

Recommendations from the 2015 EPSRC Review of Analytical Science

In June 2015 the EPSRC published this Review of Analytical Science in the UK following extensive consultation with all stakeholders involved with this research area. As a result of this a Review Group was commissioned to draw out recommendations to EPSRC, the research community and stakeholders based on the report's findings, which are given here. The EPSRC would like to thank the Review Group members for their hard work and valued input in producing these recommendations.

The members of this group were:

- Professor Duncan Graham (Chair), Research Chair of Chemistry, Department of Pure and Applied Chemistry, University of Strathclyde, Director of the Centre for Molecular Nanometrology;
- Dr Paul Ferguson, Associate Principal Scientist, Separation Science at AstraZeneca and President of the Chromatographic Society;
- Mr Alan Handley, Past president, of the Analytical Division of the Royal Society of Chemistry and Senior Scientist & Head of Knowledge Exchange and Development at LGC;
- Mr Martin Sweet, Portfolio Manager in Physical Sciences for EPSRC.

EPSRC will liaise with other stakeholders to produce a response to these recommendations.

Academic Research

1. The profile of Analytical Science needs to be raised within academia in order to ensure that this research area is recognised as enabling and an area of research in its own right so researchers in the area feel valued. To this end it is recommended that EPSRC and Learned Societies work together to create an 'Analytical Network Plus' style initiative. This would initiate challenge driven research predicated on the perceived needs of the research area with particular input from end-users. This would require leadership and input from Learned Societies to implement.
2. There is a need for a cultural adjustment in universities to ensure that analytical science is properly represented in training at both undergraduate, Masters and PhD levels. It is recommended that Learned Societies and in particular the RSC should work with institutions at an accreditation level to achieve this.
3. Due to the underpinning and enabling role of Analytical Science across a broad swathe of Physical Sciences, EPSRC should consider the use of an 'Analytical Pathway' within its grant applications where analytical research is relevant. To minimise system changes this could be incorporated into the Pathways to Impact section of submissions.
4. Representation of analytical personnel on funding meetings is adequate but greater representation of the Physical Sciences SAT should be considered.

People in Academia

5. Fellowships in Analytical Science are already welcomed at both early and established career stages. This should continue.
6. In addition there is a need for more 'Analytical Chairs' within this area. EPSRC and the RSC should consider collaborating in the creation and funding of a number of RSC/EPSRC Chairs.

These should be predicated on 'Analytical Grand Challenges' as outlined in point 1. A stipulation could be added that:

Institutions hosting such Chairs should convert a percentage of their DTP into studentships to support this. This would greatly help in raising the profile of Analytical Science as a research area in its own right.

Such studentships should have an industrial or 'out of home institution' (such as a foreign institution) placement as standard. This would help ensure end-user relevance.

Research and Industry

7. Industry and instrument development company's involvement in the future of a healthy Analytical Science research strategy is vitally important. EPSRC should engage with Innovate UK and its strategic partners to seek to create a combined strategy from basic research to market place to ensure both academics and end-users are working more closely together to solve the 'Analytical Grand Challenges'. An area already identified as a challenge is that of separation of components in complex mixtures, but this and other challenges should be investigated further and gap analysis undertaken. This would involve crossover with the 'Analytical Network Plus' envisaged in point 1.
8. EPSRC together with Innovate UK should look onto the feasibility of forming an Integrated Knowledge Centre for Analytical Science, which would target commercialisation of emerging analytical technologies through creating early stage critical mass in an area of disruptive technology.

Additional Recommendation

9. In addition to these points EPSRC and the RSC should consider holding a joint stakeholder event to be run with the help of TI-COAST* to address research, training and structure.

*TI-COAST is a foundation that currently unites 60 private companies, universities, vocational colleges and research institutes, which aims to advance Dutch excellence in Analytical Science. TI-COAST has developed a vision for Analytical Science in the Netherlands, a mission and objectives as well as a Strategic Agenda to realize its goals.