Project List **Chris Booth 30/09/16**

SESSION 2016-2017
PHY341
PHYSICS – THIRD YEAR PROJECT LIST

No.	Supervisor(s)	Student(s)	Type	Project Title
1.	Dr C Booth	**S Abbey**	C	Cooling the MICE target
2.	Dr C Booth		C	The high energy cosmic ray cut-off
3.	Dr C Booth		C	The Neutrino Factory and neutrino oscillations
4.	Dr E. Campbell	**N Katti**	T/C	Cloud quantum computing: the IBM quantum experience
5.	Dr E. Campbell		T/C	Compiling a ternary quantum computer
6.	Dr S Cartwright & P Stowell		C/DA	Predicting final state particle counts at ANNIE
7.	Dr S Cartwright & P Stowell		C/DA	Tuning the NuWro Event Generator
8.	Prof. J. Cockburn		D/E/TE	Development of demonstrations for Year 2 electromagnetism lectures
9.	Prof. J. Cockburn	**S Jones** **J Wharton**	E	Physics of stringed musical instruments
10.	Prof. J. Cockburn		E	Optical spectroscopy of semiconductors
11.	Prof M Fox		E	Atomic spectroscopy
12.	Prof M Fox		E	Shot Noise
13.	Prof J Hobbs	**J Cadman** **J Pinksey**	E	Measuring anisotropic mechanical properties of the bacterial cell wall using atomic force microscopy
14.	Prof J Hobbs		E	Writing at the nanoscale with atomic force microscopy
15.	Prof J Hobbs	**J Bradshaw** **J Hindson**	E	Watching polymers crystallise with the atomic force microscope
16.	Dr P Kok		T	Measurements at the Heisenberg limit
17.	Dr P Kok	**C Pinnegar**	T	Foundations of quantum mechanics
18.	Dr D Krizhanovskii		D/E	Laser optical beams carrying non-zero orbital angular momentum
19.	Dr D Krizhanovskii & M Sich		E/C	Spectroscopy of exciton polaritons
20.	Dr D Krizhanovskii & P Walker		C/D	Design of optical microstructures for on-chip nonlinear optical circuits
21.	Dr V Kudryavtsev		D	Has dark matter been discovered?
22.	Dr V Kudryavtsev & E Korolkova	**J Hall** **L Hall**	C	Designing a dark matter experiment
23.	Dr V Kudryavtsev & D Woodward		C	Muon tomography for carbon storage monitoring
24.	Dr V Kudryavtsev		C	Setting a limit on WIMP interactions from a dark matter search experiment
25.	Prof. D Lidzey		E	Temperature dependent spectroscopy of perovskite semiconductors
26.	Dr J McMillan	**C Callaghan** **N Sharief**	E	Monitoring the neutron and gamma emissions of the pulsed neutron fusion generator
27.	Dr M Malek	**A Ellis**	DA	Testing predictions: How accurate is the weather forecast?
28.	Dr M Malek		D	Science communication in unconventional settings
29.	Dr M Malek	**A Brown**	C	Reconstructing neutrino events in a liquid argon detector
30.	Dr M Malek		E	Developing a new type of neutron detector
31.	Dr M Mears	**W Y Ip** **A Tookey**	E/T	A prototype device for detecting early-onset Parkinson's disease
32.	Dr M Mears		D/E	Developing a sperm count device
33.	Dr M Mears		E/T	Phase transitions of thin polymer films

34.	Dr M Mears		E/TE	Solving the problem solving problem
35.	Prof D Mowbray		D/E	The physics of photography
36.	Prof D Mowbray		E	Optical Spectroscopy
37.	Prof D Mowbray	**C Davey**	D/E	Sound experiments for schools' talks
38.	Prof D Mowbray	**M Abd Aziz**	D/E	Construction of equipment to demonstrate the properties and applications of light
39.	Dr N Olivier		C	Modelling optical microscopy using a finite differences method
40.	Prof L Roszkowski		T	Dark matter - evidence, main candidates and relic density
41.	Prof L Roszkowski	**J Beresford**	T	Supersymmetry and the Higgs boson
~~42.~~	~~Prof N Spooner~~		~~E/D~~	~~Radon emanation from matter~~
43.	Prof N Spooner		E	Development of liquid argon particle detector technology for neutrino physics
44.	Prof N Spooner		DA	Searches for Dark Matter with the DRIFT directional detector
45.	Prof N Spooner		C	Computer simulations for the COSINE-100 Dark Matter search in South Korea
46.	Prof A. Tartakovskii		D	Efficient light extraction from luminescent nanostructures in optoelectronic applications and nanoscience research
47.	Prof A. Tartakovskii		C	Principles of magnetic resonance
48.	Prof L Thompson		C	Development of a peak finding and fitting algorithm for the treatment of HPLC spectra
49.	Prof L Thompson		C	The computer simulation of ray tracing in a plastic scintillator
50.	Prof L Thompson		E/C	Position reconstruction in plastic scintillator
51.	Dr T Vickey	**W Murfitt**	E/C	Identifying tau leptons in the ATLAS experiment
52.	Dr T Vickey	**P England**	T/C	The physics of SCUBA diving
53.	Dr T Vickey		D/E	Semiconductor detectors in particle physics
54.	Prof D Whittaker		T	Dielectric multilayers
55.	Prof D Whittaker		E/T	Lorenz waterwheel
56.	Prof D Whittaker	**W Fewster** **L Wavish**	E/T	The upside-down pendulum

E	Experimental	T	Theory
C	Computational	DA	Data analysis
D	Design	TE	Teaching

Please see your supervisor as soon as possible in order to start work on your project!

Dr Chris Booth – Room D24