

Communication Projects in Life Sciences at the University of Sussex

Our definition of these Projects

Examples

Logistics of the support for these Projects

Response of our External Examiners

Responses by the students themselves

Robert Whittle, School of Life Sciences.

University of Sussex

All Finalists undertake a Project either

- Experimental Projects

 - laboratory based

 - field based

 - computer simulation or meta-analysis

- Education Projects

- Communication Projects

 - Either hypothesis driven or

 - Science writing or

 - Web site design

‘Virtues’ of Communication Projects

- **Transferable skills in drafting text** and more generally in communication
- An opportunity to **broaden perspective** within science
- Examining issues in the **publicising of science**
- Exploration of a **possible career** path beyond the laboratory

Achieving equivalence in structure with that of Experimental Projects

- **introduction** review of relevant issues within biology **and** methodology and models within science communication
- **framing of hypothesis** within science communication, and designing an investigation to test it
- **the experiment:** piloting and conducting the test
- **discussion of the outcome** in the context **both** of issues within biological science and of the field of science communication

Example 1

The effectiveness of employing a linguistic metaphor in communicating a specific science issue

Rewriting an explanation of gene expression during development as if it involved voices and conversations

Involving our writer in residence

Tested by questionnaire (n=80)

Example 2

The relationship between the understanding and the acceptability of practices within the field of plant genetic modification

Design of a web site questionnaire

True/false knowledge basis questions

Agree/disagree on acceptability questions

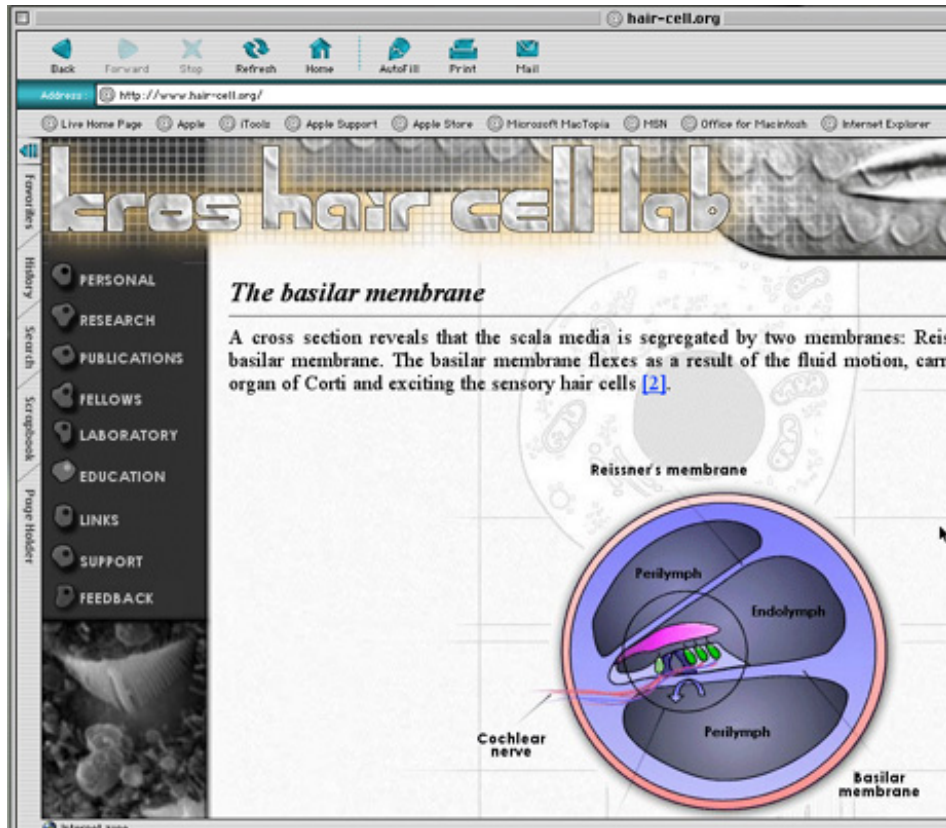
Level of formal science education experienced

Occupation of respondent

Open box comments section (350 replies)

Example 3

The design & construction of a web site about the neurobiology of hair cells in the cochlea



Example 4

Science Writing

Local primary sources
for interview

Understanding the
Scientific evidence

Casting the 'article'

Interaction with the
University press office

2

Bulletin 7 March 2003

Humans gave TB to cows

Lotte Friedrich

Human Sciences finalist,
BIOLS

There is a general assumption that we have acquired the majority of our diseases through contact with animals – mainly domestic animals. But recent research is now turning this assumption on its head, at least for tuberculosis (TB).

According to Dr Noel Smith and Professor John Maynard Smith of the Centre for the Study of Evolution in BIOLS, it is more likely that humans gave TB to cows and not vice versa.

The cattle form of TB (*Mycobacterium bovis*) and the human form (*M. tuberculosis*) are very closely related – so closely that humans can be infected with

bar code – unique to TB bacteria), which is known as the spoligotype. TB bacteria reproduce without sex (clonally) so spoligotypes can be changed by deletion of units but not by addition. The presence or absence of units within the 'barcode' for different strains indicates relatedness, which allows family trees to be established.

These family trees show that bovine TB has evolved not as a generalist (where the same strain infects a multitude of different species) but as a series of host-adapted clones. Many distinct lineages of bovine TB are found in the UK and one of these is the cow/badger lineage.

Badgers have often been implicated as a reservoir of

The tequila connection

Sally Ainsworth
Biology finalist

Researchers in BIOLS are growing Mexican agaves – tequila plants – in one of their greenhouses. Are they preparing for a fiesta or is there some deeper purpose?

Green-fingered DPhil student Ivan Saldana Oyarzabal (pictured right) is studying Agave

(Crassulacean Acid Metabolism). This is an evolutionary adaptation of typical photosynthesis to life in hot, arid regions where water conservation is of utmost importance.

In effect, CAM plants stop 'breathing' during the heat of the day by closing their stomata (small pores that allow gas exchange with the atmosphere and water loss by



CAM metabolism is well understood in low-calorie sweeteners.

Example 6

Science Writing

2

Bulletin 21 February 2003

Play it again Gustav

Joanna Ross

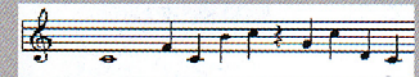
Human Sciences finalist, BIOLS

You used to hate that song, didn't you? Now you hum it while hanging out the washing or walking to the shop. Have you ever wondered how it grew on you?

Experimental psychologist Gustav Kuhn, a DPhil student in BIOLS, believes he may have the answer. His research suggests that we unconsciously learn the rules for the way music is put together. Once these rules are learnt, the music makes more sense to us and we prefer it. This explains why we may not like an unfamiliar type of music when we first hear it, but it may grow on us after repetition.

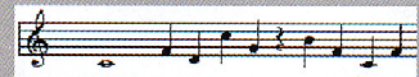
Inversion rule

Grammatical Tune



Contour -3 +6 +1 +3 -6 -1

Ungrammatical Tune



Contour -2 +6 -3 -3 -3 +3

Gustav played tunes that followed this rule (grammatical tunes) to half of his volunteers and tunes that did not (ungrammatical) to the other half. Later he played them more tunes and asked them to mark on a scale how much they liked them.

Implicit learning

Understanding the science

Communicating to the discussion group

Press office

Example 7

Science Writing

Understanding the
Neuroscience

Casting the article

Seeing the outcome
in the local daily
paper

Cricket study is real eye opener

by **HESTER TILBURY**

sports@argus-btn.co.uk

IT MAY not be a case of shut your eyes and hope but new research from the University of Sussex suggests top batsmen do not keep their eyes on the ball continuously.

In a report just published studying a professional batsman, a good amateur and a "Sunday enthusiast",

Argus 21/11/00

Logistics of the support for these Projects

Regular and frequent scheduled individual meetings with Supervisor

The student generates the agenda and also records the decisions and action plans from each meeting

Joint meetings with other Communication Project students and Supervisors: trial presentations, reports of work in progress, and mutual criticism. Support role.

Introduction of this type of Project

Substituting a Communication Project for one of the faculty member's four Laboratory-based projects

At the time of making their choice of project, students visit potential supervisors

Incremental recruitment through involving other Supervisors: as second assessors of the written project report and the 15 minute presentation

Response of our External Examiners

It was important to make clear to them the aims and design of these projects

Initial scepticism about the intellectual rigour and opportunity for a student to excel

Benefit in having to respond to this scrutiny and criticism

Responses of the students themselves

“The drafting exercises were excellent, although at times, sheer agony.

Getting criticism and feedback was essential and helpful- especially as we stuck to fairly regular contact.”

“The presentation was also useful- not only as a way of learning how to communicate one’s work, but also for the feedback. Actually, I hadn't thought about "justifying" the project prior to the presentation, so that experience opened up my eyes to the need of sometimes "persuading" your audience.”

“On the whole, I loved the fact that the project allowed me to stay within science, but to venture out of the "lab" and see what was going on elsewhere.”

My hand-out contains

Project description from our School site

Reference to the site <http://psci-com.org.uk/>

offering free access to a searchable catalogue of Internet sites covering public engagement in science, science communication and the interpretation of science in society.