



UNIVERSITY OF
BIRMINGHAM

Outreach activities → COSMOS

COSMOS (UoB) team

Lynne Long, Peter Watkins, John Wilson.

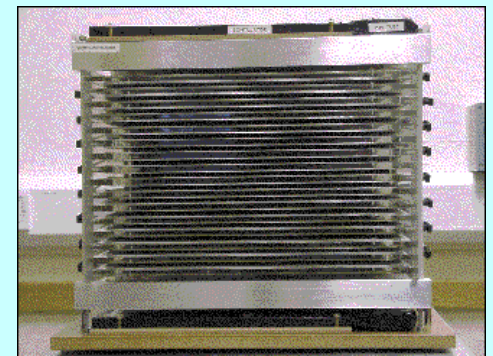
Good contact with teachers and schools

- School's Liaison Officer – Lynne Long
- ~50% of time on outreach
- Coordinator till 2010 of IOP West Midlands Teacher Network (close connections still, local and UK wide)
- Established final year undergraduate module “Teaching in Schools”: 15 students/yr
 - good insight into schools + opportunities to test scenarios.



Going out to Schools

- 40-50 Demos/talks in schools (ages 11-18)
– visits all over UK, usually with liquid nitrogen! (**Lynne Long**).
- 20-30 Spark Chamber demos to schools (mainly) in the Midlands (**John Wilson**).
- New project: cosmic ray telescopes (**scintillators+QuarkNet**); loan to schools; “hands on” experience + analysis for students and teachers.
- 20-30 specialist talks (particle, astro, nuclear, superconductivity, nanophysics, etc.).
- In total ~100 Talks and Demos in Schools around the UK each year.



Masterclasses



- **PP masterclasses** for yr12 students
 - ~150 students – 1 day
 - ~30 students for starter – ½ day.
 - ▶ Development of **MINERVA**
(Mark Stockton won UK IOP-HEPP Science in Society Prize)
 - ▶ **Link to CERN** (ATLAS + panel of experts)
 - ▶ Talks by postgrads; all PP group involved; demonstrations of PP detectors.
- **Astrophysics masterclasses** for yr12 students
 - 1 or 2 half days per year
 - 30-40 students each event

Talks, Exhibitions and Competitions

- ❑ IOP evening lectures – mainly students and teachers but public also attends.
- ❑ British Association Science Festival – Birmingham, Sept 2010
- ❑ Royal Society Summer Science Exhibition – London, July, 2011, with Univ. of Cambridge.
- ❑ Cascade (**Pete Watkins**)
Yr12/13: PP undergrad talks + website → 3 min video on PP/Astro topic
 - Finalist day; top prize is a trip to CERN.



Summary of Outreach

- Physics Liaison Officer drives our outreach programme
- Outreach both outside and within the department
- Audience ranges from Yr7 (11/12yrs) to Yr13(18yrs) + teachers/technicians
- Focus of outreach is to get more good students applying to B'ham; less focus on general public.
- Outreach activities reach ~ 4000 students/teachers per year.



Learn with ATLAS @ CERN

(Lynne and Pete + B'ham undergrads and postgrads)

- Prelim meetings with teachers
 - ▶ curricula
 - ▶ possible directions
- Developed/tested web based scenarios
 - ▶ schools (yrs 10-13)
 - ▶ undergrads
- Events on campus and in schools for feedback
- Wrote up results in [Physics Education](#)

Leading to UoB in COSMOS:

- Experience in devising new ways of communicating PP with students, teachers and public → WP2, WP3.
- Implementation of PP techniques (MINERVA); use in undergrad labs and in schools → WP3, WP4.
- Wide, long-standing contacts with schools → WP4, WP5.