**Meeting attendees.**

Xia Jiang,  Garrett Barber

**Meeting time**

4:00 – 5:00 pm, Jan 25, 2023

**Meeting agenda (an addition meeting in response to an email question).**

1. Review the progress of the work assigned last week.
2. Will test iRCT and the CausalLearning packages according to the Readme files.
3. Will provide comments based on the test.
4. Discuss issues encountered during the week.
5. Work assignment.

**Research Design**

iRCT – an intelligent pseudo randomized controlled trial.

1. Implement the simple matching estimator method as described in Jiang’s slide (AboutDID.pptx).
2. Created a simple test dataset using the same example Jiang used in her slides.
3. Test 1) with the dataset created in 2).
4. Include a transform function in our iRCT (See the MBIL package) that can convert all the covariates into one variable (such as the X in the example).
5. Develop a function that convert multi-value variables into a binary variable and include it in the iRCT pacakge.
6. Apply iRCT to our LSM-15year.
7. Identify more interesting “treatment” variables such as Menopausal status in our LSM-15 year, use method developed in 5) to convert them into binary each respectively, if they are non-binary. Then apply iRCT each respectively.
8. Compare what you learned from using iRCT with what you can learn from our MBIL methods, and from the other causal learning methods that we have access to.
9. In terms of the completed causal network, such as the you (Garrett) learned using FCI with our LSM-15year, you can just retrieve the direct causes to the target variable (BCM) and compare with our MBIL and iRCT.

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**Progress made in the past week.**

As shown by Garrett’s file called /Users/xij6/Documents/Research/git/XiaJiang-2Github/iRCT/docs/Garrett's findings for 1.18.23 meeting.docx

**Issues/Questions and Comments**

**Ongoing tasks that cover more than a week**

Developing iRCT and our CausalLearning package.

**Specific tasks for the coming week (the original task assignment for two weeks)**

1. Understand the MXM R package that Dr. Jiang mentioned in her email and learn how to use it to do the conditional independent test.
2. Incorporate the independent test mechanism from MXM R package to the current version of PC that we have, document the work and update the readme about this.
3. Looking into the other implementations of rFCI and FGS in CCD, for example the JAVA version. Once identify a “working” version, convert it to a python package to be included in our causal learning package. If can’t find a “working” version, then develop our own packages that truly work.
4. Resume the functions regarding the three versions of iRCT created during the development phase, update the readme, and the tech report describing them in detail and explaining why running times are different.
5. Enhance all readme files. For example, in term of MBIL, we need to add a link to the version submitted to the python community in the readme; and also add and explain all function including the transformation function.
6. In terms of iRCT, for now, we just treat it as the supervising learning methods similar to MBIL. We can compare it to both MBIL and the results of causal learning methods.
7. Work on the tech reports/papers.

**Less urgent tasks**