1. Virutal environment does not seem to feasible an option and would create a large hassle for the user. I will do research on if there are other rFCI and FGS python packages out there that work for the current version of python, in the worst case scenario I will develop some packages from scratch.
2. As Discussed in the previous meeting, the direction with the larger magnitude is the direct cause of the other. As well to determine if that direct cause is strong enough, some sort of baseline needs to be determined for the score. However, this algorithm also does not seem fit for comparing against the other causal learning algorithms as it is meant to compare two variables at a time not the interactions of every variable with every other variable.
3. It is my belief that the main difference between the two programs is the way in which the p-values are determined and dealt with. As seen when the alpha is lowered for the PC implementation currently in the Causal Learning package, the graphs become much more similar than previously. Again, I believe the way the p-values are dealt with is the main difference, rather than the actual implementation of the PC algorithm itself. Below is some of the important information I gathered via testing.

**Running PC algorithm from Causal Learning with verbose gives this output**

0 dep 1 | () with p-value 0.000000

0 dep 2 | () with p-value 0.001710

0 dep 3 | () with p-value 0.000000

1 dep 0 | () with p-value 0.000000

1 dep 2 | () with p-value 0.000000

1 dep 3 | () with p-value 0.000000

2 dep 0 | () with p-value 0.001710

2 dep 1 | () with p-value 0.000000

2 ind 3 | () with p-value 0.814463 \*Remove edge from COPD to COVID

3 dep 0 | () with p-value 0.000000

3 dep 1 | () with p-value 0.000000

3 ind 2 | () with p-value 0.814463

0 dep 1 | (2,) with p-value 0.000000

0 dep 1 | (3,) with p-value 0.000000

0 dep 2 | (1,) with p-value 0.027551

0 dep 2 | (3,) with p-value 0.001606

0 ind 3 | (1,) with p-value 0.446461 \*Remove edge from ED\_Visit to COVID as long as ED\_Visit to Dyspnea edge exists

0 dep 3 | (2,) with p-value 0.000000

1 dep 0 | (2,) with p-value 0.000000

1 dep 0 | (3,) with p-value 0.000000

1 dep 2 | (0,) with p-value 0.000000

1 dep 2 | (3,) with p-value 0.000000

1 dep 3 | (0,) with p-value 0.000000

1 dep 3 | (2,) with p-value 0.000000

2 dep 0 | (1,) with p-value 0.027551

2 dep 1 | (0,) with p-value 0.000000

3 ind 0 | (1,) with p-value 0.446461

3 dep 1 | (0,) with p-value 0.000000

1 dep 0 | (2, 3) with p-value 0.000000

1 dep 2 | (0, 3) with p-value 0.000000

1 dep 3 | (0, 2) with p-value 0.000000

**This is from the documentation of the package you used.**

The logarithm of the maximum p-values from every conditional independence test. Note also, that if there is a log p-value smaller that the log of the threshold value that means there is an edge.

1. READMEs of iRCT and Causal learning both have small sections added to the bottom that hopefully have enough information on how to use. I can also add graphics and other various visuals if you believe that would help.
2. There is an excel spreadsheet with just the basic amount of time that each algorithm took to run over the COVID dataset.
3. Paper has been pushed and will be worked on after meeting on Wednesday 1/18/23.