



Spring Term 2016

## Chemistry Equality and Diversity News

### A view from the 'new' Head of Department

At the end of Carol Robinson's Chemistry Anniversary Lecture on 16 February, we laughed together as she showed some of the media coverage that resulted after some of the awards that she had won – my personal favourite was 'Mother wins Prize'. I suppose we laughed because within that evening's audience we could see what was so wrong with such a headline, yet the fact was that a newspaper had still managed, 'in this day and age', to write such a thing. This is symptomatic of the institutionalised nature around some issues of diversity and equality, and reminds us of why we believe that what we are trying to do in this area is important. This is not because we wish to be politically correct, but because we believe that everyone has something to contribute and that our organisation will be better if we create an environment where they can do that effectively, without discrimination and with proper recognition, allowance and respect for legitimate personal issues and needs.

It is therefore good that the university is now taking action to promote further the Athena SWAN agenda in particular, and also wider issues of diversity, with the reimagining of structures and the formation, *inter alia*, of a revamped Athena SWAN Steering Group with Pro Vice Chancellor, Professor Debbie Smith, as chair and an Athena SWAN Forum chaired by our own Paul Walton. The timing of this is apposite as the Equality Challenge Unit (ECU) has, this year, broadened the remit of the Athena SWAN Charter to encompass what are known as the AHSSBL subjects (Arts, Humanities, Social Sciences, Business and Law) as well as STEMM. Furthermore, it has introduced a Race Equality Charter and is asking organisations to seek recognition against its framework. In addition to these ECU frameworks, there is also the challenge of responding to the LGBT agenda, well articulated by Stonewall who are promoting their Diversity Champions Programme.

To provide a working and studying environment that does its utmost to be sensitive to the needs of all and where all can work without fear of discrimination, is the least that we can do to allow each and every one of us to realise our potential and to excel. Yet meeting the challenge of these frameworks and agendas requires a good deal of time and commitment, and while I suspected as much 'from the sidelines', in my new role I am starting to appreciate fully the time and effort that goes in to making all of this happen. But this is who we are and what we believe in, and so in writing this short piece I am once more acknowledging and thanking those who give of their time to do this and exhorting us all to do what we can to support the growing university effort.

*Duncan Bruce*

## Athena SWAN Gold award presentation, December 2015



Helen Coombs, Ruth Purvis and Derek Wann travelled to Oxford in mid-December 2015 to attend the Athena SWAN Awards Ceremony, which was held at the University Examination Schools building. The venue was very impressive (although the portraits on the walls were rather biased in favour of one gender!) but it was hard during the buzz of the award presentations to imagine the rooms being filled with nervous Oxford undergraduates taking their finals. York Chemistry was the only department to pick up a Gold award.

The ceremony featured presentations from Dr Stephen Goss (PVC for Personnel and Equality at Oxford), David Ruebain (CE for the Equality Challenge Unit), Professor Tiantian Zhang (Head of the Graduate School, Bournemouth University), Professor Dame Julia Higgins (Athena SWAN patron), Professor Jane Norman (Vice Principal for People and Culture at the University of Edinburgh) and Derek Wann representing York Chemistry.

*Helen Coombs*

## Anniversary Lecture by Professor Dame Carol Robinson

There was a fabulous turnout for the second Chemistry anniversary lecture, “Changes in state and minds” presented by Professor Dame Carol Robinson, of the University of Oxford. This lecture highlighted the atypical career path of Professor Robinson and her research to date. Professor Robinson started her career as a sixteen year old lab technician at Pfizer, before completing her PhD in two years at the University of Cambridge as a mature student. Following an eight-year career break to raise her three children, Professor Robinson then continued her research career at the University of Oxford, becoming the first female Professor of Chemistry at both Oxford and later at Cambridge. She has had a spectacular career to date, winning numerous prizes and awards for pioneering research in the field of mass spectrometry. Her ground-breaking research into protein folding analysis using high resolution mass spectrometry was well presented to an audience who were not all experts in either area.

*Rachel Dunmore*



## Young researchers meet Carol Robinson

The Chemistry anniversary lecture 2015-16 provided a great opportunity for a fringe small-group discussion with Prof. Dame Carol Robinson. A small group of PDRAs and PhD students from YSBL discussed the challenges and issues concerning work-life balance for women in science. Prof Robinson was very candid while discussing her unconventional career trajectory and took a genuine interest in asking everyone in the group about what it meant to them being a woman in science. The group briefly discussed the flexibility in work scenarios when comparing industry and academia.

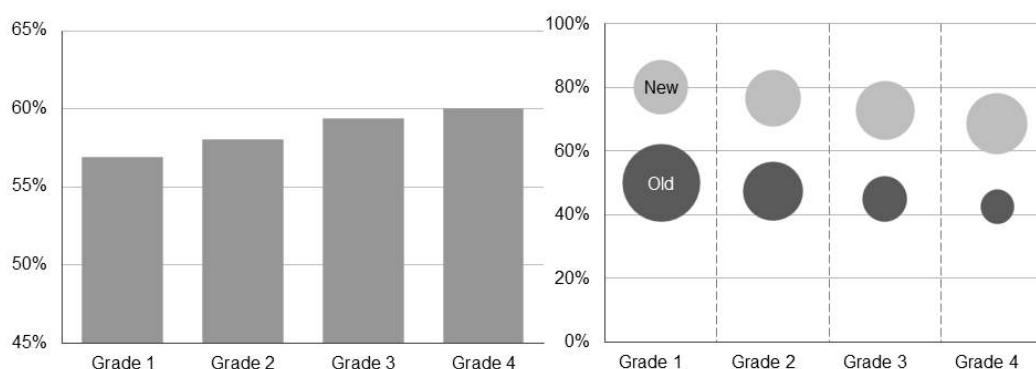
Given the emphasis on issues of equality & diversity and that the Department of Chemistry recently renewed the Athena SWAN Gold award, it is indeed a source of inspiration for early stage women researchers to be able interact with a woman scientist such as Prof. Robinson, who has done excellently well in her field and leads by example.

*Mahima Sharma*

## Simpson's Paradox in Leaky Pipeline Plots

A cornerstone of gender equality studies is the careful collection and accurate interpretation of statistical data. Furthermore, the development of effective equality policies demands an evidence base which is, more often than not, founded on quantitative data. In this regard, "leaky pipeline" plots are very widely used as a means of indicating the extent of gender inequality across a broad range of scenarios. Like nearly all forms of statistical measures, however, leaky pipeline plots are subject to confounding factors, the most surprising of which is a statistical phenomenon known as Simpson's paradox or Simpson's reversal. Simpson's paradox describes a situation across a wide range of statistical analyses, including leaky pipeline plots, in which data can often be interpreted in a way which is opposite to the actual situation on which the plots are reporting. The dangers of falling foul of the paradox are self-evident for policymakers and equality managers.

An example is given below. On the left is a plot showing the percentage of women at particular grades for a hypothetical university made up of two departments ('old' department and 'new' department), a typical leaky pipeline plot. The plot apparently shows that women enjoy a significant advantage in promotion at this university. However, the plot on the right shows the two separate departments where the real situation is opposite to that shown in the 'overall' plot (i.e. women are significantly disadvantaged in each department). A very surprising and counterintuitive result. This is an example of Simpson's paradox. The origin of the paradox can be seen in the right-hand plot where the number of women on each grade is depicted by the size of the bubble. What is seen is that the overall variation depicted on the left is actually a variation between the two departmental trends. In other words the trend in the overall plot on the left represents the shift from the old department trend to the new department trend as you move from left to right.



So, beware: leaky pipeline plots are very useful but they don't, by themselves, prove that there is gender inequality.

Paul Walton

## New report on gender bias at undergraduate level

A recent article in *PLOS ONE* (a multidisciplinary open-access journal) explored how gender influences the confidence that undergraduate biology students have in each other's performance and understanding of biology. The studies were carried out at the University of Washington, USA, and involved over 1,700 students. The results show:

- males are more likely than females to be named by peers as being knowledgeable about the biology course content;
- the effect increases as term progresses and persists even after controlling for class performance and outspokenness;
- the bias is specifically due to males over-nominating their male peers relative to their performance;
- females nominated equitably based on student performance rather than gender;
- the trends persist across eleven surveys taken in three different iterations of the same Biology course.



The conclusion drawn is that favouring of males by peers could influence student self-confidence and lead to females leaving in greater proportions than their fellow male students.

The original article can be found at:

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0148405>

A follow up article in *The Atlantic* discusses how **stereotype threat** can result in female students having additional pressures to cope with; the anxiety of fulfilling a negative stereotype hampers the performance of people from minority groups. This occurs in STEM fields where females are outnumbered in classes (typically physics, maths and engineering).

<http://www.theatlantic.com/science/archive/2016/02/male-biology-students-underestimate-their-female-peers/462924/>

Helen Coombs

## Unconscious bias: action by York Chemistry



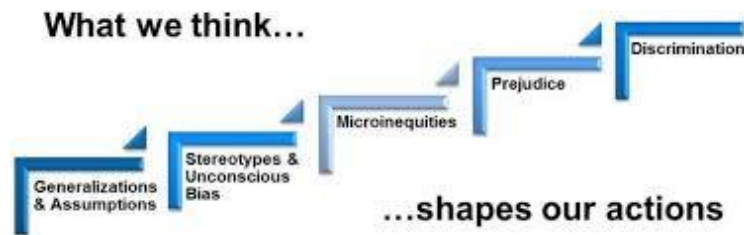
The department is currently considering ways of introducing unconscious bias training for all undergraduate students.

All staff are expected to take the *Diversity in the Workplace* online course and we highly recommend everyone to take the *Unconscious Bias* online training course:

<http://www.york.ac.uk/admin/hr/training/compliance/theme.htm>

A quick alternative is a good video produced by the Royal Society:

<https://royalsociety.org/topics-policy/publications/2015/unconscious-bias/>



Helen Coombs

## Idris Elba on diversity



Idris Elba, the actor who plays the lead role in the television series *Luther*, starred in the American series *The Wire* and the biographical film *Mandela: Long Walk to Freedom*, delivered a keynote speech to MPs and television executives in the House of Commons at a meeting on diversity in the media organised by Channel 4 in January 2016.

During his address, he stated how a lack of diversity on British television was causing talented actors to be ignored, and often feel forced to go elsewhere. Elba went on to explain that roles portrayed on screen did not reflect the real world: black people are often cast as petty criminals, women are often in roles discussing men or featuring only as the love interest, gay roles are often stereotyped and disabled people rarely feature on our screens at all.

*"Diversity in the modern world is more than just a skin colour, it's a gender, age, disability, sexual orientation, social background, and most importantly, in my opinion, is diversity of thought."*

Emma Dux

## Rethinking disability in the workplace

I was fortunate to attend a Westminster Employment Forum on Disability in the Workplace at the end of last year, which was funded by [INCLUDE, the University's Disabled staff network](#). The Forum covered a number of topics relating to Disability in the Workplace ranging from challenging traditional recruitment processes to 'designing in' inclusion in buildings so that they can be used by everyone, and confronting the stigma associated with mental health conditions.



Key facts mentioned were:

- **8% of disabled people use a wheelchair** – so the traditional stereotype of disability being mainly linked to physical incapacity is wrong. Disability can cover many conditions including sensory impairments, mental health conditions and progressive diseases such as cancer. There is no 'one size fits all'.
- **20% of people in the UK are considered to be suffering from, or experiencing a work limiting disability at any one time** - this affects more people than just those 20%, as people go in and out

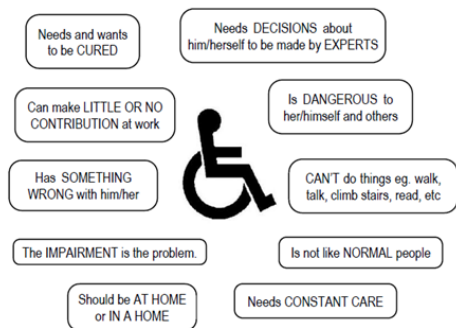
of disability over the course of their lives and most ‘acquire’ a disability later on, they are not born with it.

- **48% of disabled people of working age are economically inactive** but if there was equality in the UK labour market an estimated **2 million** more disabled people would be able to access employment.

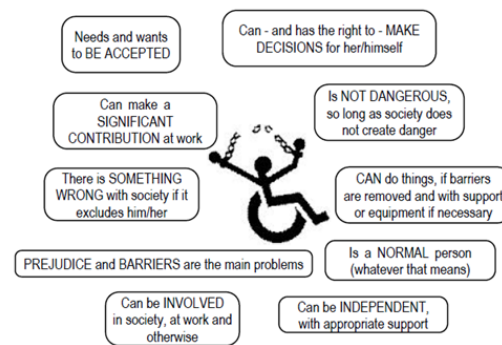
The key messages were:

- **As a nation we can’t afford to waste disabled talent.** Currently people with disabilities are prevented from working mainly by barriers in the workplace, not by the disability which they have. This creates wasted opportunities for individuals and businesses alike.
- There is a clear need **to fix the workplace and not the worker.** This also means that society as a whole must **move from the Medical view of disability** (the impairment is the problem) **to the Social model** (prejudice and barriers are the problems).

### THE MEDICAL MODEL OF DISABILITY

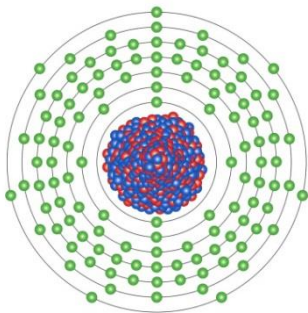


### THE SOCIAL MODEL OF DISABILITY



Eliza Bonello

## Elements of gender neutrality



The *Guardian* newspaper first reported the addition of four newly found elements to the 7th row of the Periodic Table at the start of this year, but made an amendment shortly after publication. The four new elements were all created through nuclear collisions, and then detected before their sub-second decay into smaller nuclei. At first, the *Guardian* described these new elements as being “manmade”, then amended this to “synthetic” with the following footnote:

*This article was amended on 4 January 2016. The reference to the new elements being “manmade” was changed to “synthetic” to follow Guardian style guidance on the use of gender-neutral terms.*

A quick search on Google using the search term ‘manmade elements’ brings up a host of pages, many of which refer to ‘synthetic elements’, including the appropriate page on Wikipedia. However, this does not appear to have spread much beyond scientific matters, as structures still appear to be widely referred to as ‘manmade’.

*Guardian* article: <http://www.theguardian.com/science/2016/jan/04/periodic-tables-seventh-row-finally-filled-as-four-new-elements-are-added>

Emma Dux

## Reflections on reasons behind the gender pay gap

US writer and academic Katie Roiphe writes in the *Guardian* about the shock she experienced on discovering that male colleagues of equal experience and ability were paid more than her, and shares her reflections on why women are disinclined to negotiate fees and salaries.

**WOMEN**  
Like men,  
only cheaper.



Despite being a committed feminist – to the extent of confiscating the young Katie’s Barbie Beauty Palace – Roiphe’s mother (also a writer) is quoted as saying that she would have “cut her tongue out” rather than ask for more money for her work. “That would seem rude or impolite.”

A key foundation of the problem, according to Roiphe, is women’s general wish not to be disliked. She quotes A-list actress Jennifer Lawrence: “I didn’t want to seem ‘difficult’ or ‘spoiled’.” Women, says Roiphe, display “a strong instinct towards diffusing competition, deflecting envy, towards not having people resent you.” And the “people” referred to are as often female as male.

Perhaps the importance of female-female interactions in a world historically dominated by men has contributed towards this extreme delicacy and caution in asserting one’s monetary value in the workplace. It is less a matter of solidarity than a fear of the isolation that could result from stepping out of line with one’s fellow females.

But another important factor is just the knowledge that it can be done. For Roiphe, “when my colleague told me about negotiating for his salary, it honestly felt as if a veil was lifted from my eyes: people do that?” Women seem more inclined than men to want familiarity with the territory into which they venture: they can be reluctant to ask for something unless they are reasonably confident the answer will be yes. Perhaps the context of traditional male-female interactions can shed some light on how men become inured from a relatively early age to the necessity of just asking anyway, and dealing with it when the answer’s no - ?

<http://www.theguardian.com/lifeandstyle/2016/feb/20/katie-roiphe-why-paid-less-than-male-colleagues>

Catherine Jardine

## Long-distance equality: how we ‘met’ with the Met Office



In 2015, Dr Ruth Purvis met Dr Jemma Gornall (Joint Weather & Climate Research Programme Manager) from the Met Office; they discussed equality issues and in particular Athena SWAN applications. Jemma then issued an invitation to York Chemistry to visit the Met Office in Exeter to discuss our experience of preparing an Athena SWAN submission with members of the Met Office’s AS Self-Assessment Team. Finding the right person to make a 600-mile, 10-hour round trip by train to Exeter proved difficult for the Equality and Diversity Group due to other work and family commitments. In the end we suggested a Skype meeting and this had many benefits:

- the presentation was prepared in advance and sent to the Self-Assessment Team at the Met Office, allowing them to digest the information and prepare questions;
- both Helen Coombs and Paul Walton could take part in the Skype discussion, allowing two view points and experiences to be shared;

- Leonie Jones was able to sit in and hear about the experiences of preparing an Athena SWAN submission (as she was not in post when this occurred);
- the cost to the department was nothing, and the time saved was considerable;
- we helped with Green Impact recommendations;
- we met one of our Athena SWAN Action Plan objectives in the increased use of distributed meetings.

Unfortunately, the day of the Skype meeting coincided with very noisy work taking place on the ground floor of A block directly below Helen’s window where everything was set up. However, some smooth talking from Rob Wood and Graeme McAllister convinced the builders to take a break at the appropriate time, and in the end they worked faster and actually completed everything before the Skype connection was made.

Karen Dutton, the Met Office Athena SWAN co-ordinator, said how pleased they were with the guidance and information they received and afterwards thanked us “...for sharing your experiences so openly. There were plenty of nuggets of very useful advice that we will most definitely take on board.” We were very pleased to help them and were also pleased that the Skype connection behaved itself for well over an hour!

*Helen Coombs and Paul Walton*

## White Oscars: how showbusiness reflects on us all

The Academy Awards were back in the spotlight as a focal point for social media protest as soon as this year’s nominations were released, given the tag *#WhiteOscars*, owing to the lack of diversity amongst those shortlisted in the various categories. CNN entertainment journalist David Daniel’s response on Twitter after the nominations were released was “No female directors, screenwriters, or cinematographers. No actors of color [sic].” It is not hard to see why the *#WhiteOscars* label has stuck; the A-list has never been greatly representative of the broad spectrum of American society.



Last year, at least Alejandro González Iñárritu won Best Director for the film *Birdman*. And the film *Selma*, based on the Civil Rights movement, was nominated in the Best Picture category in 2015, though many argued that there should also have been nominations for its star actor David Oyelowo who portrayed Martin Luther King, and its director Ava Duvernay (if the latter had been nominated she would have been the first black woman to have ever received a nomination for Best Director).

Last year’s ceremony was also perhaps a marker of change, as the speeches became more political. The ceremony’s main presenter, Neil Patrick Harris, opened the ceremony with a “Freudian” slip, “Tonight we celebrate Hollywood’s best and whitest, sorry... brightest.” Patricia Arquette, during

her acceptance speech for Best Actress declared “to every woman who gave birth, to every citizen and taxpayer, it’s our time to have wage equality once and for all and equal rights for women of the United States of America!” much to the obvious agreement of Meryl Streep who was listening from the audience. Alejandro González Iñárritu payed tribute to his fellow Mexicans and made references to Washington’s failure in pushing forward reforms on immigration.



Graham Moore, who won the 2015 Best Adapted Screenplay for the film *The Imitation Game*, paid tribute to the hero of the film, Alan Turing, and called on those experiencing social exclusion to have confidence in themselves, “I would like for this moment to be for that kid out there who feels like she’s weird or she’s different or she doesn’t fit in anywhere. Yes, you do. You do. Stay weird, stay different. And when it’s your turn to stand on this stage, pass the message along.”

Perhaps the controversy and debate that has surrounded the 2016 Oscars has helped focus attention on precisely those people and films that were excluded, and one can only hope it is a sign that our society is at last looking beyond the designer dresses on the red carpet to question how our prestigious events and awards reflect our values and beliefs.

Emma Dux

## Addressing the imbalance: think about gender from the start

Twenty years ago, I chaired the organising committee of a conference in York and wrote round to acquaintances abroad asking for suggestions for younger speakers. As a result of one of the suggestions I received and acted on, I acquired a long-term collaborator and friend who is now one of the foremost women chemists in France.



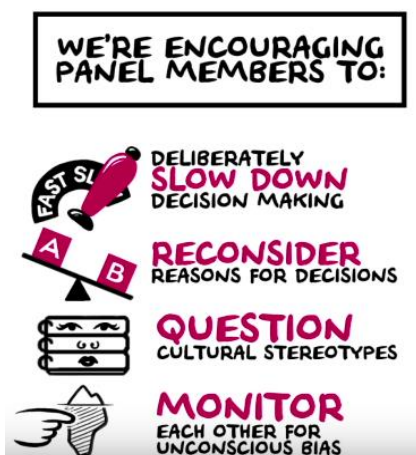
Even now, there are conferences with no female invited or plenary speakers, as happened very recently in a case where there was a woman on the organising committee and the conference was sponsored by RSC. When I queried the absence of women on the programme, I was told that it was too late to invite women speakers and there were plenty of oral contributions from women. The organisers wouldn't budge even though it was certainly not a field where women were absent.

The story of the protests over the International Quantum Chemistry Conference is well known. If there aren't any women speakers, the research students and post-docs will be tempted to conclude that there is still no future for women in science. This article by Jennifer Martin shows that you need to think about your gender balance from the start. I also like the emphasis on doing the research, not just inviting people whom you think of on the spur of the moment.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4238945/>

Robin Perutz

## Recruitment and selection procedures



Eliza and Helen are currently preparing information for all recruitment panel chairs which will cover the following areas:

- Use of photographs and images in candidate briefs;
- The need for Recruitment and Selection Training to be undertaken
  - Unconscious Bias information and training and use of independent unconscious bias observers;
  - Setting one question in advance for all interview candidates (this helps to settle nervous candidates and removes the advantage that extroverts have over introverts in interview situations);

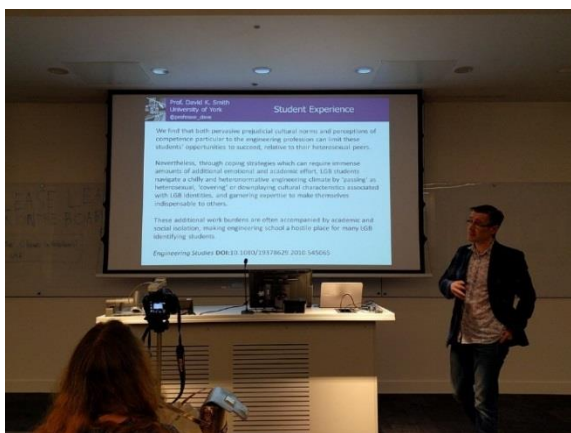
- Advertising research posts for the full length of time that funding is available for;
- The rules regarding salary offers and negotiation (to eliminate any gender differences).

Eliza has prepared some very useful guidance for selection panel members which will be sent out in future to all those concerned.

*Helen Coombs and Eliza Bonello*

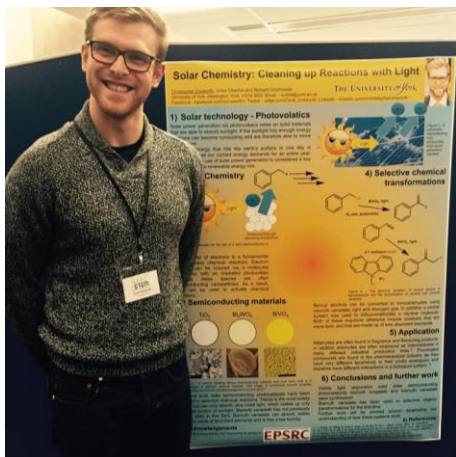
## York Chemists attend inaugural LGBT STEMinar in Sheffield

A group of York Chemists attended the first UK LGBTSTEMinar in Sheffield on the 15<sup>th</sup> January. The day was full of presentations of the highest standard from a wide variety of subject areas, such as wildlife conservation, colliding galaxies, cardiac remodelling after a heart attack, and crowdsourcing cancer research. York's own Derek Wann gave a presentation entitled "Making Molecular Movies", on the study of kinetics at a molecular level. Chris Unsworth and Robin Brabham both presented their ongoing PhD work in the form of posters.



Alongside the science content, the event addressed issues of being LGBT in a STEM working environment. Dave Smith opened the day with his Keynote speech entitled "No sexuality please – We're Scientists". Dave discussed many topics that are associated with being an LGBT scientist such as hidden diversity, how attitudes can vary in differing locations and what can be done to create an inclusive working environment. Dave also highlighted the good work done at York to create a positive and diverse workplace, and the Chemistry

Department's Gold Athena SWAN award.



Other speakers included Calvin James Smith from the University of Reading, who discussed what he does to demonstrate the idea of unconscious bias to students and the effect that it has on working environments. In addition, Elena Rodriguez-Falcon from the University of Sheffield discussed being LGBT in engineering. She also discussed the stigma she has faced with being a woman and international in her places of work in a deeply personal final Keynote.

The seminar created a great hub for networking. On Twitter the hashtag #LGBTSTEMinar was trending by the middle of the day. The conference appeared to break down traditional academic hierarchies, creating an environment in which everyone was approachable. In all, the day was a great success, with many commenting saying it was the best conference that they had attended.

*Chris Unsworth*

## Chemistry Quiet Room C/A137

In February 2016, as part of the Mind Time to Talk campaign (<http://www.time-to-change.org.uk/about-us/about-our-campaign/time-to-talk>), the department launched 'The Quiet

Room' in C/A137 and invited staff and graduates students to come along for a drink, a biscuit and a chat.

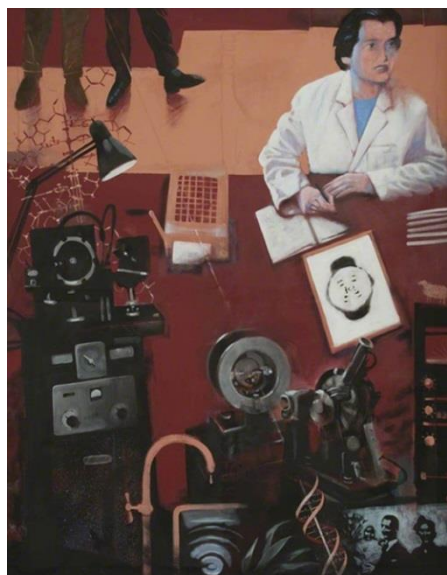


The Quiet Room is a designated area where chemistry staff and postgraduate research students can have a break from the noise of shared offices and laboratories to work or relax or sit and chat quietly with colleagues. We have a 'Do Not Disturb' sign for the door for times when individuals really need to be uninterrupted (for example for confidential conversations) but the hope is that a number of staff and students will be able to use it at the same time without disturbing each other.

Thanks very much to Emma Dux and Abi Leng who have worked hard to make the room inviting and restful.

*Helen Coombs*

## Women in science in art



11 February 2016 was the first 'International day of women in STEM', so there were many posts on social media outlets such as Twitter. One which caught my eye was a link to a website containing 15 works of art portraying various female STEM figureheads such as Marie Curie, Ada Lovelace (19th century mathematician and computer programmer) and Mae Jemison (the first African-American woman in space). This webpage contains a brief commentary about the subject of each piece as well as about the artwork itself.

<http://www.scientificamerican.com/article/15-works-of-art-depicting-women-in-science/>

*Emma Dux*

IMAGE: ROSALIND FRANKLIN

CREDIT: © GEOFFREY APPLETON; STAFFORDSHIRE UNIVERSITY

## And finally...

Nestlé's attempt to win back the ~50% of its market alienated by its sexist "not for girls" campaigns? We're not buying it!

