

How to Come Up with a Great Research Project

1. Start with a Big Question

- What problem do you care about solving?
- What is not understood in your field?
- What is a bottleneck holding back progress?
- Explore review articles, recent papers, and conference talks.

2. Find the Intersection

- Significance - Is the question biologically or clinically important?
- Feasibility - Do you have the tools or collaborators to answer it?
- Novelty - Will the outcome offer a new concept, method, or dataset?

3. Define a Clear Hypothesis

- Frame a strong, testable central hypothesis.
- Avoid overly descriptive projects - ask why or how, not just what.

4. Break It Into Aims

- Split the big question into 2-3 sub-hypotheses.
- Each Aim should have a clear path and logical flow.
- Incorporate go/no-go checkpoints and ensure cohesiveness.

5. Test the 'So What?' Factor

- Will it lead to new insight or change in thinking?
- Could it open a new research direction or therapeutic strategy?

6. Talk It Out

- Refine ideas through feedback and discussions.
- If you can't explain it in 1-2 sentences, it needs sharpening.

7. Consider Fundability

- Align with NIH priorities and look for responsive FOAs.
- Use NIH RePORTER to explore recently funded projects.

8. Prototype Fast

- Run a pilot experiment to test feasibility.

- Sketch figures or a model to clarify direction.