

# Grant Writing Education Class

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# Lesson Two

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- Group Work
  - Writing the Grant
    - Research Question → Hypothesis
    - Specific Aims
    - Background and Significance
  - The Research Pathway
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# Group Work

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- Spend 15 minutes working with your colleagues on your research question.
  - Seek guidance from the consultants!
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# Writing the Grant

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- Let's keep on moving!
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# Research Question → Hypothesis

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- ❑ Hypothesis should be based on literature, just like your question
  - ❑ It is the basis for your statistical tests
  - ❑ Should be simple & specific
    - One predictor, one outcome
    - Too many outcomes is confusing – separate into individual hypotheses
    - Leave no ambiguity about subjects, variables, or application of tests
  - ❑ Qualitative research does not include this step
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# Types of Hypothesis

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## Nondirectional

- Indicates there is a relationship (or difference) between variables, without stating in which direction

## Directional

- Indicates there is a relationship (or difference) between variables, and states in which direction

## Null

- Indicates there is no significant relationship (or difference) between variables

# Examples

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- Low-achieving 10th graders who have a 12th-grade mentor have less absenteeism than low-achieving 10th graders who do not have a 12th-grade mentor.

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(Gay & Airasian, 2003)

# Examples

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- There is no significant difference in the achievement level of 10<sup>th</sup>-grade biology students who are instructed using interactive multimedia and those who receive regular instruction.

# Examples

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- There is a significant difference in the number of aggressive behaviors of high school students in an alternative educational setting who receive either punishment or discussion approaches to conflict resolution.

# Specific Aims

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- ❑ Specifies in concrete terms the desired outcome
  - ❑ Each aim = one or two sentences
  - ❑ Should have more than one aim
  - ❑ Present them in logical order
    - By importance
    - Chronologically – what will happen first?
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# Examples

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- To recruit 400 healthy men, 40-59 years old and evenly divided between Caucasian and African American.
    - Reviewers may not consider “recruitment” as a specific aim
  - To carry out a randomized blinded trial comparing the effects of testosterone and placebo on risk factors for heart disease, prostate cancer, and fractures.
    - This one is too broad. Try to make your specific aims more specific.
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# The Key

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- ❑ Reviewers need to see that you can accomplish each aim.
  - ❑ If the 2<sup>nd</sup> aim is dependent on the 1<sup>st</sup> aim, then be sure that 1<sup>st</sup> aim is something you can accomplish.
  - ❑ Should consider making each aim stand on its own.
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# Background and Significance

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- Brief review of the literature to justify your proposal
  - Keep reviewers in mind
    - They may not know your field
    - Write so that scientists outside your area of expertise can understand the issues involved
    - Should have a strong theoretical base
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# Homework!

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- Continue your literature search
  - Write out your hypotheses and specific aims
  - Begin writing the background and significance section
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# The Research Pathway

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- If you need to log in, use CIS user name and password
  - Website: [health.utah.edu/ccrrep/](http://health.utah.edu/ccrrep/)
  - Something here for everyone!
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# references

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