HUTCHINSON LAB HANDBOOK

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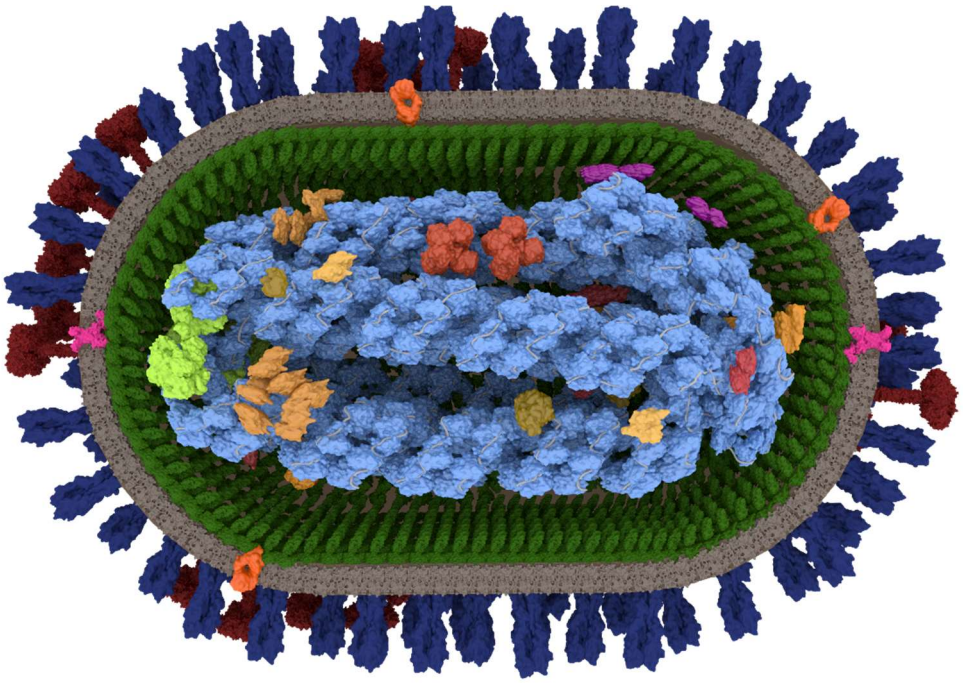

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Introduction

About the Lab

If you are reading this because you have just joined the Hutchinson lab, then welcome! We're really glad you joined us. (If you have been here for a while and just wanted to check on something – that's still true.)

We are a molecular virology lab, with a particular focus on influenza viruses. We're based at the MRC-University of Glasgow Centre for Virus Research (CVR), which is an excellent place to be if you find viruses fascinating, virology exciting, and virologists fun people to be around. We do.

About this Handbook

This Handbook is modelled after Handbooks used in a number of other labs[1]. It is intended to make it easier for you to work as a part of this lab, by setting out some of what you can expect and what is expected of you. It's written particularly for people who are new to the lab, but it might be useful for any of us to refer back to as time goes on.

The Handbook is not an unalterable rulebook. If you think that the expectations in here should change this is fine – feel free to discuss that either in a lab meeting, or individually with Ed. The Handbook is also not where to look for policies, safety information, protocols, etc. All of these exist elsewhere (the Resources section may remind you where).

This Handbook is the result of ongoing discussions between members of the group, and it aims to reflect everyone's views. However, it is written by Ed, and it has a few features in common with him: it is trying to be helpful, it is still developing and is open to correction, and it is (fairly) short.

[1] See e.g. the Aly lab (https://github.com/alylab/labmanual), Peelle lab (http://jpeelle.net/peellelab_manual.pdf) and Ritchey lab (https://github.com/memobc/memolab-manual), though bear in mind that all three of those labs (and this one) have different cultures and priorities.

Our Lab

We support each other

We respect each other. This lab (and the university as a whole) should be a supportive place to work for everyone, whatever their culture, ethnicity, beliefs, religion, sexuality or gender. We do not tolerate discrimination or bullying for these or any other reasons.

We help each other. Everyone in the lab should be willing to help each other practically, and everyone is expected to provide discussion and constructive feedback on each other's work, particularly at lab meetings and in practice presentations. In addition, Ed is available to discuss projects in person and by e-mail and to provide written feedback on documents and presentations. It's usually obvious when this is needed, but you should always feel able to ask.

We help our colleagues. This includes (but is not limited to) cleanliness in communal areas, respecting the safety of ourselves and others when working in the lab, engaging with the floor co-ordinators and following their requests, doing TC room duties thoroughly and promptly, and attending internal seminars. Essentially this is a Golden Rule approach: we should act ourselves the way we want our colleagues to act.

We look for ways to improve things. Everyone here is a talented scientist doing (most of the time) a really great job. This is quantifiably true (the University has the statistics to prove it) but it can sometimes be easy to forget. If so, Ed has not forgotten, and he will gladly remind you of your strengths if you're feeling down (really – see also 'Is your project exciting?', below).

However, none of us is perfect. Because of this:

(i) Very little is truly set in stone, and if you think if might be possible to improve something (even if it's not obvious how) please mention it. Issues affecting the group can be discussed in lab meetings or directly with Ed; there are referral routes for issues affecting the CVR or the wider university (see Resources below, or ask Ed).

(ii) Most work should (will) attract critical feedback, which can be quite detailed. If you are providing feedback, thank you for doing so, but please be constructive. If you are receiving it, then remember that the feedback is a tool to help you improve your work – it is not a criticism of you personally. If you know you will need feedback, please provide enough time for this – discuss with Ed how long will be needed to provide written feedback, and aim to schedule practice presentations at least a week before the conference.

(iii) Ed encourages, expects and welcomes suggestions, criticisms and concerns and disagreements about what he is doing himself, and he will seriously consider any suggestions about things he could do differently. You can bring this up at any time, and you are likely to be asked directly to provide feedback on how Ed is doing at supporting you during any formal review of your own work.

We look after ourselves and the people around us.

- We follow relevant safety policies and risk assessments - *obviously*. (If they are no longer fit for purpose, then point that out – they can be updated.)

- We recognise that we work best if we look after ourselves, maintain a suitable work-life balance and take sufficient holidays. We are also ambitious about the work we want to get done, and we recognise that balancing these is not trivial and requires attention. It is important to be productive and make good use of your time, but don't confuse getting a lot done with being visibly exhausted – only one of these is useful for you or impressive for anyone else (see also: 'Your Time').
- Because we are virologists (and grown-ups), we recognise that when we are unwell we should be at home recovering and not in work infecting everyone else.

We care about what we're doing

We care about our integrity. Results are important, but not as important as being honest and trying to avoid mistakes. Our reputations depend not just on our outputs, but on those outputs being trustworthy. **Academic misconduct, including misrepresentation of data, falsification or plagiarism, is always entirely unacceptable.**

- **It is OK if you are initially unsure how to honestly represent certain data – as long as you ask.** Sometimes choosing the clearest way to honestly show what you have done is not obvious. If so, the way to get to an honest solution is to discuss it: as a group, or with Ed.
- **It is OK if your results don't agree with your (or Ed's, or anyone else's) favourite hypothesis.** Hypotheses are things we make up. We can always make up better ones. The data are the data are the data.
- **It is OK if you make a mistake – PROVIDED you don't hide it.** Mistakes happen – we deal with them by admitting them, and then moving on. Even big mistakes happen sometimes (though, obviously, please try to avoid them). It is **always** better to discuss a mistake as soon as possible to prevent it happening again and to prevent things being built on it. If the mistake has been shared outside the lab, including in a publication, it is even more important to acknowledge this as soon as possible.

We look after our data.

- Data should be stored in a location that is backed up and described in a way that would be comprehensible to someone else.
- If you are planning to leave the lab your plans should include how you will make your data available after you are gone.
- An outline of how we manage our data is included in the lab's **Data Management Plan**, but you are responsible for clearly describing and safely storing your data. If you need more guidance on looking after your own data speak to Ed, and if you feel that our group's data management can be improved please discuss this with everyone in a lab meeting.

Your Work

Your Project

What are you working on? Everyone joined the group in order to work on a particular topic, but we hope you will have new ideas while you are here. It is also usually possible, and sometimes desirable, to adjust an existing project. This applies to everyone, but the more experience you have the greater the expectation that you will be actively involved in developing your projects and devising new ones.

You are also fully entitled – and encouraged – to disagree with Ed about specific details of your project or its overall direction. He won't automatically agree with you, but if you persuade him that your idea is better, he will be delighted.

Is your project exciting? Inevitably all projects include dull or tedious tasks, but the main reason for being here is that *you are working on a project that you think is exciting*. If you find your project is getting less exciting, then let Ed know – it's important that we work on this as soon as possible. We're unlikely to be able to change what excites you, but we can look at changing your project to better match this.

How's your project going? All active projects are discussed each week at the lab meeting, including (especially) on weeks when none of the experiments worked. Projects can also be discussed one-to-one with Ed (or with your day-to-day supervisor if you are here as an Honours or master's student). The default is to do this weekly, but this can happen less frequently, or only when required, depending on what works best for you (and the project).

Whose project is this? Broadly speaking, although we help each other out, all long-term members of the lab (PhD students and postdocs) should spend most of their time on project(s) that they are leading themselves. Along with Ed, they will be responsible for developing new ideas for these projects, generating most of the data, and writing at least the first draft of any manuscripts. Under those circumstances the lead researcher on the project should expect to be first author on a manuscript.

This is the normal model for work, but we recognise that things can become more complicated, for example: (i) if two initially unrelated projects converge, (ii) if someone leaves a project mid-way and passes it on to someone else, or (iii) if a study is assembled from many separate items of work. If you find yourself in this sort of position, or if you have concerns about your contribution to a project for any other reason, it is always acceptable to discuss this with Ed (and, if you wish, to ask for written clarification). The need for your work (and the work of all contributors) to be recognised will always be a key consideration in deciding how to manage project leadership and authorship.

In general (for all authors, not just the first author), we adhere to the ICMJE criteria for authorship, which are:

- Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND
- Drafting the work or revising it critically for important intellectual content; AND
- Final approval of the version to be published; AND

- Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

What do I need to know? If you are working here in any capacity then being enthusiastic about science is a given, and if you are a long-term member of the lab you are expected to develop an expert knowledge in your own research topic, keep up with new literature (and news) in influenza virology and to read deeply into other areas of science that catch your interest. This should be fun (see 'Is your project exciting?' above), so please let people in the group know if you find anything particularly interesting. In the same spirit, you will find that Ed waves papers at you – though note that it is usually up to you to decide whether they merit the quickest of skims, a thorough read, or something in the middle.

Everyone is expected to be familiar with the contents of the **Safety Folder**, and should either have read the **Data Management Plan** or have had its key points passed on to them (see Resources, below). Everyone is entitled to read the **Cases for Support** in the grant proposals for the group's current funding, and long-term lab members are strongly encouraged to do so (they are available on request from Ed; please keep them confidential). Ed will provide updates on the lab's **consumables budgets** so that you can see how your work is costed, but he accepts that most people find this very boring and so will only do it a few times a year.

Who else knows what I'm doing? If you are staff or a PhD student, you will be listed on the University website and should update ***Enlighten*** with any unlisted publications (for details on updating your Staff Profile see 'Resources,' below). If you are leading a project, you should have an ***ORCID*** account (which logs your authorship), and you are encouraged to make your work discoverable by creating a profile on ***ResearchGate***.

There is a lab **Twitter** account (@CVRHutchinson; password available on request) so that we can talk about what we're doing on Twitter and follow people we find interesting. It is a group account and all lab members can post, like, retweet and follow – we occasionally indicate exactly who is tweeting, if relevant (people outside the lab often assume everything is posted by Ed unless told otherwise). Please remember though that it is a group account, and it is for professional use – both of these constrain how it should be used. If you want to discuss/follow things other than science and the practice of science, or if you want to be at all confrontational (even with people/views with whom you have a legitimate grievance), then do this from your personal twitter account, not from here. If it helps, remember that **everything we tweet is automatically reposted on our university homepage**.

What happens when I leave? If you are planning to move on to a different position, please discuss this with Ed as soon as you are comfortable to so – this will allow us (including you) to plan to get the most out of the research you have built up. You will be responsible for disposing of unwanted material and archiving important samples before you go – make sure you leave enough time for this. You are also responsible for making sure your lab books are comprehensible to someone else. Lab books and other data remain the property of the lab, though you may take copies for your own records if you wish. It may be that you wish to continue to develop a project you've worked on here in your future career. It would be wonderful to know that both you and the projects are having such success, but please discuss this with Ed as early as possible if you are considering it.

Your Career

There are lots of forms of success. Some people stay in academic research for their entire career, and some people do not. As long as you're making a positive choice, succeeding in doing something else is not in any way a failure to succeed in academia, and it will not be viewed as such. If you move on to another position, Ed will do his best to support your plans for whatever you want to do next. (He is pretty ignorant about non-academic career paths, but that is essentially his problem.) If you do want to stay in academic research Ed will be very happy to talk with you about what this involves and to try and help you plan and prepare.

We are all in training. As well as acquiring new research skills, we are all expected to use our time here to acquire the skills we need to advance in our careers. **This needs to be balanced with research commitments**, but it is an important part of what we're doing. Development opportunities include:

- **Formal Training.** The university organises training courses for staff and PhD students. Additional training is organised through the Network for Early career Researcher Development (**NERD**). You are encouraged to make use of formal training opportunities **– as long as you think they will be useful**.
- **Reviewing.** If you are a PhD student or postdoc, Ed will sometimes ask you to support him with peer reviewing manuscripts, as the opportunity arises. This is voluntary but provides useful training; Ed will provide guidance on what to do and will also assess the manuscript himself. If you do help with a review, Ed will inform the journal editor (confidentially) that you have done so. You are strongly encouraged to set up an account at ***Publons*** so that you can be given public credit for your (anonymous) work. It is critical that you treat any peer-reviewed manuscripts in confidence.
- **Science communication.** There are many opportunities for science communication in the CVR and the wider university, from face-to-face meetings with the public, to helping to teach school students PCR, to podcasting and blogging. There are many reasons for doing this, including the training it provides in communicating what you are doing and why it matters. There are smaller and one-off activities available if you're new to science communication or do not have much time to spare. If you decide to take on larger or more regular communication commitments, you should consider becoming a recognised ***STEM Ambassador***.
- **Teaching.** Long-term members of the lab are likely to be asked to supervise the lab work of undergraduate (Honours) and master's students. They will be encouraged to take an active role in devising these projects and in their overall supervision (including project management and supervising thesis writing). Opportunities for formal teaching are more limited, but if this is something you wish to gain experience of then talk to Ed about it, as it may be possible to join in with some of the teaching he currently does.
- **Committee experience.** There are a number of opportunities to get involved in running things at the CVR, institute and College level. This can allow you to bring about changes which you care about, is a way of being a good colleague, and is a useful experience in itself.

Personal references. It is part of Ed's job (so far, always a very pleasant one) to provide references in support of applications to PhD courses, jobs, etc. You do not need his permission to add him as a

referee, but he would appreciate a warning that you've done this so that he can make sure he has a reference ready on time.

Your Time

Science is demanding and requires a great deal of time, thought, effort and commitment to do well. We acknowledge that this is a hard job, though hopefully a rewarding one.

Although you are expected to work hard and to want to do so, we also acknowledge that people differ in their preferred work patterns, and in the other commitments which they need to schedule work around. The flexibility of research work gives us some scope to manage our time in a way that works best for us.

For long-term members of the group (PhD students and staff), **as long as you are productive and can keep scheduled commitments you will be trusted to make all decisions about how you organise your time.** Note that in many ways this will make your job *harder*, as it means that it is *your* responsibility to set realistic targets, to manage the timings of your projects, and to choose between working efficiently or working longer hours. If that is becomes unmanageable, you can discuss more active management with Ed, but giving you this responsibility is the default position.

In keeping with this, you do not need to ask permission to be away. However, it's considerate to everyone to be clear about when you will be around, so if you plan to be away during core hours (10:00 – 16:00, Monday – Friday) please let people know by updating the **Lab Calendar** (hutchigroup@gmail.com; password available on request). Also, if you are a member of staff please log your annual leave on Core HR.

'Scheduled commitments' include the following:

- Working under direct supervision. If you have asked someone to show you how to do something, or if you are an Honours or master's student who requires supervision, then you need to be there at the times arranged for this (reciprocally, if you are providing the supervision, you need to be there). The same applies if you need to avoid lone working, for example when carrying out a particularly hazardous procedure, or in some cases when trying a new method. If in doubt, ask.
- Pre-arranged meetings.
- Lab meetings.
- Internal seminars.
- 'Regular' (Wednesday) external seminars.
- The monthly Respiratory Virus Group seminars.

Exceptionally, it may be that experimental timings conflict with lab meetings or seminars. If so, it is normally sensible to prioritise the experiment as a one-off. If you're uncertain, or if this is a regular issue, ask Ed (we can and do reschedule lab meetings to make experiments and commutes easier).

Experiments sometimes have awkward timepoints. When this creates problems, we try to help each other out.

Unless agreed beforehand, **there is no expectation that e-mails will be read or responded to when you are not at work**. However, because people are free to organise their own time, it may be that they choose to read and send e-mails at various peculiar hours (due to family commitments, Ed does this fairly often). If you find that e-mails sent out of core hours are difficult to ignore, and find this to be a problem, please talk to Ed.

Finally, there probably isn't a good answer to the question 'how long should I be working?' except to suggest that it is the wrong question to begin with. Science really does require hard work, which can sometimes have features (long hours, tiredness, stress) that are easy to spot in ourselves and tempting to use as a sign that we are doing something right, and to provide way to compare ourselves to others (though we often misjudge how they are feeling). But as well as being harmful in the long run, none of these features are actually measures of whether you are doing interesting science. And apart from doing interesting science, why else did you come here?

Better questions include 'what is the most interesting work I can be doing? What goals do I need to reach to do this? Is it reasonable to balance those goals with my other commitments? When do I plan to reach those goals – is it soon enough to keep me productive, and is the amount of work I will need to schedule to stick to that plan realistic?'

These questions aren't anything like as simple to answer as 'have I been standing in a lab for long enough and do I feel exhausted yet?', but they better questions. They are questions that you can, and should, revisit regularly – by yourself, and in discussion with Ed.

Resources

Online Resources

Lab Website

https://www.gla.ac.uk/researchinstitutes/iii/cvr/staff/groups/edwardhutchinson/

Staff Handbooks

CVR (contains a lot of useful practical information)

https://www.gla.ac.uk/researchinstitutes/iii/cvr/info/staffhandbookandhrguide/

University-wide (less useful day to day, but provides the bigger picture)

https://www.gla.ac.uk/myglasgow/humanresources/handbook/

CVR Communications Links

https://www.gla.ac.uk/researchinstitutes/iii/cvr/info/comms/

Including templates for posters and presentations, information on maintaining your staff profile on the website, and details on social media and CVR mailing lists.

Safety Documentation

https://sharepoint.gla.ac.uk/sites/collaboration/cvr/Risk%20assessments%20templates/Forms/AllItems.aspx

On sharepoint (requires GUID).

Network for Early Career Researcher Development (NERD)

https://www.gla.ac.uk/colleges/mvls/supportforresearch/nerd/

Includes useful career development links and a Moodle site with slides from past talks and other training resources.

Resources on the J:\ Drive

These are all in J:\III\CVR\Hutchinson\Share (accessible on-site or through remote desktop access with GUID):

Bookshelf – eBooks and useful methods chapters. Feel free to add material.

Catalogues – stock lists for the -80 °C storage, antibody collection, cells stocks (in liquid nitrogen), general-use plasmid stocks and primer stocks. Please update as soon as you add materials.

Ordering Information – useful notes for placing orders.

Projects – contains Data (shared access data for each of us and for past lab members), Data Management Plans, notes on draft papers, presentations (internal and external) and project

summary notes (including the stray ideas folder, for cool ideas that we might want to come back to).

Protocols – self-evident.

Reference Sequences – divided between hosts, plasmids and viruses.

Offline Resources

These are all in the lab cupboard.

The Safety Folder

It is red, it contains details of relevant COSHH and GMRA forms, as well as an overview of the legislation and terminology if you would find that helpful. Everyone must read all relevant forms and sign to show they have done so on joining the group, and annually thereafter.

Miscellaneous Science (and other) Books

Feel free to borrow these. (*Fields Virology* is also available online through the university library's website.)

The Lab's Secret Stash of Shortbread

Because science is hard, and living in Scotland has its benefits. Help yourself.