# Cambridge CARES Safety Procedures

# Statement of Purpose

Consistent with the Cambridge CARES mission to provide the first rate science and research, we recognize CARES has a responsibility to provide and maintain a working environment that is safe and healthy. This responsibility extends to all staff, students, research partners, contractors and other visitors to Cambridge CARES.

Our Safety & Health policy statements are as follows:

1. CARES shall prevent and minimize the occurrence of injury and illness through proactive hazard identification and risk assessment, and implementation of risk control measures.

1. CARES shall take all reasonable efforts to comply with NUS Safety & Health Policies and applicable safety and health legislation, and international best practices.
2. CARES shall lead by example and demonstrate our commitment to S&H performance through dedication of resources for capacity and competency building, and effective communications.
3. CARES shall conduct regular reviews and obtain suggestions and feedback to continually improve S&H performance and management.

# 2.0 Cambridge CARES Policies

All of these policies are provided to all laboratory workers – physically on request, and electronically always.

2.1 The Cambridge CARES Safety Procedures confirm to the NUS University Safety & Health Policy.

2.2 The CARES General Laboratory Safety procedures confirm to the NUS General Laboratory Safety manual, except for the listed differences.

2.3 The CARES Chemical Safety procedures confirm to the NUS Laboratory Chemical Safety Manual, except for listed differences.

2.4 The CARES Laser Safety procedures confirm to the NUS Laboratory Laser Safety Manual, except for listed differences.

2.5 The CARES Ionizing Radiation Safety procedures confirm to the NUS Laboratory Ionizing Radiation Safety Manual, except for listed differences.

2.6 The CARES Laboratory Biorisk Safety procedures confirm to the NUS Laboratory Biorisk Management Manual, except for listed differences.

# Appendix 1: NUS Laboratory Biorisk Management Manual

Cambridge CARES Follows the NUS Laboratory Biorisk Management Manual. The differences are noted here.

**Differences in CARES practice to the NUS Biorisk management manual**

 **General**: As CARES is a large organization, involving multiple collaborating PIs, in the NUS General Laboratory Safety Manual, for PI, please read “Respective PIs, Program Director and Lab Manager”.

p4. **2.1.1 NUS** **President.** Ultimate responsibility for CARES Safety and Health lies with the Governing Board. They invest this responsibility in the office of the Program Director.

p4. **NUS Institutional Biosafety Safety Committee (IBC).** These responsibilities are handled by the CARES Safety committee headed by the Laboratory Manager.

p4. **4.1.4 Principle Investigator (PI)** In CARES, researchers conduct the Risk assessments of their activities and submit them to their respective PIs and the Lab Manager for approval.

p18. **3.7 Oversight by Institutional Committees**. All of these responsibilities are assumed by the Program Director, the CARES Safety Committee, and the Laboratory Manager.

p19. **3.81.**  In CARES, researchers conduct the Risk assessments of their activities and submit them to their respective PIs and the Lab Manager for approval.

p26. **3.15 Training**. As CARES consists of a multi-university collaboration, individual researchers are expected to organize their training via their respective University, and to provide evidence of the training to the Lab Manager.

p. 31 **3.17.1 Laboratory Commissioning** Responsibility for Lab Commissioning rests with the Program Director

p. 31 **3.18 After Office Hours**. Office hours are 9:00 a.m. to 6:00 p.m. for CARES staff

p. 72 **6.3 Training**. As CARES consists of a multi-university collaboration, individual researchers are expected to organize their training via their respective University, and to provide evidence of the training to the Lab Manager.

p. 103. **7.6.1 Risk Assessment** In CARES, researchers conduct the Risk assessments of their activities and submit them to their respective PIs and the Lab Manager for approval

# Appendix 2: NUS Laboratory Chemical Safety Manual

 Cambridge CARES follows the NUS Laboratory Chemical Safety Manual. The differences are listed here.

**Differences in practice to the NUS Laboratory Chemical Safety Manual**

 **General**: As CARES is a large organization, involving multiple collaborating PIs, in the NUS General Laboratory Safety Manual, for PI, please read “Respective PIs, Program Director and Lab Manager”.

p. 14 **2.1.1**: NUS **President.** Ultimate responsibility for CARES Safety and Health lies with the Governing Board. They invest this responsibility in the office of the Program Director.

p.14 2.1.2 **NUS Institutional Laboratory Safety Committee.** These responsibilities are handled by the CARES Safety committee headed by the Laboratory Manager.

p.15 2.14. **Principle Investigator and Supervisor**. In CARES, researchers conduct the Risk assessments of their activities and submit them to their respective PIs and the Lab Manager for approval.

p.29 **4.2.1 Project Risk Assessment Scheme.** As detailed above, we rely on our researchers to conduct their Risk Assessments and subject them to PI and Lab Manager approval. We have our own internal Risk Assessment forms and procedures, detailed elsewhere.

p.36 **6.3.2 Safety Data Sheet** The Lab Manager has responsibility for maintaining the safety data sheet collection.

p. 51 **7.3: Procurement of Chemical**. As CARES is a collaborative exercise, we procure chemicals through NUS and NTU, as well as through our own internal mechanisms.

p.52 For “Faculty Safety and Health Officer or OSHE” read “Lab Manager”

p.53/54 **7.3.5 Explosive Precursor (EP)**. The Explosive Precursor License is held by the Lab Manager in cARES.

p.55 **7.4.1 Chemical Inventory Record System**. Our inventory system lists the following information:

1. Name of chemical (including brand name)
2. Name of chemical supplier
3. Volume / mass of chemical
4. Storage location
5. CAS number of chemical

We are currently acquiring a more advanced system for inventory that will allow us to keep a further range of information.

p.96 **11.1 Chemical Spill Response Plan** Our Chemical Spill Response Plan is detailed in the Emergency Response Plan.

p. 100 **12 Accident / Incident Reporting and Investigation** We use our own internal Accident Reporting System.

# Appendix 3: NUS Laboratory Ionizing Radiation Safety Manual

Cambridge CARES has not, as yet, obtained any ionizing radiation materials for use in our laboratories. In the event of us doing so, we shall follow the NUS Laboratory Ionizing Radiation Safety Manual, with the following differences:

**Differences between the NUS Laboratory Laser Safety Manual and CARES Practices**

**General**: As CARES is a large organization, involving multiple collaborating PIs, in the NUS General Laboratory Safety Manual, for PI, please read “Respective PIs, Program Director and Lab Manager”.

p9. **2.4.1 NUS President** Ultimate responsibility for CARES Safety and Health lies with the Governing Board. They invest this responsibility in the office of the Program Director.

p9. **2.4.2 NUS Institutional Laboratory Safety Committees** The responsibilities of the NUS Institutional Laboratory Safety Committees are handled by the CARES Safety committee.

p10. **2.4.4 Principle Investigator and Supervisor**. In CARES, researchers conduct the Risk assessments of their activities and submit them to their respective PIs and the Lab Manager for approval.

p11. **Faculty Safety & Health Officer**. The responsibilities of the Faculty Safety & Health Officer are assumed by the Lab Manager

p13. **Radiation Safety Officer**. The responsibilities of the Radiation Safety Officer are assumed by the lab manager.

P14. **Risk Assessment**. In CARES, researchers conduct the Risk assessments of their activities and submit them to their respective PIs and the Lab Manager for approval.

**Note:**

This document will be fully reviewed should CARES acquire laser capabilities such as those referenced in the manual.

# Appendix 4: NUS Laboratory Laser Safety Manual

Cambridge CARES has not, as yet, obtained any laser equipment for use in our laboratories. In the event of us doing so, we shall follow the NUS Laboratory Laser Safety Manual, with the following differences:

**Differences between the NUS Laboratory Laser Safety Manual and CARES Practices**

 **General**: As CARES is a large organization, involving multiple collaborating PIs, in the NUS General Laboratory Safety Manual, for PI, please read “Respective PIs, Program Director and Lab Manager”.

p.9 **3.4.1 NUS President.** Ultimate responsibility for CARES Safety and Health lies with the Governing Board. They invest this responsibility in the office of the Program Director.

p.9. **3.4.2. NUS Institutional Laboratory Safety Committees** The responsibilities of the NUS Institutional Laboratory Safety Committees are handled by the CARES Safety committee.

p.14 **5. Risk Assessment** In CARES, researchers conduct the Risk assessments of their activities and submit them to their respective PIs and the Lab Manager for approval.

**Note:**

This document will be fully reviewed should CARES acquire laser capabilities such as those referenced in the manual.

# Appendix 5: NUS General Laboratory Safety Manual

 Cambridge CARES follows the NUS General Laboratory Safety Manual. The differences are listed below.

**Differences between Cambridge CARES practices and the NUS General Laboratory Safety Manual**

 **General**: As CARES is a large organization, involving multiple collaborating PIs, in the NUS General Laboratory Safety Manual, for PI, please read “Respective PIs, Program Director and Lab Manager”.

 p. 12, **4. Risk Management**: In contrast to NUS, CARES requires individual researchers to complete Risk Assessments of all their activities. These Risk Assessments are then reviewed and approved by the respective PIs and the Lab Manager.

 p. 13, **5. Training:** As CARES is a collaborative enterprise between three universities – the National University of Singapore, Nanyang Technological University, and the University of Cambridge – we require our staff and students to undergo safety training at their respective institutes and to provide proof of such training to us.

 p. 18, **7.1 Laboratory Commissioning**: the Program Director approves the laboratory for use in CARES

 p. 18, **7.2.1 Safety and Health Induction Checklist**: We use our own induction checklist, as documented.