

SUMMARY

Rationale: The Cell EXPLORERS programme (www.cellexplorers.com) is an educational outreach programme based in NUI Galway that engages with civil society on STEM topics. To support the Cell EXPLORERS working model to build STEM capacity, we created a community-based learning final year module for third level education students to complete educational science outreach final year projects as part of their curricula.

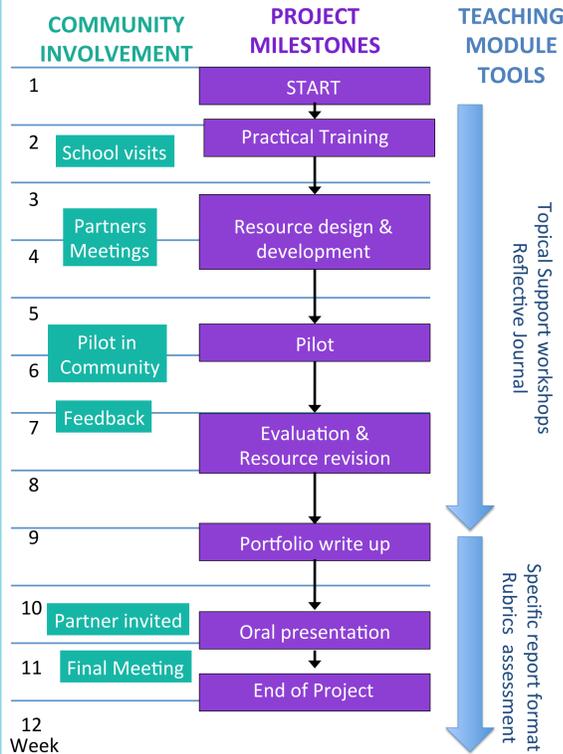
Objective: To develop a module format benefitting both final year students and community partners

Methodology: Action research evaluated using interviews, pre- and post-project surveys of students, and surveys of collaborative partners.

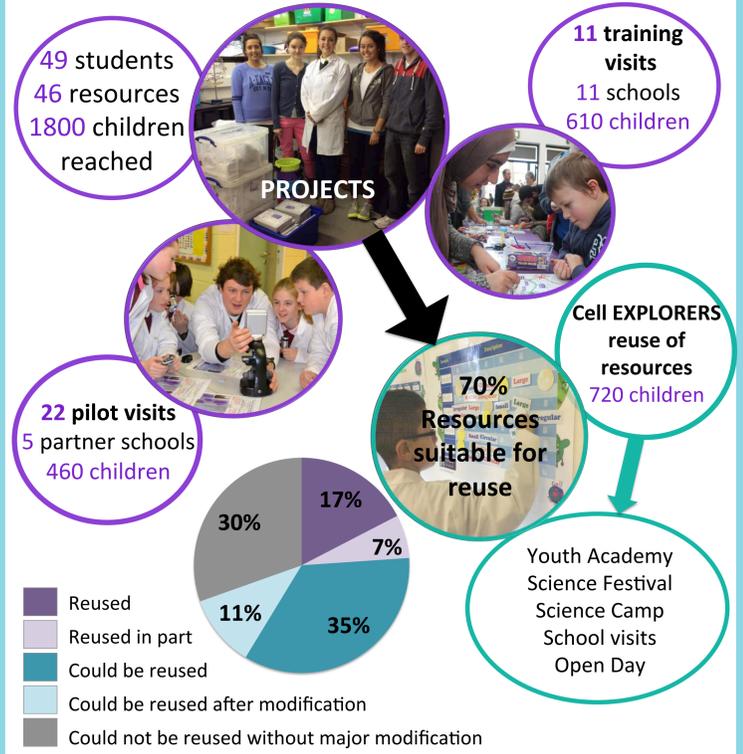
Results: 49 students from final year Biochemistry, Microbiology and Zoology have undertaken these research projects, produced outreach resources for partners and piloted them within schools. All participants declared satisfaction in taking part and specific gains. Students report the development of specific skills and the gain of desirable employee attributes.

Conclusion: The module gives an alternative for students who do not want to pursue careers in research, without excluding this option. It strengthens links between the university and community. We propose the creation of a science communication/public engagement Project module linked to service learning for the College of Science students of NUI Galway.

TIMELINE & PROJECT CONTENT

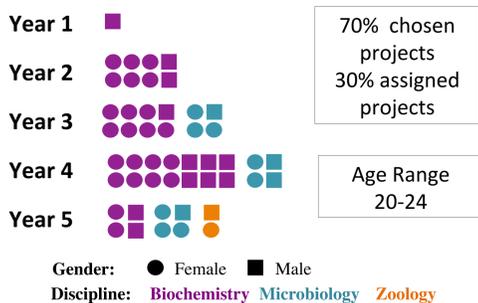


CONTRIBUTION TO PUBLIC ENGAGEMENT IN SCIENCE



BENEFITS TO SCIENCE UNDERGRADUATE STUDENTS

Students repartition

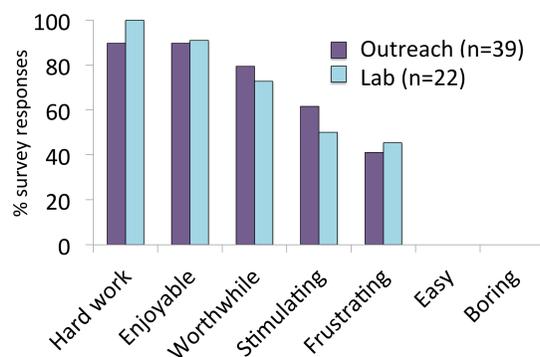


Key Opportunities are also most liked aspects

- Working with children & outside organisations
- Group work
- Creativity/Design



Words matching student's experience of the project

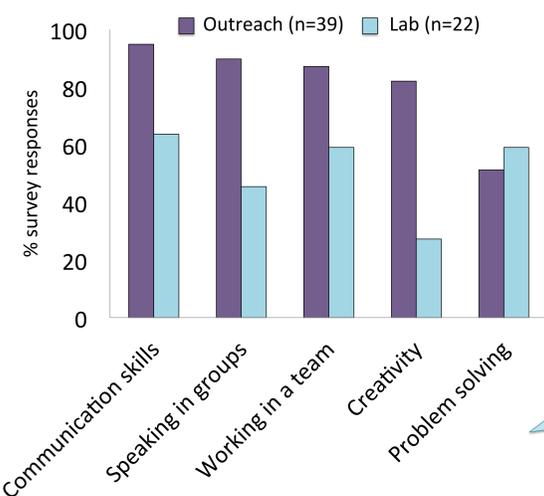


Student feedbacks

"This project entailed a lot of work but gave me a refreshing new insight to how we can best apply our knowledge and understanding to genuinely make a difference or create positive and efficient effect."

The project, whilst extremely difficult is so worth well and fulfilling! I am delighted with the results we obtained and the idea that we have potentially changed a classes opinion of science so much to want to be a scientist. Nothing can beat that feeling. Thank you!

Students develop 'desirable graduate attributes'



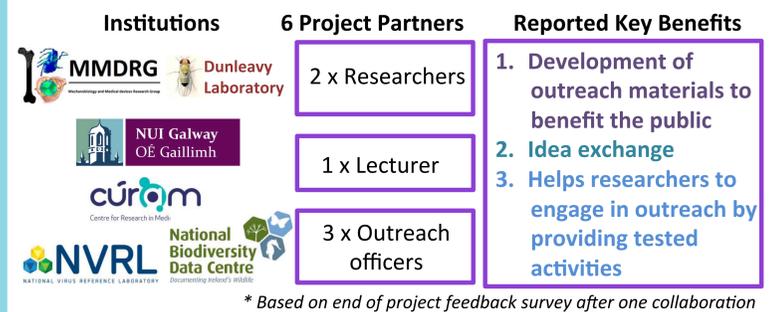
Data collection

- The results presented in both graphs were obtained from:
- 39 post-project questionnaires collected in year 2, 3 and 4, 22 post-laboratory-based project questionnaires collected in year 4.
 - Students were given a list of skills or a list of words to choose from to define their perception of skills development and experience of the projects.

BENEFITS TO THE COMMUNITY

Institutional Partners

Partners have an outreach need that forms the basis for a project



"The partnership created science outreach materials for CÚRAM in the start up phase of the centre that were ready to deliver and have been used repeatedly in the last year."

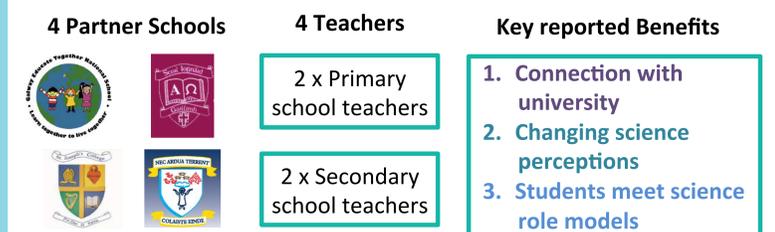
"[It gives] opportunities for researchers to engage with outreach content development."

"Developed resources that were properly researched and tested. We would not have time to do this without Cell Explorers"

BENEFITS TO THE COMMUNITY

Partner schools

INVOLVEMENT: Allow piloting of material, provide feedback on activities



"It keeps a strong link with the science community and NUIG alive."

"It is extremely important for schools to engage with third level institutions and vice versa. This helps to engage students' interest in their chosen subjects. More schools should get involved!"

"It ... helps to give a different perspective to students of what a career in science is like. ... This will help them to make informed decisions about their future in science."

"The third level students present as positive role models for children of this age."

ACKNOWLEDGEMENTS

We thank Dr Andrew Flaus, Prof Heinz-Peter Nasheuer, Dr Bob Lahue, Dr Adrienne Gorman, Dr Michael Carty and Prof Richard Reece for critical comments during this work. We thank all students who took part in projects as well as all institutions and Schools Partners. We also thank Blanneth McSharry and Grainne McGrath from the All Aboard project for designing and issuing digital skill badges. This work is supported by the disciplines of Biochemistry and Microbiology, the school of Natural Sciences, by a Wellcome Trust People Award and Science Foundation Ireland Discover awards to Dr Grenon, by NUI Galway and NUI Galway University Foundation.