



# 2012 WISE Awards

in association with Amey

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***“Be someone  
who makes a  
difference.”***



**WISE**

promoting female talent in  
science, engineering and technology  
from classroom to boardroom

Presented by Her Royal Highness,  
The Princess Royal, patron of WISE

Thursday 29 November 2012

The Institution of Engineering and Technology

**Thank you to the 2012 WISE Awards Judging Panel**

**Chris Brockley-Blatt**

Project Manager and Mechanical/Thermal Engineer, Institution of Mechanical Engineers

**Mike Short**

Former President of the IET

**Angela Reich**

Director of Education and Engineering Development, Thales

**Cindy Penney**

Human Resources Manager, Alcoa

**Rosie Sherry**

Human Resources Manager, STFC

**Steve Withers**

Managing Director, Amey

**Ruth Merrett**

Corporate Affairs Consultant, Intel Corporation

**Aradhna Tayal**

BBC Academy

**Helen Wollaston**

Director, WISE

**Rukhsana R Din**

Campaigns Manager, WISE

## Foreword

Welcome to the WISE Awards 2012 – a celebration of the considerable female talent that we, the UK, have in science, engineering, technology and the built environment.

Our eight winners all made a significant difference to the success and contribution of technology, science, engineering and the built environment - sectors that are critical to the UK's economic growth potential. We applaud their achievements.

Today, we're also recognising the importance of inspiring the next generation of girls who will help to ensure this country is a world leader in innovation and enterprise with three awards dedicated to engaging the female talent we need.

We will be recognising the importance of leadership commitment by making an award to a Chief Executive too.

I would like to congratulate the winners and all those shortlisted; to thank our sponsors and to everyone who supports the WISE campaign as role models, champions and corporate partners. If we harness the energy and passion of everyone in this room today, we can and will make significant progress towards a vision that will benefit all stakeholders in the UK – a tipping point of 30% of the UK STEM workforce being female.

**Trudy Norris-Grey**

Chair of WISE

## Guest Speakers

### **Christina Jackson** **Technical Director, Amey**

Christina is a chartered civil engineer and geotechnical specialist with more than 30 years' experience of directing and delivering infrastructure and regeneration projects. She is a Fellow of the Institution of Civil Engineers (ICE), a former trustee and member of the ICE Council and former chair of both the ICE West Midlands and the Midlands Geotechnical Society. Christina leads the company's Highways Geotechnical team at its International Design Hub in Birmingham. She was the first woman in the Birmingham office to return to work after maternity leave and was promoted to Associate Director whilst working part time, acting as a role model to others with family commitments.

### **Genevieve Bell** **Intel Fellow Intel Labs Director,** **Interaction and Experience Research**

Dr Genevieve Bell is an Australian-born anthropologist and researcher. As director of User Interaction and Experience in Intel Labs, Dr Bell leads a research team of social scientists, interaction designers, human factors engineers and computer scientists. She has fundamentally altered the way Intel envisions and plans its future products so that they are centered on people's needs rather than simply silicon capabilities. She is a regular public speaker and panelist at technology conferences worldwide, sharing myriad insights gained from her extensive international field work and research. In 2010, Bell was named one of Fast Company's inaugural '100 Most Creative People in Business.'

## 2012 Wise Awards Winners

- CEO Charter Champion** **Page 6-7**  
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**Winner:** Maggie Philbin, TeenTech and BBC Reporter
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Sponsored by Microsoft  
**Winner:** Belinda Swain, Rolls-Royce

## 2012 WISE Awards

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### CEO Charter Champion

Sponsored by EADS

Acknowledging the importance of leadership in transforming organisational culture.

### The shortlist

**Card Geotechnics Ltd**  
**The University of Sheffield**



#### **Nick Langdon**

Chairman and Director of Card Geotechnics Ltd

Nick has nearly 35 years' experience in geotechnical engineering. Card Geotechnics Ltd is a small to medium business with just 22 technical staff, nine of whom are women, close to a 50% female workforce which almost unheard of in an engineering consultancy.

## **My proudest moment**

My proudest moment was receiving the SET Fair Standard Achieving Award\* in 2010 on behalf of CGL. We were the first SME in the construction sector to receive the award. Not much over 100 years ago one of my female relatives, a widow, wasn't allowed to run her family's successful construction company while her son was under 21 and a little later her granddaughter couldn't graduate with her degree. In each case, because they were women.

## **My advice**

CEOs of other small to medium sized companies should provide role models for women to aspire to, make clear that they are people first and then engineers, treat them equally and do not make gender a 'special' issue.

If I could change one thing, it would be a change within the education system early enough. Educate the teachers, starting in junior schools, of the idea that STEM provides rewarding and highly fulfilling professional careers for women outside of the traditional caring professions associated with medicine and teaching.

***“Do not  
make gender a  
'special' issue.”***

\* SET Fair Standard is a gender equality kitemark awarded by the UKRC.

# 2012 WISE Awards

## The WISE Advisor Award

Sponsored by Arup

Acknowledging the key role played by teachers, advisors and mentors in motivating girls and young women to pursue STEM related subjects.

### The shortlist

**Sonya Chan - Commended**

Regional Director, Robogals

**Helen Heggie**

STEM Director, STEMFirst Ltd

**Pam Popay**

Education Engagement & Strategy, BT

**Ismeni Vasileiou**

Lecturer in Information Systems,  
Plymouth University

**Pooran Wynczyk**

Professor and Director, Small Enterprise  
Research Unit, Newcastle University  
Business School



**Helen Heggie**

Director of STEMFirst Ltd

Helen studied engineering at Cambridge University and got her first job with the Ford Motor Company. After having a family, she changed her career path to become a qualified teacher and then set up her own company, STEMFirst, which works with schools in deprived areas to promote the STEM message.

**My proudest moment**

My proudest moments are when young people express how their awareness has changed - at one recent event a young girl proclaimed 'engineering is pretty cool isn't it?!' - that sums up what we are about and why I love my job.

## My advice

There is so much more information, opportunities and role models out there for young women these days, enabling them to find out in detail about the world of STEM and the career opportunities science and engineering can bring. However, traditional stereotypes and misconceptions still exist, information does not always get through and there is a lot more work to do in joining the dots for schools, parents, teachers and young people regarding the whole STEM agenda on local, regional and national levels. We need to highlight the local labour market needs of each region so that we can develop skills that feed into these industries.

## Combining work and family

We also need to support women during those early years of having children, and make it easier to return to work or undertake flexible working hours without jeopardising their career.

My experience is that though a company will offer their employees part-time, job share or flexible working, this is only to women that are existing employees. It is very difficult for professional, experienced engineers to have career mobility at the time they want to work part time.

Being married to a senior engineering manager I found that when his job moved, I had to leave a senior part-time position, and could not find another within STEM in a new location because part-time STEM positions are not advertised externally for blue chip companies. This does affect career progression significantly.

Regarding having a family, I do think things have changed for women in the sense that we can take control of our careers by undertaking more entrepreneurial activities these days. I am a prime example of that, by setting up my own company, holding the CREST and STEMNET contracts for Lancashire, I have used my STEM skills to great affect and now have a very successful company with an excellent reputation, but can organise my day around all the other elements of my life.

*“Engineering is pretty cool, isn’t it?”*

# 2012 WISE Awards

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## WISE Diversity Award

Sponsored by Intel Corporation

Celebrating the achievement of organisations, in building diversity and engaging with young people.

### The shortlist

**Arup - Commended**

**Career player**

**EDT**

**Generating Genius**

**Ignite!**



#### **Gordon Mizner**

Chief Executive of EDT

EDT is an educational charity, which connects industry and universities with young people aged 11-21 years, to increase diversity of those pursuing technical subjects.

#### **My proudest moment**

Every time I attend one of the EDT events which display and celebrate the hard work that the young people have produced from their projects or work experience with industry. The standard and commitment is awe inspiring, and I am confident that our future is in safe hands.



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### **My advice**

Promoting STEM courses and careers to girls requires persistence and a willingness to try new avenues. Girls seem to be motivated by the wish to “make a better world”. Focus on changing stereotypes amongst teachers and parents, the two main influencer groups.

Engagement of young people in projects with mentors who are currently doing STEM jobs dispels many of the myths about scientists and engineers. We find that once young people have been given the opportunity to see how a real world project connects with their studies, their attitude towards the possibility of a STEM career is transformed. We are delighted that so many girls take part in EDT programmes, particularly at the younger stage of secondary school. This means that we have the opportunity to inspire them about STEM subjects before they start making the GCSE choices which will shape their future career prospects.

*“Girls seem to be motivated by the wish to make a better world.”*

# 2012 WISE Awards

## WISE Excellence Award

Sponsored by Thales

Recognising the achievement of women in the early stages of their STEM career. The winner will receive a cheque for £1,000.

### The shortlist

#### **Emma Dalzell**

Test Systems Design Engineer,  
Thales Precision Effects

#### **Jia-Yan Gu**

Researcher, Semantic Technology, BT

#### **Vidhyalakshmi Karthikeyan**

Senior Researcher, BT

#### **Karen Masters**

Research Fellow, Institute of Cosmology  
and Gravitation, University of Portsmouth

#### **Huda El Mubarek**

Royal Academy of Engineering and  
Engineering and Physical Sciences  
Research Council Fellow, University  
of Manchester



#### **Jia-Yan Gu**

Researcher, Semantic Technology, BT

Jia-Yan arrived in the UK from China speaking no English at all. Discouraged by her school from studying A-Level Biology, she taught herself and went on to achieve six Grade As.

#### **My proudest moment**

Giving a live demonstration of a novel cloud-based supply chain software system to ten of China's media companies at the Launch of BT's Advanced ICT Lab at Tsinghua University in Beijing, having been selected to lead and manage a growing team to run the first projects that built this platform, hosted at the new Research & Technology facility, during an International Assignment to support BT Global Services and BT's Strategic University Programme.

**My advice to girls**

The advice I would give to any girl or young woman considering a STEM career is to spend time to discover the true breadth of opportunities that this can lead to. Applications of technology have added so much value across every industry from aircraft control systems, fashion designs embedding textile electronics, software-based surgery to social networking platforms. Finding ways to gain experience will help girls to understand what the real opportunities are and where their passions lie. Expect that technology will continue to advance so choosing STEM subjects to study is the first step to gaining those essential skills so that you can make an impact and be part of that evolution.

**My advice to the UK**

Increase investment across all schools, from the early stages of education, so that they are able to dedicate school time to providing girls with hands-on understanding of how technology they use and see in the world around them works 'under-the-bonnet'.

It is especially with a 'behind-the-scenes' look at what the roles of different people in a typically multi-disciplinary team are, that will make that happen. It is invaluable for girls to experience working in diverse teams to simply build something from a young age.

**Partnerships**

Improving partnerships between schools partnerships and industry for girls to have the opportunity to be inspired by role models across different sectors and ask questions that will help them to feel confident about choosing their future to be in science, engineering and technology.

***“Make an impact and be part of that evolution.”***

# Women of Outstanding Achievement Awards

## Innovation and Entrepreneurship

Sponsored by the Institution of Mechanical Engineers

Celebrating women who are creating significant change, making discoveries, innovating processes, establishing new ventures and helping the UK excel in science, engineering and technology.

### The shortlist

#### **Dr Liz Towns-Andrews**

Director of Research and Enterprise,  
University of Huddersfield

#### **Professor Naomi Chayen - Commended**

Professor of Biomedical Sciences, Chief  
Scientific Officer, Imperial College London

#### **Dr Rowan Gardner**

Chairman, Biolauncher Ltd

#### **Fiona Marshall**

Chief Scientific Officer, Heptares  
Therapeutics Ltd

#### **Shelaine Siepel**

Area Development Manager Rural  
West Sussex, West Sussex Sustainable  
Business Partnership



**Winner**  
Fiona Marshall

#### **Fiona Marshall**

Chief Scientific Officer,  
Heptares Therapeutics Ltd

Fiona set up her own drug discovery company with Malcolm Weir in 2006 to develop new medicines for diseases of the brain and metabolism. She leads a team of 60 scientists, has invented 7 patents, has authored over 50 scientific papers and Heptares has become one of the UK's brightest start-ups, raising over \$40m in venture capital.

#### **My proudest moment**

Seeing Heptares grow from just two of us in a portacabin to a world leading biotech company. It has been wonderful to give so many talented young scientists a rewarding job. We have made some great discoveries which I get to talk about around the world and most importantly we hope to have discovered some breakthrough medicines for serious neurological diseases.

### **My advice to girls**

Do something important with your life. A career in science gives you the chance to discover something new that no-one else knows about. Be someone who makes a difference and changes how people live for the better. You might discover a new medicine, learn to predict earthquakes, design the perfect robotic limb or find a new planet or subatomic particle.

### **My advice to the UK**

We need to start in schools and get more girls to study physical sciences and maths. How our world works is truly amazing and we need to make science lessons exciting, interesting and relevant to kids today.

### **Start with the fun bits**

Learning how your iPod actually works is more interesting than learning equations about thermodynamics. Start with the fun bits and learn the serious stuff later - not the other way round.

*“Do something  
important with  
your life.”*

# Women of Outstanding Achievement Awards

## Leadership and Inspiration

Sponsored by the BBC

Celebrating achievements of women who are leading STEM businesses, research teams, academic organisations or professional bodies.

### The shortlist

**Angela Brady**

President, The Royal Institute of British Architects

**Naomi Climer**

Vice President, Sony

**Kathy Ellis**

General Manager, Nuclear Propulsion Systems, Rolls-Royce

**Professor Alicia El Haj**

Chair of Cell engineering, Theme lead in bio-engineering and Therapeutics, Institute of Science and Technology in Medicine, University of Keele

**Christina Jackson**

Technical Director, Amey



**Angela Brady**

President of Royal Institute of British Architects

Angela presents the Home Show on Channel 4 and Building the Dream on ITV. Director of Brady Mallalieu architects, which is a private practice specialising in contemporary sustainable design in housing, healthcare and education, she is very passionate about how good design can transform our lives.

**My proudest moment**

Being elected as President of RIBA to represent 44,000 architects. As the second woman it is good to be a role model for women and also being a non British architect to represent the diversity of the UK. I have been a campaigner all of my life and stand up for what I believe in, on women's issues of under-representation in our profession and for pushing the importance of good sustainable design and better access to projects for the SME sector.

### **My advice to girls**

If you care about our built environment and about how we should all be living and working in buildings that suit our planet and climate, have a flair for design and like talking to people to shape their environment, then architecture can be a brilliant career - particularly for women.

### **My advice to the UK**

Make one science subject compulsory in school to A level, and give it extra points in exams. It needs to be an inspirational subject which welcomes women.

The best way to achieve critical mass in construction is to have a 'mindset change' in the way men look at sharing childcare. In low paid professions childcare still costs too much and women do the bulk of childcare, so Government could assist better and have it tax credited.

### **Women bring added value**

My mantra has always been that "women and men together make better architecture." This is true because it brings in both viewpoints when designing homes, schools hospitals or shopping centres - where both brains are needed to give balance and come up with well thought out solutions.

I think the reason we have so few decent shopping centres or so many similar 'covered ones', is that not enough women are on the design teams. Let's face it, how many men enjoy the shopping experience?

Women do bring added value, particularly in community liaison or at client meetings where "listening" is so important. Women have such great communications skills and less ego than men, as we generally prefer to work in teams and share ideas.

***“Women and men together make better architecture.”***

# Women of Outstanding Achievement Awards

## Communication and Outreach

Sponsored by Science and Technology Facilities Council

Paying tribute to women who are communicating about science, engineering and technology within local communities.

### The shortlist

**Memona Mohammad**

Higher Apprentice, BT

**Maggie Philbin**

Co-Founder and CEO TeenTech /  
Reporter for BBC

**Dr Jenna Stevens-Smith**

Public Engagement & Events Executive,  
Society of Biology

**Mel Williams**

Contract Services Manager, MITIE Technical  
Facilities Management Ltd

**Lorelly Wilson - Commended**

Director, Chemistry with Cabbage



**Maggie Philbin**

Co-founder of TeenTech and  
BBC Reporter

Before setting up TeenTech, Maggie worked on radio and TV for 30 years on science programmes including Tomorrow's World, where she demonstrated gadgets we now take for granted, like the first mobile phone and car navigation system.

**My proudest moment**

It's so gratifying to witness moments where young people are enthused by the possibilities of what they themselves can do. They suddenly understand how STEM skills give them real power. I watched a teenager stare silently into the gubbins of an electric guitar for so long I asked if he was OK. He turned to me and said, "I'm going to make one of these". After an event in South Yorkshire, one group of 12 year old girls decided to set up their own app company.

Those are the moments of triumph, which go beyond being excited or thrilled by the tech to profoundly understanding they themselves can create it.

### **My advice**

It's important to capture their imagination with hands on activities and challenges. Our feedback shows that this approach is especially appreciated by girls. Female students gravitate towards medicine and veterinary science but showing them the part physics and engineering play in those areas broadens their thinking.

Blatchford's, a precision engineering company who make artificial limbs, brought their engineers and an athlete to our events, so students could fit his leg and with a specially constructed device, experience for themselves what it is like to use an artificial limb. This had a powerful resonance during the Olympic Games.

And never underestimate the resonance of role models - one teenage girl remarked "I never realised women would want to do jobs like this", after she'd done a half hour session using the very latest broadcast equipment to edit a news piece with a female engineer from Sony.

It's not only teenage girls who can be put off industries that seem to be male dominated. Having visible role models at all levels of an organisation and making sure effective mentoring programs are there to support, encourage and retain talent makes a difference. And being sharply aware that women often do not put themselves forward for roles that are well within their capabilities.

***“Never underestimate the resonance of role models.”***

# Women of Outstanding Achievement Awards

## Lifetime Achievement

Sponsored by Microsoft

Paying tribute to women's achievements over their career lifetime, who inspire future generations of women to pursue a career in science, engineering, or technology.

### The shortlist

**Professor Jean Manson**

Head of Neurobiology Division,  
The Roslin Institute

**Dr Sally Montgomery - Commended**

former Chief Executive, W5 at Odyssey

**Professor Nancy Nichols**

Professor for Applied Mathematics,  
University of Reading

**Belinda Swain**

Chief Airworthiness Engineer, Rolls-Royce

**Elizabeth Watson**

Head of Product Safety Assurance,  
Rolls-Royce



**Belinda Swain**

Chief Airworthiness Engineer,  
Rolls-Royce

Belinda studied Physics at Oxford and joined Rolls-Royce in 1985. She has three children and has proved an inspiration for women balancing career and family, as her interest in civil aviation safety led to her current role.

**My proudest moment**

My proudest moment was getting the job as Rolls-Royce Chief Engineer for the EJ200 turbofan engine, the engine that powers the Eurofighter Typhoon. It was a job I'd coveted from early on in my career and having responsibility for such a high-tech product proved the company's confidence in my abilities.

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## **My advice to girls**

Always do the best job you can and just go for it! Having pride in your work is important for your personal job satisfaction and when your achievements are appreciated by others it's even more worthwhile.

## **My advice to the UK**

Change the way society treats girls and boys differently and assumes they will have different interests from the moment they are born - a very easy thing to say, but difficult to do.

*“Having pride  
in your work is  
important...”*



## **Amey is extremely proud to be the headline sponsor of the 2012 WISE Awards**

Amey delivers a wide range of public services throughout the UK including repairing road and rail networks, inspecting the nation's railways and maintaining key public buildings such as schools and airports. The company employs more than 11,000 people and has recently been awarded Investors in People Gold accreditation for its proactive work developing, supporting and motivating its workforce.

We are also committed to supporting the communities we work in, with a Corporate Responsibility programme that encourages employees to participate in local community volunteering days. Many of our talented staff also take part in the company's STEMnet programme. In fact our aim is for 1% of our 11,000 workforce to regularly visit schools and attend events such as careers fairs to talk about and share their enthusiasm for STEM related careers with youngsters.

Alongside the STEMnet programme, Amey has been busy sponsoring, supporting and hosting STEM activities up and down the country to encourage school children, especially girls to choose engineering as their career of choice.

Our commitment to this is not only evident through our apprentice and graduate programmes but also through our STEM engagement programme.

At Amey we believe it is vital to nurture and develop the workforce of tomorrow.

Mel Ewell, CEO, Amey

***At Amey we believe it is vital to nurture and develop the workforce of tomorrow.***

Thank you to the 2012 WISE Awards sponsors



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To discuss sponsorship opportunities for the 2013 WISE awards, please contact Ingrid Ovenstone, Business Development Manager at WISE.

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# 2012 WISE Awards

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## About WISE

WISE helps organisations to inspire women and girls to pursue science, technology, engineering and mathematics (STEM) as pathways to exciting and fulfilling careers.

By working with and supporting women, educational institutions, business and industry we aim to increase the gender balance in the UK's STEM workforce, pushing the presence of female employees from 19% as it stands now, to 30% by 2020.

Our services are designed to build and sustain the pipeline of female talent in STEM from classroom to boardroom, boosting the talent pool to drive economic growth.

The WISE campaign, which has nearly 30 years experience of inspiring girls to pursue STEM subjects, now incorporates the UKRC, which had a contract from the Government from 2004-12 to increase opportunities for women in science, engineering and technology through support services to business, education and women returners. WISE is now an independent Community Interest Company.

Find out more: [www.wisecampaign.org.uk/get-involved](http://www.wisecampaign.org.uk/get-involved)



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