

OFFICE OF SAFETY, HEALTH AND ENVIRONMENT

ANNUAL REPORT 2019

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Our Mission

Saving lives, preventing injuries, ensuring business continuity by transforming mindsets and facilitating the development and implementation of best practices.

Our Vision

A safe and disaster-resilient university where safety, health, environmental protection and emergency preparedness are embraced as core values.

Our Values

Nurturing Potentials

All for One and One for All

Service Excellence

I Own All I Do

+ To Rise Above and Go Beyond
our Normal Limits

DIRECTOR'S MESSAGE

I am pleased to present the NUS Office of Safety, Health and Environment 2019 annual report.

Over the years, we introduced various programmes in line with our mission of saving lives, preventing injuries and ensuring business continuity by transforming mindsets and facilitating in the development and implementation of safety & health best practices.

In keeping pace with changing organisational needs, we frequently review our programmes and refine our processes. We have been making continual improvements to our safety and health management system to ensure its relevance. In 2019, together with other UCI offices, we embarked on an organisational excellence journey. Through the use of business process re-engineering, we further simplify administrative processes and improve customer experience.

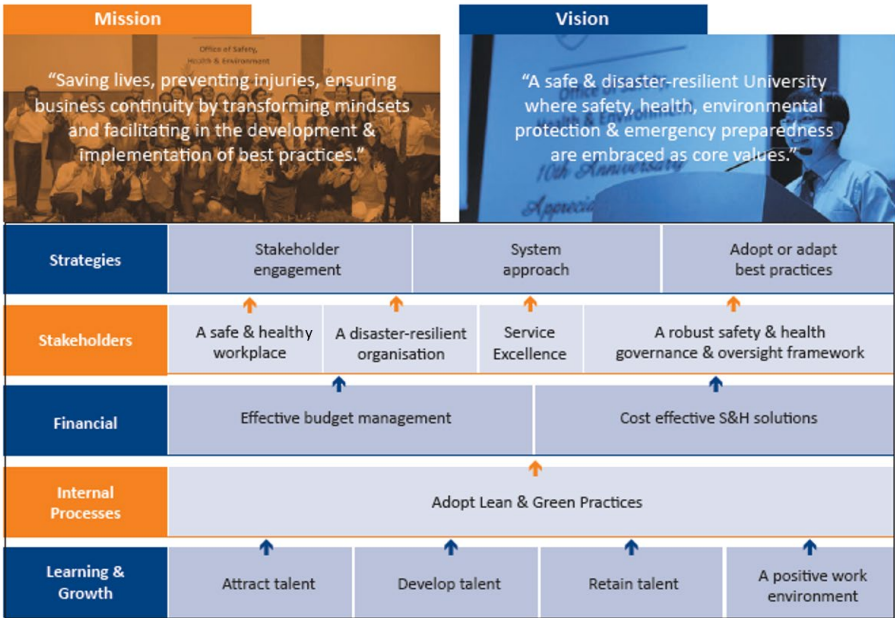
I hope this report gives you a deeper insight into the work that OSHEians do. This year, our report includes some highlights of our organisational excellence journey. Indeed, our staff is the greatest resource and I am grateful for their contributions. I would also like to thank all of our external partners (regulators, industry partners and other institutes of higher learning) and internal partners (NUS Senior Management, Deans, Directors and safety and health committees) for their support.

Even though 2019 has drawn to its close, this stretch of organisational excellence journey is just beginning. Together with our partners, we will scale greater heights.



Dr Peck Thian Guan
Director

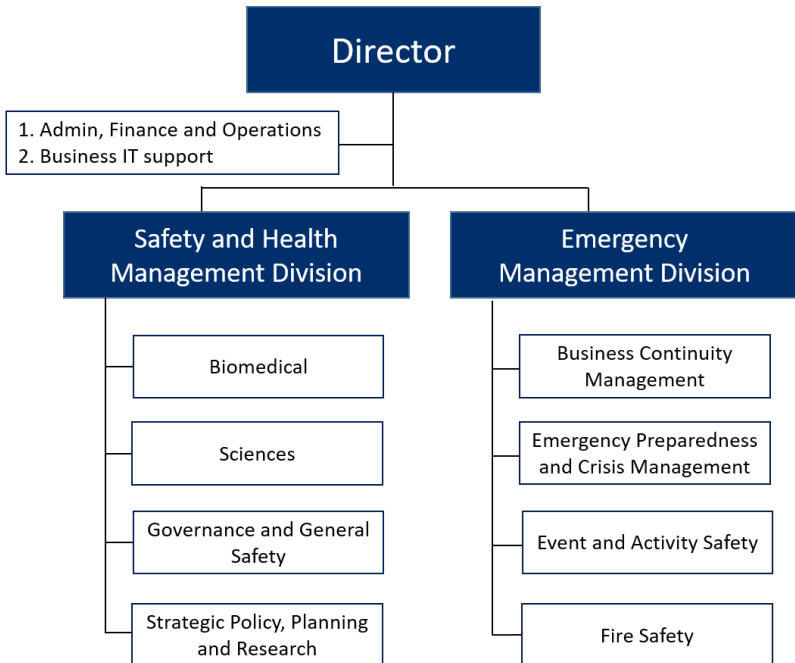
Our Strategy Map



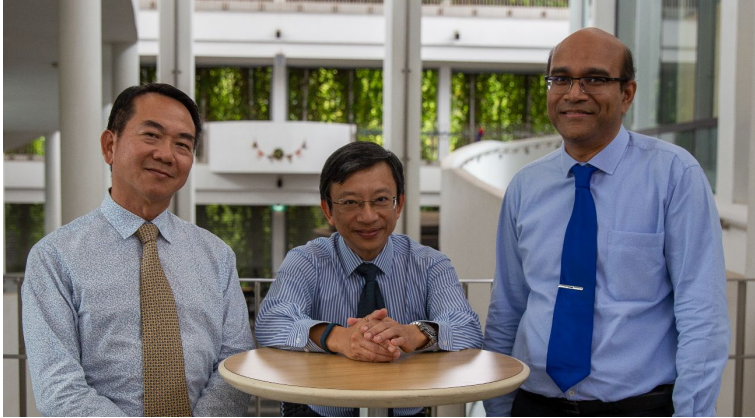
Our Service Creed



OUR ORGANISATIONAL STRUCTURE AND PEOPLE



Director and Deputy Directors

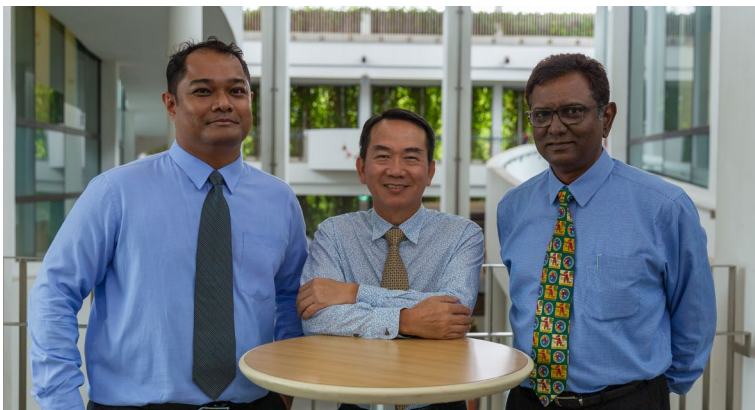


Deputy Director
Yam Guan Shyh

OSHE Director
Dr Peck Thian Guan

Deputy Director
Saravanan s/o
Gunaratnam

Emergency Management Division Leadership



L to R: Mohammad Fazulee Bin Abdul Rahman, Yam Guan Shyh, Ravindran s/o Sockalingam

Safety and Health Management Division and Business IT Support Leadership



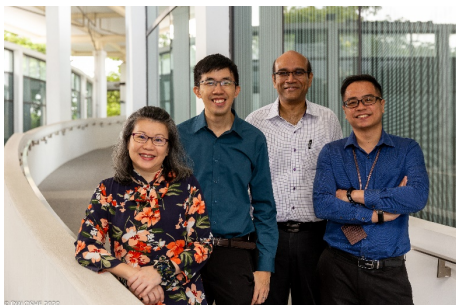
L to R: Danny Toh, Tan Bee Guan, Tan Chuen Hui, Saravanan s/o Gunaratnam, Jedison Ong, Lim Cheh Peng, Gisela Ho

Admin, Finance and Operations and Business IT Support team



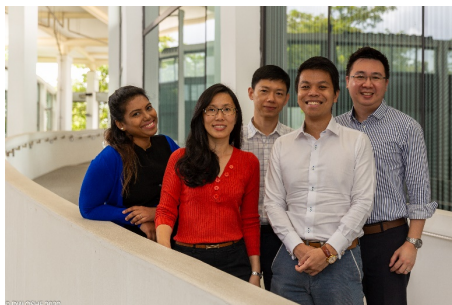
Front row L to R: Gisela Ho (group lead for Admin, Finance and Operations), Rachel Lim, Tan Bee Guan (group lead for Business IT Support), Joyce Ng, Sania Binte Nader
Back row L to R: Samantha Tan, Oh Siew Kee, Louise Ng

Safety and Health Management Division team



Strategic Policy, Planning and Research team

L to R: Lim Cheh Peng, Jeff Hwang, Saravanan s/o Gunaratnam (group lead), Jedison Ong



Sciences team

Front row L to R: Tan Chuen Hui (group lead), Joel Swee

Back row L to R: Jayavani D/O Karuppasamy, Lionel Yap, Daniel Wong

Not in picture: Gisela Ho and Priscilla Fernandez



Biomedical team

Front row L to R: Lim Cheh Peng (group lead), Suzette De Leon, Sheela Reuben, Christine Hu

Back row: Rajkumar Ramamoorthy



Governance and General Safety team

Front row L to R: Zhou Qian Zoey, Danny Toh (group lead), Leong Chee Meng, Goh Keng Beng

Back row L to R: Ngeow Kao-Peng, Hairulnizam Bin Ishak, Leong Wai Mun, Lau Kwok Siong

Emergency Management Division team



Emergency Management Division team

Front row L to R: Wong Thai Jin, Sheena Shen
Back row L to R: Adam Wong, Mohammad Fazulee Bin Abdul Rahman, Ravindran s/o Sockalingam, Yam Guan Shyh (Deputy Director), Mohammed Khoirul Bin Mohd Noor



Rapid Response Team

L to R: Muhammad Shakeel Bin Mohamed Irwan, Sa'aid Bin Abdul Rahman Bahajjaj



Rapid Response Team

L to R: Muhammad Fazlie Bin Usalli, Muhammad Taufiq Bin Hamidon



Rapid Response Team

L to R: Muhammad Syafiq Bin Ismail, Huzafah Bin Sulaiman.

Not in picture: Mohamed Noor Bin Mohamed, Sham Simon Bin Mohd Naffi

2019 KEY MILESTONES AND EVENTS



Advanced Radiation Safety Training Workshop by UHealth trainers (26 Feb to 1 Mar)



CEM Team & UICs Cohesion & Appreciation Lunch (8 Mar)

Fire Safety Fusion (4 Mar)

2019



Launch of NUS Risk Mitigation Plan for Oral Poliovirus Vaccine/Sabin Type 2 Potentially Infectious Materials (30 Apr)

- Events
- Awards
- Launch of new guidelines/ new online module under EHS360



4th NUS Safety, Health and Environment Conference (4 Jul) and Safety and Health Coordinator Workshop (5 Jul)



Outstanding Company Emergency Response Team (CERT) Award (23 Nov)



Best Pro-Enterprise Suggestion Award (26 Nov)

Appreciation Lunch for IBC, ILSC and SHMC Members (14 Aug)



Launch of EHS360 Institutional Approvals module (10 Oct)

NUS SAFETY, HEALTH AND EMERGENCY MANAGEMENT

OSHE provides a wide range of safety, health and emergency-related services to the NUS community and engages staff/students at every level to facilitate a safe and disaster-resilient university.



Safety and Health Management Division is responsible for facilitating the building of a positive safety, health and environmental culture and learning experience for all NUS staff and students through the adoption of safety & health best practices and systems.

Emergency Management Division equips NUS staff and students with the knowledge and tools so that they can efficiently and effectively plan and organise their activities and events safely, and manage crisis and emergency situations expediently when they happen.

OSHE Alerts and Safety & Health Circulars

OSHE releases circulars and announcements to NUS staff and students pertaining to lessons learnt from accident and incidents, changes in regulations, reminders on good safety and health practices and launch of new programmes/ guidelines/ online modules. In 2019, seven circulars and two safety & health advisory/ announcements were released.

SAFETY & HEALTH ADVISORY

09 September 2019, Ref No 012019

Reminder: Proper Use of Biological Safety Cabinet when Conducting *in vivo* Procedures

We would like to remind researchers performing *in vivo* procedures using the biological safety cabinet (BSC) to follow the proper safety practices as detailed in the NUS Laboratory Biorisk Management Manual [ref 1]. The following are unsafe practices and shall be avoided:

1. Raising the sash beyond the recommended safe working level;
2. Placing your head inside the biological safety cabinet (BSC) to get a clearer view of the work area inside the BSC when BSC is in use;
3. Placing paper towels and/or other materials on the front air vent of a BSC; *and*
4. Not switching on the air blower when using the BSC in order to prevent the fluctuation of temperature of the working area inside the BSC.

These improper and unsafe practices cause a disruption of airflows in the BSC and/or potentially expose the personnel to aerosols generated from handling potentially infectious agents or materials, such as when handling biological materials of human origin.

NUS SAFETY & HEALTH ANNOUNCEMENTS

10 October 2019, Ref. No. 022019

Launch of new EHS360 Institutional Approvals module

We are pleased to announce the launch of a new EHS360 Institutional Approval module today. The EHS360 Institutional Approval module is a central platform for processing requests that require institutional approvals. Two sub-modules under the EHS360 Institutional Approval are now available, namely the (1) Genetic Modification Advisory Committee (GMAC) sub-module and (2) Licence to Possess Veterinary Biologics (LPVB) sub-module.

EHS360 – Institutional Approvals module
(GMAC and LPVB sub-modules)

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graph TD; A[EHS360 Institutional Approvals] --> B[GMAC sub-module]; A --> C[LPVB sub-module]; B --- D[Submission of GMAC proposals]; C --- E[Registration of Risk Group 2 veterinary biologics]
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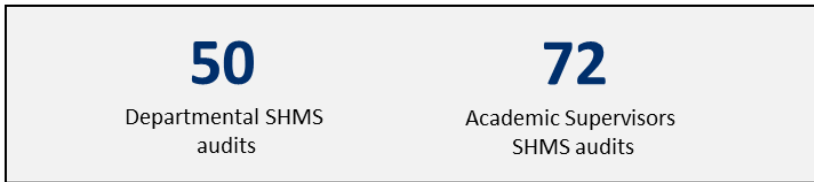
Submission of GMAC proposals

Registration of Risk Group 2 veterinary biologics

Audit Programme

The Audit Programme is an integral aspect of the PLAN-DO-CHECK-ACT system of management. This is to ensure that the Safety and Health Management System (SHMS) established by Departments and Academic Supervisors continues to be effective in managing the safety & health risks arising from their work activities.

Key Statistics

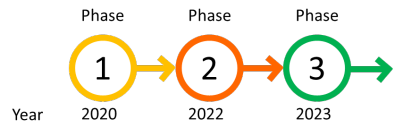


Highlights

Frequency of Surveillance SHMS Audit for Academic Supervisors

A roadmap was developed for the gradual reduction of academic supervisors' surveillance audits for departments and academics supervisors that have demonstrated consistent safety and health performance. This will be implemented in three phases, with the first phase starting from March 2020.

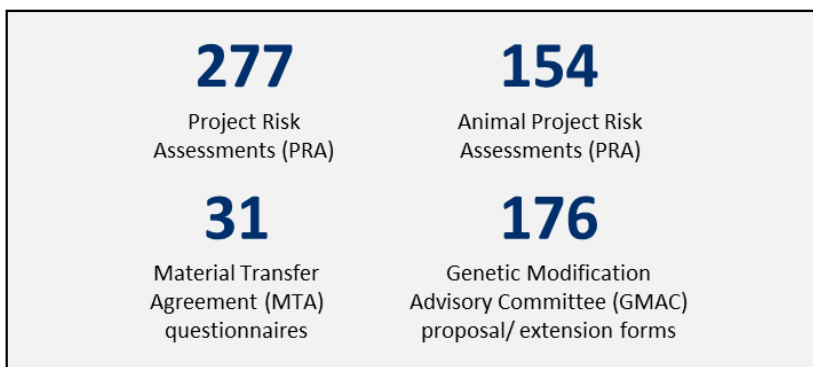
Phase implementation



Biological Safety Programme

The Biological Safety Programme is established to protect the safety and health of the University staff, students and visitors from exposure to biological hazards arising from research and teaching activities. OSHE reviews project risk assessments and protocols that involve biological materials to ensure safe conduct of research and ensures legal compliance such as regulations by Ministry of Health (MOH), National Environment Agency (NEA) and National Parks Board / Animal & Veterinary Service (NParks/AVS). The biomedical team also serves as a secretariat to the NUS Institutional Biosafety Committee (IBC), the MOH BiosIS administrator for non-advanced generation HIV lentiviral vectors, the administrator for Risk Group 2 veterinary biologics under the institutional Licence to Possess Veterinary Biologics and the central administrator for submission of proposals to Genetic Modification Advisory Committee (GMAC). OSHE collaborates with NUS Industry Liaison Office for the review of Material Transfer Agreement (MTA) questionnaires to ensure compliance to regulatory requirements for the acquisition of biological materials by Principal Investigators. The team also conducts training on safe handling of non-human primate (NHP)-derived materials and biological spill response.

Key statistics



Highlights

Commitment to Global Polio Eradication Initiative (GPEI)

On 30 April 2019, IBC released the standard entitled “NUS Risk Mitigation Plan for Oral Poliovirus Vaccine/Sabin Type 2 Potentially Infectious Materials (PIMs)” to ensure that NUS laboratories handle poliovirus PIM materials in accordance with MOH’s and World Health Organization (WHO)’s requirements.

Launch of EHS360 Institutional Approval Module

On 10 October 2019, the online IT module *EHS360 Institutional Approval* was launched. It consists of (1) Genetic Modification Advisory Committee (GMAC) application sub-module and (2) Licence to Possess Veterinary Biologics (LPVB) sub-module.



Several roadshows were conducted before launch to familiarise stakeholders to the new workflow.

Engagement with regulators

OSHE continually engages regulators to streamline processes. On 31 July 2019, OSHE met with Animal & Veterinary Service (AVS) to discuss the streamlining of current processes for NUS institutional Licence to Possess Veterinary Biologics for Risk Group 2 veterinary biologics.

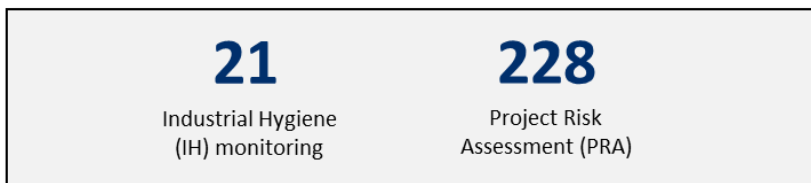


AVS team Mr Darren Kong, Ms Chonalyn Angue and Ms Lee Seen Yin together with Dr Lim Cheh Peng and Mr Saravanan s/o Gunaratnam.

Chemical Safety Programme

The Chemical Safety Programme is established to protect the safety and health of the University staff, students and visitors from exposure to chemical hazards. The programme also facilitates compliance with the regulatory requirements concerning the possession and use of chemicals. OSHE reviews project risk assessments on safe handling of chemicals and ensures that relevant licences/permits are obtained. The team also conducts industrial hygiene (IH) monitoring for the University.

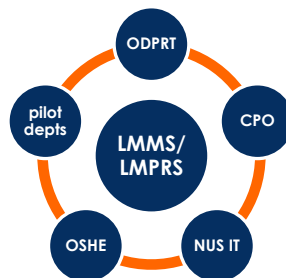
Key statistics



Highlights

Laboratory Materials Purchase Requisition System (LMPRS)

In 2019, OSHE partnered with other administrative units and departments to develop the Laboratory Materials Purchase Requisition System (LMPRS). LMPRS is an online system that departments will use for the purchase of regulated chemicals. LMPRS is integrated with Laboratory Materials Management System (LMMS), allowing a seamless user experience from chemical purchase requisition to inventory management. More than 50,000 chemical products were included into LMMS/LMPRS. LMMS and LMPRS facilitates by ensuring that Principal Investigators have the relevant licences to purchase chemicals and that the amount of regulated chemicals in the laboratories do not exceed the approved limits stipulated in the licence.



Construction Safety Programme

The construction safety programme is established for the management of NUS departments or offices supervising building and construction activities. OSHE provides advice to project managers on the design of buildings and facilities to ensure safety and health considerations are taken into account during the planning stage. OSHE also participates in construction and term contract tender evaluation for the selection of contractors for construction projects.

Quarterly meeting with Campus Operations and Maintenance offices

OSHE provides administrative support for the quarterly meeting with Office of Facilities Management (OFM) and Office of Estate Development (OED), where construction safety and related matters are discussed. Besides reviewing construction safety statistics and incident investigation reports, these meetings also served as a platform for discussion and decision on issues relevant to construction safety, such as traffic management in areas close to construction projects as well as review and update of construction safety specifications and requirements. Since 2018, 59 issues have been raised, discussed or decided in these meetings.

Key statistics



*OSHE conducts safety review of high hazard construction activities such as tower crane erection, demolition works and lifting operations.

Highlights

2019 UCI Construction Safety Day

The UCI Construction Safety Day 2019 took place on the 19 November 2019 and OSHE was a member of the organising committee. Besides event management, OSHE also assisted in the selection of event speakers and award recipients, poster production and development of bridging presentation slides.



UCI Construction Safety Day 2019 Organising Committee with OED Senior Director Mr Chew Chin Huat (3rd from left) and Mr Ngeow Kao Peng (OSHE) (2nd from right).



Opening address by Prof Yong Kwet Yew, Senior Vice President (Campus Infrastructure), at the UCI Construction Safety Day 2019.



Guest speakers from Ministry of Manpower, Lian Soon Construction Pte Ltd and Kim Seng Heng Engineering Construction (Pte) Ltd shared on Construction Safety.



Prof Yong Kwet Yew, Senior Vice President (Campus Infrastructure), presenting certificates of commendation to contractors with good safety performance.

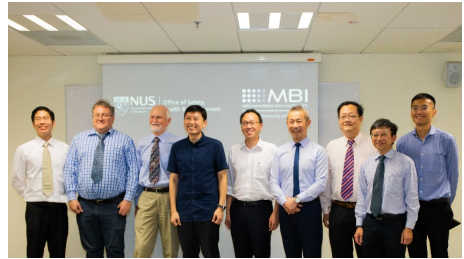
Radiation Safety Programme

The Radiation Safety Programme was established to protect the safety and health of the University staff, students and visitors from exposure to ionising and non-ionising radiation.

Highlights

Changes to non-ionising radiation licensing of confocal microscopes

Since 2008, NUS was in discussion with NEA for a re-evaluation of licence requirements for lab sonicators (N2 licence) and users of confocal microscopes (N3 licence). This discussion was a collaborative effort with NTU and A*STAR, with NEA at a workshop facilitated by the Pro-Enterprise Panel (PEP) under the Ministry of Trade and Industry (MTI) in 2018.



Visit by Senior Minister of State for Trade and Industry, Mr Chee Hong Tat (4th from left), and Senior Parliamentary Secretary for Trade and Industry, Mr Tan Wu Meng (5th from left), to NUS to observe the safety measures for confocal microscope (22 May 2019).

In Oct 2018, NEA agreed that the N3 user licence for use confocal microscope will not be required as long as certain conditions to ensure the safety of users are met.

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Confocal microscopes that do not require N3 user licence

From 1 August 2019, N2 licences is no longer required for industrial ultrasound apparatus with power output less than 1,200 W. This was the result of the collaborative effort of a 10-year discussion with NEA.

Cost savings breakdown for	Estimated yearly savings
N3 licences	\$46,507 and 107 days
N2 licences	\$61,225
Total	\$107,732 and 107 days

As a result, OSHE managed to garner significant savings for the NUS researchers who use confocal microscope and/or own low-powered sonicators.

Field Research and Research Diving Safety Programme

The field research safety programme provides a framework for establishing policies and procedures that enable staff, students and other participants in NUS to undertake fieldwork safely.

Highlights

Adoption of Singapore Code of Practice for Scientific Diving

Since 1 June 2019, NUS adopted the Singapore Standard: Code of Practice for Scientific Diving SS623:2016. The standard specifies requirements for underwater research diving not exceeding 30 m, where breathing gas is supplied through self-contained underwater breathing apparatus (SCUBA).

Institutional Safety and Health Committees

The SHM division of OSHE provides administrative and secretariat support to several institutional-level committees, namely Safety & Health Management Committee (SHMC), Institutional Biosafety Committee (IBC) and Institutional Laboratory Safety Committee (ILSC).

SHMC's primary role is to provide strategic direction on the development and implementation of a safety & health management framework that would safeguard NUS staff and students, the general public, and the environment from hazards arising from NUS activities.



Safety and Health Management Committee (SHMC) with IBC Chairman and ILSC Chairman as invited guests. Front row L to R: Ms Angeline Kwek, Prof Philip Liu (ILSC Chairman), Prof Barry Halliwell (IBC Chairman), Prof Yong Kwet Yew (SHMC Chairman), Prof Philip Moore. Back row L to R: Dr Lim Cheh Peng (SHMC secretariat), Dr Peck Thian Guan, Prof Florence Ling, Mr Saravanan Gunaratnam, Mr Danny Toh.

The SHM division also reports to the Risk Management Steering Committee (RMSC) on the overall safety & health risk indicators on a quarterly basis on behalf of SHMC.

The IBC's primary role is to safeguard NUS staff and students, the general public, and the environment from biohazards and imposes requirements for safe practices involving biological materials. The IBC is chaired by Prof Barry Halliwell, with Dr Lim Cheh Peng as the Biosafety Coordinator and Dr Suzette De Leon as the IBC secretariat.



Institutional Biosafety Committee (IBC) meeting

The ILSC's role is to provide strategic oversight on all laboratory-related safety & health issues excluding biological materials. ILSC was chaired by Prof Philip Liu and subsequently by Prof Ashraf Kassim. Mr Lionel Yap is the ILSC secretariat.

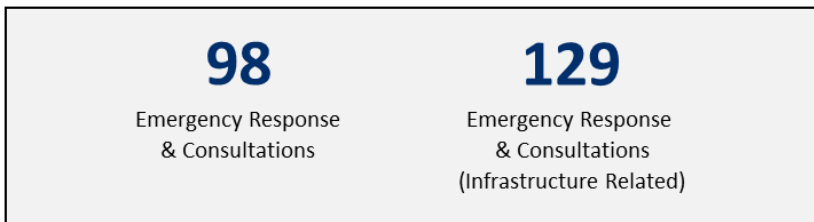


Institutional Laboratory Safety Committee (ILSC) meeting

Emergency Preparedness and Crisis Management

OSHE strategises, implements and facilitates the crisis and emergency preparedness and management in NUS. The areas of responsibility include enabling the operational capability of the Crisis and Emergency Management Teams of the faculties and offices; business continuity management; preparedness and management of pandemic/epidemic; life safety of students and staff, university events and students' activities; safety and emergency preparedness for official overseas travels; fire safety management; and management of crisis and emergency.

Key statistics



Highlights

International SOS

In 2019, Emergency Management Division provided consultation and facilitation to the NUS Office of Risk Management (ORM) in evaluating and engaging International SOS to be the service provider for our staff and student travel in safety and medical advisory of their intended areas of travel, and coordination for emergency medical evacuation.

Business Continuity Management

BCM is an integrated management process that identifies potential impact that threatens the University, faculties and units in fulfilling their key missions. It provides a framework for building resilience and the capability for an effective response that safeguards the interest of its key stakeholders, reputation, brand and value creating activities.

Emergency Management Division serves as the secretariat for NUS Business Continuity Management Committee (BCMC), facilitates and drives the BCM process by providing outreach, training, coaching, and consultation to the faculties, offices and units. We update the Risk Management Steering Committee on the overall state of readiness and ability of the University to ensure minimal business disruption when incidents occur. In 2019, OSHE conducted 88 consultation sessions with the various units.

Fire Safety

OSHE manages the Fire Safety Management Programme in the University. OSHE helps staff and students to attain a high standard of fire safety practices and maintains an effective rapid response force to respond to activation of fire alarms and fire incidents.

Highlights

Transfer of Command and Management of the NUS Rapid Respond Team (RRT) to OSHE from OCS

NUS RRT was established in 2015 under the Office of Campus Security (OCS) to provide quick response to fire incidents within NUS. The RRT was subsequently moved to OSHE Emergency Management Division in 2018. OSHE officially took over the command, control and management of the RRT on 01 April 2019.

Key statistics



Fire Safety Fusion (4 Mar 2019)



Platinum Award Winners (Group 1) with NUS Senior Vice President (Campus Infrastructure), Prof Yong Kwet Yew.



Platinum Award Winners (Group 2) with NUS Senior Vice President (Campus Infrastructure), Prof Yong Kwet Yew.



Gold Award Winners with Senior Director (Operations and Maintenance), Mr Chew Chin Huat.



NUS Rapid Response Team (RRT) with Dr Peck Thian Guan (middle) and Mr Yam Guan Shyh (3rd from right).

Life & Event Safety

OSHE Emergency Management Division equips NUS staff and students with the knowledge and tools so that they can efficiently and effectively plan and organise their activities and events safely, and manage crisis and emergency situations expediently when they happen. OSHE also supported major NUS events such as NUS Career Fair (29 Jan 2019 and 1 Feb 2019), NUS Open Day 2019 (09 March 2019), NUS Commencement (11 July 2019 to 18 July 2019), NUSSU Rag Day (10 August 2019) and NUSSU Student Life Fair (15 to 16 Aug 2019).

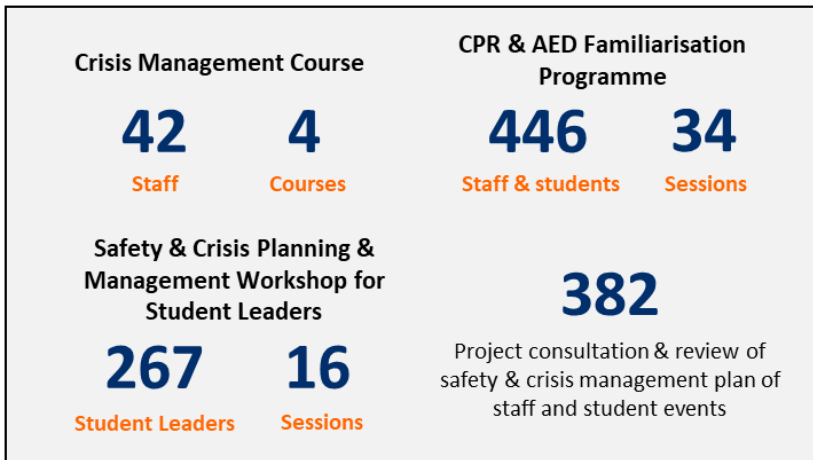


Mr Ravindran s/o Sockalingam conducting NUSSU Rag & Flag Day safety briefing and guidance. The event was held off-campus, at Ficus Green, Bishan Park on 10 Aug 2019.



Mr Ravindran s/o Sockalingam and Ms Wong Thai Jin provided consultation for NUSSU Student Life Fair, UTown (15 to 16 Aug 2019).

Key statistics



NUS Department Safety Days & Awards

NUSRI Wins Safety and Health Award

National University of Singapore (Suzhou) Research Institute (NUSRI) received the safety and health benchmark Award (安全标杆奖), given by the Administration of Work Safety from Dushu Lake Science and Education Innovation Zone in Suzhou Industrial Park. NUSRI had to compete against 18 research institutions in Suzhou Industrial Park to clinch the top award. Ms Zhou Qian Zoey and other OSHE colleagues were instrumental in assisting NUSRI in winning the award.



Safety and Health Day

Faculties, Schools, Research Institutes and Departments organise Safety and Health Day to increase awareness on safety and health matters among staff and students. The following events were held in 2019:

Safety & Health Events	Dates
Tropical Marine Science Institute (TMSI) Safety Day	26-Feb-19
Department of Physiology Safety Day	23-May-19
Department of Microbiology and Immunology Safety and Health Day	3-Jun-19
Science Safety Day	25-Sep-19
Mechanobiology Institute (MBI) Safety Day	17-Oct-19
Department of Medicine Safety Day	30-Oct-19
University Campus Infrastructure Construction Safety Day	19-Nov-19
Solar Energy Research Institute of Singapore (SERIS) Safety Day	20-Nov-19

LEAN AND GREEN

Green Laboratory Programme



The aim of the programme is to encourage NUS laboratories to reduce the environmental impact of their operations such as energy usage, water consumption and waste generation by

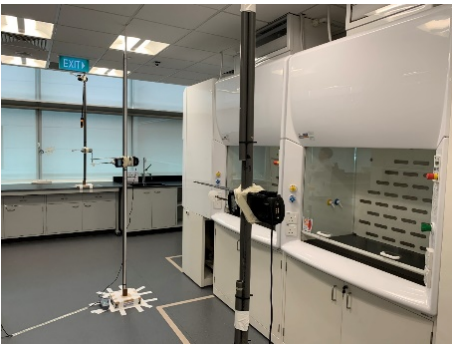
adopting best practices related to reducing consumption, recycling of materials, green procurement and inventory management. OSHE developed the GreenLab programme checklist for life science laboratories, chemical laboratories and equipment facilities.

Institutional Eye Protection Exemption Review Committee

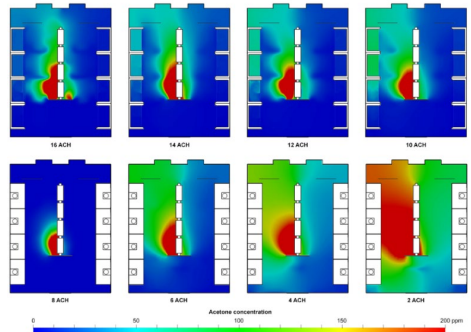
Previously, the eye protection exemption was reviewed at either the Institutional Biosafety Committee (IBC) or the Institutional Laboratory Safety committee (ILSC) based on the type of materials that the laboratory was handling. To further streamline the review process and ensure consistency of approval across the two committees, the Institutional Eye Protection Exemption Review Committee was formed. The first meeting was conducted on 16 July 2019, where 24 out of 28 exemption requests were approved in an expedited manner.

Optimisation of Laboratory Ventilation

OSHE, together with the NUS Energy Taskforce, partnered Department of Building (School of Design & Environment (SDE)) to conduct research on how different ventilation rates affect the dispersion of volatile contaminants in a laboratory using computational flow dynamics (CFD). Results of this study allow the university to determine the optimal air change rate for labs as well as the design of ventilation systems.



Experimental set up to calibrate the Computational Flow Dynamics (CFD) model.



Computational Flow Dynamics (CFD) across a range of air change rates.

OSHE also assisted the laboratories in MD 6 to conduct Laboratory Ventilation Risk Assessments (LVRA) to determine if the air change rate in these laboratories can be reduced without compromising safety. Air change rates in these laboratories have since been optimised and savings of up to 40% in electricity consumption is expected.

OSHE Organisational Excellence

Dr Peck championed several organisational excellence initiatives to further streamline and improve existing processes in OSHE.

OSHE 2019 key initiatives	Staff	Role
Pre- & post-audit management	Mr Danny Toh	Initiative owner
	Ms Gisela Ho	Member
	Mr Hairulnizam bin Ishak	Member
	Mr Lionel Yap	Member
Safety programme introduction & implementation	Dr Peck Thian Guan	Initiative owner
	Dr Lim Cheh Peng	Co-initiative owner
	Dr Suzette De Leon	Member
Rapid Response Team (RRT) administration	Dr Peck Thian Guan	Initiative owner
Eye protection waiver process	Ms Tan Chuen Hui	Initiative owner
	Dr Peck Thian Guan	Initiative owner
LMMS chemical/ product entry process	Ms Jayavani D/O Karuppasamy	Member
	Mr Joel Swee	Member
	Automated External Defibrillator (AED) management	Dr Peck Thian Guan

Key achievements

Pre- & post-audit management

- Reduce time spent on pre- & post-audit meetings by 576hrs/yr (89%)
- Self-booking of safety audit dates
- Elimination of pre-audit meetings
- Elimination of post-audit meetings unless there are notable findings
- Elimination of physical meetings by using Skype for Business

S&H programme introduction and implementation

- Reduce re-work and time spent on drafting proposals via introduction of a two-phase approach to seek approval from institutional committees, i.e. project charter followed by project details
- Allow NUS community to provide feedback on draft proposals via the introduction of a University-wide consultation before launching the programmes
- Reduce number of appeals

Rapid Response Team (RRT) administration

- Reduce re-work and time spent on checking and submitting OT pay and various allowance
- Redesign shift work. Thus improving work-life balance, reduce shift fatigue and improve their mental and physical well-being.
- Suggest bundling of pay and allowances and reduce the administrative processes for both OSHE and OHR.

Innovation Excellence Transformation Unit (iETU)

Mr Jedison Ong (2nd from right) was seconded to Office of Senior Vice-President (Campus Infrastructure) as a member of UCI's Innovation Excellence Transformation Unit (iETU) to drive the implementation of organisational excellence processes in the UCI cluster.



Design and Construction Review Committee (DCRC)

The current design and construction review process involves many offices, stakeholders and contractors. The Design and Construction review Committee (DCRC) was formed with Mr Saravanan s/o Gunaratnam (1st from right) appointed as the initiative owner to streamline the existing process from project initiation to completion and handover to stakeholders.



Information Resource Centre Project

The Information Resource Centre Committee was formed to develop a framework to ensure timely and complete depository of information and the subsequent streamlined process for retrieval of information. **Mr Joel Swee was a team member of the committee.**

Tender Award and Digital Technology Roadmap Projects

Ms Gisela Ho was a Resource Panel member for two iETU projects – Tender Award and Digital Technology Roadmap. She provided suggestions to Initiative Owners on possible opportunities to streamline, centralise, automate, or outsource UCI processes.

2019 AWARDS

Public Administration Medal (Silver) award

The Singapore National Day Awards are a means of recognising various forms of merit and service to Singapore. Dr Peck Thian Guan received the Public Administration Medal (Silver) on 1 Dec 2019. He previously received the Bronze Medal in 2012.



Dr Peck Thian Guan receiving the Public Administration Medal (Silver) from the President of Singapore Madam Halimah Yacob.

Singapore Civil Defence Force (SCDF) Outstanding CERT Award 2019

The NUS Rapid Response Team (RRT) received the Outstanding Company Emergency Response Team (CERT) Award from Mrs Josephine Teo, Minister of Manpower and Second Minister for Home Affairs at the annual Singapore Civil Defence Force (SCDF) parade on 23 Nov 2019. NUS was among 12 companies receiving the 2019 CERT Award. The RRT was accorded the award in recognition for their swift response to a fire incident in laboratory building on campus in March 2019.



Mr Sa'aid Bin Abdul Rahman Bahajjaj and Mr Muhammad Shakeel Bin Mohamed Irwan received the 2019 Outstanding CERT Award.

PEP-SBF awards 2019

At the Pro-Enterprise Panel – Singapore Business Federation (PEP-SBF) Awards 2019 ceremony on 26 Nov 2019, NUS was awarded with the Best Pro-Enterprise Suggestion Award. Dr Peck championed the review of user licensing requirements for the use of confocal microscopes in research laboratories.



Dr Peck Thian Guan (3rd from left) with Mr Leo Yip, Chairman, PEP and Head of Civil Service (centre), Mr Jedison Ong and Ms Zhou Qian Zoey (1st and 2nd from right) at the PEP-SBF award ceremony.

NUS Long Service Award 2019

The Long Service Award commemorates the dedication and contribution of NUS employees. OSHE celebrates with our eleven 2019 recipients.

Name of recipient	Number of years in Service
Yam Guan Shyh	15
Hairulnizam Bin Ishak	15
Jayavani D/O Karuppasamy	10
Lau Kwok Siong	10
Rajkumar Ramamoorthy	10
Sheela Reuben	10
Leong Chee Meng	5
Muhammad Fazlie Bin Usalli	5
Muhammad Syafiq Bin Ismail	5
Pebbisetty Radha	5
Sa'aid bin Abdul Rahman Bahajj	5

2019 EVENT HIGHLIGHTS

OSHE events

4th NUS Safety, Health and Environment Conference (4 July 2019)

“Inspiring Safety and Health Transformation through Innovation & Integration”

The conference was attended by over 260 NUS staff and students as well as overseas delegates. The conference included a vibrant panel discussion, where panel of safety and health experts discussed how safety and health transformation in the University is possible through leveraging on partnerships, collaboration, and technology.



Expert Panel discussion chaired by Dr Peck Thian Guan with panellists Prof Chia Kee Seng, Prof Philip Moore and Prof Barry Halliwell (from L to R).



Senior Vice President (Campus Infrastructure) Prof Yong Kwet Yew (3rd from left) and Dean (School of Design and Environment) Prof Lam Khee Poh (4th from left) attending the conference.



Prof Philip Moore giving a plenary speech entitled “Future Research and Education Landscape in NUS and its Implication on Safety and Health”.



Prof Chia Kee Seng giving a plenary speech entitled “Workplace Safety and Health in IR4.0”.

Safety and Health Coordinator (SHC) Workshop (5 July 2019)

OSHE organised a half-day SHC workshop to foster a closer working relationship between the SHCs across NUS departments. The theme of the workshop was “Management of Change” and it was facilitated by Ms Ivy Lim from Integrative Learning Corporation. A total of 47 SHCs and 9 international guests participated in this workshop. It was a lively time of discussion as the participants networked and exchanged ideas with one another.



Group photo of workshop participants, together with Dr Peck Thian Guan (first row, 1st from left) and Mr Saravanan s/o Gunaratnam (second row, 1st from left).



Exploration of the topic was done in a smaller group setting.



Participants sharing on ideas generated during brainstorming session.

Visitation by overseas counterparts

OSHE proudly hosts delegates from other institutions both regionally and internationally to facilitate the sharing of best practices in safety and health across institutions.



Visit by Massachusetts Institute of Technology (MIT) Environment, Health and Safety (EHS) on 11 Jul 2019.



Visit by Universitas Indonesia Department of Occupational Health and Safety on 10 Dec 2019.



Visit from Ehime University, Nagoya University, Okinawa Institute of Science and Technology Graduate University, and Universiti Brunei Darussalam on 4 to 5 Jul 2019.



Visit by delegates from Seoul Women's University on 6 Aug 2019.

Participation in UCI events

OSHEians participate and contribute actively in events organised by UCI offices and Recreation, Leisure and Active Committee (ReLAC).



NUS President Prof Tan Eng Chye (1st from right) with Ms Gisela Ho, Dr Lim Cheh Peng (1st and 2nd from left) and Ms Tan Bee Guan (5th from left) at Cinnamon/ Tembusu College dining hall with participants from Taman Jurong & Bukit Merah SilverACE Senior Activity Center for NUS Day of Service, organised by ReLAC (7 Sep 2019).



Mr Ravindran s/o Sockalingam (middle) at NUS SG Secure Day, organised by Office of Campus Security on 26 Aug 2019.



Ms Rachel Lim and Ms Oh Siew Kee (1st and 2nd from left) at the ReLAC-organised Chinese New Year celebration (13 Feb 2019).



Dr Sheela Reuben, Ms Tan Chuen Hui, Ms Gisela Ho and Dr Lim Cheh Peng (L to R) manned games/food stalls at the Singapore World Water Day @ NUS Carnival, organised by Office of Facilities Management on 21 & 22 March 2019.



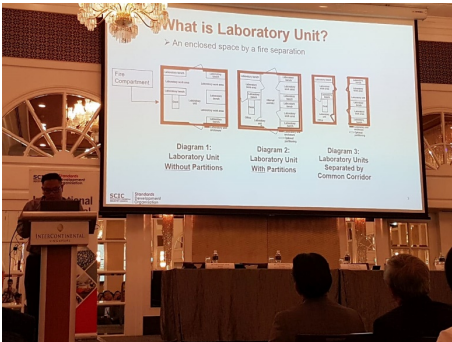
Dr Peck sharing behavior insights - Predicting the Unpredictable (Understanding & Influencing Human Behaviour) at a UCI Learning Journey on 17 July 2019.



Duke-NUS BSL3 fire drill in conjunction with SCDF on 7 Aug 2019.



OSHEians at the annual NUS National Day Observation (8 Aug 2019).



Mr Hairulnizam Bin Ishak introducing the new Singapore Standard “Code of practice for fire safety for laboratories using chemicals” at the launch organised by Enterprise Singapore (8 Mar 2019).



Annual audit of OSHE by NParks/Animal and Veterinary Service with respect to institutional Licence to Possess Veterinary Biologics (20 Mar 2019).



OSHE consultation booth at the Faculty of Science (FOS) Safety Day (25 Sep 2019).



Mr Yam Guan Shyh with SCDF officers at NUS SG Secure Day. The event was organised by Office of Campus Security (26 Aug 2019).

OSHE@PLAY



OSHEians, together with UCI colleagues, at the marimo workshop organised by UCI ReLAC (23 May 2019).



Tossing up good fortune through Lou Hei during Chinese New Year (31 Jan 2019).



Ms Jayavani D/O Karuppasamy and Mr Joel Swee (not pictured) won prizes at the ReLAC Christmas Lucky Draw (17 Dec 2019).



Mr Saravanan s/o Gunaratnam (first row 2nd from left) and Working Group on Higher Education and Research (WG HER) members at the Workplace Safety and Health (WSH) Council Chairman Appreciation Lunch (29 Jan 2019).



OSHEians enjoying the durian feast organised by UCI ReLAC (05 Jul 2019).



OSHEians cutting mint for propagation at Kok Fah Technology Farm (26 Nov 2019).

STATISTICS AND CONTRIBUTIONS



LumiNUS courses

Programme	LumiNUS Courses	Number of training places
Audit Programme	Safety and Health Management System (SHMS) – Tools & Techniques for Development, Implementation and Maintenance of SHMS (OSHSMS01)	622
Biological Safety Programme	Biosafety for BSL-1 Laboratories (OSHBIO07)	1221
	Biosafety for BSL-2 Laboratories (OSHBIO08)	2041
	Safe Handling of Human Tissue and Fluids (OSHBIO03)	935
	Biosafety Legislations & Guidelines (OSHBIO04)	122
	Biological Spills and Emergency Response (OSHBIO05)	449
	Safe Needle Usage in Research Laboratories (OSHBIO06)	1073
Chemical Safety Programme	Chemical Safety (OSHCHM01)	3943
	Safe Use & Handling of Hydrofluoric Acid (OSHCHM02)	132
	Safe Use & Handling of Pyrophoric Chemicals (OSHCHM03)	171
	Semi-Quantitative Risk Assessment (OSHCHM04)	194
	Chemical Spill Response (OSHCHM05)	1067
Ergonomics	NUS Office Ergonomics Training (OSHERG001)	74
	NUS Laboratory Ergonomics Training (OSHERG002)	85
Field Research Safety Programme	Field Research Safety (OSHGEN08)	241
Fire Safety	Online Fire Safety Training Course (OSHFS01)	4546
General Safety Programme	Laboratory Safety Induction Training (OSHGEN01)	2595
	Respiratory Protection Programme Training for first-time users (OSHGEN04)	532
	Respiratory Protection Programme Training for returning users (refresher) (OSHGEN05)	560
	Risk Management for Laboratories (OSHGEN06)	1900
	Risk Management for General Workplaces (OSHGEN07)	203
	Conducting Incident Investigation and Root Cause Analysis (OSHGEN09)	80
	Introduction to Laboratory Safety and Health in NUS - Policy, Principles and Practice (OSHGEN02)	4163
	NUS Requirements on Safety, Health and Emergency Management (OSHGEN03)	2195
Radiation Safety Programme	Laser Safety Training (OSHRAD02)	832
	Safe Handling of Radioactive Materials (OSHRAD03)	246
	Safe Handling of X-ray Machines (OSHRAD04)	344
	Basic MRI Safety Training (OSHRAD05)	59
	MRI Safety Training for Operators (OSHRAD06)	15
Total:		30640

Professional Certifications of OSHE Staff

Professional Certifications	Numbers
Registered Fire Safety Manager (SCDF)	15
Registered Safety Officer (MOM)	13
OHSAS 18001 Lead Auditor	9
Biosafety Coordinator (MOH)	9
Advanced Certificate in Training and Assessment (WSQ)	5
Noise Monitoring and Control Officer (WSQ)	5
Business Continuity Certified Expert (BCMI)	4
ISO 14001 Lead Auditor	4
Biosafety Professional Certification (IFBA)	4
Lean Six Sigma (Yellow Belt)	2
Radiation Safety Officer (ANSTO)	2
Environmental Control Officer (NEA)	2
Certified Instructor for Mental Health First Aid (Singapore)	2
Senior Fire Safety Manager (SCDF)	2
Registered Biosafety Professional (RBP, USA)	2
Crisis Management Certified Expert (BCMI)	1
Lean Six Sigma (Green Belt)	1
Laser Safety Officer (UNSW)	1
Associate Member of Business Continuity Institute (AMBCI)	1
Certified Industrial Hygienist (CIH, USA)	1

OSHE Staff Supporting International, National and Institutional Committees

Committee	Staff	Role
ISO PC 283 and Development of the ISO Standard on Occupational Health and Safety Management System (ISO 45001)	Dr Peck Thian Guan	Head of Singapore Delegation
SPRING Singapore's Technical Committee on Occupational Safety and Health Management System	Dr Peck Thian Guan	Co-Convenor
International Steering Committee, Asian Conference on Safety and Education in Laboratory	Dr Peck Thian Guan	Member (advisory committee)
	Mr Saravanan Gunaratnam	Member (international steering committee)
Working Group for Development of Singapore Standard : Fire Safety in Laboratories	Mr Hairulnizam bin Ishak	Member
Working Group on Safety & Health in Higher Education and Research Sector (WG HER)	Dr Peck Thian Guan	Chairman
	Mr Saravanan Gunaratnam	Member
	Ms Tan Chuen Hui	Lead, Chemical Safety Task Force
	Dr Lim Cheh Peng	Member, Biological Safety Task Force
	Mr Francis Zheng	Secretariat
SPRING Singapore's Technical Committee on Business Continuity	Mr Yam Guan Shyh	Member
Biorisk Association of Singapore	Dr Sheela Reuben	Secretariat
	Dr Rajkumar Ramamoorthy	Member
Health Campus Initiative (HCI)	Mr Saravanan Gunaratnam	Member

Committee	Staff	Role
APRU Multi Hazard Campus Safety Workshop 2018 Workgroup Committee	Mr Mohammad Fazulee Bin Abdul Rahman	Member
NUS SGSecure Committee (NSC)	Dr Peck Thian Guan	Member
	Mr Yam Guan Shyh	Member
	Mr Ravindran s/o Sockalingam	Secretariat
	Mr Mohammad Fazulee Bin Abdul Rahman	Asst Secretariat
	Ms Wong Thai Jin	Asst Secretariat
NUS Occupational Health Policy Working Group (NOHPW)	Mr Saravanan Gunaratnam	Member
	Dr Lim Cheh Peng	Member
	Dr Suzette De Leon	Member
	Dr Jeff Hwang	Secretariat
MOM school advisory committee	Mr Ravindran s/o Sockalingam	Member (Advisory Committee)
Singapore-MIT Alliance for Research and Technology (SMART) Institutional Biosafety Committee (IBC)	Dr Lim Cheh Peng	Observer
Business Continuity Management Committee (BCMC)	Dr Peck Thian Guan	Member
	Mr Yam Guan Shyh	Member
	Ms Shen Wan Ting Sheena	Secretariat
Risk Management Steering Committee (RMSC)	Mr Danny Toh	OSHE Risk Rep
	Dr Wong Su Ee	OSHE Risk Rep
	Mr Goh Keng Beng	OSHE Risk Rep
Safety and Health Management Committee (SHMC)	Dr Peck Thian Guan	Deputy Chairman
	Dr Lim Cheh Peng	Secretariat
	Dr Wong Su Ee	Secretariat
Institutional Laboratory Safety Committee (ILSC)	Mr Saravanan Gunaratnam	Member
	Mr Lionel Yap	Secretariat
	Mr Francis Zheng	Secretariat
Institutional Biosafety Committee (IBC)	Mr Saravanan Gunaratnam	Member
	Dr Lim Cheh Peng	Biosafety Coordinator
	Dr Suzette De Leon	Secretariat
	Dr Christine Hu	Asst Secretariat
UCI's Innovation Excellence Steering Committee (IESC)	Dr Peck Thian Guan	Member & Initiative Owner
Innovation Excellence Transformation Unit (iETU)	Dr Peck Thian Guan	Advisor
	Mr Jedison Ong	Member
Duke-NUS ABSL-3 Biosafety Committee (ABC)	Dr Suzette De Leon	OSHE Rep
NUS Medicine BSL-3 Biosafety Committee (BBC)	Dr Suzette De Leon	OSHE Rep
Institutional Animal Care & Use Committee (IACUC)	Dr Rajkumar Ramamoorthy	OSHE Rep
Institutional Safety & Health Professionals (ISHP)	Mr Saravanan Gunaratnam	Chairman
	Ms Zhou Qian Zoey	Secretariat
	Mr Lau Kwok Siong	Asst Secretariat
Institutional Eye Protection Exemption Review Committee	Dr Peck Thian Guan	Member
	Mr Saravanan Gunaratnam	Member
	Mr Lionel Yap	Secretariat



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