




Science Communication

A module for the future?

Kay Yeoman

UEA

- 
- Public engagement has become increasingly important.
 - In 2008, UEA achieved 'Beacon' status for its already excellent work with the public across all disciplines.
 - CueEast-(Community University Engagement East) is really keen to have undergraduate involvement.

Third year science communication module

- In the previous academic year, I ran a module in BIO called science communication.
- Before the module began, I decided that this was a subject which spanned across all areas of science
 - So.....

HEA Biosciences Educational Development fund

- Irene Lorenzoni (ENV)
- Helen James (BIO)
- Laura Bowater (MED)

- We were awarded a grant to roll this module out across the Science Faculty, using the existing BIO module as a pilot study.

Learning outcomes of the 'pilot' module

- understanding of how science is disseminated to the public.
- be made aware of the theories surrounding communication.
- investigate science as a culture and how this culture interfaces with the public.
- Case studies in a variety of different scientific areas.
- An appreciation will be gained of how science information can be used to change public perception and how it can sometimes be misinterpreted.

Outside organisations

- Castle Museum
- Inspire Science Centre
- Eastern Daily Press
- Norwich BioIncubator
- The Big 'C' Cancer charity
- The World Land Trust
- Content Consultants
- British Trust for Ornithology

Three stranded pedagogy

Lecture programme	Project	Assessment
<ul style="list-style-type: none">•History of modern science•Theories of learning and communication•How the public culture and science culture interface•Specific case studies eg Stem cell research, GM food, Bird Flu.	<ul style="list-style-type: none">•A public or school engagement event	<ul style="list-style-type: none">•Essay on one aspect of science communication.•Event portfolio which includes a piece of self-reflection on the development of their activity, all activity materials and an assessment of the public evaluation of the event.

Evaluation of the module

- Questionnaires
- Participant observation
- Self reflection

The Science Communication Project

- Held at the Inspire Science Discovery Centre during Science Week.
- 'Totally Amazing Me' featured nine separate activities centred around the human body.



What did the students do?

- Each student designed and developed their own activity stand.
 - Brain waves
 - Digging for bones
 - The poo factory
 - Optical illusions
 - Touch
 - Nasty germs and friendly cells
 - Fingerprints
 - The Cell
 - Human ageing and the skin

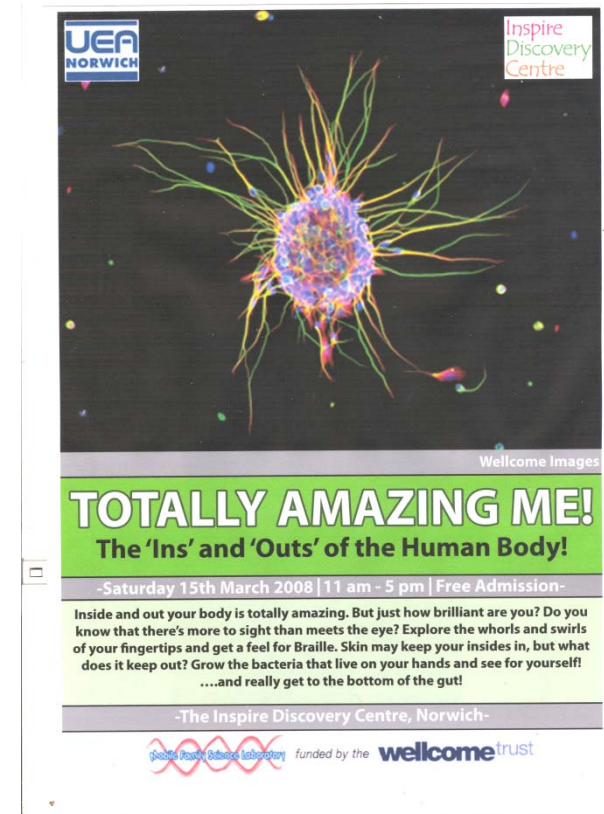


- There were approx 400 visitors from all across Norfolk.
- The event was very successful with 100% of visitors saying they would come to a similar event again.
- 90% of the children said that it had made them think about science differently.



They also as a group...

- Designed the marketing leaflet
- Designed the evaluation 'postcard'
- Wrote the event health and safety document.



Individually they....

- Wrote an evaluation report which included their self reflection
- Submitted an event portfolio which included
 - A press release
 - A funding proposal



Key transferable skills

- Team working
- Initiative
- Time management
- Communication both verbal and written



Value added

- Employability
- Enhancing the links between UEA and the community
- Raising awareness of science

What the students said...

- *“Science communication has been the most enlightening module I have ever taken! It highlights relevant issues and raises awareness about a crucial element in science. By explaining problems with science communication to science graduates, they can help to improve science communication with the public.”*

Where did the students go?

- 1 to medical school
- 1 accepted on an Mres course
- 1 accepted onto Masters course in human genetics
- 1 to do PGCE
- 4 to do PhD's
- 1 unknown

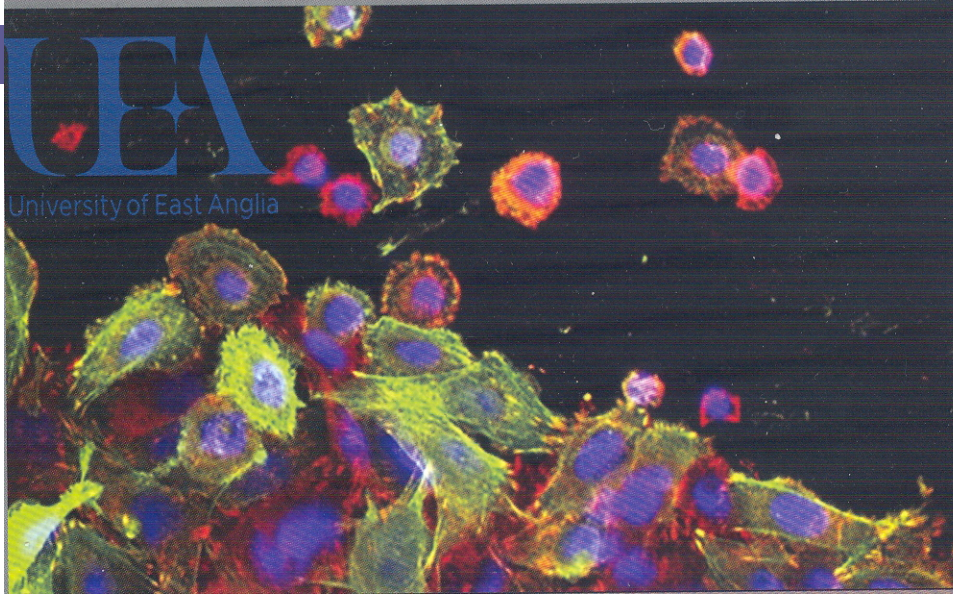


Funding for the events

- Wellcome Trust Peoples Award
 - Mobile Family Science Laboratory



University of East Anglia



Wellcome Images

Cells Alive!

Exploring the science of life

- Saturday 6th September 2008 - 10am-4pm - free admission -

From the single cell of a bacterium to the millions of cells that make you, life on Earth is quite remarkable, but what is it that makes life so amazing? Become a DNA detective and break the genetic code to discover just what DNA can do for you. Mother Nature may know a thing or two about science but can we do better? Biotechnology says we can, but how? Discover exciting ways of looking at the world through interactions between science and arts.

- The Forum, Norwich -



funded by the **wellcome**trust





Students involved

- Undergraduate students
- Recently graduated students
- PGCE students
- PhD students

Science Communication in 2008-9

- This year we have 24 students enrolled on the module.
 - 2 from Environmental sciences
 - 2 from Environmental Earth sciences
 - 1 from Computing Science
 - 2 from Biology with management
 - 9 from Biological Sciences
 - 2 from Ecology
 - 2 from Microbiology
 - 1 from Molecular Biology and Genetics
 - 2 from Biomedicine
 - 1 from Natural Sciences

BIO-3C6Y Science Communication

20 credits, CC, Year Long. Open to all students in the Science Faculty.

Module organiser: Dr KH Yeoman

Lecturers: Mr GF Appleton (BTO), Dr LJ Bowater (MED), Mr John Burton (World Land Trust), Dr R. Davies, Dr J Carter (RBS), Dr M Hutchings, Dr H James, Ms R. Jarrold (EDU), Dr I Lorenzoni (ENV), Ms D Metland (Content Consultants), Ms K Moore (Norwich Castle Museum), Dr A Munsterberg, Ms A. Ogden (COMM), Prof AE Osbourn (JIC), Mr J Piercy (Science Made Simple), Dr T. Rogers-Hayden (ENV), Mr Daniel Williams (The Big C) and Dr KH Yeoman

Aims:

To bring an understanding of how science is disseminated to the public. Students will be made aware of the theories surrounding communication. They will investigate science as a culture and how this culture interfaces with the public. Case studies in a variety of different scientific areas will be examined. An appreciation will be gained of how science information can be used to change public perception and how it can sometimes be misinterpreted.

Learning Outcomes:

An appreciation of how science is communicated to the public and an understanding of the science culture. Students will do their own project, which may include designing, running and evaluating their own public outreach event to coincide with Science Week (always held in March). In order to work on their project, students will acquire a set of professional skills in time management, organization, administration.

Assessment:

Coursework 100%

There will be an assessed essay (3000 words) in the Autumn semester in an area of science communication based around the case studies (30%), a proposal for the essay is submitted before writing (5%), Project (65%).

Reading:

You will be reading from a variety of sources, including papers and reports.

Project:

You will be given a choice of projects, details of which will be given to you in week1.

The course will run with the aid of Blackboard

Lecture and Seminar Programme:

Autumn Semester

(Mon. 14.00-15.30*; Tues. 10.00-11.30*; Fri. 12.00) *To allow time for discussion some of the case studies only will be 90 minutes.

Week	Day	Date	Topic	Lecturer
1	F	26.9	Introduction and project choice	KHY
2	M	29.9	A potted history of modern science	KHY
	Tu	30.9	Learning and communication theory	KHY
	F	03.10	Science communication	KHY
3	M	06.10	21 st Century science communication	KHY
	Tu	07.10	Science and the public as cultures	KHY
	F	10.10	Discussion on the assessed essay	KHY
4	M	13.10	Science in the media	AO
	Tu	14.10	CAREERS DAY	
	F	17.10	Museum science communication	KM
5	M	20.10	Science and education 21 st Century	RJ
	Tu	21.10	The teacher science network	PS
	F	24.10	The role of science centres	JP
6	M	27.10	The public perception of risk	IL
	Tu	28.10	Case Study: The BSE Crisis	HAJ
	F	31.10	Science communication via the web	DM
7	M	03.11	The Saw Trust, art in science	AEO
	Tu	04.11	Case study: Frankenstein foods	KHY
	F	07.11	Science communication in business	JC
8	M	10.11	Case study: Nanotechnology	TRH
	Tu	11.11	Case study: The rise of MRSA	MH
	F	14.11	Science communication and Fundraising for charities	DW
9	M	17.11	Case study: Bad science in the press	LB
	Tu	18.11	Case study: Humans and birds	GFA
	F	21.11	Project group discussion	KHY
10	M	24.11	Case study: Science in advertising	KHY
	Tu	25.11	Case study: Climate change	IL
	F	28.11	Project group discussion	KHY
11	M	01.12	Case Study: Stem cells and cloning	AM
	Tu	02.12	Case study: The World Land Trust	JAB
	F	05.12	Project group discussion	KHY
12	M	08.12	Case study: The public perception of biodiversity	RD
	Tu	09.12	Project evaluation	KHY

Spring Semester

Project work. The event 'Norfolk Science, Past and Present' will be held at the Norwich Castle Museum during Science Week 2009.

Projects coming up...

- Public event at the Castle Museum-'Norfolk Science Past and Present'
- Science club for year 6 at Avenue Junior School (they will work towards a BA Bronze Crest Award)
- Helping to design an interactive area for the newly refurbished mammal gallery at the Castle Museum.
- Video clips of research in our Biomedical Research Centre, for the Big C (local cancer charity).

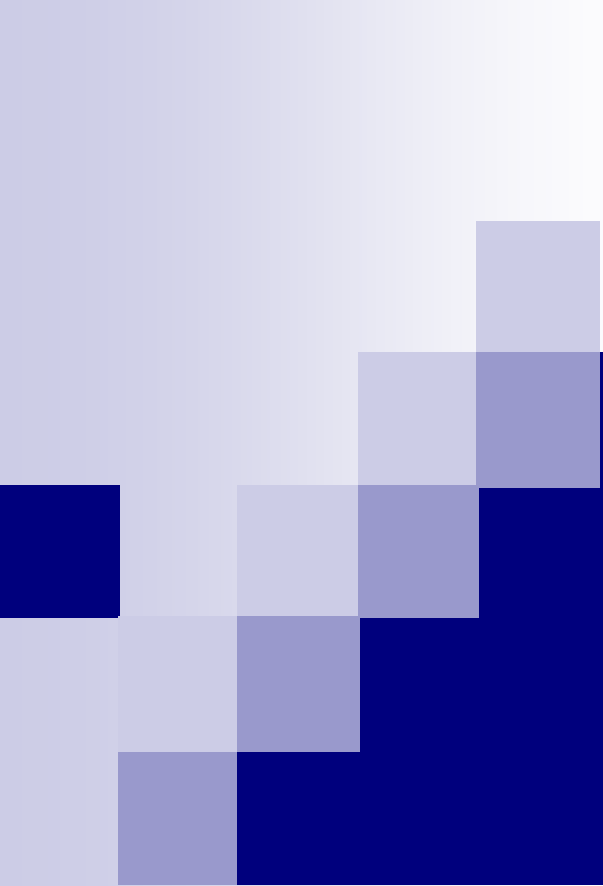
Spin off's from funding

- We have in place a second year 'Biology in Society' module which has been designed by one of the collaborators on the grant (Dr Helen James)
- Biology with Science Communication degree programme (2009/10 academic year)
- Masters in Science Communication, which will involve different schools from across the university.



Thanks go to.....

- Dr Helen James
- Dr Richard Bowater
- Dr Laura Bowater
- Dr Irene Lorenzoni
- Rachel Jarrold



How could you
engage the students
and the public in your
school?