

OCAST >>

Oklahoma Center for the Advancement of Science and Technology



Applied Proposal Solicitation Funding Cycle for Fiscal Year 2010

Intent Form Deadline:

5:00 p.m., Wednesday,
September 23, 2009

(An Intent form must be
filed by the above deadline
to be eligible to apply.)

Application Deadline:

5:00 p.m., Wednesday,
October 14, 2009

Target Contract Start Date:

March 1, 2010

This Solicitation may be amended by OCAST. Amendments can be found on OCAST's web site under the section "Applied Plant Science Research Solicitation Amendments." 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.

Oklahoma Center for the Advancement of Science and Technology

755 Research Parkway, Suite 110
Oklahoma City, OK 73104
Office: 405-524-1357, 1-866-265-2215
FAX 405-319-8426

**Proposal preparation workshop dates,
locations and registration information are
available on the OCAST web site.**

**This solicitation with editable forms is
available at:**

<http://www.ocast.ok.gov>

**Online tools are optional and are not
required to prepare an application.**

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OKLAHOMA APPLIED PLANT SCIENCE RESEARCH PROGRAM FY10 FUNDING COMPETITION PROPOSAL SOLICITATION

Oklahoma Center for the Advancement of Science and Technology (OCAST)

PLEASE NOTE: An applicant can hold *one* Principal Investigator position for either a basic or applied Plant Science Research project and *one* Co-Principal Investigator position for an applied project during the FY 2010 competition funding year; Co-Principal Investigators are not allowable on basic research projects.

PROGRAM PURPOSE

The Applied Plant Science Research program provides funding to assist the research and development of technology in Oklahoma. This program provides a maximum of one state dollar of funding for each non-state dollar of matching funds for research and development projects that:

1. lead to innovation, new knowledge or technology and have a high probability of leading to commercially successful products, processes or services within a period of time commensurate with similar type innovations;
2. are technically sound and will produce a measurable result; and
3. have a reasonable probability to enhance the economic development efforts of Oklahoma in the areas of plant biosciences, including plant productivity, alternative use crops for bioenergy, environmental applications, chemical platforms, seed management and plant-based process applications.

Awards under this program are designed to further economic development in Oklahoma in the following industry sectors: seed, agrochemical, forestry, energy, electric power, health, and other food or non-food agricultural products industries.

Single organization projects are supported under this program; however, if pooling resources can enhance a project's commercial outcomes, then applicants from different institutions are strongly encouraged to collaborate. One of the goals of this program is to encourage collaborative projects among 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.

AWARD TYPES

Proof-of-concept Awards

Proof-of-concept awards support early stage applied plant science research and development projects such as:

1. proof-of-concept research and technical development projects;

2. advance research initially conducted under the Basic Plant Science Research award;
3. exploratory developments; and
4. product definition.

These awards facilitate technology transfer and research involving 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 to benefit economic development within the state. These awards also assist small and medium sized businesses in developing the research and development capability and expanding the capacity for technological innovations.

Proof-of-concept awards are for one to two years at a maximum of \$45,000 per year. Funding awards are made on a year-to-year basis. For the second year originally awarded, funding shall be dependent upon a satisfactory annual performance evaluation and the availability of funds.

Accelerated Applied Research and Development

Accelerated applied plant science research and development awards support later stage projects for which the product, process or service is defined, the market opportunity is well assessed, commercial opportunities are clearly identified and a commercial entity is defined. These awards provide funds to quicken the pace from concept to market for the high tech product, process or service being developed. These awards can further provide funds to assist in the development and performance of regulatory trials (or address other regulatory requirements) to assist in the movement of a developed product to market.

Accelerated applied plant science research and development awards are for one to two years at a minimum of \$10,000 and a maximum of \$90,000 per year. Funding awards are made on a year-to-year basis.

ELIGIBLE ORGANIZATIONS

An eligible applicant organization shall be located primarily in Oklahoma and be (1) an institution of higher education (2) a non-profit research foundation, or (3) a private enterprise (74 O.S., Sections 5060.53/54). The investigators are residents of the state or become residents of the state before the ninetieth day after a professional service contract has been funded by OCAST (74 O.S., Sections 5060.54).

ELIGIBLE APPLICANTS

The *Principal Investigator (PI)* submitting an application shall be employed by, or affiliated with, an *eligible applicant organization*. *Investigator* is statutorily defined as

...a person who proposes research projects and is primarily responsible for the execution of the proposed projects

The Investigators must be residents of the state of Oklahoma, or become residents of this state before the ninetieth day after a professional services contract is awarded. When a *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.

INELIGIBLE PROJECTS

Projects that focus upon the following are ineligible for funding:

1. market surveys;
2. training or technical assistance for enterprises; and
3. research or research activities that create fundamental or basic information but lack the potential for reasonably short-term commercialization (see *Basic Plant Science Research program*).

* Please note that the i2E Oklahoma Technology Commercialization Center (Tech Center) does have support for these types of projects. The Tech Center may be contacted at: i2E, Inc., 840 Research Parkway, Suite 250, Oklahoma City, OK 73104, 405-235-2305, www.i2e.org.*

MATCHING REQUIREMENT

In order to qualify for funding for an OPSR applied project, the applicant organization must provide documentation verifying that 50 percent of the total direct cost of the proposed project will be provided by sources other than OCAST and other than state-appropriated money.

1. OPSR gives funding preference to proposals in which all or part of the matching monies – industrial, private or federal - are provided under terms that explicitly encourage future commercialization.
2. Matching monies must be specifically dedicated and committed to the proposed OPSR project.
3. In-kind services and indirect costs are disallowed as meeting matching requirements.

Institutions of higher education or non-profit research foundations using equipment for matching monies. If the applicant organization is an institution of higher education or non-profit research organization, statutorily, machinery and/or equipment may be considered to fulfill part or the entire required match, and must be accompanied by a statement:

1. that the institution of higher education or nonprofit research institution has received the machinery or equipment and that it is appropriate and useful to the project under review and either;
2. verifying that the equipment or machinery is donated and has only been used in testing to ensure quality control, or used by a wholesaler or retailer for demonstration purposes only and verifying the fair market value of the machinery and/or equipment on the date of the gift; or
3. detailing the price paid by the institution of higher education or nonprofit research institution, with an invoice showing the amount paid for the machinery or equipment.

If the equipment has been purchased, the institution has to show items [1 and 3] above. If the equipment has been donated, the institution has to show items [1 and 2] above.

FUNDING PREFERENCE

OPSR gives preference to plant research science projects that have potential commercial application and concern plant productivity, renewable biomass, plant-based environmental applications and chemical platforms, plant-based solutions to improve nutrition, human and/or animal health or performance, process applications, and seed management and the development of new products.

INTELLECTUAL PROPERTY RIGHTS

The OPSR proposal must show that the applicant (and any collaborating parties) has adequately addressed the ownership and disposition of patents, royalties, and all other intellectual property rights related to the proposed research project.

When a proposal is approved for funding, the awardee has 60 days from the date of the award to submit certification that an executed intellectual property-related agreement or other instrument exists and that all parties, including scientists, researchers and institutions, have agreed.

EVALUATION CRITERIA

In addition to evaluating the **appropriateness of the budget and matching requirements**, peer reviewers evaluate applications for scientific merit according to the following criteria:

1. **Technical merit of the research**
 - a. Does the research address an important problem?
 - b. The creativity and inventiveness of the proposed research; and
 - c. The significance of existing, developing or refining intellectual property to contribute to the economic development efforts of Oklahoma.
2. **Ability to perform the research**
 - a. The degree that the state-of-the art techniques and process are to be used;
 - b. The quality and probability for success of the research plan;
 - c. The competence of the research personnel;
 - d. The adequacy of the existing or proposed resources, including facilities; and
 - e. The commitment of the applicant organization.
3. **Potential for economic development**

The proposed project's potential for leading a commercially successful product, process or service, including the status of any intellectual property agreements or other arrangements:

 - a. The degree of interest shown by industry, including any existing industrial relationships;
 - b. The domestic and international growth potential in the proposed area;
 - c. The potential of short, medium and long-term impact on the Oklahoma economy;
 - d. The amount of risk relative to the return for the proposed project.

Reviewers evaluate the adequacy of the proposed OPSR projects Business Development Strategy and Economics Development Impact Statement based on the context of the technical maturity of the proposed project.

Proof-of-concept proposals are evaluated 30 percent for the potential for economic impact and 70 percent for the technical merit of the research and the ability to perform the research.

Accelerated proposals are evaluated 50 percent for the potential for economic impact and 50 percent for the technical merit of the research and the ability to perform the research.

REVIEW PROCESS

All applications are reviewed and ranked for funding by peer reviewers, a majority of whom reside outside the state of Oklahoma. All reviewers are approved by an advisory committee to OCAST.

Reviewer recommendations are presented to the Oklahoma Science & Technology Research & Development (OSTRaD) Board, which grants final approval for funding. The budget amount for each project recommended for funding is established by the reviewers and cannot be increased after the date of the award.

REPORTING

Recipients are required annually to complete an *Impact Survey for Funded Projects*. Continued funding of an active OCAST service contract may be affected if the requested information is not received. By applying for a service contract, the principal investigator and the awarded institution become obligated to provide OCAST with the requested information. Principal Investigators may be required to respond after the project is completed, if the project continues to produce impacts.

PERFORMANCE EVALUATION

Acceptance of a professional service contract obligates the principal investigator to submit an annual progress report sixty (60) days prior to the ending date of such contract period, except for the final contract period. A final report must be submitted thirty (30) days after the end of the final contract.

Annual project performance is evaluated by reviewers, the majority of whom reside outside Oklahoma. **Continued funding is contingent upon satisfactory annual performance evaluations that verify that the PI is complying with the terms of the contracts and achieving project objectives.** Late submission of an annual progress report may result in a break between contract periods or project termination.

Evaluation of the OPSR program requires the periodic collection of information from investigators and contractors during and beyond the contract period(s). The PI and contractor must provide OCAST with the requested information during and after the funding period. This information may include, but is not limited to, Impact Survey Data, Site Visits, and Reverse Site Visits where the PI may be required to present his or her OPSR funded project related information to OCAST staff, the OSTRaD Board, members of the Oklahoma Legislature, and other interested parties.

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 including Applied Plant Science Research. The acceptance of a Plant Science professional research 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.

PREVIOUS RECIPIENT ELIGIBILITY

Any PI, previously funded through an OCAST program, who has a **delinquent progress report** or has not responded to other OCAST requests for information such as impact survey data, or special reports, 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 nullify the award and return the monies to the Oklahoma Plant Science Research fund.

SUBMISSION REQUIREMENTS

Oklahoma City OCAST Office:

**OCAST
Programs Division
755 Research Parkway
Suite 110
Oklahoma City, OK 73104-3612**

Applications are also accepted in the Tulsa office:

**OCAST
Tulsa OSU campus
Main Hall
700 N. Greenwood Ave., Suite 1400
Tulsa, OK 74106-6263
Phone: 918-594-8118**

1. Statement of Intent form

Only those who have submitted the required Statement of Intent by the intent deadline are eligible to submit an application. Intents must be submitted to the Oklahoma City office. After the deadline, OCAST will assign an OPSR Project Number and e-mail that number to the PI. Each applicant is required to place that number on the top right corner box of the OPSR application.

Statements of Intent may be faxed to 405-319-8426. It is the responsibility of the PI to ensure that OCAST receives the intent by the deadline. The OCAST fax machine may be overloaded or otherwise inoperable close to the deadline. Intents will not be accepted by e-mail.

Statement of Intent Form Deadline: 5:00 P.M. September 23, 2009

2. Application Materials

The application must be received at the Tulsa or Oklahoma City OCAST office before the deadline. This solicitation with editable forms is available online at <http://www.ocast.ok.gov>. Online tools are optional and are not required to prepare an application. **Applications will not be accepted via facsimile, e-mail or in any electronic format.** No supplemental material related to the application will be accepted after the deadline except at the request of OCAST. OCAST may return applications that are judged incomplete or inappropriately completed, without review.

Application Submission Deadline: 5:00 P.M, October 14, 2009.

Important Note Concerning Intent and Application Deadlines

A Statement of Intent or Application that has been logged into a commercial delivery service with “delivery guaranteed” before 5:00 pm on the day of the applicable deadline may be accepted if the applicant can provide acceptable documentation that the Statement of Intent or Application was provided to the delivery service with delivery to the address above guaranteed prior to the applicable deadline date and time. OCAST recommends that all documents be submitted to OCAST several days prior to the deadline. **NO STATEMENTS OF INTENT OR APPLICATIONS WILL BE ACCEPTED AFTER THE DEADLINES. NO EXCEPTIONS ARE MADE.**

Required Materials

Each OPSR application must include the following materials:

Number of Sets	Contents
1	Original paper application, marked “original,” with appendices attached (stapled or fastened with a binder clip in the upper left corner). Prepare required Application Page forms 1-13 (Items 1-25) as provided. Refer to Required Attachments pages 1-10 (Items 26-42) for instructions to prepare text sections of the application including, presentation order and headings.
1	Paper set of Application Pages: 1-11(e) (Items 1-25) staple each set in upper left corner. Include in each set Items 22, 22A, 23, 24 and 25 for each budget year of project.
1 CD	File containing the entire application in (pdf.) format including appendices.

Each OPSR application must include one signed paper original of the entire proposal(s) and one set of Application Pages 1- 9(b) (Items 1-23B). Include in each set Items 23 – 23B for each budget year(s) requested. A CD containing an electronic copy of the entire proposal as a single file using Adobe Acrobat (.pdf) must be submitted. This file must be named PSA10-XXX First

Name Last Name.pdf, where XXX is the PI's three digit project number received from OCAST upon submission of the Statement of Intent Forms(s) (e.g., PSA10-001 Jessica Vinson.pdf). For identification purposes, the CD must be marked by a permanent marker or printed label using the above example.

IMPORTANT NOTE: Items 26 through 42 in the application section are prepared on 8 ½ x 11-inch white paper with not less than 0.5-inch margins with a font size not smaller than 10-pt, with single to 1.5 spacing. Approved fonts for text are Arial, Palatino or Georgia. Use the presentation order and headings as shown below. Section text length page limitations include text, inserted graphs, charts, and figures as part of the total section page length. If a section is not applicable it must be acknowledged by number and title and indicated as "Not Applicable."

OCAST recommends a black binder clip or staple in the left corner and colored sheets to set-off major sections of the proposal as reviewers find such proposals easier to read. No binders, notebooks, rubber bands, or paper clips. **Only section titles are allowed on colored sheets.**

RESUBMISSIONS

A resubmission is considered as a new proposal; therefore, a current Statement of Intent is required. Applicants resubmitting to the OPSR program must comply with the following:

1. Check resubmission in Item 2 of the application , and
2. Prepare a separate appendix that includes:
 - a. Letter responding to the Reviewer's comments from previous review and noting all changes in the research plan:
 - b. Copy of previously submitted application; and
 - c. All reviews of that application

RELEASE OF INFORMATION

OCAST is subject to the Open Meetings Act and the Open Records Act. However, information submitted to or compiled by OCAST with respect to marketing plans, financial statements, trade secrets, research concepts, methods or products, or any other proprietary information is confidential. OCAST may use the contents from the OPSR Statement of Intent, application abstracts and executive summaries from progress reports for publication without obtaining permission from the applicant or applicant organization.

CONTRACT-RELATED INFORMATION

Oklahoma statute requires that the mechanism for funding OPSR projects be a professional services contract between OCAST and the applicant organization(s). The Contractor is the applicant organization(s) which: 1) employs or is affiliated with the PI or co-investigators, 2) provides research services and/or facilities for the funded project, and 3) executes the contract. If there is any inconsistency between the information contained in this solicitation and the terms of any resulting contract.

If more than one applicant organization is involved, all applicant organizations shall be signatories to the contract; one of the parties shall be designated as the fiscal agent to receive and account for all funds. The contract shall include commitments on the part of the Contractor(s) to perform the activities described in the application and funded by OCAST. However, the

obligations of each party to a contract shall be limited to that portion of the contract they have committed to perform.

Any applicant organization or principal investigator who, in OCAST's judgment, has failed to correct a material breach of contract previously awarded under any of OCAST programs will not be eligible to be awarded a new funding contract.

If a PI under an OPSR contract becomes unable to perform the proposed research, the applicant organization must inform OCAST within 10 days:

1. The official notification of resignation by the PI as an employee of one of the parties to the contract;
2. The official decision to terminate the PI as an employee of one of the parties to the contract;
3. The inability of the PI to perform the research described in the application;
4. Any occurrence which the Contractor or Fiscal Agent determines will affect the successful completion of the research project;
5. The PI leaves Oklahoma;
6. The majority of the research is not performed in Oklahoma;
7. The receipt of notification of award of concurrent funding by the PI or co-investigator, which is not part of the approved matching monies requirement, to support any portion(s) of the research, which is supported by OCAST funds.

Any of the conditions in 1-7 above may result in the termination of the contract at the discretion of OCAST. If the PI is subsequently employed by another eligible applicant organization in the state of Oklahoma that agrees to support the research project, OCAST may consider issuing a new contract negotiated between OCAST and the new organization. If a PI cannot perform on a contract, the applicant organization may request that OCAST consider continuing the contract with a new PI.

The Contractor shall be responsible for the following:

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 the project funded by OCAST.

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 used in carrying out its responsibilities for administration of the funds.

Providing specified documentation of matching expenditures to OCAST with each Request for Payment. At no time shall the amount invoiced from OCAST exceed the amount of documented matching funds expended. Failure to document the required matching amount could result in a decrease in the OCAST funding amount and/or a termination of all subsequent OCAST funding.

Compiling 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, or designated fiscal agent, shall provide OCAST timely copies of reports on any audits that include funds received from OCAST. The contractor, at OCAST's request, shall provide OCAST with an independent audit report of all funds expended on each OCAST contract in which the amount of OCAST funds are awarded. In the event an audit results in the determination that the contractor, or designated fiscal agent, has expended contract funds on unallowable costs, the contractor, or designated fiscal agent, shall reimburse OCAST in full for all such costs.

WORKSHOPS

Proposal preparation workshops are presented by OCAST staff at no charge.

The workshops cover specifics of the solicitation with an emphasis on the instructions and procedures associated with preparing an application. These workshops are attended by proposal writers, as well as administrators at companies and institutions of higher education who wish to gain an insight into budgeting and match. Workshop registration is available online at <http://www.ocast.ok.gov>.

Application Preparation Workshops - 10:00-12:00 pm

Date	Location
September 8, 2009	Stillwater
September 9, 2009	Tulsa
September 10, 2009	Ardmore
September 15, 2009	Tulsa
September 16, 2009	Ada

Name of Principal Investigator:

Oklahoma Applied Plant Science Research Support FY10 Statement of Intent

ONLY THOSE WHO HAVE SUBMITTED A STATEMENT OF INTENT ON OR BEFORE THE INTENT DEADLINE ARE ELIGIBLE TO SUBMIT AN APPLICATION. A Statement of Intent is required for each proposal submitted. Intents may be faxed to meet the deadline, which is **September 23, 2009 at 5:00 PM**; however, the applicant assumes the risk that the OCAST fax machine may be overloaded or otherwise inoperable close to the deadline. Intents should be mailed, faxed, or delivered to the following address:

OCAST
 Programs Division
 755 Research Parkway, Suite 110
 Oklahoma City, Oklahoma 73104
 Fax: (405) 319-8426

1. Principal Investigator (PI) Information. *This person receives official notices prior to proposal submission.*

Name:		Terminal Degree
Position or Title:		
Organization of Principal Investigator:		
Mailing Address: (include department, division or equivalent; no P.O. Box numbers)		Phone:
		Fax:
E-mail:	URL: http://	
Signature of PI		Date

2. Title of proposal. *May differ from final proposal.*

3. Type of proposal. *(check one) Final proposal may differ.*

<input type="checkbox"/> Proof-of-concept Maximum of \$45,000 of OPSR funds for each of two years.	<input type="checkbox"/> Accelerated Maximum of \$180,000 total of OPSR funds for the project.
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4. Estimated request for OPSR funds. *This amount excludes match and may differ from final proposal.*

Year 1 \$	Year 2 \$
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5. Five scientific or technical keywords that describe the research project.

Name of Principal Investigator:

6. Describe the proposed project. Do not exceed 100 words.

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7. Co-Principal Investigator (Co-PI) Information.

Name:		Terminal Degree:
Position or Title:		
Organization of Co-PI:		
Mailing Address: (include department, division or equivalent; no P.O. Box numbers)		Phone:
		Fax:
E-mail:	URL: http://	
Signature of Co-PI		Date

8. Second Co-Principal Investigator (Co-PI) Information.

Name:		Terminal Degree:
Position or Title:		
Organization of Co-PI:		
Mailing Address: (include department, division or equivalent; no P.O. Box numbers)		Phone:
		Fax:
E-mail:	URL: http://	
Signature of Co-PI		Date

PI Name:	Project Number: PSA10 -
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Oklahoma Applied Plant Science Research Program FY10 Proposal Application

1. Title.

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2. OPSR Project.

Proof-of-Concept <input type="checkbox"/>	Estimated Start Date
Accelerated <input type="checkbox"/>	Resub mission <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> If so, from what year?

3. Amount of OCAST Funds Requested.

Year 1 \$	Year 2 \$
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4. Technology Development.

Check a single box that <u>best</u> describes the technology to be developed under this award.	
<input type="checkbox"/> Advanced Materials <input type="checkbox"/> Biotechnology <input type="checkbox"/> Chemicals <input type="checkbox"/> Defense <input type="checkbox"/> Energy <input type="checkbox"/> Environmental	<input type="checkbox"/> Manufacturing Equipment <input type="checkbox"/> Medical <input type="checkbox"/> Pharmaceuticals <input type="checkbox"/> Test & Measurement <input type="checkbox"/> Other (<i>specify</i>) _____

5. Principal Investigator (PI) Information.

Name of Principal Investigator	Terminal Degree:
Position or Title	
Address: <i>Include organization and department, division or equivalent, No P.O. Box numbers.</i>	Phone
	Fax
	County
E-mail	URL http://
I hereby accept responsibility for the scientific conduct of the project and for providing the materials required for contract performance evaluation. I give consent for the materials in this application to be viewed, as required by members of the OCAST staff, Board, Plant Science Research Committee and review panels.	
Signature of PI	Date

PI Name:	Project Number: PSA10 -
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6. First Co-Principal Investigator (Co-PI) Information.

Name of First Co-Principal Investigator		Terminal Degree:	
Position or Title			
Address: <i>Include organization and department, division or equivalent, No P.O. Box numbers.</i>		Phone	
		Fax	
		County	
E-mail		URL http://	
I hereby accept responsibility for the scientific conduct of the project and for providing the materials required for contract performance evaluation. I give consent for the materials in this application to be viewed, as required by members of the OCAST staff, Board, Plant Science Research Committee and review panels.			
Signature of First Co-PI		Date	

7. Second Co-Principal Investigator (Co-PI) Information.

Name of Second Co-Principal Investigator		Terminal Degree:	
Position or Title			
Address: <i>Include organization and department, division or equivalent; no P.O. Box numbers</i>		Phone	
		Fax	
		County	
E-mail		URL http://	
I hereby accept responsibility for the scientific conduct of the project and for providing the materials required for contract performance evaluation. I give consent for the materials in this application to be viewed, as required by members of the OCAST staff, Board, Plant Science Research Committee and review panels.			
Signature of Second Co-PI		Date	

PI Name:	Project Number: PSA10 -
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8. Research Area. Check one category.

<input type="checkbox"/> AGROCHEMICALS	<input type="checkbox"/> FOREST PRODUCTS
<input type="checkbox"/> BIOCHEMISTRY	<input type="checkbox"/> GENOMICS
<input type="checkbox"/> BIOMASS CONVERSION	<input type="checkbox"/> HEALTH
<input type="checkbox"/> ECOLOGY	<input type="checkbox"/> PROCESS APPLICATIONS
<input type="checkbox"/> ENABLING BIOTECHNOLOGIES	<input type="checkbox"/> SEEDS
<input type="checkbox"/> ENERGY CROP PRODUCTION	<input type="checkbox"/> WHOLE PLANT PHYSIOLOGY
<input type="checkbox"/> ENVIRONMENTAL ISSUES	<input type="checkbox"/> WHOLE PLANT PHYSIOLOGY
<input type="checkbox"/> OTHER	
*Specify _____	

9. Official Acting as Fiscal Agent.

If multiple contractors, show official of organization designated as Fiscal Agent. This is the official to whom OCAST will send all contract payments.	
Name	
Title	
Name of Applicant Organization Acting as Fiscal Agent	
Address: Include organization and department, division or equivalent; no P.O. Box numbers	Phone
	Fax
	County
E-mail	URL http://
Organization NAICS code	Organization Federal Employee Identification Number (FEI)

10. Designated Contract Official.

Show official designated as the Contracting Official for the project. This is the official to whom OCAST will send all award and contract correspondence including (1) the award letter, (2) requests for information and documentation, (3) the initiated contract, (4) the executed contract and (5) progress report and performance evaluation information and requests. If multiple applicants, the designated Contracting Official is responsible for sharing contractual information with all other applicant organizations.	
Name	
Title	
Name of Applicant Organization Acting as Designated Contract Official	
Address: Include organization and department, division or equivalent, No P.O. Box numbers	Phone
	Fax
	County
E-mail	URL http://

PI Name:	Project Number: PSA10 -
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11. Additional Applicant Organizations. All applicant organizations agree to be party to the contract.

A) Name of Official Signing for Other Applicant Organization	
Title	
Address: Include organization and department, division or equivalent, No P.O. Box numbers	Phone
	Fax
	County
E-mail	URL http://
Organization NAICS code	Organization Federal Employee Identification Number (FEI)

B) Name of Official Signing for Other Applicant Organization	
Title	
Address: Include organization and department, division or equivalent, No P.O. Box number	Phone
	Fax
	County
E-mail	URL http://
Organization NAICS code	Organization Federal Employee Identification Number (FEI)

12. Certification of Assurances.

I certify that the statements and budget figures herein are true and complete. If an Oklahoma Plant Science Research (OPSR) contract is awarded, I accept the obligation to comply with the laws of the state of Oklahoma and the policies of the Oklahoma Center for the Advancement of Science and Technology (OCAST) as they pertain to the performance of this project.	
Signature of Official Signing for Applicant Organization Acting as Fiscal Agent (same name as in Item 9.)	Date
Signature of Official Signing for Applicant Organization as Designated Contract Official (same name as in Item 10.)	Date
Signature of Official Signing for Other Applicant Organization (same name as in Item 11.A.)	Date
Signature of Official Signing for Other Applicant Organization (same name as in Item 11.B.)	Date

13. Performance Sites.

(Please include the name of the organizations, department or division, address, county, telephone numbers, e-mail and web site.)

Regulatory Compliance.

IMPORTANT: ITEM 41 PROVIDES INSTRUCTIONS FOR PREPARING THIS FORM AND APPENDIX I.

14. Human Subjects?

Is institutional approval pending?

<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
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Is institutional approval in Appendix I?

<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
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<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
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15. Vertebrate Animals?

Is institutional approval pending?

<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
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Is institutional approval in Appendix I?

<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
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<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
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16. Recombinant DNA?

Is institutional approval pending?

<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
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Is institutional approval in Appendix I?

<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
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<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
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17. Biological hazards? (If Yes, complete Section D of Appendix I)

<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
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18. Narcotics/Dangerous Drugs?

<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
--------------------------	-----	--------------------------	----

If the registrant is not the PI, state name and address of the individual whose registration number from the Oklahoma State Bureau of Narcotics and Dangerous Drugs and the U. S. Drug Enforcement Administration will be used.	
Name:	
Telephone:	e-mail:
Address:	
Use number:	

19. Radioisotopes?

<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
--------------------------	-----	--------------------------	----

State name, address and radioactive use number of the individual under whom radioisotopes will be purchased, stored and used.	
Name:	
Telephone:	e-mail:
Address:	
Use number:	

PI Name:

Project Number: PSA10 -

20. Abstract.

Project Title

Name and address of Applicant Organization(s)

Name, Title and Department of Principal Investigator and Co-investigators

Benefiting Firm(s) *If the Applicant Organization is not a firm, name the benefiting firm(s) and location(s).*

Match Summary *Name the match source(s), the percent contribution, and the location for each source.*

PI Name:

Project Number: PSA10 -

20. Abstract. (continued)

Economic Summary: Present a brief discussion of the potential commercial application of the project analyzing its commercial potential for Oklahoma firms and farms. Include jobs created or retained as well as gross sales projections and any other financial impacts that are anticipated 2 years, 5 years and 10 years after the end of the project. In the first two or three sentences, describe the project in layperson terms including the product or service to be commercialized.

Scientific Abstract: Include a statement of the specific scientific and technical objectives and plan for achieving the objectives.

Five Key Words:

PI Name:	Project Number: PSA10 -
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21. Organization of Application. Prepare a Table of Contents listing the required items in the order shown in the format shown below. This Table of Contents exemplifies how the application should be arranged. The applicant should prepare a separate Table of Contents showing page numbers that correspond to their application.

Required Forms	Page
Application Form Pages (Items 1 –19)	1 - 6
Abstract (Item 20)	7 - 8
Table of Contents (Item 21)	9
Budget (Item 22), Sub-contract Budget if needed (Item 22.A), Source of Matching Funds (Item 23), Matching Funds Certification (Item 24), Machinery or Equipment (Item 25) – Do not include unused pages.	11, a, b, c, d, e
	12, a, b, c, d, e
Required Attachments	
Budget Justification Pages (Item 26)	
Principal Investigator and Key Personnel (Item 27)	
Assessment of Attracting Future Funding (Item 28)	
Letter of Recommendation from Applicant Organization (Item 29)	
Current and Previous OCAST Support, and Other Support (Items 30,31,32)	
Commercialization Development Strategy (Item 33)	
Intellectual Property Relationships and Protection (Item 34)	
Company Profiles (Item 35)	
Economic Impact Statement (Item 36)	
Matching Funds (Item 37)	
Research Plan (Item 38)	
Collaborative Relations (Item 39)	
Literature Cited (Item 40)	
Appendix I (Item 41) IRB Materials and Certifications	
Appendix II (Item 42) Resubmission Materials	
Appendix III (Item 42) Additional Appendices - 5 page limit	

PI Name:	Project Number: PSA10 -
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Prepare a budget for each year.

22. Project Budget. *Direct Costs Only. In addition, carefully prepare a Budget Justification to accompany each year that is requested (see Item 26).*

Year 1

Personnel Applicant Organization(s) Only		Effort	Amount Requested (In Dollars Only)		
Name	Title or Position	HR/WK	OCAST	Matching	TOTALS
Subtotal					
Travel					
Subtotal					
Supplies <i>(Itemize by category)</i>					
Subtotal					
Equipment <i>(List items over \$500)</i>					
Subtotal					
Contractual Services <i>(Itemize, if over \$2,000 use 22A)</i>					
Subtotal					
Patient Care Cost		OUTPATIENT			
		INPATIENT			
Alterations and Renovations					
Subtotal					
Other Direct Costs <i>(Itemize)</i>					
Subtotal					
TOTAL DIRECT COSTS					

OCAST Approval:	Date:
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Prepare a Contract budget for each year.

22.A Contractual Service Breakout. Include and complete this form if Contract Services on Item 22 is over \$2,000. Direct Costs Only. In addition, carefully prepare a Budget Justification to accompany each year that is requested (see Item 26).

Year 1

Personnel Applicant Organization(s) Only		Effort	Amount Requested (In Dollars Only)		
Name	Title or Position	HR/WK	OCAST	Matching	TOTALS
Subtotal					
Travel					
Subtotal					
Supplies (Itemize by category)					
Subtotal					
Equipment (List items over \$500)					
Subtotal					
Contractual Services (Itemize)					
Subtotal					
Patient Care Cost		OUTPATIENT			
		INPATIENT			
Alterations and Renovations					
Subtotal					
Other Direct Costs (Itemize)					
Subtotal					
TOTAL DIRECT COSTS					

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PI Name:	Project Number: PSA10 -
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Prepare a Source of Matching Funds for each year.

23. Source and Amount of Matching Funds.

Year 1

NOTE: The PI must submit this form for each project year for which CASH and/or a GRANT(S) or CONTRACT(S) will be provided as match. Monies certified as match must be placed in an account held by one of the organizations that is a party to the contract.

Source of Cash Match	Date Received	Contracting Organization that holds Matching Account	Account Number	Amount
1.				
2.				
3.				
4.				
5.				
Subtotal				
Source of Grant(s) or Contract(s) Match	Inclusive Dates of Award	Contracting Organization that holds Matching Account	Account Number	Amount
1.				
2.				
3.				
4.				
5.				
Subtotal				
Total Match				

OCAST Approval:	Date:
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PI Name:	Project Number: PSA10 -
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Prepare a Matching Funds Certification for each year.

Year 1

24. Matching Funds Certification.

Contracting Organization 1	
Contracting Organization 2	
Contracting Organization 3	
Amount of cash total to be provided for match	\$
Dollar Amount of Grant(s) or Contract(s) total to be provided for match	\$
Dollar Value of Machinery or Equipment total to be provided for match	\$
<small>IMPORTANT: ONLY INSTITUTIONS OF HIGHER EDUCATION OR NONPROFIT RESEARCH FOUNDATIONS ARE ELIGIBLE TO USE EQUIPMENT OR MACHINERY FOR MATCHING FUNDS REQUIREMENTS. IN SUCH INSTANCES, THE EQUIPMENT OR MACHINERY MUST ORIGINATE FROM SOURCES OTHER THAN STATE-APPROPRIATED FUNDS AND THE REQUIRED DOCUMENTATION RELATED TO THE ALLOWABLE VALUATION MUST BE SUBMITTED WITH THE ORIGINAL PROPOSAL.</small>	
MATCH AMOUNT TOTAL	\$
<p>I certify that the monies, grants and contracts, and/or machinery or equipment described on this form and detailed on the following OPSR Matching Funds Documentation for the project year designated above will be available for use on this project as of the contract start date.</p> <p>I certify that if machinery or equipment is being used as matching funds, that each item of machinery or equipment provided for match (1) has been received by the institution of higher education or non-profit research organization, (2) if donated to the institution of higher education or non-profit research organization, has been used only in testing to ensure quality control or for demonstration purposes by a wholesaler or retailer and the fair market value on the date of the gift, and if purchased by the institution, the amount paid is certified by an invoice held by the institution.</p>	
Name of Principal Investigator	
Signature of Principal Investigator	Date
Name of Designated Contracting Official	
Signature of Designated Contracting Official	Date

OCAST Approval:	Date:
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PI Name:

Project Number: PSA10 -

Prepare a Machinery or Equipment Matching Funds form for each year.

25. Machinery or Equipment Being Used for Matching Funds.

Year 1

IMPORTANT NOTE: ONLY HIGHER EDUCATION INSTITUTIONS AND NONPROFIT RESEARCH FOUNDATIONS ARE ELIGIBLE TO USE MACHINERY OR EQUIPMENT OWNED PRIOR TO THE CONTRACT AS MATCHING FUNDS.

Description of the equipment

Justification of the use of the machinery or equipment for the project

Calculation for the valuation of the machinery or equipment for matching funds.

(a) Invoiced value if purchased, documented fair market value if donated.	(b) Dollar value of the annualized life of the equipment. Life years of equipment: _____		(c) Percent usage on the OPSR project.	(d) Amount eligible as matching funds (column b multiplied by column c).	
\$	Year 1	\$	Year 1	Year 1	\$
Date purchased or donated	Year 2	\$	Year 2	Year 2	\$

OCAST Approval:

Date:

PI Name:	Project Number: PSA10 -
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Prepare a budget for each year.

22. Project Budget. *Direct Costs Only. In addition, carefully prepare a Budget Justification to accompany each year that is requested (see Item 26).*

Year 2

Personnel Applicant Organization(s) Only		Effort	Amount Requested (In Dollars Only)		
Name	Title or Position	HR/WK	OCAST	Matching	TOTALS
Subtotal					
Travel					
Subtotal					
Supplies <i>(Itemize by category)</i>					
Subtotal					
Equipment <i>(List items over \$500)</i>					
Subtotal					
Contractual Services <i>(Itemize, if over \$2,000 use 22A)</i>					
Subtotal					
Patient Care Cost		OUTPATIENT			
Subtotal		INPATIENT			
Alterations and Renovations					
Subtotal					
Other Direct Costs <i>(Itemize)</i>					
Subtotal					
TOTAL DIRECT COSTS					

OCAST Approval:	Date:
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Prepare a Contract budget for each year.

22.A Contractual Service Breakout. Include and complete this form if Contract Services on Item 22 is over \$2,000. Direct Costs Only. In addition, carefully prepare a Budget Justification to accompany each year that is requested (see Item 26).

Year 2

Personnel Applicant Organization(s) Only		Effort	Amount Requested (In Dollars Only)		
Name	Title or Position	HR/WK	OCAST	Matching	TOTALS
Subtotal					
Travel					
			Subtotal		
Supplies (Itemize by category)					
			Subtotal		
Equipment (List items over \$500)					
			Subtotal		
Contractual Services (Itemize)					
			Subtotal		
Patient Care Cost		OUTPATIENT			
		INPATIENT			
Alterations and Renovations					
			Subtotal		
Other Direct Costs (Itemize)					
			Subtotal		
TOTAL DIRECT COSTS					

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OCAST Approval:	Date:
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PI Name:	Project Number: PSA10 -
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Prepare a Source of Matching Funds for each year.

23. Source and Amount of Matching Funds.

Year 2

NOTE: The PI must submit this form for each project year for which CASH and/or a GRANT(S) or CONTRACT(S) will be provided as match. Monies certified as match must be placed in an account held by one of the organizations that is a party to the contract.

Source of Cash Match	Date Received	Contracting Organization that holds Matching Account	Account Number	Amount
1.				
2.				
3.				
4.				
5.				
Subtotal				
Source of Grant(s) or Contract(s) Match	Inclusive Dates of Award	Contracting Organization that holds Matching Account	Account Number	Amount
1.				
2.				
3.				
4.				
5.				
Subtotal				
Total Match				

OCAST Approval:	Date:
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PI Name:	Project Number: PSA10 -
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Prepare a Matching Funds Certification for each year.

Year 2

24. Matching Funds Certification.

Contracting Organization 1	
Contracting Organization 2	
Contracting Organization 3	
Amount of cash total to be provided for match	\$
Dollar Amount of Grant(s) or Contract(s) total to be provided for match	\$
Dollar Value of Machinery or Equipment total to be provided for match	\$
<small>IMPORTANT: ONLY INSTITUTIONS OF HIGHER EDUCATION OR NONPROFIT RESEARCH FOUNDATIONS ARE ELIGIBLE TO USE EQUIPMENT OR MACHINERY FOR MATCHING FUNDS REQUIREMENTS. IN SUCH INSTANCES, THE EQUIPMENT OR MACHINERY MUST ORIGINATE FROM SOURCES OTHER THAN STATE-APPROPRIATED FUNDS AND THE REQUIRED DOCUMENTATION RELATED TO THE ALLOWABLE VALUATION MUST BE SUBMITTED WITH THE ORIGINAL PROPOSAL.</small>	
MATCH AMOUNT TOTAL	\$
<p>I certify that the monies, grants and contracts, and/or machinery or equipment described on this form and detailed on the following OPSR Matching Funds Documentation for the project year designated above will be available for use on this project as of the contract start date.</p> <p>I certify that if machinery or equipment is being used as matching funds, that each item of machinery or equipment provided for match (1) has been received by the institution of higher education or non-profit research organization, (2) if donated to the institution of higher education or non-profit research organization, has been used only in testing to ensure quality control or for demonstration purposes by a wholesaler or retailer and the fair market value on the date of the gift, and if purchased by the institution, the amount paid is certified by an invoice held by the institution.</p>	
Name of Principal Investigator	
Signature of Principal Investigator	Date
Name of Designated Contracting Official	
Signature of Designated Contracting Official	Date

OCAST Approval:	Date:
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PI Name:

Project Number: PSA10 -

Prepare a Machinery or Equipment Matching Funds form for each year.

25. Machinery or Equipment Being Used for Matching Funds.

Year 2

IMPORTANT NOTE: ONLY HIGHER EDUCATION INSTITUTIONS AND NONPROFIT RESEARCH FOUNDATIONS ARE ELIGIBLE TO USE MACHINERY OR EQUIPMENT OWNED PRIOR TO THE CONTRACT AS MATCHING FUNDS.

Description of the equipment

Justification of the use of the machinery or equipment for the project

Calculation for the valuation of the machinery or equipment for matching funds.

(a) Invoiced value, if purchased, documented fair market value if donated.	(b) Dollar value of the annualized life of the equipment. Life years of equipment: _____		(c) Percent usage on the OPSR project.	(d) Amount eligible as matching funds (column b multiplied by column c).	
\$	Year 1	\$	Year 1		Year 1 \$
Date purchased or donated	Year 2	\$	Year 2		Year 2 \$

OCAST Approval:

Date:

IMPORTANT NOTE: Items 26 through 42 below are prepared on 8 ½ x 11-inch white paper with not less than 0.5-inch margins with a font size not smaller than 10-pt, with single to 1.5 spacing. **It is very important that the presentation order and headings are followed as shown below in items 26 through 42.** Section text length page limitations include text, inserted graphs, charts, and figures as part of the total section page length. If a section is not applicable it must be acknowledged by number and title and indicated as “Not Applicable.”

26. *Budget Justification.* Required Attachment

Carefully prepare an accompanying explanation of the budget and justification for the budget. Incomplete justification may result in an item being deleted. Four page maximum.

Project Budget -- Complete the required budget information for each year of the project. Account for all project funds – both monies requested from OCAST and the proposed matching funds. All amounts should be in dollars (no cents). The approved budget amount is established by the reviewers and cannot be increased after the date of the award. If obvious budget items are omitted, provide information regarding the alternative resources available to provide for these items in the budget justification.

Personnel List the names and positions of all personnel involved in the project, both professional and nonprofessional, whether or not salaries are requested. For each participant estimate the percentage of time (in hours) per week of effort on this project. In computing estimated salary charges to an OPSR contract, an individual’s base salary must represent the total authorized annual compensation that an applicant organization would be prepared to pay for a specified work period. The base salary must exclude income that an individual may be permitted to earn outside of full-time duties to the applicant organization and may not be augmented or supplemented by funds from a professional service contract. Add and include fringe benefits to the extent that they are treated consistently by the applicant organization as a direct cost to all sponsors. Explain fringe benefit calculation.

Travel Describe the purpose of any travel, giving the number of trips and the professional activities involved, the destination(s) and the number of individuals for whom funds are requested. The amount requested for travel must be fully explained in the Budget Justification. The amount of travel approved by the reviewers cannot be increased after the date of the OPSR award.

Supplies Itemize supplies such as glassware, chemicals or 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. When requesting funds to purchase items of equipment that appear to duplicate or be equivalent to items listed under Facilities, Instrumentation and Resources, carefully justify the reasons for the duplication. In most cases, reviewers have denied requests for computers not dedicated to the project. Computers must be used for research activities rather than for word processing or other common uses. Provide sufficient documentation for the reviewers to recognize the importance of the computers to the research effort. The amount of funds (OCAST + match) budgeted for equipment must be justified in terms of the amount of usage on the project and the residual value of the equipment after the OCAST project. Reviewers carefully question large equipment requests with OCAST matching monies when a large residual value of the equipment would occur at the end of the project.

Contractual Services Itemize and provide detailed description if the total amount is over \$2,000. If over \$2,000, include Item 22.A., Contractual Services Budget, to detail the amount indicated in the Contractual Services category in Item 22.

Patient Care Costs Include inpatient and outpatient charges only if they are an integral part of the research supported by a professional service contract. 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 the cost per test or treatment. Patient care costs do not include travel and per diem cost; request these costs in Other Expense category.

Alterations and Renovations Do not include cost of construction. If the costs of essential alterations of facilities necessary for this research project are requested, itemize such costs by category and justify each fully. When applicable, indicate the square footage involved, giving the basis of the costs, such as an architect's or contractor's detailed estimate. When possible, submit a line drawing of the alterations being proposed.

Other Expenses Itemize other expenses, such as publication costs, page charges or books by category and unit cost. Itemize and justify such items as patient travel and per diem costs, donor fees, rentals, leases or 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.

Indirect Costs Indirect costs are not allowable as a budget item for applicants or sub-contractors. If an organization requires direct cost reimbursement for project specific utility or compliance costs, these should appear as line items in the budget along with both the method of calculation and an explanation for their inclusion.

Important Note: The following items present the project's potential for research success and economic success. Applications without the required information may be returned without review.

27. *Principal Investigator and Key Personnel Biographical Information.* Required Attachment

Provide the following information for key professional personnel involved in the project beginning with the principal investigator. *Two page maximum for each professional.*

- A. Name
- B. Title
- C. Education (provide education, baccalaureate through postdoctoral; include institution and location, degree year conferred and field of study, with the most recent first)
- D. Research and professional experience. Beginning with the present position, list in chronological order, previous employment, experience and honors. List in chronological order beginning with the most recent, the titles and complete references to recent representative publications, especially those most pertinent to this application.

28. *Assessment of the Potential for Attracting Future Funding.* Required Attachment

Two page maximum to contain the following related to the completion of the research and commercialization of the product, process, or service described in the proposal:

- A. Describe the source and potential for attracting private funds.
- B. Describe the source and potential for attracting government funds.

29. *Letter of Recommendation from the Applicant Organization.* Required Attachment

Two page maximum for each letter to contain the following:

A signed letter of commitment for the proposed project from each of the applicant organizations is required. An official of the applicant organization(s) must sign the letters of commitment. Include a statement of organizational commitment to the proposed project beyond the required matching monies and equipment. This should not be a form letter but specific to the application. It should include specific organizational commitments to the project for such items as equipment, computer services, facilities, release time for key personnel, or secretarial and technical support that the organization(s) will provide for the project.

30. *Current OCAST Support. Required Attachment (if applicable)*

Two page maximum per project.

- A. Current recipients of OCAST funding must include a listing of the support by the project number, the type of support (OPSR Proof of Concept, OPSR Accelerated, Oklahoma Applied Research Support (OARS), Intern Partnerships, Health Research, SBRA, Alliance, TBFP, etc.), the number of years approved, and the total amount of funding.
- B. Give the date of the last annual progress report and summarize the progress since the report.
- C. Describe any product, process, or service that has been (or will be) commercialized.
- D. Provide business and financial impacts produced and expected, such as sales, capital investments, cost-avoidance, jobs, dollar amounts of any royalties and license agreements.
- E. Describe any economic benefits to Oklahoma that have occurred or are expected to occur.
- F. List federal or other grant support obtained based on this OCAST support.
- G. List collaborating organizations.

31. *Previous OCAST Support. Required Attachment (if applicable)*

Two pages maximum per project.

- A. Previous recipients of OCAST funding must include a listing of the support by the project number, the type of support (OPSR Proof of Concept, OPSR Accelerated, Oklahoma Applied Research Support (OARS), Intern Partnerships, Health Research, SBRA, Alliance, TBFP, etc.), the number of years approved, and the total amount of funding.
- B. Give the date of the final progress report and summarize the progress since the report.
- C. Describe any product, process, or service that has been (or will be) commercialized.
- D. Provide business and financial impacts produced and expected, such as sales, capital investments, cost-avoidance, jobs, dollar amounts of any royalties and license agreements.
- E. Describe any economic benefits to Oklahoma that have occurred or are expected to occur.
- F. List federal or other grant support obtained based on previous OCAST support.
- G. List any previous collaborating organizations.

32. *Other Support. Required Attachment (if applicable)*

For each of the professionals involved in the project prepare a list of other support related to this proposal. Include all federal, non-federal, and institutional grant and contract support.

- A. Describe any active support.
- B. Describe pending review or funding.
- C. Describe applications planned or being prepared for submission.
- D. List any grants or contracts that have been received, excluding OCAST.

33. *Commercialization Development Strategy of the R&D.* Required Attachment *Four pages maximum.*

- A. Describe in a short sentence the product, process or service to be commercialized and its end use.
- B. Describe the customers or clients.
- C. Describe the domestic and global markets to be served including market size, market growth rates, number and nature of competitors and any important market information.
- D. State the competitive advantage the project offers in the targeted markets.
- E. Using a chart or table, describe the key steps required to commercialize the product, process or service and corresponding plan of action for successful project commercialization. This plan should include a schedule of key business milestones and the indicators of successful achievement of each milestone. Include how success is measured. The schedule should be prepared in a style where it can be used in annual and final reports to show progress.
- F. Provide summary pro forma income statements and cash flow projections for the proposed new product, process or service.

34. *Intellectual Property Relationships and Protection.* Required Attachment *Two pages maximum.*

The OPSR application requires assurance the collaborating parties have adequately addressed the ownership and disposition of patents, royalties and all other intellectual property rights related to the proposed research project.

- A. Describe the plan to protect the intellectual property generated from this research project.
- B. For collaborative proposals, e.g., subcontractors, firms and a university, university and a not-for-profit research center, or two firms; provide a short statement describing how the intellectual property patent and licensing agreements will be effectuated between co-investigators, applicant organizations and sponsoring entities. If all relationship and licensing agreements are in place write a short statement indicating the types of agreements that have been executed between the parties. For proposals in which only one entity is involved, a statement such as “This proposal is from a single entity and the firm owns all intellectual property generated by its employees” will suffice.

35. *Company Profiles.* Required Attachment. *Maximum two pages for each company.*

Provide a profile of each company involved in the project. Each profile should include a description of the company including financials in the public domain. Provide web addresses and stock symbol if applicable.

36. *Economic Impact Statement.* Required Attachment. *Maximum four pages.*

Discuss the project’s potential impact on Oklahoma’s economy during the project and at 2, 5, and 10 years following the project. If the project will not be commercialized within 2 years of completion explain why additional time is needed. Evaluate national and international growth potential markets of this project.

Carefully discuss under a separate heading for each time period items A. through G., during the project, and at 2, 5, and 10 years after completion, the potential regarding the following:

- A. Increase in scientific and technical staffing levels over the time periods specified above. This includes student/post-doctoral associates gaining technical expertise.
- B. Increase in work force staff over the time periods specified above.
- C. Productivity, profitability or cost savings over the time periods specified above.
- D. Amount of capital investment in equipment and facilities at the organizations participating in the project over the time periods specified above.
- E. The estimated gross sales, net sales, and cost avoidance over the time periods specified above.
- F. If applicable, describe technology transfer plans over the time periods specified above.
- G. Other sources of funding and capital attracted to Oklahoma as a result of the project over the time periods specified above.

37. *Matching Funds.* Required Attachment *Maximum one page.*

Submit a brief statement describing how the matching monies – industrial, private or federal – are provided under terms that explicitly encourage future commercialization.

38. *Research Plan.* Required Attachment *Maximum 15 pages.*

- A. Objectives for the period of the proposed work: State concisely what the research described in the application is intended to accomplish or what hypothesis is to be tested.
- B. The significance of the research:
 - i. Briefly sketch the background of the present proposal.
 - ii. Evaluate existing knowledge in this area and identify the gaps that this project intends to fill.
 - iii. State the importance of this research by relating its aims to longer-term objectives.
 - iv. Present related projects and demonstrate this effort does not repeat previous studies nor infringe on intellectual property rights granted to other workers and firms.
- C. Preliminary and related studies:
 - i. Describe prior research by the investigator(s) that lead to formulating the proposal.
 - ii. Include any additional information that will assist reviewers in assessing the competence of the investigator(s) who will perform the proposed project.
- D. Research methodology and timetable:
 - i. Detail the research design and the procedure to accomplish the objectives of this research. This includes a discussion of alternate paths to attain the objectives if the initial procedure does not allow the goal to be reached. Relate the discussion to the timetable in Section D.vi. below.
 - ii. Describe the sequence of the investigation within a calendar framework.
 - iii. Describe the means by which the data will be analyzed and interpreted.
 - iv. Discuss the methodologies and any potential limitations of the proposed procedures and alternative approaches that may be used to reach the objectives of this proposal.
 - v. Note any procedures that may be dangerous to personnel and the precautions that will be used in these situations.
 - vi. Include indicators of success. This section should relate to Sections D.i., D.ii, and D.iii. above. The timetable should be prepared in a style where it can be used in the annual and final reports to show project progress as well as the work plan for

subsequent years. The timetable should include such activity as report writing and equipment purchasing schedules; however, most important is to show research goals and the alternate path(s) if the research goal is not attained.

- vii. Using the heading “Facilities, Equipment and Resources” describe the resources necessary and available for this project.

39. Collaborative Relations. Required Attachment (if applicable)

If there is more than one investigator, include the work statements or research obligations of each. In addition, describe and document any substantial collaboration with individuals not referred to in the budget with a letter from each collaborator.

40. Literature Cited. Required Attachment

The literature cited does not count toward the page limitation; however, only relevant and important citations should be compiled. Do not scatter citations throughout the text. Number the references in order of appearance, and provide the complete citations, which correspond to the numbers, in a list at the end of the Research Plan section. Each citation must include the title of the journal article or specific book chapter. While disciplines vary in the accepted style, the citation must be sufficient for a reviewer to locate the cited information with little searching. Seldom would a book, without a specific page reference, be a suitable citation.

41. Appendix I. IRB approvals and Certification Information. Required Attachments (if applicable)

Special Note on IRB Approvals and Certifications

No OPSR award will go to contract without IRB 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

If an IRB approval or certification is available it should be submitted at the time of the application. However, the approvals and certifications are not required to be included in the application proposal. Following OCAST’s peer review and Board approval, awardees have 90-days from the date of the award letter to submit the required IRB approvals and certifications.

THE INFORMATION LISTED BELOW (A – E) SHOULD BE SUBMITTED WITH THE APPLICATION since they are often an essential part of the experimental design. The lack of this information may jeopardize an otherwise excellent proposal during the review.

IMPORTANT NOTE : For Items 14-19, Regulatory Compliance, enter and complete all information. Indicate whether or not human subjects, vertebrate animals, recombinant DNA and/or biological hazards will be used in the proposed project. It is the responsibility of the PI and the applicant organization to ascertain that state and federal requirements are met. The PI and the applicant organization must supply evidence of compliance, qualification and/or license(s). The appropriate Institutional Review Board (IRB) must certify and approve projects involving human subjects, vertebrate animals, and/or recombinant DNA prior to contract.

A. HUMAN SUBJECTS, HUMAN DERIVED MATERIALS OR HUMAN DATA. If human subjects, human derived materials or human data are to be used in this project, provide the following information:

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1. The sources of the potential subjects, derived materials or data; the characteristics of the subject population, including the anticipated number, age, gender, ethnic background and state of health; the criteria for inclusion or exclusion; 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.
2. 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.
3. Any potential risks--physical, psychological, social, legal or other--and their likelihood and seriousness; any alternative methods that were considered and why they need not be used.
4. The procedures for protecting against or minimizing any potential risks including their likely effectiveness, the confidentiality safeguards where relevant, and the arrangements for providing medical treatment if needed.
5. 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.
6. The risks in relation to the anticipated benefits to the subjects and to society.

Research on human subjects, derived materials or data utilizing resources awarded under OPSR must follow federal guidelines as promulgated in 45 CFR except that 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 the Office of Human Research Protection, <http://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 which is defined 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 OCAST; as stated above, none of the funds available through OCAST "shall 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 certification of institutional review and approval regarding use of human subjects must be submitted prior to contract.

B. VERTEBRATE ANIMALS. If vertebrate laboratory animals are to be used in this research project, provide the following information:

1. The species, strains, ages, and numbers of the animals involved; the rationale for their use and their numbers if the animals are in short supply, costly or to be used in large numbers.
2. The procedures for adequate care of any animals involved.
3. 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.

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 organization must duly constitute a review committee to assist in assuring humane treatment and care of animals. The certification of institutional review and approval regarding use of vertebrate animals must be submitted prior to contract.

C. RECOMBINANT DNA. If recombinant DNA will be used in the project make sure to address the level of containment to be used and why this level is appropriate for the proposed project. Applicant organizations are required to comply with federal guidelines regarding the application of recombinant DNA technology as of the date of application submission. The certification of institutional review and approval regarding use of recombinant DNA technology must be submitted prior to contract.

D. BIOLOGICAL HAZARDS. Identify potential biological hazards, explain the procedures to protect individuals from infection or injury, state the level of containment to be used and explain why it is appropriate. 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. Biological hazards must be satisfactorily addressed prior to contract.

E. NARCOTICS AND DANGEROUS DRUGS. The use of narcotics and dangerous drugs is regulated by the Oklahoma State Bureau of Narcotics and Dangerous Drugs and the Drug Enforcement Administration of the U. S. Department of Justice. The individual organization, under whose auspices narcotics or dangerous drugs will be used, must be identified. If these substances will be used in the project, the PI must: (1) check "yes" on Item 18. and (2) include a letter in an appendix that is attached to the application and identified as Appendix I. The letter must state the registration number with the Oklahoma State Bureau of Narcotics and Dangerous Drugs and the U. S. Drug Enforcement Administration. If the registrant is not the PI, the PI must (1) provide the registrant's name, title, address and phone number in Item 18 and (2) submit a letter from the responsible individual that: (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. Item 18 must be satisfactorily completed prior to contract.

F. RADIOISOTOPES. 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 complete Item 19. If the responsible individual is someone other than the PI, include a letter in Appendix I that grants permission for the use of

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radioisotopes in this project under this license. Item 19 must be satisfactorily completed and the required letter submitted, if appropriate, prior to contract.

42. *Additional Appendices: Other materials, including resubmissions.* Required Attachment if resubmitting a proposal

Materials required for resubmissions are to be placed in Appendix II (see Instructions pages 5-6). All other materials placed in Appendix III must be limited to those relevant and essential to the proposal and may not exceed five (5) pages maximum printed only on the front side. Detailed vitae or resumes must not be included in the appendices.

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