# Applied Statistical Analysis 

EDUC 6050
Week 12

Finding clarity using data

## Today

## Moderation vs. Mediation

## Mediation

## Moderation

- Tellis us about the path of an effect
- from one variable to an intermediate one then to the outcome
- Jamovi does not have
- Synonym for interaction
- Jamovi performs this - "The effect of $X$ on $Y$ depends on $M^{*}$ built in ways to performs this
- "The effect of $X$ goes through $M$ to $Y$


## Moderation



Mediation


## Mediation

Use specialized software for this (Jamovi can't do it yet)

Be aware of it but you do not need to know how to do it for this class

## Why Do We Talk About Mediation?

Helps us think more about how things are actually happening in the real world

Helps us think about confounding better

## The Four Elemental Confounds

| The Fork <br> $\mathrm{X} \leftarrow \mathrm{Z} \rightarrow \mathrm{Y}$ | The Pipe <br> $\mathrm{X} \rightarrow \mathrm{Z} \rightarrow \mathrm{Y}$ |
| :--- | :---: |
| The Collider |  |
| $\mathrm{X} \rightarrow \mathrm{Z} \leftarrow \mathrm{Y}$ | The Descendant <br> $\mathrm{X} \rightarrow \mathrm{Z} \rightarrow \mathrm{Y}$ <br> $\downarrow$ |
| A |  |

## No Application This Week

## Questions?

# Please post them to the discussion board before 

 class starts