GRANTSEEKING TOOLKIT

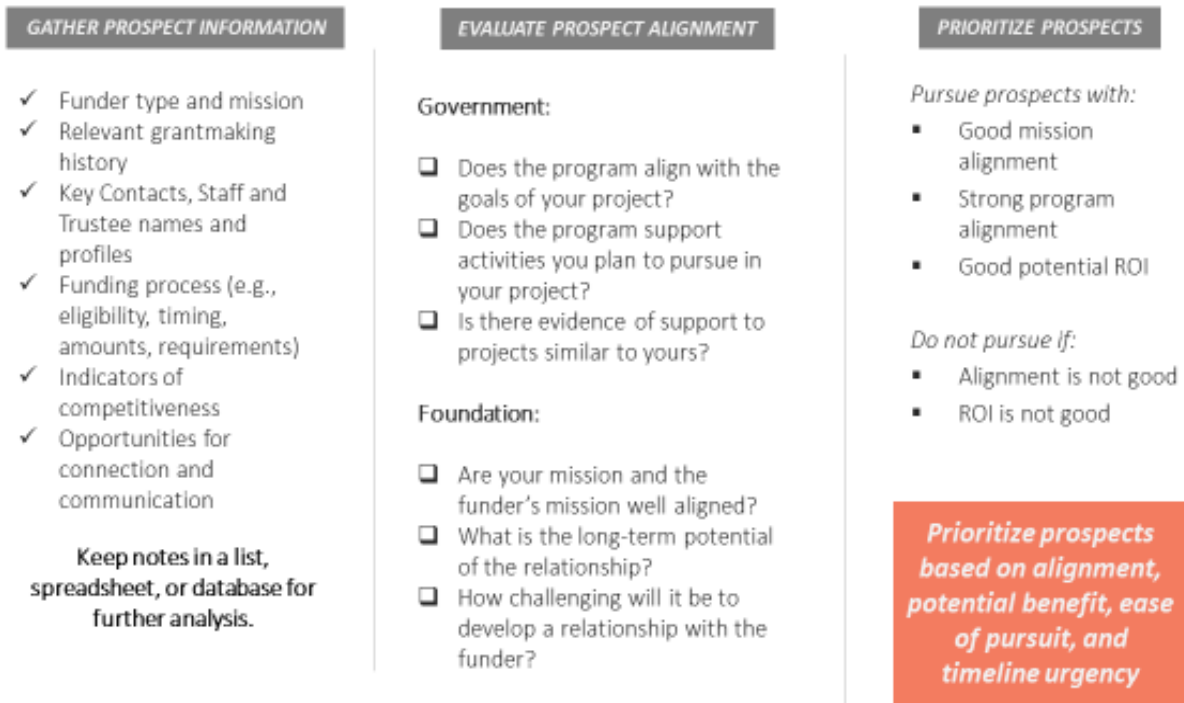Prepared for Temple University

March 2020

In the following toolkit, Hanover Research outlines a prospecting process and provides related resources; provides an overview for concept paper development; offers guidance on program officer outreach; and highlights popular NIH and NSF funding opportunities.

HANOVER RESEARCH

www.hanoverresearch.com

CONTENTS

SECTION 1: PROSPECTING

OVERVIEW OF PROSPECTING PROCESS

GATHER PROSPECT INFORMATION

- ✓ Funder type and mission
- ✓ Relevant grantmaking history
- ✓ Key Contacts, Staff and Trustee names and profiles
- ✓ Funding process (e.g., eligibility, timing, amounts, requirements)
- ✓ Indicators of competitiveness
- ✓ Opportunities for connection and communication

Keep notes in a list, spreadsheet, or database for further analysis.

EVALUATE PROSPECT ALIGNMENT

Government:

- ❏ Does the program align with the goals of your project?
- ❏ Does the program support activities you plan to pursue in your project?
- ❏ Is there evidence of support to projects similar to yours?

Foundation:

- ❏ Are your mission and the funder's mission well aligned?
- ❏ What is the long-term potential of the relationship?
- ❏ How challenging will it be to develop a relationship with the funder?

PRIORITIZE PROSPECTS

Pursue prospects with:

- ▪ Good mission alignment
- ▪ Strong program alignment
- ▪ Good potential ROI

Do not pursue if:

- ▪ Alignment is not good
- ▪ ROI is not good

Prioritize prospects based on alignment, potential benefit, ease of pursuit, and timeline urgency

FIRST PHASE: DEVELOP A PRELIMINARY LIST OF POSSIBLE FUNDERS

Develop keywords and search for relevant funders using the funding opportunity databases to which Temple subscribes:

- Pivot/Community of Science (Pivot/COS):
  - One of the most valuable tools for researchers at Temple is to take advantage of the Pivot/Community of Science (Pivot/COS) database. Pivot/COS is a comprehensive global source of funding opportunities that affords access to billions of dollars from potential funding sponsors. Pre-populated scholar profiles are matched against more than 26,000 funding opportunities;
  - Collaborators can be found from among 3 million profiles worldwide. Pivot/COS also allows funding opportunity alerts to be targeted to individual research interests based on a faculty profile.
  - The Pivot/COS database contains first-person profiles of researchers at leading universities and other institutions involved in basic or applied research.

- o Pivot/COS contains approximately 480,000 profiles submitted by researchers, scholars and other experts from more than 1,600 universities, government agencies, and other research and development organizations from around the world.
  - o Pivot/COS profiles include contact information and position, qualifications and expertise, publications, patents and awards, and Pivot/COS keywords – a standardized list, applied consistently through all profiles.
  - o New users can construct a profile in Pivot/COS after registering and setting up an account. For help with account registration, contact Ming-Hui Chou at era@temple.edu.
- Egrants.net
  - o This service is available to anyone at Temple University.
- Sponsored Programs Information Network - SPIN
  - o SPIN is an online accessed database that provides web-based information resources and searchable databases for federal, non-federal and corporate funding opportunities. It is designed to assist faculty and staff in the identification of external sources of support for research, education and development projects.
  - o SPIN is accessed by logging into the ERA platform with your Temple credentials (AccessNet ID and password). After you are in ERA, you will click on the **Find Funding** link in the dashboard. This will take you to the main SPIN search platform.
  - o The database is searchable using SPIN keywords, sponsor names(s), award type(s), applicant type(s), geographic region, and/or deadline date/date ranges. It includes the InfoEd Commerce Business Daily and a SPIN keyword thesaurus. It also provides listings of upcoming deadlines and allows investigators to customize email notifications of funding information.
- Private & Corporate Sources of Support
  - o The Office of Corporate and Foundation Relations works in conjunction with the Office of Research Administration to identify foundation and corporate support. For assistance in identifying funding sources in the engineering, physical sciences, social sciences, humanities, medical and life sciences, please contact the Corporate and Foundation Relations Office or Office of Research Administration.
  - o Foundation Directory Online– This is resource is available through the Temple University Library.
  - o Contract Information (Federal Business Opportunities)

Keep a working list of potential prospects that includes the funding agency name, purpose, notes on alignment, and a link to the funding opportunity or database result.

Use Google to search a variation of "grant grants award awarded ~grant ~award" followed by your relevant keywords and review the first 10 pages of results. Add your results to your list of potential prospects.

Search for relevant federal opportunities through the Grants.gov search engine and add to your list of potential prospects.

Conduct a reverse search of awarded grants using the Federal RePORTER. The comprehensiveness of the data and information available in Federal RePORTER varies based on the agency. Add your results to your list of potential prospects and note any overlap with funded studies in your alignment notes section.

Agencies with data in Federal RePORTER are: Department of Defense (limited to certain programs); Department of Education; Institute of Education Sciences; Environmental Protection Agency; Department of Health and Human Services; Administration for Children and Families; Agency for Healthcare Research and Quality; Centers for Disease Control and Prevention; Food and Drug Administration; National Institute on Disability, Independent Living, and Rehabilitation Research; National Institutes of Health; National Aeronautics and Space Administration; National Science Foundation; United States Department of Agriculture; Agriculture Research Service; Forest Service; National Institute of Food and Agriculture; and U.S. Department of Veterans Affairs (VA)

It may also be beneficial to explore USASpending, Grantome, and the NIH Matchmaker. NIH Matchmaker allows you to enter abstracts or other scientific text and will return a list of 100 similar projects based on the terms and concepts used in the submitted text. Up to 15,000 characters are permitted. Add your results to your list of potential prospects and note any overlap with funded studies in your alignment notes section.

SECOND PHASE: NARROW DOWN YOUR LIST OF POSSIBLE FUNDERS

Review all listed prospects from the first phase and determine which are good fits by visiting links to the full funding announcements and reading all guidelines.
- Assess PI and organization level eligibility based on guidelines and award history
    - Have they funded PIs at a similar point in their career, with a similar publication history etc.?
- Assess interest in your project focus area and, if applicable, target population based on guidelines and award history
- The following additional criteria should be used to evaluate foundation prospects:
    - Mission alignment: Consider how well-aligned the funder and client missions really are: is one broader than the other? Are they coming from slightly different angles, or aiming at slightly different end goals? How might the slight differences in mission affect the relationship in the long term?
    - Potential ROI: What is the long-term potential of the relationship? What can the funder offer the client?

o   Relationship development possibility: What are the challenges to developing a relationship with the funder? How open is the funder to communication? How desirable is the funder? How competitive are you likely to be, or become, for this funder?

Narrow down your prospect list by highlighting projects that are "perfect fits" in green, highlighting those that may not be a fit in yellow and highlighting those that are not a match in red. Ideally, you want to have 1-3 green opportunities. For the green opportunities, you should develop a plan to reach out to a program officer, if allowed, and then, to submit a preproposal, letter of intent or full proposal depending on the agency or foundation's application process. The yellow opportunities can serve as next level funders if the better fits do not pan out or as secondary proposal goals if you have extra time in any given year.

SECTION 2: CONCEPT PAPER DEVELOPMENT

PURPOSE

A concept paper provides a concise summary of the key elements of a funding request for soliciting feedback and/or buy-in from prospective funders, prospective partners, and other potential stakeholders. It should be:

- Written in the first person
- Explicitly related to the goals of the funder
- Written in a style appropriate to the funder
- Generally reflective of the structure of a full proposal
- One to five pages in length

TECHNICAL SPECIFICATIONS

A concept paper should follow any technical specifications provided by the funder. If no specifications are provided, we recommend the following:

- 1" margins
- single-spaced
- 11 pt. Arial
- 0.25" left indented, fully justified paragraphs
- Bold headings where appropriate

OUTLINE

A concept paper should follow the outline of the funder's requirements or their usual proposal structure. If none is provided, we recommend the following key components:

- Introduction
- Purpose/Need
- Project Description
  - Goals/Objectives/Aims/Research Questions
  - Methods
  - Timeline
  - Expected Outcomes/Benefits (and Evaluation)
- Budget/Needs & Requested Support
- Contact Information

INTRODUCTION

Introduce your idea and identify the program or opportunity you think is a good fit. Demonstrate that you understand the mission of the funding agency and the types of projects that they support. Identify how your project meets the goals of the funder. Identify any other funders that will be involved and their interest in the project where appropriate. Introduce the question, problem, or need to be addressed.

Example: In response to RFA-1234, Studies to Enhance the Texture of Peanut Butter, we propose a cross-over randomized controlled trial to compare consumer preference for fluffy vs. powdered peanut butter among school age children in urban communities. This project will address the USDA's goal of understanding consumer preferences in this difficult to please group and may provide critical insights into understanding how and why these preferences often fail to persist into adulthood. Although the RFA allows for industry support, we are electing to forgo Skippy's funding to reduce the risk of unintended bias.

PURPOSE/NEED

The Purpose or Need section identifies the project's focus, establishes the relevance of the proposal to the funder's mission.

Formula: There is a significant problem or unknown associated with a critical need and solving this problem is aligned with the mission of the funding agency.

The Purpose/Need may involve establishing a health problem, establishing a science problem, and/or or referencing the gap in knowledge and why is it important to fill.

Need Section Tips and Tricks
The need is the issue or concern in the topic area that your research or program seeks to address.
The need is not just an interesting unknown to solve.
The need acts as the background and driver of your proposal as it is the issue to be addressed and the significance of that issue within the field is the reason your proposal should be funded
Show how this need is important to increase knowledge in your field or impact lives (emphasize the significance of the problem you are trying to address).

Briefly provide supporting documentation for the importance of addressing this question, problem, or need. If you have statistical data, use it. Cite significant and compelling sources. Why does this project matter? Make sure you cite or refer to what others have accomplished relative to your project.

Example: More than 18 million children eat peanut butter every day, with peak annual consumption at age 11.7 years. Peanut butter consumption gradually declines through the remaining public-school years and remains at about 0.6 jars per person per year throughout adulthood. The USDA and the peanut industry have identified low peanut butter consumption as a major risk for multiple chronic conditions in adulthood such as full-time employment, mortgage payments (sometimes extending as long as 30 years), and the birth of children. Pan et al. (2012) hypothesized that age-related changes in texture perception and texture-mediated pleasure responses are responsible for the widespread reduction…

PROJECT DESCRIPTION

Concisely describe what you plan to do, your approach, who benefits and the potential impacts.
Example: We propose to compare consumer responses to fluffy vs. powdered peanut butter in 420 school age children recruited from 6 urban schools in Los Angeles… [Additional but brief detail

GOALS/OBJECTIVES/AIMS/RESEARCH QUESTIONS

Outline your goals, objectives/aims, and research questions. Goals are simply a clearer statement of the vision, specifying the accomplishments to be achieved if the vision is to become real. The target objectives/aims are clearer statements of the specific activities required to achieve the goals. A goal is a statement describing a broad or abstract intent, state or condition. An objective is a statement of action or intent to achieve measurable outcomes that relate to the goal.

Example: Our short-term goals are to improve our understanding of peanut butter texture preferences in school age children and to evaluate Pan et al.'s hypothesis on age-related changes in texture preferences accounting for changes in peanut butter consumption. Our long-term goal is to develop peanut butter products with textures that appeal to adults and thereby increase adult peanut butter consumption and reduce chronic conditions associated with low consumption. To achieve these goals, we propose the following objectives/aims:
Objective 1. Conduct a randomized controlled trial comparing texture preferences for fluffy vs. powdered peanut butter in 420 school age…

METHODS AND TIMELINE

Briefly describe how the project be carried out, providing sufficient detail to allow the reader to assess feasibility and likely impact but not so much detail that the reader is overwhelmed. Make sure the methods and timeline are explicitly related to the goals and objectives.

Example: In partnership with the Los Angeles County School District, we identified 6 schools serving a diverse population of children in grades K-12 that will be available for recruitment. In Year 1, we will recruit 420 children across all grades, and they will be randomly assigned to receive fluffy or powdered peanut butter in sandwich form once per week during school lunch for 3 months. After a one-month break, groups will be switched to receive the other form of peanut butter in sandwich form once per week during school lunch for 3 months. Throughout the administration, research staff will assess sandwich waste. At baseline and 3, 4, 7, and 8 months, we will administer multiple measures to assess…

BUDGET/NEEDS & REQUESTED SUPPORT

If appropriate, indicate the overall budget for the project, identify other contributors and the amounts pledged, and state your request of the funder. This is usually only included with foundation-type funders, and then usually only with formal Letters of Inquiry (LOIs).

Example: Since we are electing not to accept Skippy's support to reduce the risk of bias in this study, we are requesting $250,000 direct costs per year for three years for this study.

SECTION 3: CONTACTING A PROGRAM OFFICER

HOW TO FIND A PROGRAM OFFICER

- NSF and most Agencies – Program Opportunity listings
- NIH – RFAs and Project RePORTER
- Foundations – search their websites or other listings

Program Officer Outreach: Suggested Email Content
Indicate to which program you are applying
1-3 sentences for your request, e.g., "I would like to inquire as to the suitability of the proposed research to meeting your program's objectives.", or "I feel that the proposed research addresses Objective 1 of the program in that… I would like to confirm my understanding of the program objective."
4-6 sentences summarizing your proposed project, including project objectives, approach, expected results, and how the research will contribute to the field
2-3 sentences providing your background and introducing your research program.
1-2 closing sentences acknowledging the PO's time and efforts, and that you look forward to the PO's response
Make sure your full contact information is provided in the email

PROGRAM OFFICER OUTREACH: EXAMPLE EMAIL

Subject: Request for call to discuss XXX due on DATE

Dear Dr. X:

I am interested in submitting a proposal for RFA #XXX "RFA Title" and would like to schedule a call with you to discuss whether my research is appropriate for this opportunity. [If your request is urgent, indicate that here and explain why.]

[Briefly describe your proposed work and why you think it is a good fit.] If it would be helpful, I can provide a [brief concept paper / specific aims] for you to review prior to our call. [If you have specific questions that you want the PO to consider, include them here.]

[Provide possible days/times or indicate that you can be available at the PO's convenience.]

Thank you in advance for your assistance. I look forward to talking with you soon.

Contact Info

PROGRAM OFFICER OUTREACH: EMAIL FOLLOW-UP

You should receive a response within a week or two—study it for tone and nuance in addition to the direct message. You might receive a recommendation to contact a different program office. There might be hints about how to strengthen your proposal. Some Program Officers will ask to see a longer description of your project—usually a positive sign. Once you receive a response to your email, say you would like to discuss some issues the Program Officer raised in the email. Ask if you can schedule a call within the next couple of weeks. If the Program Officer agrees to a meeting (and many will), you should prepare a short (1–2 pages) concept paper and send it first.

PREPARING FOR THE CALL

COMMON QUESTIONS:

- Is this project a good fit / competitive for this opportunity / your funding priorities?

- Are there other opportunities that would be a better fit?

- What are your recommendations for improving the fit / competitiveness?

- What other recommendations do you have?

- What are the most common causes for proposals being declined for this opportunity?

- What are the usual success rates for this program?

- What is your preferred method for me to contact you if I have additional questions?

AFTER THE CALL

Follow up with an email thanking the PO for their time and summarizing the key points you took away from the call.

In any future communication about this opportunity, reference your call. Change the subject line of your email to reflect the purpose and urgency of the request.

RESOURCES

- How to get a speedy response from a Program Officer: https://www.niaid.nih.gov/research/grants-how-speedy-response-program-officer

- R. Porter. (2009) Can we talk? Contacting Grant Program Officers: https://www.okhighered.org/grant-opps/docs/can-we-talk-contacting-program-officers.pdf

- How to reach out to POs. This paper presents the rationale for initiating contact with a program officer and describes a sequential set of activities designed to assure a productive dialogue: What to Say—and Not Say—to Program Officers: http://chronicle.com/article/What-to-Say-and-Not-Say-to/131282/

- How to get the most Help from your NIH Program Officer: http://www.biosciencewriters.com/How-to-get-the-most-Help-from-your-NIH-Program-Officer.aspx

- Examples and additional resources are available for developing concept papers on many university websites. Be careful to distinguish between examples for grant proposals and business ideas.

SECTION 4: COMMON FEDERAL FUNDING MECHANISMS

ADVANTAGES AND CHALLENGES TO COMMON NIH FUNDING MECHANISMS

Mechanism	Advantages	Disadvantages/Challenges
R01	Available through all ICs Some advantages for New and ESI investigators	Preliminary data expected Need a solid history of funded research
R03	No preliminary data required Supports pilot studies	Small amount of money
R21	For high-risk, high—reward studies Technically does not require preliminary data	Although preliminary data is not required most funded projects include preliminary data Commonly lower success rates for New and ESI investigators

DESCRIPTIONS OF COMMON NIH FUNDING MECHANISMS

R01: This program supports a discrete, specified, circumscribed project in scientific areas that represent the investigators' specific interests and competencies and that fall within the mission of the participating NIH Institutes and Centers (ICs). The R01 is the original, and historically the oldest, grant mechanism used by the NIH to support health-related research and development. Research grant applications are assigned to participating Institutes/Centers (ICs) based on receipt and referral guidelines and many applications are assigned to multiple participating ICs with related research interests. Grants are typically up to $500,000 per year for 3-5 years; the R01 grant is offered by all ICs.

R03: The small grant program supports discrete, well-defined projects that realistically can be completed in two years and that require limited levels of funding. Because the research project usually is limited, an R03 grant application may not contain extensive detail or discussion. Accordingly, reviewers should evaluate the conceptual framework and general approach to the problem. Appropriate justification for the proposed work can be provided through literature citations, data from other sources, or from investigator-generated data. Preliminary data are not required, particularly in applications proposing pilot or feasibility studies. Grants are up to $100,000 over 2 years; the R03 grant is offered by slightly over half of the NIH ICs. The R03 grant is not renewable.

R21: This program supports exploratory and developmental research projects by providing support for the early and conceptual stages of these projects. These studies may involve considerable risk but may lead to a breakthrough in a particular area, or to the development of novel techniques, agents, methodologies, models, or applications that could have a major impact on a field of biomedical, behavioral, or clinical research. Although preliminary data are not required, most funded projects include such data. **The R21 mechanism typically has a lower success rate for New Investigator/ESI applicants**. Grants are up to $275,000 over two years; the R21 grant is offered by most NIH ICs.

NSF CAREER

Securing funding from the National Science Foundation (NSF) is highly competitive and requires the development and submission of substantially rigorous and merited proposals. As with all NSF proposals, the key elements of successful CAREER requests is that they contain sufficiently technical descriptions of innovative science that shows promise for advancing your field(s), are responsive to the funding mechanism (*i.e.,* they are clearly organized and well written per the CAREER instructions), provide compelling responses to the two NSF-wide merit review criteria namely: (a) *Intellectual Merit* (*i.e.,* impact on field) and (b) *Broader Impacts* (*i.e.,* societal outcomes generated by both the research and implementation), and are responsive to the specific priorities of the funding directorate or division to which you are applying for CAREER support.

Overview. The Faculty Early Career Development (CAREER) Program is a Foundation-wide activity that offers NSF's most prestigious awards in support of junior faculty *who exemplify the role of teacher-scholars through outstanding research, excellent education, and the integration of education and research within the context of the mission of their organizations*. Such activities should build a firm foundation for a lifetime of leadership in integrating education and research. NSF encourages submission of CAREER proposals from junior faculty members at all CAREER-eligible organizations and especially encourages women, members of underrepresented minority groups, and persons with disabilities.

Program Description. The CAREER Program offers standard grant awards in support of junior faculty integrating education and research within the context of the mission of their organizations. [1] The program places importance on the early development of academic careers dedicated to stimulating the discovery process in which the excitement of research is enhanced by inspired teaching and enthusiastic learning. *The intent of the program is to provide stable support at a sufficient level and duration to enable awardees to develop careers*

---

[1] Please note that NSF technically offers several different grant types including new and continuing grants that, although rare, apply to the CAREER mechanism (see https://www.nsf.gov/pubs/manuals/gpm05_131/gpm2.jsp). [2] For more information regarding tenure-track-equivalent positions, refer to the eligibility guidelines in the CAREER Program Solicitation.

as outstanding researchers and educators who effectively integrate teaching, learning, and discovery.

Additionally, NSF annually selects from CAREER applicants up to 20 nominees for the [Presidential Early Career Awards for Scientists and Engineers](PECASE). The PECASE award is an honorary award and does not provide additional funds.

Award Information. NSF anticipates the disbursement of roughly $220 million over ~600 awards per year to new and continuing CAREER awards. The minimum CAREER award, including indirect costs, should total $400,000 for the five-year duration with the following exception: proposers to the Directorate of Biological Sciences (BIO) or the Division of Polar Programs (PLR) must submit budget requests for a minimum of $500,000 over the five-year project duration. Applicants should review recent awards in their area to determine the average award size and consult with a Program Officer if an anticipated request is considerably larger than the average.

Eligibility Requirements. A Principal Investigator (PI) may submit one CAREER proposal per year and may not participate in more than three CAREER competitions. CAREER applicants must meet the following eligibility requirements:

✦ Hold a doctoral degree by the Directorate's deadline date in a field supported by NSF;

✦ Be untenured until October 1 following the Directorate's deadline;

✦ Must not have previously received a CAREER award (prior or concurrent federal support for other types of awards or for non-duplicative research does not preclude eligibility); and

✦ By October 1st following the deadline for submission of CAREER proposals:

  o Be employed in a tenure-track or tenure-track-equivalent position[2] as an assistant professor or equivalent title at an accredited institution located in the U.S., its territories, or possessions, or the Commonwealth of Puerto Rico, that awards degrees in a field supported by NSF; or

  o Be employed in a tenure-track position (or tenure-track-equivalent position) as an assistant professor (or equivalent title) at an organization located in the U.S., its territories or possessions, or the Commonwealth of Puerto Rico, that is a non-profit, non-degree-granting organization such as a museum, observatory, or research lab.

Proposal Format. While NSF does not require a specific format for proposals, the [NSF Grant Proposal Guide (GPG)](provides) specific guidance on what must be included in the one-page *Project Summary* – the most read and influential document in your proposal – and the 15-page *Project Description*, which is the primary scored element of the proposal. In addition to the GPG, the [CAREER funding announcement](contains) instructions that take precedence for applications to this mechanism.

Recommended Tasks for Career Project and Proposal Development. The following recommendations are provided to help you optimize your CAREER project design and proposal development work. They are offered to yield progressive insights regardless of where you are in the proposal development process.

a. Develop your long-term CAREER plans and five-year project. Putting your CAREER project request in the context of your long-term career (*i.e.,* research and teaching) goals is the key first step. _NSF_ _Program Officers recommend thinking of a CAREER application as the first five_ _years of a 10-year plan._ Thinking through and articulating your long-term plans, past and current activities, the specific research project for which you seek support, and the ways that it will enhance individual teaching/career and institutional capacity is essential to a successful project design. As with all NSF projects, this planning should culminate in a Project Summary that includes articulation of the core elements of the proposed project including the evidence base, preliminary data, goals, hypotheses, objectives, and impacts of the program on the field (*Intellectual Merit*) and society (*Broader Impacts*).

b. Write a Concept Paper. Recognizing that the requisite NSF Project Summary to be submitted as part of your application does not always deliver sufficient information to give colleagues or an NSF Program Officer a full sense of what the applicant wants to accomplish and how, and that the development of the succinct one-page Project Summary is more difficult to complete in advance of revising and finalizing the project and the Project Description, _Hanover recommends writing a brief_ _one- to three-page Concept Paper to share_ _with your colleagues, mentors, peers, and Program Officer_. The goal is to solicit feedback from stakeholders and Program Officer regarding fit and approach. It should be written in the first person (e.g., I, we, our) and explicitly related to the goals of the CAREER mechanism and the NSF directorate and/or division to which you are applying. The Concept Paper should provide a concise summary of the key elements of a funding request. It should contextualize and detail the specific research questions, objectives, activities, and outreach in a manner that will allow a Program Officer to provide feedback – and for you the applicant to incorporate the feedback into the project design before developing the 15-page *Project Description*. As such, Hanover recommends the Concept Paper should be structured similar to the *Project Description* (see below) and approximately one to three pages in length.

c. Consult colleagues and collaborators to get critical feedback. This is a critical first step to developing your core project and feedback you want to get and incorporate before you contact a Program Officer. Once you have the Concept Paper, you are well positioned to request review and feedback from colleagues and mentors. The best practice is to _consult_ _these experts for early, substantial, and critical feedback on the quality of the research and/or_ _project design_ that you can use to refine your research and educational goals, activities, and intended impacts. The goal is to get an early and frank assessment of the quality of your science and your plans for advancing your career within the institution and beyond and to use that information for developing your research and articulating it in the *Project Description*.

d. Contact and seek insights from the Program Officer. Once you revise the Concept Paper to address substantial feedback, the next step is to consult a Program Officer to gain insights into the responsiveness and competitiveness of your project in the context of the the directorate's goals and the funding mechanism.[2] Your primary contact is a Program Officer in a division or program that is closest to your area of research. Consult the Program Areas section of the NSF Find Funding web page and select the appropriate NSF Division/Office to review the associated divisions, programs, and program descriptions. The NSF staff directory provides contact information for program officers, by name and by organization. In addition, you can consult the list of CAREER Contacts. *NSF Program Officers tend to prefer succinct and direct emails that include insightful questions as well as a copy of the Concept Paper*; they often will read and respond to both. You can also request to set up a phone conversation to follow up or ask additional questions. Working to develop some rapport with Program Officer and to convey your enthusiasm and diligence can increase the likelihood of receiving helpful feedback.

e. Write the *Project Description*. Once you have consulted with a Program Officer and addressed his/her feedback, then the main task is to elucidate your research/project in the 15-page *Project Description*. Per the NSF GPG, the *Project Description* should provide a clear statement of the work to be undertaken and must include the objectives for the period of the proposed work and expected significance as well as the relationship of this work to the present state of knowledge in the field (and work in progress by the PI under other support). A responsive CAREER *Project Description* will outline the general plan of work, including the broad design of activities to be undertaken, and, where appropriate, provide a clear description of experimental methods and procedures. PIs should convey what they want to do, why they want to do it, how they plan to do it, how they will know if they succeed, and what benefits could accrue if the project is successful. The project activities may be based on previously established and/or innovative methods and approaches, and must be well justified in either case. The expectation for justification relates to both the technical aspects of the proposal and the way in which the project may make broader contributions. See more information and templates for the *Project Description* in Section 3 below.

f. Write the *Project Summary*. The one-page *Project Summary* is the most read and influential page in your application, and Hanover recommends that you make sure this document is a compelling reflection of your proposed work. An effective *Project Summary* will excite reviewers about the opportunity to invest NSF funding in the project and make them eager to thoroughly read the *Project Description*. The *Project Summary* must consist of three sections: (1) Overview, (2) Intellectual Merit, and (3) Broader Impacts. The Overview should include a description of the activity that would result if the proposal were funded and a statement of objectives and methods to be employed. The statement on Intellectual Merit should describe the potential of the proposed activity to advance knowledge. The statement

---

[2] Two articles that provide a good overview for talking with program officers are *Can We Talk? Contacting Grant Program Officers* and *What to Say-and Not Say-to Program Officers*.

on Broader Impacts should describe the potential of the proposed activity to benefit society and contribute to the achievement of specific, desired societal outcomes. The *Project Summary* should be written in the third person (i.e., "Dr. X at the University of X will…"), informative to other persons working in the same or related fields, and, insofar as possible, understandable to a scientifically or technically literate lay reader. It should not be an abstract of the proposal.

CAREER Planning and Development Resources. These links provide a wealth of information about CAREER from the perspective of past reviewers and Program Officers.

✦ **NSF CAREER Webinar Slides** (2018)
https://www.nsf.gov/mps/dms/career_and_pecase_information/career_webinar_slides_2018.pdf

✦ **NSF CAREER Frequently Asked Questions** (Submission in Years 2020-2025)
https://www.nsf.gov/pubs/2017/nsf17050/nsf17050.pdf

✦ **NSF CAREER Proposal Writing Tips** (E-Book / Kansas State University)
http://aries.imse.ksu.edu/nsf/NSF2014/subfolder/career.pdf

✦ **NSF CAREER Proposal: My Experience and Advice** (Slides / Kansas State University)
http://aries.imse.ksu.edu/nsf/NSF2015/subfolder/Gurpreet%20Singh.pdf

✦ **Example Proposals with Reviewer Comments** (Webpage / 2013)
https://thmatters.wordpress.com/funding-opportunities-and-tips/career-examples-proposalscomments/

✦ **Writing A Winning CAREER Proposal** (Academic Research Funding Strategies, LLC / 2015) http://research.utsa.edu/wp-content/uploads/2015/02/CAREER-Workshop-Handouts-April-2015.pdf NOTE: due to the age of some examples, some elements of the structure are not appropriate for new submissions—most of these changes are noted in the consultant's comments, but always follow the most current NSF GPG and Program Solicitation
Guide to Departmental Letter with Annotated Example (2013)
http://rds.ucmerced.edu/sites/rds.ucmerced.edu/files/event/templatedeptletter.pdf