Swanson Lab for Infant Neurodevelopment and Language Research

Lab Manual and Code of Conduct

1. Introduction

Welcome to the manual and code of conduct for Swanson Lab for Infant Neurodevelopment and Language Research (a.k.a. The Baby Brain Lab). This manual was developed by me, Meghan Swanson, but was inspired by other similar works. The manual is intended to represent my vision for how the lab should function and to complement existing University of Texas at Dallas policies. My goal is to foster an environment that produces excellent science while also supporting the career development of all lab members. During your time in the lab, I want you to be happy, productive, and making progress towards your personal and professional goals. The goal of this manual is to provide clear guidelines for expectations, if you have any questions or comments please contact Meghan Swanson (meghan.swanson@utdallas.edu).

Upon joining the lab, all lab members are required to read the lab manual and sign a form indicating they have done so.

2. Lab Code of Conduct

2.1. Introduction: First thing first. All members of the lab are expected to adhere to the following code of conduct.

I expect all lab members to cooperate and be committed to creating a safe environment for all lab members and visitors. The lab is dedicated to providing a harassment-free experience for everyone. Harassment includes, but is not limited to, verbal comments that are viewed as offensive and relate to race, religion (or lack thereof), gender (including gender identity and expression), disability, physical appearance (including body size), nationality, and immigration status. Harassment also includes sexual images or language, deliberate intimidation, stalking, following, inappropriate physical contact, and unwelcome sexual attention. Please also see the UT Dallas Nondiscrimination Policy and Sexual Misconduct Policy.

We do not tolerate harassment of lab members or participants in any form. Lab members asked to stop any harassing behavior are expected to comply immediately. If you are being harassed, notice that someone else is being harassed, or have any other concerns, please contact Meghan Swanson immediately. If Meghan is the cause of your concern, then please reach out to the program area head, another trusted departmental member, a counselor at the Student Health Counseling Center, a health care provider in the Student Health center, all of whom can assist.

2.2. Confidential Support: Title IX of the Higher Education Amendments of 1972 is a federal law that prohibits discrimination on the basis of sex in the higher education setting. People deemed "responsible employees" are required to report sexual misconduct violations to the UTD Title IV Office. In her role as faculty at UTD, Meghan Swanson is considered a responsible employee. This means that Dr. Swanson is required to report

instances of sexual misconduct in a timely manner. While I would not want this policy to stop a lab member from raising a concern with me, I also understand the desire for privacy and confidentiality in these situations. Lab members can get confidential support from the following places without concern that the incident will be reported to the Title IX Office: a counselor in the Student Counseling Center, a health care provider in the Student Health Center, or an off-campus resource (i.e. rape crisis center, doctor, psychologist, etc.).

3. Expectations

3.1. Expectations for Everyone:

- Be supportive of your fellow lab members. We are a team. It is our job to be there to celebrate each other's victories and be compassionate of failures.
- Be punctual and follow your lab schedule.
- Work independently when you can and ask for help when you need it.
- Communicate openly and respectfully with all lab members. This means, when possible, resolving conflict by talking directly to the person you are in conflict with. If you need a mediator, contact Dr. Swanson or another senior lab member.
- Do rigorous work with the utmost integrity that makes you proud. We double-check our work in the Baby Brain Lab and never cut corners.
- The lab dress code is casual but do look semi-professional if you are interacting with research participants (e.g., jeans are okay, but please avoid wearing gym clothes, athleisure, and pajamas).

3.2. The PI: It is Dr. Swanson's responsibility to:

- Maintain the scientific direction of the lab.
- Apply for and secure funding to conduct major research projects
- Support your professional development (e.g., have regular meetings, write letters of recommendation, promote your work in my talks).
- Be available for questions (e.g., have regular office hours, responsive to emails, and available in the case of emergencies).
- Review manuscripts and grant applications in a timely manner.

3.3. Postdocs: It is the responsibility of postdocs to:

- Begin to develop your own independent line of research.
- Mentor undergraduate and graduate students.
- Apply for external fellowship funding within your first 12 months in the lab (e.g., foundation fellowships, NIH NRSA, NIH K99).
- Make consistent progress towards publishing manuscripts (e.g., submit at least one first-author paper a year, and co-author others).
- Keep the next step in mind and make progress towards those goals, whether that be a faculty position or a job outside academia.

- If you are employed full-time in the Baby Brain Lab I expect you to work 40 hours per week. I do not expect you to work overtime or on days when the university is closed. You will also have vacation days as part of your employee benefits, I encourage you to use these vacation days every year.

3.4. Graduate Students: It is the responsibility of graduate students to:

- Develop your dissertation research project.
- Mentor a team of undergraduate researchers.
- Think about what kind of career you want for yourself and work towards those goals.
- Read the UTD BBS PhD Student Guide.
- Be aware of all department requirements (e.g., First Year Project, Dissertation Proposal, Dissertation Defense), and fulfill these requirements.
- Prioritize time for research. It is important to do a good job in your classes and TAing, but you also need to be making steady progress towards completing your dissertation.
- If you are a paid research assistant you are required to spend 20 hours per week working on the research project supporting your funding. You may spend additional time in the lab working on independent projects.

3.5. Lab Managers: It is the responsibility of the lab manager to:

- Assist with participant recruitment and scheduling.
- Assist with data collection.
- Manage the lab schedule, including setting a schedule with each student.
- Maintain IRB application including keeping track of when IRB application expire and assisting the PI in submitting continuing review applications.
- Oversee the hiring and training of undergraduate research assistants.

3.6. Undergraduate Students

- Work with the lab manager to determine your weekly schedule and let the lab manager know if you are unable to make a shift.
- Assist other lab members with data collection or analysis (typically you will be assigned to particular projects).
- Provide extra help to other lab members including the graduate students and lab manager (e.g., filing paperwork).
- If you don't have a task to do, please ask the lab manager if they need help with anything.
- Undergraduate students completing course work in the lab may have additional requirements.

4. The Science

4.1. Reproducibility in Science: I believe that one of the cornerstones of scientific advancement is the ability to critically evaluate and reproduce scientific claims. This requires a systematic approach with precise descriptions of the experimental procedure, data processing, and data analysis. In addition, the approach needs to be carried out carefully with an effort to avoid systematic and statistical errors (this means we do a lot of planning before experiments). In order for our science to have *methods reproducibility*, we should provide sufficient detail about procedures and data so that the same procedures could be exactly repeated. Our science should also aim to have results reproducibility, the ability to obtain the same results from an independent study with procedures as closely matched to the original study as possible. Last, we should strive to have *inferential reproducibility*, the ability to draw the same conclusions from either an independent replication of a study or a reanalysis of the original study (Goodman et al., 2016).

How do we conduct reproducible science, you ask? It's harder than it sounds, because it requires organization, foresight, and extensive documentation. Three things will help you conduct reproducible science: planning, extensive note taking, and programming workflows.

The planning begins well before we see the first participant. We must outline the research question, formulate specific hypothesis, and review the relevant literature. Once those things are in place we need to decide the procedures, what questionnaires will be given, what direct assessments will we do, on what schedule? What statistical approaches will we use to analyze the data? Then, we need to make sure these procedures address our research questions. Once all of that is settled, we will write an IRB application for approval to conduct this research.

After the data is collected it's time to process and analyze the data. I recommend creating a README document for each project/manuscript you are working on that outlines *a priori* decisions and notes about the dataset and analyses. All processing scripts, analysis scripts, and README files will be archived.

Programming workflows help with reproducibility because they take some of the human element out, and in an ideal scenario, you are left with a script or series of scripts that takes data from raw form to final product. Aim to manually process data as little as possible (e.g., editing excel sheets), instead write processing scripts with notes (trust me, you won't remember what you did 3 months from now when it's time to address the manuscript reviews). Your processing script should be followed by a script of all analyses. I recommend that your analysis script follow the results section of your paper. Someone should be able to run the script and get the result written in your manuscript.

4.2. Open Science: Open science is the concept that scientific research findings, software, and data should be accessible to everyone. As a research lab who conducts human subjects research (sometimes with vulnerable populations), we have to balance our desires to contribute to open science and our primary responsibility to our participants to protect confidentiality. This lab is committed to sharing processing pipelines and data analysis scripts when requests are reasonable (another reason why we follow the steps in the section on reproducibility in science). We will also share raw and processed data when sharing in is accordance with the consent form and IRB mandates.

4.3. Mistakes in Sciences: Mistakes happen, even when we strive to conduct reproducible science. If you uncover a mistake in work that has been presented or is in the publication process, please let me know as soon as possible. I'm here to help.

5. Authorship

5.1. The Basics: Authorship will be discussed at the start of a new project so that expectations are clearly defined. However, changes to authorship may occur over the course of a project if a new person becomes involved or if someone is not fulfilling their planned role. In general, I expect that graduate students and postdocs will be first authors on publications on which they are the primary lead, and I will be the last author.

5.2. Authorship Recommendations: The lab follows the recommendations set by the International Committee of Medical Journal Editors (ICMJE). The ICMJE recommends that authorship be based on the following 4 criteria:

1. Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND
2. Drafting the work or revising it critically for important intellectual content; AND
3. Final approval of the version to be published; AND
4. 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.

6. Human Subjects Research

6.1. Respecting Research Participants: The Baby Brain Lab is privileged to conduct research with human participants. Families trust us to provide a safe and respectful environment. All participants are to be treated with respect during and after their visit. Speaking about participants in a disparaging way will not be tolerated.

6.2. Person First Language: People first language is a form of linguistic prescriptivism aiming to avoid perceived and subconscious dehumanization when discussing people with disabilities. The basic idea is to replace, e.g., "disabled people" with "people with disabilities", "deaf people" with "people who are deaf" or "individuals who are deaf", etc., thus emphasizing that they are people first (hence the concept's name) and anything else second. Further, the concept favors the use of "having" rather than "being", e.g. "she has a learning disability" instead of "she is learning-disabled". The rationale behind people-first language is that it recognizes that someone is a person, a human being, or a citizen first, and that the disability is a part, but not all of them. Generally speaking, we will use person-first language in our manuscripts, grants, and presentations. However, not all people with disabilities prefer people-first language, and in such cases we will use the language and terminology that they prefer. When speaking to a person with a disability, you may find it appropriate to ask the individual how they prefer to be addressed (i.e. Noted writer and animal advocate, Temple Grandin refers to herself as an autistic).

6.3. IRB Protocols: The Baby Brain Lab conducts research with human subjects. Our research protocols have been approved by the UTD IRB, as such, we must adhere to these protocols. If we want to do things like, add a new questionnaire, change a recruitment flyer, or switch one assessment for another, we need to first apply for an IRB addendum or amendment. Once approved we can change the protocol. Before a lab member can work on the study they first must complete training in human subjects research, complete training in responsible conduct in research, and be added to the IRB protocol. If you have any questions about the IRB protocol or want to see a copy of the IRB proposal, let Dr. Swanson or the lab manager know. We would be happy to answer questions and share the protocol.

6.4. Participant Unanticipated Problems or Adverse Events: If you encounter a problem in the course of doing research that results in a negative outcome for the participant (e.g., if a participant becomes ill or upset, if there is an accident with the equipment, if there is a breach of confidentiality, etc.), you should immediately seek assistance from Dr. Swanson or the lab manager. In the event of an emergency, dial 9-1-1 immediately, in non-emergency situations you call the UT Dallas Police Department at 972-883-2222 (extension 2222 from any campus phone). If Dr. Swanson is unavailable during or after the event, you must notify her via email/phone immediately. In some cases, we may need to report this information to the IRB and/or our funding agencies.

6.5. Required Training

- **UTD Human Subjects Protection Training:** All lab members need to complete the UTD Human Subjects Protection Training before you begin research in the Baby Brain Lab. Once your training has been completed we will submit an addendum to add you to the IRB, once this is approved you can start doing research with participant data.
- **UTD Responsible Conduct in Research:** All lab members are required to complete the UTD RCR Foundations Training (online) before you begin research in the Baby Brain Lab. The lab manager will request that this course be added to your Galaxy Account when you join the lab. Please provide your certificate of completion to the lab manager. Lab members who are supported by NIH grants (your stipend or salary is paid by a grant), may also need to complete the UTD RCR Development Series (5 lectures). The Development Series needs to be completed within 24 months of receiving funding.

6.6. Confidentiality: The Swanson Baby lab has the opportunity to conduct research with human participants, some of which include young infants and children with neurodevelopmental disorder. Please respect the confidentiality of previous and current research participants, by taking the following precautions.

- Please keep doors closed and locked, participant folders secured in a locked filing cabinets, names omitted from paper and computer files.
- Additionally, files/videos cannot be taken from the lab. Only lab computers can be used to code data. Never take confidential files and videos from the lab or allow anyone outside our lab to access these files and videos.
- Please do not discuss participants in public or on social media. Do not request that participants follow or friend you on social media. If participants want to stay up to date on the Baby Brain Lab, you can invite them to follow one of our official accounts.

6.7. Storing Data. Participant privacy and confidentiality is of paramount concern at the Baby Brain Lab. Below is a description of how we store data and our efforts to maintain and protect participant privacy.

- **Ripple Science for Identifiable Participant Information:** The Baby Brain Lab stores identifiable participant information in Ripple. The security features in Ripple met or exceed HIPPA guidelines, including encryption, custom access permission, dedicated firewalls, and automatic user logoff.
- **REDCap for De-Identified Data:** The Bab Brain Lab stores all participant data in REDCap, which is a secure web application for building and managing data sets. We store data from all questionnaires and assessments in REDCap. Keeping this data

stored separate from identifiable participant information allows us to better ensure we keep our participant's information confidential.

- **Storage for Audio and Video Files:** Audio and video files are stored on secure drives housed at UTD. These files have names that use unique study identifiers and not private participant information.

7. It's a long road my friend, work hard and take care of yourself.

7.1. Self-Care: Academic research is a long road and the journey can be stressful. I want you to be productive, happy scholars. This will likely require you to take active steps towards self-care. Do what works for you, but the science shows that eating well, sleeping plenty, getting exercise make for happier humans. Feel free to take a break to stretch your legs, take a walk, or meditate. If you are feeling overwhelmed, please let someone know (e.g., Meghan, a trusted friend, another faculty member, a someone in the Student Counseling Center).

7.2. Deep work: Deep work is an idea put forth by author Cal Newport, around the notion that we do our best, more thoughtful work in an environment free of distractions. I recommend all graduate students and postdocs in the Baby Brain Lab to schedule time for deep work. This set aside time should be 1-3 hours, at the time of the day when you are your most creative and productive. During this time, close your email, put your phone away and dig into work. Protect the time you set aside, don't schedule meetings during the time or otherwise eat away at it. Use your deep work time to develop ideas, write, or analyze data.

8. New to the Baby Brain Lab?

8.1. Welcome! We are thrilled that you are joining the team. To get you off on the right foot, there are a few things we need from you.

- Sign the form saying you read the manual.
- Complete the UTD Human Subjects Training and give a copy of your certificate to the Lab Manager.
- Complete the UTD Responsible Conduct of Research Training and give a copy of your certificate to the Lab Manager.
- If you are an undergraduate or graduate student, please fill out the Conflict of Interest Disclosure Form for the IRB.
- Set up your schedule with the lab manager.
- Give the lab manager a quick bio and a picture so we can add you to the website!

9. FAQ

9.1. Do you have any advice for writing peer reviews? Have you been asked to write a peer review? You can ask Meghan for advice, but we also recommend reading this helpful article.

9.2. Can I work on Baby Brain Lab data after I leave the lab? Chances are if you are a grad student or postdoc ready to make the move to a new job you have some lose ends to tie up. I generally expect grad students and postdocs who leave the lab to continue

working with the lab to wrap up projects and papers and they see fit. This can be a great way to stay productive in the early stages of a career move. We will need to make sure that proper IRB permission is in place if you need access to data.

9.3. **Can I please get a letter of recommendation?** Part of my job is making sure you get to your next career stage, this means writing letters of recommendation. Please give me as much notice as possible, make deadlines clear, and provide information on how to submit letters. If you need multiple letters we should talk and discuss if a service like Interfolio will best serve your needs.