

UK Resource Centre for Women in Science, Engineering and Technology

Established in 2004 to support the Government's ten-year strategy for Science and Innovation, the UKRC works to improve the participation and position of women in SET across industry, academia and public services in the UK. Funded by the DIUS, it provides advice and consultancy on gender equality to employers in industry and academia, professional institutes, education and Research Councils. The UKRC also helps women entering into and progressing within SET careers, through advice and support at all career stages, training, mentoring and networking opportunities.

Acknowledgements

The UKRC is proud to have originated this important initiative and wish to thank all involved with it: all those individuals and organisations who nominated women and supported the process, the selection panel, the photographer, the design team, and most importantly all the 115 women nominated and doing such fantastic and inspirational work in SET.

“If you look at the portraits that adorn the walls of our great institutions and public buildings it soon becomes apparent how few women are actually featured. That is what is so exciting about this exhibition. In 2006, with your help, we began to create a legacy for the future: a collection of portraits that will celebrate women in SET.”

Annette Williams, Director, UK Resource Centre for Women in Science, Engineering and Technology



The Concept

In 2006 the UK Resource Centre for Women in Science, Engineering and Technology embarked on a very exciting and rewarding project that set out to celebrate the exceptional achievements of women from science, engineering and technology (SET).

With just 24.1% of employees in SET professions being women, the UKRC aims to make women in Science, Engineering and Technology more visible as role models and inspiration to others. The Women of Outstanding Achievement in SET photographic exhibition was born and little did we know that it would enthuse and capture the minds of so many people, all of whom who we are proud to recognise as ambassadors of the exhibition.

Two years on, we are delighted to add a further 6 portraits to the collection. Respected photographer Robert Taylor joins us once again to capture the essence of 6 amazing women who are making an outstanding contribution in:

- > SET Discovery, Innovation and Entrepreneurship
- > Communication of SET with a Contribution to Society
- > SET Leadership and an Inspiration to Others

With your support we have made a fantastic start towards capturing individuality, essence and gravitas of inspirational women - creating a legacy for future generations, male and female. For this collection, 136 nominations for 115 women of outstanding achievement were received.



The Photographer

Robert Taylor has specialised in artistic portraiture for twenty years, and has pictures in collections, including those of the National Portrait Gallery and the Victoria and Albert Museum.

“

My main photographic preoccupations are portraiture and bodies. I feed my fascination with people by not only photographing them, but also interviewing them whenever I can about all sorts of personal and worldly subjects, including their experience of the photographic process and the results. There's lots of revelation, liberation, and fun.

I came to photography via the RAF, the Bar and educational publishing. Whilst photography remains my main interest, I enjoy distractions such as the co-production of a Channel 4 documentary about black divas and their queer fans (broadcast September 1996), and the occasional photography related TV appearance.”

Robert Taylor

Freelance Photographer

The Collection

“ Once again, the UKRC’s photographic exhibition has recognised and highlighted the truly outstanding achievements of women working in science, engineering and technology in the UK.

Half a million women in the UK are qualified in SET but less than a third work in those areas, all of which are experiencing severe skills shortages which look set to increase in the coming years.

Women need equal exposure in both the industry and the media, so it is important that we highlight the achievements of women in the SET sectors. If women are shown to be at the forefront of leadership, innovation and communication of SET then future generations of scientists and engineers will be inspired to follow in their footsteps. ”

Phil Willis MP
for Harrogate and Knaresborough

For SET Discovery, Innovation and Entrepreneurship

Professor Dame Kay Davies CBE DBE FMedSci FRS
Dr Lee's Professor of Anatomy and
Director of the MRC Functional Genetics Unit
University of Oxford

Enquiring

“Talk to other women and gain confidence. The cliché is that men concentrate on the positives while women wonder why they can't do something.”



For SET Discovery, Innovation and Entrepreneurship

Professor Uta Frith FMedSci FBA FRS

Emeritus Professor of Cognitive Development

UCL Institute of Cognitive Neuroscience

and Aarhus University Research Foundation Professor

Innovative

“In SET you can try anything – you can change your direction mid-career. Don’t be afraid to learn and remember that you don’t have to be aggressive to get to the top.”



For Communication of SET with a Contribution to Society

Professor Dame Nancy Rothwell, FRS FMedSci
MRC Research Professor
Deputy President and Deputy Vice Chancellor
University of Manchester

Engaging

“There are plenty of women at PhD level but there is more of a gender imbalance at higher levels which is negative in terms of role models, something which we try to address.”



For Communication of SET with a Contribution to Society

Wendy Sadler

Director, Science Made Simple Ltd

School of Physics and Astronomy, Cardiff University

Inspiring

“The best thing is seeing the audience react and understand something for the first time. It’s the satisfaction of inspiring someone and hoping they’ll hold on to it and go on to do something with it.”



For Leadership and Inspiration to Others

Joanna Kennedy OBE

Director

Ove Arup and Partners

Creative

“The fascinating thing about civil engineering is that you can design and build things that improve people’s quality of life. It involves everything from clean running water to the whole environment we live in.”



For Leadership and Inspiration to Others

Professor Anne Glover FRSE FAAM
Chief Scientific Adviser for Scotland
Scottish Government

Visionary

“Society needs to know how good the UK is at science, because globally we are excellent. People also need to understand that it can be fun and tremendously exciting.”





Professor Dame Kay Davies

CBE DBE FMedSci FRS

Nominated by Professor Sir George Radda, Head of the Department of Physiology, Anatomy and Genetics, University of Oxford

Kay has made major contributions to our fundamental understanding of the function of genes in several important human diseases and her outstanding scientific qualities have served as an example for a new generation of scientists.

Throughout her career Kay has inspired and nurtured many young scientists by her enthusiasm for directing world-class research. As Head of the Department of Human Anatomy and Genetics at Oxford she brought alive and built a unique department whilst establishing the MRC Unit of Functional Genomics. Together with one of last year's finalists, Professor Frances Ashcroft, she founded (with Wellcome Trust support) the Oxford Centre for Gene Function, an interdepartmental research building and the first of its kind in Oxford.

Kay's key focus is to deliver an effective therapy for Duchene Muscular Dystrophy (DMD) – a disease she has worked on for the last 25 years. It's a muscle wasting disease affecting boys which leaves them in a wheelchair by the age of 12 and gives them a life expectancy of mid-20s. It's a disease close to Kay's heart because she has met so many families who she works with to develop treatments.

Kay is widely sought after as a lecturer, not only at major scientific meetings but also by giving prestigious 'named lectures' where she can convey the excitement of scientific discovery and her role in this, to wide ranging audiences, from school children to business figures.

Kay is an outstanding scientist who leads by example and participates in many external activities because of her standing in the world of science.

Kay's inspiration?

I always wanted to do something useful with medicine but wasn't allowed to do Biology at A Level because I had to take Latin to get into Oxbridge and they clashed. I've always been very curious and was always experimenting with things as a child. I especially liked to explore things in the garden. There was no academic influence from my family – my father was a toolmaker and my mother was a nurse – but I got plenty of general encouragement.

What is the best thing about working in SET?

The best bit is probably the social aspect. It's very much an international field to work in so it involves lots of travel and meeting people from all over the world. Also, as it's ever-changing, there's no chance to get bored.

Proudest achievement?

Discovering a molecule that could potentially cure Duchene Muscular Dystrophy (DMD). It's a muscle wasting disease that affects boys which leaves them in a wheelchair by the age of 12 and gives them a life expectancy of mid-20s. It's close to my heart because I've met so many families and we work together to develop treatments.

What would your advice be for other women thinking of starting a career in SET?

Talk to other women and gain confidence. The cliché is that men concentrate on the positives while women wonder why they can't do something.

What would your advice be to SET employers for attracting women to the sector?

Be proactive and get more role models to go out into the SET community. If people can see there's a woman at the top, they can see that it's possible.

How valuable do you think the UKRC is as a resource for women in SET?

The UK Resource Centre for Women in SET (UKRC) is helping to alter the culture of the science sector and give women the confidence to aim high and excel.



Professor Uta Frith

FMedSci FBA FRS

**Nominated by Professor Colin Blakemore,
Chief Executive, Medical Research Council**

Despite not coming from a scientific background, Uta is a highly innovative, successful and respected scientist, and her originality in developing new lines of investigation in areas previously thought not to be amenable to scientific approach has helped lead the dramatic change in knowledge and consequently attitudes towards the disorders of autism and dyslexia.

Uta is well known for her work on autism and was one of the first to recognise the importance of Asperger syndrome. When Uta began her career in the 60s, autism had hardly been heard of, and the idea that it could be studied experimentally was audacious.

Uta's work on dyslexia has also been highly influential and has shaped the now widely accepted view that this disorder is neurologically based, and does not only involve difficulties in learning to read, but has far wider implications and is a lifelong disorder. When Uta first started work in this field, educators in particular ridiculed the idea that there could be a neurological cause, though this view has now changed, particularly with the new evidence from brain imaging.

Uta is currently Aarhus University Research Foundation Professor and Emeritus Professor of Cognitive Development at the UCL Institute of Cognitive Neuroscience (ICN). Uta has played a leading strategic role in UK developmental cognitive neuroscience, while her role in setting up the ICN has helped to make UCL an exemplary and world leading centre in cognitive neuroscience.

Uta's inspiration

I didn't come from a scientific background but got into the area by being interested in psychology. Through my studies I was drawn into science – I had to carry out experiments on how the brain works and then I was completely hooked.

What is the best thing about working in SET?

The opportunity of finding out whether my ideas are true or not by testing them out.

Proudest achievement?

Changing attitudes to autism and developing my theories on what goes wrong with people's minds.

What would your advice be for other women thinking of starting a career in SET?

My advice would be that in SET you can try anything – you can change your career and get qualifications. Don't be afraid to learn and be considered. You don't have to be aggressive to get to the top.

Advice to prospective SET employers?

Follow the example of the Queen – a high-powered woman in the top job in the UK – look what women can do and what they can achieve.

How valuable do you think the UKRC is as a resource for women in SET?

I very much approve of it and the invaluable work it carries out.



Professor Dame Nancy Rothwell

FRS, FMedSci

**Nominated by Professor Colin Blakemore
Chief Executive, Medical Research Council**

Nancy's gift for finding methods for engaging the public in science has been demonstrated in many ways: from high profile lectures, to demonstration lectures with experiments to over 1,000 children to broadcasting on such programmes as the 'Material World'.

Recently, Nancy has tried to focus on inner city schools in deprived areas where the children have never seen a scientist, spearheading a University-wide initiative on public engagement in Manchester and plans to make training in this area obligatory for all students.

Nancy's support for encouraging girls and young women into science has included an initiative to help the career prospects of women academics at the University of Southampton. This involved funding a high-profile lecture series, the Campbell Lectures, intended to showcase women scientists, and highlight the need to increase the visibility of women in SET – Nancy was the first Campbell lecturer. Through her monthly column in the Times Higher Education Supplement, Nancy also encourages school children, particularly girls, into science and it is something that she is really passionate about.

Nancy now holds a MRC Research Professorship at the University of Manchester. Her Neuroimmunology group comprises over 20 researchers investigating the interactions between the brain and the immune system, and particularly the role of cytokines in neuroimmune interactions and neurodegeneration. Nancy's work has contributed to greater understanding in a variety of neurological conditions including stroke, head injury, MS and Alzheimer's disease. In June 2004 her outstanding contribution to science was recognised when she was elected as a Fellow of the Royal Society and in June 2005 was made Dame Commander of the Order of the British Empire in recognition of her services to science.

Nancy's inspiration

My father was a biology lecturer so it was very much a family influence. However, I didn't choose the subject at A Level – I chose Maths, Physics, Chemistry and Art and wasn't really sure what I wanted to do. I've never really had a plan as to what I wanted to do; I've just gone with what takes my interest at the time.

What is the best thing about working in SET?

Working with clever and creative people. My position means that I get to work with people across the whole university in all the different disciplines and there are so many creative minds and exciting ideas.

Proudest achievement?

Discovering a protein that we think causes damage to the brain after a stroke then discovering a way of blocking it.

What would your advice be for other women thinking of starting a career in SET?

Don't start out with the premise that just because you are a woman it will be difficult because there are plenty of people that will support you no matter who you are. Also, don't be put off by negativity around women in science.

What would your advice be to SET employers for attracting women to the sector?

At the University of Manchester, we try very hard to be flexible with all our staff. We also put a lot of emphasis on getting women into senior positions. There are plenty of women at PhD level but there is more of a gender imbalance at higher levels which is negative in terms of role models so we try to address that. We also set up focus groups to identify any issues and run mentoring schemes. We also have a scheme to encourage women to go for promotions, even if they wouldn't necessarily think they're eligible.

How valuable do you think the UKRC is as a resource for women in SET?

I'm signed up to the GetSETWomen database and was asked to be a judge for women in science award. My experience of the UKRC has been very positive and I see it as an invaluable resource for bringing people together and addressing problems.



Wendy Sadler

Nominated by Professor Teresa Rees, Cardiff University

Wendy's mission is to inspire future generations of scientists and engineers and to promote science and engineering as part of popular culture. She makes SET exciting, with her boundless enthusiasm, energy and humour and has created a vehicle to enthuse audiences all over the world.

After spells promoting science in Australia and for the Institute of Physics in the UK, Wendy has set out to become an inspirational role model for future generations of women in SET by creating an innovative and growing educational company, Science Made Simple, a Cardiff University spin-out company, that delivers science performances, largely in schools.

Her Cardiff-based company addresses challenging teenage audiences and to date, 125,000 young people have participated in the hands-on shows in the UK, and over 20,000 people overseas. A branch of Science Made Simple has opened in Manchester, to respond to growing demand. A show on the careers of female scientists and engineers has toured schools in Wales and will tour the UK next year.

Following the success of Science Made Simple, Wendy has now raised funds to launch a sister venture, Engineering Explained, which aims to use entertaining presentations to help break the stereotypes of engineering, both for school children and for the wider public.

Wendy also draws on research findings in the design of the shows, so her approach to science communication is evidence-based (she has conducted research with the Open University on the long term impact of informal science presentations). She has delivered training courses to hundreds of scientists and engineers to equip them with communication skills to enable them to get their research across to a wider audience.

Wendy's inspiration?

My Mum was a science teacher and Dad was a scientist so I suppose there were a lot of family influences. When I was growing up we played a lot of games that involved investigating things which really sparked my interest and curiosity.

What is the best thing about working in SET?

It's so much more than sitting in a lab. I never thought that working in science would lead me to be running my own business and give me the opportunity to do so many exciting things. It's such a sociable profession which has taken me all over the world. For me, the best thing has to be seeing the audience react and understand something for the first time.

Proudest achievement?

The fact that we've been so successful in engaging teenagers has been a great achievement as they are a notoriously difficult group to engage. To work with such an amazing team of people also feels like a great achievement as I am always so proud of them and the feedback they get from teachers.

What would your advice be for other women thinking of starting a career in SET?

I did physics purely because I enjoyed it and not for any career-related reasons. Go for what you're interested in and you'll do well.

Advice to prospective SET employers

As an employer myself I'd say that employers should attract women by promoting the variety that working in SET offers. If you create a varied job description that allows people to work flexibly, it will be much more appealing to women, as well as men.

How valuable do you think the UKRC is as a resource for women in SET?

I've done a few different things with the UKRC – I'm signed up to the role model database and was partnered up for the public bodies mentoring scheme to find out more about how to get involved in sitting on committees. I also took up their media training service which was invaluable.



Joanna Kennedy OBE

Nominated by: Dr Robert W Ditchfield, Director,
Education Affairs, The Royal Academy of Engineering

Joanna has combined her career with raising a family. Working for a company that recognises the needs of parents by offering a flexible working environment and allowed her to take career breaks and work part time in order to spend time with her sons.

Joanna is a Director of Ove Arup and Partners, one of the UK's largest firms of consulting engineers with 40 offices in 20 countries. They have a reputation across the globe for dramatic and adventurous engineering projects such as the Sydney Opera House, the Channel Tunnel and Anthony Gormley's Angel of the North. As a leader of Arup Project Management, Joanna is responsible at any one time for a range of construction projects, often worth hundreds of millions of pounds.

After gaining a first-class honours degree at Oxford University, Joanna specialised in the design of structures such as bridges. She subsequently developed her skills in the leadership and management of large multidisciplinary projects.

Throughout her career, Joanna has been active in promoting her profession, and describes her own experience of engineering as 'exciting, creative and practical'. She has held a wide range of public appointments including membership of the Engineering Council. In 1993 she was appointed a Trustee of the Science Museum by the Prime Minister and is a non-executive member of the Port of London Authority. Joanna was awarded an OBE in 1995 for 'services to consulting engineering'. She is one of a handful of women to be elected Fellow of the Royal Academy of Engineering. She had a key role in the launch of WISE (Women Into Science and Engineering) for promoting women in SET.

Joanna's inspiration?

At school I was keen on maths and physics and wanted to use my technical skills to be creative and practical. I wanted to design buildings and was determined to go into engineering despite it being rare for a woman to do so.

What is the best thing about working in SET?

The fantastic variety of opportunities. My job isn't just office based – I get to go out onto sites and take a hands on approach. It's also all about improving people's lives – our company works with organisations such as the Register of Engineers Disaster Relief and Engineering Without Borders who we sponsor to work in war-torn and under-developed countries, which is fantastically satisfying.

Proudest achievement?

There have been a number of highlights one of which was seeing my design of the M25 Runnymede bridge come to life, especially since it was so rare to see a woman on site in the 1970's when I did it.

Probably my greatest achievement though is being able to have a fantastic career and bring up and support my family. I'm pleased to be able to demonstrate that you can get to the top and have a family life.

What would your advice be for other women thinking of starting a career in SET?

You need to get specific qualifications and nowadays there's a huge variety of training you can do. My advice to other women is to go for it – the opportunities are enormous and there's never a dull moment in engineering.

Advice to prospective SET employers?

Arup is great at attracting and retaining women because we have good policies for flexible working and encourage women to progress. More importantly though is getting more good science teachers to attract the brightest and most able students into careers like engineering. Companies also need to make sure they have attractive propositions for graduates to prevent them going into other industries.

How valuable do you think the UKRC is as a resource for women in SET?

I actually gave some input into the original report which the UKRC sprung out of, so I'm certainly supportive of it. It's great that there's one place where women from across science, engineering and technology can go for co-ordinated information, advice and support.



Professor Anne Glover

FRSE FAAM

Nominated by Hazel Gibson, Office of the Chief Scientific Adviser, Scottish Government

Anne is the first ever Chief Scientific Adviser for Scotland, and the only female Chief Scientific Adviser (CSA) in the UK civil service at Departmental level.

Anne was appointed as CSA for the Scottish Government in August 2006 following an open competition that attracted intense interest from the Scottish research community

A dedicated scientist, she is evangelical in her desire to communicate the importance of science and research and the benefits they can bring. This stems from her firmly held belief that science is exciting and enjoyable and should be part of mainstream culture.

Anne's own area of research is in molecular biology and she holds a Personal Chair in molecular and cell biology at the School of Medical Sciences at the University of Aberdeen and continues to pursue her research work when she is not working in her capacity as CSA.

Anne has successfully championed the science agenda with top management and key influencers in academia, business and Government, encouraging them to acknowledge the benefits of making science less remote and more relevant to people's lives. She has shown considerable courage in the domain where women are often heavily outnumbered by men and where both scientists and those in positions of power may not always see the immediate benefits of dialogue. She has helped to overturn some of the commonly held negative perceptions of scientists as "male, white-coated boffins" working away in laboratories with little interaction with the outside world and has shown that it is possible for women to reach the highest strata of leadership in our institutions and to make an impact.

Anne's inspiration?

I have always been curious about things. I particularly enjoyed school science and liked carrying out experiments. I loved looking at the world and chemistry was an inspiration coupled with the fact that I also really liked biology. I had supportive parents who encouraged me to do whatever I wanted to do.

What is the best thing about working in SET?

Government – provide better access to quality evidence to keep government informed. We need government to invest in the future of SET, people need to have access to it and to invest in the people that work in it.

Society – society needs to know how good the UK is at science. Globally we are excellent. People enjoy it and need to understand that there's a fun aspect to it and it's tremendously exciting. Science needs to be more accessible.

Proudest achievement?

Developing technology that is now used commercially.

What would your advice be for other women thinking of starting a career in SET?

Women have to be aware of what's happening around them and get involved and take advantage of opportunities. Go ahead and do things, science is rewarding and can be an attractive industry to work in for women but also be prepared to work in an environment that does include a lot of men.

Advice to prospective SET employers?

Be flexible – for both men and women, i.e. childcare provisions and be supportive of families. Women must be encouraged to apply to join committees, as they bring a different perspective to the workplace.

How valuable do you think the UKRC is as a resource for women in SET?

It's a very good resource and I find the website very useful.

It's a shame that companies/institutions don't make more of an effort to highlight the UKRC and its resources to their female employees, especially when they start work. Women need to know what's out there for them. Mentoring is also very important – I've had amazing mentors throughout my career and schemes such as the ones run by the UKRC need to be highlighted to women.

The exhibition on tour

To date, the Women of Outstanding Achievement Photographic Exhibition in SET has been on display at the following locations:

The British Library · The Royal Society · Yorkshire Craft Centre, Bradford
Institute of Electrical Engineers · Cheltenham Science Festival · Scottish Resource Centre for Women in SET · IBM Headquarters, South Bank, London
2nd UK-Korea Women in Science Forum Dinner · Wales Resource Centre for Women in SET, as part of National Science, Engineering and Technology Week · The Cheltenham Ladies' College · Aston University
University of Reading · Maastricht W.I.S.E.R. Conference · the BA Festival the Milton Keynes Science Festival.

Future vision

It has always been the UKRC's aim that the Women of Outstanding Achievement portraits find a permanent home with the finalist's employer, business, university or professional institute. This way we hope to build a legacy, provide inspiration for future generations and celebrate the achievements of women in these fields.

The UK Resource Centre for Women in SET would like to thank those organisations who have kindly offered to provide a permanent home for our past finalists:

- Rebecca George OBE, Deloitte
- Dr Maggie Aderin, Imperial College London
- Professor Jocelyn Bell Burnell CBE and Professor Averil MacDonald, Institute of Physics
- Professor Wendy Hall CBE, Professor Julia King CBR FEng and Joanna Kennedy OBE, Royal Academy of Engineering
- Professor Ijeoma Uchegbu, Royal Pharmaceutical Society of Great Britain
- Professor Frances Ashcroft FRS and Professor Carol Robinson, The Royal Society
- Professor Julia Goodfellow CBE and Professor Kathy Sykes, University of Bristol
- Dr Sima Adhya, University College London

The UKRC would be interested to hear from any organisation willing to offer a permanent home for this and future collections.