Summer Research Program
Getting Started on a Student-Initiated Research Project

Before you embark on a research project, think about the kind of project that would fit within the larger framework of your major and academic interests. This could be a self-contained single project, or one that is part of a larger research effort of your own, of a faculty member, or of a research institution.

The ways you source for potential topics would depend on your field of interest – the sciences, social sciences or humanities.

**Sciences and Social Sciences:** Talk to a faculty member who conducts research in the same or a related field as the one you are interested in. They can advise you on identifying a research topic and may even become your project mentor and/or supervisor. Undergraduate projects in the sciences are normally expected to be part of a larger faculty-led project, although self-contained projects will also be considered.

**Humanities:** In the topic exploration stage, it is useful to consult primary (documents, texts, films, images, websites, blogs) and secondary sources (journal articles, scholarly books) to get exposure to various topics, learn what research has been done in the area and how you can help enhance it. Discussing your initial ideas with Humanities faculty can help you further clarify your project goals and focus on a central research question.

**Shaping Your Project**

**Project supervisor and co-supervisor.** Your project supervisor can be a faculty member or an individual with appropriate expertise in your field of research interest. He/she helps you identify suitable research methodology and craft a discrete project that is stand-alone or part of a larger research effort, provides you with a letter of support at the time of application, trains you in specific skills as necessary, and gives you regular feedback for the duration of the project.

If your project supervisor is not from Yale-NUS College, you will need to identify a co-supervisor who is a Yale-NUS faculty member. He/she needs to review and endorse your project proposal before you apply to the program, give feedback as necessary during the project and on the basis of your progress report, and follow up with you after the end of the project.

For supervision, we advise you to approach a professor or an experienced individual who works in the same or similar area as the one you are interested in, as he/she would be familiar...
with appropriate research topics and relevant methodologies. You may wish to approach more than one person for guidance.

**Central question and scope.** After conducting the initial exploration, ask yourself – what question within my field of interest is so fascinating that I would spend a large part of my summer (and possibly academic year) studying it? Often, the answer will be your central question. Make it as concrete and focused as possible, and ensure that you can gather and analyze enough data to answer the question within the timeframe you propose. Consult with your project supervisor to narrow down your focus and project scope.

For example:

**Topic of interest:** Climate change.

**Research question:** How has climate change impacted weather patterns in Southeast Asia?

**Focused research question or testable hypothesis:** Do meteorological records obtained from the Singapore National Environmental Agency demonstrate a change in weather patterns over the past 20 years that correlates with other climate change indicators?

Once you have identified a working research question, define the keywords in it that will help you find relevant research in article databases, e.g. “climate change”, “weather” and “Singapore.”

**Structure.** Possible project structures include, but are not limited to:

- A discrete project that is part of a larger faculty-led research project in a laboratory, field, archival or other setting;
- Participation in a structured summer research program at a university or other external organisation;
- A student-designed project, supervised by a faculty member or other professional with relevant expertise.

**Note that structured summer research programs bearing academic credit, or providing broad/rotational exposure to a field of research, are not eligible for program support.**

Consult with your supervisor and with CIPE on the most appropriate structure for your goals. Consider the following aspects:

- The type of work you would be doing and how it fits with your academic and research goals.
- The degree to which you can engage in a single, focused research effort. Structured programs providing broad research exposure are not eligible for program support.
The amount of supervision you can expect in a research lab, a field research project or in a structured summer program, and who will be supervising you – your proposed project supervisor, or another individual.

For self-directed research: How to select, contact and secure collaborations with appropriate on-site partners. Your project co-supervisor can be very helpful in suggesting and even connecting you to relevant contacts.

**Data Gathering Methodology.** If your project is not part of a larger supervised project with an established methodology, you should consider the type(s) of data you need in order to investigate your central question. This will help you decide where and how to collect the data. You may wish to consider several methodologies before settling on one, and you can tweak it as needed during the project.

For example, if you plan to gather opinions from the residents of an HDB estate, you may be considering a short survey or an in-person interview. The most appropriate method will depend on the type of information you seek (e.g., qualitative vs. quantitative, more or less nuanced) and the project scope (e.g., 50 vs. 500 interviewees or survey respondents).

**Note that if you propose a research project involving human subjects (intervention or interaction with them, or handling their identifiable private information), it must be part of a larger project supervised by an experienced researcher to facilitate obtaining the necessary Institutional Review Board permits.**

**Data Analysis.** Whether you conduct surveys, interview subjects, gather statistics or design and run experiments, you will collect two kinds of data: qualitative and quantitative. Consult with your supervisor on appropriate ways to analyze it.

- **Start small and build up.** Begin with a pilot study, where you gather preliminary data from a smaller group of sources to gain a better idea of the question you are investigating. You can increase the scale as you go along.