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Conference or Workshop Item

Title: Enhancing computing student employability skills through partnership working in STEM outreach

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http://nectar.northampton.ac.uk/7571/

Enhancing computing student employability skills through partnership working in STEM outreach.

Scott Turner.

The University of Northampton

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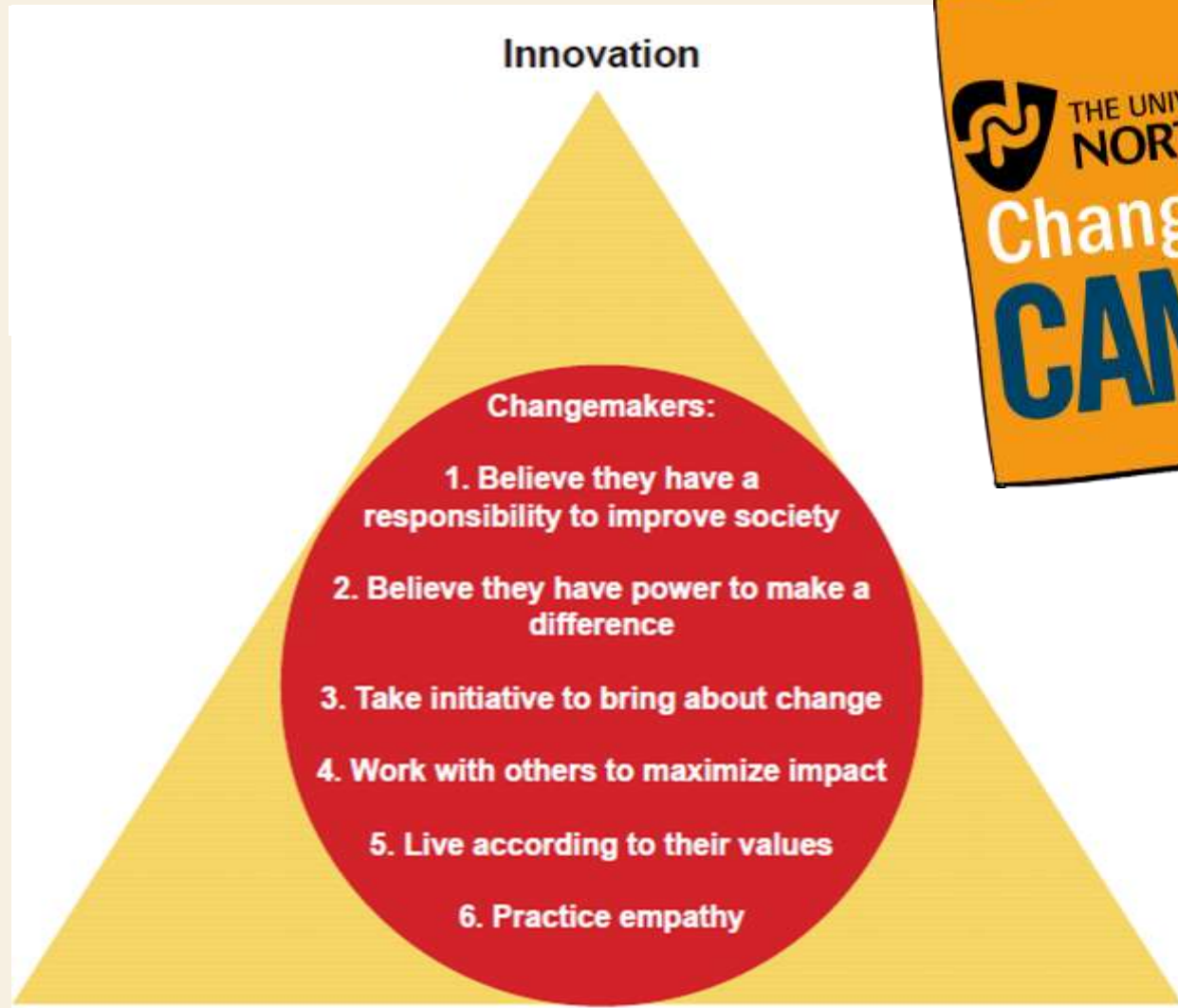**NORTHAMPTON**
School of Science and Technology

96%
Student
*Employability**

Source: Hesa Destinations of leavers from Higher Education (DLHE) Survey 2011/12. July 2013, compared to full university status HEI's for full time study first Undergraduate degree leavers.
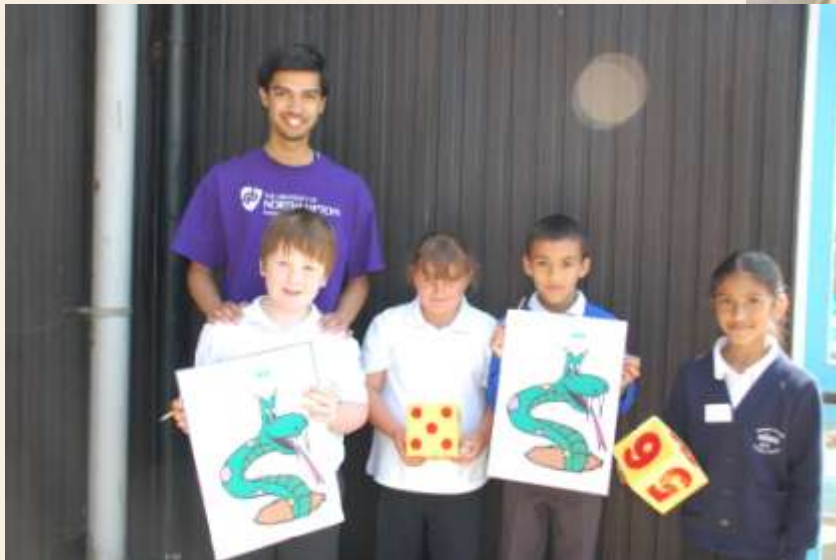
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TRANSFORMING LIVES + INSPIRING CHANGE

Changemaker Campus since 2013

A decade of STEM experience.

…across a range of STEM disciplines.

- *Lab-in-a-lorry* - 2009, 2010 (Chemistry/Physics);
- **Be.SwitchedOn - 2010, 2011 (Computing);** *Be.Biological* - 2010, 2011, 2012 (Biology/Health);
- *Darwin Day* - 2010 (Health/Psychology)
- ***Junkbots* - 2010-2013 (Computing/Wastes Management).**

Promotion of diversity and inclusion: Award-winning commitment to "Women into Science and Engineering ("WISE") since 2010.

- Junkbots training

- One of those in the picture has lead a junkbots session.

- One has support one.

(c) Linda Davis-Sinclair

The value of student volunteering

- Students bring talent, time and enthusiasm

- a new demographic - broadening diversity

- Student volunteers challenge misconceptions and are positive ambassadors for their University

- Student volunteers gain confidence,

- skills,

- and high levels of satisfaction

- Students can try new things to clarify career options

Brewis, Russell and Holdsworth, 2010.

And what students think…

I have gained an appreciation of being able to apply and impart my knowledge to younger students. Personally, I feel that I have developed in terms of my confidence, creativity and science-based skills. Working with STEM has further reinforced my passion for science.

Working with the children was amazing. Showing them that science was fun as well as interesting and getting them to interact with the experiments we did gave me an immense sense of achievement.

Being a STEM Champion has helped me improve my communication skills considerably. I believe I have enhanced my skill set.

Student STEM Champions, 2012/13

Cross-University Steering Group

- Four years ago four members of staff set up the steering group

- Linda Davis – leads on volunteering.
- From School of Science Technology
  - John Sinclair (Deputy Dean)
  - Scott Turner
- From the School of Health
  - Stuart Allen

Cross-University Steering Group - Aims

- planning, co-ordination and promotion of STEM activities
- networking opportunities for students, staff, schools and community groups interested in STEM
- a single point of information for schools and STEM Champions

- promote interest and aspiration in STEM in local schools
- increase University student identification with their STEM subject
- provide University students with a coordinated programme of training to develop their skills (response to NSS 2011, 2012)

Coordinated training – networking and employability

- Recognition by the University - ie Changemaker Award

- Opportunities for peer mentoring and staff/student mentoring to develop student-led STEM workshops

- The University STEM network of staff and students

- Becoming a National STEM Ambassador enhancing employability

Feedback on training

I now have a better understanding of employability and how it will help me

Very useful to see how National STEM fits into the University

It has helped me to be more confident

University STEM Champions, 2014.

Student achievements 2013

Active STEM Champions	National STEM recognition	Withdrawals cf. University benchmark	Progression cf. University benchmark	Graduation cf. University average
73	42	-1.3%	+5.1%	+0.2%

TRANSFORMING LIVES + INSPIRING CHANGE

Computing Case Studies

- **1.'Supporting'**
- A current third year student on the BSc Computing course.
- Delivering robot-based activities, in schools,
- developed the confidence to run part of an activity on his own

- **2. 'Supervisor'**
- A second year BSc Computing (Software Engineering)
- both supervised and unsupervised, delivering STEM activities.
- On STEM Steering group, bringing a student perspective.

Quote

 "Being a STEM Champion and National STEM Ambassador means that I can take advantage of events both here at the University and regionally. I can pick and choose what I get involved in, so recently when I was asked if I could run a Blogging workshop for Year 10 students from Thomas Becket School, I jumped at the opportunity. I planned the session and then with help from fellow STEM Champions, we enabled the students to write up their experiences of their aspiration day. It was not without challenges but it was very interactive and great fun."

Meet Aleksandra - **Leader**

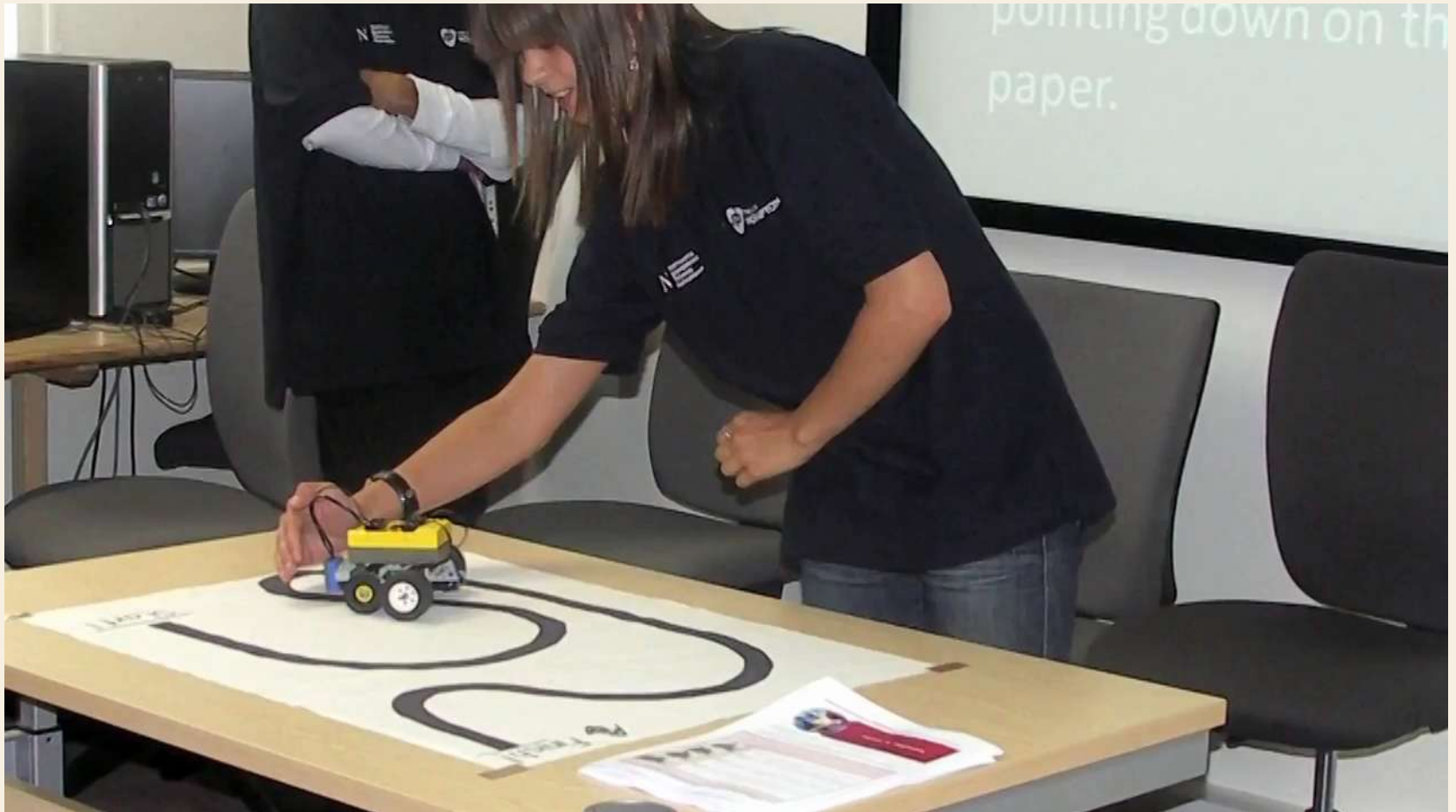**BSc Computing, 2011. Now PhD (part-time) student**

- Women into Engineering, 2010, workshop leader.

- "Redefining Women into IT" project, 2011, workshop leader.

- International Women's Day, 2013, careers workshop.

Aleksandra inspired

Aleksandra transformed

Aleksandra employed

Personal Reflection

- Confidence building
  - Being treated like the 'expert'
  - Taking the lead on something.
- Would these students have done well anyway?

- Not just about CV enhancement
- Enjoyment
- Not every stage is everyone.
- Some are using to get into teaching.

Next steps

Website

- Student-designed (and maintained) portal for students, staff and schools, identifying:
  - Training
  - CPD
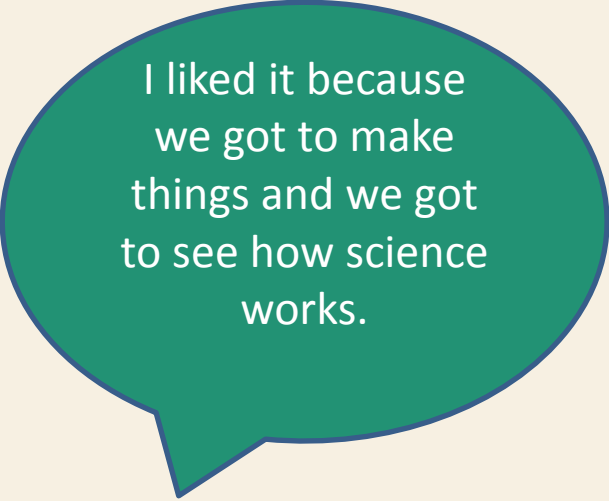 - Workshops
  - Events

Track alumni careers

- Data set is still small at the moment
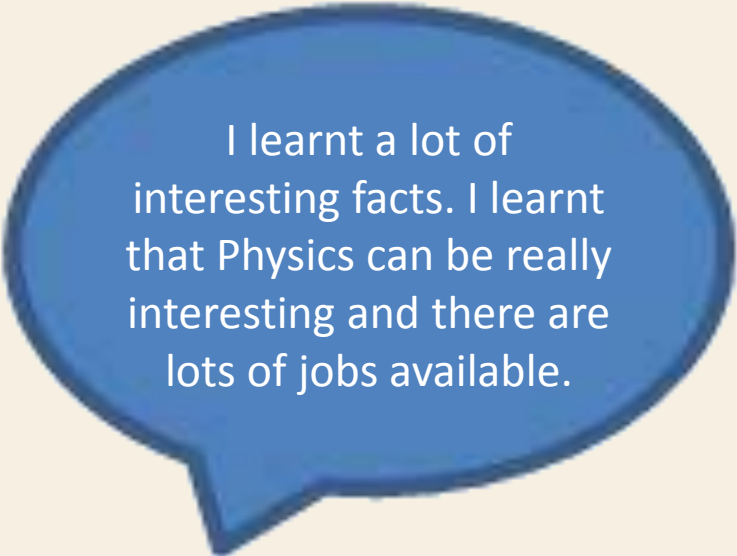- Longitudinal study of the impact of STEM work is needed

- STEM volunteering is valued by all participants

- STEM volunteering provides enhanced experiences in schools and HE

- We need to ensure more systematic data collection in order to evaluate the impact on our students.

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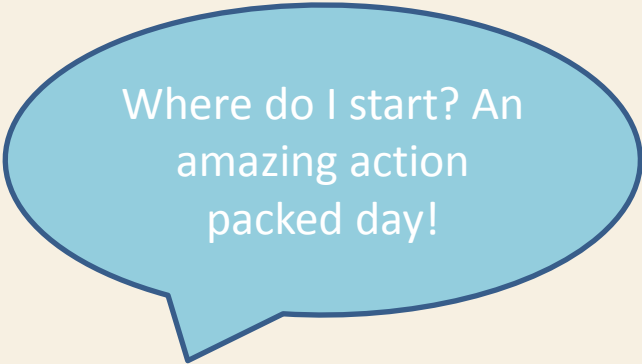Thank you for listening

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Participant feedback.

I liked it because we got to make things and we got to see how science works.

I learnt a lot of interesting facts. I learnt that Physics can be really interesting and there are lots of jobs available.

Where do I start? An amazing action packed day!

School students, 2011-2013