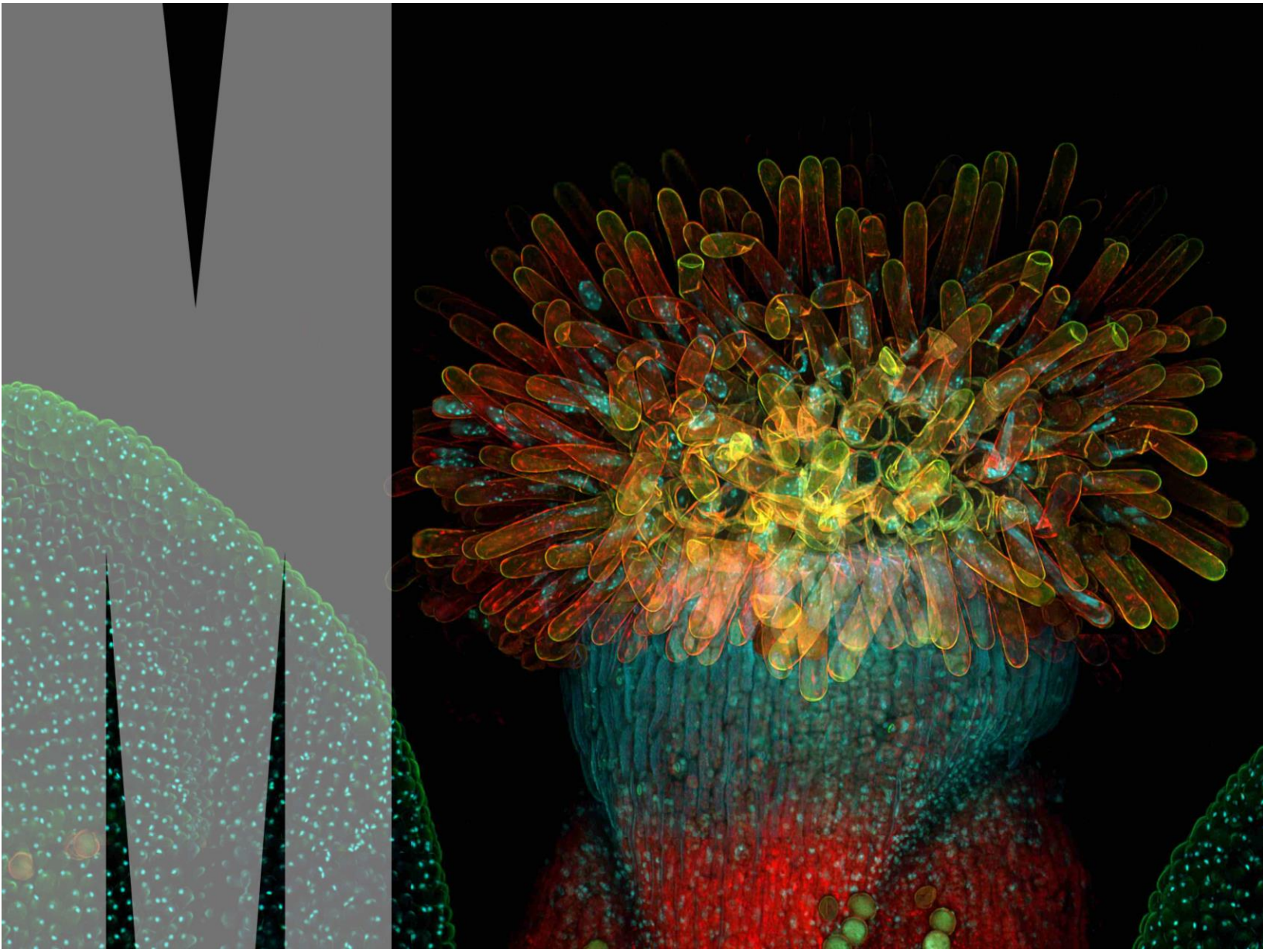
MONASH University
MALAYSIA

School of Science Capability

sci.monash.edu.my



2017 AT A GLANCE

7249
Undergraduate students

340
Postgraduate coursework students

444
Graduate research students

1978
International students from 72 countries

15,052
Monash Malaysia graduates (1998-2017)

343
Academic staff

511
Professional staff

RM4.44mil
in external research funding

RM17.12mil
in scholarships awarded

Statistics as of 31 December 2017

VISION

Monash University Malaysia is a premier research intensive institution committed to nurturing visionary, responsible and effective leaders who are empowered with the skills to serve our national and global communities.

MISSION

Monash University Malaysia offers an internationally recognised Australian education, enriching the student experience and employability through educational innovation, high impact research, student mobility, social entrepreneurship and industry engagement.

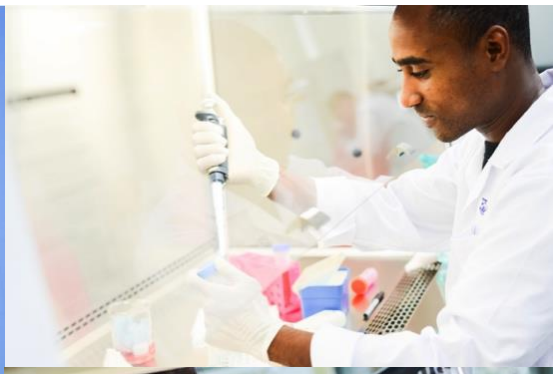
RESEARCH AT MONASH

School of Science is committed to promote active research engagement with industries and our global research partners.

Scientists at Monash University Malaysia actively engage with key research partners, industry, government and communities to deliver high-impact outcomes in these areas; biodiversity, cell biology, chemistry, crop sciences, food science and technology, genomics and bioinformatics and microbiology. Science strategic industry engagement plan emphasizes on collaborations in research, education, internship and placements, career development and scholarship with our partners. Monash University Malaysia houses sophisticated facilities and specialist technologies, we are committed with industry to provide solutions to global problems. I welcome you to engage our experts.

Associate Professor Emily Goh Joo Kheng
Head, School of Science
Monash University Malaysia

SCHOOL OF SCIENCE



Science at Monash is home to a vibrant, dynamic and world-renowned community at the forefront of innovation, discovery and learning.

We offer the following undergraduate and postgraduate courses:

Bachelor of Science

Majors offered:

- Applied microbiology
- Biotechnology
- Genomics and bioinformatics
- Medicinal chemistry
- Psychology
- Tropical environmental biology

Bachelor of Medical Bioscience

Bachelor of Food Science and Technology

(Accredited by the International Union of Food Science and Technology (IUFoST)).

Bachelor of Science (Honours)

This is a prestigious program of coursework and research in science for high achieving students who have completed a relevant undergraduate degree. Satisfactory completion of this course will provide the preparation necessary to undertake a master's by research degree or a doctoral (PhD) degree. Areas of study available:

- Biotechnology
- Food science and technology
- Medical bioscience
- Medicinal chemistry
- Psychology
- Tropical environmental biology

Postgraduate Courses

- Postgraduate Diploma in Science
- Master of Science (MSc)
- Doctor of Philosophy (PhD)

Globally Relevant Education

Our courses have a strong regional focus, but are globally relevant. Many of our units are also offered on the Clayton campus, Melbourne Australia, and are discipline areas where there is strong demand for high quality graduates in Malaysia, the region and beyond.

We also teach many units founded in Malaysia that play to our strengths and context. We are one of six Schools in Monash's Faculty of Science. Other Schools include School of Biological Sciences School of Chemistry, School of Mathematical Sciences, School of Earth, Atmosphere & Environment and School of Physics & Astronomy.

OUR RESEARCH CAPABILITY

Research Strengths

- More than 500 undergraduates and approximately 100 research students across Honours, MSc, and PhD
- Local students comprise about 80% of Science student population
- Uniquely 100% of our academic staff hold a PhD or MBBS/PhD
- We are part of a global university with a presence on four continents
- Our size and global presence gives our graduates opportunities other universities cannot offer – we provide an environment that identifies and nurtures talent – and turn that talent into ability
- Monash Malaysia's School of Science has a strong desire to make an impact, both locally and internationally

The School of Science is well-equipped to meet the demands of industrial collaboration. The University is housed in an RM 200 million Campus, with dedicated space for research in science, pharmacy, and medicine within a 73,000 m² complex. We have new, state-of-the art laboratories that focus on chemistry, bioscience, food science, and environmental science. The School has approximately 100 PhD, MSc, and Honours students, giving it a strong research profile. Being a part of the global Monash research effort, researchers based in Malaysia have easy access to the Monash Australia Infrastructure.

Research Infrastructure

Monash University Malaysia Genomics Facility: Lies within the School of Science and provides next generation DNA sequencing services.

Electron Microscopy Unit: Houses the Field Emission Scanning Electron Microscope (FE-SEM) and the Variable Pressure Scanning Electron Microscope (VP-SEM), which enable ultra-high resolution imaging for nanoscience and nanomaterials and biological analysis of cells, tissues and other soft materials.

Monash-Agilent Microarray Service Centre: Provides microarray instruments and all the software to interpret data, enabling molecular biology studies and monitoring gene expression levels.

NMR facility: Allows the characterisation of complex molecules.

Intelligent Lighting Laboratory: Focusses on solid-state lighting and organic electronics.

Crop Science Capability

Adeline Ting
adeline.ting@monash.edu

Associate Professor and Head, Discipline of Biological Sciences

Expertise

- Applied microbiology
- Plant health and crop protection
- Bioremediation and biodegradation
- Biosourcing valuable compounds and derivatives from microbes

CROP IMPROVEMENT, BIOCONTROL AND BIOREMEDIATION

We explore and harness various bacteria and fungi for use as biocontrol or bioremediative agents.

Use of endophytes to improve crop growth. This involves investigations on how endophytes could benefit plant growth by improving their vegetative growth and overall plant vigour. This will endow plants as with improved growth characteristics and they will be less susceptible to disease and adverse environmental conditions. The endophytes can be further developed as biofertilizers.

Screening for pollutant-degraders to manage toxic residue in soil and water. This would involve bioprospecting naturally-occurring microbes that have the potential to degrade toxic pollutants (metals, dyes, hydrocarbon, pesticides and fungicides) so that they can be used to breakdown the residual chemicals in the soil. This approach is more sustainable and will lead towards Green Environment. It will ensure the effective management of recalcitrant pollutants in agricultural soils.

Biosourcing for biocontrol agents for control of crop diseases in the tropics. We are harnessing beneficial microorganisms from soil and plants (endophytes) for use as biocontrol agents of crop diseases. We investigate their biocontrol efficacy in the lab and in potted-plants (soil environment). The interaction and influence of soil factors (acidic soil, metal-laden soils) on the diversity and functionality of biocontrol agents are also explored. Microbial bioagents can be further developed as biopesticides.

GENETICS AND BIOCHEMISTRY OF RICE

Our research applies a combination of genetics, transcriptomics, proteomics, and biochemical assays to identify economically valuable genes in rice.

Rice starch digestibility. Our research investigates genes involved in influencing the rate of digestion of cooked rice. Several promising lines from Bangladesh are being used in this study. We are collaborating with CSIRO Australia to conduct in vitro assessments of digestibility.

Rice oil. When rice is polished the residue is usually utilised for cattle or thrown away. However, the residue is approximately 20% oil. The extraction of this oil could be made more profitable by reducing the impact of lipases, which breakdown the triglycerides. Some lipases have been characterised but we have discovered two new ones, which could be important in the process.

Rice stress tolerance. This research interest investigates micro RNAs that could be involved in heat-tolerance of rice.

Non-nuclear DNA in rice. This project investigates bacteria associated with rice roots and rice organelles.

Professor Sadequr Rahman
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Professor and
Director of Tropical Medicine
Multidisciplinary Platform

Expertise

- Identifying genes for grain quality in rice germplasm
- Characterising lipases that break down triglycerides
- Rice microRNAs
- Microbial DNA in rice

Dr. Song Beng Kah
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Senior Lecturer

Expertise

- Genetics of weedy rice
- Next generation sequencing, transcriptomics and genome analysis for plant improvement

UNLOCKING THE GENETIC POTENTIAL OF WEEDY RICE

Weedy rice improvement. Weedy rice is a conspecific form of cultivated rice (*Oryza sativa* L.) that infests rice production areas worldwide. Despite being a notorious weed in rice industry worldwide, our research surveys weedy rice population structure and its ongoing evolution and origin. In collaboration with Washington University St Louis, and Chiang Mai University, this project focuses on Southeast Asian weedy rice as a model system. We are examining allelic variations at the genome level, mutations within domestication genes, and changes in agronomic and domestication traits of weedy rice.

Using a combination of whole genome sequencing, enriched target sequencing and biochemical assays, we are surveying weedy rice population structure and its ongoing evolution and origin.

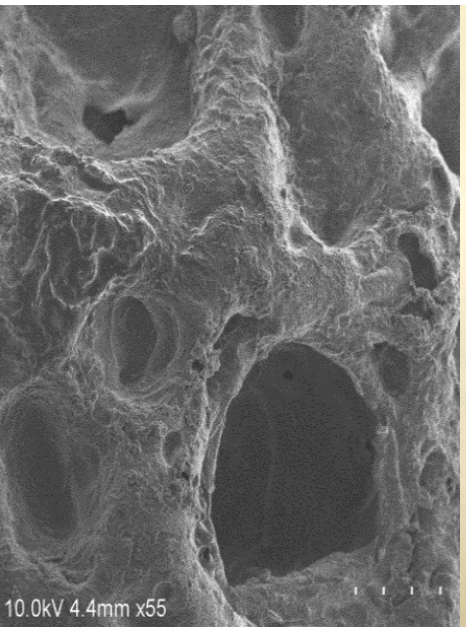
Genomics. We exploit next generation sequencing-based genomics, transcriptomics and population genetics for improvement of crops, particularly rice, medicinal plants, among others.

FOOD PROCESSING AND STORAGE

Food encapsulation. Our research interest involves encapsulating bioactive compounds, determining their physicochemical properties and understanding the release kinetics in various food matrices or food model systems. We use encapsulation techniques such as spray drying, complex coacervation, molecular inclusion and liposomes.

We partner with the industry to develop new food products that are safe, nutritious and wholesome.

Food processing. Our research studies the effects of processing such as freezing and heating and their pretreatments on the physicochemical properties of fruits, vegetables and bioactive compounds extracted from their waste.



Dr. Siow Lee Fong
siow.lee.fong@monash.edu

Associate Professor and Head, Discipline of Food and Physical Sciences

Expertise

- Microencapsulation and controlled release of bioactive compounds
- Frozen food chemistry
- Freezing, drying, and thermal analysis
- Release kinetics in food matrices
- Food product development

PEST MANAGEMENT IN CROPS AND PLANT BIOCHEMISTRY

Dr. Jasmine Hue Seow Mun
hue.seow.mun@monash.edu

Lecturer

Expertise

- Pest management in crops
- Pest resistance in tropical crops
- Secondary metabolites from plants for industrial usage

Pest management in crops. Our research uses Integrated Pest Management (IPM) methods for the management of tropical crops. This includes a combination of biological, chemical and cultural methods to reduce pest infestation in plantation.

Pest resistance in tropical crops. Pest resistance varieties are often selected by plant breeders in commercial planting. But what actually contributes to their resistance is often a mystery. Our research investigates the gene expression patterns for varieties that are resistant and susceptible to pest infestation. This is performed using molecular techniques.

Secondary metabolites from plants for industrial usage. Secondary metabolites, especially those that are beneficial to humans such as astaxanthin and lutein are often very expensive. We focus on studying the biosynthesis pathway of these metabolites and perform modifications to induce higher production of these metabolites via plant tissue culture. This area of research relies heavily on analytical chemistry and extraction techniques.

Pest infestation results in enormous economic losses to farmers and economy. Our research applies Integrated Pest Management methods to address this problem.

PRODUCING VALUE-ADDED PRODUCTS FROM SAGO WASTE

Our research aims to develop biodegradable polymers for drug delivery, slow release of fertilizers, and other industrial applications.

Controlled Delivery in Hydrogel Disks. Our research investigates the use of hydrogels prepared from Sago (*Metroxylon sagu*) waste as a controlled drug delivery vehicle. Here, we use radiation cross-linked hydrogel discs to release ciprofloxacin. Sustained drug release was obtained at pH 7.4 across 36 hours.

Controlled Delivery in Hydrogel Beads. Hydrogel beads prepared using aluminium chloride and further cross-linked with electron beam irradiation have been shown as a potential drug delivery carrier. Drug release at stomach pH has been minimised and sustained drug release was achieved at the colonic pH. This shows the potential of carboxymethyl sago pulp (CMSP) hydrogels in colon drug delivery systems.

Blended Hydrogels for Controlled Release. Polymer biocomposites have attracted much attention due to increasing requirements for biomaterials, which includes biocompatibility, biodegradability and non-toxicity. CMSP was added in mixture of polymers to improve the properties of other natural polymers by solvent casting. We have recently reported, for the first time, the complex coacervation of our hydrogels with gelatine for sustained drug delivery.

Dr. Pushpamalar Janarthanan
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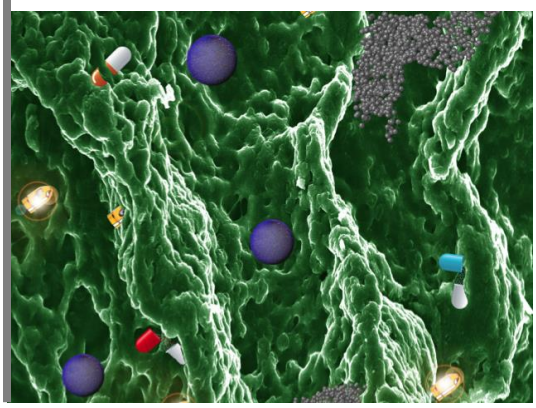
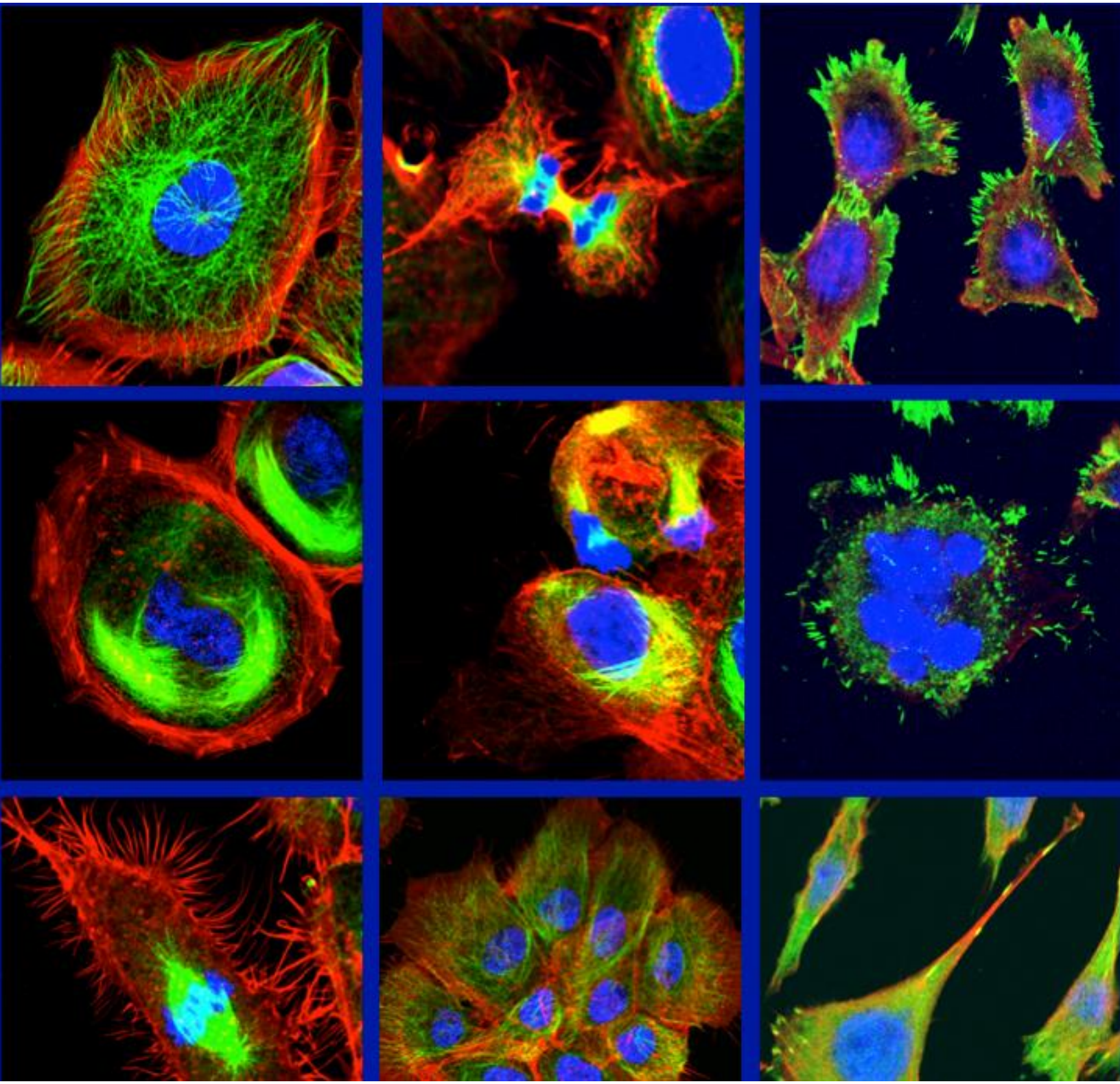
Senior Lecturer

Expertise

- Sago biomass derived hydrogels for slow release of fertilizers
- Characterizing properties of hydrogels
- Polymer chemistry
- Biodegradable plastics



Cell Biology and Biomedical Sciences Capability



SYSTEMS VIROLOGY APPROACH TO HOST-VIRUS RELATIONSHIPS

Translational outcomes on emerging viral diseases using Systems Biology approaches to new anti-viral targets, innate immune responses and disease biomarker discovery.

Professor Sunil K. Lal
sunil.lal@monash.edu

Professor of Microbiology

Expertise

- Molecular virology and emerging infectious diseases
- Viral strategies to host innate immune response
- Genomic and proteomic approaches to studying host-virus interactions

Viral strategies to evade host innate defense mechanisms. Pathogens that infect us device new and diverse strategies to overcome our cellular defense mechanisms. We study these strategies at a molecular biology level and try to understand how viruses exploit and suppress our natural anti-viral defense mechanisms.

The search for new anti-viral targets. When we fall sick due to a viral infection, virus encoded proteins interact with numerous host proteins in various sub-cellular compartments and use the cellular machinery for their own benefit. Deciphering the host factors that promote or inhibit virus replication can provide important insights into viral pathogenicity.

Transcriptome/interactome models using Systems Biology. Current "Omics platforms" can portray a "bird's eye view" of viral infection progression and gene expression profile dynamics in the host. Using influenza A virus as a model we combine transcriptome data with proteome-wide ligand binding systems biology networks to predict new targets.

Translational drug repurposing – using established drugs for combat of emerging viral infections. Using drug-target data, protein-ligand and molecular dynamics simulation, we investigate potential new drug repositioning for emerging infectious viral diseases.

IMMUNOTOXICOLOGY

Investigating how the immune system works will provide insights into how some immunological diseases arise and offer opportunities to understand the molecular basis of infection and diseases in the immune system.

Modulation of the immune system by xenobiotics. Disruption of immunity by xenobiotics is known to have profound effects on immune function. My interest lies mainly in the understanding of how xenobiotics modulate the immune system, particularly on T lymphocytes function. This knowledge will provide insights for development of new strategies for therapeutic intervention for some immunological disorders.

Mechanism and regulation of program cell death or apoptosis. Apoptosis plays a fundamental role in the normal development of lymphocytes, cytotoxic T lymphocyte and natural killer cell killing and maintenance of tissue homeostasis following immune responses. Because of this a number of diseases including most autoimmune diseases are the direct result of either immunosuppression or hyperactivity of the immune system caused by inappropriate or deregulated apoptosis. Understanding these processes can offer opportunities to advance our knowledge on the molecular basis of infection and diseases in the immune system.

Mechanism of death and extracellular survival of the apicomplexan parasite *T. gondii*. Identification of the death effectors involved in the parasite death pathway can be exploited for anti-parasitic drug development to combat and eliminate parasites that cause widespread infections.

Professor Chow Sek Chuen
chow.sek.chuen@monash.edu

Professor of Biomedical Science and Head, Discipline of Medical Bioscience

Expertise

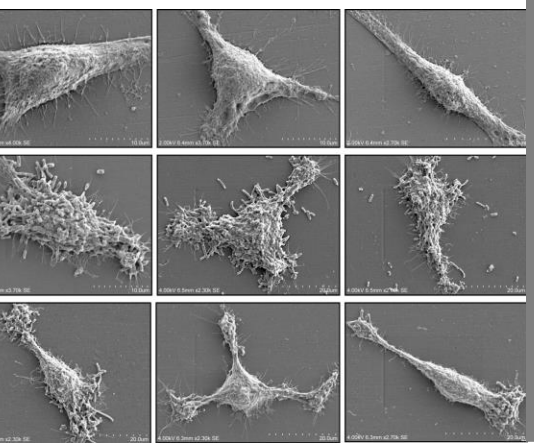
- Regulation of apoptosis/programmed cell death
- T-lymphocyte biology
- Toxicology
- Mechanism of death and extracellular survival of the apicomplexan parasite *Toxoplasma gondii*

Associate Professor
Kumaran Narayanan
kumaran.narayanan@monash.edu

Associate Professor and Deputy Head of School (Research)

Expertise

- Gene expression
- Artificial chromosome technology
- Gene therapy



GENE DELIVERY AND EXPRESSION IN MAMMALIAN CELLS

Our group is developing artificial chromosomes that can exist as stable independent chromosomes that provide prolonged gene expression in cells.

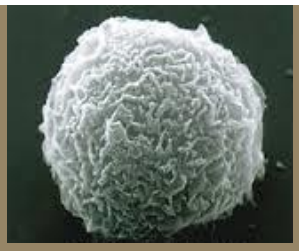
***E. coli* as a vector for gene delivery into mammalian cells.** Our research has adapted a non-pathogenic *E. coli* strain to deliver large chromosome-sized genes into mammalian cells. A vector capable of delivering such large DNA can include complete genes together with their introns, exons, and regulatory regions to permit more accurate expression of a genetic locus.

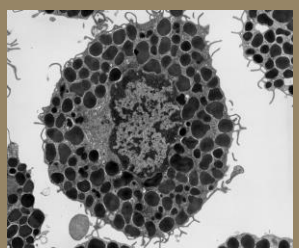
Artificial chromosome research. Gene therapy requires development of improved vectors for long-term retention and accurate expression of transgenes in cells. Our research is developing artificial chromosomes that can exist as stable independent chromosomes that provide prolonged gene expression.

Genetic correction of Fabry disease. Mutations in the α-gal A gene result in accumulation of the glycolipid ceramide trihexosidase in several organs including skin, liver, heart, and vascular endothelial cells, leading to renal, cardiac, and cerebrovascular failure and early death. We are developing strategies to deliver the full-length α-gal A gene in cell lines and animal models in order to understand the requirements for the genetic correction of this problem in Fabry patients.

ETHNOPHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS

Phytochemical's therapeutic properties. Over the years, human population have suffered from various diseases as our world progress through evolution of societies, cultures and technologies. These diseases for example allergy, Alzheimer's disease, and cancer have caused millions of lives and money lost every year. Sadly, current modern medicine is mostly palliative by easing the severity of a pain or a disease without removing the cause. Therefore, researches have started to look for other alternatives to combat these diseases. Medicinal plants are gaining renowned interest in scientific communities nowadays due to their reliable pharmacological actions and affordability to common people which makes them effective in control of various diseases. Our research focus on the therapeutic properties of natural products against human diseases, particularly allergic inflammation and neurodegenerative diseases.





With Malaysia's rich and diverse natural resources, our research focuses on discovering potential phytochemicals against human diseases, and to unfold their capabilities within the cell.

Study of cellular and molecular signaling pathways. Cellular and molecular signaling is a complex ballet of molecules interacting and stimulating surrounding proteins, lipids, and ions, resulting in cytoskeletal reorganization, modulation of differentiation, and induction of gene expression. The choreography of events in signaling pathways has been a hot topic in the past few years. We hope to explore how a potential therapeutic compound exert its beneficial effects within a cell by unfolding its role within the complex signaling pathways of a cell.

Dr. Tan Ji Wei
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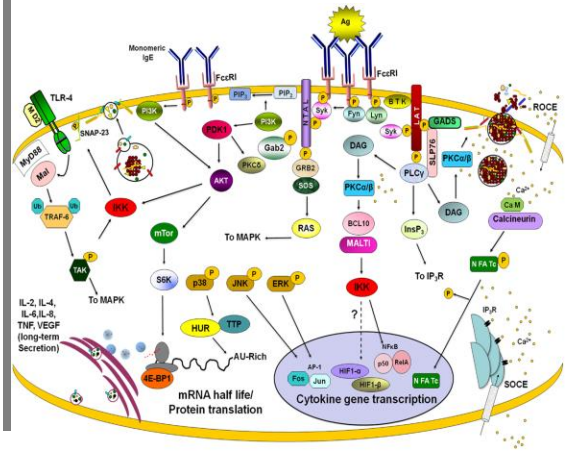
Lecturer

Expertise

- Anti-inflammation and allergy
- Etnopharmacology
- Cellular and molecular signaling pathways



Dr. Kirti Shukla
kirti.shukla@monash.edu

Lecturer

Expertise

- Gene expression analysis
- RNA biology
- Signaling pathways
- Cancer biology
- Bioinformatics

miRNAs AS BIOMARKERS IN CANCER AND INFECTIOUS DISEASES

MicroRNAs (miRNAs) are a class of non-coding RNA which are of ~22 nucleotides in length. They regulate gene expression through RNA Interference pathway and repress target gene expression mainly by base pairing with the 3'-untranslated region (3'-UTR) of their target messenger RNA (mRNA). This class of regulators has been described to have an important role in a vast range of biological process such as proliferation, differentiation and apoptosis. My aim is to explore role of miRNAs as biomarkers in disease models with following projects.

Effect of miRNA expression on regulation of tumor cell survival in response to oxidative stress. In this project, the aim is to evaluate miRNAs that regulate cell survival in response to oxidative stress caused by pro-apoptotic peptides such as the cathepsin B inhibitor, benzyloxycarbonyl-phenylalanine-alanine-chloromethylketone (z-FA-CMK) in an in vitro cancer cell model.

My research focus is to study miRNA and gene expression de-regulation that leads to disease progression.

Role of miRNA in regulation of NF-κB signaling in Influenza A virus disease model. In this project, the aim is to evaluate miRNAs that are significantly involved in regulation of NF-κB signaling pathways by targeting different proteins in response to Influenza A virus infection in human cell line models. This will identify miRNA biomarkers involved in disease progression.

Mining circRNA and miRNA binding sites in viral genomes. We do bioinformatics analysis to look for binding sites within the viral genome which can be targeted by miRNA and circular RNA to reduce viral replication to serve as drug targets.

PHARMACOPROTEOMICS AND TOXICOPROTEOMICS

Proteomics have been powerful tools to unravel the complexity of proteins in the path of discovering bioactive proteins and elucidating their pharmacological actions.

Toxicology of bioactive proteins from medically important venomous species. Snake venoms is enriched with proteins and polypeptides exhibiting different pharmacological actions. The study on venoms' toxicology is essential to understand the pathophysiology of envenomation towards the development of effective antivenom as management of envenomation.

Venomics. Recent advances in protein identification using sophisticated mass spectrometry, multifaceted chromatography and integrated venom protein database have made possible an overall understanding on the venom compositions. These approaches are toxins-targeted to identify venom toxins of poor immunogenicity and venom toxins for supplementing immunisation to improve antivenom efficacy which contribute to the formulation of pan-regional antivenom to overcome regional antivenom crisis.

Molecular dynamics and toxin-receptor docking. The correct folding and dynamic of a toxin is influenced by the amino acids distribution within its functional toxin. Furthermore, the possible interaction of cytotoxin with membrane-bound protein receptors remains unraveiled. Our lab is currently interested to investigate the resolution and dynamic of cytotoxin in its solution structure and combination with computational approach on the toxin-receptor conformation to a better comprehension of the molecular basis underlying cytotoxicity.

Dr. Michelle Yap
yap.michelle@monash.edu

Lecturer

Expertise

- Toxicology and pharmacology of bioactive proteins
- Pharmacokinetics
- Proteomics
- Molecular genetics

Dr. Lee Wai Leng
lee.wai.leng@monash.edu

Senior Lecturer

Expertise

- Cancer cell biology
- Proteomics
- Ethnobotany

MOLECULAR AND CELL BIOLOGY OF CANCER

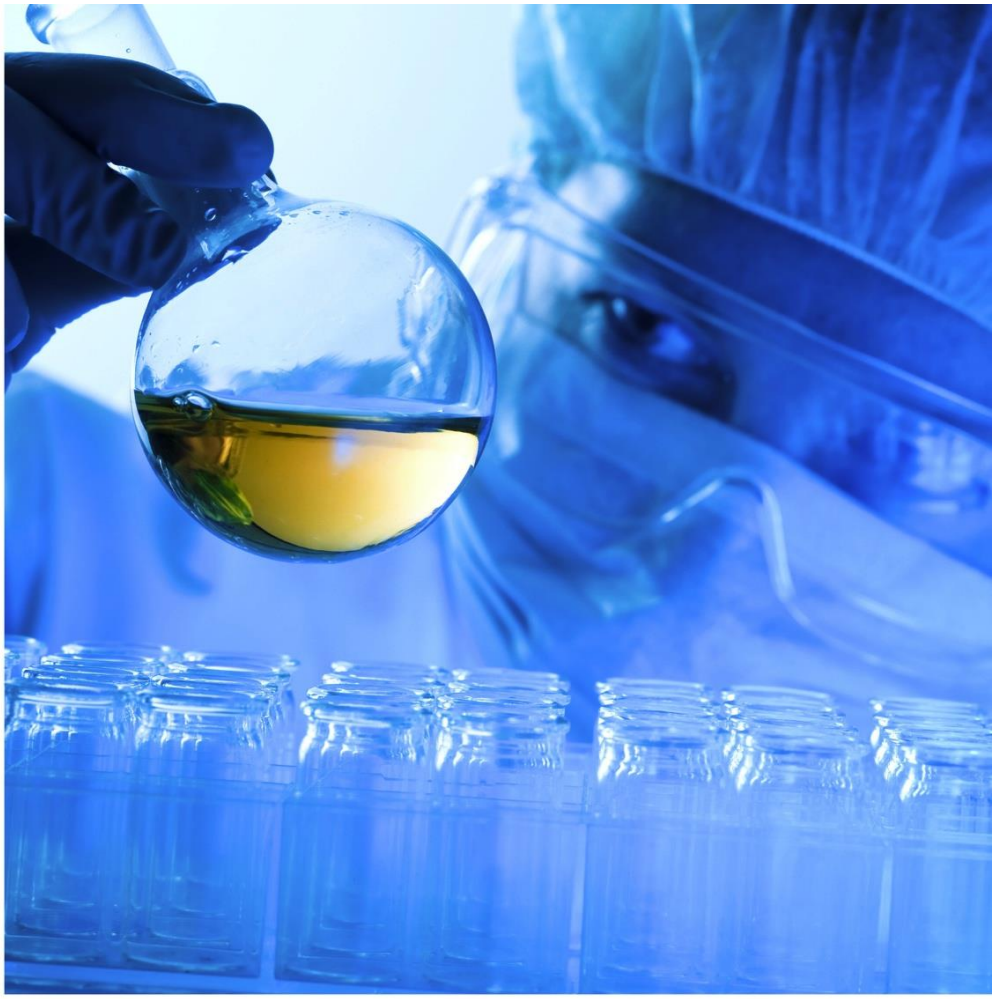
Development of novel treatments for treating life-threatening cancer diseases. Concerns about drug resistance and side-effects of currently used therapeutic agents have raised interest in phytochemicals derived from dietary foods and traditional medicines which allow safe and continuing ingestion. Our research aims to screen local medicinal plant-derived phytochemicals for cancer treatment.

Our lab is screening local medicinal plant-derived phytochemicals for cancer treatment.

Novel targetable pathways in cancer treatments. Several novel signalling pathways in breast cancer were discovered in my previous study. Among the components involved in these pathways, exosome is an extremely intriguing target in cancer treatment. Exosomes are microvesicles released from various cell types into the extracellular space for intercellular communication. My lab is investigating the roles of exosomes in cancer biology.

Study of phytoagents in modulation of cellular redox level. It is commonly known that vitamins and various phytoagents antagonise carcinogen-triggered oxidative stress by scavenging free radicals and/or activating endogenous defence systems. Lately, the prooxidant effects of some phytoagents pose selective cytotoxicity on cancer cells and shed light on a new strategy of cancer therapy. We are now interested in exploring the "double-edged sword" role of phytoagents as redox regulators to provide rationales for their use as chemopreventive or therapeutic agents.

Chemistry Capability



METAL CARBENE COMPLEXES AND BIOLOGICAL PROPERTIES

Our lab is studying the synthesis and structural characterisation of Group 10 Metal N-Heterocyclic Carbene (NHC) complexes and its biological activities.

Dr. Cheow Yuen Lin
cheow.yuen.lin@monash.edu

Lecturer

Expertise

- Natural product chemistry
- Organometallic chemistry and medicinal chemistry

Organometallic chemistry and medicinal chemistry. Our research is studying the synthesis and structural characterisation of Group 10 Metal N-Heterocyclic Carbene (NHC) complexes and its biological activities. Our project will be the first to prepare and evaluate the biological properties of chiral nickel, palladium and platinum pyridine-N-heterocyclic carbene complexes. We have synthesised group 10 metals that incorporate chiral-*C* backbone bidentate pyridine-N-heterocyclic carbene. Molecular structures and absolute configurations are being determined by 2D-^{1}H-^{1}H ROESY NMR spectroscopy and X-ray diffraction analyses. The biomedical applications of these metal complexes will be evaluated *in vitro* in antimicrobial assays against several strains of Gram-positive and Gram-negative bacteria, as well as in anticancer assays against three human carcinoma cell lines, including HeLa (cervical cancer), MCF-7 (breast cancer) and HCT 116 (colon carcinoma).

Natural product chemistry. Our lab is isolating and characterising novel bioactive compounds from Malaysian tropical plants and bacteria obtained from tropical peat swamp forest soil. The ecosystem biodiversity in Malaysia is among the world's richest and its potential as a vast pharmaceutical store bank has been cited by many scientists. We believe a myriad of interesting chemistry and biology can be discovered from our ecosystem.

BIOACTIVE COMPOUNDS AND CHEMICAL SENSORS

Our group is isolating bioactive compounds from medicinal plants with anti-inflammatory and wound healing properties.

Bioactive compounds from *Hemisgraphis alternata* (Red ivy) and its anti-inflammatory and wound healing properties. This project focuses on bioassay-guided purification method. It aims to investigate the anti-inflammatory activity and wound healing properties of *H. alternata* and to isolate and identify the potential bioactive compound(s).

Evaluation of antioxidants, antimicrobial and anticancer properties of *Fagrea spp.* Our work focuses on bioassay-guided purification to investigate the antioxidants, antimicrobial and anticancer properties of *Fagrea spp.* and to isolate and identify the potential bioactive compound(s).

Chemical synthesis of imidazole naphthyridine derivatives positive inotropic agent. This compound is known to increase muscular contractions and decrease heart rate in anaesthetised rats. Our research will evaluate its suitability to be an alternative drug for CHF by investigating the molecular mechanism and their toxicity.

Chemical sensor for the determination of flavanoids. This research aims to develop an analytical device i.e. chemical sensor, which could be used as a detection kit. This study mainly employs electrochemical method such as voltammetry technique due to its fast, easy and cost effective benefits.

Associate Professor
Emily Goh Joo Kheng
goh.joo.kheng@monash.edu

Associate Professor and Head of School

Expertise

- Natural product chemistry
- Chemical sensors and biosensors
- Electroanalytical chemistry

NATURAL PRODUCTS

Our research focuses on plants with exceptionally stable natural pigments to identify, characterise and develop them for potential applications in the food industry.

Dr. Joash Tan Ban Lee
tan.ban.lee@monash.edu

Lecturer

Expertise

- Bioactivity of phytochemicals
- Potentiation of antibiotic activity via synergism with natural products
- Extraction and isolation of bioactive phytochemicals

Our lab specialises in natural products research. This includes bioactivity determination of extracts; isolation, identification, and characterisation of individual compounds; and real-life application of natural products.

Potentiation of antibiotics via synergism. The rapid rise of antibiotic-resistant bacteria is a major concern worldwide. We are working to improve the activity of existing antibiotics via synergism with natural products, thus breathing new life into once-defunct antibiotics.

Stable natural food colorants. Our research focuses on plants with exceptionally stable natural pigments to identify, characterise and develop them for potential applications in the food industry.

Bioprospecting: bioactivity of naturally-occurring compounds. Our group examines the antimicrobial, antioxidant, anticancer and antidiabetic activity of extracts from plants, microalgae and fungi; as well as identifying the compounds responsible for the aforementioned bioactivities.

Rebar corrosion inhibition. Steel bars are a crucial reinforcing element in concrete construction, but are prone to corrosion. We are looking into minimising this oxidation with the use of natural products in the concrete mix without requiring extensive retrofitting, or entirely replacing steel.

BIOACTIVITIES FROM TROPICAL AND HERBAL PLANTS

Our research is isolating and identifying phytochemicals responsible for antibacterial and antioxidant activities.

Bioactive compounds from plants. We are investigating the bioactivities of extracts from several selected plants. The phytochemicals responsible for the various activities are being isolated and identified.

Herbal plants processing. This research investigates factors that affect changes in bioactivity herbal leaf samples as well as changes in the plant oxidase enzymes activity upon oven drying and ambient air drying. A number of herbal leaf samples are currently being investigated which include *Alpinia galangal, Morus alba, Orthosiphon stamineus, Vitex negundo, Vitex trifolia 'Purpurea' Gynuru procumbens, Thunbergia grandiflolia* and *Persea Americana* (avocado).

Bioactivities of bezoar stones. The research investigates the antioxidant, anti-inflammatory and anticancer activities of bezoar stones that are commonly used in Traditional Chinese Medicine (TCM) treatments such as cancer, post-surgical recovery, dengue fever. Its medicinal values remain to be verified scientifically due to availability and high pricing. We are investigating the bioactivities of different types/classes of bezoar stones and identifying the active compounds/fraction from the solvent extracts.

Associate Professor
Lim Yau Yan
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Associate Professor

Expertise

- Food chemistry
- Natural products
- Herbal plants processing
- Inorganic chemistry

Dr. Pushpamalar Janarthanan
pushpa.janarthanan@monash.edu

Senior Lecturer

Expertise

- Sago biomass derived hydrogels for slow release of fertilizers
- Characterising properties of hydrogels
- Polymer chemistry
- Biodegradable plastics

POLYMER CHEMISTRY

Controlled release system for anticancer drugs. We are developing carboxymethylcellulose hydrogels for anticancer drug delivery. These hydrogels, with many pores and shaped into beads, biodegrade to release the drug. Our lab is studying the controlled release pattern of these hydrogels during drug delivery.

The outstanding antimicrobial properties of silver nanoparticles have led to the development of a wide variety of medical devices.

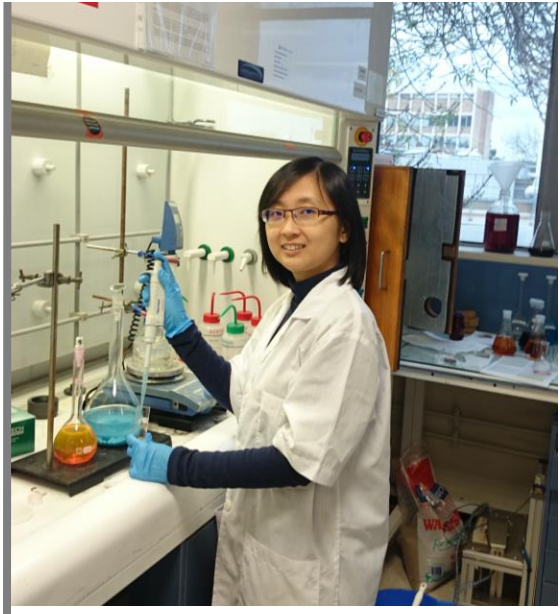
Carboxymethylcellulose polymer nanoparticles for removal of metal ions and dyes. We have developed nano-enhanced polymeric membrane by addition of different types of modified iron oxide nanoparticles. Subjecting appropriate organic/inorganic modifiers for inorganic nanoparticles like iron oxide could promote removal of metal ions and dyes.

Green biosynthesis of silver nanoparticles using Algae aqueous extract. The outstanding antimicrobial properties of silver nanoparticles (Ag-NPs) have led to the development of a wide variety of nanosilver products, including nanosilver-coated wound dressings, contraceptive devices, surgical instruments, and implants. We are adapting phytochemicals from marine algae, including hydroxyl, carboxyl, and amino functional groups as metal-reducing agents and as capping agents to provide a robust coating on the metal nanoparticles in a single step.

Assembly of nanofibers using electrospinning technology. To achieve a higher degree of controlled drug release we are using halloysite nanotubes to assemble improved microfibers.

SUPRAMOLECULAR CHEMISTRY

Design and construction of controlled supramolecular and nanometric structures based on the concepts of molecular recognition and self-assembly.



Dr. Irene Ling
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Lecturer

Understanding the self-organisation of small molecules into supramolecular assemblies in solid state (crystals) and in liquids (or solutions) is a key component in developing functional materials. Present research focuses on:

Co-operative self-assembly. Much is established in gaining control over the self-assembly related to macrocyclic molecules, with the ability to form multi-component structures and aggregates with specific arrays, such as fibres, bilayers and spheroidal structures. The design and synthetic strategies of new compounds with designer properties are useful for a wide range of applications.

Nanoparticle. The approach of using water-soluble macrocyclic molecules is particularly noteworthy as a potential self-assembled strategy for stabilising a wide range of materials with limited solubility in aqueous media including carbon rich nanomaterials and drug molecules.

Green chemistry. A variety of efficient and eco-friendly synthetic protocols are investigated to achieve clean reaction, ease of product isolation, short reaction time, mild reaction conditions and the use of benign solvent.

Expertise

- Supramolecular chemistry
- Solid-state and solution chemistry
- Nanomaterials

MEDICINAL CHEMISTRY

Research focused on organic synthesis of small molecules with medicinal properties.

"Transforming chemicals to drugs"

Dr. Yeong Keng Yoon, Ken
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Lecturer

Expertise

- Medicinal chemistry
- Drug design and discovery
- Organic synthesis
- Immunoassay development

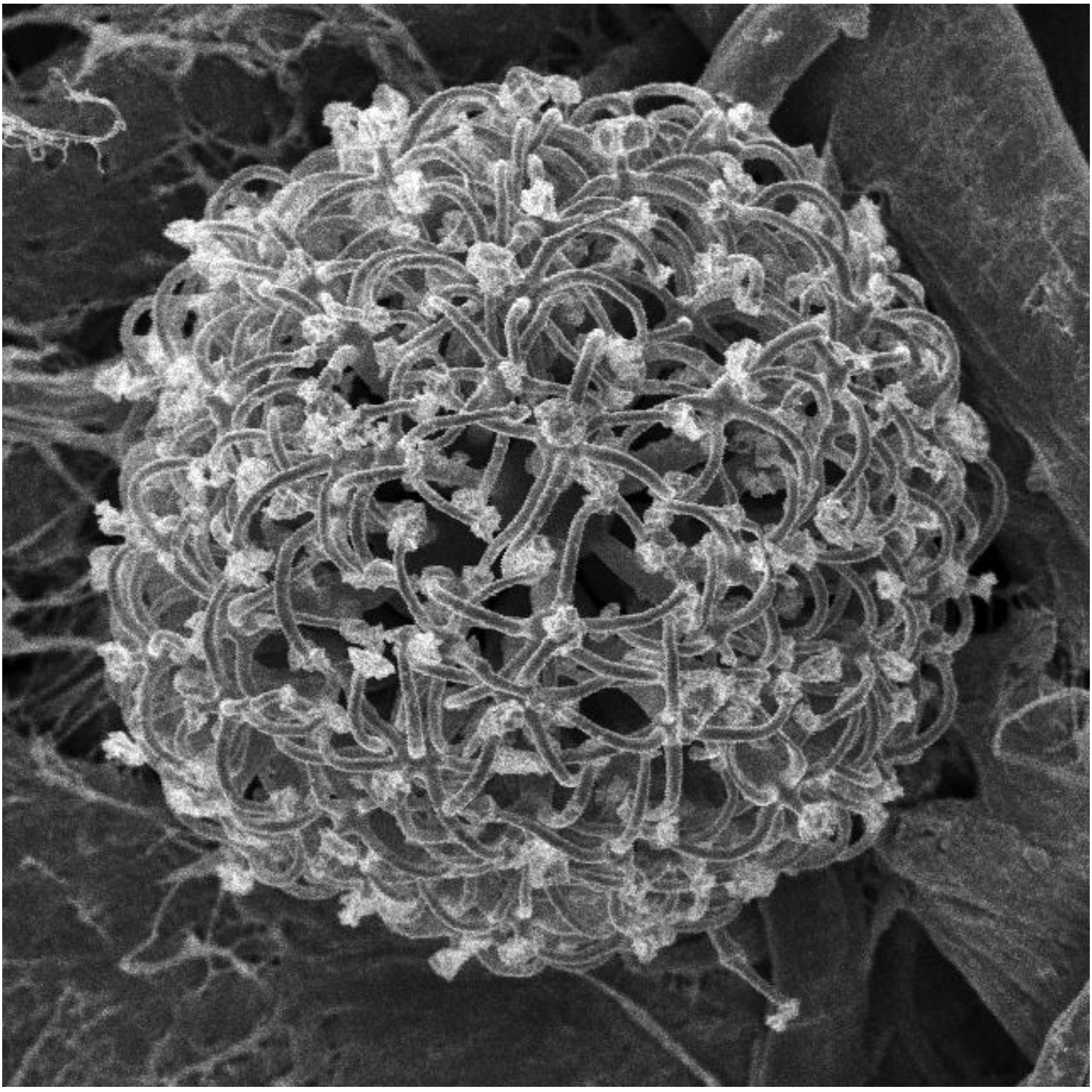
Medicinal chemistry. The core theme of research revolves around medicinal chemistry. Of particular interest is utilizing small molecules to target diseases such as cancer and Alzheimer's. Another area of research interest is in searching for a new class of antibiotics.

Organic synthesis. Total synthesis of compounds with biologically active scaffold such as benzimidazoles, nitrobenzoates, and spiro compounds. Synthetic modifications of naturally active compounds are also of interest.

Theranostics. Therapy cum diagnostics. Autofluorescent compounds with medicinal properties are an extremely exciting breed of molecules with wide-ranging applications in biomedical and bioimaging field.

Sirtuins. Sirtuin enzymes are potentially the master control switch of aging. Modulation of these enzymes are therefore deemed important in regulating/treating various age-related diseases such as cardiovascular, metabolic and neurological disorders as well as cancer. Currently, 7 mammalian sirtuins have been identified (SIRT1-7). We are interested in developing sirtuin activators/inhibitors to treat age-related disorders.

Microbiology Capability



MEDICAL MICROBIOLOGY

We have had a long-standing interest in studying the prevalence of antibiotic-resistant bacterial pathogens such as MRSA, ESBL and VRE in Malaysia.

Dr. Lee Sui Mae
lee.sui.mae@monash.edu

Associate Professor

Expertise

- Isolation and characterisation of antimicrobial compounds
- Bacterial oxidative stress response genes
- Applications of antimicrobials

Antimicrobials from plants and microbes. Our group's main research focus is to isolate and identify potentially novel antimicrobial, anticancer and antibiofilm compounds from plants and microorganisms found from tropical peat swamp forests and pristine forests of Sabah.

Oxidative stress response in bacteria. Another area of strength in our laboratory is the application of various molecular techniques to elucidate the oxidative stress response of *Enterococcus faecalis* and understanding the role of its recA protein in biofilm formation.

Antibiotic resistance. We have had a long-standing interest in studying the prevalence of antibiotic-resistant bacterial pathogens such as MRSA, ESBL and VRE in Malaysia.

Application of antimicrobial compounds. We are working towards developing applications involving antimicrobial compounds such as new antimicrobial water filters and paint.

PATHOGENIC MECHANISMS OF INFECTIOUS DISEASES

Our group was first to identify introns in *A. actinomycetemcomitans*, which may potentially play a role in the onset of periodontal disease.

Molecular pathogenesis and epidemiology of periodontal disease. Periodontal disease is a multi-microbial disease caused by anaerobic bacteria such as *Actinobacillus actinomycetemcomitans* and *Porphyromonas gingivalis*. Our group was first to identify introns in *A. actinomycetemcomitans*, which may potentially play a role in the onset of periodontal disease. Our research additionally demonstrated the presence of a toxin gene in *P. gingivalis*, which may interfere with the repair of bone tissue damaged by other oral pathogenic bacteria.

Pathogenesis of *Clostridium difficile*. Another research focus of our lab is to understand the pathogenic mechanisms of pseudomembranous colitis caused by *Clostridium difficile*, which results in inflammatory disease

Associate Professor
Song Keang Peng
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Associate Professor and Deputy Head of School (Education)

Expertise

- Epidemiology and pathogenesis of periodontal disease
- Molecular pathogenesis of bacterial disease
- Regulation of bacterial toxin expression
- Molecular biology

APPLIED MICROBIOLOGY

We explore the use of bacteria and fungi as biocontrol and bioremediative agents for sustainable environmental applications.

Associate Professor Adeline Ting
adeline.ting@monash.edu

Associate Professor and Head, Discipline of Biological Sciences

Expertise

- Applied microbiology
- Plant health and crop protection
- Bioremediation and biodegradation
- Biosourcing valuable compounds and derivatives from microbes

Biocontrol agents. Our research aims to develop bacteria and fungi as biocontrol agents for the control of plant diseases of major crops in the tropics. This reduces pesticide usage and residues in the environment.

Bioremediative and biodegradative agents. We explore the use of microbes for the removal of dyes, metals and hydrocarbon from water, achieved via biosorption or biodegradation. This approach is more sustainable and will lead towards Green Environment. It will ensure the effective management of recalcitrant pollutants in the environment.

Harnessing valuable compounds from microbes. Our interest is to harness valuable antimicrobial compounds, enzymes, pigments and an array of other bioactive compounds from microbes. These compounds are useful for the various agricultural, pharmaceutical, and industrial applications.

SYSTEMS VIROLOGY APPROACH TO HOST-VIRUS RELATIONSHIPS

Translational outcomes on emerging viral diseases using Systems Biology approaches to new anti-viral targets, innate immune responses and disease biomarker discovery.

Viral strategies to evade host innate defense mechanisms. Pathogens that infect us device new and diverse strategies to overcome our cellular defense mechanisms. We study these strategies at a molecular biology level and try to understand how viruses exploit and suppress our natural anti-viral defense mechanisms.

The search for new anti-viral targets. When we fall sick due to a viral infection, virus encoded proteins interact with numerous host proteins in various sub-cellular compartments and use the cellular machinery for their own benefit. Deciphering the host factors that promote or inhibit virus replication can provide important insights into viral

pathogenicity.

Transcriptome/interactome models using Systems Biology. Current "Omics platforms" can portray a "bird's eye view" of viral infection progression and gene expression profile dynamics in the host. Using influenza A virus as a model we combine transcriptome data with proteome-wide ligand binding systems biology networks to predict new targets.

Translational drug repurposing – using established drugs for combat of emerging viral infections. Using drug-target data, protein-ligand and molecular dynamics simulation, we investigate potential new drug repositioning for emerging infectious viral diseases.

Professor Sunil K. Lal
sunil.lal@monash.edu

Professor of Microbiology

Expertise

- Molecular virology and emerging infectious diseases
- Viral strategies to host innate immune response
- Genomic and proteomic approaches to studying host-virus interactions

Food Science and Technology Capability

Dr. Thoo Yin Yin
thoo.yin.yin@monash.edu

Lecturer

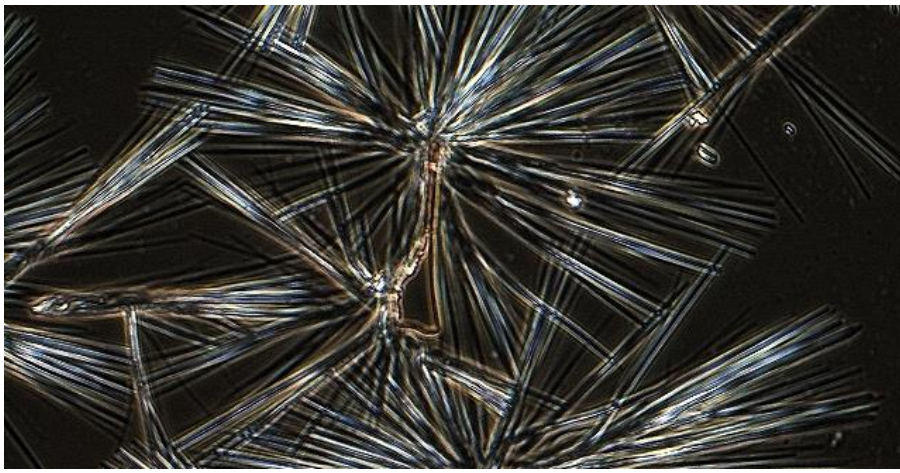
Expertise

- Antioxidant synergy on oxidative stability
- Activity of antioxidants as a function of their solubilisation in emulsions and lipids
- Value-added food products

STRUCTURE FATS AND FUNCTIONAL FOODS

We are utilising organogelation as an alternative processing method to structure lipid oil without generation of trans-fatty acids.

Characterisation and modulation of physical properties of palm oil-based organogel. We are utilising organogelation as an alternative processing method to structure lipid oil without generation of trans-fatty acids. Our research aims to modulate the physical properties of organogels to resemble physical properties of margarine spreads.



Stability and efficacy of natural antioxidant in food systems. Natural antioxidants have attracted much attention due to its ability to retard lipid oxidation by scavenging free radicals in food system. The physical location of the antioxidants in food system is associated to the polarity of both antioxidant and food system. We are investigating the stability and efficacy of hydrophilic and hydrophobic antioxidants as influence of polarity of food system during high heat treatment.

BIOACTIVE COMPOUNDS IN FOOD AND FOOD TECHNOLOGY

Our group aims to investigate the natural pigments from various sources to be used as colorants in food, pharmaceutical and cosmetic industries.

Pectin extraction and characterisation. Pectin is used as a gelling agent, thickening agent or emulsifiers in food, pharmaceutical and cosmetic industries. In spite of its availability in a large number of plant species, commercial sources of pectin are limited. Our research aims to utilise waste from Malaysian food industry to extract pectin.

Enzymatic modification of bioactive compounds. We aim to modify bioactive compound chemically using enzymes. Most of the compounds that are useful to us are easily broken down by heat and oxygen. Such compounds need to be engineered using gentle conditions. Use of enzymes allows us to do this and still retain their efficiency.

Functional natural colorants. The growing interest of consumers in the aesthetic, nutritional and safety aspects of food has increased the demand for natural food additives. Our group aims to investigate the natural pigments from various sources to be used as colorants in food, pharmaceutical and cosmetic industries.

Production of probiotic non-dairy beverages. The growing interest of consumers in the aesthetic, nutritional and safety aspects of food has increased the demand for functional foods or foods that potentially offer health benefits beyond basic nutrition. We are working towards producing healthy non-dairy beverages that contain good bacteria for the benefits of those who cannot eat dairy products.

Dr. Choo Wee Sim
choo.wee.sim@monash.edu

Senior Lecturer

Expertise

- Bioactive compounds in foods
- Enzyme technology
- Lipid technology

Dr. Siow Lee Fong
siow.lee.fong@monash.edu

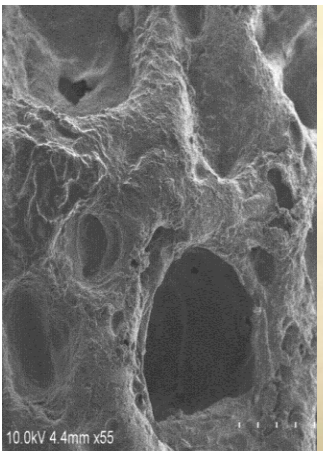
Senior Lecturer and Head, Discipline of Food and Physical Sciences

FOOD ENCAPSULATION AND PROCESSING

We partner with the industry to develop new food products that are safe, nutritious and wholesome.

Expertise

- Thermal properties and phase transition of fats and oils
- Microencapsulation and controlled release of bioactive compounds
- Freezing and drying technology
- Food product development



Chocolate. We develop cocoa butter alternatives from fats and oils for chocolate and chocolate coating used in confectionery, biscuit or frozen dessert applications by understanding the thermal and physical properties of fats and oils. We are interested to understand the properties of cocoa butter alternatives in formulations with reduced sugar. Our aims is to produce quality chocolate with affordable price.

Effect of food processing on the physicochemical and antioxidant properties of fruits and vegetables. Our research studies the effects of processing such as freezing and drying and their pretreatments on the physicochemical and antioxidant properties of fruits, vegetables and bioactive compounds. We are working towards extending the shelf life of fruits and vegetables.

Encapsulation and controlled release. Our research interest involves encapsulating bioactive compounds, determining their physicochemical properties and understanding the release kinetics in various food matrices, food model systems or in vitro. We use encapsulation techniques such as spray drying, complex coacervation, molecular inclusion and liposomes. Our aims is to protect the bioactive compounds from external environment and to improve their bioaccessibility and bioavailability.

Food product development. Our research also explores the reuse of underutilized plants or waste from food processing for food product development to minimize food waste. We are keen to explore bioconversion as a mean to convert waste to food.

EDIBLE FATS AND OILS

Our group design and synthesize healthful lipid and fat analogs for nutraceutical and food applications.

Fats and oils structural modification. We alter the structure of conventional fats and oils for the synthesis of healthful structured lipid by rearranging and adding specific fatty acid on the glycerol backbone of triacylglycerol *via* enzyme lipase-catalyzed reaction.

Enhancement of physical, chemical and physiological property of fats oils. Through the understanding on the physiochemical properties of fats and oils, we attempt to employ economical lipid technology approaches to extend the application of fats and oils in various food products. Moreover, our group is keen to explore the incorporation of essential fatty acid on the fat-based food products to improve its nutritional content.

Palm oil products. Our group investigates the utilization of various palm oil fractions for the development of fat-based food products. We are also interested in exploiting the by-products from palm oil processing for various applications.

Optimization of processing parameters. We utilize response surface methodology to see the interaction between reaction parameters and determine the "sweet spot" with just a minimal amount of the reaction parameters.

Dr. Lee Yee Ying
lee.yeeying@monash.edu

Lecturer

Expertise

- Structural modification of fats and oils
- Application of fats and oils in food and nutraceutical product
- Physicochemical property of fats and oils
- Palm oil product

Dr. Joash Tan Ban Lee
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Lecturer

Expertise

- Bioactivity of phytochemicals
- Natural products chemistry
- Extraction and isolation of bioactive phytochemicals

NATURAL PRODUCTS

Our research focuses on plants with exceptionally stable natural pigments to identify, characterise and develop them for potential applications in the food industry.

Our lab specialises in natural products research. This includes bioactivity determination of extracts; isolation, identification, and characterisation of individual compounds; and real-life application of natural products.

Stable natural food colorants. There is growing consumer demand for natural food colorants following health concerns regarding synthetic colorants. Unfortunately, most natural plant-derived pigments often suffer from low stability compared to synthetic pigments. We focus on plants with exceptionally stable natural pigments in an effort to identify, characterize and develop them for potential applications in the food industry.

Ecology Capability

BIODIVERSITY AND WATER MANAGEMENT

Our research focuses on ways to manage waterways for aquatic biodiversity and for people in Malaysia.

Dr. Holly Barclay
holly.barclay@monash.edu

Lecturer

Expertise

- Aquatic invertebrate biodiversity
- Water management of oil palm landscapes
- Biological monitoring of water quality

Ecology and conservation of Malaysian river invertebrates. Freshwater biodiversity is the world's most threatened group of wildlife however our knowledge of the types of animals living in Malaysian streams and rivers, and their environmental requirements, remains incomplete. By understanding the relationship between environmental change, water quality and aquatic species living in Malaysian rivers our research is investigating how to protect these animals as well as how they can be used as biological indicators for monitoring river health. A particular research focus is for our team is how oil palm agriculture can be managed to help protect aquatic ecosystems, including the impact of sustainability certification schemes on agricultural management

Tropical forests and sustainable water management. We are studying the relationship between forest management and water provision in tropical water catchments. This research will have implications for the sustainable management of water supplies in Malaysia during upcoming decades.

Dr. Sze Huei (Zoe) Yek
Yek.szehuei@monash.edu

Senior Lecturer

Expertise

- Evolutionary ecology
- Insect symbiosis
- Genomics tools for non-model organism
- Science writing

EVOLUTIONARY ECOLOGY AND BEHAVIOUR OF INSECT SYMBIOSIS

An interdisciplinary approach to insect symbiosis. Insect symbiosis pervades almost every terrestrial ecosystem. They are especially diverse in the tropics. Depending on their symbionts, they perform different functions in their respective habitats. Because of their diversity, we adopt an interdisciplinary approach that aims to characterize the partners, their context in the symbiosis, their behavioural and physiological roles as interdependent partners in the symbiosis.

Our group is working toward understanding how different insect symbiosis evolved and are maintained.

Ants evolution and diversification. The ants are the only major lineage of social insects that are characterised by obligate reproductive (the queen is the sole reproducing individual in the entire colony) and division of labour by morphologically distinct caste (workers and soldiers). To understand the origin and adaptive significance of these traits, a global initiative (http://antgenomics.dk/) starts to collect comprehensive dataset of the genomic diversity of the world's ant genera. Our group is the focal collaborator in contributing to the SE Asian ants genera for this global genomic project.

Science outreach through storytelling. There's a knowledge gap in communicating our science to the general public. Traditionally, we rely on journalists that have little or no science background to do the work for us. I provide a science outreach platform (https://www.scihealthnews.com/) where the goal is to train scientists to write for the general public. Essentially, tell your research story in an engaging and informative way!

Dr. Foo Su Chern
foo.suchern@monash.edu

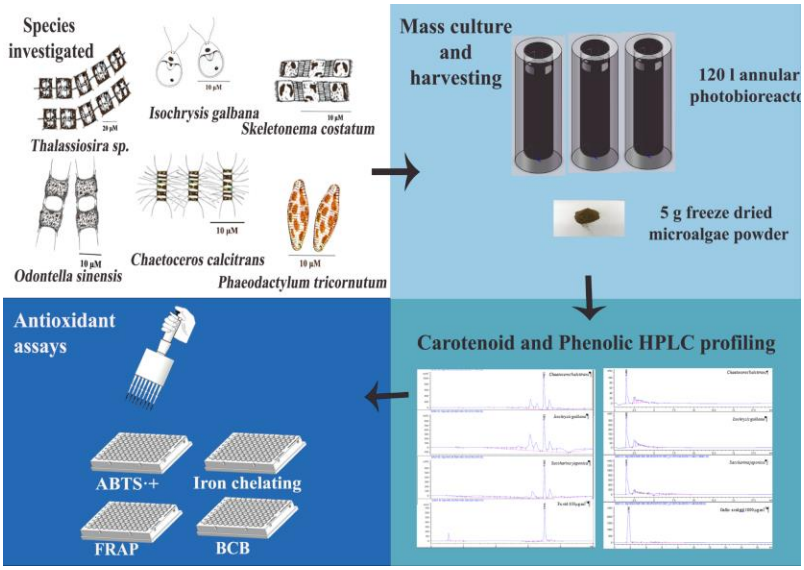
Lecturer

Expertise

- Bioprospecting of tropical microalgae (i.e. isolation, maintenance and mass culture)
- Bioactive extraction (e.g. carotenoids, phenolic compounds)
- Bio-evaluation assays (e.g. antioxidant, anti-cancer activities)
- Using metagenomics to understand microalgae molecular ecology
- Genetic engineering microalgae as biofuel sources
- Culturing microalgae in wastewater and economical harvesting techniques

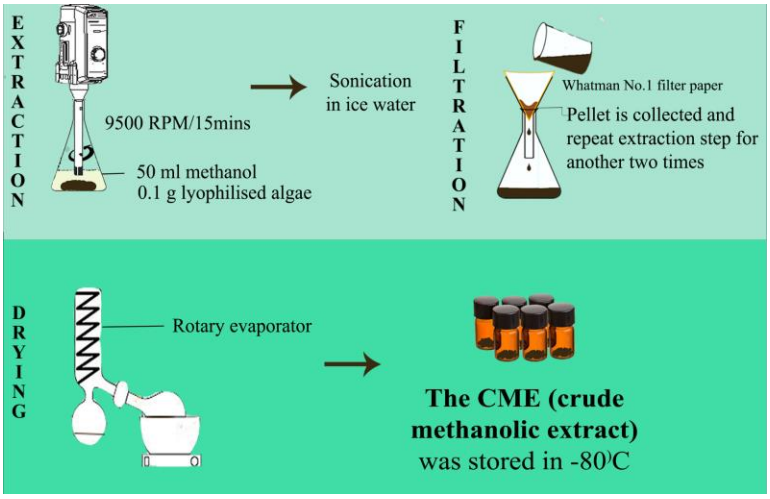
MICROALGAE FOR NUTRACEUTICALS, BIOFUEL AND BIOREMEDIATION

Bioprospecting

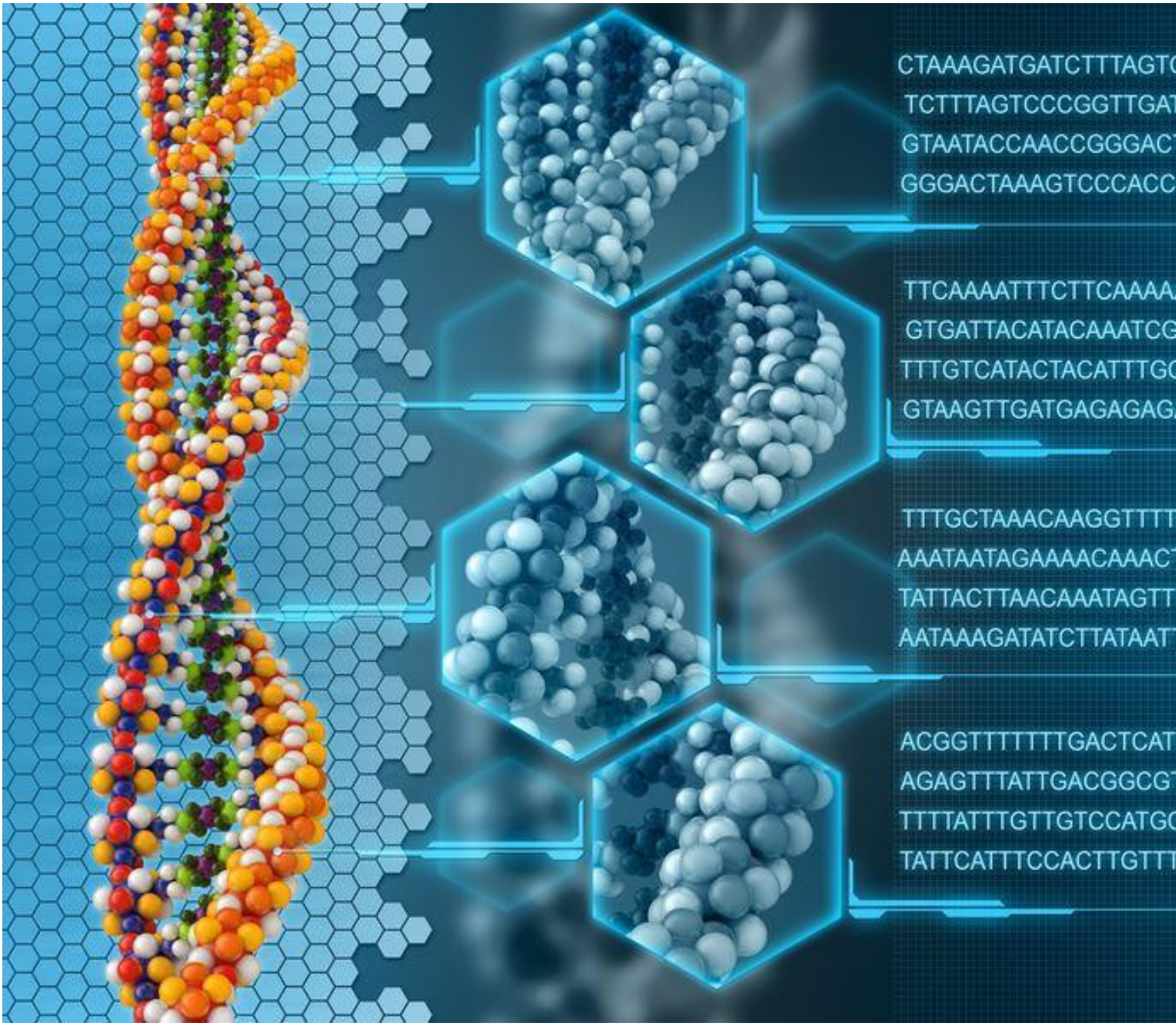


Join my research team in discovering the potentials of microalgae for a sustainable future

Bioactive Extraction



Genomics and Bioinformatics Capability



Dr. Qasim Ayub
qasim.ayub@monash.edu

Associate Professor and Director of Genomics Facility

Expertise

- Human genetics
- Population genetics
- Evolutionary genomics
- High throughput sequencing
- Bioinformatics
- Immunology

POPULATION AND EVOLUTIONARY GENOMICS

Functional characterization of human adaptive variation. Genetic signatures of adaption have been characterized across continental modern human populations, but functional studies have identified the underlying phenotypic trait in only a handful of positively selected variants. Our group plans to use a method, developed by researchers at the Wellcome Trust Sanger Institute, termed Fine-Mapping of Adaptive Variation (*FineMAV*), which combines population allele frequency information with functional scores to prioritize variants for functional follow-up in populations from the region. In particular we would like to understand the basis behind the selection signals in South and South East Asian populations using a combination of *in-silico*, *in-vitro* and *in-vivo* approaches. Variants in genes associated with human host response to certain pathogens will be identified from whole genome sequencing datasets and characterized in human induced pluripotent stem cell derived macrophages.

As part of the EBP the MUM-Genomics Facility aims to characterize the biodiversity within Malaysia and train the next generation of research leaders.

Earth Bio-genome Project. Earth Bio-Genome Project (EBP) aims to characterize the genomes of all living species on the planet. Malaysia is a country that is rich in biodiversity and characterizing the genomic variation underlying this diversity will contribute towards global efforts at understanding species diversity, train a core group of local specialists to lead such projects and develop local expertise in high throughput genomics and bioinformatics. Pilot collaborative projects will focus on microbes, South East Asian fresh water fish and vertebrate species. Biological samples will be collected in accordance with the Nagoya protocol, the Convention on Biological Diversity and the recently passed Access to Biological Resources and Benefit Sharing Bill 2017. Sample collection, storage, sequencing and data sharing will observe best practices and standards set up by the Global Genome Biodiversity Network http://www.ggbn.org/ggbn_portal/.

BIOINFORMATICS – THE FUTURE OF SCIENCE ANALYSIS

What is Bioinformatics? Bioinformatics is an interdisciplinary science involving biology, computer science, statistic, mathematics and engineering. It is the science of storing, retrieving and analyzing large amounts of biological data. As current biological data are being produced at a phenomenal rate, Bioinformatics have become indispensable to biological research to handle the large amount of data and probe the complex dynamics observed in nature.

Our group is working toward different Bioinformatics analysis to facilitate Biology research

Dr. Wee Wei Yee
wee.weiyee@monash.edu

Assistant Lecturer

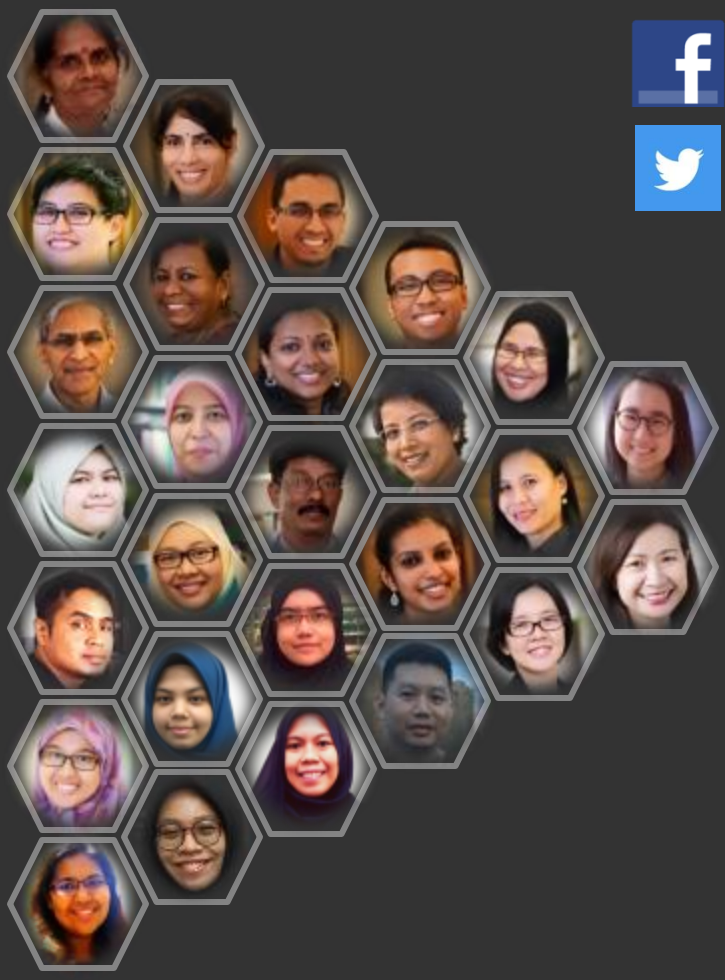
Expertise

- Whole genome analysis
- Transcriptomics and RNA-Seq analysis
- Metagenomics analysis
- Phylogenetic analysis
- Comparative genomic analysis
- Genome assembly

Whole genome analysis. As whole genome sequencing is getting popular and cheaper, whole genome analysis is definitely required to reveal the complete set of genetic and biology information of a genome. Different kind of analysis are include such as the genome assembly, genome annotation, phylogenetic analysis, comparative genome analysis, positive selection analysis. Identification of SNP variants and the prediction on the effect of the SNP variants are useful to unravel the relationship between genotype and phenotype and yield important insights into the disease.

Transcriptomics and RNA-seq analysis. The study of transcriptomic and understand the gene expression. Differential gene expression analysis can further provide researchers with greater insights into biological pathways and molecular mechanisms and important to identify pattern of expression differ according to phenotype or experimental condition.

Metagenomics analysis. Study of genetic material directly from the environment sample. The analysis involve study of taxonomic diversity in the sample and comparative metagenome can further provide the function of complex microbial communities.



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Our Laboratory and Administrative staff

GETTING TO MONASH UNIVERSITY MALAYSIA

AIRPORT TRANSFER

The most convenient way to travel from the Kuala Lumpur International Airport (KLIA) would be by taxi. A less expensive alternative would be the KLIA Ekspres train service, which makes a direct journey to KL Sentral in 28 minutes. KL Sentral is the country's largest transit hub located in the heart of the city. It is home to an integrated rail transportation centre and is situated about 20 kilometres from Monash University Malaysia.

FROM KL SENTRAL

Take the KTM train (available at KL Sentral) and alight at the Setia Jaya station. Once there, look for the Sunway Bus Rapid Transit (BRT) station and board the electric bus. Alight at the Sun U-Monash BRT station, where Monash University Malaysia is located. Buses on the Sunway BRT system operate on a five-minute interval from 6am to 12midnight daily.

WITHIN BANDAR SUNWAY

The Sunway BRT electric bus service will take you to key locations to suit different needs, including healthcare (Sunway Medical Centre), retail shopping (Sunway Pyramid Shopping Mall), recreation (Sunway Lagoon), restaurants and cafes (Sunway Mentari), education (Monash University and Sunway University), private residences (South Quay), and walking distance to city train services interchange (from BRT to KTM and LRT trains).

CITY TRANSPORT

The nearest Light Rapid Transit (LRT) stop to Monash University Malaysia is the USJ7 station, near the Sunway BRT station of the same name. The LRT will connect you to many places in and around the Greater Kuala Lumpur, including Petaling Jaya, KL Sentral, the Petronas Twin Towers, and other parts of the Kuala Lumpur central business district.

The Sunway BRT was launched on 1 June 2015 and is the first electric bus service to operate in Malaysia.

Hop onboard the BRT for a convenient way to access a myriad of lifestyle choices near campus.

Research at Monash University Malaysia

Research Contacts

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