Number of Work/Study-Related Injuries

A total of 48 work/study-related injury cases were recorded in 2010. Among the cases:

- 35 cases involved staff members
- 8 cases involved students
- 5 cases involved contractor

A comparison of accident numbers over the past 10 years is shown in Table 1 below.

### Table 1. Comparison of Staff & Student Work/Study-Related Accident Numbers

<table>
<thead>
<tr>
<th>Year</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff Accident Number</td>
<td>28</td>
<td>25</td>
<td>23</td>
<td>30</td>
<td>35</td>
<td>25</td>
<td>18</td>
<td>22</td>
<td>27</td>
<td>35</td>
</tr>
<tr>
<td>Student Accident Number</td>
<td>10</td>
<td>7</td>
<td>7</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>4</td>
<td>8</td>
</tr>
</tbody>
</table>

Lost Workdays

A total of 382 lost workdays of all staff injury cases were recorded by the end of 2010. The comparison of lost workdays over the past 10 years is shown in Table 2 below.

### Table 2. Comparison of Lost Workdays

<table>
<thead>
<tr>
<th>Year</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number of Lost Workday</td>
<td>71.5</td>
<td>190</td>
<td>382.5</td>
<td>123.5</td>
<td>278</td>
<td>430</td>
<td>86</td>
<td>140</td>
<td>473</td>
<td>382</td>
</tr>
<tr>
<td>Average Lost Workday Per Accident</td>
<td>2.5</td>
<td>7.5</td>
<td>16.6</td>
<td>4.1</td>
<td>7.9</td>
<td>17.2</td>
<td>4.8</td>
<td>6.4</td>
<td>17.5</td>
<td>10.9</td>
</tr>
</tbody>
</table>

The severity of individual cases is analyzed and indicated by the number of lost workdays as shown in Table 3. In all the 35 staff work-related injury cases, 11 cases did not incur any lost workdays, 9 cases incurred 3 or fewer lost workdays and 15 cases incurred more than 3 lost workdays. The largest number of lost workdays in one single case was 222 days. The case involved an operational staff who sprained his wrist when repairing a door closer and has been assessed having a 2.5% permanent loss of earning capacity.
Table 3. HKUST Staff Work Accident in 2010 by Department

<table>
<thead>
<tr>
<th>Department</th>
<th>Total</th>
<th>LWD=0</th>
<th>0&lt;LWD≤3</th>
<th>LWD&gt;3</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACPF</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCB</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CBME</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLS</td>
<td>1</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>CSO</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DMSF</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>FMO</td>
<td>11</td>
<td>1</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>LANG</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>LIB</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MEB</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAO</td>
<td>10</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>35</strong></td>
<td><strong>11</strong></td>
<td><strong>9</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

LWD = Lost Workday(s)

**Cause of Work/Study-Related Injuries**

Figure 1 summarizes the causes for all work/study-related injuries in 2010.

Manual handling had become the top cause for work/study-related injuries again in 2010, with 7 cases in total, as compared with only 3 cases in 2009.

Among the 8 student injury cases, 4 of them were due to inadequate protection of eyes.
Locations of Accidents

Among the 43 staff and students injury cases:

- 19 occurred in laboratories
- 10 occurred in common areas
- 7 occurred in staff/student quarters
- 3 occurred in workshops/plant rooms
- 2 occurred in office areas
- 1 occurred in sports area
- 1 occurred in different area on campus

Common Root Causes of Accidents

Besides classifying causes of injuries in terms of physical sources and energies involved, investigation of the injury cases also revealed some common underlying root causes. These root causes are summarized in Figure 2 below.
Non-injury Incidents

A total of 9 non-injury incidents were reported in 2010, 7 of which occurred in laboratories and 2 occurred in the staff quarters. More significant ones included:

- Leakage of CO2 gas due to defect in the regulator fitting.
- Spreading of chemical vapour in NFF due to improper mixing and disposing of chemicals.
- Gas alarm at NFF went off due to blockage in a vent pipe.
- Chemical (bromine) leaked out from a broken glass tube.
- Acetic acid leaked out from the storage tank of a reactor.
- Unsafe act (disassembling the on/off knob of a cylinder under pressure) discovered and stopped.
- Small fire caused by a fan heater in staff quarters.

Summary of Significant Findings

Both the numbers of staff and student injury cases had increased. Staff cases had increased from 27 cases in 2009 to 35 cases in 2010. Student cases had increased from 4 cases in 2009 to 8 cases in 2010. However, the number of injuries that had resulted in lost workdays had increased only by 1 case.
The number of lost workdays in 2010 was 382 days, less than that (473 days) of 2009. However, the number of workdays of one case was still counting at the close of 2010. More than half of the total lost workdays (222 days) were contributed by only 1 single case.

"Manual handling" had become the top cause for injuries again the year (7 cases), with “Sharp Objects” and “Slips/Trips” as runner-up causes. These 3 causes had contributed to over 40% of all work/study-related accidents.

Analysis of underlying root causes of the accidents indicates that continuous efforts in safety training and assessment are needed for providing adequate safety knowledge and skill to our staff, and for improving the safety of the work processes. The number of accidents due to inadequate protective gears (especially eye protectors) had also increased. As a matter of fact, 4 of the 8 student injury cases were due to inadequate protection of eyes. This indicates that efforts in enforcing wearing of appropriate eye protectors (especially in lab areas) need to be stepped up.
Commitment to Maintaining Good Indoor Air Quality on Campus

The growing trend of working long hours in offices is perhaps a trademark of many modernized, knowledge-based working communities. Office has unsurprisingly become the second home to many. Inevitably, making this second home more comfortable will take priority if occupant desires to alleviate the stress of working long hours and more importantly, sustain a consistent level of productivity. Indoor Environmental Quality is understandably a holistic approach in an attempt to address issues related to occupant’s comfort in an indoor environment. However, the crux of the whole mix lies in the very one element of many, which is Indoor Air Quality (IAQ).

To improve and promote public awareness of the importance of IAQ, the HKSAR Government has launched an IAQ Certification Scheme for offices and public places. The scheme encourages occupiers of premises to participate on a voluntary basis. If a premise is certified by an accredited IAQ Certificate Issuing Body (IAQ CIB) and meets indoor air quality objectives established by the Hong Kong Environmental Protection Department, the occupier will be issued a certificate showing the quality of indoor air attained in the premise. In the scheme, twelve indoor air quality parameters of the participating premise will be assessed. These parameters include temperature, relative humidity, air movement, carbon dioxide, carbon monoxide, ozone, radon, total volatile organics, suspended air particulates, nitrogen dioxide, formaldehyde and airborne bacteria. Either Excellent or Good IAQ Class will be awarded to the premise that satisfies the IAQ objectives established for the specific class.

Since the launching of the scheme, HKUST has successfully submitted application and been awarded corresponding IAQ classes to the Library, S H HO Sports Hall, computer barns and all lecture theaters. Monitoring program has been implemented by FMO to ensure the quality of the indoor air in these locations will continue to meet the criteria established for the IAQ class achieved.

To further support the commitment to achieving good air quality in indoor environment on campus, Health, Safety and Environment Office (HSEO) has sought to be and been accredited by the Hong Kong Accreditation Service as one of the IAQ CIBs in Hong Kong. With the accreditation, HSEO is endorsed to perform IAQ assessment according to the guideline established by the HKSAR Indoor Air Management Committee. IAQ reports issued by HSEO will be accepted by the IAQ Information Center, currently coordinating the IAQ certification scheme, for application and renewal of IAQ certification of indoor environment on campus. HSEO will continue to provide IAQ certification service to the university and help occupants attain a comfortable working environment which we may call it our second home.
The existing Dangerous Goods Ordinance and Regulations (DGO&R) were promulgated almost half a century ago. This set of law and regulations served us well throughout the period when Hong Kong began its rapid industrial development and economic boom during the past several decades. However, the continuous development in chemical safety knowledge and technology, plus the pressing need of a harmonized system for safe handling of hazardous chemicals especially during transportation and storage in global trading, all called for a revision of the local DG regulations.

The Government Fire Services Department (FSD) initiated the process more than 10 years ago. In 2003, the amended DG Ordinance, which includes the overarching principal regulations, was promulgated. The amended ordinance revised the DG classification system and modified hazard labels based on the latest international practices documented in the International Maritime Dangerous Goods (IMDG) Code. The subsidiary regulations are expected to be ready in the near future. One major change in the new DG regulations is the introduction of a “use license” to cover places where DGs are being used. This is a completely new direction from the existing regulations which only address storage. All use licenses are required to be tied with specific storage licenses.

Along this line of amendment, a particular set of regulations that will have major impacts to universities are those related to DGs stored in university DG stores, and used in various research laboratories. Because of the unique nature and pattern of chemical use in research laboratories, many of the regulations intended for industrial or commercial entities are difficult to apply here. Therefore the FSD is actively considering different options to bring university laboratories under the amended DG regulations in a practicable manner.
It is still unclear what approach FSD will adopt for regulating DG in research laboratories. HSEO has expressed our views to FSD both directly and through the Tertiary Institution Safety Advisory Group. Recently, we have invited FSD officers in charge of drafting the new regulations to visit our laboratories and Center of Laboratory Supplies, so that they will have first hand information of the storage, distribution and use of DGs in our research laboratories. We will try our best to explain and demonstrate to FSD the uniqueness of chemical use in research laboratories, and appeal for flexibility in managing DGs in laboratories based on expertise available in universities, in terms of chemical safety and management.

Regardless of the exact details of the final DG regulations for laboratories, one essential element for compliance of the anticipated regulations will be a comprehensive chemical inventory system. Both the existing and future DG regulations put a lot of emphasis on the quantities of DGs, and both include an important concept of “exempted quantity”, below which the storage and use of DGs will not require a DG license. When a license is required, there is a “licensed quantity”, which limits the maximum amount of DG that can be kept, both in storage and in use, by a licensee. Therefore, whether we want to demonstrate eligibility for exemption, or compliance with license requirements, we must have a comprehensive and accurate chemical inventory.

Since a few years ago, HSEO has developed a comprehensive chemical inventory system, which is a web-based database where users can have different levels of access and control, from individual laboratory, department, to the whole university. Although this project was initiated mainly to improve chemical safety management, now it has become a critical compliance tool for the anticipated DG regulations for laboratories. We would like to take this opportunity to appeal to all chemical users on campus to do the following to diligently keep your individual chemical inventory updated:

1. Order chemicals through Center of Laboratory Supplies (CLS). CLS will affix the inventory barcode and enter the data for you before delivering the chemicals to your laboratory.
2. If for any reason you need to order chemicals directly, enter the chemical into the inventory immediately after you receive it, request a barcode from CLS, and affix it to the bottle.
3. When you finish a bottle of chemical, check it off from the inventory before disposing the bottle.
4. Allow access and assist with annual stock taking for updating the inventory by student helpers.

If you have any question about the chemical inventory system, please contact Mr Pak Ip, our Senior Manager, at ext 6538. For questions regarding ordering chemicals from CLS, please contact Mr Painchai Tantivangphaisal, Chief Technical Officer, at ext 6883.

We look forward to your full cooperation in this important chemical safety management, and soon-to-be regulatory compliance effort!
Traffic and Pedestrian Safety

A number of major construction projects are in full swing on campus. Some of the construction activities may temporarily block or reduce the full use of existing traffic roads. The following are pictures showing the current situation and the temporary traffic arrangement around construction zones.

Construction work for CLP Project at HKUST:

Construction work for Lee Shau Kee Campus at HKUST:
Please pay attention to all the traffic rules that apply to construction activities, drivers and pedestrians. It is the responsibility of all stakeholders to observe traffic rules in the University’s community!

At the present stage, drivers and pedestrians may not be familiar with the temporary traffic arrangement in the campus. Make sure to pay attention to traffic signs and follow them. As the projects progress, the temporary measures may change.

From safety point of view, the project team and other concerned parties have to monitor the road traffic arrangement to cope with the construction projects’ development. They should make sure that proper road crossing, traffic lights, signs and walkways for stakeholders are in place.
The Student Dental Clinic at HKUST campus routinely helps and treats students with acute dental pain which may be caused by dental decay or trauma leading to infection of the nervous tissues inside the tooth and causing severe pain and great discomfort.

Pain can be comfortably controlled and quickly relieved by local anaesthesia and performing ROOT CANAL TREATMENT whereby our dental surgeons, with the help of the latest state-of-the-art equipment, can remove dental decay and infective materials including residual ailing dental nervous tissues inside the pulp and root canals.

Treatment usually takes a few visits and the patient will be prescribed with the necessary painkiller in between. The patient will also be advised not to chew on the offending tooth as long as possible.

After the root canals are cleaned and shaped, they will be filled with a rubber compound to provide an air tight seal against future infection.

Then the cavity would be filled with conventional filling materials to stop recurrent bacterial invasion from the oral cavity.

Although the tooth is now filled, it is much weaker with a large filling in the centre of the tooth and sometimes the filling is quite extensive involving multiple surface repairs. The tooth will be weakened and will not be strong enough to withstand normal use. A CROWN which protects the whole tooth is usually advised to be placed soon after the completion of ROOT CANAL TREATMENT.
The functions and requirements of the CROWN are:

1. It can protect the remaining tooth substance from failing and cracking.
2. It can provide enough strength for chewing.
3. The crown can be made of alloy, porcelain or porcelain fused-to-alloy which is made to look like a tooth.
4. The crown is usually custom-made to a specific shape and size to fit the tooth so that it provides a better sealing function against bacteria invasion and also a good match to the neighbouring and opposing teeth.
5. The loading of the crown must be managed carefully. If the tooth is overloaded, the underlying foundation will suffer leading to root, crown fractures, and subsequent failure of the otherwise successful ROOT CANAL TREATMENT.
6. It is therefore advised that you should continue and complete your treatment at the Student Dental Clinic and have the crown properly and suitably constructed by the same dental surgeon because he/she is most familiar with your dental condition and requirements of the treatments.

If the patient is not able to have a crown made, before proceeding with root canal treatment, the dental surgeon will discuss with the patient other options like removal of the remaining tooth, roots and waiting for healing for a prosthetic replacement at a later date.

It is not beneficial for the person whose root canal has been treated correctly and successfully at the dental clinic to let someone else who is not familiar with the original dental treatment to make the crown as he/she would not be aware of the individual requirements for the crown construction.

We had unfortunately seen a number of patients who, after receiving successful ROOT CANAL TREATMENT, opted to receive subsequent crowns and elaborate restorations against our advice elsewhere which had led to failure of the root canal treatment because the crowns did not reach the required standards and specifications for successful healing.

If you have any problems, please contact the Student Dental Clinic at 23588580 or come to the clinic. We will try our best to help you.

(This article is written by the HKUST’s Student Dental Clinic.)