From Research Gap to Research Question

A Researcher's Roadmap

Build on what is known. Explore what is missing. Ask what matters.

CURIOSITY
EVIDENCE
IMPACT
CHANGE

Better Research Brighter Tomorrows

1 Understand the Current Landscape

Conduct a focused literature review.



Search for:

- Recent systematic reviews
- Landmark studies
- Clinical guidelines
- Ongoing trials
- Emerging technologies

Goal: Identify what is already known.

Ask:

- What has been studied extensively?
- What conclusions are well established?
- What controversies remain?

2 Identify Potential Research Gaps

Look for areas where knowledge is incomplete.



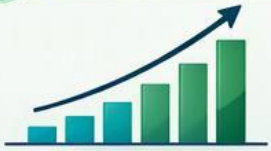
The gap is an opportunity.

Types of Research Gaps

Knowledge Gap	Methodological Gap	Population Gap	Temporal Gap	Clinical/ Translational Gap	Contradictory Evidence Gap
Limited evidence available	Existing studies use weak or inconsistent methods	Certain groups are under-represented	Lack of longitudinal or follow-up data	Findings are not yet translated into practice	Studies report conflicting results

3 Evaluate the Importance of the Gap

Determine if it is worth pursuing.



IMPACT MATTERS

Ask:

- Does it affect patient care, policy, or scientific understanding?
- Is there a substantial unmet need?
- Could filling this gap advance the field?
- Is the question timely and innovative?

Prioritize gaps that are:

- High Impact
- High Feasibility
- High Significance

4 Narrow the Focus

Move from a broad topic to a specific problem.

- Broad topic → General area of interest
- Research gap → What is missing?
- Specific problem → A clear, focused problem

Example:

Broad Topic	Gut microbiome and colorectal cancer
Gap	Limited understanding of microbiome volatility preceding adenoma formation
Problem	Temporal microbial changes before neoplasia remain poorly characterized

5 Generate Research Question Ideas

Transform the gap into answerable questions.



Good questions drive progress.

Use prompts such as:

- What factors influence...?
- How does X affect Y?
- Why do outcomes differ among populations?
- What mechanisms explain observed effects?
- Can intervention X improve outcome Y?

> *A good research question turns uncertainty into opportunity.*

6 Apply the FINER Framework

A strong research question should be:



- **F** Feasible
- **I** Interesting
- **N** Novel
- **E** Ethical
- **R** Relevant

If the question fails any criterion, refine it.



A stronger question today. A bigger impact tomorrow.

7 Build a Structured Research Question

Use a framework such as PICO (clinical research).

P Population	I Intervention/ Exposure	C Comparator	O Outcome
Who?	What?	Compared to what?	What outcome?

Example:

"In individuals with Lynch syndrome (P), does metformin use (I), compared with no metformin (C), alter microbiome volatility and adenoma risk (O)?"



A focused question today.
A healthier tomorrow.