The Research and Development Society

from ideas to wealth

Higher Education in 2015 and beyond: will it meet our needs?

Summary of a survey of “Science Higher Education in 2015: Employers' current and future skill needs”, conducted by the Research and Development Society

Executive Summary

Twenty seven responses to a survey of the UK research and development community into their current and future skill needs are summarised in this report. This report and all the survey responses are submitted as evidence to the Royal Society's science policy study on Science Higher Education in 2015 and beyond.

Respondents to the survey want science, technology and mathematics graduates to have experience of the practical application of research and development by applying their skills and academic knowledge through industrial placement or practical projects. Respondents also want graduates to have good communication skills and other transferable skills such as teamworking, and identified that these are currently detrimental. The majority of respondents have no clear way of communicating their needs to the people that determine the contents of undergraduate courses, but would like to if possible.

This report does not represent the views or opinions of the Research and Development Society. Rather, it summarises common themes from the submissions of the respondents of the survey, and it aims to reflect their views. The R&D Society does not form opinion on matters; rather it seeks to enable its members and others in the R&D community to contribute to policy discussion and debate. The full text of all submissions received is published as an annex to this report, and is submitted to the Working Group for the study together with this summary.

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Introduction

During August 2006, the Research and Development Society conducted a web-based survey of our members and contacts of the current and future needs of employers in science-based industries. The survey was conducted to enable organisations to submit evidence to the Royal Society's science policy study on Science Higher Education in 2015 and beyond ("the study"), which is looking at whether higher education in science, technology and mathematics at UK universities and colleges will produce enough individuals with the skills to meet the needs of the economy in 2015 and beyond.

The R&D Society conducted a survey to assist with one important component of the study, namely, employers' current and future demand for science, technology and mathematics graduates. We understood that the Royal Society was keen to ensure that the current and future needs of UK employers are represented in their study. The R&D Society recognises that a key component of the successful transfer "from ideas to wealth" is the availability of high-quality staff, and so implemented this survey to enable the UK Research and Development (R&D) community to contribute to this important study.

The Research and Development Society

The Research and Development Society is a UK-based organisation which aims to promote the better understanding of R&D in all its forms. It is unique in the UK in covering all types of business and industry with an interest in R&D, enabling common issues and solutions to be discovered, shared and solved. With a membership spread across the full range of UK R&D community, it holds regular meetings on a wide variety of topics relating to innovation and R&D management best practice. The R&D Society's administration is provided by the Royal Society, but the R&D Society is independent, being a company limited by guarantee run by its members through an Executive Committee (board of directors).

The Royal Society study

The Royal Society's study is seeking to assess whether higher education in science, technology and mathematics at UK universities and colleges will produce enough individuals with the skills to meet the needs of the economy in 2015 and beyond. The study will look at a range of issues including the demand for individuals trained in science and technology, the skills of those going into and leaving higher education and the international competitiveness of the UK higher education system. The Society will review all the evidence they receive, and will make recommendations to key policy makers in Government and elsewhere.

The survey: implementation

The R&D Society devised a web-based survey in cooperation with the secretariat for the Royal Society's Science Higher Education in 2015 and beyond study. Six open questions were drafted in consultation with the secretariat, to ensure optimum relevance to the terms of the study.

These questions were:

- What do you want from the science, technology and mathematics graduates you appoint?
- Are the science, technology and mathematics graduates you appoint well prepared for their roles? Has this changed recently?
- What skills, knowledge and experience are lacking? Has this changed recently?
- What can they do that you hadn't expected/didn't require? Has this changed recently?
- From your perspective, what components are important as part of Higher education? Which experiences is it important to offer students?
- How (if at all) do you communicate your requirements to the people who determine the contents of undergraduate courses?

These questions were supplemented by a range of closed questions about the respondent's organisation, role, recruitment influence, and personal background.

The survey could be completed anonymously; with any contact information provided stored separately from the survey responses. The IP (computer) address of respondents was also stored, to guard against unfair representation or abuse. All respondents agreed to their responses being published in an anonymous form.

A request for completion of the survey was sent to all the R&D Society's members and contacts for which the Society had email addresses, some 700 in total. The survey was also advertised on the Society's website.

We are grateful to all respondents who contributed to the study, including those that participated anonymously. Seventeen respondents agreed to have their organisation credited in this report. They are (in alphabetical order):

- Cranfield University
- De La Rue International Limited
- Engineering and Physical Sciences Research Council
- Huntleigh Healthcare
- Kodak Ltd
- LGC
- London Knowledge Innovation Centre
- Medical Research Council
- Morgan Stanley
- National Grid
- O2
- Patent Office
- QinetiQ
- Rentokil Initial
- Rolls-Royce
- Royal Botanic Gardens, Kew
- RWE npower

The survey: respondents

We received twenty-seven responses from twenty-six organisations. We believe that responses Z and K are both from the same organisation (but not necessarily the same person) based on the answers given and the IP address logged.

Respondents were from a broad spread of sectors across the UK R&D community, including aerospace and defence (3 responses), chemicals and materials manufacturing (4) (includes two responses from one organisation), business and support services (3), universities (3), utilities (3), pharmaceuticals and healthcare (2), telecommunications (2), Government research and research support establishments (5), the automotive industry (1), investment banking (1) and technology development (1).

Respondents were from a range of size of companies, with six falling in the Small and Medium Enterprise (SME) category of up to 500 employees, nine having between 501 and 2000 staff, four between 2001 and 5000 staff and 8 employing over 5000 staff. The number of scientists, technologists or mathematicians employed by respondents was generally proportional to the total number of employees, but there was a broad spread of those companies with a high proportion of scientists as staff, and those with lower levels, as the table shows.

Total number of scientists, technologists or mathematicians employed	Total number of staff employed				
	1–250	251–500	501–2000	2001–5000	5000+
1–25	3				
26–50	1		1		
51–250	1	1	2	3	1
250–500			2		1
500+			5	1	6

Table of the number of respondents for each combination of total staff and total scientists, technologists or mathematicians employed.

Of the respondents themselves, eleven were company directors or senior managers, five managed a lab, research team or project group, four worked in research but had no direct line management, and five worked in human resources. More than half (15 out of 26) directly supervised more than six staff, and just over a quarter supervised more than fifteen. When questioned about their responsibility for recruiting science, technology and mathematics graduates, six described themselves as primarily responsible for recruiting all or some in their organisation, eight for recruiting all or some in their team only, and twelve said they had some influence in recruiting graduates in their organisation – this included some company directors and human resources' staff. All respondents had graduate qualifications in science, technology or mathematics – three quarters held a masters degree or postgraduate qualification.

The survey: respondents' current and future needs for graduates in science, technology and mathematics from UK universities

The following is a summary of the key messages from the responses received. The annex to this report lists the full text of the responses, in an anonymous form.

Respondents want transferable personal skills and applicable science knowledge

When asked "What do you want from the science, technology and mathematics graduates you appoint?", respondents overwhelmingly wrote about personal and communication skills and applicable science knowledge.

An understanding of basic science was mentioned by fifteen respondents, who wrote about wanting graduates with a "good grounding in science", a "broad level of scientific literacy," or "with a strong maths / physics / technology foundation". Three spoke of requiring strong academic specialist knowledge, with another calling for "highly developed technical and mathematical skills".

Written and verbal communication, were both cited by fourteen respondents as being key. Seven specifically cited numeracy.

Ten respondents talked of teamworking, a further two respondents required the ability to influence and persuade, or to build relationships and two others requested "interpersonal skills". Eight wanted a variety of planning skills – to be able to plan a work programme, prioritise, multitask, and have self-discipline.

Problem solving was mentioned by five respondents; innovative behaviour or "thinking outside the box" by six, and a further two cited creative thinking. Seven required a logical and analytical approach or "critical thinking", and five wanted cross-discipline thinking or versatility and adaptability.

Being able to understand the business environment (three respondents), to be able to relate one's expertise to business (two) or to have a challenging applied final year project were also required.

"Many students fail at the interview stage as they not aware, or do not place as much focus on the need to have strong communication and team working skills. This is often frustrating, as technically they are highly proficient but have failed to appreciate the equal importance of these soft skills in allowing them to successfully apply their technical knowledge in the work place."

Respondents call for significant improvements in communication and numeracy skills

A clear message, communicated throughout the responses was that graduates' written and verbal communication skills were in need of significant improvement. As noted above, fourteen respondents wanted

graduates to have good communication skills, but many were concerned that they had experienced a drop in the standard of graduates' communication skills. Seven wrote of a lack of communication skills and four of a lack of numeracy or mathematics skills in the graduates they appointed recently, and several of these perceived a decline in these skills over recent years.

"Written English language skills on occasion are startlingly poor." "General levels of literacy and numeracy are lower, particularly spelling, grammar and vocabulary – many recruits are not able to write acceptable letters or reports."

On the positive side, one respondent wrote that graduates "are better at report writing and project work" than anticipated, and another, from a different industry sector, said that they were "all keen to do more training courses and often express enthusiasm for things involving young people (e.g. science festival, placement in schools)".

Respondents think higher education should offer experience of industrial research and develop interpersonal skills, in addition to developing academic knowledge and rigour

When asked what higher education should provide, as could be expected, most respondents expected "skills, knowledge and awareness in degree subject(s)", a "good basic understanding of [their] subject area" and "academic rigour". Though some respondents required particular specialisations, others noted that graduates should have "a broad basis before you specialise in depth" or should have a "sound basic knowledge of the principles" of their field.

One third wrote of the need for graduates to have "a really good idea of the work environment" through, for example, industrial placements, job shadowing, "business training", "practical, challenging projects" or "real research experience". One organisation, in discussing their links with academia stated that they "do not have the resources to address the scope of expectations from a majority of agencies, and would like to focus our resources and provide our support to students with a keen interest and aptitude in the science & technologies appropriate to our business." Four respondents cited "knowledge and understanding of where and how science and technology fit into the rest of the world", with "technology/social interaction and government/technology interaction", including "an awareness of intellectual property and patents".

One third also listed different elements of interpersonal work skills, summarised by one respondent as, "Interpersonal & communication skills that enable people to effectively communicate orally (small & large groups) (and in writing) ideas and concepts to experts and non-experts alike, work in teams, seek & share ideas, concepts & information."

Other requirements included practical lab skills, problem solving abilities, flexibility in their skills and confidence.

Two respondents wrote that they expected to train their graduates in certain skills – eg “if they have intellectual capability, basic maths and physics knowledge and understanding to degree level, we can do the rest.”

One respondent noted that graduates “lack business awareness & business skills, as would be expected. This is addressed though the core graduate programme. We are finding that science & technology degrees increasingly include business awareness training, though this additional training often lacks context and makes it difficult for graduates to employ the business training in their initial roles.

Respondents found students are more ambitious and have better IT skills than anticipated

Five respondents noted that recent graduates are more computer literate than anticipated and than previously, though one noted that “their computer skills are higher than we need.” One also talked about graduates having a “good understanding of digital convergence and opportunities this opens up”.

Four respondents wrote of the expectations, confidence and ambition of graduates being higher than expected – though two warned that their confidence and eagerness to progress may be misplaced. “They usually are very enthusiastic, but sometimes frustrated by the pace of change – suggesting minimal prior exposure to a real world or an industrial setting. Their desire for growth and international exposure is sometimes greater than can be met within normal business expectations.” One other organisation noted that graduates from overseas have higher confidence levels than UK graduates.

Experience in giving presentations was cited by three respondents, and two wrote of better-than-expected technical knowledge, awareness of other disciplines, or principles of management or business studies – though this respondent noted that was not required for “a technical capacity in industry”.

Respondents have no clear way of communicating their needs to the people that determine the contents of undergraduate courses

Respondents either did not communicate their needs to the people that set courses (ten responses) or cited informal contact with lecturers and university staff (fourteen) – though some gave the impression that they were not sure if this was effective. Twelve of the fourteen only wrote about influencing course content at one or a few universities or individual departments. Only one of the respondents wrote about higher-level funding policy: “There is no easy mechanism for industry to do this as there are many universities. I am a BOARD MEMBER on one University just trying to understand this.” [Respondent’s emphasis]

Four respondents stated that they had clear ways of communicating their requirements: one had “input via engineering institutions course accreditation processes” (and also had informal contact with university staff), one was a “member of educational advisory group”, one stated that “as part of the sector we work with the developers of undergraduate courses” and one stated that “we have very strong links to many UK

universities that will help provide universities with a clear view of what we do and what we require from our graduates", through joint research, joint assessment and graduate marketing. This was one of three respondents that cited the job market as a method of communicating requirements – though not all were implied to be effective – "I usually just moan to the recruitment agencies about the quality of people on offer."

Respondents gave the impression that they would be willing to communicate their needs, if they were asked or if there was an appropriate mechanism to do so. One suggested that this should be anonymous.

Other issues

Respondents cited specific subject knowledge where they are experiencing difficulties, which usually reflects their organisation's speciality: "Physicists more difficult to find than chemists", "Skills related to curation of collections and a restricted knowledge of whole organism (plant) biology", "Chemists – lack of knowledge of formulation chemistry", "Micro-biologists – lack of knowledge of disinfectants", "Finding good chemistry graduates is getting harder", "PhD/Post Docs with Mass Spectrometry and Separation Science backgrounds, which we have found very difficult to recruit", "infrastructure skills […] engineering and networking", "engineering calculation skills", "Specific need for power engineers is difficult to fill."

Two respondents perceived inconsistencies in university degree structures. "There is huge variation in ability [of the graduates], almost regardless of the degree type of level shown on paper." "[The preparedness of graduates] depends very much on the university from which they have graduated. There is clearly a difference in academic level between different universities and so the university courses may need to be graded, as well as the student's degree."

Two, unprompted, comments were about levels of pay: "A big issue for us currently is pay and the cost of living in London. While this is not part of your survey, it can have a great influence on attracting people to research, retaining them in the institute and attracting them to a biological course or to University at all." "Mostly the graduates we hire tend to be from European universities because the salaries in non-profits are not attractive for UK graduates".

Respondents were receptive to being consulted on this issue – "it is good to have the opportunity to contribute to this debate." One respondent put it bluntly: "I believe the ability to attract and keep good engineers and scientists is the most serious threat to our company."

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ANNEX:
Questionnaire and full text of all responses

This annex contains the questionnaire provided, together with the full text of all respondents' submissions. Submissions are grouped by question, with the response from each respondent labelled with a character. Submissions have only been edited for spelling and formatting and to ensure submissions are anonymous.

Survey for Science Higher Education in 2015: Employers' current and future skill needs

Introduction

Thank you for your interest in completing this survey. The Research and Development Society is conducting this survey to gather the opinions of the R&D community in the UK of their current and future skill needs as employers in science-based industries. The results will be collated and submitted as evidence to the Royal Society's study on Science Higher Education in 2015 and beyond.

The Royal Society's study is seeking to assess whether higher education in science, technology and mathematics at UK universities and colleges will produce enough individuals with the skills to meet the needs of the economy in 2015 and beyond. The Society will review all the evidence they receive, and will make recommendations to key policy makers in Government and elsewhere.

This survey seeks to assist with one important component of the study, namely, employers' current and future demand for science, technology and mathematics graduates. Therefore, if you are an employer of UK graduates in science, technology and mathematics, or think you might be in future, we would be grateful if you could complete this short survey.

The survey is anonymous unless you choose to tell us who you are and which organisation you are from. Full details of how we will publish the responses you give are detailed below. Respondents can receive a copy of our submission by email if requested. If you have any questions or comments about this survey, please contact Scott Keir, Administrative Secretary of the Royal Society on 020 7451 2513 or rdsociety@royalsoc.ac.uk. The survey will close on Friday 1 September 2006.

Your current and future needs

These questions are about your current and future needs for staff, in particular your recruitment of graduates in science, technology and mathematics from UK universities. Succinct answers are preferred for each question - no more than 500 words per answer, please. Bulletpoints are acceptable - answers do not need to be in prose. You may skip any question you do not wish to answer.

1) What do you want from the science, technology and mathematics graduates you appoint?

A	Knowledge and Skills: Critical thinking A good understanding of basic science and general knowledge Better preparation for technical aspects of laboratory work- practical experience and understanding of theory behind techniques Communication skills eg articulate presentations and reports; ability to add up and to be able to communicate both verbally and in writing including plain English and good grammar Attributes: Commitment to doing a good job, keen, motivated, enthusiastic, ambition prepared to ask for guidance if they do not understand something a desire to extend their knowledge and skills
B	We are a leading international defence & security technology company. We deliver innovative technical solutions & support services to UK and US intelligence and security agencies, and to leading aerospace & blue chip commercial customers around the world. We recruit science, technology and mathematics graduates to provide innovative solutions to our customer requirements & problems. This is accomplished through working in technical teams to deliver customer projects. On recruitment, we expect our graduate recruits to be able to work effectively as part of a team, communicate ideas and concepts at the appropriate level orally and in writing, can spell and are appropriately numerate.
C	Good general understanding, genuine enthusiasm and interest in science, technology and engineering research and training. The following attributes and competencies are tested through recruitment assessment centres: An open and listening manner, with ability to convey difficult messages sensitively; Excellent verbal communication, drafting and numeracy skills; Excellent interpersonal skills and a comfort in working within a team; An ability to influence and persuade others; An ability to work with people of all levels and able to build relationships with them; Good presentational skills; A logical and analytical approach; An ability to multitask and prioritise workloads. Experience and knowledge of the research environment either academic or industrial

D	We are looking for: (1) a high level of scientific, technological, mathematical and IT literacy across the board, with strong knowledge in a particular comparatively wide area – eg in electrical technology, in organic chemistry, in computer science. Versatility and adaptability are generally more important than deep technical knowledge, except in one or two highly specialized areas such as bio-technology, (2) that said, there should be a good knowledge – and understanding – of the core elements (at least) of degree subject(s) (3) strong analytical skills, and balanced judgement (4) the ability to communicate clearly and accurately both orally and in writing – in particular the ability to write reports in clear, jargon-free, grammatical English (5) the ability to assimilate quickly technical documents, drawings and formulae (6) facility with business computing tools (7) preparedness for the work environment - in particular the necessary levels of self discipline, organization, responsibility and awareness of the needs of others
E	Intellectual capability and basic maths and physics knowledge and understanding to degree level.
F	Thinking outside the box Ability to put ideas into practice- application of theory
G	Analytical skills, good problem solving ability Innovative behaviour, ability to challenge and find new solutions Communication skills, ability to inform others and seek their input
H	A high level of appliable science particularly in areas where there are skill shortages such as bio. Graduates need to be flexible, self-motivated with the ability to take responsibility for their own careers.
I	Good grounding in science, ability to think through problems and think creatively, ability to plan, organise and deliver a work programme, ability to work in a team and present work in both written and oral forms.

J	People with good levels of skill in English, maths and their appropriate area of science; good analytical skills; good synthesis skills; the ability to communicate their work and results in both written and verbal form
K	Creative in adapting existing / emerging technologies to new applications. Ability to plan projects and work round problems. Flexibility - be company specialist in one or more key areas but willing to work outside.
L	Good basic knowledge and skills to build upon. Problem solving ability and free thinking. Good presentation - both verbal and written. Specific need for power engineers is difficult to fill.
M	1. Highly developed technical and mathematical skills 2. An understanding of the professional context of such skills 3. Numerate 4. Good transferable and communication skills
N	Intelligent, committed and versatile people who can work both independently and in teams
O	1. Strong analytical and problem solving skills 2. Ability to apply the knowledge that they have learnt at university to new concepts 3. Ability to communicate with others about technology, including communicating technology to non technologists 4. Ability to work effectively with others on team projects
P	A multidisciplinary approach, some business awareness and excellent scientific training
Q	Graduates that can relate their expertise into business.
R	Problem solving ability in an increasingly globalised market, where solutions are only implementable through international networks of providers. Unless graduates can communicate & think through ideas in this context, their potential to contribute is diminished.
S	Solid understanding of the basics in their chosen discipline. Good communication skills (verbal & written). Flexibility and ability to pick up new projects fast. Good team players. Good problem solvers. Confidence to achieve.
T	* Good communication, technical skills and understanding of where technology fits into the business model * Ability and common sense to recognise that unless a particular technology has a real competitive advantage it's not worth exploring further

	* Enthusiasm and discipline to try and work across technology sectors and avoid 'bunker not invented here mentality' or "I'm a chemist and a chemistry answer will be the best solution....” etc
U	Numerate with a thorough understanding of basic scientific units and definitions. An ability to judge magnitudes and cross-check information. Willingness to work long-term in science or engineering without expecting the pay and fringe benefits of better paid professions.
V	Rounded business / communications and interpersonal skills , with a strong maths / physics /technology foundation.
W	We usually hire graduates with PhD, MSc or MEng qualification, or a BSc or BEng who has a few years experience. That said the following are the key things we look for. 1. Broad academic background 2. Problem solving ability 3. Hands on practical lab experience 4. Challenging, applied, final year project 5. presentable, well rounded individuals with a range of interests outside of their core disciplines (not usually the university’s remit) 6. Some understanding of business environment
X	Good grounding in basic science - chemistry, biology, mathematics. We will then specialise the graduates in a specific field.
Y	A broad level of scientific literacy, awareness of modern developments in the bioscience field, the ability to express themselves on paper and orally to specialists and non-specialists and an ability to organise and carry out their work, managing their own time and working with others.
Z	People who are creative, innovative and knowledgeable. Also required is some commercial awareness and ability to manage projects.
$	well-presented and keen to work with experienced partners and co-workers discipline and analytical ability knowledge of state-of-the-art worldwide interest and knowledge of commercial applications
	The following comment has been separated from the rest of the submission text, to maintain the anonymity of the respondent’s other responses: For PhD students, a clear understanding of the goals of doing a PhD.

2) Are the science, technology and mathematics graduates you appoint well prepared for their roles? Has this changed recently?

A	Various responses here, eg: 'In general graduates are articulate, they have good IT skills and have had experience of presenting papers etc - this has certainly improved in the last 5-8 years.' 'Mostly OK, though peoples understanding seems to be more superficial. People seem to be less dedicated and driven'. 'Depends very much on the university from which they have graduated. There is clearly a difference in academic level between different universities and so the university courses may need to be graded, as well as the student's degree.'
B	Science, technology and mathematics graduates we appoint come generally with good numerate & problem solving skills, as well as knowledge associated with their degree discipline. Their initial roles are generally to deliver elements of customer projects as part of small technical teams. In these roles they are expected to develop the skills & knowledge associated with the particular technical area they were appointed to. These graduates are expected to take on increasing responsibilities as their skills, knowledge & experience grows. Graduates recruited are generally well prepared for the technical aspects of their initial roles, though less well prepared for the business aspects of their role as expected. We have some concerns about the quality of technical report writing and report writing in general. This has led to some parts of the company developing technical report writing programmes. We address the lack of business awareness and skills by providing a core graduate programme that results in a [postgraduate qualification] in Management that is delivered by [a UK University] School of Management.
C	Generally we recruit high calibre staff who get up to speed with the organisational requirements very quickly. Sometimes difficult to appoint sufficient numbers to meet our vacancies at the postgraduate level. Trawl for staff 2–3 times a year recruiting on average 10 per annum
D	Our graduate appointees are generally well prepared, though (1) there is a danger with some highly modular courses that don't have compulsory core modules for students to be able to skirt around the centre of their subject (2) written English language skills on occasion are startlingly poor

	(3) some fresh graduates have difficulty in coming to terms with the need to work regular specified (albeit flexible) hours (1) – and particularly (2) – seem to have worsened over recent years
E	Not well prepared for their roles, but if they have the above, we can do the rest.
F	Yes, the majority come through our sponsorship scheme and are therefore familiar with our working practices
G	No they are not well prepared The trend is in the wrong direction
H	A number of recent graduates expect managers to take responsibility for their careers and do not appear to have the drive to self–development; the responsibility is left to the line manager.
I	In broad terms yes, because we check these aspects out as far as possible in the selection process. Recently, we have been unable to recruit sufficient numbers of UK graduates who fulfil these criteria and are taking a significant number of recruits from continental Europe.
J	they are usually pretty good at analysis and synthesis but often very poor at structuring communication and levels of written English of recent graduates is (usually) poor
K	We have found good people – but over the last ~ 3 years it has become more difficult and some vacancies have had to be advertised more than once.
L	Not in area of power engineering but we do run courses to build skills. Graduates are keen to move about to get on in the company and we struggle with building up expertise – graduates would rather have a little knowledge of a lot than a lot of knowledge of a few things. Changed in last 10 years
M	Less well prepared and the decline has developed slowly over a period of decades.
N	Often they are very computer literate which is an additional plus
O	From a technical aspect we would say yes. However, many students fail at the interview stage as they not aware, or do not place as much focus on the need to have strong communication and team working skills. This is often frustrating, as technically they are highly proficient but have failed to appreciate the equal importance of these soft skills in allowing them to successfully apply their technical knowledge in the work place.

P	Generally they have only limited business awareness, and poor understanding of customer needs, although this has improved somewhat in recent years. see above Very good at probing new technology areas, getting to grips with the "bigger" technical issues. More aware of other scientific disciplines than previously. Besides the obvious technical skills, business awareness and understanding of customer need, an awareness of intellectual property and patents would be useful. It's good for students to feel the time pressure and economic drivers for industrial R+D Not pro-actively, but do respond to requests from universities when asked, as they begin to structure a course.
Q	Some seem prepared for their roles, while others seem to lack the ability to apply knowledge. That application of knowledge being key.
R	There is huge variation in ability, almost regardless of the degree type of level shown on paper. Many graduates of science & technology now take "soft" options in their courses which do not develop their analytical skills. I even talked to one Engineering graduate who dropped mathematics right from the start of his course!
S	Basic understanding of their discipline is OK. Verbal communication skills are getting better, but written skills worse. They don't seem to be as rigorous as before – too willing to take the first answer and not cross-check their results from a different starting point.
T	Poor command of written English becoming an issue
U	The gap between the most suitable and least suitable employees has widened greatly.
V	Generally yes, but some of their skills are not as pragmatic as they are sometimes needed to be – academic science in the labs alone is not enough – its about hands on developments and having a business sense as well .
W	- There seems to be a shortage of graduates with a broad background. - In particular we see too many graduates without any practical experience from their project work or their lab work. - Too much emphasis now seems to be put on business and commerce skills, resulting in a lack of technical development. Worse, when you go to employ someone they spend all their time stressing these skills and telling how much time was spent on them. Some business knowledge is good, but too much is bad. - Our business is too new to answer whether or not this has changed.

X	Over the last decade, graduates are coming to us with more specialist degrees (eg environmental science) rather than basic science. This means that their basic grounding is not as good. Finding good chemistry graduates is getting harder.
Y	There has been fairly steady decline, despite the fact that on paper the quality of recruits has risen – we now recruit more staff with first class honours degrees and higher qualifications than a few years ago.
Z	No response
$	Yes, but mostly the graduates we hire tend to be from European universities because the salaries in non-profits are not attractive for UK graduates We have only been operating 3 years
	The following comment has been separated from the rest of the submission text, to maintain the anonymity of the respondent's other responses: Since they are often from departments of Biology, Life or Environmental sciences and not strictly Plant Sciences (systematics and conservation) they can be less equipped for their role in our institution. This continues to change to our detriment.

3) What skills, knowledge and experience are lacking? Has this changed recently?

A	The biggest theme here was the lack of practical laboratory skills eg: 'It is quite disturbing to find some undergraduate science courses contain very little practical work – it is a huge gamble to appoint someone to a practical lab-based post or studentship if they have done nothing more than a literature based project. The lab based activities in different courses is very variable and this places those who have done some of those where there has been hardly any lab-based activity at a big disadvantage in obtaining a job.' Also mentioned were – variability in communication skills and ability to produce a cogent argument – lacking general interest in science /curiosity– with people having a narrow focus of interest
B	Graduates generally lack the skills, knowledge & experience associated with the technical area they are appointed to, as indicated in an earlier question. This is addressed through delivering elements of customer projects in technical teams as indicated earlier. They lack business awareness & business skills, as would be expected. This is addressed though the core graduate programme. We are finding that science & technology degrees increasingly

	include business awareness training, though this additional training often lacks context and makes it difficult for graduates to employ the business training in their initial roles.
C	Have recently reviewed our recruitment process and this has re-affirmed the required competencies as described above.
D	See above [Our graduate appointees are generally well prepared, though (1) there is a danger with some highly modular courses that don't have compulsory core modules for students to be able to skirt around the centre of their subject (2) written English language skills on occasion are startlingly poor (3) some fresh graduates have difficulty in coming to terms with the need to work regular specified (albeit flexible) hours (1) – and particularly (2) – seem to have worsened over recent years]
E	There are graduates with "good degrees" that do not have intellectual capability – these are not useful to certain types of company
F	Design experience is normally limited to theoretical issues.
G	Too few have industrial experience Too few have passion to apply technology in the business environment
H	Confidence is one of the missing links. Overseas graduates are far more able to sell themselves, their skills and experience at interview. Preparation for interview seems to have disappeared.
I	We have specific requirements for PhD/Post Docs with Mass Spectrometry and Separation Science backgrounds, which we have found very difficult to recruit. In general, knowledge of quality systems is lacking.
J	Communication, especially the ability to write effective reports
K	Physicists more difficult to find than chemists.
L	General all round knowledge is OK but the in depth knowledge of specific topics is lacking. A surprising lack of statistical skills has been evident recently although they all trust spreadsheets.

M	Technical and mathematical skills less highly developed. Expression in written prose less developed. Declined slowly over a period of decades.
N	No response
O	Technical: rounded infrastructure skills: students tend to be very focused on development skills at the cost of engineering and networking Non-technical: Project management and team working skills.
P	see above [Generally they have only limited business awareness, and poor understanding of customer needs, although this has improved somewhat in recent years.]
Q	The link between business and technical skills seems to be lacking. Difficult to determine if this has changed recently.
R	Areas requiring improvement: Skills – Spreadsheet knowledge, presentation & report writing ability, ability to research many sources & weigh up a mass of information Knowledge – we need more people who can speak foreign languages & understand cultural differences. Basic mathematical ability appears to be declining Experience – Extracting relevant information from people – forming specifications & building business models based on this information
S	Experimental design (use of controls; minimising replicates; statistical analysis) Mathematical skills & numeracy Chemists – lack of knowledge of formulation chemistry Micro-biologists – lack of knowledge of disinfectants Maths has got worse; others are the same as 15 years ago.
T	Written English needs improving. Lack of knowledge of real world costs/finance/risk and where their skills sit in the value chain. Concept of adding value through constant innovation and improvement not fully understood...new is not always best solution.... concept of opportunity cost not understood.
U	A significant proportion of recent engineering graduates and post-graduates have been able to select educational options that avoid the need for numeracy and engineering calculation skills.

V	History / background rarely comes with more recent graduates – the education they have is often remote from reality. Sometimes the academic publishing mantra has got in the way of more vocational hands on experience. The IP skills generation and wider Digital needs for the economy could be a challenge.
W	- Practical project work. Too many graduates have no applied project work or projects that are clearly closely controlled. Graduates need projects in lieu of actual work experience. Projects need to be practical and achieve something either research or development. - Mixture of research and development experience. Graduates need to understand the difference between research based work "trying to understand why", and development based work "trying to build X". Courses seldom ever explore this crucial difference. - Challenging projects - Better a graduate does no project and gets extra taught courses than wastes time on non-challenging projects. Too many projects are obviously generated to give a graduate things to do with no reason as to why. - Again too new to comment on changes over time
X	No response
Y	General levels of literacy and numeracy are lower, particularly spelling, grammar and vocabulary – many recruits are not able to write acceptable letters or reports. Recruits tend to be more specialised in their scientific knowledge, with less breadth to their interests and understanding.
Z	Written communication skills often surprisingly poor.
$	doctorate graduates mostly lack social skills because they are not required to work in teams commercial awareness is low but improving with the spread of knowledge transfer and university start-up initiatives
	The following comment has been separated from the rest of the submission text, to maintain the anonymity of the respondent's other responses: Skills related to curation of collections and a restricted knowledge of whole organism (plant) biology. This is now critical–we have to train staff and students

4) What can they do that you hadn't expected/didn't require? Has this changed recently?

A	They are all keen to do more training courses and often express enthusiasm for things involving young people (e.g. Science festival, placement in schools) Good at using computers

B	We expect graduates to develop their careers to various levels of seniority (mid to very senior positions) in technical & functional roles. The speed of progression & the level achieved is generally dependent on the range of skills of the graduate, their ambition and how well they seek and deliver development & career opportunities. We actively encourage graduates to show the range of the skills they possess to enable them to progress to appropriate roles. Thus we have very high expectations of the graduates we recruit.
C	Whilst not unexpected when recruiting PhD level staff or equivalents and not specifically tested at the assessment centre, many individuals we recruit are very creative and excellent lateral thinkers enabling problems and issues to be tackled from a new angle.
D	What has got better includes: (1) IT skills and the aptitude for learning new IT skills. These are generally good – often very good – and improving year by year. (2) an increasing number of graduates appear to have had some training, or at least experience, in giving presentations (3) there is perhaps a general rise in social skills and wider awareness, with a corresponding reduction in the ivory tower/ anorak way of life which graduates in science, engineering and maths had a bit of a reputation for.
E	They are better at report writing and project work.
F	No response
G	The overseas students have a better work ethic However, many overseas students now want to return home
H	No response
I	We find that their teamworking and presentational skills have improved over recent years.
J	They have more confidence than historically – sometimes this is justified – sometimes not.
K	No response
L	No response
M	Confidence and ability to orally communicate often more highly developed than technical skills.

N	I'm not aware of anything.
O	At an industrial placement level, they often surpass the expectations of their managers in terms of how advanced their technical knowledge is.
P	Very good at probing new technology areas, getting to grips with the "bigger" technical issues. More aware of other scientific disciplines than previously.
Q	Some graduates seem very productive and focused on task which assists.
R	There is a drift away from traditional skills like mathematics & physics towards subjects or options that are not replacing them with usable assets in business life.
S	Their computer skills are higher than we need. Basic knowledge of MS Office is sufficient.
T	Good understanding of digital convergence and opportunities this opens up. More 'media savvy' understanding of the world!
U	The majority of graduates applying for engineering posts in electricity generation have no or little idea what the difference is between a kilowatt and a kilowatt hour, or between power and energy. Most engineering graduates are unable to explain the thermodynamics of any engine or power generation cycle. A significant proportion have no idea how a car engine works.
V	They usually are very enthusiastic, but sometimes frustrated by the pace of change ...suggesting minimal prior exposure to a real world or an industrial setting. Their desire for growth and international exposure is sometimes greater than can be met within normal business expectations.
W	Business studies and marketing. For some reason there now seems to be a belief that to work in a technical capacity in industry you need to understand marketing and business studies. Untrue!
X	No response
Y	Ability to deal with IT and communications systems is far higher than it was ten years ago. They have a higher level of self-motivation, sometimes accompanied by an unjustified level of self-confidence. Awareness of general principles of management etc is higher than it was.
Z	No response
$	Self-organization and initiative is much better than one would expect for the salary we pay

	The following comment has been separated from the rest of the submission text, to maintain the anonymity of the respondent's other responses: We are seeing an increased number of people doing MScs which is often gives a good grounding for a PhD place

5) From your perspective, what components are important as part of Higher education? Which experiences is it important to offer students?

A	Good basic understanding of subject area eg molecular and cell biology some practical project work industrial placements/job shadowing give them a really good idea of the work environment Troubleshooting and analytical skills. These are central to doing a PhD, and help in most science/tech jobs. Thinking rigorously and critically. Opportunities made to write essays providing cogent arguments. Modular teaching is OK as long as at some point the whole is drawn together. –Too often the students compartmentalise things and do not properly remember what they have already been taught. eg 'Cutting and pasting from publications is bad news. They should be shown how to read journals, not just the paper that they pick up from a trawl with key words and search engines. This would broaden their minds to other possibilities in their research. It is too easy to just read abstracts etc and gain a superficial knowledge of matters.'
B	Higher education must provide people with the following: - A solid grounding in the basis principles associated with the subjects under study. - An appreciation of the range of applications for the subjects under study. - Interpersonal & communication skills that enable people to effectively; communicate orally (small & large groups) (and in writing) ideas and concepts to experts and non-experts alike, work in teams, seek & share ideas, concepts & information. It is important to offer students opportunities to visit and work in a range of companies & agencies to provide them with an appreciation, awareness & understanding of the range of career opportunities open to them, and importantly what is expected of them if they wish to pursue particular career choices. We have found it difficult to provide consistent opportunities for students from schools and universities due to the large number of agencies focused on bringing together academia &

	industry and their expectations of industry to provide support in a wide variety of areas & to students with a wide scope of interest & aptitude in science & technology. We do not have the resources to address the scope of expectations from a majority of agencies, and would like to focus our resources and provide our support to students with a keen interest and aptitude in the science & technologies appropriate to our business. It is important to note that the majority of our employees are very keen to provide their time & effort in this area, and very many do through their personal links to schools & universities.
C	Academic rigour – quality and excellence; Excellent training environment with the very best facilities; Inspirational scientists, engineers, technologists that motivate the next generation; Recognition of their (the students) potential and that they are tomorrow's leaders in science and industry; High quality mentoring/supervision for research and training including interpersonal skills; Ability to establish networks with their peers; Demonstration of career successes for those choosing paths in SET
D	Important are: (1) skills, knowledge and awareness in degree subject(s) as noted above (2) skills in important subsidiary areas such as IT, and oral and written communication – eg report writing, giving presentations (3) knowledge and understanding of where and how science and technology fit into the rest of the world - business, politics, law, ethics etc (4) at a more general level – development of a questioning, open-minded but analytical and balanced approach to issues in science and engineering, and in a wider context
E	Understanding, understanding, understanding.
F	Closer links with industry to offer real design-based learning
G	Ability to think Theoretical depth Technical breadth

H	It is essential to drive flexibility across science areas, to enable scientists to move around and develop their skills and experience. The want to self-develop, and the confidence to know what they require from an organisation, is also critical.
I	Basic statistical analysis, basic laboratory practice, how to make valid measurements, approaches to problem solving and teamwork, presentational skills.
J	Both theoretical teaching and practical examples are important and relevant to students. Many science students subsequently work in business but have received no business training during their university studies – this seems to be a big gap
K	Ability to express themselves clearly in written reports / memos.
L	Project skills to develop problem solving are important as well as basic science, maths and engineering knowledge dependent on course.
M	A technical education which is deep, but developed within a context of application and expressed in part through transferable communication skills.
N	Sandwich years out in the world of research to help people decide whether research is what they really want to do. This is vital to us.
O	That whilst gaining a sound technical and educational base will position them strongly in the market place, this has to be countered with them getting enough exposure and education on the importance of soft skills. Encouraging more social experiences, particularly work placements.
P	Besides the obvious technical skills, business awareness and understanding of customer need, an awareness of intellectual property and patents would be useful. Itis good for students to feel the time pressure and economic drivers for industrial R+D
Q	A wider understanding of business, including networking, interpersonal skills and the softer skills required in life.
R	Using many tools together to solve multi-dimensional problems. Knowing how to tackle such problems; Project planning; Team working – knowing your particular strengths & weaknesses Business awareness – how your contribution actually satisfies customer requirements or needs
S	Any experiences that increase their problem solving ability and written communication skills.

T	Letting students know where and why their 'knowledge sector specialism' fits in the commercial world and how they can make the most of this. Trying to look at the future and forecast what options may happen and the rationale of why.
U	Sound basic knowledge of the principles of physics. Ability to understand and move between various measurement units.
V	industrial real world experience
W	- Challenging projects. We want to see that graduates have what it takes to work in industry on real projects. Such information is best provided from looking at their project experience. Practical, challenging projects deliver this. - Broad education. Candidates with broad backgrounds are always preferable to narrow focussed backgrounds. Give all courses a broad basis before you specialise in depth. I don't want to hire a fluidic engineer; I want to hire an engineer with fluidic specialisation. Courses should start broad with specialisation where required in later years. - Well rounded. Universities need to look at more than just education. They need to provide and encourage their students to have broader interests. - Research and development. All technical graduates should understand the difference between the two and the unique challenges each type of role needs to face. Some project experience of both is good. - Industry environment. New term for business/marketing/project planning. All graduates should get some background in time management, project planning, communication skills. Further topics within this could include some market understanding, IP protection, technology/social interaction and government/technology interaction (funding etc).
X	No response
Y	The posts we offer are in management and administration and do not require practical skills. Literacy, numeracy and communication skills need to be developed as an integral part of the learning experience. A bit more encouragement of analytical thought would also be helpful.
Z	Academic rigor Industrial experience / awareness Concepts of applied chemistry
$	Real research experience to understand alternative methods rather than rote teaching Teamwork for common deliverables to understand different communication styles and adapt Exposure to commercial implementation risks through assisting real companies

	The following comments have been separated from the rest of the submission text, to maintain the anonymity of the respondent(s)' other responses: Troubleshooting and analytical skills. These are central to doing a PhD, and help in most science/tech jobs. Looked at from a Patent Office perspective, all science and engineering graduates should have an awareness of the part that intellectual property plays in encouraging innovation through protecting new technology and, through patent databases, as an unrivalled source of detailed information in all areas of technology.

6) How (if at all) do you communicate your requirements to the people who determine the contents of undergraduate courses?

A	Some respondents were involved in teaching at the local university or knew course organisers, but most had no input or knowledge of how to make an input but welcomed the idea of an anonymous feedback system
B	In general terms we do not have a company policy/mechanism that provides university courses with particular requirements. There are some individuals in the company who have been invited onto particular university department boards where the content of specific undergraduate courses is discussed. Additionally, we have very strong links to many UK universities that will help provide universities with a clear view of what we do and what we require from our graduates, eg: - Research activity where there is an exchange of ideas, concepts & people that aims to provide value to both the university & our company. - Assessment activity where university professors assist in aspects of out technical work, whilst our technical experts assist in aspects of university work. - Graduate marketing activities aim to promote our business and indicate the type of graduate we seek to recruit. This includes campus management where we look to engage with academics, careers departments and undergraduates on the university campus.
C	Not specifically at the undergraduate course level but our organisation has a good relationship with universities as part of our core business.
D	[We have] contact with the universities eg through careers talks and fairs, liaising with university careers officers when graduate vacancies arise etc – but provides no input into the content of undergraduate courses

E	Verbally, thru our university network.
F	Through setting of final year thesis projects
G	Member of educational advisory group
H	No response
I	We have close contacts with several university chemistry departments on the quality aspects of analytical measurements.
J	I work part-time at a University and have frequent discussions with faculty and school members
K	No response
L	We work with specific universities and communicate regularly via lecturers etc
M	As part of the sector we work with the developers of undergraduate courses.
N	We've probably bored any University department and the Royal Society on these issues and they are themselves constrained by the RAE Several of us teach courses at Universities
O	Invited a couple of [Name of University] lecturers to our annual Tech Expo. Very open to working more closely with the department.
P	Not pro-actively, but do respond to requests from universities when asked, as they begin to structure a course.
Q	Various methods, mainly through human resources, who develop graduate courses.
R	This is the first time anyone has reached out to me on this subject – well done! I usually just moan to the recruitment agencies about the quality of people on offer.
S	Have never been approached by a university regarding course content, despite having good contacts with several through CASE studentships.
T	No response
U	Informal communications with university staff. Input via engineering institutions course accreditation processes. Surprisingly the educational establishments that react most positively and effectively to comments are those with the least need for major changes.

V	We do not, other than through casual contact with Professors. There is no easy mechanism for industry to do this as there are many universities. Should the CBI have a stronger say over HE funding priorities for overall UK competitiveness? I am a BOARD MEMBER on one University just trying to understand this.
W	Currently we don't
X	No response
Y	No response
Z	Do not communicate requirements
$	job specifications

Questions about your organisation

These questions help us to understand how the needs of other types of employers match with your needs. Please answer them all, if possible.

In which sector does your organisation primarily work?

Multiple-choice answer:	**Notes**	**Responses**
Aerospace & Defence		3
Chemicals	One selected. Grouped with three “Other/Not sure” to form “Chemicals and materials manufacturing” group. Includes two responses from one organisation.	4
Diversified Industrials		0
Electronic and Electrical		0
Pharma and Biotech	One selected, grouped with one “Other/not sure response” to form “pharmaceuticals and healthcare” group.	2
Software and Computer Services		0
Support Services	Two selected, grouped with one “Other/not sure” response to form “business and support services” group.	3
Telecommunication Services		1
University and Colleges		3
Utilities		3

Other/Not sure: please write in:	Automotive Investment Banking Technology development Five grouped to form “Government research and research support establishments” group.	8
Total		**27**

How many employees does your organisation employ as a whole?

Multiple-choice answer	**Responses**
0	0
1– 250	5
251 – 500	1
501 - 2000	9
2001- 5000	4 (Includes two responses from one organisation)
5000 +	8
	27

Approximately, how many scientists, technologists or mathematicians does your organisation employ as a whole? (please enter best guess)

Multiple-choice answer	**Responses**
0	0
1– 25	3
26 – 50	2
51 – 250	8 (Includes two responses from one organisation)
250- 500	3
500 +	11
	27

Questions about your role and responsibilities

These questions help us to understand your perspective on the issues discussed. All views will be considered. Please answer all questions in this section, if possible.

Which of these would you describe as your main job function?

Multiple-choice answer	**Responses**
Independent Consultant	0
Company director/senior manager	11
Manager of a lab, research team or project group	5 (Includes two responses from one organisation)
Research, product development, design or engineering (no line management)	4
Human resources	5
Communications/public relations/technical writing/journalism	0
Sales/Marketing/Product support/Business Improvement	0
Intellectual property management (e.g., technology transfer)	0
Administration	
Other/Not Sure – please write in:	1: Head of Department
	26
No response	1

How many full-time employees do you directly supervise?

Multiple-choice answer	**Responses**
0	5
1-3	2
4-6	4
7-9	7 (Includes two responses from one organisation)
10-15	1
16 or more	7
	26
No response	1

Which of these most accurately describes your responsibility for recruitment of science, technology and mathematics graduates?

Multiple-choice answer	**Responses**
I am primarily responsible for recruiting all or some of the graduates in our organisation	6
I am primarily responsible for recruiting all or some of the graduates in my team only, but not for other teams within the organisation	8 (Includes two responses from one organisation)
I have some influence in recruiting all or some of the graduates in my organisation (eg I assist with determining job descriptions, input to the recruitment process)	12 (one noted: Response is based on information from science project team leaders)
I have no influence in the recruitment of science, technology and mathematics graduates	0
Other/Not sure Please write in:	1: Early Career Manager responsible for developing systems to enable graduates to effectively progress their capabilities & careers to meet our business need.
	27

What is your own highest qualification in science, technology or mathematics?

Multiple-choice answer	**Responses**
No formal qualification	0
GCSE/O-level grade D-G; Foundation GNVQ; Level 1 NVQ; or equivalent	0
GCSE/O-level grade A*-C; Intermediate GNVQ; Level 2 NVQ; or equivalent	0
AS Levels; A Levels; Level 3 NVQ; or equivalent	0
Undergraduate Degree; HNC; HND; Level 4 NVQ; Level 5 NVQ; or equivalent – B	7 (one also noted: Visiting Professor)

Masters degree; Postgraduate degree; or above – A,	20
Other. Please write in:	0
	27

Are you an Individual member of the R&D Society, or do you work for a Corporate member of the R&D Society? This question is just to help us at the R&D Society understand the interest in this type of activity amongst our membership. **All submissions**, whether from R&D Society members or not, will be collated and submitted to the Royal Society study.

Multiple-choice answer	**Responses**
Individual member (including Retired, Student and Honorary)	1
Corporate member	8
Neither a member nor a member of staff of a Corporate member	10
Not sure/Don't know	6
Total:	26
No response	1

Use of the information you've provided

Your answers will be collated and submitted as evidence to the Royal Society's study on Science Higher Education in 2015 and beyond.

The Royal Society will publish our submission to their study on its website. We may also make the submission available on our website. If you have mentioned any organisations in your answers to questions 1-5 (eg if you have given a case study), we will remove those from the publicly-published version. A tick in the box following confirms you grant us and the Royal Society a non-exclusive, worldwide right to quote and publish, in an anonymous form, any or all of your submission.
ALL RESPONDED YES.

We would like to include a list of organisations that contributed to our submission. These will be listed separately from the responses given. If you would like us to credit your organisation with participating in the survey, please enter the details here. **We will not directly associate your answers with your organisation**, unless you specifically request us to.
Credit for submission: (listed in alphabetical order)

- Cranfield University
- De La Rue International Limited
- Engineering and Physical Sciences Research Council

- Huntleigh Healthcare
- Kodak Ltd
- LGC
- London Knowledge Innovation Centre
- Medical Research Council
- Morgan Stanley
- National Grid
- O2
- Patent Office
- QinetiQ
- Rentokil Initial
- Rolls-Royce
- Royal Botanic Gardens, Kew
- RWE npower

If you have any other comments to make on either the issues raised in the survey or the survey itself, you are welcome to include them here:

B	Please contact me for additional information to clarify points made in the survey.
E	A good degree (2.1 or 1st) in Maths, Physics or Engineering MUST mean that the person has intellectual capability.
P	It is good to have the opportunity to contribute to this debate.
U	I believe the ability to attract and keep good engineers and scientists is the most serious threat to our company.
V	A survey such as this should relate to totals (graduates today and forecast), international benchmarks (as we are not just a UK company any more), GDP growth expectations, whether HE spend could be more effectively prioritised and by what process.
	The following comments are not attributed to a submission letter to ensure their other answers remain anonymous: These responses are from the MRC as an employer of graduates - research scientists' positions and PhD students. The response is informed by responses from some science team leaders who recruit for their own team or for the MRC research unit to which they belong. I am in the Corporate HR team.

	As well as our own needs as an organisation EPSRC is very interested in ensuring the people we fund through our grant and training support (through universities) have the necessary skills to meet the future needs of academia and industry. A big issue for us currently is pay and the cost of living in London. While this is not part of your survey, it can have a great influence on attracting people to research, retaining them in the institute and attracting them to a biological course or to University at all

Thank you for your time. Please press submit only once to send your answers to us. Once you submit your survey answers, you will be asked if you wish to leave your email address to be sent a copy of our submission.

Button: Submit response to survey

Once survey is submitted, this page is presented:

Survey for Science Higher Education in 2015: Thank you
Request a copy of the report

Thank you for completing this survey. The Research and Development Society will collate your responses together with the other responses received and will submit them as evidence to the Royal Society's study on Science Higher Education in 2015 and beyond.

If you wish, we can email you a copy of our submission. To request a copy, simply enter your email address in the form below. Your email address will be stored separately from your survey submission, and will only be used to send you a copy of our report.

Email address:

If email address is submitted, this page is presented:

Survey for Science Higher Education in 2015: Thank you
Report requested

Thank you again for completing this survey. We will email you a copy of our submission when it is available.

Your email address will be stored separately from your survey submission, and will only be used to send you a copy of our report. If you would like to be kept up to date with news of the R&D Society's activities, we have a separate Email update mailing list for that, which you are welcome to join.

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