**Lab Subclassification**

**P1822 – Statistical Methods for Causal Inference**

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**We revisit the example discussed in class working in small groups. The Gardasil study dataset is posted on CANVAS along with the R code (which can be helpful). Note that different models can be used and different choices regarding trimming and confounding adjustment can be made. I encourage you to work together and using slightly different choices that what done in the code.**

1. Define population of interest, exposure, outcome, and causal effect you are interested in studying.
2. Draw a DAG for your study
3. Check Covariate Balance
4. Estimate the propensity score
5. Check Overlap and evaluate whether trimming is necessary
6. Conduct trimming **justifying your strategy**. Once satisfied with the Overlap, fit the propensity score and check covariate balance.
7. **Compare** covariate balance pre and post trimming. Explain differences you may find.
8. Categorize the propensity score in 5 categories. Check covariate balance within each propensity score group. **Compare** with what you computed in point 6. Explain differences you may find.
9. Use Neyman’s approach for estimating ACE in blocked randomized experiments. Obtain point estimate and confidence intervals.
10. Estimate the crude association between exposure and outcome.
11. **Interpret** and compare the results obtained in 8 and 9. **Explain** any difference you may find. **What is the conclusion** **and implication** of your causal inference analysis using propensity score subclassification to adjust for confounding?