TechLife 2020: Summary

Technicians for the Life Science Sector

www.cogent-ssc.com/Higher_level_skills/techlife2020_index.php

Monday 18th October 2010 (10.00-16.30)
Grosvenor Hotel, Victoria, London, SW1W 0SJ

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Cogent would like to thank the Gatsby Charitable Foundation for supporting this work

AGENDA		
10:00	Registration and refreshments	
10:20	Welcome	Joanna Woolf Cogent
10:30	The role of the Technician Council	David Ozholl The Technician Council
10:45	Life Sciences: Technical skills in perspective	Caroline Sudworth Cogent
11:00	Employer technician training: The Novartis model	Emma Budd Novartis
11:20	Workshop 1: What are your technician needs?	Caroline Sudworth Cogent
11:55	Feedback	
12:15	Lunch	
13.15	Potential models for training	Charles Pickford Foundation Degree Forward
13.30	Developing the right content and delivery methods	Helen Thomas Working Higher (Bioscience)
13:45	Workshop 2: Your ideal supply and delivery models	Helen Thomas Working Higher (Bioscience)
14:15	Feedback	
14:30	Workshop 3: How can we help you with funding, administration and attraction factors?	Pauline Maden Cogent
14:45	Feedback	
14:55	Refreshments	
15:10	Workshop 4: Setting your priorities	Caroline Sudworth Cogent
16:25	Thank you	Joanna Woolf Cogent
16.30	Close	

Attendees	
David Bassett	Semta
Emma Budd	Novartis Pharmaceuticals Horsham Research Centre
Diane Cresswell	BioNow, North West Development Agency
Lesley Earl	Huntingdon Life Sciences
David Fox	Pfizer
Lesley Galloway	Ethical Medicines Industry Group
Don Henderson	Imperial College and NHS
John Holton	Cogent SSC
Mick Hopper	GXPRO
Julia Irving	Future Health
Sarah Jones	ABPI
Pauline Maden	Working Higher
Neil Burke	MSD Biologics
Ali Orr	Science Council
David Ozholl	The Technician Council, Royal Academy of Engineering
Charlotte Phelps	Nordic Pharma UK
Charles Pickford	Foundation Degree Forward
Neville Reed	Royal Society of Chemistry
Daniel Sandford Smith	Gatsby Charitable Foundation
Tina Sawyer	Consultant
Caroline Sudworth	Cogent SSC
Brian Szukala	Working Higher
Andrew Taylor	HEaTED
Helen Thomas	Foundation Degree Forward
Ian Wheeler	Skills for Health
Joanna Woolf	Cogent SSC
Apologies	
Jim Gazzard	Royal Veterinary College
Derek Wilson Parry	GSK
Robert Porteous	BIS

Morning Agenda

To begin the day, *Joanna Woolf, Chief Executive of Cogent SSC*, welcomed the guests to this event, and thanked the Gatsby Charitable Foundation for supporting this opportunity. This was followed by a brief introduction to the concepts that were to be discussed throughout the day, and why Cogent was seeking input into this specific area.

This was followed by a presentation from *David Ozholl from the Technician Council*, who are currently working towards a scheme of professional registration for technicians within the science community. This particular project is at the initial stages of development, supported by BIS, and is now looking to engage scientific employers to help inform their developments with education providers, particularly from the FE to HE levels.

Questions raised to David Ozholl included the difficulty in engaging the scientific employers in the registration of technicians through a number of professional institutes where members are more generally graduate entrants and beyond. The perceived lack of professional registration levels in the science area was highlighted, and compared to the Engineering sector, where professional recognition was welcomed across a wider range of qualification levels.

In addition, a question was raised regarding the clarity of offer between the FE and HE sectors, and the "value" attached to the role of technician in the science sector.

The need to engage employers was highlighted by the Technician Council and to drive forward the value of technical training rather than inappropriate supply of provision.

However, the visibility of alternative career and education pathways was stated, and therefore the need to increase this, particularly with employers, careers and teaching staff.

The research relating to the skills needs and demographics of the Life Science sector was then presented by *Caroline Sudworth of Cogent SSC*. Within the sector, there used to be a recognised pathway for technicians entering from school level education, but this has diminished in more recent years in favour of employing the graduate and post graduate recruit. This has had a number of effects, including a mismatch of expectations between graduates and employers as to the roles within the public and private sectors, with professional recognition of the Technical roles within these sectors limited.

The availability of suitable provision has also altered in favour of full time undergraduate courses, leaving those who wish to earn and learn on a relevant programme underfunded and limited in resource and capacity to feed a specific need.

Following this presentation, questions were raised about the issue of an approaching ageing population within the pharmaceuticals sector, which could potentially be problematic as the industry landscape alters in the future years. In response to this, Caroline Sudworth highlighted that this at the moment is not yet an issue, but as more graduates are recruited into lower level skilled roles, graduates are choosing to leave the sector in favour of higher salaries and job satisfaction – this could lead to wider problems with on the job experience and understanding in the future years, especially as the workforce is currently focussed on those wishing to retire in the next decade or two.

A presentation from *Emma Budd of Novartis Pharmaceuticals Horsham Research Centre* was then welcomed. Emma provided a view on the scheme in operation at the Research Centre site in Horsham, and the value placed on this form of recruitment and training, leading to well established and loyal technicians being produced.

The Novartis scheme works with local schools to recruit bright entrants at age 18 with a minimum of 2 A levels, and places them on an initial 2 year contract which takes them through a rotational training experience combined with day release HNC pathway. Once this is completed, Novartis or the employee has the option to proceed on a further 3 year contract, where further rotation and education up to graduate level is undertaken in a similar manner.

Novartis are responsible for the payment of the salary, higher education fees, and sourcing the university place (as long as the recruit is accepted for entry at the HE provider). This pathway is in addition to

graduate recruitment, and provides a key mix of skills and personnel, and also provides Novartis with a route to training its own staff in mentoring and in house training, particularly for managers who are less experienced in this area.

The benefits of the scheme were clearly detailed and the internal commitment aimed towards this programme.

Following this presentation, questions were raised regarding the scheme, and the need for an internal commitment and company foresight. Questions also included the differences and abilities of the recruitment methods, especially with regard to the flexibility of the schemes graduates versus traditional graduates, which could be a factor in the paradigm shift as the industry changes. The response to this was that both sets of recruits were able to cope with change, with the rotation element of the Novartis scheme preparing recruits for a wider skill set. The drive, independence and personal commitment from all recruits was the focus on the initial recruitment phase at both entry routes.

The limitation of the Novartis scheme is still dependent on the headcount at the Research facility, with enough staff to supervise being available. Numbers are still small but make a significant impact on return on investment, particularly as many recruits remain at the company on a long term basis.

The morning presentations were followed by *Workshop 1* – details below.

Afternoon Agenda

The afternoon presentations began with *Charles Pickford of Foundation Degree Forward* detailing the interaction of employers with the higher education system, with areas where employers have provided valuable models in other industry sectors in response to real training needs including health, safety and regulation, but also to aid staff retention and upskilling, and to increase the professionalism of individual employers and sectors as a whole. In addition, using the employer and the workplace as part or the whole education and training provider was also detailed. Employers in these cases valued the incorporation of training pathways through higher education levels, with the impact of this investment being valued in terms of immediate improvement in staff knowledge, skills and understanding, but also a real improvement in transferable employment skills, confidence of staff, and improvements in the "way they work". Employees also state an increase in confidence with more applicable skills and education, and the work-based learning approach benefited them with an opportunity that they may not have been able to have progressed with in other circumstances.

Helen Thomas of Working Higher and Foundation Degree Forward followed with a presentation relating to the various delivery models that have been used in various bioscience and technology areas. The first model included the specific industry training centre approach, where resources such as teaching laboratories and specific techniques can be taught and assessed external to the company environment, but supported as part of an integrated higher education programme.

Work-based learning was also presented, where the use of accredited internal training packages could be used as the preferred method of training, with the potential to support in house training with education provision.

In addition, learning technologies were presented as supporting options, including e-learning platforms, case studies from employers and so forth.

Most employers through these models have shown that a mix of these training and education options is preferable, and allows flexibility and resource to be tailored between sites, employers and employee needs.

These presentations were followed by *Workshop 2* – details below.

Pauline Maden of Cogent SSC then introduced the third workshop – Pauline also introduced the potential effects of the Lord Browne Review of Higher Education Funding (www.bis.gov.uk/assets/biscore/corporate/docs/s/10-1208-securing-sustainable-higher-education-browne-report.pdf) and the factors that affect attraction of employers and potential recruits to this alternative training pathway.

This was then followed by *Workshop 3* – details below.

Caroline Sudworth of Cogent SSC then invited delegates to consider where they could work with Cogent to place their own top 3 specific priorities for action, and to place them on a timescale for delivery.

Joanna Woolf of Cogent SSC then summarised some of the key points for the day, and the action that Cogent could take forward. The day was wrapped up by means of thanking all guests for their valued input to the workshop, and welcomed feedback in the near future.

Workshop Summary

Delegates were invited to join one of four groups which were facilitated as follows:

- Group 1 facilitated by Helen Thomas
- Group 2 facilitated by Pauline Maden
- Group 3 facilitated by Brian Szukala
- Group 4 facilitated by Caroline Sudworth

Each group was then asked to provide feedback on certain topics, as described below.

Workshop 1: What are your technician needs?

Participants were asked to consider:

- Is there a problem?
- What exists already?
- What works, what doesn't?
- Long term strategy

Workshop 2: Your Ideal Supply and Delivery Methods

Participants were asked to consider:

- What suits your business best?
    - In-house training accreditation
    - Flexible delivery models
    - Preferred providers
- What are the key areas?
    - Skills, knowledge and understanding
    - Techniques
- Core and Sector Specific Needs

Workshop 3: What would the Funding and Attraction Factors be?

Participants were asked to consider:

- In what ways would you be willing to make a contribution?
    - Support with fees
    - Curriculum development
    - Delivery
- What are the entry requirements?
- How do we attract the right people?

Outcomes of Workshop 1: What are your technician needs?

Participants were asked to consider:

- Is there a problem?
- What exists already?
- What works, what doesn't?
- Long term strategy

Group 1 Feedback

- There was overall support for the need for technician training but the group was mindful of the high number of graduates and postdoctoral scientists currently in marketplace. Recruitment agencies were only offering graduates plus.
- The culture of companies to currently select and recruit at graduate/post grad level should be taken into consideration in going forward. Step based approach to changing perception of what good looks like and how it can be best achieved.
- There should be transferability of models such as the Novartis apprenticeship scheme and of other good practice already out there.
- Technicians would need a scheme which encompassed behaviour, skills and knowledge.
- Need to consider career pathways and what technician roles and pathways could look like.
- At the moment there is nothing between A-levels and degrees for those wanting an alternative to university – need for recognised staged exit routes.
- There will be a spectrum of skills and roles across the sector. Is there a core which all technicians would need and specialist pathways?
- Needs to be an acceptance amongst industry about an alternative route or routes and 'value added training'.
- Incentivisation – of employers and employees. It has to be an arrangement that suits both parties. Need to explore what these incentives might be with both audiences rather than presume them.

Group 2 Feedback

- Skills issues with graduates.
- Difficult to manage their expectations in technologist roles.
- Is there an issue with the name 'technician'? Does it have a value?
- No existing routes to becoming a technician.
- Graduates see a degree as an entry ticket to the industry but degrees aren't necessarily related to the job role as courses tend to be generic. Technician route could be an alternative route which is role related.
- The part time study route is less valued by the employer.
- Need to make the process of technician training understandable.
- Local provision needs to be shared to support learners, from SMEs, in a range of techniques.
- Whatever is developed needs to be sustainable.
- Employers need a plan for technicians beyond the life of the training scheme or they'll leave as very employable, skilled people.
- Needs champions within industry and schools to support and raise the profile of apprenticeships. Case studies etc.

Group 3 Feedback

- Yes. Ideally need to get the right person aligned to the right role. Over skilled and over qualified recruits may prove to be inefficient in the long term if technician role becomes demotivating. Commented that there might be locality issues with pockets of good practice across the UK but currently uncertain as to where they are. Need some UK collaboration and cooperation on ensuring that we capture where companies have established technician development models in place.
- We have established best practice models in other sectors and we should model the Bioscience sector on the most appropriate and best fit examples. Again there may be locally specific issues where training resource might be convenient and also working in collaboration with industry. Again the question is we don't really know who is doing what and where and a key message was 'let's not reinvent the wheel' but learn from experience.

- Engineering apprenticeship model is a good example of what is well established and works well yet although many Life Science companies may already run this they haven't transferred the model to other roles.
- NHS provides a good example of those now working in Biomedical Scientist roles where the initial pathway 10+ years back was via day release but now the entry requirements are by an accredited degree system. Question was is this any better or worse than what we had before and one of the challenges is to determine the best fit model to meet current and future demands.
- The answer in relation to support would be based on all the other points being addressed. If there was more transparency on what is actually happening and significantly more collaboration then it would get supported.

Group 4 Feedback

- There was discussion around the needs of large versus small and medium sized employers and the fluidity of these markets
- Large pharma is now recruiting at the highest qualifications levels, but their supply chain currently recruits at all levels, so there is a potential supply chain issue for large pharma that outsource projects.
- The need of the large pharma is not necessarily UK based, but there is a need and this could be international.
- There were questions around what "quality" meant – but contracts are assessed on ability to meet regulatory requirements, and ability to show professionalism, and ought to include GxP.
- The workloads demanded of CROs are now demanding, and professionalism in their workforce is a specific interest as a means to investment.
- CROs have generally recruited at graduate level, and are used by those recruits as a CV builder and training ground for future positions. CROs have therefore lost talented staff to the sector. However, there could be a need to re-evaluate the method of recruitment and training as graduates return to the CROs but are supported by Technicians, who may be more loyal to the company.
- There is a feeling that the sector has tried to "cope" with the development of the right people with the right skills, but the expectations of graduates and postgraduates is a need to progress and move on.
- It was questioned if this was a problem or an opportunity to do something different
- The need is there, is the capacity?
- Can we increase the visibility of this route through SMEs and spread responsibility?
- Is there a sustainable quality provider network able to deliver?
- Attraction and working alongside local schools and colleges was welcomed to ensure bright applicants are targeted, where the need to show this and other opportunities, such as placements was also secured
- Professional training can be seen as an investment in the future – aggregate demand to a critical mass and supply a network of support
- Make it easier!

Outcomes of Workshop 2: Your Ideal Supply and Delivery Methods

Participants were asked to consider:

- What suits your business best?
  - In-house training accreditation
  - Flexible delivery models
  - Preferred providers
- What are the key areas?
  - Skills, knowledge and understanding
  - Techniques
- Core and Sector Specific Needs

Group 1 Feedback

- Need a co-ordinated approach to supply and funding including a transparent system which can be easily understood by employers.
- Identification of good practice, to avoid re-inventing the wheel.
- This should then be consolidated to draw together what is already out there, one stop shop, evaluate the 'quality' and then identify gaps where resources should be focussed.
- Need to include in that repository the full range of existing qualifications including NVQs and professional development/CPD modules linked to Professional Bodies as appropriate.
- Any accreditation has to take account of employers needs not universities' ability/willingness to deliver programmes. Need to look at other forms of accreditation alongside academic accreditation –co-terminus accreditation for example with professional body status or regulatory compliance.
- Clear signposting of the breadth of resources available to support industry is required with some assurance of quality/kitemark. Industry finds it difficult to first identify and then evaluate quality products to buy.
- Any model should be a blended learning approach.
- Look at what existing capacity is already available to deliver technical training through for example science based incubator facilities which are currently underutilised. Look at block release as a way of a wider range of companies utilising existing technical training facilities.

Group 2 Feedback

- Who values accreditation?
- Is it something industry wants to demonstrate to the regulators that they take training seriously?
- University validation can be cumbersome but consistency and a national standard across the sector is essential.
- What do you want the technician to be able to do? Is regulation the only driver for training people? What about independent thinking and problem solving?
- Mapping of technical training is difficult to articulate but an important framework for SMEs to be able to access.
- An employer led framework specification will be key to defining the core/specific needs of the sector.
- Are skills already defined by pre-existing HNCs? Have they changed?
- Plenty of courses/provision out there – how do we know what's good and where it can be accessed.
- SMEs could be supported to roll out technician training by using existing science clusters to pull together employer/provider partnerships.
- Preferred partners probably not suppliers of graduates. Felt like it was much more a case of working with those HEIs who were responsive and willing to be flexible and work in partnership.

Group 3 Feedback

- CPD identified as important, in particular within the NHS. Might even be a legal requirement to complete CPD to maintain professional status within the role. The other benefit of a structured and recognised CPD pathway is the portability of the learning and accreditation as individuals move into other roles, either within the organisation or elsewhere.
- Mandatory training should form another element and in the NHS for example there is a requirement to train all employees in various statutory legislation (eg manual handling, display screen equipment etc) but how it is done is a local decision. It would be better to have a national approach, possibly a

passport scheme of accreditation. This could possibly work similarly for any technician based training scheme where there was an accreditation passport for certain core modules.

- Underpinning knowledge required to do the job was something that clearly was a concern. Although companies can tackle the basic skills required to complete the task they didn't always have the necessary expertise to tackle the underpinning elements – question is who can deliver it and how could this be delivered? Companies believe that one of the reasons for mistakes occurring is in relation to employees having a lack of underpinning knowledge e.g. the experienced operator transferring from fine chemicals into a bio chemical facility who lacks the basic understanding of microbial contamination which is fundamental to this type of processing environment.
- There was a belief that employees themselves should take responsibility for learning, rather than the expectation that they will be trained. Emphasised that it's important that a contract is agreed and signed at the start of the programme to indicate everyone's roles and responsibilities with clear measurable objectives.
- Many organisation values the role of simulations in learning and would like to see evidence of more simulations being available. The concept of the virtual lab was mentioned and also the possibility of having mobile training facilities to transfer effective learning to companies who may find sending employees away restrictive. The value of 'hands-on' training was something that the group believed was crucial to employee development and where that incorporates elements of simulated risk (ie dealing with 'real' problems but in a safe work environment) then even better.

Group 4 Feedback

- Employees value accreditation of learning as it allows transferability and visibility of quality assurance
- The value of vocational qualifications at level 4 were raised, and the delivery of training through Higher education questioned.
- Members noted that the traditional HE experience delivered more than just education, but delivered independence and life skills
- With the introduction of fees, and more students choosing to stay at home, the value of this "HE experience" was also questioned.
- Accreditation of "practical" skills and competence allows for employer quality assurance and professional standards being demonstrated
- Flexible delivery modes can be explored in more depth, with the ideas of training centres welcomed as work commitments can act as distraction from training and learning
- Flexible Block Packages might ease provision – resources that are already there could be utilised more effectively, especially in university/FE teaching laboratories outside of normal term time
- The capacity to deliver was thought to be there, but currently inflexible with little access known.
- There was an opportunity to link FE into HE through such programmes, but a laboratory environment was essential.
- Every technician ought to know how to use, take apart and reconstruct a HPLC system!
- How can we use existing training packages e.g. ChromAcademy from the RSC – can we provide credits for learning for a fee?
- Can we encourage university technicians to help academic staff in a teaching capacity?
- Where is the professional recognition for University/College/School technicians?
- Core Skills should include HPLC, Mathematics, Data Handling, Regulation, Health and Safety, Risk Assessment, Attention to Detail, Bench Skills, GxP, QC and QA
- Specialisms around Clean Room Technology, Histology, Microbiology, Cell Cultures, In Vivo and In Vitro, Animal Experimentation and Tissue Processing
- Employability skills should be linked to career pathways and security of the profession
- Try not to map skills to qualification levels – if we get the right people performing the right practical skills, it will attract best candidates and allow career progression.
- Look at UK growth areas e.g. stratified medicine, biologics, QA for supply chain of the future.

Outcomes of Workshop 3: What would the Funding and Attraction Factors be?

Participants were asked to consider:

- In what ways would you be willing to make a contribution?
  - Support with fees
  - Curriculum development
  - Delivery
- What are the entry requirements?
- How do we attract the right people?

Group 1 Feedback

- Mechanisms to promote retention post training of good staff.
- Mechanisms to manage head count before full employment as this limits recruitment/expansion to training schemes
- Employers want to understand the range of different models that can be offered alongside traditional programmes, for example how to get Higher Education Institutions to accredited in house training as part of a programme rather than see it as additional. Don't know what they don't know!
- How to ensure that training provided by external organisations is the best value for money for the employer. What is an employer contribution? How can the different models support different funding models and what does that mean for employer contribution? Information about models which access public and private funding to different extents to use as an evidence base. Seen as particularly important post CSR
- Are A-levels the only entry marker? Industry isn't fully aware of the alternatives to A levels and their value. Recognise the existing mythology and rumour about other qualifications and need an awareness of what is fit for purpose and what isn't.

Group 2 Feedback

- Not convinced that Browne Review recommendations for abolition of up front fees for pt students and equal access to student finance would drive up demand for pt provision.
- Need signal from employers that there is an alternative route to graduates, and an intervention such as an apprenticeship.
- Need more clarity on what the right person is.
- Why can't an apprenticeship scheme start at L2? Is science a pre-requisite?
- Support needed for SMEs/supply chain and need to find a way of facilitating their contribution.
- Systems of recognition needed for employer contribution and funding.

Group 3 Feedback

General points were that learners should be expected to pay but that's dependant on the level of the training being received e.g. Masters should incur a payment but other lower level awards should be paid by the company or jointly.

Also discussed that large multinationals are still fairly cash rich and therefore have development budgets where as the smaller developing companies are struggling to finance their day to day activities, never mind sponsoring a student.

Need some additional discussions on the best models but a couple of suggestions from the group were:

- Possibility of running a scheme where students float between several SME's during the duration of the training with a view to choosing one as their preferred employer at the end of their programme.
- Larger companies subsidising SME's in some way
- Should large pharma be allowed to access funding for training that might be better utilised elsewhere considering that they often have significant budgets?

Group 4 Feedback

- This career progression route needs aspects of Higher Education and fees support to allow the knowledge element of training
- What are employers paying for? There needs to be clear articulation of the benefits of investment and the costs of "learning on the job"; what is the level of funding support?

- How much do “Technicians” get paid? Would professional registration add value? Is that value for the individual or the employer, or both?
- Professional recognition might allow quality assurance to be demonstrated, as long as the curriculum is developed, supported and delivered appropriately.
- The return on investment needs to be shown clearly alongside the expectations around fees, training costs, salaries, retention, and risks associated with alternative pathways.
- Once this is undertaken, if the balance is right, both employers and recruits will be attracted
- The option for a training bursary was tabled as a sector wide development, and potentially targeted to specific problem areas
- Entry into some roles requires maturity and age requirements above age 18, so recruitment could not be undertaken at younger ages for health and safety reasons
- GSK already operate a scheme of recruitment at age 16 with 5 GCSEs, but details were not known.
- There was still a preference for more mature entrants with at least good A-levels, particularly Chemistry, supported by mathematics and biology GCSEs as a minimum.

Options to consider and actions to take forward

A model to show return on investment for employers; Detail options, risk, expectations, costs, supporting grants

A model for recruitment; detail how we can attract school leavers and show professional career pathways

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Summary Points

The need to explore alternative methods for technicians was welcomed as a route to attracting talented people on a professional career pathway.

The pathway would remain a supporting pathway to graduate recruitment, but could allow wider attraction and retention of capable employees who may not have undertaken science or Higher Education otherwise

There was a need to make the return on investment clear allowing employers to know the risks and benefits, and the routes they could act as a collaborative voice in the sector.

It is about investing in the skills and industry future of the UK, but they need to be the right skills, with transferable core and flexible specialisms.

Make it easy and accessible!

Acknowledgements

Cogent SSC would like to thank the Gatsby Charitable Foundation for sponsoring this work. We would also like to thank the presenters, facilitators and delegates for their input, advice and guidance.