Cyber Identity and Behavior Research (CIBeR) Lab Manual

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Contents

1	Introduction	3
2	General Lab Policies	3
	2.1 Hours	4
	2.2 Timesheets	4
	2.3 Expectations	4
	2.4 Scientific Integrity	5
	2.5 Open, Accurate, and Reproducible Science	5
3	Leadership	6
4	Students	7
	4.1 Ph.D. Students	7
	4.2 Master Thesis Students	7
	4.3 Undergraduate Research Volunteers	8
5	Funding	8
6	Communication Policies	8
	6.1 My Door	9
	6.2 Lab and One-on-One Meetings	9
	6.3 Basecamp	9
	6.4 Email	9
	6.5 Calendars	10
7	Communication Outside the Lab	10
8	Preparing Manuscripts	10
	8.1 Manuscript Preparation Process	12
9	Authorship	13
10	Presenting Your Work	14
	10.1 Talks	14
	10.2 Posters	14
11	Computers and Other Equipment	14
12	Recommendation Letters	14

1 Introduction

My¹ goal is to foster an environment of consistent scientific excellence and personal development that supports every lab member in reaching their full potential, and to help us have fun while doing great science. I want you to be happy and productive while you are here. This manual is a first point of reference for current lab members as we strive to achieve these goals, and serves as a general introduction for prospective members. You can also find the lab elsewhere:

• My professional website: https://www.csee.usf.edu/~tjneal/index.html

• Twitter: http://twitter.com/TempesttNeal

• Google Scholar: https://scholar.google.com/citations?user=GopCh2QAAAAJ&hl=en

• Basecamp: Only accessible by lab members

• Google Drive: Only accessible by lab members

In general, firm policies are in the lab manual, whereas ways of implementing these policies (i.e., getting stuff done) are communicated and maintained via the lab's Google Drive repository and through Basecamp. You should assume that the lab manual is accurate. This means that you should follow all of the policies and protocols contained in the manual. If you notice something that seems to be wrong, please let me know. If there is something in the lab manual that you notice people aren't doing, please bring this up at lab meeting, or to me, privately—don't assume their actions are okay (they are not).

2 General Lab Policies

We expect each other to:

- Push the envelope of scientific discovery and personal excellence.
- Do work we are proud of individually and as a group.
- Double-check our work, and be at least a little obsessive.
- Be supportive—we're all in this together.
- Be independent when possible, ask for help when necessary.
- Communicate honestly, even when it's difficult.
- Share your knowledge. Mentorship takes many forms, but frequently involves looking out for those more junior.
- Work towards proficiency in Python, TensorFlow, Keras, Matlab, LaTeX, etc.

¹This manual was adapted from the Peelle Lab (http://peellelab.org/). Although it is licensed under a Creative Commons Attribution 4.0 License, it is beautifully written and I want to acknowledge Dr. Peelle effort's in writing this document. Many of his statements have been kept intact.

- Be patient, **including with me**. I will forget things you just talked about, and repeat some stories over and over.
- Advocate for our own needs, including personal and career goals.
- Respect each other's strengths, weaknesses, differences, and beliefs.
- Take personal time not working to recharge.

We're sharing a relatively small space, so please be thoughtful of others, including (but not limited to):

- Do not come to the lab if you are sick. It's better to keep everyone healthy. If you are sick, email the lab manager or me to let me know you won't be coming in.
- Be considerate with the thermostat. Everyone has different preferences, so we all need to learn to compromise.
- Do not leave food, drinks, or crumbs out in the lab. Please put food trash in another trash can (not in the lab), especially late in the day or on Friday (so that food doesn't stay in the lab overnight).
- Lock the door if there is no one in the lab, even if you will only be gone for "a minute."
- Keep the lab neat. Items left unattended may be cleaned, reclaimed, or recycled.

2.1 Hours

There are no set hours to work in the lab. You are encouraged to work wherever you are most creative and productive and have very few distractions (a coffee shop, the lab, at home). If you are employed as a research assistant, you are responsible for keeping your hours at the agreed amount specified in your contract.

If you plan to travel for an extended period of time and you will have limited access to research materials or a work environment (or would prefer to take time off to recharge), please let me know at least one month in advance.

Even if you speak with me in person, it is important to document these requests (and my approval) over email so that we have a record. It is your responsibility to make sure this happens.

2.2 Timesheets

When required, please promptly complete your timesheets.

- Hours entered on your timesheet should reflect hours actually at work.
- Web clock times should be entered from the lab (from a lab computer—not your cell phone).

2.3 Expectations

I expect ALL students to be organized and independent, and—importantly—manage their time and research responsibilities so that they complete a project by an agreed upon due date.

Ph.D. and Master thesis students are expected to dedicate the necessary time to complete experiments and projects accurately, thoroughly, and in a timely manner.

2.4 Scientific Integrity

You have a responsibility to me, the institutions that support our work, and the broader scientific community to uphold the highest standards of scientific accuracy and integrity. By being in the lab, you agree to adhere to professional ethical standards. There is never an excuse for fabricating or misrepresenting data. If you have any questions, or in the unlikely event that you have concerns about a research practice you have seen in the lab, please talk to me immediately.

It is also important that you prioritize the accuracy of your work while in the lab. Unintentional errors due to inattentiveness or rushing can be extremely damaging and produce results that turn out to be incorrect. Although there is always a pressure for a high quantity of research, it is critical that everything we do is of the highest quality. Please double-check your work frequently. In many cases, multiple people in the lab should double-check your procedures to ensure no mistakes have crept in along the way.

2.5 Open, Accurate, and Reproducible Science

For manuscripts, consider this paper checklist² that includes sections on open science and statistics to encourage us to continually keep these issues in mind.

We are working towards putting all stimuli, data, and analyses online and linked to each research publication. The idea is not to simply tick a box of "open science", but to make these resources readable and usable for reviewers and other researchers. In service of this:

- Items need to be documented and described. At a minimum, each collection should have a README file³ at the top level that provides details about the item in question (such as a set of stimuli or an analysis).
- Code should be tested, bug-free, and helpfully commented.
- Links should be permanent (ideally a DOI).

In pursuit of this high level of organization and documentation, lab members will frequently be asked to review and error-check lab materials. Lab members creating stimuli or conducting research projects should organize them from the outset in a way that is conducive to eventual sharing (GitHub, ipython notebooks, etc.).

A key part of accuracy is anticipating and avoiding "adverse events" (including near misses), and creating structures in the lab that facilitate a high level of reliability. Examples of adverse events include:

- Any of the lab computers malfunctioning (including freezing or crashing)
- Not being able to find the installation disc for a software program
- Nearly running out of money to pay participants (this counts as a "near miss", which we also need to discuss)

As a lab member, it is your responsibility to be aware of times when things don't go as planned and bring these to the attention of the rest of the group. Even better, let's all work together to find ways of preventing such occurrences in the future.

²https://github.com/jpeelle/paperchecklist

 $^{^3}$ http://jonathanpeelle.net/making-a-readme-file

3 Leadership

As the lab's director, you can expect me to:

- Have a vision of where the lab is going.
- Care about your happiness.
- Obtain the funding to support the science, and the people, in the lab.
- Support you in your career development, including writing letters of recommendation, introductions to other scientists, conference travel, and promoting your work as often as possible.
- Support you in your personal growth by giving you flexibility in working hours and environment, and encouraging you to do things other than science.
- Treat you to coffee (and doughnuts:)).
- Make the time to meet with you regularly, read through your manuscripts, and talk about science.
- Obsess over font choice, punctuation, and graphic design.

The lab manager's (LM) position is also very important. The LM is responsible for

- Ensuring that all lab members are aware of this manual, Basecamp, Google Drive, and social media outlets.
- Maintaining our social media platforms if asked to do so.
- Providing easily accessible resources (e.g., lab copies of textbooks) to lab members when needed.
- Maintaining contact with all lab members, especially when my schedule is busier than usual.
- Serving as a liaison and advocate for the lab's needs.

The LM is *not* responsible for:

- Following up with lab members regarding progress on their individual research projects.
- Ensuring that all lab members have read the lab's resources (e.g., this manual).
- Being the lead on all research projects.
- Supervising research projects.
- Doing my job.

LMs are not assigned entirely based on merit to encourage the development of leadership skills for the more senior students and to promote healthy mentor-mentee relationships between senior and junior students. LMs should take their role very seriously; failure to do so will result in a replacement. Keep in mind that these roles are valuable when I'm asked to provide documents such as recommendation letters or when I'm discussing your research with colleagues. Give me a reason to brag.

4 Students

4.1 Ph.D. Students

I expect Ph.D. students to:

- Know the literature related to their topic like the back of their hand.
- Seek out and apply for fellowships and awards (including travel awards, etc.).
- Realize there are times for pulling all nighters, and times for leaving early to go to the park and enjoy the sunshine.
- Have and maintain a professional website.

By the time you're done, you will be comfortable with data mining and pattern recognition, sharing your work with me and the broader research community through documentation, presentations, and talks, running experiments on Gaivi or CIRCE, writing scripts in Python, and making figures and posters. You may also need to share your data and analysis scripts publicly. The learning curve can be a little steep on these but it's well worth it. (If these aren't compatible with your goals or interests, my lab is probably not a good fit for you!)

In general, I will not approve requests to defend a dissertation until you have satisfied these requirements:

- Published at least one journal paper as first author.
- Published at least three conference papers as first author.
- Published at least one conference paper in collaboration with other researchers in or outside of the lab.
- Presented your research at two or more premier conferences in your field either as a poster or oral talk.

4.2 Master Thesis Students

Students wishing to complete a Masters thesis within the lab should request a meeting with me within their first semester of the M.S. program (preferably a few weeks before their first semester). Please be aware that your thesis study will likely involve some ongoing work within the lab, and I will encourage a project that leads to a publishable manuscript. As I am extremely busy, I expect all graduate students to work independently as much as possible, including M.S. students. However, I am always available for meetings (even those not on the schedule). You are responsible for scheduling meetings with me outside of our normal meeting times and maintaining the progress of your study.

In general, I will not approve requests to defend a M.S. thesis until you have satisfied these requirements:

- Submitted at least one conference paper as first author.
- Submitted at least one conference paper in collaboration with other researchers inside or outside of the lab.

4.3 Undergraduate Research Volunteers

I welcome undergraduate volunteers to work with the lab for research experience and to enhance their educational experience. I expect undergraduates to be utterly reliable and willing to help with whatever projects need it. At a bare minimum, reliability includes showing up on time and making sure that all of your work is accurate (double-check everything). Volunteer students in the lab are encouraged to enroll in Independent Study or Supervised Research credits to receive credit for time in the lab. Undergraduate students are typically paired with an upper level student (Ph.D.) as a mentee.

5 Funding

The goal is that external funding will supply the vast majority of resources needed to conduct our research, including salary for personnel, equipment, participant compensation, and so on. It is important that we run the lab in a way that shows we use our research funding wisely. Please read my CV for a listing of current lab funding.

6 Communication Policies

I am usually busier than I'd like to be, and as a result have less time for talking to folks than I'd like. However, you (lab members) are one of the most important parts of my job, and I need your help to stay organized and involved in the things I need to be involved in. Thus, communication is one of the most (if not the most) important elements of the group. Some general rules of thumb are:

- 1. Be proactive—tell me what you need. This includes coming to knock on my door even if it seems like you are interrupting, emailing me to set up a time to meet, or catching me before or after a meeting. In all likelihood, I will not check in with you as often as I'd like, so it is up to you to make sure nothing falls through the cracks.
- 2. Write things down and remind me what we've talked about. I would love to remember everything we decided when we met last week, but this doesn't always happen. Don't hesitate to bring me up to speed when we meet. Even if I already remember what we are talking about, a couple of introductory topic sentences will help get me in the right frame of mind. Be sure to write down everything in your lab notebook and on Basecamp!
- 3. Familiarize yourself with all of the lab documentation: this lab manual, shared Google Drive directory, and Basecamp. You are responsible for knowing what is in each of these places, following the rules and guidelines we have set up, and notifying someone if you find incorrect information (or if you have questions).
- 4. I can be the most helpful to everyone if you are a little bit strategic in what you ask me. Please check the lab docs, other people in the lab, and a Google search before shooting me off a question.

6.1 My Door

Metaphorically my door is always open, but sometimes my door is, physically, closed. If this is the case:

- If we have a meeting scheduled, please knock! Hopefully I am around it is rare that I will not let you know that I'm unavailable for a schedule meeting.
- If we don't have a meeting scheduled, a closed door generally means I am trying to do some writing (or having lunch or on an important call or who knows) and should not be interrupted. Of course, if it's an emergency, please knock anyway. Otherwise, please send me a Basecamp message or try another time.

6.2 Lab and One-on-One Meetings

We meet occasionally as a lab to talk about science together and once weekly one-on-one. This ensures that we have a chance to touch base on administrative and practical issues and everyone makes progress on research. There may even be a snack. Regular attendance and participation is expected (unless you have a class or personal responsibilities during that time).

6.3 Basecamp

Basecamp is the main tool for lab communication and is preferred over email in almost every situation. Please help me by keeping Basecamp up to date! A few thoughts and tips:

- If we have a meeting to talk about your project, take notes on your laptop right in Basecamp. Make a new discussion with notes from the day—you can copy these over elsewhere later. (Alternatively, take notes on paper, but then put it in Basecamp right away so you remember.)
- Use the to-do lists, both for yourself and others (including me). It helps me see what is coming up, and what things you are thinking about. Take the time to assign a person responsible when possible (including yourself, or me).
- When you post a message, you can optionally have it emailed to people on the project. One of the nice things about Basecamp is that it can reduce the amount of email we have to read. If you need a response, or it's critical I know what you've added, then by all means have Basecamp email me. But if you are just taking notes or updating an ongoing discussion, uncheck the box and it will save me a few minutes.
- I make an effort to prioritize Basecamp over email. Most things you would email me are related to a project, and can thus be a message (or to-do) in Basecamp. The advantage (in addition to me replying to it sooner) is that it helps loop other people in and keep our discussions organized.

6.4 Email

When contacting me, please use Basecamp whenever possible. I will try to reply to emails when I can, but please don't use it for anything urgent if you can avoid it. If you need to reach me urgently, you can call or text my cell phone.

I try to use Basecamp as much as possible, but sometimes will need to email you. I expect you will read all email sent to you, and respond (if a response is needed) within one business day.

I will sometimes email you, or Basecamp you, outside normal work hours, because it's the time I have available. It does not imply I expect you to respond outside of your normal work hours (with rare exceptions for impending deadlines, urgent matters, etc.).

6.5 Calendars

Accurate calendars are extremely important in managing lab space and resources. It is crucial that everyone use the calendars regularly and ensure they are accurate. Get use to Basecamp's scheduling and calendar system - feel free schedule any and every lab-relevant item for yourself and me.

7 Communication Outside the Lab

Communicating with people outside the lab is extremely important: your actions reflect not only on yourself, but on the lab, the lab director, the department, and the university. This is true both for participants (who volunteer for our studies) and scientific colleagues (whose opinions have a direct impact on our success and opportunity—they are the ones reviewing our grants and papers!). It is important that every time one of us represents the lab it is to a high level of quality. The less experience you have, the more preparation is required. Don't skimp! Practice communicating your research in 60 seconds, practice upcoming presentations, practice demonstrations, practice taking notes during talks, and practice teaching others about your research.

8 Preparing Manuscripts

A huge part of our work involves writing up research results for publication. When preparing manuscripts, please

- Read every word in the manuscript of every draft if you are an author.
- Verify/discuss a change/edit even if you did not make the change with all authors.
- Show a manuscript (or revision) to all authors before submitting it, giving them the opportunity to comment.
- Go over page proofs carefully, including the references. There is almost always a mistake (ours, or introduced by the publisher).
- Always give the senior author the opportunity to look at page proofs.

When you are out in the big world on your own, you are free to format your manuscripts however you like. While you're in the CIBeR Lab, when sending me a draft of a manuscript, please do the following:

• Include page numbers.

- Include the full author list starting from the first draft, which helps clarify any authorship issues or concerns early on.
- Include placeholders for all sections (i.e., introduction, methods, results, discussion, etc.) even if they are empty, so that we can fill them in as we go. Having placeholders also helps clarify the organization from the beginning.
- Use the LATEX template provided by the publishing venue from the very first draft. Open on Overleaf and share with all authors immediately.
- Before sending me a draft, fill in all sections with what you believe will go into them with as much detail as possible. This will help me find discrepancies early to help you fix them. If you are unable to do this (meaning you don't have a clear view of what the contributions of the paper will be), you are either not ready to write or have not thoroughly planned the project that the paper will cover.

Some of these are simply good practice; others are my own preferences. However, if you humor me in these, it will decrease my distraction when reading your writing, and ultimately enable me to be more useful.

Your papers should be free of spelling and grammatical errors. There is no shame in asking for help with this; your fellow labmates, classmates, or the writing studio (https://www.usf.edu/undergrad/academic-success-center/writing-studio/) are available to help. The best proofreaders will explain to you why things need to be changed so that you learn how to be a better writer, rather than simply correcting your writing. By taking time to clarify your writing early on, you will become a better writer, and also free me up to help you focus on the scientific content. If you send me a paper with grammatical errors or sloppy writing I will return it to you, which is annoying for both of us. When naming files, please include your name and a version number. If you send me a file called "Research_Statement.docx", it is likely to get lost—try "Baldrick_research_statement_v01.docx" (assuming your name is Baldrick and this is the first version you are sending me). Renaming files with initials when making comments is generally helpful; I would send this file back to you named "..._TN.docx". After you incorporate any changes, you can then create a new document named "Baldrick_research_statement_v02".

If we are still trying to work out what a good figure looks like, I'm happy to talk this through with you and look at rough drafts. However, if we have a good idea of what we want in the figure, please send me something as finished and polished as you can make it—this makes it easy for me to give the most helpful feedback. If you give me something that isn't your best work, I will probably just tell you things you already know. Don't use Microsoft Excel for your figures! It's never the best option. If you must organize your data in Excel, that's fine, but then do plotting in a better plotting program (e.g., R, Matlab, or Python) that allows you to save images with 300 DPI.

Anyone submitting an abstract for a conference, symposium, etc. should clear this with me first, and circulate to all authors at least one week before the submission deadline. Do **not** do so until you feel your abstract satisfies the following:

- State of Completion: The abstract shows substantial results indicating that the work has been, or is nearly completed.
- Novelty: The abstract shows innovative information or presents a new topic or application in the field of interest.

- Advancement of the field: The abstract presents a significant contribution to the field and the authors specify how the paper will contribute to the development of global knowledge.
- Quality: The quality of the abstract is considered indicative of the quality of the final presentation.
- **Relevance:** Material presented is concise and coherent with the focus of the abstract and its relevance stated clearly.

8.1 Manuscript Preparation Process

The following information details how we prepare manuscripts in the lab before submitting them to a conference or journal. You MUST follow these steps; otherwise, you will NOT be allowed to submit your work.

1. **Identify the Publication Venue:** You should have a clear idea of where your work should go. To clear this with me, identify 10 papers (and send them to me) that discuss a similar topic (or something related) that have been published by that venue to justify why your work should go there. The idea here is that if you can't do this, your work should likely go somewhere else. You can send me up to 30 articles representing no more than 3 venues if you are unsure how to pick between some of your top choices.

Important: Sometimes, you may finish a study and are ready to prepare a manuscript with no target publication venue in mind. This is ok. You should skip the next step, and go to step #3. We'll then circle back to steps #1 and #2 once the article is ready, and identify where to send it. In any case, you must still have a target date in mind of when you'd like to be finished with the writing, peer review, and my review, such that you are, at least, ready to submit on a certain date.

- 2. Familiarize Yourself with the Format: Once we agree on where to send your paper, download the venue's paper template, and place a copy in Overleaf (or Word if required). Share the template with me.
- 3. Start Writing: Write the first draft using the template.
- 4. **Peer Review:** Once you have a working draft, you will enter a peer review period, where all Ph.D. students in the lab (even if you are not a Ph.D. student) will provide an independent review of your article. Ph.D. reviewers should not be expected to follow any specific reviewing format, besides highlighting and commenting on problem areas in the PDF itself. The author(s) MUST allow all Ph.D. students a n-day review period.
- 5. **Editing:** Edit the paper according to all feedback received in the prior step. You are allowed up to n days for editing, starting the day your peer review period ends.
- 6. **Dr. Neal's Review:** After addressing all comments by your peers, you must allow for a *n*-day review period from me before any submission date or date you plan to submit an article. In other words, I need to receive the draft you wish to submit at least *n* days before you actually do so.
- 7. **Congratulations!** Assuming no further edits are required by you after my review and edits, you're ready to submit.

What is n?: Papers that are m pages in the first draft will be given n days of review in each review phase:

- $1 < m \le 5 \text{ pages} \rightarrow n = 3$
- $5 < m \le 10 \text{ pages} \rightarrow n = 6$
- $10 < m \le 15 \text{ pages} \to n = 9$
- $15 < m \le 20 \text{ pages} \to n = 12$
- m > 20 pages $\rightarrow n = 15$

The idea here is minimize the amount of editing I have to do, often at the last minute. While I don't mind assisting you guys, this is poor use of everyone's time. We should be optimized to take advantage of each other more efficiently. I also hope this encourages you to think about your writing in ways I may not catch. The more eyes that look at your article, the better off it'll be once its submitted.

This policy should imply that you must be aggressive about seeking venues and their due dates. However, if a conference deadline is posted that is 4-5 weeks or less out (for example, a conference posts its deadlines on 2/1/22, with its submission date for 3/1/22), I'll adjust this policy. However, I need to know AS SOON as you realize this, so that I can make adjustments early on and you can adjust your work schedule as well.

9 Authorship

Many professional associations and journals have published authorship guidelines, which are worth looking at (for example: IEEE). In my view, there are three key requirements to being an author:

- 1. Contribute to the intellectual scientific content of the manuscript in a meaningful way.
- 2. Contribute to the writing of the manuscript in a meaningful way.
- 3. Contribute to distribution of the manuscript in a meaningful way.

Being an author means understanding the content and being willing to take public responsibility for the work: a large part of this concerns the theoretical motivation and implications of the research. In practice, theoretical contributions are most often made through helping with the study design, data interpretation, and discussion about a topic.

This doesn't mean that as an undergraduate student or research assistant you can't be an author on a paper. Of course, if the study goes well and you are involved, you might (should) be. However, you will need to know enough (or learn enough) about the subject to understand what we've done, and to significantly contribute to the writing. I won't add you to a paper just because I like you and want to help you out; I will consider (and usually do) giving you the opportunity to be involved to a degree that you have earned authorship, if you are willing to take on the challenge.

Typically, one person will take on the main responsibility for writing the paper, and this person will be the first author.

I assume that, unless we have talked about it, I will be an author on papers coming out of the lab. This does not mean that you should add me on to papers as a courtesy; it means that I expect you to include me in the process of discussion and writing in a way that merits authorship. In other words, the same approach I take with you. Under normal circumstances, I should be listed as the last author; others should be listed in order of contribution to the paper.

It is worth pointing out that there are many views regarding authorship, and within any view there are always borderline cases. When collaborating with other people, I tend to defer to their own lab culture. However, it's important that within our own lab, we are clear on the expectations for authorship and transparent about authorship discussions and decisions. If you ever have any questions, please come speak to me.

10 Presenting Your Work

10.1 Talks

Anyone giving a talk to a non-lab audience is required to give a practice talk to the lab at least one week before the real talk. If this is your first public talk on a lab project, plan on at least two practice talks (starting at least 2 weeks before the real talk). Practice talks should be mostly finished (final slides, practiced, and the right length) so that our comments will be as helpful as possible. Schedule one or more meetings with me ahead of time to plan or go over your slides, especially if you haven't given many talks before.

10.2 Posters

Anyone presenting a poster should circulate an initial version to all authors at least one week before the printing deadline. Make sure to double check the poster size and orientation for the conference, and the size of the paper or canvas it will be printed on. Expect that your poster or presentation slides will be posted online.

11 Computers and Other Equipment

Our equipment (computers, smartphones, etc.) should never leave the lab; I need to be fully aware of when and which equipment has been moved outside of the lab, the purpose for the move, and the duration of the move. Do not move any equipment outside of the lab without my approval. Do not install extraneous software or store personal files on the computers. Do not allow anyone that is outside of the lab access to our equipment.

Always assume that as soon as you turn your back the computer on which you have been working will explode. Thinking such dire thoughts will make it easier to remember to always back up your files. If you save files to the shared lab drive, I manually backup the drive every Friday. When working on a lab computer save all of your files to the shared drive. If you are working on lab projects on your own computer, transfer these files to the shared lab drive regularly to make sure they are in one place and backed up.

12 Recommendation Letters

It is part of my job to write letters of recommendation for people in the lab. Please give me as much notice as possible, and make sure I know the deadline, format (electronic? printed?), official

name of the organization, what you are applying for, and so on. Please also send along a current CV.

If you are an undergraduate, I will write your letters on my own. For more senior lab members, I will also write your letters on my own, but please send me a draft of the letter (which I will extensively modify). The first few times you do this it will probably feel awkward. However, keep in mind that your goal is to make it as easy as possible for a letter writer (in this case, me) to complete the task by the deadline and without error. Even though I will re-word a lot of the letter, it will still have the name of what you are applying for and details regarding how long I have known you, the projects you have worked on, and so on. This is extremely helpful in jogging my memory and will give me more time to focus on saying good things about you. Don't worry about being too "braggy"; I have no problem toning things down if need be.

Like everything else, communication is key, and when in doubt, ask!