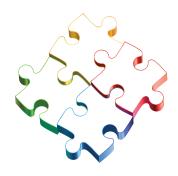


A GUIDE TO THE GRANTS PROCESS AT PURDUE UNIVERSITY

Office of the Executive Vice President for Research and Partnerships

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Office of the Executive Vice President for Research and Partnerships

A Guide to the Grants Process at Purdue University

http://www.purdue.edu/research

Using this Guide

Each chapter includes, in tables, side bars and highlighted text areas, Purdue-specific information such as websites, e-mail addresses, contacts and important notes.

The terms "faculty researcher" and "Principal Investigator" or "PI" are used interchangeably throughout this guide.

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chapter one

Where to Start

The creative discovery, learning, and engagement activities of faculty contribute to the mission and strategic plan of Purdue University. Many of these faculty-initiated projects are funded by external sponsors who have established procedures and policies for identifying and administering the programs they support. The Office of the Executive Vice President for Research and Partnerships as well as Sponsored Program Services, the Purdue Research Foundation and the University Development Office, in addition to departments, schools and colleges, provide many services to assist faculty in identifying opportunities, developing and submitting proposals, and subsequently managing all types of sponsored programs as well as the resulting technologies, patents and copyrights.

Identifying research opportunities, creating a team, developing and submitting proposals are all essential steps to receiving research funding. We have designed this guide to help researchers identify the people, departments and offices at Purdue that can help them achieve success while also outlining the steps for researchers to follow within the Purdue environment. Cumulatively, this guide aims to help faculty and researchers manage the grant process from idea development to receiving and managing an award.

The first chapter of this guide, "Where to Start," provides a brief overview of grant process at Purdue and summarizes primary sources of information and support that can help faculty and researchers throughout the grant development and submission process. The second chapter, "Identifying Funding Opportunities," provides details on internal and external funding mechanisms and campus-supported resources for locating appropriate funding opportunities and identifying potential collaborators. Chapter 3, "Preparing and Submitting a Proposal," discusses some essential steps in the development of a wide variety of proposals as well as guidance concerning how to work with the various groups who work to prepare and submit proposals. Chapter 4, "Receiving and Administering Awards," provides initial guidance on the post-award process. We also have included a short bibliography in Chapter 5, "Learning More," for further resources.

Overview of the Grant Process at Purdue

In general, the grant process starts with researchers engaging with people in their departments, including individuals such as department heads and staff in the business offices. At the College or School level, faculty members developing a proposal may engage with their associate deans for research, development officers, research specialists (College of Agriculture and College of Education), and staff in the appropriate Sponsored Program Services Pre-Award Center. At any time, researchers can arrange consultations with proposal coordinators and the project coordinator, located in the research development group within the Office of the Executive Vice President for Research and Partnerships located in Hovde Hall. This first chapter identifies staff units and, at times, individuals, who can help with these issues. In subsequent chapters, these services are outlined from a user-centered perspective, arranged to provide researchers with the most relevant information for various points in the grant process.

Resources in Departments, Colleges and Schools

A faculty member's own department often supports smaller monetary requests for course upgrades, small laboratory or computer equipment purchases, or research training support for undergraduates or graduate assistants. On occasion, funds designed to satisfy relatively low-cost and/or short-term requests already exist in a department's budget or are available through an allocation from the dean of the college/school. The offices of the deans of the various Purdue colleges/schools solicit and review applications for some internal (and external) grant and fellowship programs specific to particular academic areas. Faculty should contact their department head's office and their college or school's research dean to learn about current programs administered by the dean's office of their respective college/school. All colleges also have designated development staff members who can provide relevant information for those seeking funding opportunities supported by foundations and corporations. Every department also has business office staff, individuals who often work with researchers to initiate communication with Sponsored Program Services (SPS). At the West Lafayette campus, each college also has an assigned Pre-Award Center, part of SPS, whose staff members assist researchers regarding grant processes and submit most proposals.

Support from the Office of the Executive Vice President for Research and Partnerships

The Office of the Executive Vice President for Research and Partnerships (EVPRP) provides support to faculty members in developing competitive research proposals and supporting funded research programs. Whether locating funding opportunities, providing ready access to important policies, assisting in proposal preparation or helping set up a new center, the goal of the EVPRP is to offer effective strategies, responsive information, and tangible assistance to the Purdue research community.

The following section provides an overview of units within the EVPRP who most commonly work with faculty to develop competitive proposals and support their administration. More detailed discussion of the services EVPRP staff provide at various points in the grant process can be found in the following chapters.

Research Development Services

The Research Development unit of the EVPRP assists faculty with numerous aspects of grant development. Many faculty members first come into contact with staff from the EVPRP at the new faculty orientation or at some of the many presentations and workshops provided for faculty and graduate students on grantsmanship and proposal development. Service areas of the research development unit include:

- Identification of funding opportunities
- Development of research teams
- Management of limited submission and internal grant competitions
- Proposal coordination for large and interdisciplinary projects
- Proposal preparation support
- Educational programs and workshops on various aspects of grantsmanship
- Support for site visits

Discovery Park

Discovery Park (DP) serves as the interdisciplinary research hub of Purdue University. Influenced by the convergence of technological advances in various academic disciplines, it capitalizes on this trend by attracting faculty and financial support to conduct interdisciplinary research that is ambitious in scale and/or scientific impact. It also provides an organizational structure and a stimulating, dynamic environment that enhances the identification, evaluation and implementation of projects in emergent interdisciplinary research areas.

DP's mission is to provide Purdue University with facilities, leadership and systems that transcend traditional academic boundaries — fostering an innovative interdisciplinary environment for learning, discovery and engagement that leads to intellectual excitement, scientific achievement, and economic growth and opportunities. Space for research projects is evaluated and allocated based upon criteria that ensure the facilities are shared, flexible, and fully utilized for large interdisciplinary research programs.

Faculty may find that their own research can be enhanced or developed in new ways through collaboration with the researchers and personnel affiliated with DP's core centers. Complete descriptions of the facilities can be found on their respective websites.

Research Compliance & Conflict of Interest

The reearch compliance office promotes the responsible conduct of research by assisting investigators in understanding and complying with state and federal statutes and regulations applicable to Purdue's research enterprise. Specifically, staff members assist investigators to develop strategies to manage research protections and navigate regulatory committee submissions including:

- Protect human and animal research subjects
- Ensure the safe use of infectious and other biohazardous agents
- Disclose and manage conflicts of interest and outside activities
- Identify and observe export control regulations and statutes

More details about regulatory oversight in the grant development process pre- and post- submission are provided in chapters 3 and 4.

Corporate and Global Partnerships

The Corporate and Global Partnerships team assists faculty in the identification of potential corporate sponsors of research and in the establishment of strategic partnerships and master agreements with corporate partners. They also help companies identify sources of expertise and services within the Purdue community. More details on the services provided by this office can be found in chapters 2 and 3.

Research Communications

The research communications group, part of the EVPRP, offers a range of communication support for Purdue's research enterprise. Areas of support include:

- Publication of sponsored program awards received
- Promotion of EVPRP and Discovery Park-related events
- Assistance with electronic, print and web-based communication needs for selected research activities

Research communications staff also work with proposal coordinators to develop graphics for proposals and various graphic materials for site visits. More information about their services appears in chapters 2 and 3.

Additional Support from the EVPRP

In addition to the services and support mentioned above, the EVPRP supports the grant development process by working with researchers, departments, schools and colleges in areas such as cost-share commitments, center development, and support of research cores. These areas are discussed in chapters 3 and 4.

Office of the Executive Vice President of Research and Partnerships www.purdue.edu/research/

> Sponsored Program Services www.purdue.edu/business/sps/

University Development Office www.purdue.edu/giving/

Purdue Research Foundation www.prf.org/

Office of Technology Commercialization www.otc-prf.org

The Graduate School www.purdue.edu/gradschool/

Sponsored Program Services

Sponsored Program Services (SPS) provides pre-award, contracting and post-award services to faculty and researchers regarding grant procedures and processes. SPS staff support the submission of high-quality proposals by assisting with sponsor regulations, electronic submission systems, financial review and approval of proposals. SPS staff members work with researchers to review and negotiate contracts. They also provide post-award services such as account set up, financial reporting, invoicing, and compliance with sponsor requirements. All departments on the West Lafayette campus have SPS Pre-Award Centers to serve the needs of the research community. More detailed discussions of the pre-award services provided to faculty appear in chapter 3 and post-award services are discussed in chapter 4.

University Development Office

Private giving helps assure Purdue University's excellence in teaching, research and service. Gifts may fund programs, scholarships, fellowships, professorships, research, facilities, and equipment. The University Development Office (UDO) plans, coordinates, and implements fundraising programs with Purdue alumni, parents, friends, corporations, and foundations. In terms of research and funding opportunities, development staff in each college proactively engage with faculty concerning mostly foundation and industry-related opportunities.

Purdue Research Foundation and the Office of Technology Commercialization

The Purdue Research Foundation (PRF) was established in 1930 to perform in areas where it is inherently more difficult for Purdue University to function because of federal and state legislation that governs land-grant universities. As a non-profit corporation, PRF administers trusts, funds, and endowments; it facilitates the protection of university intellectual property via patents and copyrights. It also licenses Purdue technology, accepts and administers gifts, acquires and develops property and performs other services helpful to Purdue University. PRF supports several grant opportunities as discussed in chapter 2.

The Office of Technology Commercialization (OTC), part of PRF, operates one of the most comprehensive technology transfer programs among leading research universities in the United States. OTC is responsible for protecting and licensing Purdue's intellectual property assets including patents, copyrights, trademarks and tangible research property. The OTC professional staff work closely with Purdue faculty, staff and student innovators to provide critical resources needed to shepherd an innovation from the lab to realization. While the staff at OTC work with faculty members in relation to patents and copyrights, they may also work with researchers when funding opportunities require detailed IP management or technology transfer plans as discussed in chapter 3.

The Graduate School

Almost two-thirds of graduate students hold appointments as graduate research assistants, teaching assistants, lecturers, or administrative/professionals. Graduate appointments offer remission of tuition and most fees. Faculty and staff members from each of the degree programs direct graduate education for their areas. College or school assistant/associate deans for graduate education, heads of graduate programs, directors of graduate studies, chairs of departmental graduate committees, and departmental graduate contact persons work with faculty to manage various aspects of graduate education within their department, program, college, or school. Faculty researchers regularly include discussion of graduate students as part of their research grants proposals; therefore, researchers should be familiar with the School's policies and procedures.



chapter two

Identifying Funding Opportunities

Preparation of a strong application for funding requires a significant investment of time. Success depends not only on an investigator's experience and a great idea but also on currently available funding opportunities, the appropriateness of the idea for the opportunity, the availability of needed resources and of preliminary data to support it. In this chapter, we discuss how to assess readiness for applying for grants, how to identify appropriate funding sources for a variety of projects, both internal and external to Purdue, and how various departments and individuals can help Purdue researchers prepare for developing a competitive grant application.

Assessing the Competition

Sources of research funding range from major federal agencies and programs, such as the National Science Foundation (NSF), the National Institutes of Health (NIH), and the Departments of Energy, Education, Defense, etc, to hundreds of smaller institutes and private foundations. In addition to identifying possible sources of research funding, it can be useful to look at the types of projects and the size of grants these organizations have supported in the past. Using search engines can often provide this information for larger programs. For smaller agencies and foundations, researchers can glean important information from individual websites or through contacting appropriate people. Such background research is essential for preparing the best proposal for the most appropriate source of funding.

Analysis of this information can provide examples of how to present one's own project idea and how to define its scope. In addition, sometimes previous recipients of an award can be helpful resources who may not only be willing to provide copies of their proposal applications

NSF: http://www.nsf.gov/awardsearch/ NIH: http://projectreporter.nih.gov

but also may help answer questions or concerns one may have with the program or opportunity. Larger granting agencies, such as NSF and NIH, provide extensive information on past awards through their websites. While the EVPRP's research development group supports tools and disseminates information about most federally sponsored opportunities, staff of the University Development Office, available in each college/school, can also provide information about many foundation, industry and non-profit opportunities.

Assessing Resources

When a funding agency reviews an application, it is not just looking for a great idea and an energetic researcher but also may want evidence of a principal investigator's experience in other areas such as management and mentoring. Sometimes a sponsor requires evidence of appropriate resources available at Purdue, such as lab space and technological infrastructure. Resources may also be more intangible, for example, the demonstration of a positive intellectual environment and the presence of programs to help assure the success of interdisciplinary projects. Some grants may also require preliminary data. These types of requirements are usually made clear in the call for proposals. In addition, researchers must assess the amount of time available to themselves as well as that of those who will work on the project. Preparing a highly competitive proposal usually takes several months.

Resources Provided by Purdue

Purdue, through the resources and people located in departments, schools and units such as those described in Chapter 1, provides significant support to researchers as they pursue both internal and external funding opportunities. This section details these services and how to make use of them.

Grant Development Resources

Faculty have many electronic sources available to them concerning the identification of funding opportunities and the development of skills regarding grant development. The research development staff assist in compiling weekly announcenments of opportunities and provide help with setting up and using Pivot, the primary source for funding information at Purdue. Electronic resources available to researchers include:

- · Search tools and alerts available from agencies directly
- Pivot
- Weekly E-mails sent to deans and department heads
- Grantsmanship publications available online
- Internal funding sources
- Specialized funding resources (early career, equipment, etc.)

To learn more about available opportunities, see: www.purdue.edu/research/funding-and-grant-writing/funding/overview.php.

Dimensions of Discovery eNewsletter

Dimensions of Discovery is published bimonthly by the Office of the Executive Vice President for Research and Partnerships. It is designed specifically for Purdue researchers and research support staff.

The newsletter reflects the many dimensions of discovery at Purdue – from celebrating faculty and student investigators' achievements to understanding and applying the latest regulatory requirements to learning about funding opportunities and available university resources.

Sponsored Programs Awards Received Online Archive

Research communications also provides a monthly compilation of recently made awards. Available in PDF and Excel file formats, the Excel version may be used to search and sort the list of awards while the PDF version provides easy viewing and printing. The awards lists are posted two months behind the current month as the data is received.

Online publications from the Office of the Exectuive Vice President for Research and Partnerships can be found at: http://www.purdue.edu/research/publications-data/sponsored-programs.php.

Research Development Library

The research development unit, located on the third floor of Hovde Hall, houses a small library of references that faculty and staff may use for assistance in proposal development.

Additional Resources

Several groups also develop and maintain resources and information including sample proposals, updates on recent awards and changes in federal guidelines. Many of these, including a PDF version of this guide, are available from the EVPRP website.

Additional Support by Research Development Staff

Research development staff provide services to help faculty members succeed in identifying opportunities and applying for external funds for their research, teaching, and service activities. Staff members also help connect investigators and build interdisciplinary research teams.

Workshops and Special Sessions

Each year, research development staff sponsor a range of conferences, seminars and workshops on various topics such as applying for funding from agencies (such as NIH, NSF or NEH), developing grant proposals, and managing awards. They are presented by research development and other Purdue staff as well as by consultants and outside experts. Some of these events target certain groups such as specific schools and departments, new faculty, or experienced grantees while other events focus on specific opportunities such as NSF CAREER awards.

Faculty and administrators are encouraged to participate in these opportunities and can suggest topics and/or speakers for future events. Additional services available to researchers and their teams are discussed in Chapter 3, "Preparing and Submitting Proposals."

NIH Research Coordination

Project coordinators works with faculty to develop research teams, help investigators identify opportunities, and help prepare teams to apply for funding. The project coordinator, in particular, can:

- Guide individual faculty members to appropriate funding mechanisms
- Facilitate identification and creation of project teams
- Coordinate peer reviews
- Assist in the development of research communities
- Facilitate communication between researchers and program officers

Internal Awards and Research Funding Opportunities

The EVPRP administers several internal awards and research grant competitions that recognize achievement and provide support for faculty research activities. Many of these are supported by funds from the Purdue Research Foundation (PRF).

Grants administered partially or fully by the EVPRP include the following:

- The Herbert Newby McCoy Award
- Purdue University Research and Scholarship Distinction Award
- Arden Bement Jr. Award
- NIH-Targeted Research Initiatives
- Research and Equipment Programs
- PRF Research, Summer Faculty and International Travel Grants
- Clifford Kinley and Showalter Trust Awards (Social Science)
- Research Bridge Funding

Corporate and Global Partnerships

For more about corporate and global partnerships, see: http://www.partners.purdue.edu/.

The Office of Corporate and Global Partnerships serves as a point of contact

between faculty and corporations interested in research partnerships. Faculty and private sector companies are encouraged to contact the office for help in identifying potential private sector sponsors and for developing relationships with companies with whom Purdue has established ties. Once companies are identified, the staff provide faculty with information on the firms and often facilitate meetings.

Working with Researchers at Discovery Park

Discovery Park's ambitious research agenda includes a commitment not only to large-scale competitive initiatives in current signature areas but also to smaller-scale seeded research that can provide rapid and fundamental advances into new frontiers of knowledge. The DP model focuses on the synergy of marshaling diverse resources for rapid and dynamic responses to emerging research opportunities. DP hosts initiatives from multi-principal investigator/multi-departmental research teams and breaks traditional barriers to interdisciplinary research by fostering a culture and incentive structure that recognizes collaboration, shared inter-

ests, and complementary roles. To explore collaboration opportunities, faculty researchers are encouraged to contact the managing directors or faculty directors of the appropriate core center. Areas of specialization in DP include: biosciences, drug discovery, nanotech-

For more about Discovery Park centers, see: www.purdue.edu/discoverypark/.

nology, predictive materials and design, entrepreneurship, STEM education, healthcare engineering, oncological sciences, advanced computing, sustainability, food security, energy, climate change, the environment, and water resources, among others. ❖



chapter three

Preparing and Submitting a Proposal

Once researchers have identified one or more possible funding opportunities, they begin a variety of related tasks including identifying resources, putting a research team into place, and further developing the idea. This section discusses the process of preparing a proposal and locating appropriate resources Purdue has in place for the various steps in the development and submission process.

Most funding agencies issue various forms of proposal solicitations that may be referred to as announcements, RFPs —requests for proposals, RFAs — requests for applications, PAs— program announcements, or FOAs — funding opportunity announcements. Whatever term the agency or foundation uses, the solicitation is a researcher's point of reference for the entire proposal development process. Most solicitations include a variety of items such as: the goals and objectives of the agency; scope of the project; general and specific topics to be addressed; budget requirements; outcomes; eligibility requirements; time lines and deadlines; and review criteria. Most agencies require clear compliance with every element of the solicitation in order to justify review of a proposal; agencies may reject proposals even before they are evaluated on the basis of not following the solicitation requirements. If aspects of a solicitation are unclear, a researcher can often communicate with a designated program officer or another individual responsible for fielding questions. Some larger solicitations have in-person or web-supported conferences at which the guestions and concerns of prospective researchers can be addressed. Solicitations and their associated websites usually provide information about such meetings.

In addition, some solicitations require a preliminary proposal, usually a shorter version of the proposal, several months prior to the full proposal. Sponsors review these and then reduce the number of applications eligible to submit full proposals. Researchers follow a process similar to that of preparing a full proposal.

Reading a program solicitation for the first time can be overwhelming. However, by planning early, developing clear time lines and creating content outlines using the solicitation as a guide for writing, the process is manageable. Purdue offers help in the process through a variety of programs and services.

Resources for Proposal Preparation

As suggested in previous chapters, there are various venues for learning more about research opportunities and proposal preparation support. Colleges, schools and departments often sponsor research-related symposia, talks and workshops that complement those offered each semester by the EVPRP research development staff. In addition, see Chapter 5, "Learning More," for other online and print resources for a wide range of topics related to the grant process.

Departmental and School/College Resources

Each department, college and school has different ways in which it supports faculty members in their pursuit of research funding. Every college has at least one associate dean of research who not only distribute information about funding opportunities but who are also good contacts for learning about available services and support. A faculty researcher should always contact their SPS Pre-Award Center as soon as they make the decision to prepare a proposal. In addition, some colleges, such as the College of Agriculture and the College of Education, have additional staff who can help with proposal development.

EVPRP Resources

Several groups in the EVPRP help work with researchers and other units to help develop competitive proposals. For larger or complex proposals, these services are often coordinated through the research development group and their proposal coordinators. Other units help with cost share, regulatory affairs and center development as described below.

Large Proposal Development Services

Part of the EVPRP research development staff, proposal coordinators work with faculty as well as SPS staff, business office staff, contracting specialists and others to support researchers to develop competitive proposals.

For more information about grant writing services, see: www.purdue.edu/ research/funding-and-grant-writing/ grant-writing.php

They assist faculty in the development of high-value, high-complexity proposals that often represent multi-departmental and inter-institutional collaborations with a budget of more than \$1 million. Proposal coordination services often include assistance with:

- Proposal preparation time lines and processes
- A compelling "story line" or gap analysis
- Agency mission and requirements of specific grant competitions
- Assessment, outreach, and diversity component needs
- Meeting logistics
- Writing of non-technical text and transitions
- Document control and copyediting
- Graphics support
- Institutional support letters
- Supplementary documents such as conflict of interest lists and bioketches

To request small proposal help, email proposalcoordinator@purdue.edu.

Please note that proposal coordinators do not work with budget development or administrative requirements of a proposal submission. Large proposals typically take several months to develop and write, so Pls are encouraged to request help well in advance of deadlines.

Small Proposal Development Services

EVPRP proposal coordinators are also available to consult individually with faculty who are writing small grant proposals for external funding. They typically discuss:

- · Agency solicitation requirements
- A proposal preparation time line
- Proposal organization
- Specific proposal sections such as story line or specific aims

Please note that this service does not generally provide extensive help in editing or writing. Consultations are subject to availability and therefore requests should be made well in advance of proposal deadlines.

Mock Reviews

In some situations, usually in relation to high-value and multi-investigator proposals, the EVPRP research development staff members organize a 'red team,' a group of experienced faculty and relevant administrators asked to review a proposal before submission. After reviewing a complete draft, members meet with the research team to provide feedback and ask questions with the goal of strengthening the proposal before final submission.

Site Visits

In some situations, sponsors require a research team to further present their research and the university to indicate their ability to host and support the proposed project or center. The research development group, with help from research communications staff, routinely assist faculty for both pre-award and post-award site visits. Research development staff can coordinate non-technical aspects of the visit while also supporting faculty as they develop their technical presentations. See the research development website for more information.

Grant Writing Resources

Available on the EVPRP website, resources include guides, samples and links for a variety of topics pertinent to proposal development including:

- Quick-reference guides to proposal preparation
- Self-help tools for Postdoctoral Mentoring, Data Management and general Management plans
- Model Letters of Commitment
- Broader Impacts resources
- Descriptions of institutional resources and facilities
- Agency resources on grant writing

Grant writing resources are available at: http://www.purdue.edu/research/funding-and-grant-writing/proposal_prep_resources.php.

Limited Submissions

As discussed in Chapter 2, "Identifying Funding Opportunities," some grant competitions limit the number of submissions accepted from a university; for example, there may be a grant opportunity that allows Purdue to submit only three full proposals. To address the need to identify proposals in such a situation, the EVPRP has created a limited submission

Information about limited process by which the research development staff solicit short

Submissions and their due dates are

process by which the research development staff solicit short pre-proposals that are evaluated and ranked by a university-wide committee. Once selected, researchers follow the normal process for proposal development and submission as described in this chapter.

posted at: http://www.purdue.edu/ research/funding-and-grant-writing/ limited-submissions.php.

Deadlines for electronic submission of pre-proposals for limited submission competitions are established as soon as the RFP for the opportunity becomes available. Announcements with deadlines are e-mailed to research deans, department heads, and center directors for distribution and/or are announced through weekly funding newsletters. Researchers should consult the EVPRP website regularly for a list of all current limited submission opportunities and their deadlines.

University Support & Cost Share

Increasingly, federal and non-federal sponsors want evidence, in both auditable and non-auditable ways, that a university and other potential partners such as industry, governments or non-profits, will be contributing to the cost of supporting research efforts. For some sponsors, such as NSF, this often comes in the form of non-auditable cost-share — support that cannot be tracked at a specific monetary level. Exam-

ples of this type of support include access to university-supported computer and/or research facilities, physical lab and/or office space, and support provided to graduate students. In other situations, industry partners are asked to quantify the dollar value of time and/or resources that will be made available to the research team.

For more information about cost sharing, see: http://www.purdue.edu/research/funding-and-grant-writing/cost-sharing.php.

The EVPRP facilitates cost sharing approvals during proposal development and assists in administering cost-sharing commitments for awards. The office also provides funds for partial support of sponsored program cost sharing. By centralizing the function,

For more information about launching research centers and institutes see: www.purdue.edu/research/staff

the EVPRP helps to ensure that cost-sharing is targeted to Purdue's strategic research goals. Central cost-sharing funds are intended to supplement, not supplant, cost-sharing provided by colleges, schools, departments and other units. Cost-sharing commitments demonstrate the unit's support of the proposed work while it also helps to prioritize requests within units and leverage centralized cost-sharing resources.

Cost sharing can be considered for all projects ranging from single investigator proposals to large interdisciplinary proposals — from research instrumentation and equipment to support for research facilities.

Center Proposals

Purdue University encourages the creation of new research centers and institutes. If a research team is planning to submit a large and/or multidisciplinary center proposal, it is important to note that, if the center receives funding, the managing director for launching centers and institutes (MDLCI), a staff member of the EVPRP, can lead efforts associated with its startup and early management. The support provided by the MLDCI is summarized in the next chapter.

Research Compliance

Staff members in this area are responsible for assisting researchers in complying with federal and state statutes and regulations affecting research and for certifying to sponsoring agencies that PIs and Purdue University have satisfied all applicable requirements. As a first step, PIs identify regulated activities associated with their proposed projects and report the status of necessary regulatory approvals during proposal preparation. No sponsored project can be awarded or initiated (regardless of the source of funds) until required approvals by regulatory committees have been verified. Several areas need to be addressed during the proposal development process. Topics related to award financial management and compliance are discussed in the next chapter.

Pls are responsible for obtaining regulatory approval for the use of human subjects, vertebrate animals, recombinant DNA and potentially biohazardous materials. It is important that all regulatory approvals are identified when proposals are submitted. Since review of protocols may require certification of completion of specific online education and can sometimes require extended dialogue with

a campus regulatory committee, Pls are advised to prepare and submit the protocol for review as soon as possible after the proposal has been submitted to the sponsor. Regulatory approvals must be in place prior to beginning any work on the project and are often required before an award is issued.

For information regarding research regulations, see the website at: http://www.purdue.edu/research/ and select "Research Compliance."

Pls who plan to work with regulated materials such as select agents, radioisotopes or radiation producing materials (including Class IIIb or IV lasers), pesticides, certain drugs or controlled substances, and/or hazardous chemicals, must have all the necessary approvals in place *before* the materials are acquired (brought on campus). Pls are also responsible for ensuring that regulatory protocols remain up-to-date and active for the duration of the project grant through the appropriate continuing review process.

Forms and procedures for describing and obtaining regulatory approval for projects may be obtained via the appropriate oversight committee websites or from their campus offices and SPS staff work with researchers to obtain and process these documents.

The following is a list of assurances required for some proposal submissions.

- Institutional Review Board (IRB) Approval
- Human Subjects
- HIPAA Privacy and Security
- Animal Care and Use
- Biohazards and rDNA
- Radiation or Lasers
- Controlled Substances
- Export Regulations
- Restricted Commodities
- Emergency Response
- Environmental Health and Safety
- Conflict of Interest

For more details about SPS's services and administrative processes relating to grant submission and management, see the SPS handbook, available at: www.purdue.edu/business/sps/pdf/Purdue_SPS_Handbook.pdf.

Industrial Proposals

There are several major differences between the way SPS handles most proposals to industry in comparison to typical proposals supported by government sponsors. Proposals going to industrial sponsors require an agreement (e.g., contract). This agreement is prepared and negotiated by a contract analyst and requires a contractually binding institutional signature. Because the agreement is a legal document, industrial proposals require a more extensive review and require more time to process. Generally, industrial proposals are not sent to the sponsor until the contract analyst has prepared an agreement. In some cases, sponsors will request changes to the agreement Purdue sends to them or they want to negotiate from a sponsor-provided agreement. The contract analyst negotiates agreements to ensure that the University's financial and academic interests are protected.

Recent changes to industrial contracting now provide faculty with increased flexibility to select contract terms that best fit the scope of the project. Those contract terms can range from standard research terms to new terms allowing the sponsor more control over intellectual property and publications. Staff from EVPRP, SPS Contracting and PRF's Office of Technology Commercialization will provide consultative assistance for faculty to help select the best contract option based on the statement of work. The selection of the appropriate contract terms is a faculty-led decision, not one made by the sponsor.

Resources in SPS

Members of the Sponsored Program Services (SPS) Pre-Award Centers work in close collaboration with researchers and departmental business offices to assist in the completion of various administrative components of proposals such as budget preparation, assurances and verifications, cost sharing and resource commitment memos. They are responsible for the insitutional approval and submission of proposals and all proposals must be run through the Centers before submission. All departments on the West Lafayette campus have pre-award centers. As they are not available at regional campuses, faculty at these locations should contact their business office for proposal assistance. SPS also provides post-award support for the administration and closing of grants and awards as discussed in Chapter 4.

SPS Pre-Award Services staff members typically:

- Review calls for proposal submission requirements
- Set dates and time lines for required documents
- Review and help develop advanced budgets/budget justifications
- Prepare internal documents such as budget work papers, proposal submission form, etc.
- Help determine rate of indirect costs (F&A)

- Work with partnering institutions to secure subcontract documentation and handling of administrative matters
- Collaborate with EVPRP staff as appropriate
- Provide COEUS assistance and training
- Prepare required administrative sponsor forms
- Review and secure approval for budgets, cost sharing and all related documentation
- Review the final proposal package to ensure administrative requirements are met
- Submit and/or mail the proposal

On the West Lafayette campus, SPS Pre-Award Centers serve each college or school. The Pls should contact the appropriate pre-award center at the initial stages of proposal development to obtain assistance in all matters listed above.

College/School	Pre-Award Center Contact
College of Agriculture	agpreaward@purdue.edu
College of Education	centralpreaward@purdue.edu
College of Engineering	coepreaward@purdue.edu
College of Health and Human Sciences	chhspreaward@purdue.edu
College of Liberal Arts	centralpreaward@purdue.edu
College of Pharmacy	coppreaward@purdue.edu
College of Science	cospreaward@purdue.edu
College of Technology	centralpreaward@purdue.edu
Krannert School of Management	centralpreaward@purdue.edu
School of Veterinary Medicine	vetpreaward@purdue.edu
Discovery Park	use Pre-Award Center for academic 'home' of PI or contact centralpreaward@purdue.edu

Proposal Submission

Proposals are submitted in a variety of ways, the most common being electronically. Many federal agencies currently use Grants.gov. Researchers must pay careful attention to the submission requirements of a particular funding opportunity and allow for sufficient time for the actual submission process. Some submission sites require several weeks for accounts to be established. Many proposals also require specific signatures in home departments, SPS and, occasionally, the EVPRP as well. In some cases, both paper and electronic submissions are required. SPS Pre-Award Centers assist with the proposal submission process. 💠

chapter four



Receiving and Administering Awards

Once a researcher is notified by a funding agency that he/she has received an award, the next phase of the grant process begins—that of administering the award. As in the earlier phases of the funding process, Purdue has a range of support services in place, mostly through Sponsored Program Services (SPS). This chapter discusses important aspects of receiving and managing awards.

SPS negotiates and approves all contracts and agreements for sponsored research, facility, and instructional programs before they are signed and/or accepted by officers of Purdue University. SPS assists in the University's review of sponsored program funds to ensure they are expended in accordance with sponsor/federal regulations and preparation of financial expenditure reports. SPS also serves as a resource center on the contractual matters of sponsor regulations for all faculty and academic business offices. This chapter provides a brief overview of SPS post-award services.

Review of an Award Document

SPS reviews all award documents and obtains all necessary approvals and/or required signatures on behalf of the university. If researchers receive award documents, they should only sign appropriate PI-related spaces and then immediately forward contracts to SPS for proper signatures and award review. Delay in receipt and review of award contracts and documents will delay the establishment of accounts.

Terms and Conditions

SPS communicates to PIs any non-standard terms and conditions associated with any industrial or government contract. It is important for researchers to understand these terms and conditions before the contract can be executed (e.g., publication rights, intellectual property clauses, etc.).

Export Controls

Federal statutes, including the International Traffic in Arms Regulations (ITAR) administered by the Department of State, Export Administration Regulations (EAR) administered by the Department of Commerce and sanctions administered by the Office of Foreign Assets Control (OFAC) in the Department of Treasury, restrict access to certain technologies by foreign persons both within and outside of the United States. Research projects studying or utilizing these controlled technologies may be subject to restrictions regarding participation of foreign persons in the project, as well as publication and dissemination of the results of the research. SPS and export control staff make every attempt to identify export controls applicable to proposed research early in the proposal review process. However, most export controlled projects are driven by contractual restrictions regarding publication or personnel participation. Pls will be asked to assist export control staff in correctly analyzing and classifying their research to identify export control issues. If investigators become aware of export control restrictions associated with a planned project, they should contact the export controls staff and/or SPS contact researchers to ensure that they are aware of the restrictions and are

able to implement a technology control plan to ensure that the controls are observed. Violations of export controls can result in significant institutional and personal penalties.

For more details about export controls, see: www.purdue.edu/exportcontrols

Review for Regulatory Issues

Before sponsor funds can be made available to researchers, all required regulatory approvals must be in place and current. To document these approvals for projects involving human or vertebrate animal subjects and/or recombinant DNA or other potentially biohazardous materials, the appropriate sponsored program research regulatory administrator reviews the award file, including the technical proposal. During this review, a research regulatory administrator will work with Pls to identify the appropriate approved protocols corresponding to the specific research proposed. Federal regulations sometimes prohibit initiating a funded project before all regulatory approvals have been secured.

Notice to Proceed

If funding of a proposal is certain, but administrative details or finalization of contractual arrangements delay receipt of a fully signed award, a "Notice to Proceed" (NTP) may be requested by researchers through their business offices. All regulatory processes as described above must be completed prior to an NTP

SPS contacts the financial person at the sponsoring agency to verify funding. If funding is verified, then Purdue establishes a sponsored program account and assumes liability for incurred expenses until the award is received. If funding cannot be verified, the department has the option to assume project liability. All applicable regulatory items must be in place prior to establishment of an NTP.

NTPs are normally only authorized for routine expenditures, i.e., salaries and supplies. Special approval is necessary if travel or capital equipment expenditures are necessary while on a NTP. Travel and/or capital equipment expenditures should be specifically stated on department-backed NTPs.

Award Process

Once a fully signed or approved contract or grant letter is received from a sponsor, SPS assigns a unique account number in the University's accounting system to be used for project expenses. If project activities are to be carried out in more than one department, multiple accounts can be established for the same project. Once there is a fully executed agreement or Notice of Grant Award, SPS notifies the business office and PIs of the new sponsored program account via e-mail. If an account cannot be immediately established, SPS communicates the issues needing to be resolved to the business office and the PIs.

Multiple Sponsored Programs

Multiple sponsored programs for one project can be established by SPS and are sometimes established for some of the following reasons:

- The project is to be conducted by personnel in more than one department.
- There is more than one Indirect Cost (F&A) rate (off-campus activity involved).
- There are different program components within the same project that need to be accounted for separately.
- There are participant costs included in the award.
- The lead sponsored program is established in the department of the PI. The business office for that department is normally responsible for the allocation of funds to the other sponsored programs.

Amendments

Any amendments (e.g., change of dates, change in award amount, change in scope of work, etc.) to an existing agreement must follow the same procedures.

Award Management

While the PI is responsible for directing and managing the work as proposed under the award, departmental business offices and SPS play a large role in the administrative activities of the award, including monitoring how monitoring are spent and accounted for. SPS should be used as a resource for any administrative and/or financial questions that arise throughout the life of an award.

Roles in Award Management

The process of managing sponsored activities is a shared responsibility between researchers, business offices and SPS, with each having unique areas of primary responsibility. Faculty members play a key part in the management of sponsored awards. Serving as a Principal Investigator, a faculty member is responsible for tasks such as: determining the allocability of costs, monitoring expenditures, notifying SPS when significant changes occur (such as budget, scope of work, or level of effort), understanding the terms and conditions associated with the award, and submitting timely technical reports. Departmental resources (business office staff and others) are available to assist with the management of sponsored research by: ensuring costs are within sponsor and University guidelines, preparing projections and monitoring account expenditures, coordinating any rebudgets or other necessary approvals, working with SPS on fiscal matters, and initiating changes with payroll, purchases and travel.

SPS serves as the primary administrative liaison between PIs, sponsors, the EVPRP, and other University offices throughout the post award period, regarding award specific sponsor guidelines and regulations. SPS post-award staff members prepare required financial and property reports, manage the collection of sponsor funds, draw under the federal letters of credit as costs are incurred, issue billings to sponsors and follow up with sponsors on payments as required by the terms of an award, monitors account management, and serves as a resource to researchers and business offices on all fiscal and administrative aspects of the award.

Researchers should direct questions regarding allowable expenditures to their business office, which may consult with SPS if necessary.

Post-Award Adjustments for Projects Awarded as Grants

Many awards provide some flexibility in spending, but most agencies have detailed procedures about how rebudgeting can occur. If PIs need to consider rebudgeting an award, change the original scope of work, or seek a no-cost extension (extending the expiration date with currently available funds), they must contact SPS for more details on the process.

Reporting Requirements

SPS post-award staff also work with PIs to ensure compliance with sponsor reporting requirements and intellectual property reporting.

Sponsor Reporting Requirements

Pls are required by the sponsoring agency to submit reports on the research conducted. The sponsor may require progress reports at specified times. Instructions on reporting requirements and the preparation of such reports are included as part of the grant or contract conditions. It is important for these requirements to be met on a timely basis. SPS staff members routinely receive requests from sponsors to verify final technical report submission. Pls should submit a copy of the transmittal memo or cover page of the report to SPS staff and to their business offices (referencing the sponsored program). Failure to meet sponsor-reporting requirements on the part of researchers can jeopardize existing and future funding for Pls and the University.

Unexpended Balances

Based upon the terms of the sponsor's award, any unexpended funds at project expiration may be:

- Carried forward
- Returned to the sponsoring agency, or
- Transferred to a residual account (direct dollars only)

Note that it can only be transferred to a residual account if it is a fixed price agreement and all income has been received from the sponsor and all deliverables have been provided to the sponsor including technical reports required in the contract.

When researchers initiate research projects sponsored or supported through Purdue funds, they must be aware of, and comply with, an array of federal, state and university regulations. These relate to a variety of issues such as research integrity, conflict of interest, and use of human subjects, vertebrate animals, biohazardous materials, radioactive materials and controlled substances. Other projects involve legal issues regarding intellectual property and patents. This chapter discusses some of these issues and provides guidance as to how to assure that a research project meets all regulatory requirements.

Setting up a Center

The managing director for launching centers and institutes (MDLCI), a staff member of the EVPRP, can lead efforts associated with a center's startup and early management. As the initial managing director for a center, he or she organizes and implements all of the management-related aspects of the center's start-up phase. This includes activities such as:

- Completing sponsor award documentation and contracts
- Coordinating recruitment and hiring of the center's staff
- Setting up the center's space
- Establishing financial accounts and reporting processes and formats
- Developing and implementing the internal and external communications plan
- Arranging for initial meetings of stakeholders and committees
- Development of the center website, and
- Review and resolution of all compliance and conflict of interest issues

This process ensures a fast start for the center and allows the center director to focus on research goals and center development. The MDLCI will transfer responsibilities for center management to a permanent managing director once this individual is hired and has been integrated into the center's management structure. •

chapter five

Learning More

Numerous resources on the various aspects of the grant process are available in print and electronic form. Below is a brief listing of some useful resources. This list was updated in August, 2016.

Finding and Writing Proposals

Bauer, David G. How to Evaluate and Improve Your Grants Effort. Westport, CT: Oryx, 2001.

Blackburn, Thomas R. Getting Science Grants: Effective Strategies for Funding Success. San Francisco, CA: Jossey-Bass-Wiley, 2003.

Chapin, Paul G. Research Projects and Research Proposals: A Guide for Scientists Seeking Funding. Cambridge, England: Cambridge UP, 2004.

Friedland, Andrew, and Carol Folt. Writing Successful Science Proposals, 2nd ed. New Haven, CT: Yale UP, 2009.

Gerin, William, Kinkade, C.H., Itingerm J.B, and T. Spruill. *Writing the NIH Grant Proposal: A Step-by-Step Guide*. 2nd ed. SAGE Publications, 2010.

Howlett, Susan. Getting Funded: The Complete Guide to Writing Grant Proposals. 5th ed. Portland, OR: Portland State U, 2011.

Karsh, Ellen, and Arlen Sue Fox. The Only Grant Writing Book You'll Ever Need: Top Grant Writers and Grant Givers Share Their Secrets, 4th ed. Basic Books, 2014.

Li, Ping and K. Marrongelle. Having Success with NSF: A Practical Guide. Wiley-Blackwell, 2012.

Lucas, Christopher J., and John W. Murry, Jr. "The Art of Grantsmanship." In *New Faculty: A Practical Guide for Academic Beginners*. 3rd ed. New York: NY: Palgrave-St. Martin's, 2011. 167-188.

Miller, Patrick W. Grant Writing: Strategies for Developing Winning Proposals, 3rd ed. Patrick Miller, 2008.

Miner, Lynn E., Jeremy T. Miner. Models of Proposal Planning and Writing. Westport, CT: Praeger-Greenwood, 2016.

Oster, Sandra and P. Cordo. Successful Grant Proposals in Science, Technology and Medicine: A Guide to Writing the Narrative. Cambridge UP, 2015.

Pequegnat, Willo, Ellen Stover, and Cheryl Ann Boyce, eds. How to Write a Successful Research Grant Application: A Guide for Social and Behavioral Scientists, 2nd ed. New York, NY: Plenum, 2011.

Sternberg, Robert J. Writing Successful Grant Proposals from the Top Down and Bottom Up. SAGE Publications, 2013. Ward, Deborah. Writing Grant Proposals That Win, 4th ed. Jones and Bartlett Learning, 2011.

Resources Provided by Funding Agencies

A Guide for Proposal Writing. National Science Foundation. Feb 2004. www.nsf.gov/pubs/2004/nsf04016/start.htm

CFDA: Developing and Writing Grant Proposals. The Catalog of Federal Domestic Assistance. http://cfda.gov/downloads/CFDA_writing.pdf

EPA: Tips on Writing a Grant Proposal. U.S. Environmental Protection Agency. www.epa.gov/grants/tips-writing-competitive-grant-proposal-preparing-budget

Geever, Jane. The Foundation Center's Guide to Proposal Writing. 3rd ed. New York: Foundation Center, 2001.

Grantmaking at ED. Department of Education. www.ed.gov/fund/grant/about/grantmaking/index.html

Strategy for NIH Funding. National Institutes of Health www.niaid.nih.gov/researchfunding/grant/strategy/pages/default.aspx. •



CAREER Faculty Early Career Development Award – Administered by Federal Funding Agencies

COEUS Web-based, grants management application developed by MIT used by Purdue

DP Discovery Park

EAR Export Administrator Regulations

EVPRP Office of the Executive Vice President for Research and Partnerships

F&A Facilities & Administration

FOA Funding Opportunity Announcement

IBC Institutional Biosafety Committee

IRB Institutional Review Board

ITAR International Traffic in Arms Regulations

MDLCI Managing Director for Launching Centers and Institutes

NEH National Endowment for the Humanities

NIH National Institutes of Health
NSF National Science Foundation

NTP Notice to Proceed

OFAC Office of Foreign Assets Control

OTC Office of Technology Commercialization

PA Program Announcement

PACUC Purdue Animal Care and Use Committee

PI Principal Investigator

PRF Purdue Research Foundation
PSF Proposal Submission Form

REM Radiological and Environmental Management

RFA Request for Applications
RFP Request for Proposal

SPS Sponsored Program Services at Purdue

UDO University Development Office