Agenda for the 16th meeting of the Biosafety Committee of the University of Hong Kong. (A sub-committee of the Safety, Health and Environment Committee).

To be held via e-mail on Thursday, March 10th 2016

1. Draft minutes of the 15th meeting of the Biosafety Committee
The draft minutes of the previous meeting of the Biosafety Committee (October 9th 2015) are attached (Appendix A). If there are any comments please forward them to the secretary along with an indication of whether the minutes are an accurate reflection of the meeting. These minutes were also tabled for information at the Safety Health and Environment Committee on the 20th November 2015. No comments were made there.

2. Matters arising from the minutes of the 15th meeting (action points etc.)
Under point 3 of the minutes the committee encouraged the secretary to organize course materials and investigate the avenues for delivery of training. Currently the secretary has produced the slides for two presentations (A. Legal requirements for work with biological agents in Hong Kong and the organisation of biosafety in HKU B. Laboratory acquired infections and aerosols.) He is working on a further two presentations and the handout text to go with all four sets of slides. He anticipates that the 4 presentations with handout notes will be discussed at the next meeting in October 2016.

3. US Moratorium on certain gain of function experiments (for information following on from last meeting's agenda point 8)
For several meetings we have discussed the White House Office of Science and Technology policy which is considering the risks and benefits associated with certain gain-of-function (GoF) studies.

It is probably worth reminding members which type of experiment could be considered GoF of concern. A report to the US National Academies in 2004 entitled "Biotechnology research in an age of terrorism" proposes seven classes of experiments which (although they were clarified mostly with using experiments from bacteriology) can be used to define GoF experiments of concern. (The Fink report, for a free pdf see:- http://www.nap.edu/catalog/10827/biotechnology-research-in-an-age-of-terrorism)

These classes include experiments that:
1. Would demonstrate how to render a vaccine ineffective.
2. Would confer resistance to therapeutically useful antibiotics or antiviral agents.
3. Would enhance the virulence of a pathogen or render a non-pathogen virulent.
4. Would increase transmissibility of a pathogen.
5. Would alter the host range of a pathogen.
6. Would enable the evasion of diagnostic/detection modalities.
7. Would enable the weaponisation of a biological agent or toxin.

The report indicated these categories of experiment would require review and discussion by informed members of the scientific and medical community before they are carried out.

As mentioned previously part of the process announced by the White house was a funding "pause" for NIH monies allocated to gain-of function work. This pause is still in place 18 months later and unlikely to be removed before the end of the year. However, progress has been made and the independent report commissioned by the US National Science Advisory Board for Biosecurity (NSABB) has been published. This attempts to carry out a risk benefit analysis of GoF work. It is a massive 1009 pages and can be found at:- http://www.gryphonscientific.com/wp-content/uploads/2015/12/Final-Gain-of-Function-Risk-Benefit-Analysis-Report-12.14.2015.pdf. It is interesting to note that in general those supporting the moratorium felt the report did not emphasize the risks sufficiently and those against the research moratorium were broadly supportive calling it a balanced report. The secretary's rather simplistic view is that it is not possible to accurately assess either potential benefit or possible harm and while we should do everything we can to attempt an assessment conclusions can only be tentative at best. Interestingly the ESAC report (see below) comments "There are many uncertainties in the data available for evaluating benefit–risk of GoF studies on potentially pandemic pathogens, and differing value systems have also been applied in evaluating the data. Incommensurable parameters measured in risk and benefit do not allow a value-free determination to be made."

The European Science Advisory Councils (ESAC) report:- http://www.easac.eu/fileadmin/PDF_s/reports_statements/Gain_of_Function/EASAC_GOF_Web_complete_centred.pdf is a more accessible 65 pages long and deals with a variety of issues including regulation, risk benefit, whether EC requires new biosafety and biosecurity bodies, public engagement and publishing sensitive information.

4. Walk through visit (for information and following on from last meeting's agenda point 9)

The committee will remember that at the last meeting it was reported that several police officers visited the Centre for Emerging Infectious Disease (in FMB) on Friday the 5th of June 2015 and carried out what they termed a 'Walkthrough Physical Security Assessment'. They have sent a confidential security survey report which proposes a number of enhancements to the physical security of the premises including extra CCTV cameras. They also make a number of suggestions to enhance the security awareness of staff and students including extra training. None of the suggestions were mandatory. The School of Public Health is discussing what steps it can take in practical terms.

5. Selected topics with implications for Biosafety (for information)

A. Biological Containment

The news and views article "GM microbes created that can’t escape the lab - Engineered bacteria kept in check with a designer diet" Elie Dolgin

http://www.nature.com/polopoly_fs/1.16758!/menu/main/topColumns/topLeftColumn/pdf/517423a.pdf commenting on several papers in that issue of Nature outlines how "Biological Containment" could work.

B. Synthetic Biology

Members may be aware that synthetic biology was discussed some time ago by the committee in the context of a UK government (HSE) Horizon Scanning Intelligence Group Short Report. The opinion and public consultation documents that are linked to below are more current discussions from an EC scientific committee.

The committee opinion concentrates on the methodology to determine what, if any, risks synthetic biology (SynBio) may pose to public health. It addresses five questions focused on the implications of likely developments in SynBio on human and animal health and the environment and on determining whether existing health and environmental risk assessment practices of the European Union for Genetically Modified Organisms (GMOs) are also adequate for SynBio. Additionally, the scientific committees were asked to provide suggestions for revised risk assessment methods and risk mitigation procedures, including safety locks.

Final Opinion on Synthetic Biology II - Risk assessment methodologies and safety aspects
http://ec.europa.eu/health/scientific_committees/emerging/docs/scenihr_o_048.pdf

Results of the public consultation on the Scientific Committees' preliminary Opinion on Synthetic Biology II– Risk assessment methodologies and safety aspects
http://ec.europa.eu/health/scientific_committees/emerging/docs/followup_cons_synbio2_en.pdf . The public consultation was opened on the website of the non-food scientific committees between 19 December 2014 and 3 February 2015. Information about the public consultation was broadly communicated to national authorities, international organisations and other stakeholders. 20 organisations and individuals from universities, institutes of public health, industry representatives, NGOs and public authorities, participated in the public consultation providing 72 comments.

Each submission was carefully considered by the Scientific Committees and the scientific Opinion has been revised to take account of relevant comments. The literature has been accordingly updated with relevant publications.

6. Date of next meeting.

It was agreed last October to tentatively schedule the next Biosafety Committee meeting for the 6th October 2016. These dates are flexible, committee members are encouraged to let the secretary know if there any problems with the date. The date will be confirmed nearer the time by e-mail around the beginning of September.