

NextGen Life Sciences Supper Club – *Skills the industry needs today to build for tomorrow*

28 May 2014 at the Academy of Medical Sciences, 41 Portland Place, London, W1B 1QH

Background

Many early career non-clinical post-docs feel there is little direction and information available to them about their various options once they finish their first or second post-doctoral contract. Additionally, early career academic researchers often feel it is hard to gain an accurate understanding of the requirements of the bio/pharmaceutical industry in shaping their future careers, owing to the fact that their peers in academia are not always in a position to answer their questions about industry, and that the bio/pharmaceutical industry in the UK is currently in a period of rapid transformation.

Aim of the meeting

This informal evening was aimed at bringing early career academic researchers together with experts with a wealth of experience in the bio/pharmaceutical industry to learn more about how to make an impact in tomorrow's life sciences industry (please see Annex I). Experts shared their experiences of careers in academia and their transition into industry, and their view of the future of the life sciences sector in the UK. They also detailed the vital skills required in this rapidly evolving sector, discussing how the next generation of talented scientists will play a positive role in shaping the industry and what value they can bring.

The academic representatives present at the meeting were keen to ascertain: how best to bridge the gap between academia and industry in terms of job opportunities but also in terms of collaboration; what lessons can be learnt to better provide learning and development opportunities in academia; and how this event can inform career and medical science policy work at the Academy of Medical Sciences.

Format

Experts gave a brief summary of their career to date, emphasising essential skills they developed for their career in industry. Participants were actively encouraged to ask questions and challenge experts' perspectives.

Headlines

- The value of **training** in gaining the skills required for career progression was stressed. It was acknowledged that training courses were not necessarily valued in academia and that such attitudes need to shift towards becoming more supportive.
- **Networking** was highlighted as an important aspect of career progression, with face-to-face interactions likely to be more effective than online connections.
- Participants were advised to **take responsibility for their career**, to be **pro-active** and to seize every single opportunity for career progression.
- It was emphasised that applicants are unlikely to fill all the criteria for a job application. This should not put applicants off applying for a position of interest if they have some of the most relevant skills. Employers are looking for **potential, intelligence, character, enthusiasm, motivation** and how a new member may integrate a team.

Skills

- There is **no 'one size fits all' solution** to gaining the skills and experience desired in industry. Each individual has to find their own path and options that are suitable to their character and working style.
- **Training** was highlighted as a very important aspect in gaining the skills required for career progression. The industry experts benefitted from courses in:
 - scientific aspects (such as scientific writing, communication and presentation skills);
 - business skills (such as business management and development, financial skills); and
 - managerial aspects (such as project management, leadership skills, etc).Much of this training was received once in industry, although it was recognised that nowadays a wealth of 'self-help' training is available online. The Institute of Cancer Research also provides many training courses as do learned societies, the national academies and other organisations. It was acknowledged that these training courses were not necessarily valued in academia; such attitudes need to shift towards becoming more supportive.
- Many experts' career choices were influenced by their **personal and family arrangements**. These did not however prevent them from having successful careers in the pharmaceutical sector, a sign that a good work/life balance can be achieved.
- Applicants to the life sciences industry need a **broad skill base**: they need to be numerate, resilient, pro-active, and be able to put their work in the wider context and see the bigger picture. **Informatics and engineering skills** in addition to biological skills are highly valued.
- **Commercial skills and entrepreneurship** were recognised as a substantial plus and should be more valued in academia. Negotiation and valuation skills, and the ability to meet deadlines and to assimilate/distil information are also sought after attributes. The young science community needs to be able to recognise the **broader context of their work** in terms of the healthcare market, costs, risks, failure rates, and the drug discovery process.
- **Team work** is essential in industry and working with or employing people with **complementary skill sets** was advocated. Much of the training mentioned above is geared towards getting the best out of other team members.
- The danger of networking moving online was highlighted. **Networking** is an important aspect of career progression and face-to-face interactions are likely to be more effective, not only as an individual's personality can be conveyed more easily, but also as it puts an individual in a position to be more aware and alert to new opportunities.
- Ultimately, **many of the skills required for working in industry are not dissimilar to those desired in academia** (motivation, drive, self awareness, for instance). Industry does however carry out a different type of science, use a different language, and require a different type of learning to that in academia.

Advice

- Participants were advised to **take responsibility for their career**, to be **pro-active** and to seize every single opportunity for career progression. For instance in seeking funding, individuals shouldn't be scared of approaching the relevant experts to ask for advice on what type of data should be submitted, who should be approached for funding (charities, the Technology Strategy Board, Angels, etc), who to collaborate with, etc.
- Early career researchers need to **be brave** in their decision-making. They should have a firm idea of their career path, stay focussed and make decisions based on this plan. A 'can-do' attitude is helpful in this regard. Early career researchers should also feel confident about making independent decisions without undue influence from external parties.
- To be a leader, it was suggested that it is essential to **"know thyself"** better than anybody. An individual's strengths and weaknesses should be identified so that solutions can be sought to

improve on these. Opportunities where strengths can be shown should be focussed on, and individuals should be aware of their weaknesses to develop in these areas. Tests such as Myers-Briggs Type Indicator¹ and Belbin Team Roles² are useful tools in this respect. It was highlighted that these tools also play an important role in ensuring that the right teams with the best combination of people come together to drive scientific innovations.

- It is important to remember that applicants are unlikely to fill all the criteria for a job application. This should not put applicants off applying for a position of interest if they have some of the most relevant skills. Employers are looking for **potential, intelligence, character, enthusiasm, motivation** and how a new member may integrate a team. This is where self-help training, that may not be evident on a CV, will play an important role. Before submitting an application or attending an interview, it is also essential to do some research into the company and attempt to determine what it might be looking for in a new recruit. This foresight often impresses employers and is seen as a good characteristic.
- The difference in timescale for innovations in technology (1 – 2 years) and those in drug discovery (> 10 years) to get to market was acknowledged. However, a young scientist with great idea and little fear should not be put off setting up a start-up company. Having the courage to find the right support, including **mentorship** from seasoned entrepreneurs and contacts with relevant experts to leverage their experience, was recommended.
- The importance of **listening to every piece of advice and assimilating it** was emphasised. This can come from both senior and junior members of staff.

Thoughts on the future of the UK life sciences sector

- There was a general agreement that the **UK has one of the best science environments in the world**. However, the importance of a **strong, vibrant, passionate life sciences ecosystem** in the UK was highlighted, as was its fragility. The recent proposal by Pfizer to takeover AstraZeneca was seen a further erosion of this ecosystem. One of the experts suggested that if Pfizer were to renew its bid for AstraZeneca, assurances for the next 20 years (and not just the next five years) would be desirable. This would be a sign of real commitment to the next generation of scientific leaders and would ensure the future pipeline of drugs in the UK remains strong.
- **Industry needs to collaborate with academia** for multiple reasons, including gaining further insight into fundamental clinical knowledge and access to samples. However, it was felt that academia does not always appreciate **the role of industry in the translation of science** or the excellent research that is done in industry, and that this can sometimes hinder collaborations. It was also noted that companies should consider collaborating with smaller, newly-established academic groups and not only with the larger, more established partners. Whilst this strategy may be more risky for companies, newly-formed groups are often keen to take risks that larger groups may not consider and are driven to achieve.
- **Blue skies research** was recognised as an important aspect of innovation. Fundamental, cutting-edge science is vital for the development of new treatments and technologies – for instance antibodies would not have been discovered without fundamental research into B cell function. An industry expert related how many innovative ideas, that subsequently became blockbuster drugs, were born from informal discussions with colleagues during weekend family gatherings at the workplace. The vibrant scientific environment at these events was conducive to devising groundbreaking ideas and illustrates the importance of preserving a lively life sciences ecosystem in the UK.

¹ <http://www.myersbriggs.org/>

² <http://www.belbin.com/>

- Experts stressed the need for quality scientists in future generations and that it will be important to protect and **nurture future scientists**.
- It was suggested that **more porous boundaries** are needed between academia and industry with individuals prepared to make the transition between sectors and organisations supporting efforts to do so. Greater openness in both sectors may go some way in facilitating productive discussions between them and in overcoming the silos they still largely operate in.
- The need for more **medium-sized biotechnology companies** in the UK, which are small enough to be flexible and for employees to be close enough to decision-makers but big enough to make an impact, was emphasised.
- Participants were cautiously optimistic about the future of the life science sector in the UK. Events such as this one are a clear sign of the desire of both academia and industry to engage with one another and demonstrate that both sectors care about the future of the UK science base. Advances in science will ultimately benefit from the cross-fertilisation of ideas between academia and industry at these types of event.

Concluding remarks

- Participants relayed their perspectives of the meeting. They recognised the importance of: interacting and networking with the bio/pharmaceutical industry; having a clear idea of research goals; being proactive, inquisitive, self-confident, critical and motivated; and training to improve skill sets. These factors were noted as vital in ensuring that the UK nurtures its next generation of scientists, to maintain the vibrancy of its research ecosystem and feed its developing drug pipeline.
- There was generally a more positive feeling about interactions between academia and the bio/pharmaceutical industry, although it was acknowledged that more could be done to bridge the silos between the two sectors and there were remaining concerns about the role of big pharmaceutical companies in the UK. Participants called for more meetings of this kind to foster relationships between academia and the bio/pharmaceutical industry.
- Participants and industry experts agreed that the bio/pharmaceutical industry is undergoing a period of profound transformation and that the future of the UK life sciences sector will rely on the skills of the next generation of scientists to drive it forward.

This document reflects the views of participants expressed at the meeting and does not necessarily represent the views of all participants or of the Academy of Medical Sciences. For further information, please contact Dr Claire Cope, Policy Officer (claire.cope@acmedsci.ac.uk, (0)20 3176 2164).

All web references were accessed in June 2014.

Annex I – Participants

Industry experts

- **Dr John Anson**, EVP R&D at Oxford Gene Technology; former head of development at GE Healthcare's Maynard
- **Dr Clive Dix**, Chairman of multiple UK biotechnology firms; former CEO of PowderMed and head of Research at GSK
- **Mr Chris Molloy**, CEO RSA Life Science Executive Recruitment; former COO MerLion Pharmaceuticals Pte Ltd
- **Mr Matthew Foy**, Partner at SROne and Investor Director at Progenitor and Psioxus; former investment banker and consultant
- **Dr Melanie Lee CBE FMedSci**, CEO of NightStarX; former CEO of Syntaxin, EVP of New Medicines at UCB and head of R&D at Celltech
- **Dr Neil Weir**, SVP Discovery at UCB and chair of ABPI Innovation Board
- **Dr Kevin Young**, Director Science & Medicine at RSA Life Science Executive Recruitment; former Head of Research at Eisai

Academic representatives

- **Dr Alessandro Annibaldi**, Postdoctoral Training Fellow at the Breakthrough Breast Cancer Research Centre, The Institute of Cancer Research
- **Dr Irina Babina**, Postdoctoral Training Fellow at the Breakthrough Breast Cancer Research Centre, The Institute of Cancer Research
- **Dr Alexis Barr**, Postdoctoral Training Fellow at The Institute of Cancer Research
- **Dr Katuscia Bianchi**, Lecturer in Molecular Oncology at Barts Cancer Institute, Queen Mary University of London
- **Dr Yari Fontebasso**, Postdoctoral Training Fellow at the Breakthrough Breast Cancer Research Centre, The Institute of Cancer Research
- **Dr Amy Moore**, Researcher Development Advisor at The Institute of Cancer Research
- **Dr Nicola Potter**, Postdoctoral Training Fellow at The Institute of Cancer Research
- **Dr Claudio Santos**, Project Development Manager at Cancer Research Technology
- **Mr Martin Taylor**, Graduate Student at Clare Hall Laboratories, London Research Institute.

Secretariat

- **Dr Claire Cope**, Policy Officer, Academy of Medical Sciences

Annex II – Programme

28 May 2014, 18:00 at the Academy of Medical Sciences, 41 Portland Place, London, W1B 1QH

18:00	Drinks reception
19:00	Roundtable session <ul style="list-style-type: none">• Short introduction to the initiative and desired outcomes from the discussion• Brief round of introduction of all the participants involved• Moderated discussion – <i>Chair: Mr Chris Molloy</i>
20:30	Dinner
21:00	Open discussion over tea and coffee – <i>Chair: Mr Chris Molloy</i>
21:30	Concluding remarks from the Chair
21:45	Informal networking discussion
23:00	Close