Project List **Chris Booth 29/09/'17**

SESSION 2017-2018
PHY341
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	**B Easeman**	C	The high energy cosmic ray cut-off
3.	Dr C Booth		C	The Neutrino Factory and neutrino oscillations
4.	Drs A Buckley & C McDaid	**S Ellwood**	E	Thermometry in advanced manufacturing – comparing different thermal cameras
5.	Drs A Buckley & C McDaid		E	Thermometry in advanced manufacturing – designing the perfect black body source
6.	Drs A Buckley & C McDaid		E	Thermometry in advanced manufacturing – modelling furnace heat flow and temperature
7.	Dr A Buckley	**B Andrews** **R Chapman**	D/C/E	Energy solutions for closed loop aquaponic food production
8.	Dr E Campbell	**G Barber** **A French**	T/C	Cloud quantum computing: the IBM quantum experience
9.	Dr S Cartwright		D/TE	Design of a first or second year option course
10.	Prof J Cockburn	**M Kuprijanovs** **G Weaver**	D/E/TE	Development of demonstrations for Year 2 electromagnetism lectures
11.	Prof J Cockburn	**J Wells** **M Williams**	E	Physics of stringed musical instruments
12.	Prof J Cockburn		E	Optical spectroscopy of semiconductors
13.	Prof M Fox	**L Perry** **J Waters**	E	Atomic spectroscopy
14.	Prof M Fox		E	Shot Noise
15.	Dr M Grell		E	Photoconductivity in CdS
16.	Dr R Hawkins		T/C	Bacteria swimming trajectories
17.	Dr R Hawkins	**L Jones** **H Westmacott**	T/C	Spread of epidemics
18.	Dr R Hawkins		T/C	Growth of a cancer tumour
19.	Dr R Hawkins	**E Green** **C Hartley**	T/C/E	Teapot effect
20.	Prof J Hobbs	**R Frost** **L Rigby**	E	Measuring anisotropic mechanical properties of the bacterial cell wall using atomic force microscopy
21.	Prof J Hobbs	**C Ireland** **A Roberts**	E	Writing at the nanoscale with atomic force microscopy
22.	Prof J Hobbs		E	Watching polymers crystallise with the atomic force microscope
23.	Dr P Kok		T	Quantum metrology – measurements at the Heisenberg limit
24.	Dr P Kok	**C Diles** **A Haque** **M Rincon Munoz**	T	Foundations of quantum mechanics
25.	Dr D Krizhanovskii		D/E	Laser optical beams carrying non-zero orbital angular momentum
26.	Dr D Krizhanovskii & M Sich		E/C	Spectroscopy of exciton polaritons
27.	Dr D Krizhanovskii & P Walker		C/D	Design of optical microstructures for on-chip nonlinear optical circuits
28.	Dr V Kudryavtsev		D	Has dark matter been discovered?
29.	Dr V Kudryavtsev & E Korolkova		C	Background events in the LZ dark matter experiment

30.	Dr V Kudryavtsev	**J Marshall** **M Al-Namari**	C	Neutron production in radioactive processes
31.	Dr V Kudryavtsev	**F Ashman** **J Lister**	C	Activation of materials by cosmic rays
32.	Drs K Lohwasser & I Dawson		E/D	Investigating the new ATLAS inner tracking detector
33.	Drs K Lohwasser & C Anastopoulos	**J Dymond** **V Mandalia**	E/A	Measuring fundamental properties of the Standard Model
34.	Drs C McDaid & J McMillan		E	Environmental radon detection using party balloons
35.	Dr J McMillan		E	Monitoring the neutron and gamma emissions of the pulsed neutron fusion generator
36.	Dr M Malek		A	Testing predictions: How accurate is the weather forecast?
37.	Dr M Malek	**N Burns** **R Foster**	C	Using antineutrinos for nuclear threat reduction
38.	Dr M Malek	**L Holden** **O Stone**	C	The next galactic supernova burst
39.	Dr M Mears		E/T	Glass transition dynamics of confined macromolecular systems
40.	Dr M Mears		E	Viscosity at the molecular level
41.	Dr M Mears	**B Harris**	E/TE	TEAching physics to the British public
42.	Prof L Roszkowski		T	Dark matter - evidence, main candidates and relic density
43.	Prof L Roszkowski	**C Timoney**	T	Supersymmetry and the Higgs boson
44.	Prof N Spooner		E	Development of liquid argon particle detector technology for neutrino physics
45.	Prof N Spooner	**S Akiva** **I Bezhanova**	C/A	Searches for Dark Matter with the CYGNUS directional detector
46.	Prof N Spooner		E	RADTRACK – new techniques to image particle interactions in gas for rare event physics and homeland security
47.	Prof N Spooner		E	New ways to measure and reduce environmental radon
48.	Prof A. Tartakovskii		D/C	Efficient light extraction from luminescent nanostructures in optoelectronic applications and nanoscience research
49.	Prof A. Tartakovskii	**I Vaidogas**	C	Principles of magnetic resonance
50.	Prof A. Tartakovskii	**T Severs**	E	Optics of novel few-atom-thick two-dimensional materials
51.	Prof L Thompson	**J Parker**	C	Development of a peak finding and fitting algorithm for the treatment of HPLC spectra
52.	Prof L Thompson		C	The computer simulation of ray tracing in a plastic scintillator
53.	Prof L Thompson		C	Simulation of muon scattering tomography for cargo container scanning
54.	Dr T Vickey	**R Houghton** **M Pearson**	T/C	The physics of SCUBA diving
55.	Dr T Vickey		D/E	Semiconductor detectors in particle physics
56.	Dr T Vickey	**A Hapgood** **J Williams**	E	Building a ‘Tesla’ Powerwall using old laptop batteries
57.	Prof D Whittaker		T	Dielectric multilayers
58.	Prof D Whittaker	**B Bradshaw**	E/T	Lorenz waterwheel
59.	Prof D Whittaker		E/T	The upside-down pendulum

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

Dr Chris Booth – Room D24