

Undergraduate Project: Safety Organisation - What is required

School of Physics & Astronomy

Ysgol Ffiseg a Seryddiaeth



To ensure compliance with Health and Safety regulations for undergraduate project work, the following objectives must be **completed before work commences**.

1. All Students

With help from their supervisors, students must complete the “Project Safety Overview” form. Supervisors should then make three copies: one for the student, one to be given to Mr Steven Baker (for the module organiser) and keep one for their own records.

Regarding work associated with projects, supervisors hold the responsibility for the health and safety of their students, rather than the module organiser. Students effectively become members of their supervisor’s research group. The Project Safety Overview form serves to establish the supervisor-student relationship whilst allowing retention of School oversight.

2. Students working in laboratory environments

Laboratory based students are viewed in the same way as any other worker in that research environment, (although usually with lower expected levels of competence and experience). Hence, the following must be completed and signed off:

- A formal induction into the laboratory before commencing work. Inductions will be individual to each laboratory.
- Risk assessments (RAs) or standard operating procedures (SOPs) for the activities they will perform.

The above should include appropriate training for the required activities and any signing off should be done by competent staff.

3. Students not working in laboratory environments

Health and Safety regulations are still pertinent, especially for activities including: computer work and external outreach work. The latter will certainly require appropriate risk assessments, training and guidance.

4. Notes to assist

- A template Induction Checklist is attached.
- A template Risk Assessment is attached.
- The relevant RAs/SOPs may already exist or may need to be generated by the student as part of their project.
- All new RAs/SOPs must be checked and signed off by competent staff.
- Some projects may involve students working against a number of RAs/SOPs.
- As far as (safe) activities in a laboratory are concerned the “laboratory supervisor” is a higher authority than a “project supervisor”.

5. Advisors

For particular Hazards specialist knowledge may be required. The School has designated advisors who may be contacted for advice. Most relevant for projects are:

- **Chemicals** – Mr David Beaumont-Walker/Dr David Westwood
- **Computer work** – DSE assessors/Mr Nic Tripp/Mr David Beaumont-Walker
- **Cryogenics and Microwaves** – Professor Peter Ade
- **Lasers** – Professor Wolfgang Langbein
- **Magnetics** – Dr Sean Giblin
- **Radiation** – Professor J Emrys Macdonald
- **School Safety Coordinator** – Mr David Beaumont-Walker

Undergraduate Project: Project Safety Overview

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Students should discuss this sheet with their project supervisor and agree its content. Both should then sign before the project supervisor takes three copies. One copy should go to Mr Steven Baker no later than the end of Teaching Week 2 in the Autumn Semester. Students and supervisors should also each retain a copy for their records.

Name	Tomas James	Degree Programme	MPhys Astrophysics	Supervisor	Dr. Paul C Clark
Project Title	How good is dust emission as a tracer of structure in star-forming molecular clouds?			Rooms/Labs	

Proposed Project activities:

The goal behind Tomas' project is to test our current techniques for probing the properties of prestellar cores is observational datasets from Herschel. Tomas will first have to 1) create fake emission maps from simulation data using the radiative transfer code RADMC-3D 2) create emission maps in a range of wavelengths that cover the instrumental bands of PACS and SPIRE on Herschel 3) use the standard procedures adopted by the observational community for converting the individual pixel SEDs to maps of column density and temperature. 4) compare the "fake" maps to the 'true' values from the SPH simulation to see where this first stage in the observational pipeline can go wrong. 4) use "dendrogram" software to extract prestellar cores from both the "real" and "fake" maps, and compare the differences in the core populations. 5) compare the masses of the cores to the masses of the stars that actually do form in the simulation. If there is time, Tomas can also test how the uncertainties in the dust properties affect these measurements, and also test the quality of the dust temperatures derived in the SPH simulations by performing a full Monte Carlo RT dust temperature calculation on the density distribution for a given interstellar radiation field. By the end of this project, Tomas should be proficient in: using RADMC-3D; dendrogram analysis; basic star formation theory; and the issues of using dust as a tracer of mass in star formation.

Checklist:	Yes/No	If yes:
Is the student working in partnership with any other students?	No	n/a
Does the work involve use of chemicals?	No	Students must receive training against COSHH regulations before work commences.
Does the work involve use of a laser?	No	Students must receive training against Laser regulations before work commences.
Does the work involve ionising radiation?	No	Students must receive training against Ionising Radiation regulations before work commences.
Does the work involve extended periods at a computer?	Yes	A DSE assessment should be completed.
Is the work to be carried out in one of the School's experimental research laboratories?	No	The relevant laboratory manager should be made aware of the students activities and provide appropriate training before work commences.
Are there any activities planned involving people from outside the School?	No	Students should seek guidance before work commences.

Signatures for printed copies:

Supervisor:

Date:

Undergraduate:

Date: 20/10/15