



Oklahoma Center for the Advancement of Science and Technology

Oklahoma Basic Plant Science Research

Fiscal Year 2016 Funding Announcement and Proposal Development/Submission Instructions

Application Deadline:

April 13, 2016

Target Contract Start Date:

August 1, 2016

Oklahoma Center for the Advancement of Science and Technology

755 Research Parkway, Suite 110 • Oklahoma City, OK 73104-3612

Phone: 405-319-8400 • 866-265-2215 • Fax: 405-319-8426

www.ok.gov/ocast

General Information

Eligible organizations: Oklahoma businesses and enterprises, Oklahoma colleges and universities and Oklahoma non-profit research foundations

Amendments: This solicitation may be amended by OCAST. Amendments can be found on OCAST's website under the section Program Support/Solicitation. It is the responsibility of the applicant to review any such amendments and make necessary changes in the application to meet the amended solicitation requirements.

Application Submission: Applications must be submitted through the state's online grant management system, OKGrants, at <https://grants.ok.gov>.

Notifications: OCAST offers workshops, webinars, and other training opportunities for the Plant Science program and OKGrants. Potential applicants should register to receive notifications about upcoming training opportunities on the OCAST website at <http://www.ok.gov/triton/modules/oknotify/index.php?id=179>. Other information pertinent to the program will also be disseminated via e-mail notifications.

Proposal preparation workshop dates, locations and registration information are available on the OCAST website. Online tools are optional and are not required to prepare an application. This solicitation is available at http://www.ok.gov/ocast/Program_Support/Solicitations/index.html.

This solicitation is intended for informational purposes and reflects current planning; it does not obligate OCAST to make any specific number of awards. Awards under the Oklahoma Applied Research Support program are contingent upon the availability of state funds. If there is any inconsistency between the information contained in this solicitation and the terms of any resulting contract, the terms of the contract are controlling.

OCAST CONTACT INFORMATION:

Dan Luton, Director of Programs
Mark Ballard, Contract Manager
Laura Sohl-Smith, OKGrants

405-319-8400

405-319-8415
405-319-8411
405-319-8408

dan.luton@ocast.ok.gov
mark.ballard@ocast.ok.gov
laura.sohl-smith@ocast.ok.gov

OKLAHOMA PLANT SCIENCE RESEARCH PROGRAM
Basic Research

Table of Contents

PROGRAM DESCRIPTION	1
CONFLICT OF INTEREST	1
ELIGIBLE APPLICANT ORGANIZATIONS	1
PRINCIPAL INVESTIGATOR ELIGIBILITY	1
PREVIOUS RECIPIENT ELIGIBILITY	2
REVIEW PROCESS	2
EVALUATION CRITERIA	2
SUBMISSION REQUIREMENTS	2
RESUBMISSIONS	3
RELEASE OF INFORMATION	3
AWARD NOTIFICATION	3
AWARD PROVISIONS.....	4
CONCURRENT FUNDING	4
CONTRACT INFORMATION	4
REQUIRED DATA COLLECTION	5
PERFORMANCE EVALUATION	5
POST AWARD MEETING.....	5
AUDITS.....	5
REQUIRED ATTACHMENTS GUIDELINES	6
1. BUDGET JUSTIFICATION.....	6
2. BIOGRAPHICAL INFORMATION AND OTHER SUPPORT REQUIRED	7
3. CURRENT OCAST SUPPORT.....	8
4. PREVIOUS OCAST SUPPORT	8
5. FACILITIES, INSTRUMENTATION AND RESOURCES.	8
6. LETTERS	8
7. LITERATURE CITED	8
8. APPENDIX I. INSTITUTIONAL APPROVALS AND CERTIFICATIONS.....	8
RESUBMISSION INDEX.....	11

Key Terms

Applicant Organization: The organization(s) spearheading the project, with which the PI is affiliated, and with whom OCAST goes to contract. All applicant and additional applicant organizations must be Oklahoma-based entities. Eligible applicant organizations include universities, colleges, and non-profit research foundations, as well as firms with their principal place of business in Oklahoma.

Application: The complete package of information as required in the application section of this solicitation. If any required information is not supplied at the time the application is submitted the application will be returned without review.

Contract Official: The person who has the legal authority to designate funds and resources on behalf of the applicant organization. This is the person to whom OCAST will send all award or contract correspondence. The contract official takes on the role of Agency Administrator in OKGrants.

Contractor: The applicant organization who has been awarded funding, employs or is affiliated with the PI, provides research services and/or facilities for the funded project, and executes the contract.

Enterprise: A business or firm with its principal place of business in Oklahoma.

Fiscal Agent: The entity to which OCAST sends all contract payments. The fiscal agent takes on the role of Financial Officer in OKGrants.

Principal Investigator: The person who proposes the research project and who is responsible for executing the project according to the research plan. The principal investigator takes on the role of Authorized Official in OKGrants.

Professional Services Contract: The mechanism by which OCAST awards projects. Different from grants, these contracts allow OCAST to issue payments to contractors on a reimbursement basis upon receipt of satisfactorily completed requests for payment that are submitted to the agency.

PROGRAM DESCRIPTION

The Basic Plant Science Research program provides seed funding for research projects conducted by Oklahoma-based investigators for the purposes of 1) enhancing the competitiveness of Oklahoma researchers for national and international research funds; 2) furthering plant science and its application to the benefit of society; and 3) strengthening the state's biosciences industry.

Under this program, OCAST awards competitive plant science funds, through professional services contracts, to public and independent colleges and universities in Oklahoma, non-profit research institutions in the state, and for-profit enterprises of special importance to the Oklahoma economy. Research funded under this program includes, but is not limited to, plant productivity, alternative use crops for bioenergy, environmental applications, chemical platforms, seed management and plant-based process applications.

The Basic Plant Science Research program funds basic projects for one to two years at a minimum of \$10,000 and a maximum of \$50,000 per year. Funding awards are made on a year-by-year basis. Neither approval of a multiple-year award nor funding of any year of a contract shall automatically lead to funding in subsequent years. For each year originally awarded, funding shall be dependent upon a satisfactory annual performance evaluation and the availability of funds.

CONFLICT OF INTEREST

Neither members of the OSTRaD board nor the Plant Science Research Committee shall be precluded from participating directly in a Plant Science Research program project. However, any director, officer, agent or employee of OCAST, including any member of an advisory committee or review panel, shall comply with the conflict of interest provisions from the OCAST statute, which reads as follows:

If a member of the board of directors, officer, agent or employee of the Oklahoma Center for the Advancement of Science and Technology (OCAST) has any direct or indirect interest in any approval, contract or agreement upon which the member, officer, agent or employee may be called upon to act or vote, the board member, officer, agent or employee shall disclose the same to the secretary of OCAST prior to the taking of final action by OCAST concerning such contract or agreement and shall so disclose the nature and extent of such interest and his or her acquisition thereof, which disclosure shall be publicly acknowledged by OCAST and entered upon the minutes of OCAST. If a board member, officer, agent or employee holds such an interest, he or she shall refrain from any further official involvement in regard to such contract or agreement, from voting on any matter pertaining to such contract or agreement and from communicating with other board members, officers, agents or employees concerning said contract or agreement . . .

Indirect interest shall include pecuniary or competitive advantage which exists or could foreseeably accrue as a result of the act or forbearance of OCAST (74 O.S., Section 5060.7).

ELIGIBLE APPLICANT ORGANIZATIONS

Eligible applicant organizations include:

1. Oklahoma public or private colleges and universities;
2. Oklahoma non-profit research organizations;
3. Oklahoma enterprises of special importance to the Oklahoma economy. An enterprise is defined as a firm with its principal place of business in Oklahoma; and
4. Oklahoma businesses and farms.

Prior to initiating an application the PI must attest that all applicant organizations on the project are eligible according to the requirements above. **Foreign entities may not serve as applicants on any application.**

PRINCIPAL INVESTIGATOR ELIGIBILITY

The principal investigator (PI) must be affiliated with an eligible applicant organization. The PI must be a resident of Oklahoma or become a resident before the ninetieth day after a professional services contract is awarded. When the PI on a proposed project becomes unable to perform, the applicant organization(s) must inform OCAST within ten (10) days. If funds have been awarded, monies may revert back to the Oklahoma Plant Science Research fund.

PREVIOUS RECIPIENT ELIGIBILITY

Any PI who has a delinquent progress report or has not responded to other OCAST requests for information, impact survey data or special reports on a previously funded OCAST project will not be eligible to submit an application for new project funding. Any PI who has a delinquent progress report at the time of review will not be eligible for review. Any PI with a delinquent progress report at the time of award will not receive a contract until the progress report has been submitted. In the latter case, if the delinquent report has not been submitted within 60 days of the award date, OCAST will void the award and return the monies to the Oklahoma Plant Science Research fund.

REVIEW PROCESS

All applications are reviewed and ranked for funding by peer reviewers from outside the state of Oklahoma based solely upon scientific merit. All reviewers are approved by an advisory committee to OCAST.

The reviewers' funding recommendations are presented to the Oklahoma Science & Technology Research and Development (OSTRaD) Board, who grant final approval for funding. The budget amount for each project recommended for funding is set by the reviewers and cannot be increased after the award.

EVALUATION CRITERIA

In general, in addition to evaluating the appropriateness of the budget, peer reviewers evaluate applications for scientific merit according to the following criteria:

Significance. Does the research address an important problem? If the aims of the application are achieved, how will scientific knowledge be advanced? What will be the effect of this research on the concepts, methods, technologies, services, or products that drive this field?

Approach. Are the conceptual framework, design, method, and analysis, adequately developed, well integrated, well-reasoned, and appropriate to the aims of the project? Does the applicant acknowledge potential problem areas and consider alternative tactics?

Innovation. Is the program original and innovative? For example, does the project address an innovative hypothesis or critical barrier to progress in the field? Does the project develop or employ novel concepts, approaches, methodologies, tools or technologies for this area?

Investigators. Are the investigators appropriately trained and well-suited to carry out this work? Is the work proposed appropriate to the experience level of the principal investigator and other researchers? Does the investigative team bring complementary and integrated expertise to the project (if applicable)?

Environment. Does the scientific environment in which the work will be done contribute to the probability of success? Does the proposed project benefit from unique features of the scientific environment, or subject populations, or employ useful collaborative arrangements? Is there evidence of institutional support?

SUBMISSION REQUIREMENTS

Online Applications

Investigators for the FY16 Plant Science Basic funding cycle will use OKGrants to submit their applications electronically. **PIs who have not previously utilized OKGrants for OCAST funding must contact their organization's contract official for registration. PIs should not register for OKGrants themselves.**

The application deadline for the FY16 Plant funding cycle is 5 p.m., Wednesday, April 13, 2016. Investigators may initiate their applications at any time prior to the deadline. OKGrants will not allow users to submit applications after 5 p.m. CT on the deadline.

With the exception of documentation of institutional review board (IRB) approval of experiments using human subjects, vertebrate animals or recombinant DNA—all of which may be submitted once an award is made—OCAST must receive all materials pertaining to the application by the time of submission or application deadline, whichever comes first. No applications or supplemental materials will be accepted after the submission deadline except at the request of OCAST. OCAST may return without review applications that are judged to be incomplete or inappropriately completed.

Please note that an application has not been submitted until confirmation is received. There are several ways to confirm successful submission of your application: by checking the status of the application in OKGrants, by receiving an e-mail from OKGrants indicating that your application was submitted, or by contacting OCAST to confirm that your submission was successful. When in doubt, please contact Tessa North to confirm that your application was received. OCAST strongly encourages applicants to submit their applications well ahead of the 5 p.m. deadline.

OCAST will hold an online workshop to help new users navigate the OKGrants system. Forms and instructions can be found online at <https://grants.ok.gov>. Investigators must contact their agency administrator in order to be registered to use OKGrants. Application forms will be made available to users in the system once their agency administrator has registered them. For more information, please visit the OCAST website at <http://www.ok.gov/ocast/>.

Project Numbers

Project numbers are automatically assigned as soon as a user begins an application. The PI's name and project number must be placed in the top right corner of each required attachments page that is submitted as part of an application. Once an application is initiated and a project number is generated, the applicant's research administrator(s) receive an e-mail informing them of the PI's intent to submit.

RESUBMISSIONS

Applications that have previously been submitted but have not been approved for funding or did not rank above the pay-line may resubmit their application during a subsequent funding cycle for the same program or a different program. Resubmissions have fared well in OCAST reviews. A PI resubmitting a proposed project that was not funded in a previous funding review must proceed as follows:

1. Indicate that the current proposal is a resubmission on the Project Information page
 - a. Include the previous project number(s)
2. Prepare a Resubmission index, which includes the following:
 - a. Letter that responds to the reviewers' comments from the previous review and notes all changes in the new research plan,
 - b. A copy of the most recently submitted proposal, and
 - c. All reviews of the most recent application

There is no limit to the number of times an application may be resubmitted.

RELEASE OF INFORMATION

The meetings of the OSTRaD board and the Plant Science Research committee are subject to the Open Meeting Act and the Open Records Act. However, Oklahoma statute states the following:

Any information submitted to or compiled by the Oklahoma Center for the Advancement of Science and Technology with respect to marketing plans, financial statements, trade secrets, research concepts, methods or products or any other proprietary information of persons, firms, associations, partnerships, agencies, corporations, institutions of higher education, nonprofit research institutions or other entities shall be confidential, except to the extent that the person or entity which provided such information or which is the subject of such information consents to the disclosure. Executive sessions may be held to discuss such materials if deemed necessary by the board of directors (74 O.S., Section 5060.7).

OCAST may use the contents from application abstracts and the executive summary of the annual progress reports for the required OCAST annual report or other publications without obtaining permission from the PI or applicant organization.

AWARD NOTIFICATION

Upon approval by the OSTRaD Board, applicants will be notified of funding decisions by an e-mail from OKGrants. Please ensure that OKGrants is added to your safe sender list. As soon as the award notification is received, evaluations are available to view within OKGrants.

AWARD PROVISIONS

Award of contract shall be contingent upon the following:

1. Receipt by OCAST of certification of institutional review and approval of the research project if it involves human subjects, vertebrate animals or recombinant DNA; and
2. Verification that the PI is not presently receiving funds from another source to support any portion(s) of the proposed research described in the Oklahoma Plant Science Research program application that has been approved for funding

CONCURRENT FUNDING

Acceptance of funding from another source—either prior to the beginning or during the period of an OCAST contract—that duplicates support for the research described in the application submitted to OCAST is considered concurrent funding. A principal investigator shall not receive concurrent funding that duplicates support for any portion of the research described in the application.

CONTRACT INFORMATION

Oklahoma statute requires the mechanism for funding approved applications to the Oklahoma Basic Plant Science Research program be a professional services contract between OCAST and the applicant organization(s).

The contract shall include commitments on the part of the contractor to perform the activities described in the application and funded by OCAST. The approved application becomes a component of a contract for performance of the research project.

The timeline for return of all required contract documents will be specified in the award letter. Failure to return all documents and signatures within the specified timeframe may result in forfeiture of award.

The contractor's responsibilities shall include the following:

1. Assuring and documenting compliance with state and federal requirements pertaining to human subjects, vertebrate animals, recombinant DNA, radioactive substances, narcotics and dangerous drugs and/or biological hazards, which require special approval or license; before issuing a subcontract for any portion of a project funded by OCAST, the contractor must also assure such compliance.
2. Maintaining records and accounts that properly document and account for the source and application of all project funds; all such records and accounts shall be made available on demand by OCAST for inspection and use in carrying out its responsibilities for administration of the funds.
3. Complying with the audit policy of OCAST and, as OCAST deems necessary, permitting authorized representatives of OCAST and the state of Oklahoma full access and the right to fully examine all project records and accounts. The contractor shall provide OCAST timely copies of reports on any audits that include funds received from OCAST.

The contractor shall notify OCAST within 10 days of the occurrence of any of the following:

1. The official notification of resignation by the PI as an employee of the contractor
2. The official decision to terminate the PI as an employee of the contractor
3. The inability of the PI to perform the research described
4. Any occurrence that the contractor determines will affect the successful completion of the research project
5. The majority of the research is not performed in Oklahoma.
6. Receipt of notification of award of concurrent funding by the PI to support any portion(s) of the research described in the contract

Any of the conditions stated in Items 1-6 above may result in the termination of the contract at the discretion of OCAST. If a PI is subsequently employed by or affiliated with another eligible applicant organization that agrees to support the research project, OCAST may consider issuing a new contract negotiated between OCAST and the new organization to fund the research project initiated under the original contractor. If the principal investigator cannot perform on a contract,

the contractor may request that OCAST consider continuing the contract with another eligible scientist designated as principal investigator.

REQUIRED DATA COLLECTION

Efforts to evaluate OCAST funding programs and assess individual projects require periodic collection of information from the PI and/or contractor. Recipients are required to respond annually to an Impact Survey for Funded Projects. Continued funding of any active OCAST contract may be affected if the required information is not provided. By applying for a professional service contract, the principal investigator and the contractor become obligated to provide OCAST with the requested information. PIs may be required to respond several years after funding, if the project continues to produce impacts.

PERFORMANCE EVALUATION

Acceptance of a professional service contract obligates the PI to submit an annual progress report 60 days prior to the ending date of each contract period except the final contract period. A final report must be submitted 30 days after the end of the final contract period.

Annual project performance is evaluated by external reviewers. A satisfactory performance evaluation shall verify that the PI is complying with the terms of the contract and achieving project objectives in a timely manner. Progress report instructions are available on the OCAST website at www.ok.gov/ocast. Continued funding is contingent upon satisfactory, annual performance evaluations and availability of funds. Failure to submit an annual progress report on or before the deadline, as specified, may result in the termination of funding.

POST AWARD MEETING

OCAST will host a post award contract orientation meeting prior to the start of the first year contract for projects awarded during each funding cycle. The purpose of the meeting is to explain the mechanism by which projects will be funded and contract requirements (such as progress report due dates, allowable expenses, budget or contract modifications, request for payment procedures, records retention, etc.) to the award recipient. The Principal Investigator, Contract Official, and Fiscal Agent will be invited attend.

The Contract Official will be notified of the meeting day and time in the award letter, which will be sent shortly after the OSTRaD Board approves projects for funding.

AUDITS

Oklahoma Center for the Advancement of Science and Technology will perform compliance reviews and audits of contracts executed by the agency for all OCAST programs. The acceptance of a professional services contract obligates the contractor to permit authorized representatives of OCAST and the state of Oklahoma to have full access to, and the right to fully examine, all such records and documentation pertaining to the project.

REQUIRED ATTACHMENTS GUIDELINES

The items below should be uploaded on the Required Attachments page in OKGrants as the following separate files: Research Plan, Additional Required Attachments, and Resubmission Index. Each document must be uploaded into the appropriate field in OKGrants. **The maximum file size for each upload is 20 MB.**

Applicants should use 8.5" by 11" pages with margins greater than or equal to 0.5" and a font size not smaller than 10. Preferred fonts include Times New Roman, Arial, Georgia, or Palatino Linotype. Use the presentation order and headings below. If a section is not applicable, it must be acknowledged and indicated as not applicable. Applications may not include three-dimensional materials. Section text length page limitations include text, inserted graphs, charts and figures as part of the total section page length. The project number and PI's last name should appear on every page of the application attachments in the upper right corner. Reviewers also appreciate page numbers for the Research Plan and Additional Required Attachments sections. Applicants should be mindful of the 20 MB file size limit when adding images to their documents.

RESEARCH PLAN

Required (9 pages maximum, counting figures, graphs and charts)

This section must contain a detailed description of the proposed work to be undertaken in the format shown below. Applications lacking a complete research plan may be returned without review.

The research plan must include one page of specific aims and include up to eight pages of additional narrative. As applicants prepare their research plan, they should ensure that they answer the following questions: (1) What work is to be completed? (2) Why is the work important? (3) What is known in the area? (4) How is the work to be completed?

The research plan should be prepared in the following format:

A. Specific Aims (*one page maximum*): List the broad, long-term objectives and the specific aims of the research proposed, e.g., to test a stated hypothesis, create a novel design, solve a specific problem, challenge an existing paradigm or clinical practice, address a critical barrier to progress in the field, or develop a new technology.

B. Background and Significance: Briefly sketch the background of the proposed project, critically evaluating existing knowledge and specifically identifying the gaps that the project is intended to fill. State concisely the importance of the research described in this application by relating the specific aims to longer-term objectives. If the aims of the application are achieved, state how scientific knowledge or clinical practice will be advanced. What is the innovation? Describe the effect of these studies on the concepts, methods, technologies, treatments, services or preventative interventions that drive this field.

C. Preliminary Studies: Provide an account of the PI's progress that led to formulating the proposed project as well as any other information that will assist the reviewers in assessing the competence of the PI for performing the project. Include a thorough literature review, including the applicant's published research and any presentations of preliminary findings.

D. Research Design and Methods: Discuss in detail the research design to accomplish the specific aims of the project. Describe the protocols to be used. Include the means by which the data will be analyzed and interpreted. Discuss any new methodology and its advantage over existing methodologies. Discuss the potential difficulties and limitations of the proposed procedures and the alternative approaches to achieve the aims. Point out any procedures, situations or materials that may be hazardous to personnel and the precautions that will be exercised. Provide a tentative sequence or timetable for the investigation.

ADDITIONAL REQUIRED ATTACHMENTS

1. Budget Justification *Required* (2 pages maximum)

Complete a budget justification for each year of the proposed project, requesting only the amount necessary to conduct the research. Excessive or unjustifiable costs may be eliminated by reviewers or the OCAST contract compliance officer. All amounts should be in whole dollars. The total approved budget cannot be increased after the date of the award. Please note that funds budgeted for one year cannot carry over to a subsequent contract year. **Indirect costs are not allowable.** A [list of commonly seen unallowable costs](#) is available on the OCAST website.

Personnel List the names and positions of all personnel involved in the project, both professional and nonprofessional, whether or not salaries are requested. Estimate the hours per week on the project for all personnel. List the dollar amounts separately for each individual for salary and fringe benefits.

Money from the Oklahoma Plant Science Research fund may not be used to replace or augment any part of the salary of (1) any full-time faculty member at an Oklahoma college or university or (2) any person of equivalent status in an organization other than a university or college if he or she is the PI or collaborator on an Oklahoma Plant Science Research contract. Salaries or stipends for technicians, postdoctoral associates, students or other staff important to the success of the project are appropriate personnel costs that may become part of a professional service contract.

Professional travel Describe including the purpose of the travel, the number of trips, the destination and the number of individuals for whom funds are requested. Professional travel may not exceed \$1,000 per year and may not be increased after submission of the application.

Supplies Itemize supplies such as glassware, chemicals and animals in separate categories. If animals are involved, state how many are to be used, their unit purchase cost and their unit care cost.

Equipment List separately each item of equipment with a unit acquisition cost of \$500 or more. If funds are requested to purchase items of equipment that appear to duplicate or to be equivalent to items listed under *Facilities, Instrumentation and Resources* (see **Item 5** below) or items used in preliminary studies, **justify the reasons for duplication**. In most cases, reviewers have denied requests for computers unless they are dedicated to the project.

Contractual services Itemize and justify any work on the project that is going to be contracted.

Patient care costs Include inpatient and outpatient charges only if they are an integral part of the research. Provide the names of the hospitals to be used and the amounts requested for each. Indicate in detail the basis for estimating costs in this category, including the number of patient days, estimated cost per day and cost per test or treatment. Patient care costs do not include patient travel and per diem costs; request these costs in the *Other Expenses* category.

Alterations and renovations Costs of building construction, per se, are not permissible charges. If the costs of essential alterations of facilities are requested (i.e., repairs, removal or installation of partitions, shielding or air conditioning), itemize such costs by category and justify each fully. When applicable, indicate the square footage involved and provide the basis for the costs, such as an architect's or contractor's detailed estimate. When possible, submit a line drawing of the alterations being proposed.

Other direct costs Itemize other expenses, such as publication costs, page charges and books by category and unit cost. Itemize and justify such items as patient travel and per diem costs, donor fees, rentals, leases and computer costs. Reimbursement is allowable for personal expenses incurred by human subjects participating in the project, including travel with an escort if required. This reimbursement is applicable for all classes of research subjects, including inpatients, outpatients, donors and normal volunteers regardless of employment status. Travel associated with data gathering must be listed in this category, fully explained and detailed (miles, number of trips, duration, number of participants, travel locations, etc.) in the budget justification.

2. **Biographical Information and Other Support** *Required* (3 pages maximum for each individual)

Provide the following information for key professional personnel involved in the project, beginning with the PI. Do not designate co-principal investigators for a Basic Plant Science Research Project.

A. **Name and Title**

B. **Education** Provide education, baccalaureate through postdoctoral. Include institution and location, degree year conferred and field of study.

C. **Positions and Honors**

D. **Selected Publications** Not to exceed 15

E. **Non-OCAST Research Support** For each current or pending project give the source of the support, identifying number, project title, name of investigator, time or percent of effort on the project by the professional named, annual direct costs and entire period of support.

3. Current OCAST Support *Required, if applicable* (1 page maximum)

Current recipients of OCAST funding must include a listing of the support by the project number, project title, the number of years approved, and the total amount of funding.

4. Previous OCAST Support *Required, if applicable* (1 page maximum per project)

Previous recipients of OCAST funding must include a listing of the support by the project number, the number of years approved, the total amount of funding, and a brief synopsis of the results of each project (e.g., publications, non-OCAST funding received, patents awarded).

5. Facilities, Instrumentation and Resources *Required* (1 page maximum per facility)

Describe any specialized facilities, instrumentation and/or resources necessary and available for this project.

6. Letters of Commitment (*required*), **Recommendation** (*optional*), and **Support** (*optional*) (three one-page letters maximum of each type)

All applicants must submit a signed letter of commitment on official letterhead from an official authorized to commit the resources of the applicant organization (i.e., department, division or unit head) detailing organizational plans and commitments on the applicant's behalf. These comments should include plans and commitments beyond the tenure of the proposed research. The letter should also include commitments for such items as equipment, computer services, facilities and release time for key personnel and/or technical and clerical support that the organization will provide for the project.

Optional Letters of Recommendation

Applicants in the early stages of their research careers are encouraged to submit up to three letters of recommendation from individuals able to evaluate the applicant's scientific potential.

Optional Letters of Support

Applicants may include up to three letters of support from supporters of their project.

7. Literature Cited *Required*

The literature cited does not count toward the page limitations. Compile the list of citations in a format appropriate for the research project's discipline.

8. Appendix I. Institutional Approvals and Certifications *Required, if applicable*

Institutional approvals and certifications are not required at the time of submission of the application or prior to the OCAST peer review process, unless the applicant organization requires such approval prior to submission. If approvals have been received, include documentation of institutional approval and certifications in Appendix I.

No OCAST Plant Science Research award will go to contract without institutional approvals and/or certifications when the research involves:

- human participants, human derived materials, human data
- vertebrate laboratory animals
- recombinant DNA
- biological hazards
- narcotics/dangerous drugs
- radioisotopes

On a separate sheet(s) address the following issues (as needed) below and include in Appendix I:

Human Subjects. Research on human subjects, derived materials or data utilizing resources awarded under the Oklahoma Plant Science Research Program must follow federal guidelines as promulgated in 45 CFR. In addition, these funds may not be used to "undertake any research which has abortion, as defined by Section 1-730 of Title 63 of the Oklahoma Statutes, as its purpose" (74 O.S., Section 5054).

The federal regulation is available from Office of Human Research Protection, www.hhs.gov/ohrp/. The regulation provides a systematic means, which is based on generally accepted ethical principles, for protecting the rights and welfare of individuals who may be exposed to the possibility of physical, psychological or social injury while they are participating as subjects in research, development or related activities. The regulation extends to the human fetus (either in utero or ex utero), the dead, organs, tissues and body fluids as well as graphic, written or recorded information derived from human sources. It covers activities which present no physical risk to the subject but which may create legal risks or expose subjects to public embarrassment or humiliation through breach of confidentiality or invasion of privacy.

The major focus of a project (for example, on a medical procedure) may not be the sole determinant of the types of risks involved or the need for additional protection. The safeguarding and confidentiality of medical records and other forms of data collected on individuals and groups, the use of such data by the investigator conducting the original research, the concurrent uses of the data by other investigators and the use of the data for research purposes at a later time are considered within the scope of this policy.

The regulation requires institutional assurances, including the implementation of procedures for review and the assignment of responsibilities for adequately protecting the rights and welfare of human subjects. **Safeguarding the rights and welfare of human subjects is the responsibility of the applicant organization.** In particular, the applicant organization is responsible for ensuring that the activity described in the application and any additional information relating to human subjects, derived materials or data are reviewed and approved by an institutional review board (IRB) defined in statute as “a committee composed of (at least) investigators, lay representatives, and legal counsel . . . for the express purpose of determining the appropriateness of any research involving human subjects (74 O.S., Section 5060.4).”

The above stated federal requirements have been adopted by the Oklahoma Plant Science Research Committee and OCAST.

Projects with human subjects must address the following:

First, identify the sources of the potential human subjects, human derived materials or human data. Describe the characteristics of the subject population, state the anticipated number, age, gender, ethnic background and state of health. Identify the criteria for inclusion or exclusion. Explain the rationale for the use of special classes of subjects, such as fetuses, pregnant women, children, institutionalized mentally disabled, prisoners or others, especially those whose ability to give voluntary informed consent may be in question.

Second, describe the recruitment and consent procedures to be followed, including the circumstances under which consent will be solicited and obtained, who will seek it, the nature of information to be provided to prospective subjects and the methods of documenting consent. (A copy of the consent form must be provided if requested by OCAST.)

Third, describe any potential risks--physical, psychological, social, legal or other--and assess their likelihood and seriousness. Describe alternative methods, if any, that were considered and why they need not be used.

Fourth, describe the procedures for protecting against or minimizing any potential risks and include an assessment of their likely effectiveness. Include a discussion of confidentiality safeguards, where relevant, and arrangements for providing medical treatment if needed.

Fifth, describe and assess the potential benefits to be gained by the subjects, as well as the benefits that may accrue to society in general, as a result of the planned work.

Finally, discuss the risks in relation to the anticipated benefits to the subjects and to society.

Vertebrate Animals. If vertebrate laboratory animals are to be used in this research project indicate this on the Performance Sites, Compliance page of the OKGrants system, and submit, if available, documentation of **institutional approval in Appendix I**. On a separate sheet state the species, strains, ages and numbers of the animals involved. If the animals are in short supply, costly or to be used in large numbers, provide the rationale for their use and their numbers. Describe the procedures for adequate care of any animals involved. Describe the procedures to avoid unnecessary

discomfort, pain or injury to the animals, such as surgical anesthesia, post-trauma analgesia, tranquilizing drugs and comfortable restraining devices; include this information in Appendix I.

In recent years, there have been extensive changes in federal requirements for the use of vertebrate animals in research. Investigators, their projects and their institutions must adhere to these requirements beginning with the date of submission of a proposal.

As part of its compliance with these regulations, an applicant institution must duly constitute a review committee to assist in assuring humane treatment and care of animals

Recombinant DNA. If recombinant DNA technology will be used in the project indicate this on the Performance Sites, Compliance page of the OKGrants system, and submit, if available, documentation of **institutional approval in Appendix I**. On a separate sheet state the level of containment to be used and explain why this level is appropriate for the proposed project; include this information in Appendix I.

Applicant institutions are required to comply with Federal guidelines regarding the application of recombinant DNA technology as of the date of application submission. The applicant institution must establish an institutional biosafety committee which must judge appropriate proposals and approve only those that conform to the guidelines.

Biological Hazards. If any contact with infectious agents or substances containing them is anticipated indicate this on the Performance Sites, Compliance page of the OKGrants system, and on a separate sheet identify any potential biological hazards, explain procedures to protect individuals from infection or injury, state the level of containment to be used and explain why it is appropriate; include this information in Appendix I.

Various barrier techniques are advised when work is performed with potentially infectious agents or with substances that may contain infectious agents. A guide to the level of containment for infectious agents based upon the recommendations of the Center for Disease Control may be obtained from the U.S. Government Printing Office Washington, D.C. 20402, HHS publication NO. (CDC) 88-8395, entitled *Biosafety in Microbiological and Biomedical Laboratories*.

It is the sole responsibility of the Contractor—the applicant institution, who is the employer of, or affiliated with, the PI—to maintain a safe working environment and to make any changes required by subsequent regulations or law. **The biological hazards must be satisfactorily addressed if a proposed plant science research project is to receive funding.**

Narcotics and Dangerous Drugs Letter. The use of narcotics and dangerous drugs is regulated by the Oklahoma State Bureau of Narcotics and Dangerous Drugs and by the Drug Enforcement Administration of the U.S. Department of Justice. The PI must identify the individual or organization under whose auspices narcotics or dangerous drugs will be used.

If these substances will be used in the project, the PI must do as follows: (1) Check yes on the Performance Sites, Compliance page of the OKGrants system, and (2) include a letter in Appendix I which states the registration number with the Oklahoma State Bureau of Narcotics and Dangerous Drugs and the U.S. Drug Enforcement Administration to be used in this project. If the registrant is not the PI, the PI must (1) provide the registrant's name, title, address and phone number and (2) submit a letter from the responsible individual which (a) states the registration number with the Oklahoma Bureau of Narcotics and Dangerous Drugs and the U.S. Drug Enforcement Administration and (b) grants permission for its use in this project. **The Narcotics/Dangerous Drugs section on the OKGrants system must be satisfactorily completed and the required letter submitted, as appropriate, if a proposed plant science research project is to receive funding.**

Radioisotopes Letter. Use of radioactivity is regulated by the U.S. Nuclear Regulatory Commission. Appropriate licenses must have been obtained by the applicant organization as well as the PI, his or her sponsor or a responsible colleague. If radioisotopes are to be used in the performance of the proposed project, the PI must proceed as follows: (1) indicate this on the Performance Sites, Compliance page of the OKGrants system, and (2) if the responsible individual is someone other than the PI, include in **Appendix I** a letter granting permission for the use of radioisotopes in this project under this license. **The Radioisotopes information must be satisfactorily completed in the OKGrants system and the required letter submitted, as appropriate, if a proposed plant science research project is to receive funding.**

RESUBMISSION INDEX

Required if resubmitting an application

Persons resubmitting an application submitted to a previous OCAST funding cycle must prepare a separate appendix that includes the following:

- A. A letter that responds to the reviewers' comments from the previous review and notes all changes in the new research plan;
- B. A copy of the previously submitted application, and
- C. All reviews of the most recent submission