TIPS ON WRITING PROPOSALS

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Writing successful grant proposals is not an impossible endeavor, but it's not exactly an easy one, either. It is an art and, like most arts, requires diligence and practice. Whereas each disciplinary field and each funding source has a distinct culture of expectations, customs, and norms that govern the proposal preparation and review process, there are, nevertheless, certain features that are virtually universal. Many articles and books provide general guidelines for writing proposals, while others are directed toward specific fields; many of these have links from the ORDA web site (see Proposal Assistance —> Additional Grant-Writing Resources). Here are tips gleaned from several of these sources, organized into four sections: homework, components, general advice, and review.

I. DO YOUR HOMEWORK AND PLAN AHEAD

BE INFORMED. Successful grant-getters keep abreast of recurrent funding competitions as well as new funding initiatives in their field. Regularly check sources of information such as:
- ORDA's web site and newsletter, *Research Matters*.
- Web sites of sponsors and agencies (e.g., www.nsf.gov; www.nih.gov).
- Web-based researcher databases such as Community of Science (see ORDA home page or www.cos.com), which provides information on funding opportunities in **all** disciplines. Enter your research interests and they will send you regular customized Funding Alerts.

START EARLY. As soon as you have a good idea for a project, begin checking out possible funding sources, application deadlines, and guidelines for proposal preparation.
- Carefully identify the sponsor's deadlines as:
  - **Postmark** deadline date (by which a proposal/application must be postmarked if a nonelectronic application)
  - **Receipt** deadline date (by which an electronic or nonelectronic proposal/application must be received by the sponsor)
  - **Target** date (a flexible guideline used primarily by the National Science Foundation in order to assure proposals can be reviewed by a particular panel meeting date)
- Check proposal guidelines carefully: sponsors are increasingly limiting to one or two the number of proposals an institution may submit in a given competition. If the grant program you want to apply to has such a limit, you must submit a Notification of Intent to Apply to ORDA. We ask that this form be submitted to us **30 days** before the proposal or letter of intent deadline.
- Find out how often the sponsor's funding decisions are made during the year, how long the review process will take, and when you can reasonably expect to be notified of the outcome.
- Begin preparing your proposal well in advance of the sponsor's deadline to allow plenty of time for writing and revising the text and budget. This is especially important if you are relatively new to proposal writing. The process takes longer than you may realize (i.e., think in terms of months, not days).

- Research projects often have to be scheduled around the demands of the academic year, including teaching required courses, so consult your department chair and plan accordingly.
- As in any writing project, it is often useful to write the proposal and then put it aside for several days to cool off. When you return to it, you will be amazed at the errors of language, fact, logic, mechanics, etc., that you will find.
- Be aware that SIUC institutional review and sign-off (by department chairs, college deans, and ORDA) may impose deadlines days or weeks in advance of the sponsor's deadlines for receipt of proposals. Check with your department chair. See Proposal Submission for procedures and ORDA deadlines for processing.
- Reality check: The likelihood that a first-time proposal will be successful is slim, so plan time (perhaps as much as 6-9 months) to revise and resubmit.

AIM CAREFULLY. Target your proposal to the most appropriate funding sources. If you're not sure whether an agency or foundation funds research in your area of interest, do some investigating.
- Contact (phone or e-mail) the organization and ask what kind of research they fund and/or whether your project would be of interest to them. Do they fund only basic research? Applied research? Both?
- Direct personal contact with program officers at all sponsoring institutions can be very important. Some federal agencies (e.g., NEH) virtually require such contact before submitting a proposal. We encourage you to request SIUC travel funds for such visits.
- Check to see if the sponsor has a pre-proposal or screening process that applicants must go through before submitting a formal proposal.

MEMORIZE **THE GUIDELINES**. They are readily available on sponsor web sites and they tell you **exactly** what you must do to prepare a successful proposal.
- Carefully study the sponsor's mission statement, funding goals, and evaluation criteria. You are far more likely to get rewards for your labors if your ideas closely correspond to what the sponsor wants to accomplish.
- Learn everything you can about the review criteria and process (see sec. IV, The Review Process, below) **before** you write your proposal. This has a major impact on both how you write your proposal text and how you interpret the reviews. Again, see the sponsor's web site. For example:
  - NIH reviewers are asked to comment on 5 criteria: significance, approach, innovativeness, investigator qualifications, and scientific environment.
  - NSF reviewers evaluate on 2 criteria: intellectual merit (includes significance, originality, qualifications) and broader impacts (includes diversity and integration of research and education).
  - NEH reviewers evaluate on 4 criteria: significance to the humanities, quality of the applicant's work, quality of the proposed project, and likelihood of completion.
- Review these guidelines frequently as you are preparing your proposal.

SUBMISSION. Some proposals may be sent to the sponsor by regular or overnight mail, but federal and many private sources are increasingly using electronic submissions systems, such as the federal Grants.gov. Be aware that with online proposal submissions:

- Submission of all sections of a proposal can take a surprising amount of time, particularly when the system gets backlogged on the due date. Don't get started half an hour before the proposal is due (usually 5:00 p.m. PI's time).
- **Check with ORDA several days in advance of the due date regarding any agency requirements for PI/PD registration.**
- Typically the PI/PD submits the proposal electronically and then the agency notifies ORDA via e-mail for final submission, which provides institutional confirmation that all requirements and signatures have been obtained. The ORDA office closes at 4:30 p.m.
- Electronic guidelines change with alarming frequency. We provide updates on the ORDA web site as much as possible. Be alert.

II. THE PROPOSAL NARRATIVE: COMPONENTS

Most funding organizations require that proposals include, in one variant or another, the following components. Prepare each one carefully.

TITLE. Some agencies use cover sheets for proposals, which require detailed information about the project, budget, principal investigator/project director (PI/PD), and institution. If there is no formal cover sheet, prepare a separate title page.
- Keep the title concise: some funding agencies limit the length of project titles to a specific number of characters.
- The title may be used to assign the proposal to a review group or category, so word it to clearly reflect the basic purpose of the project.
- The title should be understandable to the lay reader. Keep in mind who might be reviewing your proposal, and also the fact that federally funded awards become public documents.

TABLE OF CONTENTS. Some sponsors require a table of contents that lists page numbers of all major sections of the proposal. Agencies can be very specific about labeling, pagination, etc; NSF, for example, provides its own forms and creates its own Table of Contents online. Obviously, a Table of Contents cannot be created until all elements of the proposal have been prepared in final form.

ABSTRACT. Believe it or not, the abstract could be the single most important component of your proposal.
- An abstract is a SUMMARY and overview of the entire proposal (it is **not** an introduction). This means it must include information on problem, methods, anticipated outcomes, significance, and budget.
- Keep it brief: sponsors usually specify a length (typically from 100 to 500 words, or a given number of characters).
- Use language understandable to an informed layperson; avoid disciplinary jargon.
- Like the title, the abstract may be the basis on which a program officer assigns your proposal to reviewers.

- Sad but true: careless reviewers will, on occasion, barely glance at your proposal text, basing their review instead on your abstract and budget. There are few other circumstances in which the ability to craft an informative abstract is as crucial!
- Write the abstract LAST, and review it carefully to make sure it agrees with the final text.

INTRODUCTION/STATEMENT OF PROBLEM OR NEED.
- First impressions count, so begin with a clear, concise, and forceful statement.
- This section introduces the who, what, when, why, where, and how of the proposed project.
- It briefly summarizes the evidence that establishes the goals and need for the project, how that need will be addressed or the goals achieved, and the anticipated outcomes.
- Depending on the sponsor's requirements, any or all of these elements may be discussed at greater length in separate sections of the proposal text.

GOALS AND OBJECTIVES. This section identifies the purpose of the project, what it is intended to achieve (what question it is designed to answer, what problem it is intended to solve, what theme it is proposed to explore), and the expected outcomes.
- **Goals** are broad, general statements about ideal project outcomes.
- **Objectives** are smaller, more specific and measurable outcomes, and should be compatible with, or steps toward achieving, stated goals.
- Anticipated outcomes are the expected final findings or "products" of the project, which may be a decision about a hypothesis, a policy recommendation, a body of work for a show or performance, a published article, etc. (Be careful here: reviewers often ask, What if the project doesn't turn out this way? You should describe your anticipated outcomes with a hypothetical "Plan B" in mind.)
- The goals and objectives of a project are not the same as its **significance**; see below.

BACKGROUND/LITERATURE REVIEW.   This section must accomplish two things: (1) It must thoroughly summarize the up-to-the-minute state of knowledge in the field in order to establish the context for the proposed project. (2) It must convincingly demonstrate that the project needs to be undertaken to fill a real gap in knowledge.
- You should establish clearly that your project addresses important questions or problems in your field of endeavor.
- Highlight innovation: the questions/problems you are addressing have never been addressed this way before.
- Don't "review the literature" by simply listing authors and dates. Your background section should focus on the specific theories, concepts, methods, or interpretations that your project will address.
- It is frequently convenient to organize this section by chronological review of the development of a particular field of inquiry and the questions, problems, or gaps in understanding that remain.
- Include as cited works both fundamental classics and just-published state-of-the-art articles, as appropriate.
- Show awareness of alternative viewpoints. Handle controversies and debates in the field evenly and non-dogmatically.

- When arguing your own position on an issue, defend it by providing supporting data or evidence. Don't merely "argue by assertion" (i.e., it is correct because I say so) or "appeal to authority" (it is correct because Smith 1995 says so).

METHODS/PROCEDURES/MATERIALS. This section, the "research design" of your project, constitutes the very core of your proposal. It must meet three criteria:
- (1) it must derive logically from the statement of problem or need;
- (2) it must proceed smoothly from describing data and techniques to be used, to explaining how the findings will be interpreted in terms of the stated goals, objectives, and outcomes; and
- (3) it must convince readers that the conclusions will be valid.

The most common reason proposals are rejected is that the PI/PDs fail to tell reviewers exactly what they will DO on the project. So, tell them! You have a limited number of pages to work within your proposal; this section is where you should concentrate your efforts. Specific approaches and methods of inquiry will vary depending on your particular discipline, of course, but in general you will need to include some subset of the following:

- **Hypotheses** to be tested or concepts to be explored. Most successful scientific research is hypothesis-driven. All hypotheses in the proposal should be testable. The proposal should not assume to be true those hypotheses that are to be tested.
- Description of how **experiments** will be designed and conducted.
- **Social sciences**: the following elements are particularly important elements of proposals in the social sciences.
  - Identification of the study population and or participants.
  - Description and justification of sampling design and sample size.
  - Description of questionnaire instruments (or include as appendices, if allowed).
  - Description of the specific types and suitability of statistical analyses of raw data, such as regression, principal components, etc.
- **Personnel**: Clear statements of the qualifications and activities of all personnel, including students, consultants, subcontractors, and others, but especially the PI/PD. It should be clear that the PI/PD is uniquely qualified by virtue of background knowledge and mastery of all the relevant techniques to successfully execute the research plan.
- **Evaluation**: How will the project be monitored, who will do it and how often, how will unexpected events be handled, and what will be done if the project isn't working?
- **Preliminary data**: If you have data from pilot projects that demonstrate the effectiveness of your approach, include them.
- Essential **equipment, facilities, and space**: describe what these items are, how they will be used, and their availability on campus or at the research site.
- **Permissions and Compliances**: All necessary permissions, collaborations, and compliances have been secured. **Compliances** are mandated by the University, state, and/or federal government for research involving human subjects, human stem cells, vertebrate animals, hazardous materials, recombinant DNA, etc.; sponsors may want these compliances in hand at the time of proposal submission. Research in foreign countries often requires formal permits; include copies of letters.
- **Illustrative material**: maps, charts, photographs, etc. (only if allowed).

TIMETABLE. A successful research proposal must strike a careful balance between time and money (which are finite resources) and project goals.
- Does the sponsor place time limits on funding? Dollar limits on funding?
- Is the research design such that project goals can be accomplished within the period proposed in the grant and allowed by the sponsor?
- Can the project goals be accomplished in one year, or is it a multi-year project?
- Is the scope of work reasonable for the project period and budget? One hallmark of an inexperienced investigator is an overly ambitious scope of work.
- How will the work be organized on a month-to-month basis? Some sponsors want a formal timeline or chart delineating activities or milestones month-by-month.

PROJECT SIGNIFICANCE AND IMPACT. The **significance** of a project is not the same as the purpose or goals (see above) of the project. Statements of the significance and impact of the project must be carefully crafted and may be couched in several themes:
- Advancing the state of knowledge in a particular field, enriching our cultural and aesthetic heritage, or contributing to the public good.
- Accomplishing the funding agency's goals; refer again to the sponsor's goals and mission.

DISSEMINATION. How will the project's findings be communicated to the field? Most agencies want a more thoughtful plan than simply "We will publish the results in journals and give presentations at meetings."

BUDGET AND JUSTIFICATION. Budgets can be quite complex, as they require knowledge of typical costs, sponsor guidelines, and University fiscal policies. Budget "justifications" are detailed explanations or rationales for the need for individual budget line items, as dictated by the project's goals, scope, and methods.
- Study the sponsor's budget guidelines carefully: if they say they won't pay for travel to meetings, don't include the costs of travel to meetings; if they say they won't pay salaries, don't ask for salary! If they require an institutional match, check with your department, college, or center for support. You can also go to the ORDA web site for a form to request matching funds from the Office of Vice Chancellor for Research.
- The budget should be reasonable, appropriate to the project, and within the usual range of awards made by the sponsor.
- The budget should include all necessary costs to successfully accomplish the stated project goals, design, description, and timetable.
- The budget should be realistic and not padded.
- Each item of the budget, particularly international travel and big-ticket pieces of equipment, must be justified in writing, usually on a separate page.
- If the proposal is for a multi-year project, you should prepare a budget for each year, as well as a cumulative budget.
- University policies: Be sure to include appropriate fringe benefits and indirect costs in your budget, and pay proper attention to release time and cost-sharing (all this information is available on the ORDA web site under Rates and Forms). ORDA's Excel budget templates (see same page) include automatic fringe benefits and indirect cost calculations.

CREDENTIALS OF PROJECT PERSONNEL. Up-to-date *curricula vitarum* or bio-sketches of the PI/PD and other senior project personnel are typically required.
- Many sponsors have their own format and/or page limits.
- If the page limit is very short, use it to outline only recent (last 5 years or so) experience and publications **directly relevant** to the proposed project.

REFERENCES CITED. As in any writing project, you must be careful to provide citation information on all literature referenced in the proposal text, particularly in the background section.
- Outdated and/or incomplete references can contribute to rejection of a proposal.
- Check carefully to make sure that all citations in the text are listed in the References Cited, that all items in the References Cited are mentioned in the text, and that they are correct and correspond by year.
- Strictly adhere to any page limit or citation style requirements of the sponsor.

III. THE PROPOSAL NARRATIVE: GENERAL ADVICE

FOLLOW DIRECTIONS. Read the guidelines for proposal preparation carefully and **follow them exactly! The importance of this cannot be overemphasized**.
- For federal grants, there is often a law requiring, or a scientific rationale for asking, every piece of requested information.
- Do NOT violate guidelines on page length, word limits, margin size, font size, organization and format, etc. This is not the time to let loose your creative spirit by using nonstanDard typefaces.
- Be wary of adding appendices. Do not use them to weasel around page limits for the proposal narrative. Some agencies do not allow appendices without prior approval of a program officer; some do not require reviewers to read them.
- Just because one agency or foundation does things a certain way, it doesn't mean they all do. Pay attention to and respect individual sponsors' idiosyncrasies.
- Some sponsors make available the forms or guidelines that reviewers are asked to use in evaluating a proposal. These closely correspond to the goals of the funding program and are therefore valuable because they tell you clearly what reviewers will be looking for and/or using to score your proposal. Check sponsor web sites to see if reviewer forms/guidelines are posted, and write with them in mind.

NEATNESS COUNTS. Few things infuriate reviewers—and prompt highly negative comments—as much as a carelessly prepared proposal riddled with typographical, punctuation, grammatical, and budgetary errors. There is simply no excuse for this with today's computerized word-processing programs. The thought always lurks: if the PI/PD prepared the proposal so incompetently, is this how s/he will carry out the research, too?
- Use a spell checker and a grammar checker—but beware of homonyms (there, their).
- Ask an experienced colleague to read your proposal draft for typos, accuracy, and clarity, and to give you an honest review. This is especially important if you are not a native English speaker.

- Proofread, proofread, proofread!

BE CONCISE. The proposal must be thorough, but the writing should be crisp, clear and readable, objective, and nonrepetitive.
- Avoid needless and pretentious jargon. This is especially important if the proposal is to be evaluated by reviewers from a variety of disciplines.
- Define acronyms the first time they are used and avoid abbreviations.
- Avoid gimmicks, hyperbole, and hokey or extravagant claims that distract from the scholarly objectivity of your writing.
- Avoid asking rhetorical questions.

EXPLAIN, DON'T ASSUME.
- Explain adequately, but do not talk down to your readers.
- Don't assume anything is obvious or that reviewers will cheerfully read between the lines. It isn't and they won't.

IV. THE REVIEW PROCESS

THE WAIT. You should receive an acknowledgment from the sponsor that your proposal has been received. They may tell you that your proposal has been given a particular reference number and/or when you can expect a decision. Then you wait.

LEVELS OF REVIEW. Most sponsors have several levels of review, including:
- Outside, ad hoc, peer reviewers, with specialized knowledge in the area of the proposal, who are solicited for comments and who send in reviews, typically via email.
- Review panels, committees, or "study sections" that meet and discuss large numbers of proposals (e.g., all those submitted for a twice-yearly deadline). They are responsible for ranking the proposals and making recommendations to the sponsor about which should be funded and which should not. These committees may be multidisciplinary, and hence they may or may not include experts in your specific field. Keep this possibility in mind when writing the proposal narrative.
- Internal agency or foundation reviews providing oversight of budgetary, regulatory, and internal concerns, rather than scholarly content.
- Reviewers, review panels, and program officers in federal agencies make **recommendations** about funding particular proposals, but these are subject to consideration by very senior officials who make final decisions. These levels of review are usually mandated by the legislation that established the agency.

REVIEWERS ARE HUMAN. Don't lose sight of the fact that reviewers are human beings who have good days and bad days just like you do. Keep in mind that:
- Reviewers volunteer their time to evaluate proposals partly because they are good academic citizens, but generally their main interest is to learn about exciting new ideas and research frontiers. It is genuinely disappointing when these are missing.
- Reviewers may have a large stack of proposals to read; they may be tired, ill, or hurried. Make it easy on them by following directions and writing clearly.
- Don't anger or frustrate reviewers with errors, overblown claims, unclear or inadequate explanation, or bloated, unjustified budgets. This is guaranteed to get you a poor—sometimes even vicious—review.

YOU HAVE TO *SELL* YOUR PROPOSAL TO REVIEWERS! Face it, they hold the key to your success. No matter how brilliant and important you are, you have to persuade reviewers that *this project*, *as you have described it* on the allotted number of pages, is worth the investment of a substantial sum of the sponsor's money. A PI/PD's solid track record of getting grants and timely dissemination of results is always a positive factor in the review process, but reputation alone cannot turn a weak proposal into a winner. There is an element of salesmanship here. Why should private or taxpayer money be invested in your project? A successful grant application will *convince* reviewers, through each of the sections described above, that:
- The proposed project is needed: it will tell us something that we don't know now.
- The PI/PD and other personnel have the requisite expertise, permits, and access to space and facilities to carry out the project.
- The project is do-able in the proposed time frame and with the proposed budget.
- The budget is appropriate and includes all necessary items.
- The proposed project will be successfully completed and make a significant contribution to the field.
- The results of the project will be disseminated in a timely manner.

YOUR GOAL: Readers can come away from your proposal captivated by your brilliantly innovative ideas, masterfully convincing logic, methodological rigor, and lucid, compelling prose that wraps all this cutting-edge project's complexities into a seamless, eminently fundable package. Or they can massacre your out-of-date, unoriginal, dogmatic, error-ridden, vague, turgid, and prolix bloviations. The choice is up to you.

RANKINGS: It should be clear from the above that, despite shared elements, every sponsor—whether federal, state, private foundation, or industry—has its own goals, guidelines, review processes, and decision-making processes. Commonly, however, when large numbers of proposals are reviewed at one time, after a particular deadline, they will be scored or ranked.
- Rankings are initially determined by expert reviewers, who usually are asked not only for written comments but also a relative evaluation. This might be a verbal evaluation as "excellent; very good; good; fair; poor," or it might be a numerical scale of 1 to 5, or, as at NIH, a numerical score from 100 to 500 (lower scores are better).
- If a review panel is convened, it too will rank the proposals, based on panel members' own readings and the opinions of the expert reviewers. Rankings may be expressed like class grades, for example, as A, B, C, and so forth, or by numerical scores.

- If the volume of proposals is high and meeting time is short (the typical situation), it is likely that proposals will be triaged. The only proposals to be discussed and ranked in panel are those that had high scores or ranks from the expert reviewers. Proposals with mixed reviews have little likelihood of funding, and those with lower rankings/scores frequently are not even discussed.
- Final panel discussions focus on determining the specific rank ordering of the top proposals. Some sponsors may give PI/PD's of worthy but unfunded proposals encouragement to revise and resubmit on the basis of reviewer comments.

THE DECISION: LIVE AND LEARN. It is rare, especially for novices and particularly when applying to federal agencies, that a proposal is successful on its first submission. The competition is tough out there and getting tougher! Estimates of the success rates for first-time submissions are on the order of 15-33%. Given the circumstances, then, it is best to grit your teeth, gird your loins, and approach a first-time submission with the attitude that it will be a learning experience.
- Reality check: Rejection is devastating, particularly if accompanied by scathing commentary. It has happened to ALL your colleagues at one time or another. Get over it and move on.
- Above all, DO NOT fire off an angry or whiny letter to the sponsor! If it makes you feel better, write the letter but do NOT mail it.
- Reading and interpreting reviews is an art in itself. Novices should ask more experienced colleagues for guidance in reading between the lines.
- If written reviews of your proposal are not returned to you, contact the program officer and ask if you may have copies or summaries of reviewers' comments.
- If a proposal is reviewed in-house by non-experts, for example by a private foundation, and your proposal is not successful, you are unlikely to get any encouragement to resubmit a revised version. Try elsewhere.
- If your proposal was peer-reviewed by experts, and then reviewed in-house, there may be reason to revise and resubmit your proposal for a second review cycle if the first was unsuccessful. Program officers usually will indicate if they think a revised version, responding to specific reviewer concerns, might be successful in the next competition. If in doubt, it is often helpful to set up an appointment for a telephone call to the program officer to get further insights.
- Swallow a dose of humility: Learn to profit from (generally) well-meaning critiques by scholars whose experience and knowledge may be greater than your own, and be prepared to incorporate their suggestions when you revise and resubmit your proposal.

BE PERSISTENT! You definitely won't get a grant if you don't submit a proposal!
- If you are unsuccessful the first time around, revise and resubmit the proposal.
- Some sponsors, such as NIH, limit the number of resubmissions of a proposal to two.