Project List **Chris Booth 10/02/17**

SESSION 2016-2017
PHY342
PHYSICS – THIRD YEAR PROJECT LIST

No.	Supervisor(s)	Student(s)	Type	Project Title
1.	Dr C Booth		C	Cooling the MICE target
2.	Dr C Booth	**M Cullen**	C	The high energy cosmic ray cut-off
3.	Dr C Booth		C	The Neutrino Factory and neutrino oscillations
4.	Dr S Cartwright & P Stowell		C/DA/T	Neutrino interaction projects *(various options)*
5.	Prof. J. Cockburn	**D Causey** **M King**	D/E/TE	Development of demonstrations for Year 2 electromagnetism lectures
6.	Prof. J. Cockburn		E	Physics of stringed musical instruments
7.	Prof. J. Cockburn		E	Optical spectroscopy of semiconductors
8.	Dr I Dawson & Prof D Costanzo		TE	Seeing the invisible world of particle radiation
9.	Prof M Fox	**L Smith**	E	Atomic spectroscopy
10.	Prof M Fox		E	Shot Noise
11.	Prof J Hobbs		E	Measuring anisotropic mechanical properties of the bacterial cell wall using atomic force microscopy
12.	Prof J Hobbs	**R Ireland** **H Lockett**	E	Writing at the nanoscale with atomic force microscopy
13.	Prof J Hobbs		E	Watching polymers crystallise with the atomic force microscope
14.	Dr P Kok		T	Measurements at the Heisenberg limit
15.	Dr P Kok	**T Galvin** **D Grundy** **S Kearney** **A Kingston**	T	Foundations of quantum mechanics
16.	Dr D Krizhanovskii		D/E	Laser optical beams carrying non-zero orbital angular momentum
17.	Dr D Krizhanovskii & M Sich		E/C	Spectroscopy of exciton polaritons
18.	Dr D Krizhanovskii & P Walker		C/D	Design of optical microstructures for on-chip nonlinear optical circuits
19.	Dr V Kudryavtsev	**T Guile**	D	Has dark matter been discovered?
20.	Dr V Kudryavtsev & E Korolkova		C	Designing a dark matter experiment
21.	Dr V Kudryavtsev & D Woodward		C	Muon tomography for carbon storage monitoring
22.	Dr V Kudryavtsev		C	Setting a limit on WIMP interactions from a dark matter search experiment
23.	Prof. D Lidzey		E	Temperature dependent spectroscopy of perovskite semiconductors
24.	Dr J McMillan	**N Mehmood**	E	Monitoring the neutron and gamma emissions of the pulsed neutron fusion generator
25.	Dr M Malek		A	Testing predictions: How accurate is the weather forecast?
26.	Dr M Malek	**L Swindells**	D	Science communication in unconventional settings
27.	Dr M Malek		C	Reconstructing neutrino events in a liquid argon detector
28.	Dr M Malek	**J Gardner** **B Tomlinson**	E	Developing a new type of neutron detector
29.	Dr M Malek		TE	Teaching quantum mechanics in a macroscopic classroom
30.	Dr M Mears	**M Charlton** **E Martin**	E/T	A prototype device for detecting early-onset Parkinson's disease

31.	Dr M Mears		D/E	Developing a sperm count device
32.	Dr M Mears		E/T	Phase transitions of thin polymer films
33.	Dr M Mears	**J Cooper** **T Sarosi**	E/TE	Solving the problem solving problem
34.	Dr N Olivier		C	Optimizing image analysis for optical super-resolution microscopy
35.	Dr N Olivier		C	Benchmarking high density software super-resolution microscopy
36.	Prof L Roszkowski		T	Dark matter - evidence, main candidates and relic density
37.	Prof L Roszkowski	**R Mann** **J Rigby**	T	Supersymmetry and the Higgs boson
38.	Prof N Spooner		E	Development of liquid argon particle detector technology for neutrino physics
39.	Prof N Spooner		A	Searches for Dark Matter with the DRIFT directional detector
40.	Prof N Spooner		C	Computer simulations for the COSINE-100 Dark Matter search in South Korea
41.	Prof A. Tartakovskii		D	Efficient light extraction from luminescent nanostructures in optoelectronic applications and nanoscience research
42.	Prof A. Tartakovskii		C	Principles of magnetic resonance
43.	Prof L Thompson		C	Development of a peak finding and fitting algorithm for the treatment of HPLC spectra
44.	Prof L Thompson		C	The computer simulation of ray tracing in a plastic scintillator
45.	Prof L Thompson		E/C	Position reconstruction in plastic scintillator
46.	Dr T Vickey		T/C	The physics of SCUBA diving
47.	Dr T Vickey		D/E	Semiconductor detectors in particle physics
48.	Prof D Whittaker		T	Dielectric multilayers
49.	Prof D Whittaker	**T Stokes**	E/T	Lorenz waterwheel
50.	Prof D Whittaker		E/T	The upside-down pendulum

E	Experimental	T	Theory
C	Computational	A	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