

SURVEY OF FIRST AND FINAL YEAR PHYSICS/ASTRONOMY UNDERGRADUATES

In November 2007, a survey of 829 undergraduate students was conducted. One question was asked of 1st year undergraduates and two of final year (4th year) undergraduates. The questionnaires were completed at the end of undergraduate lectures. The surveys were conducted at 8 universities. The sampling of 673 1st year students represents approximately 20% of the 1st year physics and astronomy undergraduate students in the UK. The breakdown by institute is given below.

Institute	# Year 1 Surveyed	# Year 4 Surveyed
Durham	111	
Glasgow	107	17
Imperial	190	22
Liverpool	48	29
Manchester		41
Oxford	93	
UCL	91	32
Warwick	33	15
Total	673	156

First Years Survey

The question: ***Which aspects of physics attracted you to the subject ?***

was divided into subjects divided according to the major themes in the A-level syllabus. A summary of the results is given in the table below:

Subject Area / % interest	No Interest	Some Interest	Significant Interest
Mathematical aspects	11	44	45
Fundamental Particles, Quantum Phenomena	5	22	73
Mechanics & Kinetic Theory	6	55	39
Electricity & Magnetism	14	63	23
Properties of Solids	37	52	11
Waves and Optics	21	60	19
Nuclear Physics	4	35	61
Astrophysics	12	34	54
Medical Physics	55	34	11
Electronics	36	49	15
Applied Physics	11	57	32

- The three most popular subject areas that students cited as having a “significant interest” in terms of attracting them to the subject are all in STFC areas. Fundamental Particles & Quantum Phenomena was the most popular subject area (72%), followed by nuclear physics (61%) and then astrophysics (53%).
- 90% of students expressed a significant interest in at least one of the 3 STFC areas of fundamental particles, nuclear physics or astrophysics.
- Only 37% of students expressed a significant interest in applied physics or medical physics.

Final Year Survey

Q1. Do you intend to continue physics research after your degree either at the post-graduate level or in industry ?

Yes at postgraduate Level (PhD, MSc)	55%
Yes in Industry	11%
No	34%

Q2. If you intend to continue physics research, which areas of current physics research are of interest ?

	No Interest	Some Interest	Significant Interest
Atomic & Molecular Physics	19	68	13
Lasers, optics & photon Physics	34	51	15
Particle Physics	11	43	46
AstroPhysics/Cosmology	27	33	40
Superconductors/fluids	47	45	8
Nuclear Physics	18	48	34
Materials, nanotechnology, condensed matter Physics	43	37	20
Quantum computing/communication	35	45	20
Medical/Biological Physics	54	33	13
Environmental Physics / Renewable energy	35	44	21
Geo-Physics	66	26	8

10% of students cited an interest in non-listed subject areas which could broadly be assigned to: particle physics (4%), computing (2%), cosmology (2%), materials/nanotechnology (2%).

- The three most popular subject areas that students cited as having a “significant interest” in were all in STFC areas. Particle Physics (46%), Astrophysics/Cosmology (40%) and Nuclear Physics (34%).
- 71% of students expressed a significant interest in at least one of the three above STFC areas.
- 89% of students expressed some or significant interest in particle physics with similarly high percentages in Astrophysics/Cosmology (73%) and Nuclear Physics (82%).
- Particle physics received more than twice as many students expressing significant interest than in any area outside the STFC remit.
- Only 11% of students expressed no interest in particle physics, which is the lowest “no-interest” fraction of all the subject areas.

Mark Lancaster (UCL) & Chris Parkes (Glasgow)