



advancing gender
equality in science,
engineering and technology

making women visible online

a toolkit from the UKRC focusing
on science, engineering and technology

Contents

1	Introduction	2
2	Who are we?	3
3	Why gender equality?	3
4	Why online representation matters	3
5	Good practice checklist	4 - 5
6	Things to watch out for	6
7	Useful resources	7

1 Introduction

- Do you own or run a website that is about science, engineering and technology (SET) or features SET in some way?
- Are you running a blog or online forum where SET issues are sometimes or always addressed?
- Are you raising SET issues through social media such as LinkedIn, Twitter and Facebook?

This toolkit will help you represent men and women fairly and positively, ensuring that you are inspirational to your audiences, and that you build diversity in content and in visitors to your online activities.

The toolkit identifies some of the challenges to look out for, and it lists some useful resources that will help you represent men and women in SET in positive ways.

It has been put together by the UKRC, as a result of research we published in 2010 into the presence and representation of women in SET occupations in UK-based online media (researched and written by Heather Mendick, Goldsmiths, University of London and Marie-Pierre Moreau, University of Bedfordshire).

We welcome comments and suggestions for content and additional links.

2 Who are we?

The UKRC is the UK's lead organisation for the provision of advice, services and policy consultation regarding the under-representation of women in SET, including science, engineering, technology, maths and the built environment (including architecture and skilled roles relating to construction).

We work with employers; professional bodies; education institutions; women's organisations and networks; policy institutes; sector skills councils; the government and many others to promote gender equality in SET. We offer tailored services and support for women at all career stages.

3 Why gender equality?

There are very few women working in SET, and fewer still in positions of leadership. Building gender equality in these sectors matters – not just for reasons of fairness. Research increasingly shows that diversity is essential to building talented workforces: it improves problem-solving and innovation, boosts business performance and increases staff retention and commitment (Women Mean Business, the UKRC, 2010).

In addition, the Equality Act (2010) makes requirements of employers and service providers to demonstrate their commitment to equality and comply with legislation regarding a range of equalities. Many public services are encompassed by the Act, including website services (see the 'Services' Code of Practice <http://www.equalityhumanrights.com/legal-and-policy/equality-act/equality-act-codes-of-practice/>).

In 2009:

- 12,663,065 women were in work – only 5.3 per cent were in SET occupations
- 15,397,778 men were in work – 31.3 per cent were in SET occupations
- only 12 per cent of SET professionals were women
- only seven per cent of engineers were women
- only 11.6 per cent of the highest paid academic roles in science, engineering, technology and maths were held by women

In 2010:

- women held only 10.7 per cent of board directorships in SET companies

Source: UKRC Statistics Guide 2010, plus data extrapolated from The Female FTSE Report 2010 (Cranfield University).

4 Why online representation matters

The media exerts a powerful influence on our attitudes, opinions and choices.

Research from the UKRC shows that women in SET are often invisible or marginalised in the media. This does nothing to inspire young people looking for interesting careers, or to strengthen the position of the women already active in SET.

Your online presence is an expression of your values, whether as an employer, a service provider, a policy leader, a communicator, a museum or science centre, a centre of learning or research, a commercial enterprise or any other role.

You can make a difference to the way women and men are depicted in SET settings by looking at your site with gender in mind. It is not just a matter of including more women more often – the sometimes subtle ways in which women are depicted through photos or text need also to be addressed.

5 Good practice checklist

This list is not prescriptive: different organisations and individuals have differing opportunities to depict or promote gender equality according to their circumstances and aims. Use the list to help you explore different areas.

Policy into practice		
1	Is gender equality included in your diversity policy, communications strategy and style guidelines? Are web and communications staff given clear guidance? (The UKRC can help you with this.)	<input type="checkbox"/>
Representing both women and men		
2	Have you included interesting and named examples of SET women (and men) across your website?	<input type="checkbox"/>
3	Do your photos show women actively engaged in SET work that might equally be performed by a man?	<input type="checkbox"/>
4	Have you shown examples (in pictures or text) of women performing in all areas of SET appropriate to your remit?	<input type="checkbox"/>
5	Do you show a range of women from a variety of ethnic backgrounds and age groups?	<input type="checkbox"/>
6	Are women with disabilities represented on your website? If appropriate, have you indicated how you provide support for people with disabilities?	<input type="checkbox"/>
7	Have you shown examples of women in significant or managerial roles?	<input type="checkbox"/>
8	Are you relying on depictions of one or two famous historical figures, such as Marie Curie? It is important to have strong examples of women who are part of the SET community today.	<input type="checkbox"/>
9	Likewise, if your site or blog is exploring the history of SET, have you included some of the pioneering women in these fields?	<input type="checkbox"/>
10	If your organisation has only a few women, have you avoided making repeated use of the same people? See the resource list in this guide for other role models.	<input type="checkbox"/>
Encouraging participation		
11	If blogging or running forums and online surveys, are you actively encouraging a range of audiences to participate?	<input type="checkbox"/>
12	Are you using Twitter and other new media to identify and connect with diverse audiences and raise awareness of your commitment to gender equality (including following @ukrc)?	<input type="checkbox"/>
13	Have you given users a clear contact point for queries, feedback or complaints?	<input type="checkbox"/>
14	Have you considered running competitions to encourage and reward staff, volunteers, students, members and others who actively communicate online through blogs or other forums? This can be another way to find good role models and encourage women to raise their profile.	<input type="checkbox"/>

Building skills

- 15** Can you offer any training, mentoring or editorial support that will help women in SET raise their profile in online media? (The UKRC can help you with this.)
- 16** Consider providing training to your web editors or communications staff on stereotyping and unconscious bias and ways to overcome this. (The UKRC can help.)

Monitoring and moderating

- 17** Have you avoided discussing appearance, private lives and/or relationships of the women on your site (unless they are of particular relevance)?
- 18** Have you checked for the use of gender-neutral language (such as using the term 'staffed' rather than 'manned')? You may be able to substitute the word 'they' for 'he' or 'she' where appropriate, or use a mix of male and female pronouns.
- 19** Have you checked the use of language for possible bias? For instance, when referencing relationships, use 'partner' rather than husband/wife or boyfriend/girlfriend, unless you know the person's preferences.
- 20** Do you have a system in place to monitor and moderate comments?
- 21** Do you have easily-located community guidelines for your website that describe appropriate behaviour for interactions on the site?
- 22** Have you tested the equality impact of your site by getting feedback from equality groups (such as the UKRC, Stonewall and Scope)?

For organisations that recruit SET apprentices, staff, members, students or volunteers

- 23** Sign the UKRC CEO Charter (<http://theukrc.org/for-organisations/ceo-charter>) and display it on your website. The CEO Charter marks a commitment to building gender equality.
- 24** Make clear your commitment to welcoming male and female applicants. If you have policies that boost gender equality and enable work-life balance and career progression then make these available.
- 25** Include case studies that demonstrate the diversity of people you take on, their range of roles and responsibilities, and their progression in your organisation.

Organisations can show their commitment to building gender equality through their on-line content and images, even when their workforce, membership or student body is heavily male-dominated. Highlight the steps you are taking to attract and include women, and any special initiatives to increase diversity.

6 Things to watch out for

Women are often depicted online in ways that are disadvantageous. The recent analysis by Mendick and Moreau (UKRC, 2010) highlights a number of trends to watch out for:

Muting

Anonymous women: The muting of women in SET happens when anonymous women are pictured to illustrate a piece for 'ornamental' purposes.

Ventriloquism: Female scientists can be used to ventriloquise other people's work – for instance, they may explain the work of a male scientist. This reinforces the position of women as mere 'transmitters of knowledge' rather than involved in knowledge production.

Clustering

Types of SET activity: SET women are sometimes grouped in certain categories of science, which 'may reflect the fact that some areas of SET are seen as more appropriate for women'. Examples of these 'feminine' areas within science include working with animals and children.

Female categories: Some sites put all the content about women in one place on their website. Although this means there is a female presence, it can lead to women being left out of more general sections of websites and this can reinforce the impression that women do not contribute to SET, or have only a marginal role.

Stereotypes

Age: Mendick and Moreau's content analysis identified that many of the scientists shown online fall into two polarising age categories: the old ('who are often iconic and respectable') and the young ('passionate and trendy'). Images depicting females in SET are predominately young. This is positive in that it can inspire young people but it risks reinforcing the idea that women are 'ornamental and decorative' or 'inexperienced and subordinate'.

Appearance: Male and female workers in SET are often portrayed as white, able-bodied and middle-class. However, greater diversity across online sites is more representative of the wider community. In addition, women are more likely than men to be described with references to their appearance. This trend can also result in the sexualisation of women scientists: the research found this was more likely to happen on informal websites and blogs.

Women on the periphery

Subsidiary roles: Women in SET represented online often occupy minor roles in comparison to their male counterparts and are often shown as 'students or young scientists'.

Placing women in the private sphere: Women may be linked to areas of science that have links to domestic activities such as cooking and child care.

Personal relationships: The personal relationships of women in SET are often described alongside explanations of their work: reference is often made to whether they are married or not, and sometimes who they are married to. Mendick and Moreau point out that 'this pattern overlaps with the locating of women scientists in the private sphere'. It presents the work of women in SET as somehow influenced by the men in their lives.

The role of web authors and users of websites

Individual decisions: Editorial decisions about website content are often individual decisions, and are not the result of institutional policies and guidelines. As a result, diversity is addressed inconsistently or not at all.

Objective reporting: Often, the values of journalism or science are applied to determine what is represented online and how it is depicted. The subject matter is seen as separate to social and political considerations. This can lead to the dismissal of gender equality and other diversity criteria as important benchmarks.

People read and contribute to sites in different ways: On sites where there is opportunity to post comments, the content often reflects the gender bias of contributors. On more informal sites, this can be particularly pronounced, with women being criticised for their appearance or lifestyle rather than (or as well as) their science. The researchers found that some people are very aware of the gender imbalance on SET related sites.

7 Useful resources

This list includes a number of useful online and downloadable resources. The linked list is also available on our website: www.theukrc.org/about-us/our-projects/women-in-the-media/making-women-visible-online

Online moderation and good practice

BBC: Netiquette – basic rules

<http://www.bbc.co.uk/webwise/guides/about-netiquette>

Lasa Knowledge Base: Code of good practice – blogging

<http://www.ictknowledgebase.org.uk/blogginggoodpractice>

Online comments: it's you not them

The blogger Neurosceptic writes about how to manage hostile online comments

<http://neuroskeptic.blogspot.com/2010/12/online-comments-its-not-you-its-them.html>

The Guardian: Community standards

<http://www.guardian.co.uk/community-standards>

The Guardian: Journalist blogging and commenting guidelines

<http://www.guardian.co.uk/info/2010/oct/19/journalist-blogging-commenting-guidelines>

University of York: Promoting equal opportunities on the web

<http://www.york.ac.uk/media/communications/weboffice/documents/Promoting%20Equal%20Opportunities%20on%20the%20Webv4.pdf>

Equality and diversity

Code of Practice on Services, Public Functions and Associations

<http://www.equalityhumanrights.com/legal-and-policy/equality-act/equality-act-codes-of-practice/>

Equality and Human Rights Commission

<http://www.equalityhumanrights.com/advice-and-guidance/>

The Government Equalities Office

<http://www.equalities.gov.uk/>

Facts and figures

Key facts and figures on gender equality in SET

<http://www.theukrc.org/resources/key-facts-and-figures>

The UKRC Statistics Guide 2010

<http://www.theukrc.org/resources/ukrc-statistics-guide-2010>

Useful networks

GetSET Women

A fast-growing community of more than 2,000 women from all walks of science, engineering, the built environment and technology (SET) – plus women who promote gender equality and SET in all sorts of ways. Free to join or search, with an informative fortnightly newsletter.

<http://www.getsetwomen.org/>

Daphnet

The mailing list for and about women in science, engineering and technology, including women returning to paid work after a career break.

<http://www.wes.org.uk/daphnet.html>

psci-comm

A list providing a forum for discussion of any matter relating to public communication of science and public engagement with science.

<https://www.jiscmail.ac.uk/cgi-bin/webadmin?Ao=psci-com>

Twitter

Explore @ukrc lists and links to find individuals and organizations championing gender equality in SET, and individual women.

<http://www.getsetwomen.org/html/join-getset-women/>

Research

The presence and representation of women in SET occupations in UK-based online media, by Heather Mendick, Goldsmiths, University of London and Marie-Pierre Moreau, University of Bedfordshire. The UKRC, 2010.

<http://www.theukrc.org/influencing-policy/research-projects/online-media-project>

Attracting Teen Surfers to Science Web Sites, Michael F. Weigold and Debbie Triese, Public Understanding of Science, 2004.

<http://pus.sagepub.com/content/13/3/229.abstract>

Bimbo or boffin? Women in science: An analysis of media representations and how female scientists negotiate cultural contradictions, Mwenya Chimba and Jenny Kitzinger. Public Understanding of Science, 2009.

<http://pus.sagepub.com/content/early/2009/04/07/0963662508098580.abstract>

Does my brain look big in this?

November 2010 blog entry by science communications expert Alice Bell, reflecting on recent research on media representations of women in science.

<http://alicerosebell.wordpress.com/2010/11/10/bimbo-or-boffin/>

Role Models in the Media: An Exploration of the Views and Experiences of Women in Science, Engineering and Technology. UKRC Research Report Series No.1, by Jenny Kitzinger, Joan Haran, Mwenya Chimba and Tammy Boyce. The UKRC, 2008.

http://www.theukrc.org/files/useruploads/files/resources/report_1_kitzinger.pdf

Stereotype Threat

A website explaining and exploring the ways people conform to stereotypes.

<http://www.reducingstereotypethreat.org/>

See in particular the section on reducing stereotype threat: <http://www.reducingstereotypethreat.org/reduce.html>

The Invisible Witness Project <http://www.open.ac.uk/invisible-witnesses/>

Investigating gendered representations of scientists, technologists, engineers and mathematicians on UK television. The UKRC and the Open University.

Useful case studies, communicators and role models

The UKRC

The UKRC can help organisations find role models and case studies, and some are available on the UKRC website.

<http://www.theukrc.org/>

Female SET bloggers:

A recent Guardian listing of nearly 200 women in SET bloggers, collated by the UKRC

<http://www.theukrc.org/about-us/our-projects/women-in-the-media/women-bloggers>

GetSET Women

A free, searchable online listing of women in SET, and women working to support them.

<http://getsetwomen.org/>

Icould.com

A website using video to showcase a wide range of women and men in different careers.

<http://icould.com/>

Science and Public Engagement videos

A listing of online videos, including many showing women in SET.

<http://scicomms.wikidot.com/science-pe-videos>

SET media spokeswomen:

A recent Guardian listing of potential media presenters, collated by the UKRC <http://www.theukrc.org/about-us/our-projects/women-in-the-media/where-is-the-next-brian-cox>

Useful skills

A manifesto for the simple scribe

A former Guardian science journalist provides 25 commandments that are useful for people writing online.

<http://www.guardian.co.uk/science/blog/2011/jan/19/manifesto-simple-scribe-commandments-journalists>

Ingenious Women Blog

Advice on making podcasts and videos for websites.

<http://www.theukrc.org/blogs/ingenious-women/2010/11/sue-nelson>

Ingenious Women Blog

Science biographer Georgina Ferry outlines how to write well.

<http://www.theukrc.org/blogs/ingenious-women/2011/01/how-to-write-well>

Online engagement: good practice

How to do it: engagement in practice

Website of the National Co-ordinating Centre for Public Engagement. Includes guidance on online engagement, podcasting and more.

<http://www.publicengagement.ac.uk/how>

Public engagement for science and society – a conversational tool

A tool from the Department for Business, Innovation and Skills.

<http://interactive.bis.gov.uk/scienceandsociety/site/all/files/2010/10/PE-conversational-tool-Final-251010.pdf>

Science and Society

A website run by the Department for Business, Innovation and Skills. Includes resources relating to the media and public engagement ('science for all').

<http://interactive.bis.gov.uk/scienceandsociety/site/>

Research Councils UK: best practice guides and publications

<http://www.rcuk.ac.uk/per/Pages/Bestpractice.aspx>

A variety of resources to build public engagement with scientific research.

Free photos of women and men in SET

Creative Commons global search facility

<http://search.creativecommons.org/>

Graphic design and picture resources

List of useful links on the 'Stuff that occurs to me' blog run by Jo Brodie.

<http://brodiesnotes.blogspot.com/2010/02/graphic-design-and-picture-resources.html>

Flickr

<http://www.flickr.com/>

Stock Vault

<http://www.stockvault.net/>

The Free Site

http://www.thefreesite.com/Free_Graphics/Free_photos/

Web Resource Depot

<http://www.webresourcesdepot.com/12-amazing-and-free-stock-photo-resources/>

Information on copyright

Creative Commons

<http://creativecommons.org/>

Photography and copyright

http://www.copyrightservice.co.uk/protect/p16_photography_copyright

The UK Copyright Service

<http://www.copyrightservice.co.uk/>

Access

How to make your website accessible for all

W3C: <http://www.w3.org/TR/WCAG10/>

RNIB website

http://www.rnib.org.uk/professionals/webaccessibility/pages/web_accessibility.aspx

The UKRC

- The UKRC offers consultancy support to businesses and organisations wanting to improve their policies and practices with regard to gender equality, including online and other communications.
- The UKRC CEO Charter is available to a wide range of organisations and employers.
- We offer a variety of training opportunities, including sessions on stereotyping and unconscious bias, building gender equality on line, and media and presentation skills.
- All women in SET, including computing and communications professionals with a SET remit, are encouraged to join GetSET Women, a free online listing with a fortnightly newsletter.
- The UKRC has access to inspiring women at all career levels and across all SET sectors. Visit our website and GetSET Women for case studies and contacts, including the recipients of our annual high profile award for Women of Outstanding Achievement.
- Through our Connect network you can link up with more than 100 women-in-SET groups and organisations.
- With WISE (Women into Science and Engineering) the UKRC works with industry and education to inspire girls to take up STEM careers.

For more information about these and other services, visit the UKRC website (www.theukrc.org) or contact us direct: **01274 436485** or **info@theukrc.org**



This toolkit is based on the following research:

'The presence and representation of women in SET occupations in UK-based online media', by Heather Mendick, Goldsmiths, University of London and Marie-Pierre Moreau, University of Bedfordshire. The UKRC, 2010.

<http://www.theukrc.org/influencing-policy/research-projects/online-media-project>

For more information and to download copies of this toolkit:

The UKRC
Listerhills Park of Science & Commerce,
40-42 Campus Road, Bradford
BD7 1HR
www.theukrc.org
www.theukrc.org/resources/other-ukrc-resources

Join us online:

Twitter:

@ukrc

LinkedIn:

<http://www.linkedin.com/in/theukrc>

Facebook:

<http://www.facebook.com/pages/UK-Resource-Centre-for-Women-in-Science-Engineering-and-Technology-UKRC/139259354820>

Wikipedia:

http://en.wikipedia.org/wiki/The_UKRC

GetSET Women:

<http://www.getsetwomen.org/html/join-getset-women/>

Written by Ruth Wilson and Eleanor Donajgrodzki.

With thanks to all who helped with the development of the toolkit through comments, resource material and help with production, including Isma Batool, Marilyn Booth, Jo Brodie, Jane Butcher, Pollyanna Dawber, Julia Jordan, Malwina Kalbarczyk, Chrissi McCarthy, Martin Robbins, Jennifer Rohn, Dawn Rose, Alom Shaha, Rachel Tobbell, Lou Woodley and Anna Zalevski.

The UKRC is supported by the Department for Business, Innovation and Skills.

ISBN: 978-1-905831-36-4

© The UKRC, 2011



Permission is granted under a Creative Commons Attribution 3.0 licence. To view a copy of this license, visit <http://creativecommons.org/licenses/by/3.0/>