

# Societal Challenge Themes and an Entrepreneurship Programme

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Societal Challenge Themes  
in Teaching and Learning  
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# What is ACTION 2011: Sustainability

- What did we do?
  - Encouraged researchers to engage with enterprise training by using the societal challenge theme of sustainability
- How did we do it?
  - 9 month programme (March – November)
  - Problem based learning approach
    - 3 enterprise training labs
    - Teams of 3-5 researchers (staff and students)
  - Competition with a substantial prize
    - Public engagement showcase event

# Who was involved?

## Collaborative organising team

- **Katie Wray**  
(enterprise curriculum development)
- **Elizabeth Scanlon**  
(research staff development)
- **Bryn Jones**  
(postgraduate Dean)
- **Gail de Blaquièrè**  
(postgraduate researcher development)
- **Jane Nolan MBE**  
(Rise Up Entrepreneur in Residence)



## Early Career Researchers (PGRs and research staff)

# Use of the Sustainability theme

## Launch and promotion



## Ideas generation



## Judging criteria



# Sustainability provocations

Used in World Cafe ([link to toolkit](#))

Why is my car so attractive?

How can we use social networks to improve the take up of low energy solutions?

How can we better visualise the carbon footprint of individuals and organisations?

Can I live on local food?

# Sustainability solutions

## ZapZyme - WINNERS

Chelsea, Rekha, Gabriel, Matthew, and Nithya

ZapZyme Technology - a novel enzyme for process cleaning which has the potential to significantly decrease operating costs through reduced energy and chemical use



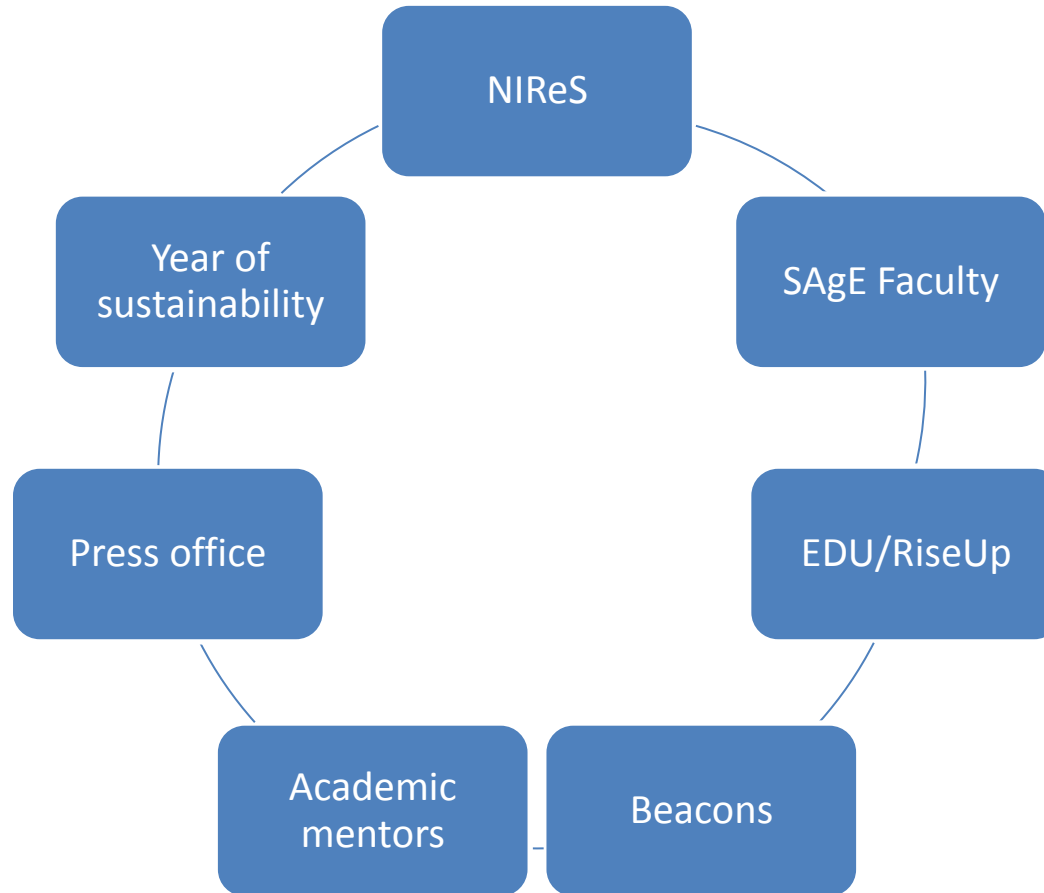
## TeraTura - RUNNERS UP

Jen, Ryan, David, and Jared

TeraTura is a consultancy connecting tourism and sustainability science through innovative IT solutions



# Sources of internal support



# External links

- National drivers (enterprise and impact)
- EPSRC
- Lab facilitators
  - Samantha Aspinall & Sara Shinton
- Networking opportunities
  - Newcastle Science City, Cynergy
- Additional workshops
  - Simon Raybould, Murgitroyd & Co
- Judges from
  - RadFan, British Science Association/Corylus learning  
Procter & Gamble, Kromek, Newcastle Science City



# How we know ACTION works

1. Encourages researchers to apply for enterprise-based training programmes
  - For 73% of applicants sustainability interests = main motivation
2. Improves and embeds skills amongst researchers
  - Increased confidence in their skills (maintained post-showcase)
  - Skills applicable beyond the competition
3. Changes researchers attitudes to enterprise training
  - more positive attitude towards enterprise
  - Motivated to develop further

# Participant Quotes

- I've tried new things!

“ACTION 2011 has set me a challenge I never thought I would do. It allows me to apply my skills out of the lab and develop my creativity. ACTION allowed me to work in and develop a strong team.”

- I know about business!

“From ACTION 2011 I have experienced the business-side of scientific research, which is important for all scientists to understand and this is something I can apply to my Doctorate and in my future career.”

- I'm an entrepreneur!

“ACTION 2011 has provided a unique opportunity to explore my individual entrepreneurial qualities and use them to launch a viable business idea with similar minded people.”

# What have we learnt?

- Get the support of people with different roles within the theme
- Identify hooks from the societal challenge theme that relate to and engage your audience
- The entrepreneurial development needs of researchers and how to meet them (sustainably)

# The next challenge...

## ACTION 2012: Social Renewal

**ACTION 2012:**  
Social Renewal



**CALLING ALL  
RESEARCHERS  
TO TAKE ACTION**

A competition for researchers  
addressing societal  
challenges through enterprise

[www.ncl.ac.uk/action2012](http://www.ncl.ac.uk/action2012)

**EPSRC**  
Engineering and Physical Sciences  
Research Council

*Developed using EPSRC  
funding for enterprise training*



## ACTION 2013: Changing Age?

# Questions for presenters

- What did you do and how did you do it?
- Which members of staff were involved? Was there a specific group of students that your project targeted?
- What sources of internal support did you use?
- Did you link with external stakeholders/groups?
- Did you access funding or other resource?
- What advice would you offer staff embarking on a comparable project?

# How we've used World Café

- 1) Community: Enterprisers
- 2) Curriculum: New Food Product Development Module
- 3) PGR Training: ACTION 2011 Sustainability Challenges
- 4) Staff Researchers: Intelligent Transport Route Mapping

# World Café: Stage 1

- **Divergent thinking** phase – brainstorming in a World Café session
- Provocations at each base
- Write your ideas on the large sheet
- Build on other people's ideas
- Can make notes, draw pictures etc
- **“I wish...”**    **“If only.....”**

# World Café: Stage 2

- After 5 minutes change base
- Work with new people
- Review the brainstorm on the table, build on it with more ideas
- Add completely new ideas
- Visit each base only once
- Every 5 minutes change bases -
- More brainstorming – **“I wish...”**, **“If only...”**



# World Café: Final Stage

- Final Base – 10 minutes
- **Convergent thinking**
- Review the ideas generated at your current base - “**How might we....**”
- Combine ideas, refine, reject, select
- Focus on the ideas with the most potential
- Does the idea meet needs? Is there any scope for commercialisation around the idea?

# World Café: Summary

- Feedback from academic staff:
  - “The theme of engagement, entrepreneurialism and commercialisation was topical and relevant and the method of delivery was informal relaxed and worked well”.
  - “I will be considering possible ways of integrating world cafe and solvers approaches into seminar teaching and activities”.

# Evaluation Methods

- Application Form
- Evaluation and Feedback after each Lab and Showcase
- Skills Perception Inventory (SKIPI) at Team Formation Stage (Lab1) and one month after the Showcase
- The 25 questions in the SKIPI were designed to:
  - gauge confidence levels in three skills areas covered in the ACTION programme  
(Communication, Group work, Creativity and Entrepreneurial Skills)
  - measure attitudes towards the perceived value of Enterprise training and Sustainability
- Controls groups (pre-competition, post-competition and larger sample to ensure wider representation of research students/staff).
- ACTION participants pre-competition were considered to be represented in the large group control

# Data Analysis

## SKIPI Analysis

- Researchers were asked to rate their level of confidence with a series of situations or issues. A four point scale was used to score students' perceptions (with a score of 1 for very uncomfortable to 4 representing very comfortable).
- Researchers were also asked their level of agreement with a series of statements about Enterprise and Sustainability. A four point scale was used to score students' attitudes (with a score of 1 for strongly disagree to 4 representing strongly agree).

## Data Reduction

- Principle components analysis for each of the question groupings led to solutions with one dominant component confirming that each set of questions act as consistent measure of a single underlying dimension. Differences between the combined responses for each grouping were measured using ANOVA.

# Effect of format on participation

The use of the societal challenge competition to engage researchers was very successful.

- 73% of applicants referred to sustainability interests as their main motivation for applying,
- 15% engaged for commercial development
- 12% referred equally to both

“I like the idea that ACTION 2011 is a vessel to develop ideas that people come up with to improve sustainability and hopefully get a lot of people involved and thinking about improvements that can make a difference.”

“I am very interested in participating in ACTION 2011. I feel strongly about the development of a sustainable future for everyone”