

PHY342

PHYSICS – THIRD YEAR PROJECT LIST

<u>No.</u>	<u>Supervisor(s)</u>	<u>Student(s)</u>	<u>Type</u>	<u>Project Title</u>
1.	Dr C Booth		C	Cooling the MICE target
2.	Dr C Booth		C	The high energy cosmic ray cut-off
3.	Dr C Booth	R Stanley	C	The Neutrino Factory and neutrino oscillations
4.	Dr S Cartwright	J Turner	D/TE	Design of a first or second year option course
5.	Dr S Cartwright	T Johnson	C	Geoneutrinos
6.	Dr B Chakrabarti		T/C	Small molecule migration through complex networks and gels
7.	Dr B Chakrabarti		C	Using phase maps to understand thermodynamic phase diagrams
8.	Prof N Clarke		C	Nanoparticle diffusion in random networks
9.	Prof N Clarke		C	Can machine learning complement physical models?
10.	Prof J Cockburn		E	Physics of stringed musical instruments
11.	Prof D Costanzo		C	Discover the Higgs boson with ATLAS open data
12.	Prof M Fox	A Smedley E Wall	E	Atomic spectroscopy
13.	Prof M Fox		C	The student-project allocation problem
14.	Dr R Hawkins		T/C	Tracking the family tree of bugs
15.	Dr D Krizhanovskii		D/E	Laser optical beams carrying non-zero orbital angular momentum
16.	Dr D Krizhanovskii & M Sich		E/C	Spectroscopy of exciton polaritons
17.	Dr D Krizhanovskii & P Walker		C/D	Design of optical microstructures for on-chip nonlinear optical circuits
18.	Prof V Kudryavtsev		D	Has dark matter been discovered?
19.	Prof V Kudryavtsev & E Korolkova		C	Background events in the LZ dark matter experiment
20.	Prof V Kudryavtsev		C	Neutron production in radioactive processes
21.	Prof V Kudryavtsev		C	Activation of materials by cosmic rays
22.	Prof V Kudryavtsev & V Pec		D	Designing a future dark matter experiment
23.	Dr M Mears		D/TE	Solving the problem solving problem
24.	Dr M Mears		E/D	A novel approach to measuring contact angles and viscosity for clinical applications
25.	Dr M Mears		TE/D	The decay (rate) of education?
26.	Prof D Mowbray		D/E	The physics of photography
27.	Prof D Mowbray		E/C	Interfacing and sensing with a Raspberry Pi
28.	Prof D Mowbray		D/E	Construction of equipment to demonstrate the properties and applications of light
29.	Dr M Quinn		E/C	Chaotic simple pendulum: compare experiment with simulations
30.	Dr M Quinn	A Alhebsi	C	Investigate chaotic motion of a compound pendulum using numerical simulation methods
31.	Dr M Quinn		E	Investigate chaotic motion of a compound pendulum using experimental methods
32.	Prof N Spooner		E	New ways to measure and reduce environmental radon

33.	Prof N Spooner		C/A	The COSINE-100 experimental search for Dark Matter particles in the Universe
34.	Prof A. Tartakovskii		C	Principles of magnetic resonance
35.	Prof A. Tartakovskii	R Gordon J Smith	E	Optics of novel few-atom-thick two-dimensional materials
36.	Prof L Thompson		C	Development of a peak finding and fitting algorithm for the treatment of HPLC spectra
37.	Prof L Thompson		C	Motion of Particle Orbits in a Circular Storage Ring
38.	Prof D Tovey		C/A	Lightning location with the Met Office LEELA network
39.	Dr T Vickey		C	Automating task scheduling for physicists
40.	Dr T Vickey	J Lawford	T/C	The physics of SCUBA diving
41.	Dr T Vickey		D/E/C	Deep machine learning to identify semiconductor sensor imperfections
42.	Prof D Whittaker		T	Dielectric multilayers
43.	Prof D Whittaker	A Karnad H Shawkat	E/T	Lorenz waterwheel
44.	Prof D Whittaker		E/T	The upside-down pendulum
45.	Prof D Whittaker		E/T	Bandstructure effects in coaxial cable networks

E Experimental
A Data analysis

T Theory
D Design

C Computational
TE Teaching

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

Dr Chris Booth – Room D24