



**3rd Meeting of ICSU  
Committee on Freedom and Responsibility in the conduct of Science (CFRS)**

Academy of Sciences located in Taipei  
15-16 October, 2007

**Meeting Report**

**Present:** Ruth Arnon, Carol Corillon, Bengt Gustafsson (Chair), Peter Mahaffy, Sylvia Rumball, Peter Schindler, John Sulston, Ovid Tzeng, David Vaux, Moises Wasserman, Kan Zhang

**ICSU Secretariat:** Carthage Smith (*ex officio*)

**Apologies for absence:** Ana Maria Cetto (*ex officio*), Alice Gast, Najia Kbir Ariguib and Peter Anyang 'Nyong 'O

**1. Welcoming remarks**

The Chair welcomed members to the meeting

**2. Adoption of agenda**

**Decision**

To adopt the agenda

**3. Reports of the previous CFRS and Executive Board meetings and matters arising**

The report of the previous meeting had been approved electronically and posted on the ICSU website, with Members being notified, as agreed. There were several issues not covered elsewhere on the agenda as follows:

**Item 6**

Following confirmation of discrimination against Israeli scientists, Peter Schindler contacted the International Union of Geological Sciences (IUGS) and requested them to withdraw their sponsorship of the conference in Jordan. At the Unions meeting in April, the IUGS representative thanked the committee for its actions in this regard. UNESCO had also been contacted but did not respond.

**Item 10**

The International Union for the History and Philosophy of Science had been contacted by the secretariat to request assistance in producing a history of SCFCS. The Union's Council would be considering this issue at its next meeting in December.

**Item 15**

The Bulgarian health workers sentenced to death in Libya had now been released. Whilst the specific impact of any diplomatic interventions by ICSU Members could not be measured, the strong voice of protest of the international scientific community as a whole had certainly contributed to the resolution of this case.

**Item 16**

Moises Wassermann agreed to prepare the scoping paper on ‘mobility of researchers and Universality’ to be considered at the next meeting.

The reports from the 1<sup>st</sup> and 2<sup>nd</sup> CFRS meetings had also been considered by the Executive Board at its meeting in April. There was strong support for the committee’s work thus far, although it was recognised that additional resources would be required from external sources if the ambitious work-plan was to be fully achieved.

**Decision**

To note the meeting reports and update on subsequent developments; and, to agree that a 3-year workplan, including a funding plan, should be finalised at the next meeting for presentation at the General Assembly.

**4. Outcomes of additional consultation with ICSU Members**

At the previous meeting it was decided that a general circular should go out to all ICSU Members reminding them of the importance of tracking visa issues. Several Unions (IAU, IUGG) responded positively to this by email. One suggestion was that CFRS should develop a standard template for the reporting of visa issues in relation to Member meetings.

Whilst it was recognised that the collection of accurate quantitative data on visa problems was complicated, it was nevertheless considered to be very important. In addition to data from Member organisations it would be useful to have a web-based reporting mechanism for individual scientists. This should not be strictly limited to scientific meetings but should also permit reporting of other visa problems, e.g. visas for students or sabbatical visits.

Several ICSU Members had been invited to provide additional information in relation to some of the issues that they had identified in response to the initial request from CFRS for input to its workplan.

The International Union of Forestry Research Organisations (IUFRO) provided examples from its perspective of how the mass media and use of new electronic media can influence the reporting of science. Because of this scientists can easily be drawn into policy debates for which they are ill prepared. A fundamental issue was maintaining the quality of the scientific information and the distinction between peer-reviewed and ‘grey literature’.

The Royal Society of New Zealand provided information of national biosecurity regulations and examples of where the regulatory mechanisms have impeded research and international collaboration. It was clear that regulations, on issues such as import and export of biological materials, varied enormously from one country to another. One of the problems in defining national regulations was that there was rarely any policy input from the international

perspective. The life science Unions might usefully provide such input and help to establish minimum rules or requirements to inform national regulators.

#### **Decision**

To request the secretariat to develop reporting templates for both Member organisations and individuals, re visa issues;  
taking note of the valuable input from IUFRO, to agree that the interface between scientists, science communicators and the media should be a high priority in the future workplan (see ahead, item 16); and,  
in light of the additional contributions from New Zealand, to contact the life science Unions, re policy work and/or problems encountered in relation to biosecurity regulations;

## **5. Middle East**

### **5.1 Proposed UK academic boycott of Israel**

In May the UK's Academic and College Union (UCU) had renewed a call to its members to cut academic links with Israeli researchers. After electronic consultation with CFRS members, the Secretariat had assisted the chair in writing a letter to *Nature* opposing a boycott and this was published on 21 June. In May the policymaking congress of the UCU voted 158 to 99 to ask its 120,000 members to "consider the moral implications of existing and proposed links with Israeli academic institutions." However, it was subsequently reported that, upon seeking legal advice, the UCU announced that "making a call to boycott Israeli institutions would run a serious risk of infringing discrimination legislation. The call to boycott is also considered to be outside the aims and objects of the UCU."

In discussion, concern was expressed that the letter to *Nature* made no reference to the policy and actions of the State of Israel, which in some instances prevented the movement and exchange of Palestinian students and academics. The call for a boycott of Israeli academia was rightly condemned but the broader issue of Israel-Palestinian academic relations should also be addressed. ICSU should be consistent in its opposition to all breaches of the Principle of Universality in the region and encourage initiatives to promote academic cooperation.

### **5.2 Freedom of movement of Palestinian scientists and students**

Academic relations and exchange between Israel and Palestine were discussed at the previous CFRS meeting. A letter from the International Human Rights Network of Academies and Scholarly Societies, calling for greater scientific cooperation between the two communities had been published in *Science* in June. In the light of the proposed UK academic boycott, specific proposals to, instead, support Palestinian education had also been developed by a leading Palestinian academic, Sari Nusseibeh, who urged the UK government in cooperation with UK academic institutions, to take the lead in an international initiative.

It was noted that there were several initiatives underway to support scientific cooperation in the Middle East. However, some of these, including the Israeli-Palestinian Science Organisation, were limited by a lack of funding. Encouraging support for these initiatives was a very positive way to promote the Principle of Universality.

**Decision**

To request the Secretariat to prepare a balanced position statement supporting the various initiatives to establish closer academic collaboration between Israel and Palestine; and, to request that the Chairman discuss the proposals from Sari Nusseibeh with the President of the UK Royal Society.

**6. Cuba and the USA**

In June, the case of a Cuban scientist who had been refused an entry visa to the USA for a meeting on food sciences was brought to the attention of ICSU by one of its Member Unions. Subsequently in August, the case of a Cuban chemist who was similarly denied a visa was also reported. The US-NAS was informed of both of these cases and tried to facilitate the provision of visas but to no avail. After electronic consultation with the committee, the chairman submitted a letter to the journal, *Chemical and Engineering News*, highlighting both of these cases as breaches of the Principle of Universality.

The scientific relations between Cuba and the USA were discussed at the 1<sup>st</sup> CFRS meeting in November, 2006, when it was agreed that the Cuban National ICSU Member should be invited to articulate its perspective. A letter from the Cuban Academy of Sciences had now been submitted for consideration. This highlighted the deteriorating situation with regards to access to the USA for Cuban scientists.

The communications between US-NAS and the US State Department, concerning the visa refusals, indicated a worrying tightening of US visa policy in relation to Cuban scientists. It appeared that Cubans could only be granted visas when so doing supported U.S. Foreign policy interests and efforts to advance democratic transition in Cuba. Scientists were apparently not exempt from this purely 'political' consideration, which if strictly applied could inhibit any visit of Cuban scientists to the USA.

**Actions required**

To note the letter to the Chemical and Engineering News; and, to write to the US State Department requesting clarification of the policy in relation to visas for Cuban scientists.

**7. Communication and outreach**

## 7.1 The 'Blue book'

The audience and content for a revised version of the 'Blue book' (previously the handbook for SCFCS) had been considered at the two previous meetings of CFRS (see item 10 of previous meeting report). At the end of May, Bengt Gustafsson and Peter Schindler spent two full days in Paris with Carthage Smith, drafting a completely revised 'blue book'. The first draft was completed and agreed electronically by the drafting group and then circulated to all committee members for input in July. Several members provided comments, which had been incorporated into a consolidated draft for consideration at this meeting.

The aim was to have a final draft ready for circulation to the ICSU Membership in early 2008, with an agreed version being published in good time for the General Assembly in October 2008.

CFRS members were pleased with the overall emphasis and identified a number of areas where the draft could be improved:

- The link between the title and the main headings and structure of the document was not very logical;
- The introductory section on the ‘context for science’ was too long and should begin with a positive definition of science and its cultural (as well as economic) value;
- Responsibilities to society should be expanded to explicitly include the environment and future generations;
- ‘rights’ should be replaced by ‘freedoms’ throughout the text;
- A one page Executive summary would be helpful;
- Additional examples and questions should be included to stimulate the reader.

It was noted that the section on responsibilities reinforced the need to reconsider the wording of the Principle of Universality, which currently focuses exclusively on freedoms.

## 7.2 Web site

All committee members had been requested at the last meeting to look at the ICSU website and the presentation of Universality and the work of CFRS for consideration at this meeting.

Overall, the information on the web was considered to be satisfactory but it was not visible or easily located by the uninitiated visitor. A number of suggestions were made to improve this:

- A new message should be included on the front page after each CFRS meeting with a link to the relevant web information;
- Freedom and Responsibility should be a second level heading under ‘about ICSU’
- Current content needs editing/up-dating, e.g. to remove references to ‘SCFCS’
- Links between the documents in various different sections should be made

### **Decision**

To request the Secretariat to revise the draft in the light of the suggestions made and circulate to committee members for consideration;  
to invite Peter Mahaffy to propose a revised text for statute 5; and  
to request the Secretariat to revise the presentation and content of the website, in the light of the suggestions made.

## **8. Universality in armed conflict situations**

Following discussion of a preliminary document at the previous meeting, the Chair presented a revised background paper for consideration by the committee. In addition to discussing the

document content, members were asked to consider the audience and potential mechanisms of dissemination for any future activities in this area.

The document described in some detail the relevant UN Conventions and covenants, and how these might incorporate the rights of scientists as regards conflict situations. Various mechanisms already existed for upholding these inter-governmental agreements including special UN rapporteurs and the UNESCO Committee on Conventions and Recommendations. Thus, a number of options already existed for dealing with individual cases of persecution against scientists and it was important to be aware of these. It was not clear whether any other provisions were necessary at this stage and a workshop or study to more specifically define the problems confronting scientists in chronic conflict situations could be an important first step.

#### **Decision**

To agree that this is an area that should be given high priority when considering future workshops (item 16) and to note that UNESCO might be a valuable partner in organising such a workshop.

### **9. Science policies – impact on rights and responsibilities**

At the previous meeting, Carol Corillon had agreed to prepare a preliminary scoping paper on Science Policies/Politics and their impact on Rights and Responsibilities of Scientists. The presented paper listed a number of responsibilities of scientists with regards science policies and a number of freedoms that are vulnerable to political interference. Over twenty ‘problem’ areas were identified where these responsibilities and freedoms did not necessarily accord with policy and political imperatives.

It was agreed that the ‘problem’ areas were all within the remit of the committee and the current listing covered most of the topics of current concern with regards to upholding the Principle of Universality. Many of these related to broader themes that were already on the committee’s agenda, e.g. the public-private interface or science and the media, and some restructuring of the list would make it a useful reference document (see [annex 1](#)). Specific topics were considered for workshops under item 16.

#### **Decision**

To further develop the document as a reference list for the committee itself and a communication tool to illustrate the interests of the committee and key challenges to the Principle of Universality.

### **10. Proposal for a foresight study on the public-private interface**

Following discussion at the previous meeting, the Chairman presented a paper on the interactions between universities and industry and their impact on the freedom and responsibility of academia.

Committee members agreed that this was an important topic that should be given high priority. The ‘rules of engagement’ with industry were not always clear and conflicts of interest at both the institutional and individual level could lead to major problems. In taking this topic forward it would be important to involve legal and technology transfer experts, e.g.

from the Science Commons initiative. There was also a possibility of collaborating with other organisations, e.g. the Swedish Academy of Engineering, with regards to funding

**Decision**

To request the Chairman to prepare a funding proposal to carry out a foresight study of the development of the interaction between universities and industry; and, as part of this study to consider arranging a workshop on Universities, Industry and the Universality of Science (item 16).

**11. Follow-up to the World Conference on Research Integrity**

Several committee members had participated in the World Conference on Research Integrity, which was held in Lisbon in September. This raised some important issues in areas such as scientific publishing, authorship, science education and codes of conduct. In one session, there was an appeal to ICSU to take the lead in developing a universal code/guidelines on integrity in research. The ICSU Executive Board had considered a report of the conference at its recent meeting and asked that CFRS consider very carefully what actions might be appropriate for ICSU at the international level to promote integrity in research.

It was apparent at the conference that maintaining research integrity in the modern research environment is a major challenge. It requires both a values based preventative approach (education and mentoring) and formal compliance-based rules and mechanisms to deal with identified cases of cheating. Universities, research funders and other scientific institutions, including ICSU and its Members, have a shared responsibility for promoting an honest research culture. The particular niche for ICSU relates to its international and interdisciplinary perspective. Encouraging debate and discussion within and between the ICSU Membership was very important.

Several initiatives to promote research integrity had been proposed at the Conference. This included an initiative from the STM Publishers Association to develop a universal set of ethical guidelines. ICSU had been approached to be involved in this activity and ensure the input of the scientific community. The proposal was to establish a small (virtual) working group to take this forward. There was also a proposal from the host country, Portugal, to organise a second World Conference in Asia and ICSU had been invited to participate in this. OECD was planning a follow-up activity on rules and mechanisms for dealing with cases of scientific cheating.

**Decision**

To write to all Members encouraging them to play a strong role in promoting research integrity and requesting information on existing mechanisms for dealing with cases of scientific cheating;  
 in re-drafting the blue book to ensure that it reinforces the values of science and importance of research integrity;  
 to agree to work with the STM Publishers Association in developing a universal set of ethical guidelines for scientific Publishing and to involve the relevant scientific Unions in this activity;  
 to contact the main conference organisers (ORI and ESF) and express the interest of CFRS in playing a major role in a follow-up conference, particularly if this were to be organised in Asia; and,

to propose that Sylvia Rumball be involved in any planned OECD follow-up activity on harmonisation of national rules, regulations and mechanisms for dealing with scientific dishonesty.

## 12. Ongoing and new cases

The committee considered four cases that had been brought to its attention either by individual committee members or via approaches to the Secretariat.

### 12.1 Andrez Holm (Germany)

A. Holm is an urban sociologist who had been arrested in July 2007 in Berlin, held in solitary confinement for more than three weeks in pre-trial detention, and charged with membership in a terrorist organisation. His trial was imminent and the federal prosecutor had cited as circumstantial evidence against him the fact that his academic writings contain words and phrases, such as ‘gentrification’ that are similar to those that have been used by the terrorist organisation to which it is alleged he belongs. This had stimulated protests from several scientific organisations, including the American Sociological and Political Science Associations and Education International.

The publicly available information on this case was sparse and as the accused was about to go to trial it was considered unreasonable to request further evidence from the German authorities now. Depending on the evidence presented during the trial and its eventual outcome, further information might be requested in the future.

### 12.2 Claudio Mendoza (Venezuela)

Claudio Mendoza is a physicist at the Venezuelan Institute for Scientific Research, who had written a controversial article in a national newspaper that was critical of the Government and its ‘scorn for experts’. He subsequently was demoted from Laboratory Director to a researcher position within his Institute.

The issue of institutional autonomy and related academic freedom was recognised as being a source of tension in several Latin American countries. In this particular instance the precise status of the Institute and its Board structure and remit were important factors.

### 12.3 Marc van Roosmalen (Brazil)

Marc van Roosmalen is an eminent primatologist who had recently been sentenced in Brazil to more than 15 years in prison. He had been convicted of a number of charges relating to his research practices, including keeping monkeys in confinement without permits and auctioning names of new primate species to wealthy donors. His case was linked to a more general concern about Biopiracy in the Amazon. The length of his sentence had stimulated strong protests from sectors of the Brazilian and International Science community and his case had been publicised in *Nature* (448/9, p634).

It appeared that whatever the facts of the case, the very long sentence was disproportionate to the supposed crime. It was possible that international pressure might help to accelerate the scientist’s release, although any action from ICSU should be taken in close consultation with its relevant Member organisations.

### 12.5 International Statistical Institute conference

The Director of the International Statistical Institute (ISI) had written to ICSU in September, asking for information on ICSU's policy as regards access of professional scientists to international conferences. Several scientists (in particular from Iran and Nigeria) had been refused visas for an ISI conference in Lisbon. The organisers had been informed that this was not because of Portuguese policies but due to restrictions imposed by Schengen regulators. This potentially had implications for international meetings in many European countries.

**Decision**

To request Carol Corillon to continue to monitor the Andrez Holm case;  
to request Moises Wassermann to gather more information on the Claudio Mendoza case;  
to approach the Brazilian Academy of Sciences and the International Union of Biological Sciences about the van Roosmalen case; and  
to request Peter Schindler to gather more information on the issue raised by ISI in relation to Schengen visas and controls.

### 13. Lunch and open forum with local academics

It had been agreed at the first CFRS meeting that the major rationale for having committee meetings outside of Paris was to engage with the local scientific community in other parts of the world. This 3-hour session had been organised with the local host, the Academy of Sciences, and included a number of brief presentations and discussions by Taiwanese academics. A list of those who attended and a summary of the discussions is provided at [annex 2](#).

In subsequent discussions in committee, it was agreed that this had been a very stimulating and useful dialogue. It had informed and reinforced the committee's future work and priorities, introducing the particular perspectives of a mid-developing Asian country. Ovid Tzeng reported that from the host viewpoint, the opportunity to discuss with international experts had been very much appreciated. The dialogue would certainly stimulate a number of initiatives in relation to rights and responsibilities in the Academy. In terms of the remit of CFRS for outreach and promotion of the Principle of Universality it was considered to be a resounding success.

**Decision**

To thank Professor Chi-Huey Wong and the Academy of Sciences located in Taipei for organising a very stimulating forum; and  
to agree that the exercise should be repeated in future committee meetings.

### 14. Workshop with Pugwash on Converging Technologies

Pierre Cannone from Pugwash attended the previous CFRS meeting and presented a proposal for a workshop on Converging Technologies. This was favourably viewed by the committee and it was agreed that two members (Ovid Tzeng and David Vaux) should work with Pierre to develop the workshop agenda. The possibility of combining the workshop with the next CFRS meeting was also raised and potential dates were subsequently circulated by email.

**Decision**

To agree that CFRS should co-sponsor this workshop and combine it with the next committee meeting; and,  
to note the workshop dates 29 (evening), 30 and 31 May and 1 June (am) in Ajaccio, Corsica

### **15. Date and location of next meetings**

Following on from item 14, it was agreed that the next meeting should be held in Corsica

It was noted that the subsequent, 5th meeting of the committee will take place in conjunction with the General Assembly in Maputo (18-24 October). This was recognised as an important opportunity for the committee to interact with the African science community. It was also a unique opportunity to interact with the entire ICSU Membership.

#### **Decision**

To agree that the next meeting should be held on 2<sup>nd</sup> and 3<sup>rd</sup> June in Ajaccio, Corsica, following the joint workshop with Pugwash;  
to note the dates for the 5<sup>th</sup> CFRS meeting in Maputo on 17 and 18 October;  
to request the secretariat to identify appropriate opportunities for the committee to interact with the African science community in association with the General Assembly in Maputo.

### **16. Future support for the committee's work**

After three meetings it had become clear that in order to achieve its objectives and fulfil the remit requested of it, the committee needed additional financial and personnel support. The Chairman and ICSU Secretariat had held discussions with the Royal Swedish Academy of Sciences (KVA) and the Chair now presented a preliminary proposal for a series of joint ICSU/CFRS-KVA workshops. The proposal was for 2 workshops a year to be held in Stockholm, from 2008 until 2010. These would focus on areas of high priority for CFRS, e.g. collaboration between universities and industry or freedom of science in armed conflict situations. The aim would be to bring together about 40 international scientists/experts for each three-day meeting. In addition to direct support for the workshops, funding would be requested for a 50% position for an experienced science manager some of whose time could be spent supporting CFRS meetings and assisting with cases where the Principle of Universality is breached. In addition to KVA, it was suggested that Pugwash might be considered as a partner for some of the workshops. A suitable Foundation had been identified that would be potentially interested in funding this proposal.

Committee members were very supportive of the proposal, which could develop into a flagship 'Stockholm series' of meetings on science, freedom and responsibilities. They identified a number of issues that needed to be taken into account in developing the proposal further:

1. The choice of topics was critical and could be largely derived from the priorities already agreed by the committee, including those discussed at this meeting (items 4, 8, 9, 10) although some future flexibility was necessary.
2. A specific conference profile should be identified, building on the unique ICSU niche – global and inter-disciplinary. The ICSU-CFRS role was to facilitate and catalyse debate and exchange of experience and knowledge.
3. The impact of the workshops would depend both on the people invited and also the products and associated outreach. Careful attention should be given to this and the use of new information and communication technologies, e.g. video/web and podcasts.

4. It would be important to involve younger scientists both in the planning and implementation of the workshops
5. Two meetings a year was an ambitious target and, although not all CFRS members should necessarily be expected to attend all meetings, this did mean that a central activity of the committee in the future would be to oversee and manage these workshops. The workshops would effectively become the major mechanism for taking forward identified priorities.

**Decision**

To request the chair to further develop a list of potential workshop topics to be circulated to the committee electronically for prioritisation; and, to agree to develop a full proposal, jointly with the Royal Swedish Academy of Sciences, taking into account the suggestions of the committee.

**17. Global Health workshop`**

Global Health had been identified as a priority area by the committee at its previous meetings. In order to take this forward a regional workshop had been organised in collaboration with the Academy of Sciences located in Taipei. The workshop “Emerging Infectious Diseases: Rights and Responsibilities of Scientists” took place the day after the CFRS meeting on October 17 in Taipei.

The workshop attracted more than 100 scientists, policy makers and medical students. CFRS members acted as rapporteurs of the various sessions and their reports are attached together with the workshop agenda, as [annex 3](#).

**Annexes**

- [Annex 1](#) Principle of Universality: Science Policies and the CFRS’s Interests and Challenges
- [Annex 2](#) Agenda and rapporteur’s report of CFRS Open Forum, Academy of Sciences located in Taipei, October 16, 2007
- [Annex 3](#) Agenda and rapporteurs’ reports of the workshop, “Emerging Infectious Diseases: Rights and Responsibilities of Scientists”, Taipei, October, 17, 2007

Annex 1

**Principle of Universality: Science Policies and the CFRS's  
Interests and Challenges**

What CFRS promotes through the Principle of Universality:

- Self-governance
- Personal and public accountability
- Good judgment
- Responsible, ethical research and behavior
- Peer review & objective presentation of facts
- Recognition and management of risks
- Awareness of potential misuse of science
- Prevention of misuse of research technologies or findings
- Public education/education of scientific community
- Engagement with/outreach to government, public, law

What CFRS protects from political interference through the Principle of Universality:

- Right to independence/self-governance
- Right to academic freedom
- Right to travel
- Right to conduct responsible research
- Right to free exchange of ideas and information
- Right to publish scientific findings (while maximizing public benefit and minimizing risks of misuse)

What challenges the CFRS faces to the Principle of Universality:

- marginalization of the voice of science—i.e. stem cells, evolution, global warming, GMO's, sex education, contraception, day after pill,
- distortion of science advice to the public
- prevention of the purposeful misuse of science without impeding progress—i.e. dual-use dilemmas
- promotion of private profit over public good
- hindrance of free flow of ideas and information by patenting
- conflict between intellectual property policies and value and direction of science based research
- mischaracterization of scientific findings to bolster political agendas
- suppression of scientific evidence in political decision making process
- denial of access by policy-makers to pertinent scientific information

- identification of contributions by scientists to the widening gap between science and policy
- restriction by government agencies on foreign travel of scientists
- suppression or distortion of scientific evidence or findings by industry—i.e. tobacco use, junk food ads
- suppression or distortion of science by religion –i.e. evolution versus intelligent design; abstinence versus condoms, issues surrounding abortion, HIV education, etc.
- interference in choices of scientific consultants for government agencies
- reduction in funding for international scientific meetings for political reasons
- suppression of academic freedom through bureaucratic controls
- prevention of best available science from informing policy decisions
- censorship of scientific findings that contradict policies
- manipulation of scientific findings to match predetermined political decisions
- subversion of independence of scientific advisory panels

Annex 2**Agenda for CFRS Open Forum, Academy of Sciences, Taipei, October 16, 2007**

Time	Event	
12:15 – 13:15	<b>Buffet Lunch</b> <ol style="list-style-type: none"> <li>1. Brief introduction to CFRS members</li> <li>2. Brief introduction to local academics</li> <li>3. Brief overview of CFRS interests and activities</li> </ol>	
13:15 – 14:50	<b>Issues and Discussion —</b> <b>Key rights and responsibilities issues for Taiwan and Asia</b>	
13:15 – 13:30	<b>Presenter</b>	<b>Dr. Mei-Shang Ho</b> <i>—Research Fellow, Institute of Biomedical Sciences, Academy of Sciences located in Taipei</i>
	<b>Topic</b>	Scientific Ethics on Public Responsibility: the Taiwanese Academic Community at a Glimpse
13:30 – 13:40	<b>Presenter</b>	<b>Dr. Hwa Dai</b> <i>—Professor, Department of Philosophy, National Cheng Chi University</i>
	<b>Topic</b>	Biomedical Research and the Protection of Aboriginal Communities in Taiwan
13:40 – 13:50	<b>Presenter</b>	<b>Dr. John Yu</b> <i>—Director, Institute of Cellular and Organic Biology, Academy of Sciences located in Taipei</i>
	<b>Topic</b>	International and Local Guildlines for Human Embryonic Stem Cell Research
13:50 – 14:00	<b>Presenter</b>	<b>Dr. Wen Tsong Chiou</b> <i>—Assistant Research Fellow, Institute Jurisprudentiae, Academy of Sceinces located in Taipei</i>
	<b>Topic</b>	Governance of Human Subject Research in Taiwan – The causes of Its Current Predicament and the Proposed Solutions
14:00 – 14:10	<b>Presenter</b>	<b>Dr. Chang Fa Lo</b> <i>—Professor, College of Law, National Taiwan University</i>
	<b>Topic</b>	Scientists’ Responsibilities in Helping the Perfection of International Health Regimes
14:10 – 15:00	<b>Discussion</b>	

**CFRS-Academy of Sciences located in Taipei Open forum:  
local academics in attendance**

Dr. Chi-Huey Wong,

—*President, Academy of Sciences located in Taipei*

Dr. Chao-Han Liu,

—*Vice President, Academy of Sciences located in Taipei*

Dr. Ts'ui-Jung Liu,

—*Vice President, Academy of Sciences located in Taipei*

Dr. Shih-Lin Chang

—*Vice President, National Tsing Hua University*

Dr. Wen-Tsong Chiou,

—*Assistant Research Fellow, Institute Jurisprudentiae, Academy of  
Sciences located in Taipei*

Dr. Hwa Dai

—*Professor, Department of Philosophy, National Cheng Chi University*

Dr. Mei-Shang Ho,

—*Research Fellow, Institute of Biomedical Sciences, Academy of  
Sciences located in Taipei*

Dr. Lou-Chuang Lee

—*President, National Central University*

Dr. Yan-Hwa Wu Lee

—*President, National Yang Ming University*

Dr. Rai-Min Liao

—*Director, Graduate Institute of Life Science, National Cheng Chi  
University*

Dr. Sue Lin-Chao,

—*Director, International Affair Office, Academy of Sciences located in  
Taipei*

Dr. Chang-Fa Lo,

—*Professor, College of Law, National Taiwan University*

Dr. Jei-Fu Shaw

—*President, National Chung Hsing University*

Dr. Yih-Hsiung Yeh

—*Director General, Academy of Sciences located in Taipei*

Dr. John Yu,

—*Director, Institute of Cellular and Organic Biology, Academy of  
Sciences located in Taipei*

## **CFRS Open Forum, Academy of Sciences located in Taipei, October 16, 2007**

### **Rapporteur's report: Peter Schindler (CFRS)**

**Chi-Huey Wong**, President of the Academy, welcomed the members of the Committee on Freedom and Responsibility in the Conduct of Science (CFRS) of the International Council for Science (ICSU) and the local academics.

**Bengt Gustafsson**, Chairman of CFRS, expressed the gratitude of the members of CFRS for the excellent welcome by the Academy. He briefly described the committee's work and introduced the concept of Universality, which involves both rights and responsibilities for scientists.

**Carthage Smith** remarked that this was the first such Open Forum. The aim was to exchange views with local academics and discuss the issues of concern in Taiwan and the Asian region in relation to the freedoms and responsibilities of scientists. The forum would inform the future priorities and activities of CFRS.

The members of CFRS, as well as the local academics, introduced themselves briefly.

**Mei-Shang Ho** gave a description of the general situation of science in Taiwan. It has been influenced by its history – more than 30 years of martial law, more than 30 years of political isolation. The culture of open scientific discussion, the understanding of the individual scientist's responsibility has to be developed. Science and technology are not sufficiently differentiated, potential competing interests not acknowledged.

**Terence Hua Tai** reported on a recent problem with a genetic research involving the indigenous Kavalan tribe. The dispute centred on the question on how to properly conduct "informed consent" procedures. While endangered and vulnerable minority populations unquestionably need adequate protection, some of the demands of the "Basic Law of indigenous People" make research difficult; this can be overcome by establishing a relationship based on mutual trust.

**John Yu**, member of an international Human Embryonic Stem Cell Guidelines Task Force, reported on new developments for increasing the level of scrutiny in this area, Stem Cell Research Oversight (SCRO) was a shared responsibility between scientists and other interested parties. Guidelines had been formulated for research in Taiwan. For international collaboration it is mandatory to have scientific and ethical standards that are internationally recognized. A new regulatory guideline on the Ethics of Human Embryo and Embryonic Stem Cell Research was issued on August 21, 2007; new National Legislation was currently under review. An Asia-Pacific Network had been established with the task of harmonising regulations and supporting the establishment of repositories for biological resources.

**Wen-Tsong Chiou** described the situation in Taiwan with respect to research on human subjects. The Medical Affairs Act of 1986 demanded prior ethical review and informed consent, but only in the case of clinical trials on new medical products. Other academic research involving human subjects was largely unregulated until the end of 2006 when

guidelines were issued on human tissue research. A general paradigm shift could be observed from a “harm-based rule” to a “value-based” or “autonomy-based” approach.

**Chang-Fa Lo** spoke about the “International Health Regulations” IHR originally set up in 1969, amended in 2005 and in force since 2007. IHR is important in all efforts to control emerging infectious diseases, several of which have recently arisen in Asia. Taiwan’s problem is that it is not a member state of WHO; the new IHR are however formulated in such a way that they are also applicable to people in non-member states. Universality, meaning universal exchange of data and information and cooperation, has been introduced only late during the legislation process at WHO, and it is still not an integral part of the IHR. Infectious diseases spread irrespective of national boundaries and membership status at WHO, so universality, as health officials understand it, is essential in the efforts to control such diseases.

In the **discussion** several of the key issues arising from the presentations were expanded upon: exactly how can informed consent be defined? What is the status of “whistleblowers”? Social pressure often protects the hierarchies; whistleblowers are frowned upon. Dual use questions: can blood samples taken for therapeutic purposes used for research purposes? Or can such samples be used in other situations, e.g. the case of the Swedish blood bank that made samples available to legal authorities to help identify a murderer. Scientists often feel uneasy about their relations with the media; they feel misrepresented or not represented at all in important matters related to science.

Most of these issues had come up in previous CFRS discussions but in the particular context of Taiwan they had a different emphasis. The challenges for science and scientists are often shared universally but in order to effectively address them one has to take account of the local context.

Annex 3

**Emerging Infectious Diseases : Rights and Responsibilities of Scientists**  
**A workshop organised by ICSU-CFRS and the Academy of Sciences located**  
**in Taipei, October 17, 2007**

<b>09:00 - 09:30</b>	<b>Registration</b>	
<b>09:30 - 09:40</b>	Opening Address	
	<i>Remarks: President Chi-Huey Wong, Prof. Bengt Gustafsson</i>	
<b>09:40 - 10:45</b>	<b>Session 1: The Macro-Context: Politics, Policies and the Private Sector</b>	
	<i>Chair: Bengt Gustafsson, Kan Zhang</i>	<i>Rapporteur: Carol Corrillon</i>
09:45 - 10:05	<b>Prof. John Sulston</b> (CFRS and UK) <b><i>Science, Equity and Global Public Health</i></b>	
10:05 - 10:45	Discussion Session	
<b>10:45 - 11:05</b>	<i>Refreshment</i>	
<b>11:05 - 12:10</b>	<b>Session 2: Research Focus and Effort</b>	
	<i>Chair: Ming-Liang Lee, Ovid Tzeng</i>	<i>Rapporteur: Ruth Arnon</i>
11:10 - 11:40	<b>Prof. Chien-Jen Chen</b> (Taiwan) <b><i>Control of Emerging Infectious Diseases: Research Focus and Global Collaboration</i></b>	
11:40 - 12:35	Discussion Session	
<b>12:35 - 13:50</b>	<i>Lunch Break</i>	
<b>13:50 - 14:55</b>	<b>Session 3: Sharing Results, Data and Samples</b>	
	<i>Chair: Michael Ming-Chiao Lai; Sylvia Rumball</i>	<i>Rapporteur: David Vaux</i>
13:55 - 14:15	<b>Prof. George Fu Gao</b> (China) <b><i>Migratory Birds and Avian Influenza and the Beyond: who share the data? birds or Scientists?</i></b>	
14:15 - 14:55	Discussion Session	
<b>14:55 - 15:15</b>	<i>Refreshment</i>	
<b>15:15 - 16:45</b>	<b>Session 4: Research Practice</b>	
	<i>Chair: Chien-Jen Chen, Che-Kun James Shen</i>	<i>Rapporteur: Peter Mahaffy</i>
15:15 - 15:20	Introduction	
15:20 - 15:40	<b>Prof. Lam Sai Kit</b> (Malaysia) <b><i>Research Practice: Coping with Limited Resources</i></b>	
15:45 - 16:05	<b>Dr. Ellson Chen</b> (Taiwan) <b><i>Research Practice for locally prevailed Infectious disease: An Industrial View</i></b>	
16:05 - 16:45	Discussion Session	

## **Workshop on Emerging Infectious Diseases: Rights and Responsibilities of Scientists : Rapporteurs' reports**

### **Session 1: The Macro-Context: Politics, Policies and the Private Sector**

#### **Rapporteur: Carol Corillon**

John Sulston spoke on Science, Equity, and Global Public Health, particularly, from a public health perspective, where a program that addresses specific emerging infectious diseases should go. Although the effort to combat infectious diseases has been a success story, because of the extent of international travel in today's world, there is a strong possibility of pandemics in the future, particularly in the world's poorest countries. How do we find funding to address this potential problem? Perhaps through WHO, an organization that is without profit motive and could receive public revenues. It is important, however, not to get locked into an inflexible position.

The most important thing about the delivery of health care is public infrastructure, i.e. clean water, food, housing, sewage systems, etc. Science comes on top of that. In the delivery of medicines and medical treatment everyone should have the right to health and full access to health care. In Europe and Taiwan this problem is addressed through a social system based on a cost/benefit approach while in the United States the problem is addressed through a market system based on one's ability to pay.

The Global Health Care system is important for the future. What will it look like? How are we going to apply the discoveries that will be discussed during the workshop? People think of science in terms of applications but the emphasis must be shifted to the full cycle of science. Currently, there is a bias toward applications to generate profit for investors. These resulting high prices exclude those who cannot pay. Monopolies, such as patent "thickets" block follow-on innovation. 75% of new drugs provide no additional therapeutic benefit. We are all shareholders! New drugs benefit certain patients but an exception must be obtained for those cannot afford them. Only one tenth of the drug profits go back to research and development while one third goes into marketing and another third is profit. The exclusive rights patenting system drives prices up. Compulsory licensing works but it is an inefficient and blunt instrument. The U.S. and E.U. have said they will never issue compulsory licenses for medicines.

The total number of new drugs developed from 1975-2004 is 1,556; of those, only 18 were for tropical diseases and, of that, 3 were for tuberculosis (TB)—a total of 1.3%—while tropical diseases and tuberculosis account for 12% of the global disease burden. There is a high price on diseases of poor people although TB is now the subject of more research because it is being contracted by tourists. New drugs and vaccines are needed.

Because we don't have a truly effective vaccine for TB and bacteria are resistant, death from TB accounts for a large proportion of people who die in developing countries. The Global Fund supports the fight against AIDS, tuberculosis and malaria, diseases that kill over 6 million people each year.

To make drugs safe, affordable, and available, two problems must be addressed—innovation (how to support research and development (R&D) for diseases on the basis of need rather than

market) and access (how to provide access to medicines at affordable prices while still providing financial incentives for R&D). Excesses are attributable to marketing issues-- lobbying by pharmaceutical agents, adversarial testing, ghost publication, and disease mongering.

A remedy can be to support drug development R&D directly, as has been done by the Bill and Melinda Gates Foundation with directly funded public private partnerships (PPP), which appear to work. Other possible solutions include advance marketing commitment or prize fund and compulsory licensing which can allow governments to buy drugs for less from patent holders in instances of urgent or grave need. Cooperation may be developed by crises.

Another important development has come from the independent Commission on Intellectual Property Rights, Innovation and Public Health, chaired by Ruth Dreifuss, for the World Health Organization. The report recommended actions needed to ensure that poor people in developing countries have access to existing and new products to diagnose, treat and prevent the diseases which affect them most.

We must dare to think about designing markets to optimize social benefits.

Examples include :

- Global fund has spent \$7 billion in 136 countries
- UNITAID : international air-ticket solidarity levy (founded 16/9/06) – will collect €300 million in 2007
- Advance market commitment (AMC) for vaccines, \$1.5 billion (launched 9/2/07)
- Intergovernmental working group (IGWG) set up by WHO following CIPIH report (5/06)
- WIPO adopted a development agenda
- Use of compulsory licences

We must work toward globalization of justice by building trust through:

- Benefit sharing
- Access to knowledge
- Equitable trade rules
- Multinational agreements
- Reversal of brain drain
- Balancing openness with opportunity

With regard to benefit sharing there must be guarantees that countries that share the samples will get the benefit back. For example, Avian flu samples were shared with WHO on the condition that drug companies that benefit from the samples provide subsidized mass vaccination programs against avian flu for developing countries.

With regard to scientific responsibility, is health a right or privilege? Should trade agreements respect human needs? Are such questions pertinent to CFRS?

During the question and discussion segment, it was pointed out that vaccinations are a most important contribution to public health in developing and developed world and that they deserve more attention. But vaccines are becoming more sophisticated and expensive and there is fear that in the future vaccines will be available only for those who can pay. Concern was also expressed that some older vaccines, such as polio, may not be available because they

are too cheap. Although vaccines are essential, they are getting squeezed out because drugs that need to be used repeatedly are more profitable and, thus, a different framework is needed.

It was urged that everyone have access to genome information, that all countries be urged to be frank, open, and transparent when faced with an outbreak of an infectious disease. It was pointed out that in the United Kingdom, the foot and mouth disease outbreak caused a loss in tourism, that tourists feel safer going to open and transparent countries, and that WHO can play an important role in bringing such policies together.

There was considerable discussion regarding competition versus sharing of data and mention was made of aspirations for the Nobel Prize by developing countries. Sulston said he avoids competition - that one must not worry about a career but focus on doing good science. He personally found that sharing everything worked well - but allowed that times change. Others urged that scientists use their curiosity and to be open to unexpected things, not what is expected to bring fame or money. The long-term solution is for everyone to become citizens of the world. NGO's, such as Médecins sans Frontières, have driven advances in this area.

Mention was made of an individual researcher at Cambridge University who sold his discovery for considerable sums of money but rationalized it by saying. "I've made a few million, but the drug company has made billions." The point is that it is important to negotiate more equitable deals and different deals for low income countries and high income companies. A scientist is on the front line and in a position of control and can help broker more equitable deals.

Scientists should take a general interest in the global impact of the patent and licensing policies of their institutions and change them if they don't like them. For example, pressure from students, researchers, and access advocates, forced the renegotiation of Yale's license with Bristol-Meyers Squibb to ensure the availability of generic versions of stavudine, developed by researchers at Yale, in developing countries. This episode led to the founding of Universities Allied for Essential Medicines. It was noted that the United Nations and World Health Organization could play a much larger role in global health equity.

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## **Session 2: Research Focus and Efforts**

**Rapporteur:** Ruth Arnon

The session was opened by Ovid Tzeng. He introduced the co-chairman, Ming-Liang Lee, who was in charge and played the major role in the efforts to control the outbreak of SARS in Taiwan during 2002. Dr. Lee introduced the speaker, Dr. Chien-Jen Chen, the Minister of the National Science Council of Taiwan, who gave the introductory Presentation of the Session on "Control of Emerging Infectious Diseases – Research Focus and Global Collaboration". In the talk he emphasized the importance of discussing this topic in view of two aspects that should be considered – the need for more investments and the balance between basic and applied research.

Emerging infections are a lasting threat and for centuries have led to epidemics and catastrophes in many parts of the world. Recent examples are the outbreaks of Ebola virus in 1966; HIV in 1981; Avian Flu in 1997 and Nipah virus in 1998. The danger for rapid spread of infections is nowadays higher due first of all to globalization and population growth, but

also to other factors such as global warming, open sexual behaviour, evolution of infectious agents, as well as drug abuse, which in many cases lead to resistant strains.

A case in point is the Dengue virus, where both mosquito spread and the development of new strains led to repeated outbreaks in Southern Asia during 1950 to 1970. Means of control include first of all the control of the vector (mosquito), but also the full reporting of cases, the isolation of patients, quarantine etc and follow-up of the patients. Not less important is international collaboration.

Another example is HIV. It is now over 20 years since the emergence of HIV/AIDS. While in the first few years these were mostly local foci, during 1984 to 1999 there was a massive spread worldwide, including in Asia, leading to a major health issue in both South-East Asia and Africa. Means of control are first of all health education, but also screening of pregnant women, screening of blood donors, as well as high-risk groups of the population. Patients' treatment provides an effective means for life prolongation. Vaccine development would of course be the ideal means, but regrettably, in spite of the tremendous effort invested in it – no fruitful results as yet.

The third example is SARS (Severe Acute Respiratory Syndrome). This infection is an atypical pneumonia. It started in the region of Guandong in the South East of China in the winter of 2002 and effected 6 localities – China (Guandong and Beijing); Hong-Kong; Taiwan (Taipei), Canada (Toronto) and Singapore. Due to an intensive effort of the World health Organization in identifying patients, severe control and quarantine, as well as International collaboration, it was possible to contain the infection. SARS control in Taiwan (headed by Dr. Lee) included persuasion of the population to observe isolation procedures, tracing of contacts and strict hospital surveillance.

In parallel, an intensive research on the virus, with international collaboration, led to its complete characterization within less than one year. It was identified in 2003 as a Corona virus, the cause of a new disease with an unknown natural history, with extremely high case fatality (744 deaths out of 1706 cases). Furthermore, during this year both the DNA sequence and the 3 dimensional structure of the virus had been determined, which was a considerable scientific achievement.

A further example is that of Avian Flu, and the main concern in this case being the prevention of pandemic influenza. The cause of the Avian Flu is a genetic variation leading to a new strain, H5N1, which is much more virulent leading to high mortality. The cumulative number of cases until now is about 700, mostly in Indonesia, but it can spread to other regions in Asia. The preparedness for pandemic includes mainly rapid diagnosis, food safety and infection control surveillance. A most important factor is sharing of information internationally. Efforts towards development of a vaccine and anti-viral drugs could of course be meaningful in prevention of a pandemic.

The research on emerging diseases in general should focus on several important issues, including: 1) Identification of causal agent (animal reservoir); 2) Diagnostic criteria (symptoms; lab evidence confirmation); 3) Early detection – cost effectiveness; 4) Surveillance networking: reporting; modelling & productions; 5) Preventive measures for disease and outbreaks; 6) Therapeutic methods; 7) Policy and governmental responsibility – preparedness and International Collaboration; 8) Public awareness (including risk assessment); 9) Medical research and Ethics.

The crucial factor in the control of emerging diseases is the global collaboration. This should focus first of all on the role of Governments and NGO's, efficient and immediate exchange of information on outbreaks of infection, but also the exchange of the isolated infectious agents. Here the issue of collaboration versus competition may present some problematics, particularly when the isolates are obtained in a developing country and the

research is to be performed in a developed country. But, the exchange of state-of-the-art technology and scientific information is crucial.

Biomedical industries partake in both research and development of diagnostics and reagents. In this respect the consideration of wealth versus health becomes an important issue. Finally, an important issue is the financial support for developing countries so that they can perform both surveillance, rapid diagnosis, isolation of infectious agents and willingness to collaborate on an international level. Such collaboration is essential in controlling and combating of emerging infectious diseases.

The discussion following the presentation included the following points:

1. Emerging diseases should include also re-emerging ones such as malaria and tuberculosis. All issues pertain to them as well.
2. Influenza – the reason for Avian Flu – mostly agricultural due to the proximity of poultry and pigs as well as people. In the USA it is possible to separate agricultural handling of different species. More difficult in SE Asia. As for the question why didn't Avian Flu get into Taiwan by migrating birds – possibly because Taiwan is a relatively small island. However, there are tests and monitoring constantly to make sure that this does not happen, because it might affect the entire poultry industry.
3. SARS - Dr. Gao mentioned that in China there are restrictions on working with SARS. In Thailand and Singapore there are several labs working on SARS. Sharing of results and the virus is important. Dr. Gustaffson asked what was the role played by nurses and school teachers in the control of SARS. The answer was that there was a high emphasis on this. Also important was the education of the population at large, as to the behaviour in public transportation and at home. A most significant factor was the use of public media and press releases to avoid panic.

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### **Session 3: Sharing Results, Data and Samples**

#### **Rapporteur: David Vaux**

The session was opened with a Presentation from George Fu Gao, Director, Institute for Microbiology, Chinese Academy of Sciences (IMCAS) China, entitled “Who should share the data? Migratory birds or human beings: Avian influenza and beyond”.

The outbreaks of H5N1 influenza in migratory and domestic birds, and cases of infection of humans with H5N1 avian influenza, were used to illustrate the importance and advantages of sharing data among scientists, public health officials and physicians.

Minimizing harm from other emerging infectious diseases, SARS, RSV, parainfluenza viruses and swine streptococcus, has been helped by sharing experiences as different countries faced these challenges.

Dr Gao contrasted the rapid transmission of infectious agents between individuals and populations with the sometimes less efficient transfer of data and materials among scientists.

The source of H5N1 avian influenza virus was traced to the Chinghai Lake area in central China. This required extensive epidemiological investigations, including field work, such as collecting viral samples, as well as laboratory work, such as isolation and sequencing of the viral genomes.

While transfer and sharing of infectious materials needs to be undertaken responsibly to ensure that it does not cause spread of the disease or infection of laboratory workers, sharing of sequence data does not pose similar risks.

Disincentives to sharing information include fear of losing credit, intellectual property, and “bargaining chips” that might allow access to expensive drugs and vaccines produced in other countries or by the pharmaceutical industry.

Delays can also be caused when publications are withheld until patents applications are submitted.

The advantages of rapid communication of information and sharing of samples were clear:  
More rapid and efficient containment and management of outbreaks.  
More rapid development of diagnostics and therapeutics.  
Improved measures to handle future emerging diseases.

The talk and the discussion that followed covered the disincentives for the sharing and communication of samples and results, and suggested some procedures that might be implemented to encourage free communication of data and materials.

Impediments to free sharing of data, samples, ideas:

Fear that contributions will not be acknowledged.  
Losing credit for discoveries - more difficult to obtain future grants, promotions  
Loss of intellectual property - loss of income if findings are commercialised  
Use of information as “bargaining chips” to ensure that if vaccines and treatments are produced elsewhere, they will be provided to those providing the information.  
Quarantine and biosafety concerns with infectious samples.  
Negative impacts on tourism and export industries.

Suggestions to minimize these problems and encourage free exchange of information and samples:

Improvements and standardization of material transfer agreements (MTAs)  
Establishment of high level (P4) containment facility in Asia  
Funding bodies and universities to take deposition of information and samples to databases and banks into account when considering grant applications and promotions.  
Journals to ensure that those who contribute to publications but are not authors are acknowledged.  
Databases designed so that sources are easily identified and remain linked to the data.

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#### **Session 4: Research Practice**

**Rapporteur: Peter Mahaffy**

Lively discussion was catalyzed by the provocative talk by Prof. Lam Sai Kit, past president of the Asia Pacific Society for Medical Virology and Adjunct Professor at the University of Malaya in Malaysia. The University of Malaya is a WHO Collaborating Centre in Influenza.

Drawing on his experience with identification of the Nipah encephalitis virus and with the global response to the SARS breakout, Prof. Kit emphasized the importance of building regional capacity at universities and research centres in addressing emerging infectious diseases.

The critical role for the private sector and for linkages between public and private initiatives was then presented by Dr. Ellson Chen, president and CEO of Vita Genomics Inc, a biotechnological and biopharmaceutical company in Asia-Pacific with headquarters in Taiwan. Dr. Chen described private sector efforts to create drugs more suited for the health needs of the region and to reposition drugs for the Asian market.

The session highlighted the connection between Asian issues related to global health and emerging infectious diseases and the underlying concerns related to freedom and responsibility of science that are the mandate of CFRS. Some of the key issues of particular interest to CFRS are:

1. Matters of research practice and the resulting issues related to freedom and responsibility in the conduct of science are not the same around the world. In particular, we were reminded to focus on some of the challenges particularly important to the developing world, such as:
  - Flow of data and samples
  - Flow of communication between global health authorities and practitioners in a region
  - Availability of resources – human, infrastructure, equipment and operating funding
  - Cultural and religious sensitivities
2. We were reminded in this session that while issues of freedom and responsibility are important for individual scientists to wrestle with, they can not only be dealt with at this level. Equally important are the systemic and institutional issues having to do with policies regarding transparency, exchange of data and samples, designated centres of expertise, and underlying economic issues.
3. Of particular relevance was the example given in Professor Lam's talk of how the very practice of transparent communication with global health authorities following the outbreak of a virus led to referral to other centres of excellence, limiting the rights of local and regional scientists to investigate regional issues and utilize existing research capacity.
4. Strong emphasis was placed on the need to build capacity in the region to independently address emerging issues in a way consistent with the needs of the region. Also the need to recognize, support, empower, and fully utilize existing capacity. Perhaps ensuring that this happens is one of the most important responsibilities of the global science community.
5. In building that capacity, both public and private initiatives have important roles to play. Finding the right balance for these sectors to work together to bring solutions to infectious diseases in Asia is of central importance to the global science and health research communities, given that many of the emerging infectious diseases come from this geographical region.