

*Education Sub-group
Minutes for the 5th meeting*

Room 5, Whiteley Suite, RCS1 Chemistry
Imperial College, London, U.K.

21st May 2008

Present - Dr. David Carey (DC) [Chair], Surrey University; Dr. Steve Dunn (SD) [Deputy Chair], Cranfield University; Dr. Vasant Kumar (VK), University of Cambridge; Dr. Milo Shaffer (MS), Imperial College; Dr. Peter K. Milligan (PM), Nottingham University; Dr. John Lee, Oxford University; Dr. Mark Morrison (MM), Institute of Nanotechnology; Kshitij Aditeya Singh (KAS), Institute of Nanotechnology.

Apologies - Professor Dan Nicolau, Liverpool University; Dr. David Bakewell, Liverpool University; Dr. Francesco Peiró, University of Barcelona; Dr. Brian More, Coventry University; Professor Phillippe Peyala, University of Joseph Fourier, Grenoble; Dr. Denis Koltsov, Lancaster University; Dr. G. Battaglia, Sheffield University; Dr. Mark Geoghegan, University of Sheffield; Dr. Christiane Norenberg, Oxford University; Dr. Martin Bennink, University of Twente; Dr. Babette Sluijter, TU Delft; Dr. Günter Moebus, Sheffield University; Katharina Gugler, FFG Austria; Dr. Richard Perks, Cardiff University.

Agenda

1. Welcome note by the Chair
2. Action points from the previous meeting
3. Recruitment trends and promotional activities
4. Open standard and benchmark: Future direction
5. Template for detailed module information
6. M-level modules analysis: Amendments and publication
7. Skills and training Survey: Additional needs
8. IoN and Nanomedicine activities
9. International Collaboration
10. Election of New Chair and Deputy Chair
11. Any other business
12. Date of next meeting

1. Welcome and Introduction

DC welcomed everyone to the meeting. Introductions were made around the table. MM introduced himself and mentioned that he had taken up the responsibility as the new CEO of the Institute of Nanotechnology (IoN).

2. Action Points from the previous meeting

DC asked colleagues for comments on the minutes of the previous meeting. The minutes were accepted as accurate representation.

Action point 4.1- IoN to investigate the possibility of conducting the award ceremony along an event run by the Institute : DC provided a background to the paper on student awards he had written for the Education Sub-group. KAS provided an update on the lack of sponsorship due to difficult economic circumstances. MM mentioned that a low cost award ceremony could be run along with one of events of the Institute. A discussion on a low cost and minimal administrative organization took place. A prospective date for March 2010 was agreed. MM underlined that the event could coincide with the annual Albert Franks lecture organized by the Institute. It was agreed the award would be focused on post-graduate taught masters. The recommendation and a short summary of the students work would be made by the supervisor to a panel of 3 judges.

DC mentioned that the Action Point 4.2 (Information on course modules) and 4.3 (Information template) would be discussed under agenda item 5.

Action Point 4.4 – DC to provide the document of the assignment conducted in assessing perceptions of nanotechnology: DC provided an overview of the assignment on perceptions of nanotechnology, the background rationale and differing thoughts presented by the students. He underlined the usefulness of the exercise.

DC mentioned that Action Point 4.5 (Skills and training issue) would be discussed under agenda item 7.

Action Point 4.6 – IoN to provide information about the Euro-India net project: Information on the project and documents were circulated.

3. Recruitment trends and promotional activities

KAS provided an update on the promotional activities of the recognition scheme. He presented a list of conferences and channels that had been used to promote the activity. A discussion on the benefits of methods and specific channel ensued. KAS provided a background to the recruitment trends at various courses across Europe. He added that some programmes had seen an increase while others had a decreased intake. Some programmes had stopped running the course due to academic or administrative reasons. A discussion on the recruitment for the present academic year ensued. VK mentioned that

the numbers had gone up for the academic year 2009-10. SD added that their programme had observed a similar upward trend. JL mentioned that the professional development courses had observed an increased intake. A discussion on the funding provision through collaborative training accounts and other grants ensued. The high cost of education is an issue with international students, and a relatively higher number are admitted but all of them do not turn up added SD. VK mentioned that over 50% students at Cambridge are overseas. PM added that Nottingham programme had noticed a marked increase of Saudi students due to the Saudi Arabian government's interest in nanotechnology. SD commented on the cost versus benefit of resource allocation in registration of overseas students. KAS remarked that employment after education forms an important criterion for students in registering for post-graduate masters programmes. Due to limited opportunities for employment, nanotechnology courses have not seen very high uptake in the student community. VK mentioned that half of the students graduating from the enterprise programme at Cambridge go on to pursue PhD. Similar figures were observed by DC and SD in their respective programmes. SD added that the uniqueness of the post-graduate course was in acting as a bridge to many technology areas, developing skills to communicate and hybridizing knowledge from different areas was the characteristic of such programmes. A discussion on the career paths of the students ensued. SD added that double degree up skilling is beneficial for careers. VK added that Cambridge was preparing student for a management role in nanotechnology enterprises that the graduates would take in 5 – 10years time. A discussion on the future trends on student mobility, Bologna and funding for STEM subjects took place.

Action Point 5.1 – IoN to investigate an indicator for the Nanomasters website that could serve as a measure of interest

4. Open Standard and Benchmark: Future direction

KAS provided a background on the proposal for an open standard presented at the last education meeting. He mentioned that standard was presented with a view to include post-graduate programmes from different education systems, and one which could evolve with the development of the field. He enquired from the Sub-group on the need for such a system and standard. DC responded by mentioning that the current systems for quality assurance and accreditation were robust. A discussion on suitability of accreditation system ensued. Issues related to generic learning outcomes, transferable skills, definition of subjects and evaluation of modules was discussed. The scope of such an open standard remained an issue to be addressed. The limitations of current accreditation systems and exhaustive paper work requirements were also mentioned. The benefit of the becoming Chartered through a licensed member such as the IET was discussed. SD questioned the value addition from the open standard. The course manual for the master programmes were rigorous validated both internally and externally. He also reflected on the need for EU benchmarking, and issues of local relevance.

PM added that their programme had not been accredited as the programme content did not fit the requirements. DC emphasized the virtue of originality and the different focus of each programme. A discussion on nature of quality assurance and its relevance to

nanoscience and technology ensued. KAS mentioned that IoN could play the role of an integrator and act as a bridge. DC added that a joint process between Institutions would be welcome. VK remarked that with evolution of education, science and engineering, there could potentially be a department of nanoscience and technology in the future. SD pointed out the nanoeducation at the bachelors' level may also become wide spread.

5. Template for detailed module information

DC provided a background to the information template he had prepared for the course directors. The template, he added, would be used for acquiring information by topic, the concepts taught, practical knowledge gained, intellectual learning, and transferable skills acquired and learning outcomes demonstrated. A discussion on benefits of the template in context of the previous agenda item ensued. DC added that quality assurance is an exercise in trust. KAS mentioned that joint processes could be followed under the amended ECUK guidelines in the future. It was agreed that it would be difficult to implement at present. DC summarized the discussion saying that the further development in the area should be put on hold for now. He added that it could be visited again in the future. It was agreed that best practice would be shared between course providers in the interim.

6. M-level module analysis

DC asked everyone in the sub-group if they had any more thoughts on the circulated M-level module document. SD commented that document needed clarity on the audience, purpose and statement of intent. A discussion on the different aspects of the document took place. It was agreed that the document would be beneficial for educational institutions in setting up new masters programmes and also in sharing best practice among the existing master courses. DC added that document should be circulated to the new members of the sub-group.

7. Skills and Training Survey: Additional needs

SD started the discussion by expressing the need to bring industrial partners into the group. He added up to 2 industrial groups could be involved in the education sub-group. A discussion on the current state of the industry, start-ups and commercialization of nanotechnology took place. MM provided an overview of the Nanotechnology Stakeholders Forum meeting that he had attended recently and EPSRC grand challenges.

Action Point 5.2 – Education Sub-group members to circulate names of suitable industry contacts to IoN

Action Point 5.3 – IoN to circulate reports relevant to start-ups and commercialization

Action Point 5.4 – IoN to circulate the NSF power point presentation to the education sub-group

8. IoN and Nanomedicine activities

MM provided a background to nanomedicine activities at IoN, recent increase in interest and relationship with Cranfield. He added that 1 course contribution to the nanomedicine masters jointly branded, run by Cranfield University was being made by Richard Moore at the Institute. On reflection and suggestion from the advisory board, IoN had decided to ensure its impartial status with regards to masters course. MM added that IoN had withdrawn from the formal partnership with Cranfield on the masters course. The relationship would continue for the delivery of short courses, several of which have received CPD recognition by Royal Colleges. Members of the Education-Sub group agreed that they would have issues with such a partnership between IoN and a university jointly delivering a masters course. A discussion on nature of such collaborations, limitations, and challenges ensued.

9. International Collaborations

KAS presented the background to the proposal submitted by the consortium of Russian Universities to IoN. A discussion on the nature of such educational collaborations took place. Issues related to learning outcomes on 1 year and 2 year master programmes were discussed. It was mentioned that delivering a collaborative degree was very difficult. The cost to economic benefit resulting from such collaboration needs to be carefully considered. It was suggested that such collaboration would be beneficial, if approached by the government, through the embassy and FCO. DC quoted an example of the distance learning delivery at Institutions in Pakistan conducted in PMI-2. He underscored the problems and difficulties faced in initiative and political problems resulting from it. Some of the issues to consider in international collaborations were mentioned to be sustainability, accreditation and registry. MS spoke about his experience of the Royal Society of Chemistry organizing various missions and partnering meetings. VK spoke about the experience with Erasmus exchange programme. DC summarized by saying that it was important to identify with whom the IoN wanted to work.

10. Election of Chair and Deputy Chair

DC proposed SD as the next chair of the education sub-group. SD was unanimously elected. It was agreed that the election of the Deputy Chair would be done through email.

11. Any other business

KAS mentioned that collaboration with Newham College of Further Education was being considered. He provided a background to the prospective collaboration in Further Education. JL expressed an interest on behalf of the CPD unit at Oxford University. A discussion on the subject of involving post-graduate students in further education took place.

DC made a special mention for the minutes thanking KAS for his contribution and support during his tenure as Chair. He noted that it had been a pleasure working together.

12. Date of Next meeting

The next meeting would be arranged for November. The date and location would be decided closer to the time.