Loaiza Cognitive Aging and Memory (CAM) Lab Manual

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Welcome!

Welcome to the Loaiza Cognitive Aging and Memory (CAM) Lab! The goal of this lab manual is to get you familiar with the essential information about our policies and procedures.

Whether you are joining the lab as a research assistant, graduate student, or postdoc, it is imperative that you read this manual to ensure that you feel clear and confident about what your role entails and what we can expect from each other. This will ensure that we will all have an awesome experience doing cool research, develop our professional skills, and work alongside a supportive and friendly team of lab members.

You should consult this manual and our website before deciding to join the lab. If we are lucky enough to have you, then you will be asked to sign a form indicating that you have read this manual. **If you ever need any clarification or have suggestions after reading through this manual or while working in the lab, please get in touch as soon as possible.** No one should ever feel confused, uncomfortable, or that their expectations are not being met. We want everyone to have a positive and rewarding experience in this lab!

Acknowledgements

This lab manual was created in part by consulting the lab manuals of multiple others who graciously have shared them either directly or online: Mariam Aly, Anne Cleary, Adam Fetterman, and Gloria Luong. Thanks very much to them!

Mission and Values

The research in our lab is generally focused on understanding the processes underlying human memory performance across the adult lifespan. To read more specifics about our main topics of research, please check out the Research and Publication tabs on the lab website. Our mission is to conduct excellent research that (a) strongly contributes toward

theoretical progress and knowledge in our field and (b) advances the development of our lab members and collaborators. Our lab's values are **skepticism** (i.e., we need strong and reliable evidence to reach solid conclusions, even if not aligned with our or others' hypotheses), **transparency** (i.e., we share our research materials and outputs openly with others, and honestly admit when we are wrong or mistaken), and **compassion** (i.e., we strive to be kind and supportive to, as well as assume the best intentions of, ourselves, each other, our colleagues, and our participants, and we take action to be a positive force wherever possible). Our mission and values are operationalized in the information provided below.

Everyday Life in the Lab

The following are just a few quick practicalities about working in the lab:

- Everyone working in the lab should call each other by their preferred first names and pronouns (e.g., please feel free to call Dr. Loaiza by her first name, Vanessa).
- Email is our primary mode of communication; you **must** check it daily!
- The lab maintains regular business hours (Monday – Friday, 9 am – 5 pm). You are not expected to work or answer emails in the evenings or on weekends/holidays.
- The dress code for the lab is casual, but not *too* casual, particularly when working with participants (e.g., please do not wear pajamas while working with older adults!).
- If you have an issue in the lab requiring immediate attention, please contact Vanessa and/or the person in charge of the project in the first instance. Please use the information below accordingly.

Name	**Role**	**Phone**	**Email**
Vanessa Loaiza	Principal Investigator (PI)	(970) 491-1607	v.loaiza@colostate.edu
Emma Rhodes	Graduate student	-	emma.rhodes@colostate.edu
CSU Police Department	(in case of any non-emergencies)	(970) 491-6425	-

Expectations and Responsibilities

The following is broken down according to the different roles in the lab. You must adhere to these expectations and responsibilities to work effectively and successfully in the lab. Failure to do so will result in an initial meeting to clarify any problems, but persistent neglect will result in more serious consequences (e.g., termination of an assistantship position).

Everyone

Our lab is committed to fostering a positive and supportive environment, where everyone has the chance to grow in their skills and knowledge and to succeed in achieving their goals. To ensure that we maintain a healthy and strong community in the lab, we all must adhere to the following important policies. In particular, everyone should…

- Feel clear and confident about their roles and responsibilities, with any apprehension or lack of clarity voiced and addressed as soon as possible.
- Feel comfortable asking questions and/or asking for help.
- Offer help and support to others in the lab, but within reason of existing constraints.
- Show respect and kindness to yourself, other lab members, and participants.
- Be responsive to all communication, including emails and meeting discussions, within a reasonable timeframe (e.g., allowing 24 hours to respond to most emails).
- Work both independently and collaboratively. For example, try to solve problems on your own first, but reach out to others if you are still struggling. Another example is to take initiative when it comes to reading papers, thinking through ideas, anticipating potential problems, and so on, while also sharing that with each other so that we can all benefit from each other's perspectives, knowledge, and skills.
- Show up on time and prepared to all scheduled events (e.g., meetings, participant testing sessions, etc.).
- Rarely miss any scheduled event, especially at the last minute; any missed event requires as much notice as possible (at least 24 hours, except in crisis situations).

- Stay home if you are sick to avoid getting others sick and to make sure to take care of yourself; be sure to give as much advance notice as possible for any consequently disrupted scheduled events.
- Complete required ethical training prior to working with participants.
- Show strong integrity and good behavior during the entire research process. For more specifics on this, please see the Code of Conduct section.
- Treat lab equipment and data with the utmost care and security: Always sign out of/turn off the computers when not in use, turn off the lights and lock up when you are finished with the lab space, never drink or eat food near the lab equipment, and never share any confidential information outside of the lab.
- Remain silent in and around the lab during testing sessions (e.g., silence your cell phone, have conversations in the hallway outside, etc.) to avoid disrupting participants and lab members.
- Adhere to agreed deadlines, with clear communication about any anticipated problems and advance notice of changes in plans.
- Carefully and efficiently double and triple check things like protocols, code, results, and writing, to ensure that we avoid unnecessary mistakes.
- Report any mistakes or problems as soon as they are detected – everyone makes mistakes, but we should not brush them under the rug!
- Be committed to bringing our best selves to the lab, which is a win-win-win all around: It's good for our own development, it helps lift up others in the lab, and it ensures that we are doing the best science that we possibly can.
- Where appropriate, give both positive and constructive feedback to other lab members and colleagues that is clear, actionable, and kind.
- Receive both positive and constructive feedback from others both in and outside the lab (e.g., reviewers) with grace, openness, and the benefit of the doubt that the feedback comes from a genuine and in-good faith place to make the work better.
- Decouple our sense of self-worth from any the various "bad" things that can happen, such as manuscript/grant/job rejections, annoying nonsensical results, and so on;

this is not only to maintain good mental health, but it also makes our science better to avoid so strongly personally investing in things over which we have little control.

- Avoid fatigue and burnout by taking breaks when you need them and having an active life and friends outside of the lab.

Research Assistants

All of the above, as well as...

- Assist with data collection or any other tasks that have been discussed and agreed.
- Commit to at least 9 hours/week (i.e., 1 hour lab meeting + 8 hours of lab tasks), unless otherwise agreed. This is equivalent to 3 credits (if registering for credits).
- Actively engage in the lab by participating during lab meetings (e.g., asking questions, sharing your ideas/perspectives) and maintaining good time management.
- Reflect on your professional ambitions and, if helpful to you, discuss them with Vanessa to ensure that your time in the lab is as beneficial to you as possible.

Graduate Students

All of the above, as well as...

- Strongly develop your research program at every step of the process: Reading the relevant literature, thinking through/discussing project ideas, creating study materials and scripts, testing participants, analyzing and interpreting data, and communicating the research at conferences and in peer-reviewed publications.
- Meet all relevant departmental and graduate school deadlines and requirements.
- Meet your course and GTA assignment obligations, voicing any concerns to Vanessa.
- Present at least once per semester in our lab meeting, as well as once per academic year in the cognitive area's brownbag and one professional conference.
- Network and make friends in the cognitive area, the broader psychology department, and the wider field.
- Help to mentor research assistants who work with you on your projects.

- Help to support and provide guidance to other graduate students who are more junior than you.
- Be committed and motivated toward your broader professional development. This includes but is not limited to taking active steps toward acquiring and honing your research skills, applying for awards/grants, attending workshops or other training opportunities, and discussing your career plans often with Vanessa.

Post-doctoral Fellows

All of the above, as well as...

- Develop your own independent line(s) of research.
- Take on an active role to mentor research assistants and graduate students in the lab.
- Network and make friends in the cognitive area, the broader psychology department, and the wider field.
- Present at least once per semester in our lab meeting, as well as once per academic year in the cognitive area's brownbag and one professional conference.
- Apply for grants and jobs, asking Vanessa for guidance and feedback on your applications within a reasonable timeframe (e.g., two weeks before a deadline).

Principal Investigator

All of the above, as well as...

- Lead and organize the lab effectively, with clear and positive communication that provides the basis of an intellectually stimulating and engaging lab environment.
- Be available to all lab members and attend to their needs and wellbeing in the lab.
- Give clear guidance and support to all lab members on a timely basis so that they can feel confident and happy doing their best work.
- Give feedback and advice on a timely basis for all relevant aspects of your work in the lab, including but not limited to project ideas, conference presentations, writing (manuscripts, grants, etc.), as well as your conduct and professional development.

- Provide a letter of recommendation to all lab members who work in the lab for at least one academic year, with sufficient advance notice (at least two weeks).
- Support your professional development in multiple ways, including but not limited to discussing and offering advice on your career plans, promoting your work in multiple venues (e.g., conferences), pointing you to resources, introducing you to other researchers, and, where possible and appropriate, providing financial assistance for development opportunities (e.g., workshops, conference attendance, etc.).

Code of Conduct

Essential Policies

Our lab adheres to CSU's Principles of Community. If you are ever concerned about yourself or anyone else in the lab, please talk to Vanessa and/or contact the Tell Someone office. If you are experiencing an issue that is specific to the lab that negatively affects you, then please discuss it with Vanessa as soon as possible. Ideally, everyone will feel comfortable discussing any problem arising in the lab with Vanessa in the first instance, but unfortunately that may not always be the case. If so, then please discuss the issue with another member of the department, such as Matthew Rhodes or Ginger Lacy-Gill, who know our lab well but are not members, and who are trustworthy and kind people who will know how to direct you. Note that we do not tolerate hostility, harassment, or any other poor behavior in the lab for any reason, and there will be swift and thorough repercussions for this kind of behavior. Hopefully, this will never be a problem since we will always aim to keep our values and expectations in our central focus while working together in the lab.

Scientific Integrity

The only way that we can effectively carry out our lab mission to conduct excellent research is to hold ourselves to the highest standards when it comes to scientific integrity. This includes both avoiding any research misconduct as well as committing ourselves to

transparent research practices. We also aim to fairly acknowledge everyone's contributions in the labs by following APA guidelines with respect to authorship. As with any of the above, if you ever have any questions about these issues, please get in touch with Vanessa; she will be happy to discuss anything openly and without judgment.

Research Misconduct

Unfortunately, there are pressures that can cloud our judgment and decision making, such as feeling the pressure to succeed (e.g., publishing a lot of papers and winning a lot of grants). You are **never** alone in these feelings (we **all** experience them to some degree!), and you should talk about it with Vanessa and your trusted friends/colleagues to find good strategies and resources to cope. However, your strategies should **never** include fabrication, falsification, plagiarism, or failing to adhere to the ethics training that you will receive to work with human participants and data. Not only will there be significant repercussions to you for such intentional acts of research misconduct, but it is also a terrible disservice and disrespect to your fellow lab members, the field, and the scientific enterprise of understanding reality as it really, truly is (and not what we wish for it to be so that we can somehow benefit). The risks and consequences are far too high to everyone involved, including you and your career, so just don't do it. Ask Vanessa if you are ever in doubt.

Transparent Research Practices

A big part of excellent research is that it is reliable, replicable, and reproducible – we do not want our results to just exist in our lab, but we want to ensure that others can find similar patterns of results and benefit in their own research progress by relying on what we have done. This is crucial to the scientific enterprise, and as such, just as crucial to our lab. This means that the entire research process must be organized and well documented from start to finish. This includes but is not limited to taking good notes during meetings (our memories are faulty, after all!); explicitly documenting *each step* of your project's rationale, development, design, protocol, and analysis pipeline; including extensive comments all of your experimental and analysis scripts so that anyone (including future you, who will forget!)

can understand what you did and how you did it; methodically and efficiently double and triple checking your work and including sanity checks to make sure that nothing is missed; paying close attention to version control; creating backups of essential files; and making all of your research outputs (pre-registrations, study materials, analysis scripts, raw de-identified data, pre-prints, etc.) available on the Open Science Framework (OSF).

Furthermore, if we ever discover a mistake or problem, we always make others aware of it no matter what stage of the research process that it's in, whether the project is early in development (ideally!) or is now post-publication (which could require corrections or retractions). If we put fail-safes in place to catch such mistakes, meticulously look through our work, and pilot our studies sufficiently, then we are far more likely to catch potential mistakes that will help us to avoid embarrassment later down the road. You should not live in abject fear of making mistakes, but you should take your work very seriously to avoid them.

Authorship

Our lab follows APA guidelines with respect to authorship, such that the individual's contribution to the work determines their authorship or acknowledgement on the final product of the research (e.g., a peer-reviewed publication and/or conference presentation). Specifically, individuals will be included as co-authors if they intellectually contribute to the research by actively working on research design, providing intensive work on study materials and analysis, and/or drafting/revising the write-up of the work.

The authorship order will be explicitly discussed and agreed upon at the start of the project and potentially revisited if contributions change during the course of the project. In most cases, graduate students and postdocs will be first author for their own projects and Vanessa will be the last author, with other collaborators ordered according to their contributions to the work. We will use the Contributor Roles Taxonomy (CRediT) to help us determine the authorship order, and there should be open discussion of any concerns.

Research assistants who do not contribute in these ways but still assist with data collection or similar will be listed in the acknowledgements of the presented/published work. Research assistants who would like to intellectually contribute to the research are encouraged to speak to Vanessa for opportunities, as we often include undergraduate co-authors when their contributions to a project exceed those of a junior research assistant. This ambition is not expected or required of research assistants to join the lab, but we do welcome discussing opportunities with experienced research assistants who have demonstrated clear motivation and reliable commitment to the lab and its research topics.

Artificial Intelligence

The use of artificial intelligence (AI) and the internet more broadly (e.g., web searches via Google) to help you find solutions to problems when it comes to things like coding experiments/analyses, preparing study materials, or thinking of how to rework sentences in your writing is absolutely fine when it comes to the lab. However, **you should never let the resource do the work for you**. In other words, avoid mindlessly copying/pasting the results of your searches/prompts to what you are working on. Instead, you should consider whether the output is actually relevant/helpful, revise the information according to your needs, and double-check other sources to be sure that the information is accurate. In short, AI and the internet are helpful tools, but they are no replacement for our big, beautiful brains. **If you are ever in doubt, please ask Vanessa** – open and non-judgmental discussions can be important to determining what makes the most sense for what you are doing.

Changes to the lab manual

This lab manual is subject to revision depending on factors that occur to Vanessa and/or other lab members that are prudent to include or exclude. Any changes will be communicated clearly to the entire lab, with opportunity for discussion, and if substantial, may require signing another form that everyone has read and abides by the updated lab manual.

List of changes (reverse chronological order)

2025-September-11: The second point under research assistant expectations has changed from requiring 3 credits per semester to simply a number of minimum weekly hours in the lab given that registering for credits is not a departmental requirement. Research assistants are encouraged but not obliged to register for credits that reflect their work in the lab.