Minutes from the Medical Engineering IAB meeting

Date
The 3rd of March 2016

Location
Nanoforce Boardroom

Start
2 pm

IAB Members present
Dr. Allan Ritchie (chair), Dr. Phil Jackson (Lucideon), Prof. Mehdi Tavakoli (KTN), Dr. John Thomson (Vygon), Mr. James Grainger (St Jude), Mr. Chris Brown (replacement for Amy Kinbrum, DePuy)

IAB Members absent
Mr. Michael Dean (Baxter), Dr. Amy Kinbrum (DePuy)

SEMS staff present
Prof. Julia Shelton (Chair of Medical Engineering DTG), Prof. David Lee (Head of School), Dr. Federico Carpi (Director of MSc programmes), Dr. Pavel Novak (Industrial Liaison for Medical Engineering)

Introductions and minutes from previous IAB meeting

Since two new members (JT and CB) were present, all members of the board introduced themselves and briefly described their background and which industrial partner or field they represent. SEMS staff members described their role in the school. AR asked whether anyone has any comments on the minutes from the previous meeting. AR asked to check whether the terms of reference were updated as suggested on the last meeting. No other comments were raised and the board approved the minutes.

Actions: Check that the Terms of Reference were updated.

IAB membership

AR asked the board members to express their views on whether the current composition of IAB reflects the structure of medical engineering industry. General consensus of the board was that some of the key areas of medical engineering are not represented. AR, JG, and JT stated examples of areas in the need of representative member: oncology, diabetes, regenerative medicine, critical care monitoring, remote care monitoring, imaging, contact lenses, pain management. MT suggested Neema Roopor from GSK to be invited as a member of IAB. JT suggested that the Royal Colleges could be used as a “template” for how the IAB should be structured. Other suggested organisations which could be used to gather information about the structure of medical engineering industry were NHRA, Innovate UK and ABHI. MT said he could provide details of suitable contact person in ABHI.

Actions: The board agrees that IAB needs to keep searching for ways to expand.

New programmes

JS briefly described the new conversion programmes aimed at “converting” students with scientific degrees to engineers starting in September 2016. FC described new postgraduate taught programmes in biomedical engineering and mentioned possible future programme focused on biomedical devices. The board was then asked to express their views on the new programmes.

JT liked the MSc programme in Biomedical Engineering Imaging & Instrumentation because it appears to be related to non-invasive diagnostics - a timely topic in the medical engineering industry. FC added that the ideal candidate for this particular programme is expected to have engineering or physical background.

JS continued with description of the Robotics programme and the newly recruited academic in charge of the programme. The idea of a possible future programme focused on Clinical engineering was then discussed. JT stated that there is definitely a need for the type of skills associated with clinical engineering – such as programming of pacemakers, testing of medical devices, and technical support. JT mentioned the problem of “reality gap” – a gap between what students’ vision of industry is and what industry really is. Students’ vision often remains unchallenged during their time at university. The board then continues to discuss whether the need for clinical-engineer type of skills could be covered by modifying existing modules in the Biomedical Engineering programmes to include the skills needed. Further examples of skills needed were failure analysis and diagnostics.

In relation to the problem of “reality gap”, DL noted that there is an ongoing issue with students not recognising the importance of ethics and regulations for industry. There’s a wide agreement between the members of IAB that jobs in ethics and regulations are very important and rewarding. DL also noted the difficulties to follow the changes in ethics and regulation, which requires help of external professional.

FC asked what companies look for in candidates, whether it is a specialised engineer or rather multidisciplinary engineer. JT noted that these are two different profiles and both are sought after for different purposes.

Actions: Consider Clinical engineering – whether as a programme or as a set of skills provided within biomedical engineering programme.

Exploring opportunities for collaboration between industrial partners and the school

The board proceeded to discussion on how to improve interactions between the school and industrial partners. Two options are mentioned: guest lectures and internships.

Guest lectures

AR asked those members of board who have existing agreements on delivering guest lectures to share their experience and perhaps inspire others to follow. JS described her ongoing collaboration with AR who delivers guest lectures as part of her module. JT described his positive experience with guest lectures in Urology module organised by Prof Martin Knight. JS suggested that motivational lectures for 2nd year students would be particularly good opportunity to engage with students. JT suggested that patients talking about their experience with particular medical engineering technology can be highly motivating for students. JT knows few patients that are willing to share their experience – some of them are quite high profile (a famous footballer). JS and DL agreed that this is a

very good idea and noted that, given the possible motivational impact, this kind of lecture should ideally be for the whole cohort of medical engineers rather than just one small module. During the discussion the idea has further developed into suggestion to organise a lecture where the experiences of a patient, a surgeon and a medical engineer could be merged to provide a unique and engaging session. AR noted that this could provide a window into industry which could bridge the "reality gap" mentioned earlier. The board notes that charities could also be involved in these types of lectures.

In summary, the board liked the idea of interaction in form of guest lectures and AR asked the members to come forward with suggestions for such talks.

Actions: Explore the possibility to organise motivational lecture for the whole cohort that would include experiences of a patient, and commentary from surgeon and medical engineer. Industrial partners to think about possible guest lectures and drop PN e-mail with suggestions.

Internships

Moving onto the topic of internships JS stated that the school is aiming to reach target of 30%-40% of students going through industrial internships. Payed internships are particularly sought after due to the background of our students. AR asked about the specific conditions and JS described the process – company interviews and selects the candidates, QMUL is just suggesting students. DL noted that this effort is part of the wider "QMUL model" seeking to improve employability of our students. DL and JS then explained the particular difficulty with limited mobility of our students, some of them can't move out of home.

JT suggest that a way to get internships is to get in touch with HR managers at a particular industrial organisation. AR noted that the only way to get internships is personal interaction. JT agreed and added that networking is important in this case.

MT wondered what the industry gains from an internship. Present academics and industrial partners with previous experience with internships explained that there are essentially two types of work experience - a short work experience (summer), which is beneficial for the student rather than the company as it gives the student the possibility to learn new skills but it is too short to get anything back from the view point of employer. The other type is payed internship which is long enough to bring benefits to employer.

To illustrate possible ways of establishing internship opportunities, JS described her development with DePuy which initially started as academic collaboration and later developed into possibility to offer internships. JT reiterates his earlier comment that it is important to get contact to HR managers who have more information about work opportunities. However, DL noted that it's not easy to convert the original academic contact into an "HR contact". Resources available in SEMS are limited, ideally we would need dedicated industrial liaison person for each discipline, while we have just one at the moment for the SEMS. It was then suggested that QMUL model might be a way to get financial support for this activity.

Actions: Explore opportunities for industrial internship. Industrial partners to e-mail suggestions.

Any other matter

MT mentioned an important event in Guy's hospital in London and promised to circulate details.

Academics announced that there will be 25 years' anniversary of the IRC on the 11th of November.