Imperial College London

Health and Safety Matters

OCCUPATIONAL HEALTH & SAFETY NEWSLETTER

Issue 21
September 2010

*i*Care
Control the situation
Assess the hazards
Reduce the risk
Educate staff & students

Inside this issue:

New One-Way Traffic System at South Kensington Site

Facilities Management have recently announced that a new one-way traffic system will be introduced at South Kensington campus taking effect from 6 September. The new arrangements will mean that Ayrton Road and Wells Way will become one-way routes as indicated on the diagram below.

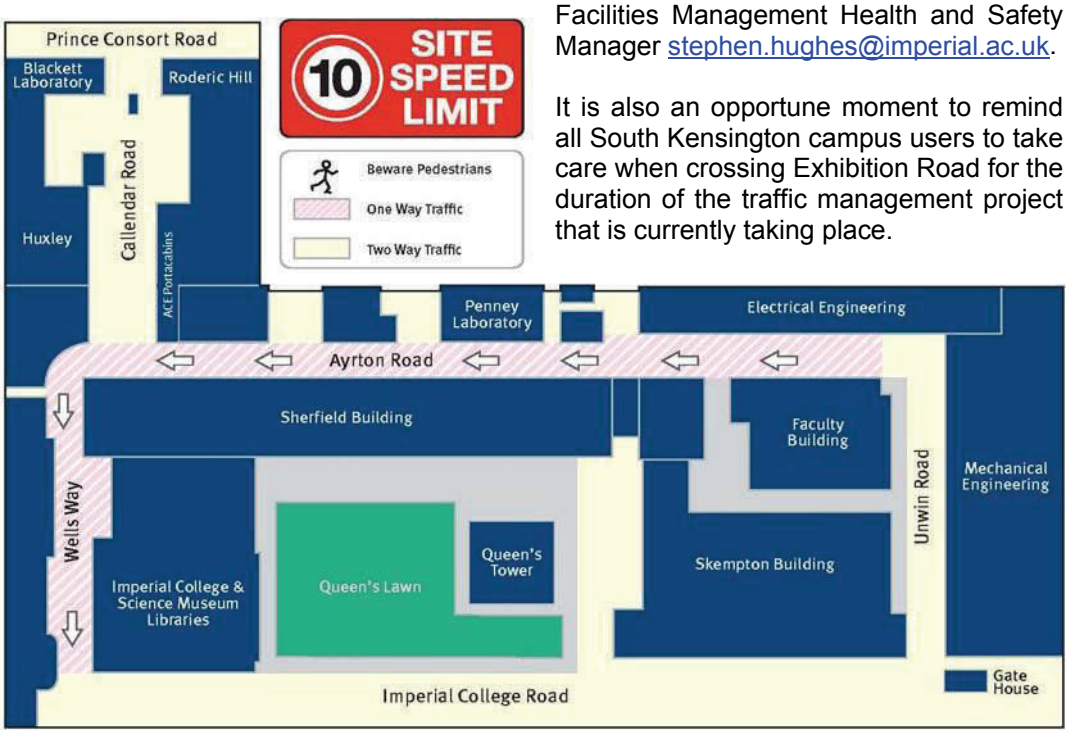
These measures are being introduced to improve traffic flow and provide greater safety for pedestrians using these key areas. The following conditions will apply:

- Vehicles are not to exceed the 10 mph campus speed limit.
- Pedestrian walkways have been marked on road surfaces and vehicles are not to enter these areas or park on them. Pedestrians should use these marked routes.
- Cyclists are expected to comply with the one-way system or else dismount and walk their bicycles.
- A number of delivery bays have been introduced at the rear entrance to Sherfield Building—a maximum stay of twenty minutes is to be permitted in these bays.
- Double yellow lines have been used to denote those locations where it is not permissible to park. Any breach may result in a ticket being issued by College Security staff.

The information included in this article has been reproduced in a pdf 'postcard' format and notifications have been disseminated to building users in the affected areas.

Any queries with regard to the new system should be addressed to Stephen Hughes, Facilities Management Health and Safety Manager stephen.hughes@imperial.ac.uk.

It is also an opportune moment to remind all South Kensington campus users to take care when crossing Exhibition Road for the duration of the traffic management project that is currently taking place.



Access this Newsletter in electronic format at:
http://www3.imperial.ac.uk/safety/otheresources/newsletter

Working with hydrofluoric acid

Hydrofluoric acid (HF) is not a widely used substance in the College but it is certainly employed in some applications. It is therefore worth summarising some of the issues associated with this particularly hazardous chemical.

Health Effects & Symptoms of Exposure

HF is highly toxic via all routes of exposure. Skin contact causes penetrating sores and severe painful burns which, depending upon the concentration of acid, may not be immediately apparent. Contact typically results in a white burn mark or reddening and pain—with blistering and necrosis in the more serious cases. Eye contact can cause extreme irritation and lead to severe and permanent damage. Ingestion can be fatal due to rapid systemic effects, though as with other laboratory chemicals, this remains the least likely route of exposure.

Safety Precautions

* Ensure that users are suitably informed and trained before commencing work with HF (and if necessary, supervised). They should be familiar with the hazards and the symptoms and effects of exposure. They should also know how to check the control measures and be familiar with the emergency procedures including first aid. Ensure that other users of the area are aware of the risks and necessary controls.
* Ensure that local training has been suitably recorded.
* Access to first aid and medical assistance must be available at all times when work with HF is being conducted.
* Lone working and work outside 'normal' office hours should not be permitted.
* Always work in fume cupboard when handling HF. Ensure that the fume cupboard has been tested (and passed) in the past 12 months. Ensure that the face velocity matches the figure which is specified on the test sticker and that no alarms are sounding or flashing. The sash must be at the safe working height or lower.
* Plastic spill trays will offer additional containment in the event of spillages.
* Ensure suitable PPE is available and is worn—lab coats, shoes that completely cover the feet and other more specialised PPE such as visor, apron and butyl rubber arm length gloves.
* Ensure that there is easy and rapid access to an unlimited water source so that any HF that has come into contact with skin or eyes can be washed off.
* Ensure that 2.5% calcium gluconate gel is available and within its shelf life date.

First Aid and Medical Treatment

First aiders must take particular care not to contaminate themselves when treating someone that has been exposed to HF. If the substance has been inhaled, remove the person to a place of safety where there is adequate fresh air. If it has been ingested, rinse the mouth with water but do not induce vomiting. In both cases urgent medical assistance should be sought via the established procedures for the particular College site and the risk assessment / MSDS should be taken along as information.

For contamination of the skin or eyes, remove any contaminated clothing, wash with water and continuously irrigate for fifteen minutes. For skin contact, apply calcium gluconate gel and massage for thirty minutes. If there is pain and it persists after the application of the gel, then medical intervention is required. Medical treatment is also required if:

* There has been contact with the eyes.
* There are burns to the face and neck (because of the risk of inhalation).
* The contact amounts to >1% of body surface area (BSA) with HF concentration above 50% (about the size of a hand).
* The contact amounts to >5% of BSA for HF of any concentration.

Spillage Control

Ensure that suitable spillage absorption materials are readily available for use. These should preferably be products that both absorb and neutralise (sometimes with a visual pH change indicator) and are specified by the supplier of manufacturer for use with HF. The *Chemizorb* and *Spill-X* ranges are examples that can be purchased from the usual suppliers such as Jencons. Do not rely on blue *Kimwipe* as a primary spillage absorbent!

There should be enough spillage absorption material available to treat the largest foreseeable spill. Once the HF has been absorbed, the waste must be transferred to a plastic chemical bottle and labelled for disposal as hazardous waste (see below). The affected area should be suitably cleaned once the absorbent has been removed. Appropriate PPE must be worn for the clean-up procedure and disposable PPE should also be disposed as hazardous waste along with any other contaminated items.

Waste Disposal

Hydrofluoric acid must not be discharged to the drainage system and neutralisation of unwanted stocks or experimental wastes with alkalis is inadvisable due to the additional handling and the potential for vigorous reactions that increase the likelihood of exposure .

Unwanted HF solutions must be disposed as hazardous waste via the established College system—contact the Helpdesk to raise a job number by using the online facility: http://icestprd1.cc.ic.ac.uk/fmhelpdesk/Helpdesk/Helpdesk.asp It is the responsibility of the waste producer to ensure that the waste is adequately contained for safe transportation to the waste store. This effectively means a minimum of double containment. The best way to achieve this is to reuse the screw-lidded transport container that the material was originally delivered in. Ensure that it is clearly identified and labelled. Any items known or suspected to be contaminated with HF should be treated in the same way—double contain and dispose as hazardous waste.

Report on *i*Check – departmental self-audit system

In June, the College Safety Auditor and Safety Director met with the Rector to demonstrate *i*Check (the College's on-line audit software), and to agree that for departmental self-audit to be effective it would need to be managed (at least in part) by the Faculties. It is important that audit is perceived as intrinsic to the faculty management system, rather than something imposed by the College Safety Department.

The Safety Auditor also met with most of the Faculty Principals and Faculty Operating Officers to discuss the purpose of *i*Check, the responses of the iCheck question sets, and the next steps.

Purpose of *i*Check

*i*Check is designed to help departments fulfil the safety management system (SMS) requirement to self-audit. The data collected from the *i*Check audits belongs to the departments. It should be used by them to help identify gaps (and best practice) in their implementation of the SMS - and to prioritise any remedial actions.

*i*Check is also designed to be used by the Faculties and College to obtain an overview of compliance – to identify trends and College-wide gaps in the SMS.

The system will enable departments to measure progress over time, and with one another. The Faculty Operating Officers, Campus Safety Managers in Medicine and Faculty Safety Managers in Natural Sciences who have an overview of the departments in their faculties should find this a very useful management tool, particularly as it can also be used to record and collate inspection findings.

Results of January 2010 *i*Check

36 departments were asked to report. Of the 7 who did not complete, 6 were for various excellent reasons. For competency, the average (unverified) "score" across the College was 40% below full assurance - the omissions are something that departments should focus upon and assign priorities to. This will in part be addressed by the verification process described in the next steps.

Next steps

There will be no more question sets this year, allowing the College Safety Auditor to verify selected key performance indicators (see table opposite). Items 1 and 4 are being followed up by the auditor, but the faculties will be asking the departments to collect information on items 2 and 3, so that they can collate a faculty-wide response.

By concentrating on only one or two elements of the College Safety Management system each year, it is more likely that departments will be able to implement them, without overloading them.

Key performance indicators selected for verification

KPI	*Intended outcome (if verification shows a gap)*
1. Departmental Codes of Practice (whether they exist and how effective they are)	Safety Department to use data to develop proformas for departments to adopt
2. Recording and reviewing significant departmental hazards and health and safety risks (i.e. by risk assessments and risk registers)	Faculty and Safety department to assess the progress of data capture and check if a similar format to the College Business Risk Management Register is used to record and help manage safety risks rather than have a separate format
3. If and how the training and refresher training needs of new and existing staff are identified—whether this is by an informal or proactive process (e.g. using the College training needs analysis process)	Faculty and Safety Department to spread best practice and improve awareness of the current system.
4. If and how PIs and line managers are trained in their H&S responsibilities i.e. whether they are attending the mandatory *H&S responsibilities for Academic Supervisors* course	Develop HRs system for informing new staff of courses . Safety Department to provide extra courses and develop a new course for Support Services line managers, possibly on-line

Plans for next year

In January 2011, the *i*Check section on Heads of Departments responsibilities will go out again, plus the section on monitoring.

One of the big drawbacks associated with the current system is that the software resides on PCs and it is only uploaded onto the safety officers machines, so Heads of Department cannot access it. This will not always be the case. HASTAM, the company who developed the software, are in the process of creating the web-based version, which Imperial will be trialling shortly. We are hoping that this will be in place for next year.

Please contact Julia Cotton, College Safety Auditor, if you have any further queries, concerns or comments.

Safety Department and Occupational Health Service News

Farewell….

Rohini Gowtham, College Accident Investigation Officer, left the College on 20 August to return to her home country of India. Rohini joined the Safety Department in 2003 initially in an administration role and later attained the position of Accident Investigation Officer. We would like to thank Rohini for her valued contribution and wish her well for the future.

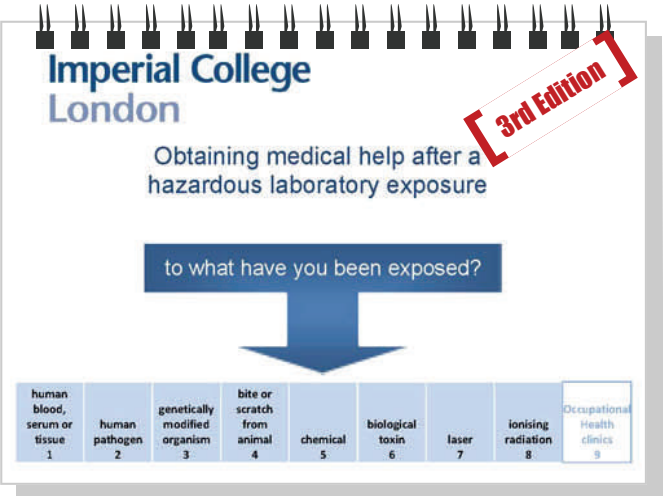
John Burgess, Hazardous Waste Coordinator, retires at the end of September after 44 years service with the College. After working as a research technician, John joined Estates in 2002 as Chemical Waste Coordinator and transferred to the Safety Department from FM in 2007. Again, we would like to thank John for his valued contribution and wish him a long and happy retirement.

Following John's departure, responsibility for the role of Hazardous Waste Coordinator will be transferring back to Facilities Management and **Roger Smith** will be taking on the post. Roger currently works for FM as part of the Soft Services team and already has a hand in waste management procedures including overseeing day-to-day activities with regard to disposal of clinical waste. The Safety Department will continue to work closely with FM and offer a technical advice role.

Barbour
www.barbour.info

NO MORE

The Safety Department has recently cancelled the subscription to the Barbour Professional web service. The subscription had been in place for over two years and was accessible to a number of selected staff throughout the College. However, it was felt that the significant cost of retention could no longer be justified, particularly in the light of the fact that most HSE publications are now available electronically free of charge.



Hazardous Laboratory Exposure Guidance 3rd Edition Published

Occupational Health have recently published a 3rd Edition of the wire bound booklet *Obtaining medical help after a hazardous laboratory exposure* (the 2nd edition was published in September last year). There are no new exposure scenarios in the latest version but the text has been amended in places.

As with previous editions, the booklets have been distributed to Faculty Safety Managers, Campus Safety Managers and Departmental Safety Officers for further dissemination within their areas. Any enquiries with regard to the booklet should be addressed to the Occupational Health Service.

Sickness Certification

This subject was flagged in *Health and Safety Matters* earlier in the year and the new procedures have now been in place since April. Occupational Health, in conjunction with Human Resources, have produced some guidance for managers and this can be found on the HR website: http://www3.imperial.ac.uk/hr/procedures/health/sicknessabsence/sicknessabsencepart2

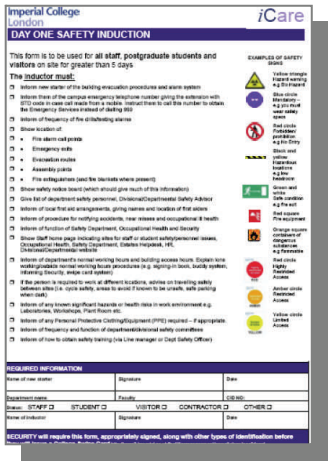
Rectors Award for Excellence in Health and Safety 2010

WINNERS

Brian Willey, Technician (Physics Department) won the £2000 first prize for his contribution to laser safety within his department.

Trudy Breuss, (Programme Manager, FoM) and **Steve Pullen**, (User Coordinator, FoM Redevelopment Projects) won a joint commendation award for their work in ensuring inclusion of safety considerations in building projects.

Update on Day One Induction, Month One Safety Training (MOST) and Risk Assessment Foundation Training (RAFT)


Imperial College London iCare

DAY ONE SAFETY INDUCTION

This form is to be used for all staff, postgraduate students and visitors on site for greater than 5 days

The inductor must:

REQUIRED INFORMATION

Day One

Day One inductions now appear to be firmly embedded into the College culture, so this reminder may be unnecessary for most departments. However, it is timely to remind new institutions and restructured departments that the Day One induction is a requirement for all new staff, visitors, contractors who are embedded in College space and students.

Day One relates to the specific local safety arrangements for the "home" buildings of students and staff. This includes halls of residence as well as home departments, so students may have several "Day One" inductions (i.e. one per building), when they begin at the College, and should expect a further Day One induction if they do a research project in yet another building.

If staff or students work in several buildings, rather than just one - or even work at other institutions - then Day One should be used to remind people to be aware of fire evacuation routes, fire assembly points, building access hours and any other relevant issues. Further information can be found at: http://www3.imperial.ac.uk/staffdevelopment/safety/induction

For visitors and contractors on site for *less* than 5 days, there is also an information form / sheet available on the same web page.

Remember, everyone should know the basics from their first day – how to evacuate a building and whom and how to call for assistance.

Month One Safety Training (MOST) and Risk Assessment Foundation Training (RAFT)

Since going live with our first on-line training courses and workshops in May 2009, there have been a number of developments. Firstly, the Faculty of Natural Sciences has elected to make the RAFT course available for its students, and some departments have made it mandatory and secondly, several universities have expressed an interest in adopting the course.

The training data and feedback make interesting reading, and show that the courses were a worthwhile investment for the College.

MOST (mandatory for all staff)

- 1329 delegates enrolled on the course - 895 have attempted the test. 33 are in progress and there have been 29 failures. The rest all passed (average score of 73%)[1]. In addition there have been a number of workshops held (~150 persons trained and tested). Not all staff can take the test via the OLM and some managers prefer to deliver the material themselves via a workshop.

- Feedback – 69 persons completed *Survey Monkey* feedback for MOST; 97% liked the way the course covered the subject material; 3% thought there had been some material omitted (mention of fire drills); 94% of those who took the course on-line thought it was a good way to learn about the subject; 86% (of the 54 who answered) would recommend the course to others.

RAFT (mandatory for line managers, area, equipment and process controllers)

- 145 delegates enrolled onto on-line course of which 72 persons have passed the test; 330 persons have attended 29 workshops, and passed the test.

- In addition, there are reports of entire departments taking the course via the web link (unfortunately there is no test associated with this and attendance cannot be monitored).

- Feedback – 103 persons completed *Survey Monkey* feedback for RAFT; 92% liked the way the course covered the subject material; 7% thought there had been some material omitted (but had not realised the course was for general risk assessment not specifically for chemicals); 82 % thought the course was good or very good; the 7% who thought it needed improvement related to issues with accessing videos (since resolved), when the course was first released. 73% of those who took the course online, thought it a good way to learn about the subject. 86% would recommend the course to others.

If you wish to enrol on either of these courses or have missed the opportunity to give feedback, you can go to the courses via http://www3.imperial.ac.uk/staffdevelopment/safety/index or by typing MOST or RAFT into the College search engine.

Accidents & Near Misses

The departure of the Safety Department Accident Investigation Officer (see Page 4) has prompted a review of how the accident reporting and recording system is to be managed in both the short and long term.

In the short term (envisaged as the remainder of 2010 and perhaps beyond), the Safety Department intend to absorb the duties of the Accident Investigation Officer into the duties of other existing departmental staff. We have established a new e-mail account—incidentreporting@imperial.ac.uk—and have requested that all accident and near miss reports are forwarded to this address. This has the obvious advantages of enabling us to keep all incident correspondence separate from other e-mail traffic and also allows a number of Safety Department staff to access this correspondence. Anyone who submits an incident report will receive an automated reply. The autoreply advises the sender that they may be contacted for further information, either directly by the Safety Department, or indirectly via their local safety officer. It also indicates that while we may elect to follow up on any accident reported, we are likely to focus on following up the more serious incidents and those that have a wider implication across the College—in other words, expect a proportional response. You should only receive the autoreply when first submitting the incident report i.e. when there is an attachment present in the message. Further investigations, where required, will be carried out by an appropriate member of the Safety Department depending upon the nature of the incident. The standard accident report form and supporting guidance on the web have been updated to reflect these changes.

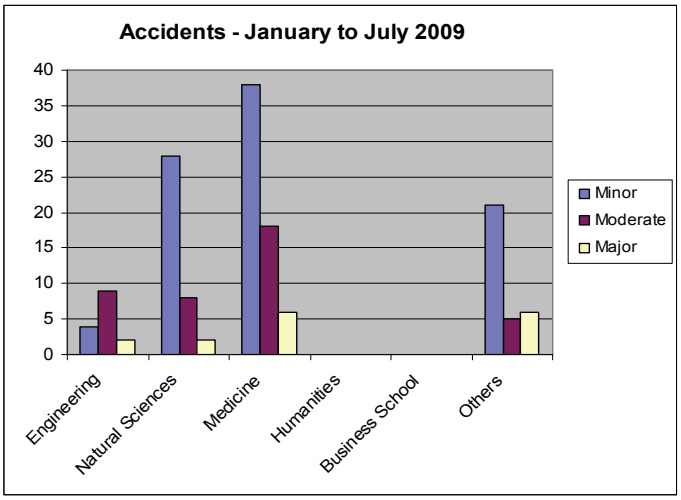
We reported as long ago as December 2009 that we were undertaking some initial evaluation of commercially available web-based incident reporting software. Recent events have now focussed our attention on stepping up the process, as a self-service electronic reporting and recording system has the potential to reduce and streamline much of the administrative side of the process. It should also give us far greater flexibility with regard to accessibility as we envisage being able to set viewing, editing and action tracking permissions for different categories of staff.

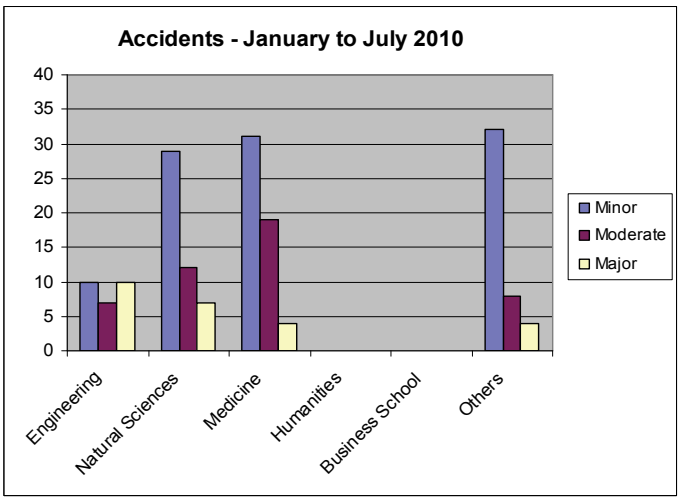
Currently, we are focusing on further evaluating two software packages—the OPAS software that we mentioned in the December edition of *Health and Safety Matters* and a second package OSHENS, produced by Optima Diagnostics Ltd. We have been working with ICT to develop an evaluation template whereby we will be able to systematically assess functions such as usability, compatibility, hosting, data entry function, report generation, and not least, migration of the large quantity of existing historical data that we currently have. The two providers will be invited to attend and give another presentation in due course. Whatever the outcome, we do not envisage that the system will be in place until early 2011. We will keep you informed of any further developments.

Accident Statistics

	Jan-July 2009	Jan-July 2010
Total accidents reported to the Safety Department	147	173
Total accidents reported to the Health and Safety Executive in accordance with *RIDDOR 1995*	12	19

Comparison Graphs January to July 2009 vs. 2010





Accident rating:

Minor: No treatment required / First Aid.

Moderate: Visit to Occupational Health / GP / Health Centre or A&E.

Major: HSE reportable / Lost time (up to 3 days) / member of public taken to hospital for treatment.

FREQUENTLY ASKED QUESTION:

What exactly is a written Code of Practice?

We are probably all familiar with the Approved Codes of Practice (ACoPs) that are published by the HSE. These provide advice and guidance on how to comply with the provisions of the relevant health and safety regulations to which they relate…...details on what actions we are expected to take in order to be confident that we are complying with the law.

In the College, we encounter Codes of Practice (CoPs) at various levels. The Safety Department issue CoPs to describe the College procedures for managing a certain aspect of health and safety. For example, the CoP *Microbiological safety cabinets: selection, installation, use, maintenance and decommissioning* describes the College procedures for the 'cradle to grave' management of these important items of safety equipment and supports the College Biological Agents Policy.

We also expect departments to produce their own CoPs. At the end of the day it does not matter whether you manage a laboratory, a workshop, plant rooms or a catering facility - wherever there are potential hazards in the workplace, line managers must have an effective and consistent method for providing staff, visitors, students and especially newcomers with specific information on the arrangements for working safely. This can most effectively be laid out in a CoP.

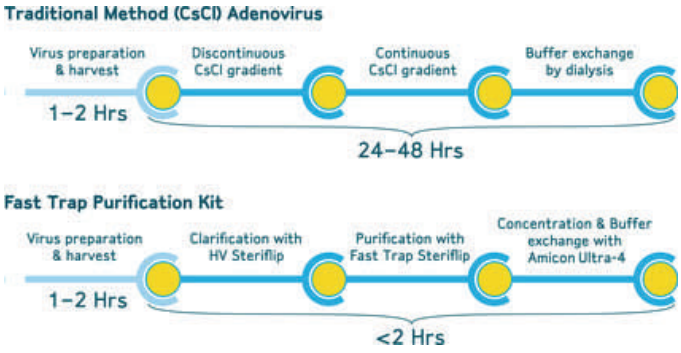
A CoP is defined as, a set of rules according to which people in a particular area are expected to behave, and will typically contain an introduction and background information on the work environment, local rules, information regarding waste processes, health, testing and maintenance, and emergency procedures. A CoP may be written for a whole department for example to cover implementation of a management structure. They may also be written for a specific location such as a combustion laboratory or biological containment facility or even a specific task such as operation and maintenance of autoclaves. The HSE publication *Management, design and operation of microbiological containment laboratories* for example, refers directly to local codes of practice as forming "part of the process of giving information on the arrangements on safe working".

A good code of practice should be written with a sense of proportion relative to the risk and with consideration of the target audience's strengths and weaknesses. If you require further information, the safety department are able to provide advice and examples of Codes of Practice.

Reducing the risks through the application of technology—Part 2

In the June edition of *Health and Safety Matters* we plugged the safety benefits of the Millipore Scepter handheld cell counter. With the same caveat with regard to trying to avoid an overt sales pitch, we considered it worth mentioning another Millipore product—the Fast-Trap Virus Purification and Concentration Kit.

A long standing method of viral purification is the use of caesium chloride gradients. Unfortunately this method presents certain hazards in the laboratory which include use of needles to recover the intact virus. The Fast-Trap kit provides an alternative to this procedure. The kits are designed for adenovirus, lentivirus and adeno-associated virus purification and concentration. The kits contain the necessary components to accommodate the entire virus purification workflow. The purification results in high recovery of viable viral particles with good purity in a fraction of the time taken using the caesium chloride gradient method. The closed vacuum device eliminates potential spills.



As with the Scepter, we would welcome feedback from any researchers who chose to investigate or purchase these kits.

For more information go to the website: http://www.millipore.com/catalogue/module/c78139 or contact Kate Feeney at kate_feeney@millipore.com

Contact Details

Occupational Health

Level 4
Sherfield Building
South Kensington
London SW7 2AZ

PHONE:
0207 594 9401
FAX:
0207 594 9407
E-MAIL:
occhealth@imperial.ac.uk

WEBSITE:
www.imperial.ac.uk/occhealth/

Safety Department

Level 5
Sherfield Building
South Kensington
London SW7 2AZ

PHONE:
020 7594 9423
FAX:
020 7594 9424
E-MAIL:
safety-dept@imperial.ac.uk

WEBSITE:
www3.imperial.ac.uk/safety

If you have any comments or suggestions for inclusion in future Newsletters please contact the editor:

John Luke
Safety Department
j.luke@imperial.ac.uk

Training

Eric Miranda, Learning Development Consultant

The competence of College staff and postgraduates is a key strategic goal. Competence is about working effectively and efficiently. It has three main building blocks – knowledge, skills and experience – all of which overlap. Competence is also about knowing your limitations and when to call on advice. The challenge the College faces is ensuring that new and existing staff achieve and maintain an appropriate degree of competence. This will vary in detail depending upon the work activity, the individual's role and the degree of competence required. We can however become fixated on developing a competency framework which becomes too specific and rigid and doesn't take into account changing needs over time. A learning organisation needs to be adaptive to changing circumstances, create new solutions and renew its knowledge through experience.

Training supports competence—which leads to knowledge and skilled behaviour. The Learning Development Centre and Safety Department provide a core training programme but this must be supplemented by local training. However, the individual must transfer this learning and apply it to the workplace and take responsibility to work safely. To aid the individual we must ensure that training is relevant and where necessary engage in "creative destruction" in order to ensure that our training is still fit for purpose.

To this end we have replaced some external consultants and refined and introduced new training courses. First Aid Training will be delivered by Marlin Training who will also take responsibility for First Aid at Work Qualification, Emergency First Aid at Work as well as First Aid for Offsite Workers. We will work with Workplace Law Group to provide us with Manual Handling for Users and Train the Trainers courses. We will prioritise those areas where employees regularly handle and lift. However, the aim is to be able to sustain ourselves locally in the Departments.

We will extend our Gas Safety courses with the Laboratory Gases and Decanting Liquid Nitrogen course extended to 2.5 hours. The Connecting Gas Regulators will be extended to 3 hours with an added manual handling of cylinders element. Both sessions will include an introduction of "Why Accidents Happen" and focusing on the need for training, risk assessment and standard operating procedures. We hope to offer 200 places. Delegates are still required to complete the relevant E-Learning workshop prior to attending the practical courses.

We will also extend the Pressure Fittings course to 2 days so that it includes elements on valves, seals and regulators. This course will include both theory and practice to ensure that participants get the best training. Much of the success of these courses depends on access to workshop space which must be offered by departments. We will also introduce a Lifting Operations and Lifting Equipment Regulations (LOLER) for Assessors course and well as look at Driver Awareness Training for staff that have to work offsite.

We can run some central courses across College but there are limits to what we can deliver from the centre. Departments must take responsibility in budgeting for safety training. This means not only making a greater contribution to the cost of external courses but departments funding courses directly that are specific to the needs of their staff and postgraduates.

training schedule & events

Below is a selection of forthcoming courses. The complete list for this term is too comprehensive to include here—please consult the training programme link for the entire range: https://www3.imperial.ac.uk/staffdevelopment/safety/index.htm

September 2010		October 2010	
Manual Handling and Lifting for Users *(Silwood Park)*	20th	CIEH Level 2 Award in H&S in the Workplace *(SK)*	5th
Asbestos Awareness *(South Kensington)*	21st	H&S Responsibilities for Academic Supervisors *(SK)*	6th
Introduction to Laser Safety *(Hammersmith)*	22nd	Biological Safety Foundation Training *(Hammersmith)*	18th
Principles of Radiation Protection *(Hammersmith)*	22nd	Centrifugation *(South Kensington)*	19th
First Aid at Work Requalification *(South Kensington)*	27th & 28th	Gas Safety *(South Kensington)*	20th

Next issue of Health and Safety Matters: December 2010