

# Projects

(Please sit in your groups and meet each other)

Project	Visit	Team
<b>GP_002</b> - Titan Aerobot Support Mission	TBC, but tentatively 30 or 31 October	Cameron Waters, Robert Ferguson, Daniel Smith, Matthew Walsh, Alasdair Grant
<b>GP_003</b> - Development of a pulse correlation Reflectometer	17 October, 14:00, Oxford	Eloy Torres Ramon, Lukas Burakauskas, Sarah Littlejohn
<b>GP_004</b> - Tuning in to developing thunderstorms	15 October, PM, Bristol (pending driver availability!)	Oliver Tyers, Katherine Lausch, Catherine Curtin, Andrew Doyle, Marian Longa
<b>GP_005</b> - Should I rain or should I snow?	15 October, PM, Bristol (pending driver availability!)	Charles Yin, Matthew Peplinski, Ying Xiong
<b>GP_006</b> - Augmented Intelligence: Correcting Biases of the Human Brain	15 October, 15:00, Oxford	Rose McNally, Edward Crookenden, Lucy Fellingham, Thomas Vout
<b>GP_007</b> - Instrumentation and Characterisation of Cryogen Free environments for nanoscience experiments	TBC	Viktoria Noel, John Gray, Ian Foo



# Introduction to the BA Group Industrial Project

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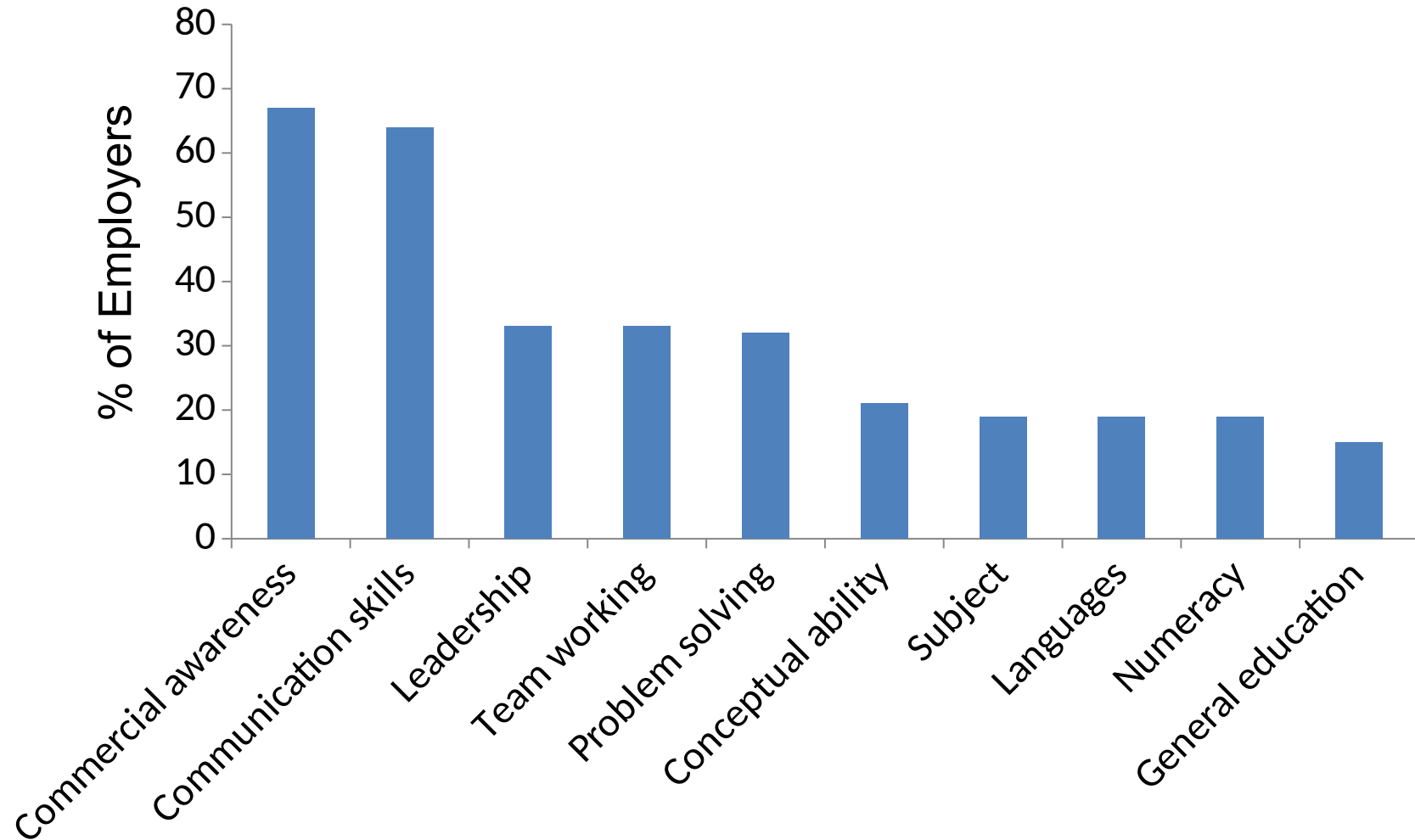
9 Oct 2018, BA Project Introduction MT 2018

Oxford, UK

# Overview

- Motivation
- Background, aims and objectives
- Organisation of the project
- Team working
- Project management
- Team exercise

# 1. Motivation - Skills Shortages in Graduates



Source: Association of Graduate Recruiters

# 2. Background, Aims and Objectives

- Aims and objectives (for Oxford University)
  - To give students awareness of the role of physicists in industry
  - To improve student employability, through communication skills, team working, project management etc
  - To foster departmental links with industry
- Aims and objectives (for sponsoring companies)
  - To get a problem investigated by physicists
  - To give some companies awareness of what physicists can do
  - To meet some promising future graduate employees
- Feedback has been overwhelmingly positive

# 3. Organisation - Overview

- Your company has already come up with a problem they would like you to investigate
- (Almost) Everyone is in a group of 4-5 people from one of their three choices (if expressed)
- This lecture is about:
  - how the projects are organised
  - the basics of team working and project management
- At the end there will be an opportunity to think about your teamwork style and discuss it with your team

# 3a. Timeline MT

- MT Week 1, Tues: BA Project lecture – Robert Hooke Meeting Room
  - MT Week 1, Weds: Safety lecture – Martin Wood Lecture Theatre, 14:00
  - MT Week 1-2: First team meeting (arranged by you!)
  - MT Week 1-3: Face to face meetings with industrial mentors, combined with industrial visits
  - MT Week 2: You should arrange to see your academic supervisor some time this week and regularly thereafter (every two weeks)
  - MT Week 2-7: E-mail or other weekly contact with industrial mentor. Start your project work
  - MT Week 7: Write a short (1 page) progress report for your college tutor
- You MUST meet with your group weekly and your academic supervisor at least once every two weeks this term and next**

# 3a. Timeline HT & TT

- HT Week 1-4: Continue group work and regular interactions with both supervisors.
- HT Week 4, Thurs: Project presentations and group assessment.
- HT Week 5: With your Academic Supervisor you will decide upon an aspect of the project to write up individually. Continue to work as a group whilst doing your write ups.
- HT Week 9: Hand in a draft (as complete as possible) of BA project report to your Academic Supervisor. You and your supervisor must complete and sign the BA Draft Form from the **BA Report Guidance**<sup>1</sup>.
- HT Week 10 on: Comments from Academic Supervisor.
- TT Week 1: Hand in your report to Examination Schools (full instructions in the **BA Report Guidance** document).

<sup>1</sup> <https://www2.physics.ox.ac.uk/students/undergraduates/ba-project-guidance/ba-project-report>



# 3b. Visit Practicalities

- Visits will take place in the next few weeks. You should be informed by Hannah Glanville ([hannah.glanville@physics.ox.ac.uk](mailto:hannah.glanville@physics.ox.ac.uk)) of the details and travel arrangements.
- You should meet your industrial mentor, who will introduce you to the project, and be shown any facilities. Your academic supervisor may also attend the visit.
- We have kept the visits out of lab/lecture time wherever possible. Most meetings will only require a half day out.
- If your visit involves public transport (e.g. to Harwell Campus/RAL) then **keep all bus tickets/receipts** and you can claim them back.
- Health and Safety for travel and visits: do not take any risks that you would not take normally (e.g. crossing roads safely, not hanging around anywhere you feel unsafe, taking a charged mobile with useful numbers etc., travelling in a group)
- There should be a “return visit” towards the end of term where you discuss progress with your industrial supervisor

# 3c. Your Projects

- The company will present you with a real physics-related problem that they want you to investigate.
- This is likely to be something not directly related to your course, and it may be your first experience of an open-ended problem. **Do not be put off!**
- Your industrial mentor may suggest you take a particular approach to solving the problem, so listen out for suggestions.
- Try and come up with a plan to get started straight away as things often take time to set up. It does not matter if you need to modify it later.
- Your industrial mentor wants this problem solved and wants to help you to do it, so do not hesitate to ask them questions. They will tell you if you are pestering them, but their feedback has been that students do not contact them enough.
- We expect you to get started with this project immediately and work on it through Michaelmas Term.

# 3d. How to do the Project

- You are in charge! Companies want students to take the initiative.
- Nominate one person to deal with all communication with the company. Aim for one email/skype/phone call per week. Discuss communication with the industrial mentor when you meet them. Respect your mentor's other commitments.
- Your team should be meeting at least once a week. Agree on tasks for each person (more on team working later). You should be spending approximately 1 day per week all this term and next on the project.
- Your academic supervisor is there to guide you and help with any local problems, or problems with the company. You must see them every 2 weeks.
- You are welcome to use any free space in the Mac computer room (avoid Thursdays or Fridays in weeks 1 or 2), open approx 8-5 Monday-Friday. We will try to provide any facilities that you need.
- You can visit companies more than once if you think it helps, please ask Hannah.
- **After the group presentation you will be focusing more on your individual write up, but we still expect you to meet regularly as a group to discuss your work, and to keep in touch with your industrial supervisor.**

## 3e. Experimental Work

- **If any experimental work is to be done at your host company, your academic supervisor must be told.**
- You cannot start until a risk assessment has been prepared.
- Most experimental work will be based in the Teaching Laboratories. You can work in the teaching laboratories any time 9:00-17:00 Monday-Friday, but you may NOT work alone on a Wednesday!
- Technical support is provided by Keith Long ([keith.long@physics.ox.ac.uk](mailto:keith.long@physics.ox.ac.uk)). See him if you need anything. If you ask Hannah, me or the demonstrators, they will usually direct you to Keith...

# 3f. Assessment

1) Project marks are divided between group and individual work. 125 marks contribute towards your exams.

2) Group mark (25):

- Assessed by a team of markers on the basis of your presentation in Hilary Term week 4.
- You must ALL contribute to the presentation (even if not one of the presenters).
- You will normally ALL get the same mark for this part.
- Last year we assessed scientific presentation of the project (10 marks available), evidence of team working (5), communication skills (5) and project management (5).

3) Individual mark (100):

- You will write an individual report based on your contribution to the team project. Discuss this with your academic supervisor after the presentation.
- You can, and should, discuss your results and report with your team, however please do not go through the details of the text with each other. Shared results are fine, shared write ups are not.

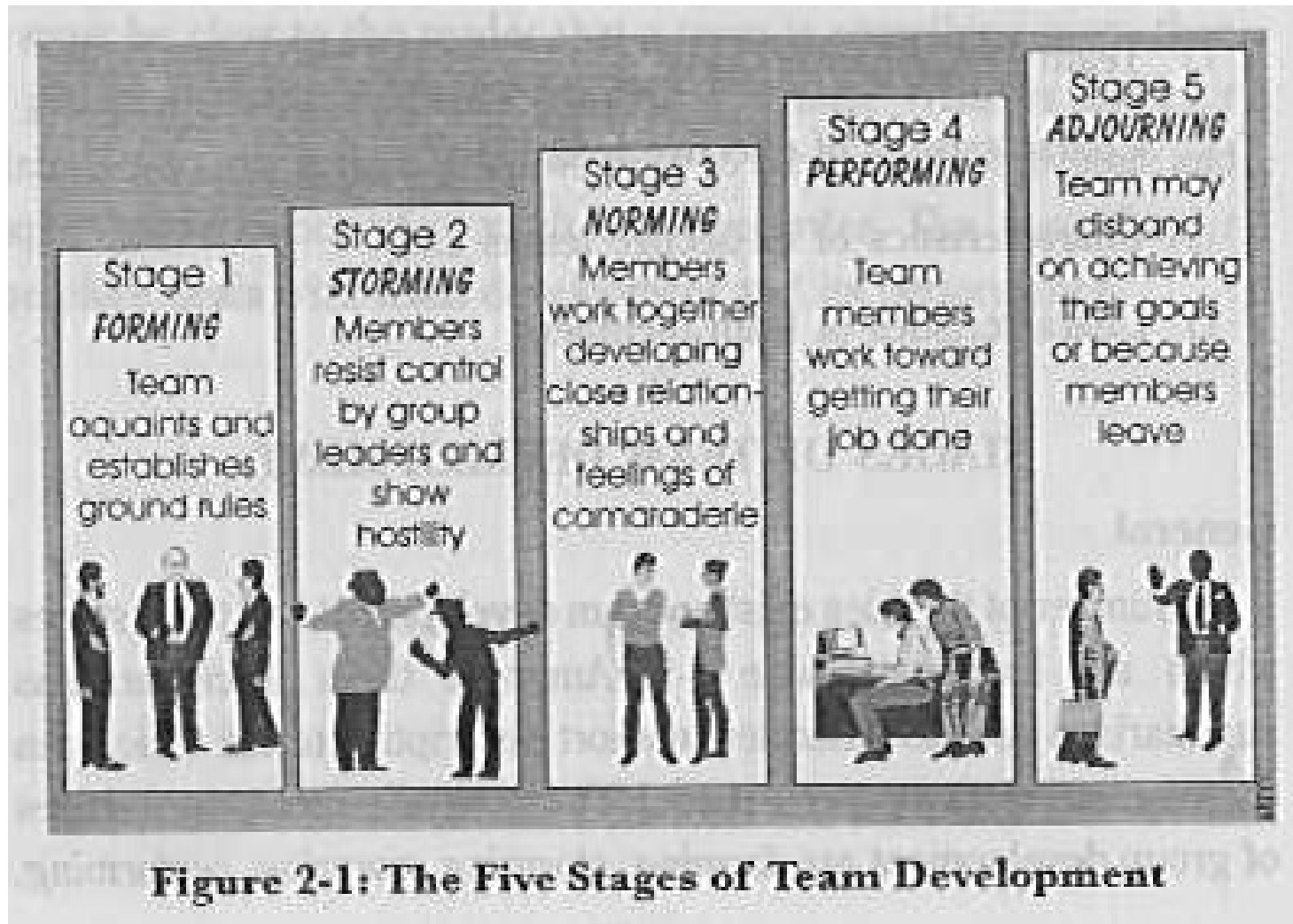
**4) If you do not hand anything in at the end or do not show up for the presentation without good reason, you could fail your entire degree!!**

# 4. Team Working

- Team working is a necessary part of almost any career, and many graduates are employed on the basis of their performance in a group exercise.
- People play different roles in a team – consider what yours is or might be:
  - Encourager
  - Clarifier
  - Leader
  - Summariser
  - Ideas generator
  - Evaluator
  - Compromiser
  - Recorder
- We may come back to this at the end if there is time.

# 4. Stages in Team Development

Tuckman model



See also: <https://www.projectsmart.co.uk/the-five-stages-of-team-development-a-case-study.php>

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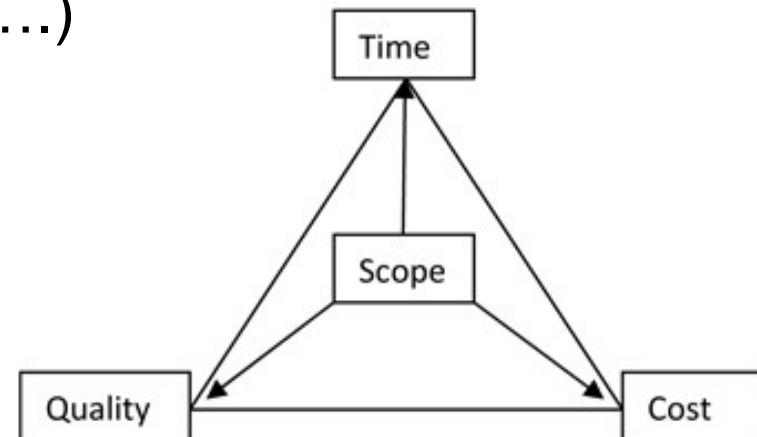
# 4. Team Working Summary

- A team should play to its strengths.
- Be aware of your co-workers' strengths and weaknesses.
- Plan your final presentation carefully, bearing the advice above in mind.
- Team working doesn't mean you have to work together all the time – you should plan around availability and other commitments.
- Use technology appropriately (e.g. skype, google docs, Redmine) – but do not use it as a sophisticated procrastination tool.
- If you get stuck:
  - TALK TO YOUR TEAM FIRST
  - THEN TALK TO YOUR SUPERVISORS



# 5. Project Management

- Project management is about making sure a project meets its objectives within certain constraints, usually, scope, time, cost and quality.
- A key concept in project management is the critical path. Whilst some tasks can be done in parallel, others have to be completed before some things can proceed.
- (this can often hold up lab work....)



Source: Association of Project Managers

# 5. Project Management: Basics

- Come up with a plan of what to do first of all. Discuss with each other, your academic and industrial supervisors.
- Managing scope:
  - Define your task and break it down into chunks to be carried out by 1-2 people.
  - Scope can be continually redefined.
- Managing people:
  - Team working.
  - “Managing” your supervisors to get what you want from them (e.g. asking clear questions).
  - Interactions with technical staff.

# 5. Project Management: Basics

- Managing time
  - How long will a task take? Usually longer than you think!
  - Which deadlines are firm and which deadlines have a little more flexibility?
- Managing tasks
  - Think about which tasks can run concurrently, with different people working on them.
- Your academic supervisor should help you to plan and schedule your work.
- You may have a natural “project manager” in your group, which can be very helpful, but make sure.
  - That the project manager keeps in touch with the physics, as a real technical manager would.
  - That if you do not have a natural “manager”, you still have regular meetings.
  - The project manager can still produce a valuable physics-based report using their unique skills.

# 6. Buying Things

If you need to buy things there is a procedure:

- 1) Talk to both your supervisors about your plans. Explain what you want and why.
- 2) Talk to Keith Long about your needs.
- 3) It is usually possible to buy items that are relatively cheap (under £100). You will need to make a clear case for more expensive items.
- 4) Remember that orders can take time to come (especially from abroad), so plan ahead where possible (this is project management!).

# Common Problems...

- “There’s a person in my team who does not really contribute”
  - Sorry, but that is life. Their marks will reflect their attitude. If they have been absent/uncommunicative for more than 2 weeks contact your academic supervisor with your concerns.
- “I cannot get in touch with my industrial supervisor”
  - Contact your academic supervisor.
- “We need special software”
  - Email Hannah and she will direct you accordingly.
- “We are really stuck”
  - Tell someone! Ideally your industrial supervisor but it could be your academic supervisor or one of the project organisers (Hannah or Moritz).
- “We worked together and have not got independent results, how do we do our write ups?”
  - That is not a problem as long as you prepare your write ups individually.

# Summary

- The projects will provide you with valuable skills and contacts that you can use when deciding on a career.
- This is YOUR project and it is up to you to take the initiative. Getting going quickly this term is important.
- Project details available at:  
<http://www2.physics.ox.ac.uk/students/undergraduates/third-year-group-projects>.
- Be aware of your roles within the team!
- Be aware of the basic principles of project management to keep yourselves on track.
- Any questions not answered here/website, ask Hannah Glanville at [hannah.glanville@physics.ox.ac.uk](mailto:hannah.glanville@physics.ox.ac.uk).

# Next Steps

- **Compulsory safety lecture** 14:00-16:15 pm Wednesday (tomorrow) in Martin Wood lecture theatre
- Organise a team meeting very soon even if just to have a chat
- Keep an eye on when your visit is happening

# Do the Quiz to find your Role in a Team

<https://www.123test.com/team-roles-test/>

Also: <http://www.youofficecoach.com/coaching-resources/coworker-relationships/working-in-teams/what-role-do-you-take-on-a-team>