

Transdiagnostic Addiction Laboratory Manual

TALab Team

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Part I

Welcome

Welcome to the Transdiagnostic Addiction Laboratory at Dalhousie University - we are glad to have you!

This is the comprehensive guide for students and trainees working within the Transdiagnostic Addiction Laboratory at Dalhousie University. Dalhousie University is located in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq. We are all Treaty people.

The goal of this document is to provide you with a detailed guide on navigating programs at the University, as well as providing you with the general rules and expectations you should follow while working in the lab. We also provide some resources both for the program and for setting up and conducting research.

This document was inspired by several other documents (see [here](#) and [here](#)) and is a work in progress. If you have feedback and/or suggested updates, please reach out to the lab manager at jacob.belliveau@dal.ca.

1 Mission statement

Research at the Transdiagnostic Addiction Laboratory focuses on factors that influence the development, maintenance, and treatment of substance abuse, and behavioral addictions such as gambling. We are particularly interested in the co-occurrence of addiction and other psychiatric disorders.

1.1 Our research

Current projects within the lab cover the following topics:

- We are interested in understanding the mechanisms of how individuals and populations develop and recover from addiction, with a focus on cannabis, alcohol use, gambling, and video gaming.
- In collaboration with the Canadian Research Initiative on Substance Misuse (CRISM), we are developing a comprehensive evidence-based online platform for screening, self-management and referral to treatment for individuals curious about their substance use habits.
- A large part of our research investigates the co-occurrence and interaction of addiction and other mental health disorders with the goal of accounting for real-world conditions where most individuals struggle with multiple comorbid disorders.

Part II

Getting Started

Before you begin working in this lab, all members are expected to do the below.

Read this manual

This manual contains all of the [policies and expectations](#) you are expected to follow while working in the lab, and provides you with many [resources](#) you may need throughout your research journey. Our goal with this document is to add in resources as they come up through working with students on different research projects.

It is good practice to consult this manual before asking Igor for assistance on a specific topic.

Complete Ethics Training

As an incoming student in the lab, part of your on-boarding will be to complete the [TCPS 2: CORE Course on Research Ethics](#). You will not be permitted to participate in research within the lab until you have completed this course and emailed proof of completion to the lab manager, Jacob at jacob.belliveau@dal.ca.

Get Access

Access to spaces

The Department requires that the hallway leading to the lab spaces remain locked 24/7. This door is only accessible by keycode associated with your DalCard. The lab manager will need to set up this access for you.

Before you can enter, even if you have been granted access by the Department, you will need a PIN code associated with your DalCard. If you lived in a residence or otherwise have had access to an area on campus that required you tap your DalCard and input a PIN, this door will use the same PIN. Otherwise, if you have not set up a PIN already, you can set one on the [DalCard website](#).

Access to virtual resources

The project you are working on may have different demands as to what specific resources you need. You should familiarize yourself with the [software](#) available to you through Dalhousie. Additionally, the majority of lab communication is carried out through [Slack](#). If you haven't received an invitation, please let the lab manager Jacob know. If you are working on a

systematic review, you will likely need an account created in [Covidence](#). Otherwise, the specific demands of the project will be communicated to you.

Review the Below

Depending on whether you are an incoming [Volunteer](#), [Honours or \(In\)dependent project student](#), or [Graduate student](#), you may have further steps you should consider. Please consult the relevant sections.

2 Volunteer Students

Volunteers within the lab must sign the volunteer agreement form and return it to the lab manager, Jacob.

Generally, students are expected to commit an average of 3 hours per week to working within the lab. This work need not be completed on campus if the nature of your work permits you to work from home; however, all students are encouraged to work on campus if possible. Working on campus is a great opportunity to meet your fellow labmates, make new friends, and learn about research going on in the lab.

3 Undergraduate students

All undergraduate students must work in the lab prior to working with Igor. If you are a student considering working with Igor for either an Honours or 3000-level project, reach out as soon as possible to igor.yakovenko@dal.ca or jacob.belliveau@dal.ca to arrange [volunteering](#) within the lab.

3.1 Honours students

Honours students are expected to...

3.2 Dependent or independent project students

These students are expected to...

4 Graduate students

Graduate students within the lab are expected to recruit undergraduate (Honours) students to assist them with their comprehensive (if running a new study) and dissertation projects. These students will be co-supervised by you and Igor. This will provide you with both supervisory experience, and invaluable labour from the undergraduate student to further your research.

Part III

Policies & Resources

There are several general rules and expectations students are expected to follow while working within the lab, as well as several resources collated here which students are expected to consult before asking Igor for assistance. Please review the sections below!

5 General lab policies

5.1 Respect

Please be respectful of not only the people you're working with, but also the spaces you're working within and the equipment you are using. Students are expected to follow the [Dalhousie Code of Student Conduct](#), and researchers must follow the TCPS 2 Code of Ethics (see [Ethics Training](#)). Discrimination of any kind will not be tolerated within the lab.

Note

In the event of an unresolvable disagreement or conflict between labmates, please bring this to Igor's attention. If the conflict or disagreement is with Igor and you are not comfortable bringing this to his attention, please contact your program head/coordinator.

When using the lab spaces, please be sure to clean up after yourself and leave the space as you found it. If you notice that the trash or recycling bins are full, please empty them in the communal bins in the hallway and replace the bags (if applicable). Cleaning and sanitizing supplies are available for you to use - please feel free to use them! And if you notice that any supplies are running low, please notify the lab manager.

Please note that students are not permitted to smoke or vape anywhere on campus, especially indoors, as per Dalhousie policy. Under this policy those who wish to smoke are asked to **leave university property**.

5.2 Safety & Security

It is important to be aware of how to ensure the safety of not only yourself and others working on campus, but also the data with which you are working.

5.2.1 Physical safety

! In case of an emergency...

Dalhousie Security should be your first point of contact. You can contact them using the [DalSafe app](#) or by **calling 902-494-4109**. **Do not call 911** - Dalhousie Security will call 911 if need be and will ensure that emergency services are capable of navigating to the correct area on campus. If you call 911 on your own, emergency services will have great difficulty locating you.

All students should have the [DalSafe app](#) on their mobile devices and be familiar with the services offered in the app. This app allows you to get in contact with security, and allows you to send text messages to security in case you need to be discrete. There is also a “Working Alone” feature which makes Dalhousie Security aware of where you are and allows them to check in on you.

As per department policy, please do not share your Banner (B00 or B01) number and PIN with anyone. When accessing the human research area on campus (where the lab spaces are located), please do not let anyone in who you do not know.

5.2.2 Running participants

! Research participants should never be run alone.

Always have someone else within earshot when running participants. This can be an undergraduate student, volunteer, graduate student, or the lab manager. If the study design requires you be alone in a room with the participant, there should be no locked doors keeping you and the extra person apart. There are a few reasons for this, not all strictly related to safety:

- In the event where someone (either you or the research participant) is made to feel uncomfortable by the actions of another, having an extra perspective or witness to the situation can be helpful to resolve disputes.
- Unfortunately, there have been incidences in the department where participants have acted maliciously towards researchers. Having a second person nearby to assist you is imperative, and may discourage assailants outright.
 - On this topic, the department has been working toward establishing a resource containing banned participant names and contact information. To date, this has not been established, but the lab manager Jacob may have resources for you. Please reach out and ask **before** you begin recruiting participants.

5.2.3 Data safety

All data collected or datasets which you have access to are not to be shared with anyone. Data and research materials should not be stored on your personal computers - all materials should be stored on the lab OneDrive account. Resources are permitted to be saved to lab computers; however, these documents should also be stored on the lab OneDrive.

All physical research materials (from questionnaires to equipment) should not leave the lab space without explicit permission from Igor.

6 Igor's philosophy on supervision

7 Funding opportunities

8 Lab space and resources

9 Resources

9.1 Using R

For statistical analyses, students are able to use any analytic platform with which they are comfortable. However, Igor strongly recommends that students learn R and conduct analyses using R.

If you've never used R, you will first need to [download R](#) and then an IDE (**I**ntegrated **D**evelopment **E**nvironment). Simply downloading R is not sufficient for using R. There are several IDEs that can be used for R, the most common and specialized being [RStudio](#). You are free to use any IDEs you would like - however, the content in this manual will assume you are using RStudio.

9.2 Setting up GitHub

All projects you work on within the lab should be stored on Github. Note that data should never be stored on Github; rather, only the analysis code and any relevant documents should be stored within.

For more information and tutorial websites/videos, please see the below.

[Setting up R projects to GitHub](#)

A short step-by-step video on how to add your existing projects to GitHub.

Part IV

Research Practices

Our lab is a proponent open science. If you're unfamiliar with open science, please read Kathawalla, Silverstein, and Syed (2021). In short, the goal of open science is to conduct research in a way that is transparent and reproducible. Our goal within this lab is to carry out the research project with documentation of all the steps and decisions made along the way, as well as conducting data management and analyses in a way that is entirely reproducible for anyone else to run. Any person should be able to take your analysis code and run it on your data from their computer for the same output you reported.

This section will prepare you on how to set up your projects and document these steps, from conceptualization to publication.

10 Initializing your project

There are a few steps you should take when you begin conceptualizing your project.

10.1 File storage

All files related to your project **must** be stored in the lab [OneDrive](#). If you haven't already, please [download OneDrive](#) for Desktop and sign in with your Dalhousie credentials. There should never be any files that are stored only on your personal computer. If you don't have a folder for your project, please ask the lab manager to create a directory for your project and send you a link. Once you have the OneDrive folder/directory shared with you, you are able to add this shared folder as a workable folder on OneDrive for Desktop by logging in to OneDrive online, navigating to *Shared > Shared With You*, and locating the project folder. Once you have the folder, you can select it or open it and click *Add shortcut to My files*. This will add the folder to your computer and you can (and should) work from this folder as you would any other folder on your computer. If you need further assistance, you can [consult this guide](#).

10.2 Preregistration

All studies being carried out within the lab must be preregistered. Generally our lab preregisters studies using the [Open Science Framework \(OSF\)](#). Depending on the nature of your study, [PROSPERO](#) may also be an option.

The goal of preregistration is to delineate the steps that the project will take. In essence, you are writing the introduction and methods section of your paper. This should include:

- Brief overview of the background. Why is this project important? What makes it unique? What is the theoretical rationale for your project?
- Methods used:
 - Participant inclusion criteria, required sample size, as well as power analyses
 - Measures and/or instruments used for data collection
 - Planned analyses

Once you create your preregistration, you will be provided with a DOI. This DOI should be published along with your manuscript to serve as a record of your study design and decisions made. An added benefit of preregistration is that it also gives you a chance to thoroughly conceptualize your study, as well as providing you with a solid first draft of your introduction and methods section when it comes time for you to write your manuscript.

10.2.1 Amending your preregistration

Preregistration should be thought of as a plan for your research study. Regardless of how much you prepare and think ahead, it's always a possibility that things change along your research journey. If you make changes to the design of your study, these changes should be reflected within your preregistration through an [amendment](#). Generally you must provide: 1) the changes made, 2) the rationale for the changes, and 3) the impact of these changes on your study.

10.3 Research logging

All students, regardless of training stage, should create and maintain a separate research log for each study with which you are involved. You can think of this as journaling for academics. Each day you work on your project, once you're done working, you should log any and all decisions made, any lingering thoughts or questions, and also make note of any relevant or key research studies you find if you did a literature search. In particular, if you resolve a question you had previously or if a key decision is made on your project, write it down in these logs. It's also a good opportunity for you to take note of where you left off for the day, which you can consult when you return to the project and have a good starting point.

The format you can follow for these is up to you. These documents will be for your use only. We provide this base format for you to use or follow as you wish:

DATE: DD-MM-YYYY
TOPIC(S): One-word summaries of topics covered
NOTES: Explanation of the topics
TO DO: Notes on what actions should be taken or have been taken
TAGS: A series of tags or keywords to aid you in finding this portion of the research log

Here is an example of how these should be used:

DATE: 19-03-2023
TOPIC(S): design; preregistration
NOTES: Worked on finalizing the preregistration for the study. Discovered a hole in our p

TO DO: Discuss with Igor: SOGS vs PGSI?
TAGS: measures; question

DATE: 25-03-2023

TOPIC(S): design; preregistration; meeting

NOTES: Met with Igor to discuss topics from 19-03-2023. Igor agreed that PGSI is better s

TO DO: Modify preregistration plan: use PGSI over SOGS.

TAGS: design; measures; decision

10.4 Survey design

If you are designing a survey-based study, an important consideration is the use of attention checks and inconsistency checks (see Belliveau and Yakovenko (2022)) integrated within the survey. Unfortunately, many participants in survey based research may not be providing genuine answers to our surveys (see Belliveau, Soucy, and Yakovenko (2022)). Within our lab, we seek to have the highest quality data possible. Part of this process is accomplished through the use of attention checks and inconsistency checks. We generally exclude participants who fail any given attention or inconsistency check in a survey. Additionally, these questions should be distributed evenly throughout the survey.

10.4.1 Attention checks

We use several types of attention checks. You should incorporate at least 1 of each type within your survey (for shorter survey designs, e.g. as part of a qualitative study, 1 or 2 attention checks in total are sufficient). The wording of these questions should be simple and straightforward; our goal is not to deceive participants, but rather catch those who are picking responses without reading the question prompts.

Select-C-type	These types of questions instruct participants on which answer choice to select. Participants selecting any answer other than the instructed answer choice are considered inattentive.
Quiz-type	These questions quiz participants on instructions they should have read. Note that Dalhousie REB often requires this type of quiz with regards to evaluating informed consent for participants.

Honeypot-type	These questions aim to minimize desirability bias . These types of questions may, for example, ask participants if they completed some training program unrelated to the study and if so, provide participants with open-ended responses for feedback on this program. Any participants who indicate participating in the training and providing feedback are considered ingenuine.
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10.4.2 Inconsistency checks

These types of questions should serve to double-check both inclusion criteria and key variables to the study. These questions can be formatted as simple repetitions (e.g., asking for participants' age twice at two points within the survey) or by evaluating variations of the same question (e.g., asking for participants' age at one point, and later asking for date of birth).

As many projects within our lab are on the topic of addiction, these questions can evaluate the behaviours or substances under examination. For example, if it's required that participants play video games at least once per week over 3 months, you may have this question in your screening questions:

How often over the past 3 months have you played video games?

- Daily
- Every 2 to 3 days
- Once per week
- Less than once per week
- I have not played video games in the past 3 months

Here, the first 3 answer choices are considered eligible for the study. A follow-up question later in the study evaluating participants' gaming behaviour can be formatted as follows:

Over the past 3 months, how long is your typical gaming session?

- <1 hour
- 1-3 hours
- 3< hours
- I have not played video games in the past 3 months

In this case, participants should never select the final answer choice. Any participants who do can be considered ineligible.

11 Data management

All study files (excluding anything personal or sensitive; manuscript drafts, design documents, participant data, etc.) should be stored on GitHub. This includes:

- Analysis or data management code
- Recruitment materials
- Copies of any non-sensitive documents; ethics applications, preregistration

Any sensitive files can still be stored in your personal GitHub repository on your computer; however, you must be certain to include the sensitive files/folders in your `.gitignore` file. For more assistance on GitHub, including how to set it up and best practices to follow within the lab, see the [Resources](#) page.

11.1 Data cleaning

Once you have your data collected, you must clean your data. Ideally, this step will be carried out while you are recruiting participants.

12 Analysis

You are free to choose the software you wish to use to carry out analyses. However, Igor recommends all trainees learn how to use R.

Part V

Clinical program resources

13 Comprehensive projects

14 Practica

15 Program resources and guidelines

16 Residency

References

- Belliveau, Jacob, Krystal I. Soucy, and Igor Yakovenko. 2022. “The Validity of Qualtrics Panel Data for Research on Video Gaming and Gaming Disorder.” *Experimental and Clinical Psychopharmacology* 30 (4): 424–31. <https://doi.org/10.1037/pha0000575>.
- Belliveau, Jacob, and Igor Yakovenko. 2022. “Evaluating and Improving the Quality of Survey Data from Panel and Crowd-Sourced Samples: A Practical Guide for Psychological Research.” *Experimental and Clinical Psychopharmacology* 30 (4): 400–408. <https://doi.org/10.1037/pha0000564>.
- Kathawalla, Ummul-Kiram, Priya Silverstein, and Moin Syed. 2021. “Easing Into Open Science: A Guide for Graduate Students and Their Advisors.” *Collabra: Psychology* 7 (1). <https://doi.org/10.1525/collabra.18684>.