

Minutes from the Bioengineering and Biomaterials IAB meeting

Date

The 22nd of November 2017

Location

Frances Bancroft Building

Start

1 pm

IAB Members present

Dr. Amy Kinbrum (DePuy), Prof Mehdi Tavakoli (KTN), Prof Allan Ritchie (chair), John Thomson (Vygon), Prof Andrew Lewis (BTG), Monisha Philips (BSI Healthcare)

Apologies

Dr. Phil Jackson (Lucideon), James Grainger (St Jude), Nic Bowmen (Pfizer)

SEMS staff present

Dr N ria Gavara, Dr Julien Gautrot, Dr Pavel Novak

Introductions, apologies and minutes from previous IAB meeting

Since new members joined the IAB meeting, AR asked all present to introduce themselves and briefly describe the company they represent.

PN reported apologies from PJ, JG and NB. AR asked whether anyone has any comments on the minutes from the previous meeting on the 3rd of March 2017. No comments or issues were raised, and the board approved the minutes.

Degree Apprenticeships

AR returned to the topic of degree apprenticeships discussed on the previous IAB meeting in March 2017. AR asked AK who could not attend previous IAB meeting to share her experience of the degree apprenticeship run by DePuy/Johnson&Johnson. The apprenticeship is running in partnership with Sheffield University. AK stressed the importance of geography – apparently the best way is to team up with nearby universities/industrial partners. AK identified a number of benefits from the viewpoint of company such as: half of the cost is funded by government; the apprentices go through different department during the apprenticeship so after 5 years the company ends up with somebody very well trained with very good knowledge of the inner workings of the company effectively ready to start working straight after finishing the apprenticeship. All the apprentices are effectively contractors hired through external company and do not count towards the overall headcount of the company. NG asked about the arrangement of teaching/working, AK said in their case this was 5 days spent working in company then back to university.

Actions: Prepare presentation/slides stating benefits of degree apprenticeship for companies to be distributed in newsletter.

Latest updates in curriculum development

Accreditation

NG briefly described the process of accreditation of all our Biomedical Engineering programmes with IMechE we went through recently. We were still waiting for the outcome, but the accreditation committee was positive. In particular, the reestablishment of industrial advisory boards was positively commented on by the members of the accreditation committee. PN pointed out that the accreditation committee was particularly interested how our industrial partners influence the curriculum. One of the ways we are trying to do this is via invited lectures. The plan is to have on average one lecture by industrial partner per module. We are not quite there yet.

JT and AR asked whether we know where our students end up working and whether we track this. NG and PN explain that this is done partially via alumni office and partially via networking through or example LinkedIn. It is believed that substantial amount of our graduates end up in regulatory bodies.

Medical robotics

PN then talked about Medical Robotics module which is currently being setup. Teaming up with robotics was previously suggested by IAB members to reflect the latest trends in healthcare industry. PN stated we are looking for external experts in the field using medical robots to deliver lectures on this module. MT suggest we should team up with clinicians in the field. AK, JT and others suggest a number of areas where we could look for experts: robotics in orthopaedics, minimally invasive surgery at St Bart's, urology robotics. PN asked IAB members for help with introduction to clinicians, and/or providing contacts

Chemical engineering

NG briefly described the new programme in Chemical Engineering and stated that students numbers look good given the competition from stronger universities such as Imperial College.

QMUL model

NG and PN explain that the QMUL model is aiming to improve employability of our graduates by providing a range of skills and networking potential they may be missing due to specific demographics of our students. NG explained that as a part of the QMUL model, student will be selecting one module from outside of the school, such as management etc. MT asked whether our students have awareness of the health organisation network and funding bodies. Perhaps an invited lecture would help. Other IAB members commented that even they would benefit from such a lecture and that this would be great for students and perhaps could be done in a form of an invited lecture. AK suggested that if such a lecture was presented in the first year it could improve students' chances to get internships. MT continued that there is a lot of funding opportunities which could be beneficial for students to be aware of.

AR then asked IAB members to share their approach to recruitment.

AL explained that at BTG they do not have HR as they are small company. They use websites or agencies to recruit, then perform interviews, and aptitude tests. JT said they use assessment centres, pre-assessment through agencies and LinkedIn. AK explained the recruitment process used recently at DePuy/Johnson&Johnson. The selection process was quite complex with several stages. In the first stage about 600 interviews was made to select 9 candidates, these are done through quiz interview on a PC where they test capability to lead, shape and deliver, interpersonal skills, capability to persuade other people to do what you want them to do. Only in the second round they test in-depth knowledge about the engineering/scientific aspects of the post. AR suggests that employability of our students could be improved by educating them about the application/recruitment process which would give them higher chance to succeed.

MP said that their experience of assessment centres was not very good, they had a feeling the centres did not select the right people for them.

JT added they often test applicants by asking them to do some problem solving. JT also noted that some big companies do pre-screening of CVs for the right keywords and shortlist only those applicants matching the right keywords.

Actions: IAB members to provide contacts or help with introducing to clinicians using medical robotics. Invited lecture about health care providers and funding network by MT. Invited lecture on the recruitment process by AK.

Centres for doctoral training

JG explained the aim of the proposed CDT. One of the main aims is to provide training and research in the area of efficacy of medical devices and materials. AR pointed out that the proposal seems to be targeting pharmaceutical companies but there seems to be knowledge gap in pharmaceutical science in SEMS. JG suggested we will try to bridge the gap by teaming up with academic partners. JG stated the main strength of SEMS is in vitro testing – organs on chip. AR noted that it needs to be clarified what we mean by drugs and devices. MT asked about the call, whether it is already out, JG stated the call is expected to be announced in January 2018. AR asked who decides what the CDT will be teaching. JG stated this is not clear but we may need to align the strategy. MP asked whether this is aiming to replace clinical trials, JG said not, this is rather to improve understanding, improve selection of successful substances for future clinical tests. MT stated he was involved in a number of CDTs, and he pointed out we need to closely follow EPSRC rules. For inspiration he suggested to look at NHR funded MIX, and Innovate UK. JT noted that proving that technology works before it gets to the market is a problem and that safety and efficacy are both important. He assumes the regulations which seem to be a bit relaxed at the moment are going to get tougher in this area in about 4 years time.

JG then continues regarding the funding. It is going to be awarded for 5 years and 1/3 is expected to be provided by EPSRC, 1/3 by QMUL, and 1/3 by industry. The advantage to companies is access to technology and possibility to get PhD students better trained for the needs of the industry. MT noted that it is important to get companies committed to this. MP added in agreement with JT that regulations regarding the area of medical devices, their efficiency and safety is going to change in future therefore it is important topic from the viewpoint of healthcare industry. AK noted that from the point of view of DePuy/Johnson&Johnson it is important to understand the risks – risk assessment of devices. MT suggest some kind of testing lab for companies aimed at testing efficacy and safety of medical devices might be worth exploring. AK asked further regarding the level of such a testing facility – could it be small or does it have to be full PhD? JG explained we could do rotation between sites. It is quite flexible, students would be able to apply for sponsoring of exchanges. NG noted that there's also possibility beyond CDT, this proposal could be a "port" for other applications. AR asked whether we are going to offer the service or just the training how to do this kind of tests. JG replied that if there is a demand for such a service we could set it up. Birmingham and Strathclyde are setting up these kind of facilities.

JG then briefly explains the bid for Technology Touching Life funding. This is to support networking at the interface between technology/engineering and medicine/biology. The focus of the proposal was on organ on chip technologies. AL asked whether he could still join in, JG said there will be opportunities later on to join it too.

Actions: IAB members to send feedback regarding the CDT proposal and any statement of commitment if interested in participating in this CDT. Pavel to keep IAB updated about the progress of the proposal.

Potential collaborations

MEng projects, half funded PhDs and other engagement with industry

PN asked IAB members to suggest possible MEng project ideas. JT said he had one idea.

Action: JT and PN to liaise regarding the possible MEng project.

Prizes

PN noted that we lost some of our previous sponsors of student prizes and we are looking for new sponsors. AK stated that they would be happy to sponsor prizes.

Action: PN to contact IAB members regarding prize sponsorship and let James and Crawford know.

Invited lectures

PN noted we are looking to increase the number of lectures by industrial partners so that approach the average of one invited lecture per module.

Action: PN to send list of modules to IAB members to have a look and think about possible lectures.

Any other matter

The next IAB date 7th of March 2018.