

Why write a concept paper?

A concept paper can be beneficial for several purposes:

- To reach out to **potential collaborators** once a project has been clearly defined
- To solicit **support from institutional leaders**, particularly when a project will require significant institutional commitment
- To initiate dialogue with a **program officer** about a proposed research project or idea.
- To **find a home** for your project. A well-written concept paper may open the door to a larger discussion about the sponsor's funding priorities.

Many foundations require submission of concept papers as a “first step” toward inviting full proposals, while other organizations (e.g. PCORI) allow for the submission of concept papers to initiate a discussion with program staff to assess if a proposal would be a good match for the organization. The Research Concierge Service developed a [concept paper template](#) that PIs can adapt for their own use.

What are tips for writing effective concept papers?

Limit the concept paper to 1 or 2 pages.	Concept papers should be concise and clear. Ideally, concept papers are only 1 page, but definitely no more than 2 pages.
Sell your idea by utilizing definitive statements.	Conditional statements that include “may,” “if,” or “but” can indicate uncertainty. A concept paper should be positive and definite. Focus on objectives that “will be accomplished” within a given time frame.
Avoid unnecessary technical jargon.	Unless the audience is intimately familiar with your scientific field, speak in terms that a generalist audience will understand.
Be clear about you want to accomplish.	When describing the project, clearly state what you plan to do, why the approach is unique, and who benefits. If targeting a specific funding sponsor, connect the project description to the sponsor's mission and funding priorities.
Refer to advances in the field relative to your project.	Concept paper should demonstrate that you have done your homework. The proposed project should connect your research questions to existing literature and demonstrate how your research will add to the body of knowledge.

What are the Heilmeier Criteria?

George Heilmeier was an American engineer and pioneering contributor to the development of liquid crystal display (LCD) technology. In the 1970s, he was Director of the Defense Advanced Research Projects Agency (DARPA), an agency of the U.S. Department of Defense responsible for developing emerging technologies used by the military. As director of DARPA, he developed a set of questions every proposal for a new research program had to answer. These questions, which are commonly referred to as the “Heilmeier Criteria,” are equally compelling questions for any research project. These questions are:

1. **What are you trying to do?** Articulate your objectives using absolutely no jargon. What is the problem? Why is it hard?
2. **How is it done today, and what are the limits of current practice?**
3. **What's new in your approach and why do you think it will be successful?**
4. **Who cares?**
5. **If you're successful, what difference will it make?** What impact will success have? How will it be measured?
6. **What are the risks and the payoffs?**
7. **How much will it cost?**
8. **How long will it take?**
9. **What are the midterm and final “exams” to check for success?** How will progress be measured?