



National Centre for Sensor Research

Safety Statement

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1.0 Introduction

1.1 The National Centre for Sensor Research (NCSR) acts as the umbrella organisation for the following large scale research initiatives: the Biomedical Diagnostics Institute (BDI), the Irish Separations Science Cluster (ISSC), the National Biophotonics & Imaging Platform, Ireland (NBIP), the Insight Centre for Data Analytics, the Optical Sensors Laboratory (OSL) and the Marine & Environmental Sensing Technology Hub (MESTECH).

1.2 The purpose of the Safety, Health and Welfare at Work Act 2005, is to ensure the safety, health and welfare of all employees* in the workplace and to ensure that non-employees present in the workplace are safe. The Act applies to employees in all types of work and embraces all the activities of Dublin City University (DCU).

** The SHWW Act 2005 definition of an “employee” reads “a person who has entered into or works under a contract of employment and includes a fixed-term employee and a temporary employee ...”. In the DCU context, postgraduate students who hold an employment contract issued by DCU HR Office are deemed to be employees of DCU.*

1.3 In compliance with the Act, the University has prepared a written Framework Safety Statement describing the employer arrangements and the employee co-operation necessary to achieve this purpose. In addition, the Framework Safety Statement outlines the University’s policies on occupational health and safety matters and defines the necessary management structure for the implementation of these policies. Specific health and safety issues of relevance to the University as a whole are detailed in this framework safety statement.

1.4 In compliance with the DCU Framework Safety Statement, the National Centre for Sensor Research (NCSR) has prepared our own local safety statement, documenting our own hazards and risks, as well as the risk control, protective and preventive measures and resources for ensuring a safe and healthy work environment.

1.5 This Safety Statement sets out the policies and procedures in the protection of employees, students and visitors from potential injury or ill-health arising from our work activities.

1.6 This Safety Statement will be updated as necessary in light of new legislation, staff feedback, university structural changes and practical experience. In addition, the Safety Statement will be reviewed annually.

1.7 This Safety Statement is available to DCU Management and to all employees, visitors and students of the NCSR.

2.0 Statement of Safety, Health & Welfare at Work Policy

2.1 The policy of the NCSR is, in so far as is reasonably practicable, to ensure the safety, health and welfare at work of all our employees and further to ensure that persons not in our employment,

who may be affected by the work activities, are not thereby exposed to risks to their safety and health.

- 2.2 In particular, the NCSR recognises our express responsibilities under Section 8 of the Act and will provide the necessary resources, structures and procedures required to safeguard our staff, students and visitors against the risks arising from activities in our workplace.
- 2.3 The NCSR considers that it is the strict duty of all staff and students to conform to university safety policies and practices and to carry out their responsibilities as detailed in this document and in accordance with any other relevant legislation. Staff members with specific responsibilities for safety, health and welfare must properly delegate these in their absence.
- 2.4 In addition to reviewing this Safety Statement, each employee is expected to make himself/herself familiar with the DCU Framework Safety Statement. The Framework Safety Statement is available on the DCU Website.
- 2.5 Staff and students who fail to co-operate with safety procedures may be subject to the normal DCU disciplinary procedures.
- 2.6 The NCSR welcomes feedback from staff and students regarding any aspect of this document or any other health and safety concerns. Feedback in this regard should be directed to the Centre Safety Co-ordinators, (i.e. Stephen Fuller; x6305, stephen.fuller@dcu.ie or Josephine Ozoani; x7712, josephine.ozoani@dcu.ie).

Safety Statement 2014: Approval and Sign-Off

This is to certify that the NCSR Safety Statement has been approved by the NCSR Director and the Centre Safety Advisor.

Prof. Dermot Diamond
NCSR Director

Date

Mr. Robbie Sinnott
Centre Safety Advisor/ Research Facilities Manager
for the Science & Technology Enhancement Platform (STEP)

Date

3.0 Scope of the Safety Statement

This safety statement deals in the main with the health and safety issues that fall within the remit of the NCSR.

Our staff offices and operations are located in the following Estates;

- (a): All floors of the NCSR and the BDI extension, R&E Building.
- (b): Room N205 in Block-2.

Refer also to the “Floor Plans / Space Allocation” document referenced in Appendix 4.

The scope of our operations includes research which is focused on the science and applications of chemicals sensors and biosensors.

4.0 Health and Safety Management Structures and Responsibilities

4.1 In accordance with the DCU Framework Safety Statement, the Director of the NCSR, Prof. Dermot Diamond (x5404, dermot.diamond@dcu.ie), as part of his management function, is responsible for ensuring, so far as is reasonably practical, the health and safety of persons working, studying or visiting the NCSR. In particular, he is responsible for the following:

1. To ensure that we have prepared a Safety Statement, relevant to our operations, which complies with Section 20 of the Safety, Health and Welfare at Work Act.
2. To ensure that the safety statement is reviewed at least annually and that the Health and Safety Steering Group is notified that the review has been completed and is provided with any updated document which may result from such a review.
3. To ensure that the topic of occupational health and safety/fire safety is a standing agenda item on all NCSR staff meeting agendas.
4. To ensure that all hazards are identified, risks arising are quantified, and risk control measures are identified and implemented.
5. To ensure that regular safety inspections/audits are carried out to monitor compliance with the Safety Statement and legal requirements and to ensure appropriate follow-up action is taken.
6. To investigate all accidents to staff/students/visitors in his area of responsibility and to complete the DCU Injury/Incident Report forms as appropriate.
7. To ensure that the DCU Evacuation and First Aid Procedures are implemented and that sufficient Fire Wardens/First Aid personnel are available.
8. To ensure that staff are appropriately trained and competent to carry out their duties safely and to ensure the attendance of staff at designated training courses, as appropriate.
9. To ensure that students are adequately trained and supervised in carrying out practical and experimental work. (Adequate level of supervision to be determined having regard to the age, level of experience and status (graduate/post-graduate etc) of the student).

10. To arrange for the provision of adequate and appropriate personal protective equipment for employees within the NCSR, based on risk assessments.
11. To notify the Estates Office of any health and/or safety issues arising within their area of operation which requires Estates Office action/input to resolve
12. To ensure that all contractors carrying out work in their area operate under the Estates Office Permit to Work system.
13. Fire Safety Responsibilities;
 - (a): To promote general fire safety within the NCSR.
 - (b): To ensure that staff attend fire safety awareness training arranged by the Health and Safety Officer / Fire Safety Officer.
 - (c): To ensure, in consultation with the Fire Safety Officer and other Heads who may have staff located in the building, that a sufficient number of trained Fire Wardens is available within the building to respond to evacuation alarms.
 - (d): To ensure that all fire safety housekeeping inspections required under the DCU Building Fire Safety Register system are carried out (and that the outcomes are notified to the campus Fire Safety Officer).
 - (e): To receive reports of fire safety issues which may arise during the housekeeping inspections and to follow up with the appropriate parties (e.g. local area staff, Estates Office Helpdesk etc), to ensure resolution.
 - (f): To escalate issues which cannot be resolved at local level to Deans / Senior Managers.

4.2 The Safety Management Structure within the NCSR is comprised of the following people:

- Prof. Dermot Diamond, NCSR Director. The Director has ultimate responsibility for the provision of a safe working environment within the NCSR.
- Mr. Robbie Sinnott, Centre Safety Advisor (CSA). The CSA currently oversees the day-to-day maintenance of safety policies / procedures within the NCSR.
- Mr. Stephen Fuller, Centre Safety Coordinator (CSC).
- Ms. Josephine Ozoani, Centre Safety Coordinator (CSC). The CSCs liaise with the CSA and the Lab Safety Reps to ensure that all safety policies / procedures are being adhered to within the NCSR.
- Laboratory Safety Representatives / Deputy Safety Representatives. The Lab Safety Reps monitor safety within the individual labs / workshops and bring any safety concerns or issues to the CSC's or the CSA.

Appendix 1(b) details the Safety Management Structure that is currently in place within the NCSR.

4.3 Communication between the NCSR Management and NCSR members on matters of health and safety is achieved via the NCSR Management Committee, the NCSR web-site, the NCSR newsletter and the NCSR Safety Statement. A lot of health and safety information relevant to the NCSR can be found on the L:-drive under the following directory: **L:\All\NCSR\Health and Safety.**

4.4 Health and Safety Consultation on Campus

In order to ensure effective consultation with staff and other campus users, DCU Executive has established a Health and Safety Consultation Group to provide a formal structure for the highlighting and resolution of more difficult Health and Safety problems/issues that cannot be resolved locally. Health and Safety issues that are not resolvable through internal channels can be referred through a representative to the Health & Safety Consultation Group and ultimately the H&S Steering Group. In addition, the current Safety Representative(s) for the University can be consulted informally and in confidence by individual staff members with a view to raising specific Health & Safety issues for resolution.

Appendix 1(a) provides a diagrammatic overview of the Health & Safety structure within DCU. Refer also to Appendix 1 of the DCU Safety Statement for more specific details (including the identification of the relevant personnel), relating to the Health & Safety structure within DCU.

4.4 Employee Co-Operation

Section 13 of the Safety, Health and Welfare at Work Act 2005 imposes a number of obligations on employees while at work:

- (1) An employee shall, while at work:
 - a) *Comply with the relevant statutory provisions, as appropriate, and take reasonable care to protect his or her safety, health and welfare and the safety, health and welfare of any other person who may be affected by the employee's acts or omissions at work,*
 - b) *Ensure that (s)he is not under the influence of an intoxicant to the extent that (s)he is in such a state as to endanger his or her own safety, health or welfare at work or that of any other person,*
 - c) *If reasonably required by his or her employer, to submit to any appropriate, reasonable and proportionate tests for intoxicants by, or under the supervision of, a registered medical practitioner who is a competent person, as may be prescribed,*
 - d) *Co-operate with his or her employer or any other person so far as is necessary to enable his or her employer or the other person to comply with the relevant statutory provision, as appropriate,*
 - e) *Not engage in improper conduct or other behaviour that is likely to endanger his or her own safety, health and welfare at work or that of any other person,*
 - f) *Attend such training and, as appropriate, undergo such assessment as may reasonably be required by his or her employer or as may be prescribed relating to safety, health and welfare at work or relating to the work carried out by the employee,*

- g) *Having regard to his or her training and the instructions given by his or her employer, make correct use of any article or substance provided for use by the employee at work or for the protection of his or her safety, health and welfare to work, including protective clothing or equipment,*
- h) *Report to his or her employer or to any other appropriate person, as soon as practicable-*
 - i.) *any work being carried out, or likely to be carried out, in a manner which may endanger the safety, health and welfare at work of the employee or that of any other person,*
 - ii.) *any defect in the place of work, the system of work, any article or substance which might endanger the safety, health or welfare at work of the employee or that of any other person, or*
 - iii.) *any contravention of the relevant statutory provisions which may endanger the safety, health and welfare at work of the employee or that of any other person, of which (s)he is aware.*

(2) *An employee shall not, on entering into a contract of employment, misrepresent himself or herself to an employer with regard to the level of training as may be prescribed under subsection (1)(f)*

As well as these general duties, it is important that employees are aware of the health and safety duties assigned to them in this safety statement as part of their normal duties. These delegated duties are essential for the day to day implementation of safety measures, and employees are obliged to carry out these functions in accordance with Section 13(1)(d) of the Act, as above.

Section 14 of the Act applies to all persons and requires that:

A person shall not intentionally, recklessly or without reasonable cause:

- (a) *interfere with, misuse or damage anything provided under the relevant statutory provisions or otherwise for securing the safety, health and welfare of persons at work, or*
- (b) *place at risk the safety, health or welfare of persons in connection with work activities.*

In addition to the above legal requirements, all staff and students of the NCSR are required to immediately report to Mr. Robbie Sinnott, CSA (x6320, robbie.sinnott@dcu.ie) any accident resulting in loss or injury or any incident that could have resulted in loss or injury. The injured party is also required to co-operate with DCU in the investigation of the accident and the completion of the DCU Injury/Incident Report Form.

5.0 Health & Safety Resources

- 5.1** Considerable resources are expended by the NCSR in securing the health, safety and welfare of employees in terms of personnel, time, materials, equipment and the purchase of goods and services.
- 5.2** The NCSR Stores, Room S101, stocks various PPE items (including safety glasses, lab coats, gloves, face-masks etc), as well as items that help to maintain a safe working environment (e.g.

chemical waste drums, sharps bins, First Aid consumables, gas cylinder trolleys, chemical spill granules etc).

Where additional equipment, training etc is required (whether as a result of ongoing risk assessment or legislative change), resources will be allocated on a prioritised basis to meet the identified requirements.

- 5.3** The Health and Safety Office retains a reference library of texts, literature, videos and other publications on health and safety matters. The Office also subscribes to an online database of safety legislation, codes of practice and international standards. All staff can gain access to these information resources by contacting the Health & Safety Office. DCU Library Services also offers a number of health and safety journals and reference material.

6.0 Health and Safety Training

The provision of appropriate training and instruction is an important element in the management of safety and the implementation of this safety statement. Such training is also a legal requirement in controlling many of the risks identified in the NCSR. Training and instruction also serve to improve safety awareness and attitudes that are essential for effective safety management.

In addition to our statutory duty to employees, the NCSR also has a common law duty to all undergraduate and postgraduate students to provide such training as is necessary to enable the students to undertake their studies in a manner which, in so far as it is reasonably practicable, is safe and does not give rise to risks to health or expose the individual student or other persons to unacceptable levels of risk. The provision and extent of any necessary training is dependent upon the nature of the academic discipline being pursued, the experience and disposition of the students involved, their familiarity with any equipment/substances to be utilised, the environment/conditions where the activities may be discharged, and the extent to which supervision is necessary and available.

6.1 Health & Safety Training within the NCSR

Safety Induction training is provided to all new students and employees who intend to work within the NCSR for a period greater than one month. The purpose of this training is to provide a general overview of Health & Safety policies within the NCSR. A copy of the form that is used to provide this training can be found in Appendix 3. Each person who undergoes this training must complete the “Declaration of Understanding” section at the end of the training form to verify that they fully understand everything that has been brought to their attention. The CSC’s usually perform this training, however, the CSA may also perform this training in their absence. Records of this training are kept on file by the CSC’s in a filing cabinet in room S103. An updated list of all those who have received this training (since June, 2010) can also be found here: **L:\All\NCSR\Health and Safety\TRAINING\Safety Induction Training**.

Principal Investigators are responsible for providing equipment- or task-specific training to their own researchers for anything that has a health/safety risk associated with that equipment or task. The relevant PIs are responsible for organising, developing and recording such training and this should involve the use of “Risk Assessments” that have been created specifically for that equipment or task.

“SafeLab” training modules are also provided to new students / staff at the start of each academic year. This training is coordinated, performed and recorded by members of the Faculty of Science & Health in conjunction with the Health & Safety Office. Topics previously covered in the “SafeLab” training include: “Chemical Safety”, “Biological Safety”, “Electrical Safety”, “Laser Safety”, “Radiation Safety”, “Manual Handling”, “Out of Hours/Lone Working” and “Fire Safety Awareness”. More details relating to this “SafeLab” training can be found on the Faculty of Science & Health website.

6.2 Health and Safety Office Training

The Health and Safety Office is responsible for providing the following specific Health and Safety Training on an ongoing basis;

- (1) Health and Safety Induction of all new employees and students, including information on fire and emergency procedures (delivered in conjunction with HR scheduled New Employee Induction Training).
- (2) Manual Handling Training
- (3) Fire Safety Awareness Training
- (4) Fire Warden Training
- (5) First Aid Training
- (6) Office Ergonomics Training
- (7) Management Training in Health and Safety
- (8) Safety Representative Training
- (9) Out of Hours Policy Induction Training
- (10) Emergency Response Training
- (11) Risk Assessment & Control Training
- (12) Preparing and Updating Safety Statement Training
- (13) Other central training where risk assessment identifies a specific campus need

Details of upcoming courses are advertised via e-mail on an ongoing basis. As staff will generally be involved in manual handling at some stage in DCU, all NCSR staff are required to attend Manual Handling training provided by the Health & Safety Office.

7.0 Fire and Emergency Management

Refer to section 6 of the *DCU Framework Safety Statement (April 2014)* for details on how DCU propose to implement an ambitious, 3-strand fire safety management system across the campus in 2013 / 2014.

7.1 Fire Wardens

The following members of NCSR staff are trained Fire Wardens:

- Maurice Burke (x7605; maurice.burke@dcu.ie)
- Stephen Fuller (x6305; stephen.fuller@dcu.ie)
- Lorcan Kent (x6305; lorcan.kent@dcu.ie)
- Brian O'Reilly (x6306; brian.oreilly@dcu.ie)
- Josephine Ozoani (x7712; josephine.ozoani@dcu.ie)
- Barry Byrne (x5818; barry.byrne@dcu.ie)
- Robbie Sinnott (x6320; robbie.sinnott@dcu.ie)

Their role is to sweep their designated section of the NCSR building in the event of an alarm activation and to provide information on building occupancy etc. to DCU security and the emergency services in the event of a genuine emergency. All staff and students are required to comply with the instructions of Fire Wardens and to evacuate the building promptly in the event of an emergency.

The NCSR will ensure that sufficient Fire Wardens are trained and available on an ongoing basis to provide an effective service throughout the building. The CSA, Mr. Robbie Sinnott (x6320, robbie.sinnott@dcu.ie) is responsible for ensuring that the Health & Safety Office is notified of any changes in the Fire Warden Team and for ensuring that the names of proposed Fire Wardens are added to the waiting list for training.

7.2 Emergency Evacuation

Fire / Emergency Drills are organised annually (usually in the second week of Semester 1) by the Health and Safety Office in cooperation with the Estates Office and the local Fire Wardens. Feedback on performance in terms of the time taken to evacuate and particular difficulties with alarm systems / building fabric are notified to all staff via e-mail. Where the performance of a particular building in a fire drill falls short of the required standard, further drills will be carried out to confirm that the required standard has been reached.

The *DCU Emergency Evacuation Policy & Procedure* is posted on the Health & Safety Website.

7.3 Local measures

All staff are required to familiarise themselves with the locations of:

- (a) escape routes (refer to the “Emergency Escape Route” document referenced in Appendix 4)
- (b) fire alarm call points (red break glass units)
- (c) fire extinguishers and fire blankets
- (d) fire assembly points

7.4 First Aid and Injury/Illness Management

Fully stocked First Aid boxes are available in almost all laboratories and workshops within the NCSR. Some offices also contain First Aid boxes, notably rooms S101, S103 and S311.

The following members of staff are trained as Occupational First Aiders.

- Maurice Burke (x7605; maurice.burke@dcu.ie)
- Josephine Ozoani (x7712; josephine.ozoani@dcu.ie)
- Dr. Una Prendergast (x6310; una.prendergast@dcu.ie)
- Emma O’Brien (x5349; emma.obrien@dcu.ie)
- Barry Byrne (x5818; barry.byrne@dcu.ie)

They are available to respond to First Aid incidents during normal office hours. In addition, all permanent members of the DCU Security team undergo Occupational First Aid Training with a view to providing first aid response up until 22:00, Monday – Friday and to 18:00 on Saturday & Sunday.

The CSA, Mr. Robbie Sinnott (x6320, robbie.sinnott@dcu.ie) is responsible for ensuring that the Health & Safety Office is notified of any changes in the First Aid team and for ensuring that the names of proposed First Aiders are added to the waiting list for training.

The DCU First Aid Policy & Procedures, Injury / Incident Management Procedure and the Emergency Ambulance Assistance Procedure are posted on the Health & Safety Website.

8.0 Hazard Identification, Risk Assessment & Controlling Risks

8.1 Definitions

- “Hazard” is *any substance, article, material or practice within a workplace which has the potential to cause harm to employees at work or visitors to that workplace.*
Hazards are often categorised as Physical, Chemical, Biological, Mechanical/Electrical, Environmental or Psychosocial (Human).

- “Risk” is *the potential of the hazard to cause harm in the actual circumstances of use.*
- “Risk Assessment” is *the evaluation of the likelihood that harm could arise from the hazard and the likely severity and extent of the harm.*

The outcome of qualitative risk assessment requires that the identified hazards be given a risk rating of “Intolerable”, “Substantial”, “Medium”, “Acceptable”, or “Trivial”. Control measures are prioritized based on the risk rating and are commensurate with the level of risk.

8.2 Purpose

The purpose of performing a “Risk Assessment” is to identify the hazards associated with an activity, to assess the seriousness of these hazards and to formulate systems of work, training or other methods to reduce the associated risks to a minimum or at least, to an acceptable level. Risk Assessments must be carried out by someone who is experienced and fully familiar with the activity, i.e. a “competent person”.

8.3 Creation of Risk Assessments

A review and assessment of hazards, risks and controls within the NCSR has been undertaken. This exercise has been carried out in accordance with the definitions and procedures described above/below.

Appendix 2 contains a list of the current Risk Assessments in place in the NCSR. All risk assessments are available for reference on a shared-access DCU network drive at the following location: **L:\All\NCSR\Health and Safety\Risk Assessments.**

All new and amended equipment, procedures and processes will be similarly assessed as they arise and the results similarly recorded. All staff are regularly encouraged to review the hazards listed in Appendix 2 to identify any issues that are not currently assessed and to feedback to the CSA, Mr. Robbie Sinnott (x6320, robbie.sinnott@dcu.ie).

In relation to post-graduate/post-doctoral research, the Principal Investigator (PI) is responsible for carrying out ongoing risk assessment of his/her own research in consultation with the post-grad/post-doc. The PI must ensure that the control measures in place comply with all health and safety regulations currently in force. A copy of all such written risk assessments must be supplied to the CSA, Mr. Robbie Sinnott (x6320, robbie.sinnott@dcu.ie) for review and recording purposes.

8.4 Risk Control

The outcome of the risk assessment process guides the identification of appropriate control measures. The goal is to reduce the risk arising from the specified hazards to “as low as is reasonably practicable”. Selection of control measures is determined by:

(a): The magnitude of the assessed risk

(b): The availability / feasibility of control options

(c): The cost of the proposed controls and the level of risk reduction achievable by their introduction.

In selecting controls, the following hierarchy is considered:

1. Elimination
2. Substitution
3. Enclosure
4. Guarding
5. Safe systems of work
6. Supervision
7. Training/Information
8. Personal Protective Equipment (PPE)

All final decisions on risk control must take into account the relevant legal requirements and industry codes of practice.

Risk assessments are particularly important in the science, engineering and manual work areas. Activities including the use of hazardous chemicals or machinery, field trips, science based practicals/demonstrations/research projects, hazardous physical manipulations, maintenance of hazardous machinery and the manufacture of new hazardous substances or equipment etc, require rigorous risk assessments with carefully documented and implemented controls. Where possible, controls and other safety measures identified in the risk assessment process must be put in place immediately. In other cases where the scale or cost prohibits immediate action, a program of action must be planned by the relevant head of department/section and put into effect and the relevant deadline listed in the Risk Assessment. Depending on the risks involved, appropriate interim action must be taken i.e. if “Substantial”, discontinuing the operation in the interim must be considered. The implementation of these arrangements must be reviewed at regular intervals.

8.5 Intolerable Risk

Where the risk cannot be reduced to acceptable levels and finance is not available to implement appropriate controls, it is the policy of the NCSR to require that the activity cease or the area close.

9.0 Management of Contractors

Refer to section 8 of the DCU Framework Safety Statement.

10.0 Bullying and Harassment

Refer to section 9 of the DCU Framework Safety Statement.

11.0 Stress at Work

Refer to section 10 of the DCU Framework Safety Statement.

12.0 Safety In Pregnancy

Refer to section 14 of the DCU Framework Safety Statement.

13.0 Out of Hours Work

“Out of Hours” working is defined as follows;

- Any Laboratory / Experimental work undertaken outside of 09:00 – 17:15, Monday – Friday.
- Any other work undertaken outside of 07:00 – 22:00, Monday – Friday and during the hours of 09:00 – 18:00 on Saturday, Sunday & Bank Holidays.

“Lock-Up Hours” (where no access is allowed to the University teaching and research buildings) are as follows:

- 18:00 Saturday – 09:00 Sunday
- 18:00 Sunday – 07:00 Monday
- 18:00 Bank Holidays – 07:00 Next Working Day

In addition, the University may designate certain days during the Christmas and Easter periods as “Lock-Up Days”.

The NCSR strongly recommends that in the interest of health, safety and personal security, out of hours work should only be undertaken when absolutely necessary and where no other alternatives are available. Where employees or postgraduate students need to undertake work out of hours they must adhere strictly to the DCU “Out of Hours” Policy. This policy is available for reference on the DCU Health & Safety Office website.

Note: Unsupervised undergraduate student “Out of Hours” work is strictly prohibited !!

A copy of the relevant “Approval Form” and “Risk Assessment Form” for Out of Hours Work can be found on a shared-access DCU network drive at the following location: **L:\All\NCSR\Health and Safety\Forms.**

Refer also to section 11 of the DCU Framework Safety Statement.

14.0 Use of Display Screen Equipment (DSE)

Refer to section 15 of the DCU Framework Safety Statement.

15.0 Manual Handling

Refer to section 12 of the DCU Framework Safety Statement.

16.0 Smoking on Campus

Refer to section 16 of the DCU Framework Safety Statement.

17.0 Injury / Incident Reporting and Investigation

All staff and students of the NCSR are required to immediately report to Mr. Robbie Sinnott, CSA (x6320, robbie.sinnott@dcu.ie) any accident resulting in loss or injury or any incident that could have resulted in loss or injury. The injured party is also required to co-operate in the investigation of the incident and the completion of the DCU Injury/Incident Report Form.

Refer also to section 17 of the DCU Framework Safety Statement.

18.0 Health Risk Management

Refer to section 13 of the DCU Framework Safety Statement

19.0 Health and Safety Performance Monitoring

Refer to section 19 of the DCU Framework Safety Statement

20.0 Traffic Management on Campus

Refer to section 18 of the DCU Framework Safety Statement

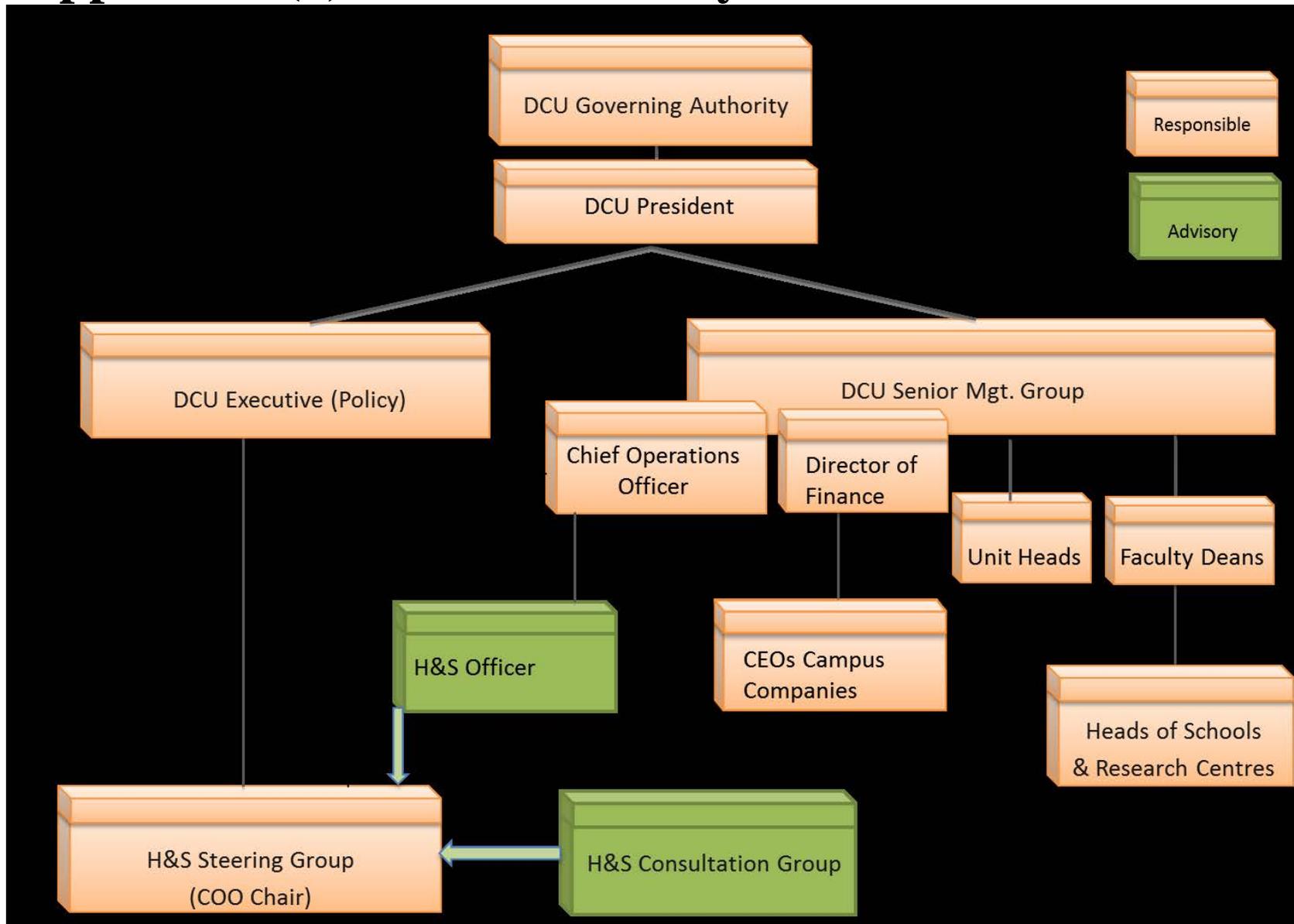
21.0 Revision and Updating of the NCSR Safety Statement

The NCSR Safety Statement must be reviewed at least annually by either the CSC's or the CSA, or more regularly where the changes or hazards dictate more frequent reviews. Confirmation that the annual NCSR Safety Statement review has been completed and any resulting updated Safety Statement must be forwarded by a CSC/ the CSA to the University Health and Safety Steering Group for reporting to the DCU Executive. The Health and Safety Office provides training in developing and updating Safety Statements and this training is normally held in May/June of each year.

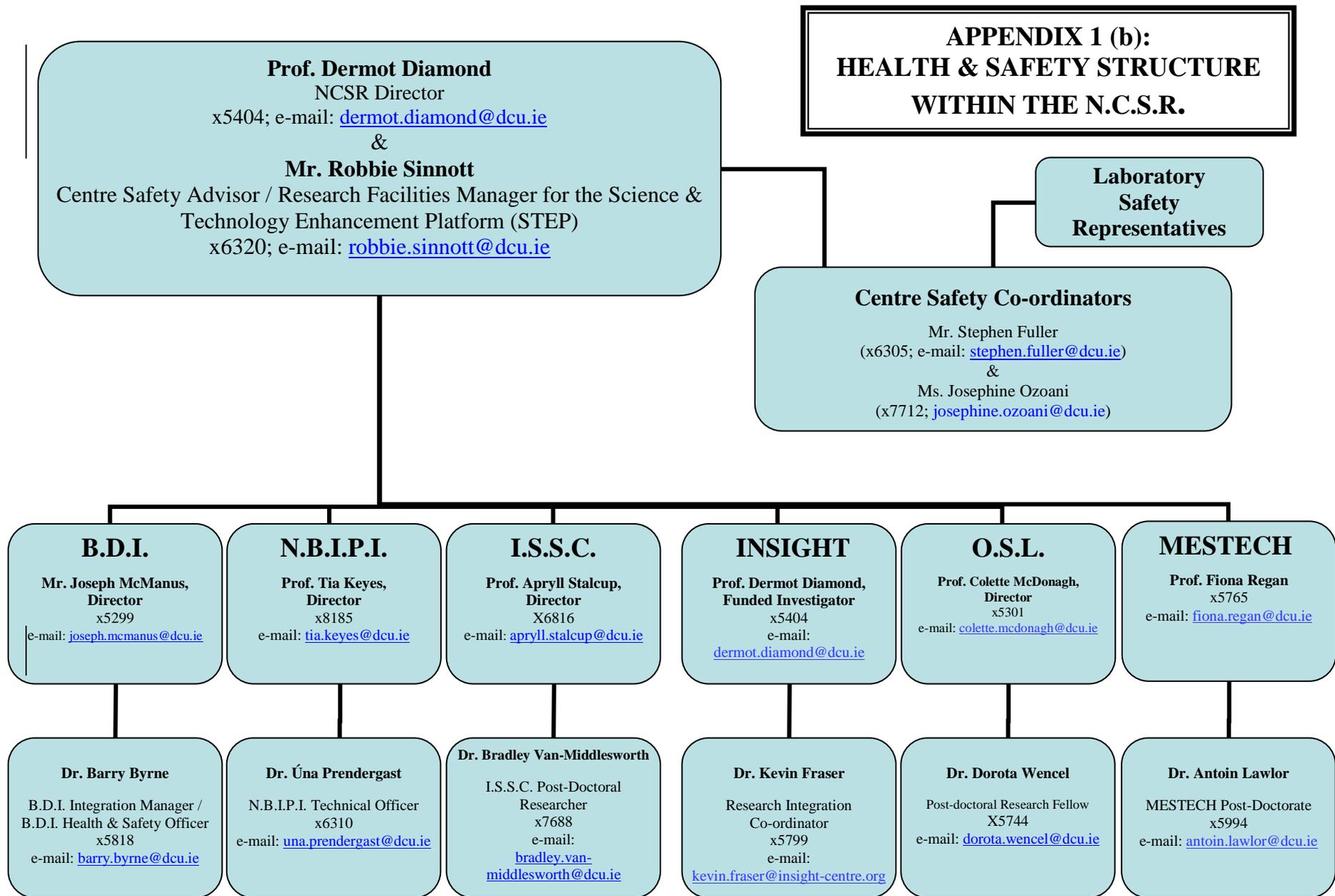
22.0 Communication of the NCSR Safety Statement

The CSC's/ CSA, in compliance with Section 20.3 of the "*Safety, Health & Welfare at Work Act, 2005*", will bring the contents of the NCSR Safety Statement to the attention of all NCSR members following its amendment, or annually if no amendment is required.

Appendix 1(a): Health & Safety Structures within DCU



**APPENDIX 1 (b):
HEALTH & SAFETY STRUCTURE
WITHIN THE N.C.S.R.**



Appendix 2

List of NCSR Risk Assessments

The following Risk Assessments have been completed for equipment used & activities performed within the NCSR. All of these Risk Assessments are available for reference on a shared-access DCU network drive at the following location:
L:\All\NCSR\Health and Safety\Risk Assessments

In-line with recommendations from the Health & Safety Office in DCU, each Risk Assessment is categorised based on whether the main hazards are either “Physical”, “Chemical”, “Biological”, “Mechanical/Electrical”, “Environmental” or “Psychosocial (Human)”.

(A): PHYSICAL HAZARDS:

- General Office Work
- Handling, Transport and Storage of Liquid N₂ and other Cryogenic Material
- Micro-Milling (Datron 3D Milling Machine in SG02)
- Operation of the Optimum D320 x 920 Centre Lathe in SG02
- Procedures for Preparative Thin Layer Chromatography and Flash Chromatography
- Use of the Agilent Super-Critical Fluid Chromatography System in S205D
- Use of the Autoclave in S205F
- Use of the Beckman Coulter Delsa Nano C DLS Instrument
- Use of the Bruker LC-MS
- Use of the Farfield Analight 4D Dual Polarisation Interferometer
- Use of Fumehoods
- Use of Glassware
- Use of the Graphtec Cutter in S251
- Use of the Horiba Jobin Yvon LabRAM High Resolution Raman Microscope
- Use of the Horiba Raman Microscope / Veeco Atomic Force Microscope
- Use of Laboratory Centrifuges
- Use of Laboratory Heating Equipment
- Use of the MicroTime 200 Fluorescence Lifetime Microscope System
- Use of the Orbital Shaker in S205E

- Use of the Perkin Elmer Bench-Top Raman Spectrometer in SG04
- Use of the Perkin Elmer FT-IR Spectrometer in SG04
- Use of Reduced Pressure or Vacuum
- Use of the SDS-Page Electrophoresis Equipment
- Use of the Sodium Press to make Sodium Wire for Solvent Drying
- Use of the Trinity Biotech Coagulometer in S251
- Use of Ultra-Violet Light Sources
- Use of the Varian FT-IR Spectrometer / Microscope with Continuum Minilite Nd:YAG Nano-second Pulsed Laser
- Use of the Varian 940 HPLC System
- Use of the Veeco Bioscope II Instrument
- Visual Display Equipment
- Use of the Waters QToF Ultima Global Mass Spectrometer in S205C

(B): CHEMICAL HAZARDS:

- Cladding a Carbon Monolith Rod with Teflon
- Cleaning of Quartz Crystal Microbalance with Piranha Solution
- Distillation of Solvents
- Disposal of Waste Solvents
- Heated Chemical Reaction in Lab S205E
- Use of Cyanide Salts
- Use of Flammable, Explosive and Toxic Gases
- Use of Laser Dyes and Dye Solutions
- Use, Handling and Clean-up Procedures for Mercury
- Use of Hydrofluoric Acid
- Use of Phosphine Gas
- Use of Pyrophoric Reagents
- Use of 1,3-Butadiene in Lab SB04
- The Cleaning of Glassware Contaminated with Hazardous Residues
- Transport, Storage and Use of Solvents and other Flammable Liquids

(C): BIOLOGICAL HAZARDS

- Bloodhandling in Lab S251
- Genetically Modified Micro-organisms Class I, Part 1
- Genetically Modified Micro-organisms Class I, Part 2
- Genetically Modified Micro-organisms Class II
- Working with *Listeria monocytogenes* (Class II Biohazard)

(D): MECHANICAL / ELECTRICAL HAZARDS

- Laser Work in a Laboratory
- The Transport and Use of Compressed Gas Cylinders
- The Use of High Power Microwave and Radio-Frequency Power Supplies
- Use of a Potentiostat
- Use of Standard Electrical Equipment

Appendix 3

NCSR Safety Induction Training Form

N.C.S.R. Safety Induction Training – 2014

Aim: To safeguard the H&S at work of all NCSR members, including all students and visitors whilst engaged in NCSR activities and to contractors and leasers of areas whilst on the NCSR premises.

Legislation: “The Safety, Health & Welfare at Work Act, 2005” (H.S.A.)

Responsibilities:

- NCSR Director (Prof. Dermot Diamond)
- Centre Safety Advisor (Mr. Robbie Sinnott)
- Centre Safety Co-ordinators (Stephen Fuller, x6305 & Ms. Josephine Ozoani, x7712)
- Lab Safety Reps & Deputy Safety Reps (refer to the Addendum sheet)

Employee Responsibilities:

1. To take reasonable care whilst at work for his/her own safety and for the safety of those who may be affected by his/her acts or omissions.
2. Not to be under the influence of an intoxicant (drink, drugs incl. prescription drugs), so as to be a danger to themselves or others
3. To co-operate with the employer on safety matters in order to enable the employer to fulfill his/her legal duties. (Note: This includes any requirements to attend training).
4. Not to misuse or damage safety equipment which is provided by the employer.

Lab Audits:

- Performed monthly in each lab/workshop by one of the CSC’s.
- Includes a check of the eye-wash stations, safety showers, First Aid Cabinet stock-levels, PPE compliance, hazard identification & solvent storage.
- Hazardous waste is also removed from each lab at this time.
- The results of the lab audit are reported back to the CSA and the Lab Safety Reps, who should endeavor to resolve any issues identified.
- Bi-monthly lab audits will also be performed by senior members / management within the Faculty.

Communication: E-Mails, NCSR Newsletter (“Safety Corner”), Lab Rep Meetings, L:\-Drive Referencing: **L:\All\NCSR\Health and Safety**

Normal University Working Hours: 09:00 – 17:15, Monday to Friday.

N.C.S.R. Safety Induction Training – 2014

Evacuations:

- Fire “Drills” will be notified in advance, otherwise take very seriously.
- Assembly Point **23** = set-down car-park in front of R&E building. (B.D.I.: Assembly Point **20**).
- **MUST** comply with the Fire Wardens instructions (F.W.s identified by yellow bibs).
- Do not use the elevators.
- Emergency escape routes: follow the green “running man” symbols.
- Goal = 3 minute evacuation.
- Leave everything & **DO NOT** run.
- No roll-call, so remember who’s in (Fire-Warden “Sweeps”).

Fire:

- If clearly minor: tackle using the appropriate extinguisher or materials (**max 1 extinguisher!**).
- If not minor: raise the alarm (red break-glass unit), tackle the fire (**max 1 extinguisher!**) & evacuate the building.
- **Never let a fire get between you and the exit !!**
- Always discharge the entire contents of the fire extinguisher.
- Contact the Technical staff (room S103, x6305/x6306), Fire Wardens or Security (x5999).
- Familiarise yourself with the location of the nearest fire extinguishers (and the type).
- Report **ALL** instances of fire, however minor.

Spillages (Chemical / Biological):

- New blanket policy for all staff / students: Leave, lock door(s), post warning sign on door(s), contact one of the Chemical / Biological Safety Officers (details posted in each lab).
- Large spill of flammable solvent: use Foam fire extinguisher to prevent it catching fire.
- If there’s a danger to others, then activate the nearest fire alarm point (red break-glass unit.)
- Suspect odours: Contact the Technical staff, H&S members or Security (x5999).

Injured Person:

- Contact a registered First Aider (Refer to the list provided).
- If serious, contact Security as well (x5999).
- If there’s a Fire Alarm, **DO NOT** move the patient, unless there’s imminent danger!

N.C.S.R. Safety Induction Training – 2014

Flood:

- Stop the source of the leak, if possible.
- Contact the Technical staff or the Estates Office (x5336 / x5362).
- If out of hours, contact Security (x5999).
- Warn people on the floors below & safe-guard electrical equipment.
- “Spill Response” Wheelie Bin (red) – located outside room S101 (NCSR Stores).
- Water Hoover available from room X161 (School of Chemistry).
- Water cooling connections? If “Yes”, then use plastic tie-wraps to secure tubing (except on the tap itself !)

Solvents:

- Only a “working minimum” of solvent should be left out on the bench.
- Store in ventilated cupboards (beneath the fumehoods) or in solvent cabinets.
- Use of solvent stills? If “Yes”, then consult the relevant Risk Assessment.

Leaving a Lab / Workshop:

- Turn everything off (lights, water, equipment, gas) & lock the doors.
- Complete an “Overnight Reaction Form”, if applicable.

Personal Safety:

- Eating / Drinking / Smoking – strictly forbidden in labs / workshops.
- Mobile Phone Usage – advised against using in labs / workshops; move to the corridor.
- MP3 Players / Personal Stereo Equipment (dual-ear).
- P.P.E.: Safety glasses & lab-coats (minimum); protective gloves (variety); appropriate footwear (no open-ended shoes / sandals); policy on contact lenses.
- Avoid wearing rubber/plastic gloves when working with a flame (where possible).
- Remove gloves when handling general use equipment (e.g. telephones, door/press handles).
- Fumehoods: “*Max Safe Operating Height*” (opening = 500mm); not to be used as storage areas; take care with sash cords (heavy glass front).
- Labelling: clear & detailed (name, date, expiry date, compound, hazardous? pencil !!)
- Leaving very late at night & concerned about personal safety: contact Security (x5999).
- “*Risk Assessment*” Form.
- “*Hazardous Substances Assessment Form*”(HSAF) (Online – HSAF numbers)
- “*Overnight Reaction Form*”.
- “*Postgraduate Finishing-Up Form*” (consideration to the safety of your colleagues & **must** complete prior to Graduation !!).

N.C.S.R. Safety Induction Training – 2014

Chemical Safety:

- Online HSAF Forms (= “Hazardous Substances Assessment Form”).
Note: No chemicals will be issued from the Stores without a completed HSAF (HSAF No.)
- “Material Safety Data Sheets” (MSDS)
- Be aware of Chemical Incompatibilities (e.g. avoid mixing flammables with oxidizers / acids).
- Solvents / Powders: Use fumehoods or protective masks, where possible (esp. fine, dry powders).
- N.B.: Mercury, Cyanides, Hydrofluoric Acid, Pyrophoric Reagents & Explosive Reagents.
- Obey the “100g Rule”, wherever possible (safety issue & waste disposal).
- Storage of gases in labs – consider gas expansion / displacement of Oxygen (20% → 18%).

Biological Safety:

- Consider the classification groups for biological agents (i.e. groups 1 – 4; less – most dangerous).
- Ensure Risk Assessments have been completed, if required (groups 2 – 4).
- DCU Biological Safety Officer (Dr. Robert O’Connor; x5691, robert.oconnor@dcu.ie).
- Biological Safety Committee

Mechanical Safety:

- Carriers for Winchester bottles, gas cylinder trolleys, general use trolleys.
- Use of localized gas cylinders in labs? **Must** secure these to bench/wall using the appropriate brackets.
- Care with equipment that has moving parts (utilise guards, where possible); changes to noise
- Manual Handling Training? (provided by the Health & Safety Office as part of “SafeLab”).

Glassware Safety:

- Take extra care with evacuated or pressurised glass (“enshroud” the glassware with netting or tape if using non-laminated glassware).
- Sharps Bins (yellow, plastic, labelled & available from the NCSR Stores, S101)
- “Drop-Points” for empty glass bottles (on each floor).

Electrical Safety:

- N.B.: Wiring of plugs, damaged power cords, wet electrical equipment, old electrical equipment.
- If in doubt, contact the Technical staff in room S103 (x6305 / x6306).

Cryogenic Safety:

- Handling Liquid Nitrogen, Solid Carbon Dioxide (“Dry Ice”) – beware of freeze burns.
- N.B.: Consider gas expansion properties if storing Liquid N₂ or Dry Ice in the labs.
- P.P.E.: Cryogenic Gloves.
- Label all samples before storing in fridges / freezers (no food!).
- Use of spark-free fridges / freezers.

N.C.S.R. Safety Induction Training – 2014

Radiation Safety:

- Radioactivity & high-energy radiation (>10keV).
- DCU Radiation Safety Officer (Dr. Rosaleen Devery; x5406, rosaleen.devery@dcu.ie).

Laser Safety:

- Various classes / groups of lasers: class 1 (no hazard) to class 4 (severe hazard for eyes & skin).
- Do not try to defeat safety interlocks on equipment.
- Eye injuries are the main concern; wear appropriate safety glasses (λ -specific).
- DCU Laser Safety Officer (Dr. Paul van Kampen; x5023, paul.van.kampen@dcu.ie).

Pregnancy:

- **MUST** inform the DCU Health & Safety Office **IMMEDIATELY**.
- Risk Assessments will need to be performed based on work activities.
- Certain chemicals & radiation pose a higher-than-normal risk to pregnant women/ unborn child.

Out of Hours / Lone Working:

- Forms part of the “SafeLab” Module training, (1st Semester).
- Definition: Laboratory Work / Experimental Work: outside of 09:00 – 17:15, Monday to Friday
Any other form of work outside of 07:00 – 22:00, Monday to Friday
- If you want to work “Out of Hours”, you **MUST** attend the training session.
- Web-based system where you must Login / Logout (contact Security, x5999 if you have problems)
- Why is this such a H&S concern? Reduced levels of First Aid support, security back-up, technical staff back-up (spill & fire response); lighting levels reduced in common areas; air-conditioning / heating not operational.
- Undergrads **MUST** be supervised if working outside these hours.
- Completion of forms for Approval & Risk Assessments (Note: Risk Assessments may differ).
- Note: Work involving Cyanides, Hydrofluoric Acid, Explosives or Pyrophoric Compounds is **STRICTLY PROHIBITED**.

Reporting Accidents & Incidents:

- Includes “near-misses”.
- Contact the Technical staff, Centre Safety Advisor or the Centre Safety Co-ordinators.
- Completion of “DCU Injury / Incident Report Form” (available as a hardcopy in the First Aid Boxes or NCSR Stores, Room S101).
- “Incidents” may be completed online.

Appendix 4

REFERENCE MATERIAL

The following material is available for reference on a shared-access DCU network drive at the following locations:

**L:\All\NCSR\Health and Safety\Reference Data &
L:\All\NCSR\Health and Safety\Forms**

- 2010 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations, 2001
- Basic Laboratory Safety Rules in the NCSR
- Chemical Incompatibility and Storage Groups
- Clean-room SOP
- DCU Code of Practice on the Control of Laboratory Animal Allergies
- DCU Emergency Evacuation Policy & Procedure
- DCU Fire Safety Inspection Checklist
- DCU Fire Safety Management Policy
- DCU First Aid Policy & Procedures
- DCU First Aid Protocol for the Medical Management of Injuries and Illnesses (sustained on DCU Campus)
- DCU Mother's Rest Room Policy & Procedures
- DCU Occupational Injury & Incident Management Policy & Procedures
- DCU Out of Hours / Lone Working Induction Presentation
- DCU Out of Hours / Lone Working Policy – FAQ's
- DCU Policy and Procedures for Out of Hours / Lone Working
- DCU Procedure for Requesting Emergency Assistance (Ambulance)
- DCU SOP for the Disposal of Animal Carcasses
- DCU Vaccination Policy & Procedures
- Emergency Contact Numbers in the NCSR
- Emergency Escape Routes in the NCSR & BDI
- Floor Plans / Space Allocation in the NCSR
- Form: Approval Form for Out of Hours Work
- Form: DCU General Risk Assessment Template Form

- Form: DCU Out of Hours Exceptional Access Request Form
- Form: Finishing-Up Form
- Form: Overnight Reaction Form
- Form: Risk Assessment Form for Out of Hours Work
- Form: Safety Induction Training Form
- Guidelines and Procedures for the Prevention and Control of Infection (Mater Hospital)
- Guidelines to the Safety, Health and Welfare at Work (Chemical Agents) Regulations, 2001
- Handling and Usage of Human and Animal Blood and Blood Products
- Handling of Chemical and Biological Spills In The NCSR / BDI
- Handling of Cryogenic Liquids (School of Physics, Trinity College)
- List of Nano-material Users in the NCSR
- List of NCSR Safety Reps and Deputy Safety Reps
- List of NCSR Safety Reps, First Aiders & Fire Wardens
- MSDS Overviews for Common-Use Solvents
- Nano-Materials Safety Program - University of New Hampshire
- Picric Acid – Chemical Laboratory Information Profile
- Picric Acid – Information on Hazards
- Procedure for the Disposal of Bio-hazardous Waste
- Procedure for the Disposal of Chemical Waste
- Procedure for the Disposal of Human Blood Waste
- Procedure for the Disposal of Cardboard & Glass Bottle Waste
- Regulations for Working with Unsealed RadioIsotopes in DCU
- Safety, Health and Welfare at Work Act, 2005
- Safety Literature Available from the NCSR Centre Safety Co-ordinators
- SOP: Handling and Disposing of Class II Biohazard (*L. monocytogenes*)
- SOP: Submission of Applications for Review to the Biological Safety Committee
- SOP: Using Piranha Solution to clean Quartz Crystal Microbalance (QCM)
- The Management of Chemical Spills and Releases (Draft)
- The Management of Inoculation (Sharps) Injury or Blood-Borne Pathogen Exposure Policy
- The Safe Use of Liquid Nitrogen Dewars up to 50L
- Working with Nano-Materials – Occupational Hazards and Control Measures (Draft)
- Working Safely with Nano-Materials in Research & Development