



The 2014 ASDC National Conference



UK Science Centres

Effectively engaging under- represented groups

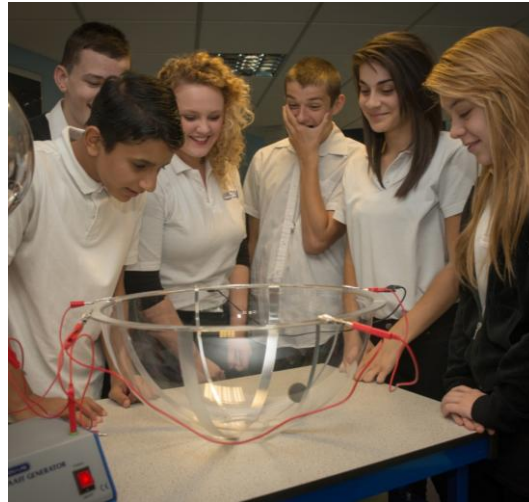
As a nation and as a global society we have some major challenges ahead, particularly those relating to climate and energy.



To solve these challenges we will need the scientific talents and entrepreneurial minds across our whole population **not just a subset**

Likewise, we want people in every part of UK society to feel confident discussing the science-related matters that will affect all of our futures.

However....



Not all parts of society are equally engaged or represented in UK science and engineering (at school or in STEM careers)

- There is under-representation of people from a range of cultural backgrounds, as well as those living in areas high on the indices of multiple deprivation.
- Although women make up 46% of the UK workforce, only 15.5% of the STEM workforce is female. In engineering only 8% are women.
- Girls do well at Physics GCSE, but only 21% of Physics A Levels are taken by girls

Why does this matter?



- 1. Skilled STEM workforce for UK future economic success and growth**
- 2. Societal Equity – fair and open access to science, and social mobility**

“It’s not for me”

One of the key messages for young people and their families is that qualifications in science really keep your options open...

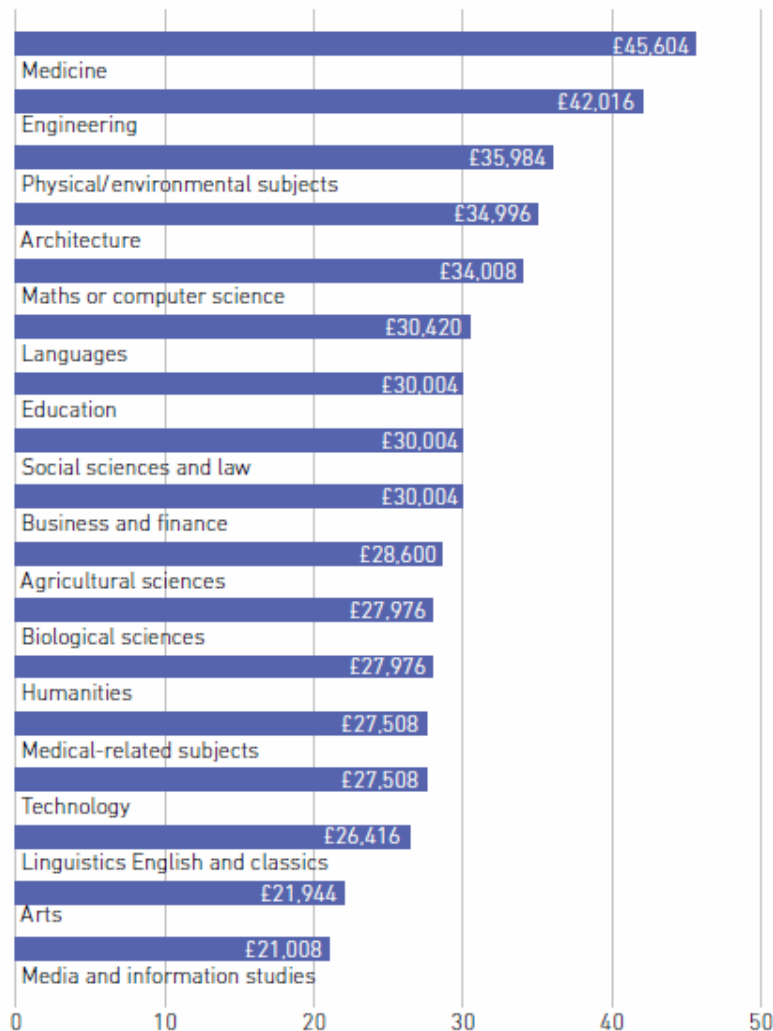


High employability for STEM-skilled young people

- 39% of businesses who were seeking employees with STEM skills had difficulty recruiting those staff (CBI, 2014).
- 70,000 new jobs coming up in the space sector for technicians, researchers and engineers.
- 45,000 more people are needed to meet growth in the offshore wind sector by 2021.



STEM graduates earn more



Source: Labour force survey 2013

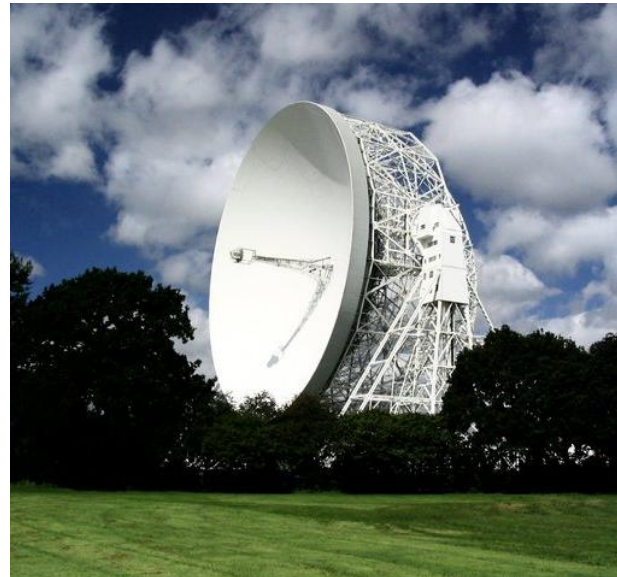
Embarking on a STEM career is an exceptionally good way of achieving social mobility.

Women and men with a first degree in a STEM subject earn 4.47% higher salaries than those with a first degree in other subjects.



Average annual Pay for Graduates by Subject

Privileged position to make large national changes



The Association for Science and Discovery Centres Network

20 million
participants
every year

385,000 each
week

Over 50%
are girls and
women

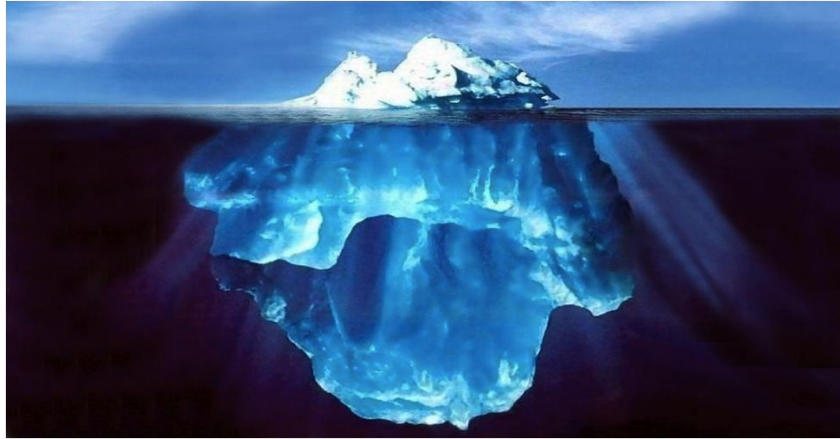


www.sciencecentres.org.uk

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Reaching diverse audiences everyday



- Exhibitions are just the tip of the iceberg
- Huge number of learning and family programmes.
- Science Centres are already working with:
 - City drop-in centres for teenagers, hospitals and community groups
 - With young offenders and prisoners and their families
 - Targeted initiatives and bursary schemes for school children and their families from areas high on the indices of deprivation

Reaching Girls with the physical sciences everyday

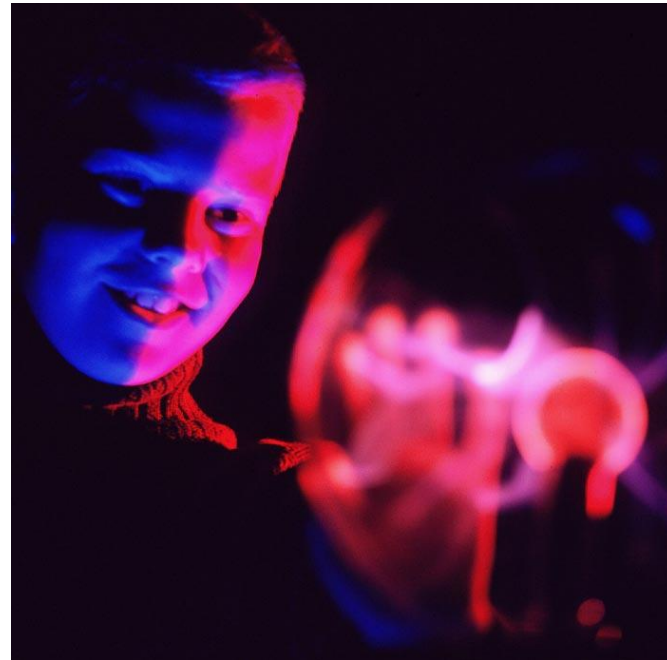


- More than half the 20 million people participating in science activities at science centres and museums are female
 - Engaging over 10 million women and girls with science each year
 - Engaging over 1 million schoolgirls every year
- More than half the science staff who engage with the public are female

Science Engagement Professionals are on the ground, embedded in their local communities and already involving people with science every day

Working in partnership with:

- Schools and teachers
- Families
- Community groups
- Universities and Scientists
- Local industry and engineers
- Science Festivals
- Science cafés
- Artists, actors, gamers
- National and local press and TV
- Social media with thousands of followers
- Other networks



2 million school children in curriculum-linked workshops and visits





80% of a child's time is spent out of school

Science learning happens in all contexts and environments, not only in school

Discovering that learning and exploring are enjoyable is vital. After all, these are things you must choose to do ...



**UK Science and Discovery Centres:
Effectively engaging
under-represented groups**

May 7 2014



UK Association for
Science and
Discovery Centres



UK Association for
Science and
Discovery Centres

The Golden Ticket Scheme and Community Outreach, Dundee

Dundee Science Centre



Key Facts

- A Golden Ticket Scheme to build family science capital in partnership with schools in disadvantaged areas.
- Pupils from these schools can ask to use the Golden Ticket and bring their families for free to Dundee Science Centre.

Community open weekends in Bristol

At-Bristol



Key Facts

- Community open weekend, offering free entry to families from areas of Bristol in the top 10% nationally for deprivation.
- School children are given invites, to bring their families to the community weekend + community partners
- 2000 people from under-served communities come over one weekend once the entry fee barrier was removed (4000 on the first weekend)

Science outreach to communities across Scotland

r
Glasgow Science Centre



Key Facts

The Scottish Government partnered with four Scottish science centres to use their strong local connections and science expertise to engage adults across Scotland with science.

Focus on adults who do not currently engage with science and live in areas of multiple deprivation and/or rural isolation across Scotland.

2,000 people engaged in areas identified by the Scottish Index of Multiple Deprivations as in the top 25%. 80% of participants were in the top 15%.

The National Space Academy inspiring girls

Inspiring girls with physics at an inner-city school in Leicester
National Space Centre



Key Facts

This case study focuses on a class of 30 physics GCSE students from a Community College in Leicester....an all girls' inner-city school with no track record of students progressing to physics A level.

The National Space Academy provided an intensive programme for the students prior to their GCSE exams.

Following this intervention, 100% of the girls achieved their physics GCSE (grades A* to C) and 63% achieved a grade A/A*.

For the first time for the school, 11 girls then choose to progress to A level physics.

Recommendations to increase STEM engagement with under-represented groups



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Firstly find out who doesn't
visit you, then ...

- Work in Partnerships
- Develop relationships
- Trust
- Co-development
- Discuss and remove barriers



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Welcome to the reports page

This page contains reports and documents useful to the science and discovery centre sector, as well as to the wider public engagement community.



[The ASDC response to BIS consultation on proposals for long term capital investment in Science and Research](#)



[UK Science Centres: Effectively Engaging Under-represented Groups](#)



[Science Centres Enhance Learning, Local Prosperity and Community Development, A report by Professor Per-Edvin Persson](#)



[CBI: Engineering our Future, Stepping up the urgency on STEM](#)



[The Council for Science and Technology's letter to Michael Gove regarding STEM education](#)



[TISME publications, including the 'What influence participation in science and mathematics?' report.](#)



**“Science and maths makes you
more prepared for life and for
business”**

Dr Melanie Windridge, physicist and science communicator

Your Life is a three-year campaign to ensure the UK has the maths and science skills it needs to succeed in a competitive global economy. The campaign will do this by inspiring young people to study maths and physics as a gateway to exciting and wide-ranging careers; and by helping employers recruit and retain talent, particularly women.

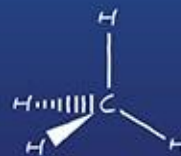




EXPLORE

YOUR UNIVERSE

ATOMS TO ASTROPHYSICS

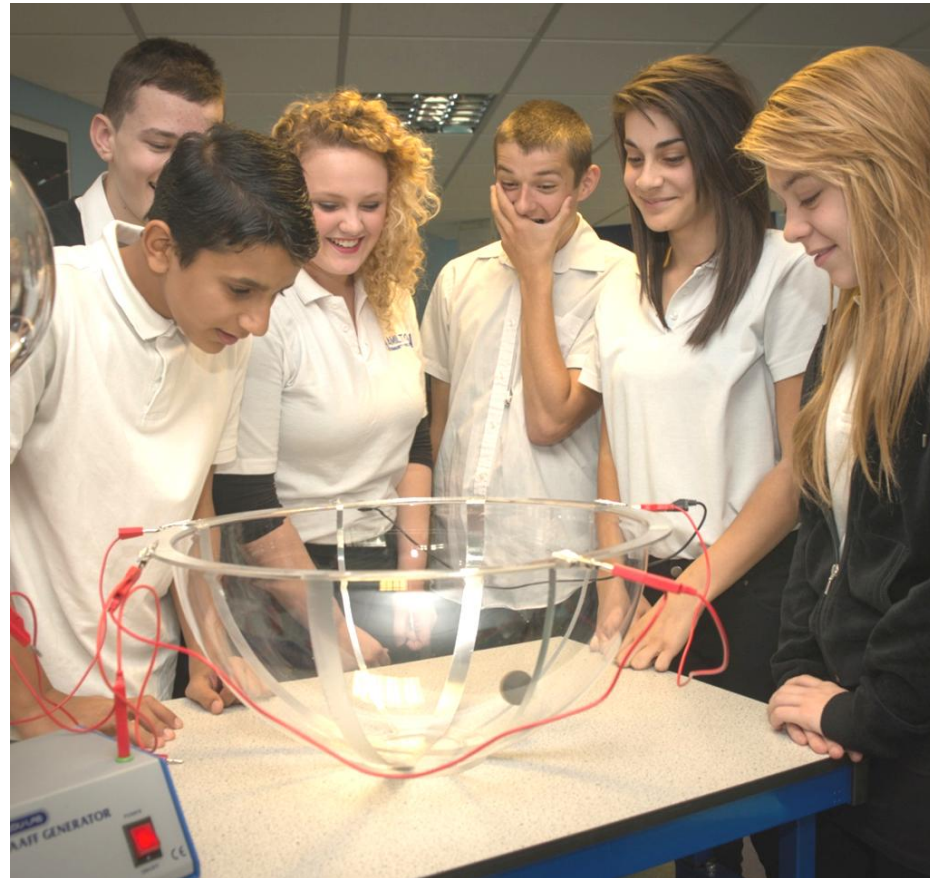


The Project vision

To inspire a new sense of excitement amongst young people around the physical sciences by sharing the amazing stories and technologies of STFC

By training, equipping and supporting 10 science and discovery centres and 50 scientists to run outstanding activities in this area

The nations largest academic evaluation of informal science learning at science centres



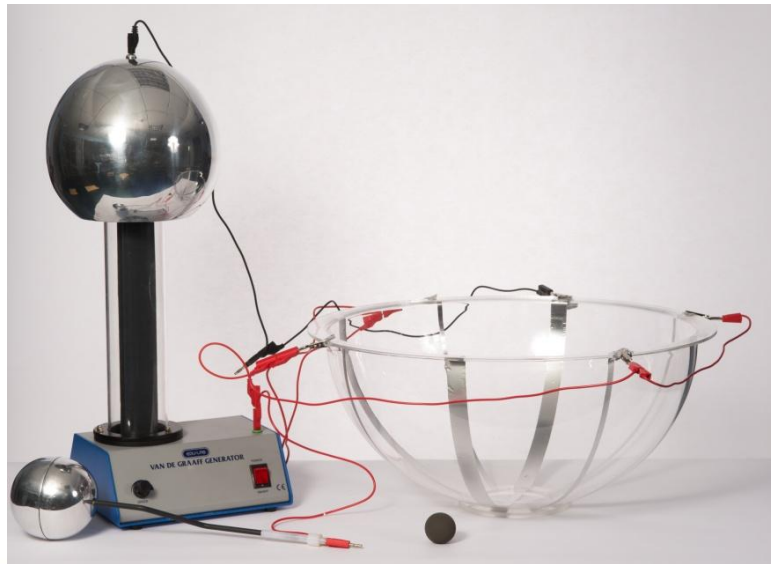
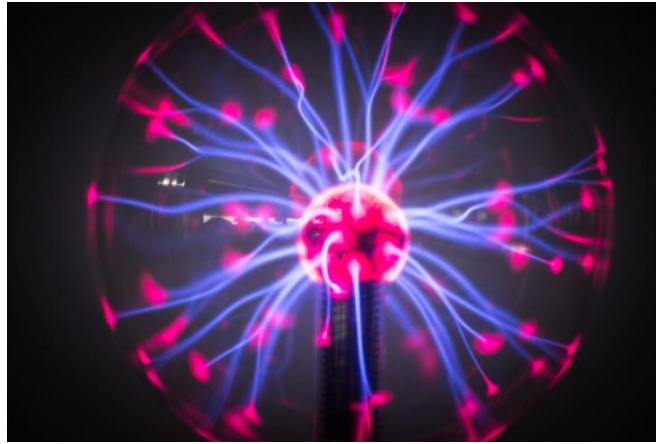
Caption style



Explore Your Universe

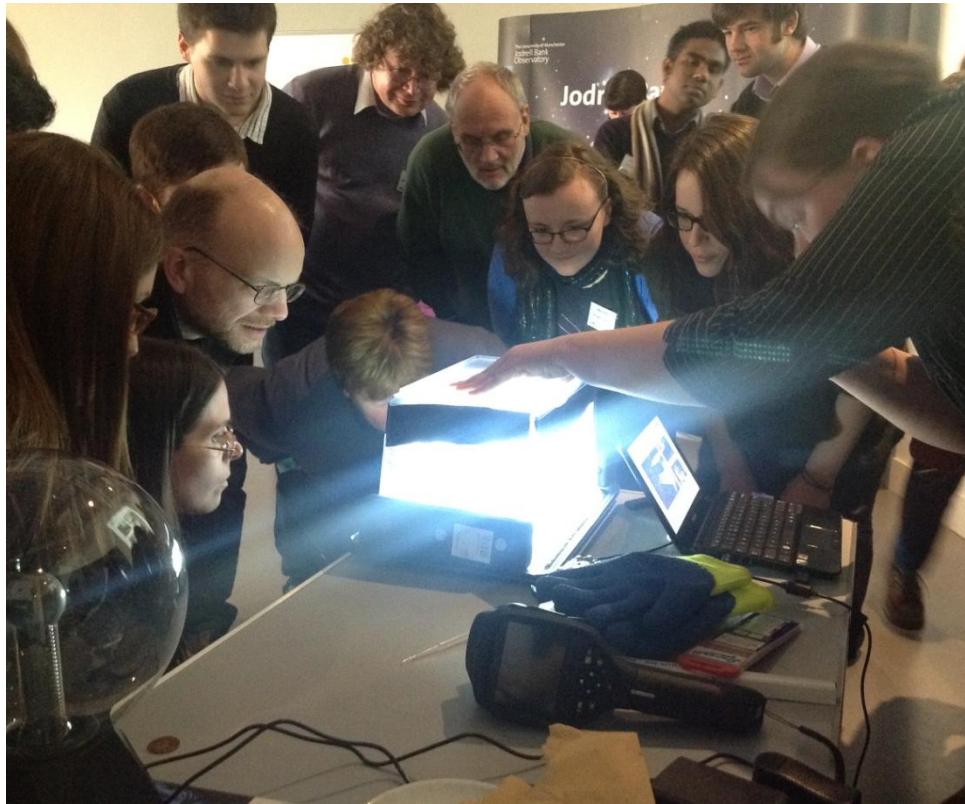
- 156,880 people took part
- Half were girls and women
- School children and communities
- 45,852 met a scientist or engineer
- Academic Evaluation showed **NO DIFFERENCE BETWEEN BOYS AND GIRLS** responses for this physics programme







Training Academies: For science centres and scientists ...Phase 2 underway



National Family Astronaut programme



Partnering with the UK Space Agency for a UK National Family Astronaut programme



Thank you

Dr Penny Fidler

CEO of ASDC



The 2014 ASDC National Conference

wellcometrust



THE
**ROYAL
SOCIETY**

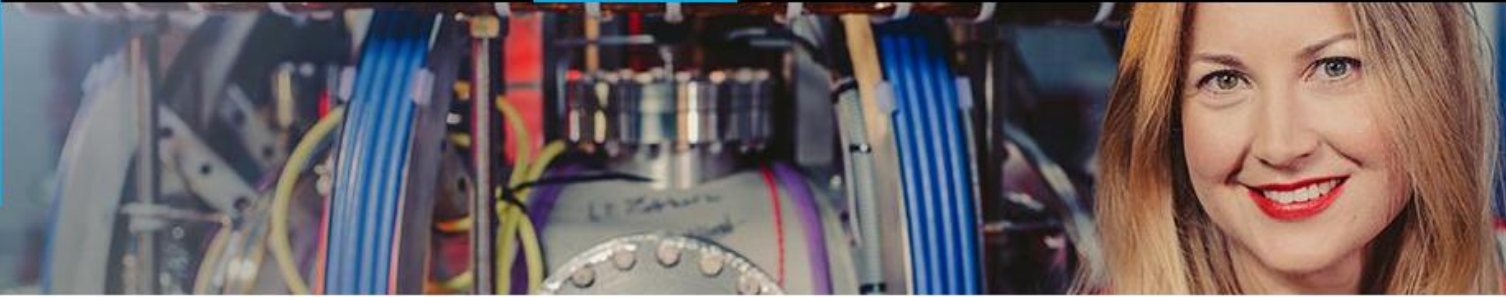


Family Astronaut Shows Across the UK



Developing in partnership with:

- UK Space Agency
 - National Space Centre, Leicester
 - Jodrell Bank Discovery Centre
 - Science Museum
-
- In 2015 we will be seeking 15 science centres to take part
 - running fabulous family astronaut shows and activities with visitors
 - celebrating UK Astronaut Tim Peake's mission into space
 - with a £3000 grant to centres + £2000 of equipment to each centre



The Campaign

This autumn, Your Life will speak directly to young people through a national media campaign and in schools across the country.

We will give young people the opportunity to interact with the campaign and its partners through social media, competitions and events.

And this is just the beginning. Your Life will be working with its corporate advisers and partners over the next three years to ensure we make an impact - that we inspire and promote better opportunities for young people and equip the UK with the skills it needs to succeed in a competitive global economy.



Get Involved



We need more businesses, entrepreneurs and educators to support our campaign. Get involved here.

[Read more](#)

The Call To Action



UK Space Agency



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