2021 Semester 2 (January 2021)

**REGISTER BY
11 JAN 2021**

Every Monday, Wednesday & Friday (Feb 2021 - Mar 2021*)

6:00PM - 9:00PM

Classes will commence from 1st Feb 2021 to 31st Mar 2021

Venue: National University of Singapore, MD7, Level 2 Seminar Room M9

Course Reference Number: SkillsFuture Singapore (SSG)-Funded (CRS-N-0052834)

Organised by the NUS Yong Loo Lin School of Medicine, Division of Graduate Studies, this module aims to educate participants on current techniques in biomedical research, including molecular and cellular biology, protein analysis and animal modelling.

Participants will develop an understanding of the fundamental principles underlying common experimental techniques, as well as the advantages and limitations of each technique for specific research applications, to facilitate the critical analysis of experimental data. These techniques include the different ways to study nucleic acids, proteins and lipids, key recent advances such as next-generation sequencing and CRISPR (clustered regularly interspaced short palindromic repeats), disease-specific approaches such as in stem cell and cancer biology, and the importance of big data analysis in the fast-evolving biomedical research landscape.

With this knowledge, participants will gain better productivity in the workplace and be able to contribute increasingly to cutting-edge research which improves overall healthcare delivery.

WHO SHOULD ATTEND

- Research and lab officers in biomedical industries, research institutes and hospitals
- Science teachers in junior colleges and polytechnics



For Self-Funded Participants

CLICK HERE TO REGISTER

(Under Lifelong Learning Initiatives; Short Courses)

For Inquiries & Corporate Registrations

Contact Ms Evelyn at nusmedcet@nus.edu.sg

Please note that the scheduled course run will proceed only if the minimum class size is met.

(MDG5102) TECHNIQUES IN BIOMEDICAL RESEARCH
EVERY MONDAY, WEDNESDAY & FRIDAY (FEB 2021 - MAR 2021) | 6:00PM - 9:00PM

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MINIMUM ENTRY REQUIREMENT

Participants are required to have at least a Bachelor's or Master's Degree in related fields such as Biology, Bioengineering, Life Sciences or Biotechnology.

LEARNING OBJECTIVES

At the end of the course, participants will be able to:

- Understand the fundamental principles underlying common experimental techniques
- Compare and contrast different techniques to identify the one best suited for each application
- Evaluate the advantages and limitations of each technique to better troubleshoot different tools for various purposes
- Maintain awareness of the evolving technology and stay updated on new advances in techniques
- Critically analyse self-authored experimental data to determine the degree of relevance to the original hypothesis
- Critically analyse third parties' published papers and work to evaluate the robustness of the conclusions

MODE OF ASSESSMENT

- No final examination
- Take-home assignment to be completed by April 2021

40% Journal club, group presentation and Q&A session

60% Two written individual essays

Upon successful completion of the module, participants will be awarded with a Certificate of Completion.



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TRAINERS' PROFILES

Dr Yvonne Tay

Assistant Professor, Department of Biochemistry
NUS Yong Loo Lin School of Medicine

Principal Investigator
Cancer Science Institute of Singapore, NUS

- Obtained PhD from NUS and performed her postdoctoral training at the Beth Israel Deaconess Medical Center, Harvard Medical School
- Main research areas include studying the dynamics and complexities of RNA regulatory networks and the application of this knowledge to the development of RNA therapeutics

Dr Wai Leong Tam

Adjunct Assistant Professor, Department of Biochemistry
NUS Yong Loo Lin School of Medicine

Principal Investigator, Genome Institute of Singapore
Agency for Science, Technology and Research (A*STAR)

Principal Associate
Cancer Science Institute of Singapore, NUS

- Obtained PhD from NUS and performed his postdoctoral training in Massachusetts Institute of Technology
- His laboratory at the Genome Institute of Singapore, A*STAR and Cancer Science Institute of Singapore, NUS focuses on investigating cancer biology and developing therapeutic approaches for cancer treatment

Dr Takaomi Sanda

Assistant Professor, Department of Medicine
NUS Yong Loo Lin School of Medicine

Principal Investigator
Cancer Science Institute of Singapore, NUS

- Obtained his MD and PhD degrees from the Nagoya City University, Nagoya, Japan, and trained in clinical hematology and oncology
- Main research areas include transcription factor and enhancer abnormalities in T-cell malignancies and neuroblastoma

Dr Dennis Kappei

Assistant Professor, Department of Biochemistry
NUS Yong Loo Lin School of Medicine

Principal Investigator and Head of Quantitative Proteomics Core
Cancer Science Institute of Singapore, NUS

- Conducted his graduate work at the Max Planck Institute of Molecular Cell Biology and Genetics
- Main research focuses on changes in chromatin composition at non-coding elements in cancer using quantitative mass spectrometry



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TRAINERS' PROFILES

Dr Jiang Jianming

Assistant Professor, Department of Biochemistry
NUS Yong Loo Lin School of Medicine

- Research areas include hypertrophic and dilated cardiomyopathy, cardiac reprogramming/regeneration and gene therapy

Dr Jason Pitt

Special Fellow
Cancer Science Institute of Singapore, NUS

- Obtained his PhD in Genetics, Genomics, and Systems Biology from the University of Chicago
- His laboratory utilises scalable computational techniques to better understand the cancer genome, particularly with respect to genomic instability

Dr Long Nguyen

Assistant Professor, Department of Biochemistry
NUS Yong Loo Lin School of Medicine

- Obtained his PhD from University of Hamburg in Germany and completed his postdoctoral training in US and Singapore
- Main research focuses on the characterization of membrane transporters which includes the use of various techniques such as lipidomics, metabolisms, and mouse models

COURSE FEES

	International Participants	Singapore Citizens ¹		Singapore PRs	Enhanced Training Support for SMEs ³
		39 years old or younger	Singapore Citizen 40 years or older eligible for MCES ²		
Full Course Fee	\$5,400.00	\$5,400.00	\$5,400.00	\$5,400.00	\$5,400.00
Less: SSG Grant Amount	-	\$3,780.00	\$3,780.00	\$3,780.00	\$3,780.00
Nett Course Fee	\$5,400.00	\$1,620.00	\$1,620.00	\$1,620.00	\$1,620.00
7% GST on Nett Course Fee	\$378.00	\$113.40	\$113.40	\$113.40	\$113.40
Total Nett Course Fee Payable, Including GST	\$5,778.00	\$1,733.40	\$1,733.40	\$1,733.40	\$1,733.40
Less Additional Funding if Eligible Under Various Schemes	-	-	\$1,080.00	-	\$1,080.00
Total Nett Course Fee Payable, Including GST, after additional funding from the various funding schemes	\$5,778.00	\$1,733.40	\$653.40	\$1,733.40	\$653.40

This course is eligible for Absentee Payroll Funding. Please visit [this link](#) for more details.

¹All self-sponsored Singaporeans aged 25 and above can use their \$500 SkillsFuture Credit to pay for the course. Visit <http://www.skillsfuture.sg/credit> to select the course.

²Mid-Career Enhanced Subsidy (MCES) - Singaporeans aged 40 and above may enjoy subsidies up to 90% of the course fee.

³Enhanced Training Support for SMEs (ETSS) - SME-sponsored employees (Singapore Citizens and PRs) may enjoy subsidies up to 90% of the course fee.



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