



**UPAIR – University Partnership with Industry Research Program**

**Program Description, Proposal Preparation and Submission Instructions  
(aka Program Guidelines)**

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**Table of Contents**

<b>1. BACKGROUND INFORMATION ON ISSUING AGENCY</b> .....	<b>1</b>
1.1 GENERAL INFORMATION ABOUT KSTC AND KSEF.....	1
1.2 KSEF UNIVERSITY PARTNERSHIP WITH INDUSTRY RESEARCH (UPAIR) PROGRAM.....	1
<b>2. THE REQUEST FOR PROPOSAL (RFP)</b> .....	<b>1</b>
2.1 PROGRAM TYPE AND ISSUING OFFICE.....	1
2.2 PURPOSE OF PROGRAM .....	1
2.3 FUNDING AVAILABILITY AND STIPULATIONS.....	2
2.4 AWARD PROCESS .....	2
2.5 RESEARCH FOCUS AREA PRIORITIES.....	4
2.6 APPLICATION AND AWARD PROCESS BY PHASE.....	4
<b>3. ELIGIBILITY, PROCEDURES &amp; SUBMISSION REQUIREMENTS</b> .....	<b>5</b>
3.1 ELIGIBILITY .....	5
3.1.1 <i>Universities and Colleges</i> .....	5
3.1.2 <i>For-profit Organizations</i> .....	5
3.1.3 <i>Limit on Number of Applications and Awards per RFP</i> .....	5
3.2 APPLICATION SUBMISSION REQUIREMENTS.....	6
3.3 SUBMISSION DEADLINES.....	6
3.4 ONLINE SUBMISSION REQUIREMENT.....	6
3.5 CONFIRMATION OF ONLINE SUBMISSION AND INTERNAL REVIEW RESULTS.....	6
3.6 PROGRAM CONTACT (UPDATED 04/25/18).....	7
3.7 ACKNOWLEDGEMENT OF RECEIPT .....	7
<b>4. APPLICATION PREPARATION AND SUBMISSION</b> .....	<b>7</b>
4.1 PROPRIETARY OR PRIVILEGED INFORMATION .....	7
4.2 INTERNAL ADMINISTRATIVE REVIEW OF APPLICATION .....	7
4.3 ENGAGEMENT AND PARTNERSHIP PROCESS.....	8
4.4 APPLICATION CONTENT .....	8
4.5 SECTIONS OF THE PROPOSAL.....	9
4.5.1 <i>Proposal Cover Sheet</i> .....	9
4.5.2 <i>Project Summary: Abstract</i> .....	10
4.5.3 <i>Impact Statement</i> .....	10
4.5.4 <i>Proposal Budget (UPDATED 04/25/18)</i> .....	10
4.5.5 <i>IDEATE Phase Technical Section</i> .....	12
4.5.6 <i>Facilities, Equipment, and Collaborations</i> .....	12
4.5.7 <i>Current and Pending Support</i> .....	12
4.5.8 <i>Biographical Sketches</i> .....	13
4.5.9 <i>External Services and Consultant Commitment</i> .....	13
4.5.10 <i>Tasks, Deliverables, and Gantt Chart (UPDATED 04/25/18)</i> .....	13
4.5.11 <i>Files and Attachments</i> .....	13
4.5.12 <i>Suggested Reviewers and Conflict of Interest</i> .....	14
4.6 APPLICATION FORMAT AND ORGANIZATION.....	14
4.7 OFFICIAL SUBMISSION OF COVER SHEET AND BUDGET PAGE.....	15
4.8 INTERNAL REVIEW OF SUBMITTED APPLICATION .....	15
<b>5. REVIEW PROCESS, AWARD SELECTION, AND ADMINISTRATION INFORMATION</b> .....	<b>18</b>
5.1 PROPOSAL EVALUATION .....	18
5.1.1 <i>Criteria for Evaluation</i> .....	18
5.1.2 <i>Summary Ratings</i> .....	18
5.2 PRINCIPALS OF THE PROPOSAL SELECTION CRITERIA .....	19
5.3 NOTIFICATION OF AN AWARD .....	20
5.4 AWARD CONDITIONS (UPDATED 04/25/18).....	20

5.5 AWARDEE RESPONSIBILITIES .....20

5.5.1 *Acceptance of Proposal Content*.....20

5.5.2 *Fulfillment of the Project Personnel*.....20

5.5.3 *Presentation Requirements* .....21

5.5.4 *Reporting Requirements* .....21

5.5.5 *Publication and Presentation Acknowledgement*.....21

**6. FUTURE REQUESTS FOR PROPOSAL.....22**

## 1. Background Information on Issuing Agency

### 1.1 General Information about KSTC and KSEF

The Kentucky Science and Engineering Foundation (KSEF) was created as an instrument to increase Kentucky's capacity to attract research funding to the Commonwealth and become a leader state in competitive research. KSEF was entrusted to make state-funded investments in peer-reviewed research and development activities to promote innovation, human resource development, and to accelerate the rate of success in securing Federal and private sector funds to support R&D work in Kentucky (KIA 2000, Section 22).

KSEF is an initiative of the Kentucky Science and Technology Corporation (KSTC) and it is managed in partnership with the Council on Postsecondary Education (CPE). KSTC is a private nonprofit enterprise founded in 1987 to enhance the capacity of people, firms, and organizations to use science and technology and to effectively and responsibly compete in the global market place.

KSEF is building an ecosystem of scientists, innovators and community builders, investors and service providers that will take advantage of scientific discovery to develop the next generation of technology-based companies.

### 1.2 KSEF University Partnership with Industry Research (UPAIR) Program

KSEF's University Industry Research Partnership (UPAIR) Program is a gated, three-phase program based on milestone achievement evaluated by peer and panel review. The program supports unique research ideas that engage researchers from academe and industry, provide project-based research learning experiences for students, and promote innovation and increase Kentucky's research capacity. The desired outcome of the program includes the development of a system of opportunities in which students are incorporated into the researcher enterprise, expanding the entrepreneurial and technological development capabilities of our workforce and institutions, and a strong private-public R&D infrastructure.

## 2. The Request for Proposal (RFP)

### 2.1 Program Type and Issuing Office

Program Title:	KSEF University Partnership with Industry Research Program (UPAIR)
Award type:	Contract
RFP Issuing Office:	Kentucky Science and Technology Corporation 200 West Vine Street, Suite 420 Lexington, KY 40507 859.233.3502

### 2.2 Purpose of Program

The purpose of KSEF's University Industry Research Partnership (UPAIR) program is to expand Kentucky universities and colleges' capacity to innovate and cultivate a competitive industry-ready workforce by encouraging our research enterprise to engage on academe-industry partnerships. The program will enable university and college scientists to align their research to areas of interest to industry, engage

industry interested in collaborating on precompetitive industrially-inspired R&D, and finally form an academic-industry partnership to perform research in science, engineering, and technology areas of interest to the partnership. Ultimately, the program seeks to establish lasting partnerships between academe and a community of industries and national labs, driving innovation and commercialization efforts to benefit Kentucky's economy.

The program seeks to make high-risk investments that will help Kentucky to become a leader in science and technology (S&T) developments that have industrial potential. The program solicits applications in most scientific research topics with promising societal impact. For programmatic purposes, applications should be categorized within one of the following five areas: Biosciences, Human Health and Development, Information Technology and Communications, Environmental and Energy Technologies, and Materials Science and Advanced Manufacturing.

### **2.3 Funding Availability and Stipulations**

The program will issue a request for proposals (RFP) for awards of **up to \$200,000** maximum total amount awarded over 24 months, divided into three gated phases. Applications will only be accepted during an open RFP solicitation period. The three phases of the program, named IDEATE, ENGAGE and PARTNER, will have individual peer-reviewed evaluation of proposed activities, follow-on plan and milestones reached. Each juncture constitutes a go/no-go stage, that is, progress and future plan evaluation will be required every six months. Each of the three phases will extend for 9 to 12 months to ensure there is no funding gap between phases. Matching Funds are not required. Funding is open to Kentucky Universities and Colleges ONLY. Award funds must be used to perform R&D work at the academic institution (some exclusions such as external lab services apply, please inquire) or by undergraduate, graduate students and personnel paid by the academic institution.

The processing of applications and the decision on awards is subject to the availability of funds from the Commonwealth of Kentucky. The most currently issued RFP will contain details on current total maximum award size, individual stage maximums, and eligibility restrictions. The funding made available by KSEF is not designed to support research currently supported through other means. The idea must be new and novel, and with the potential to lead to a partnership with industry.

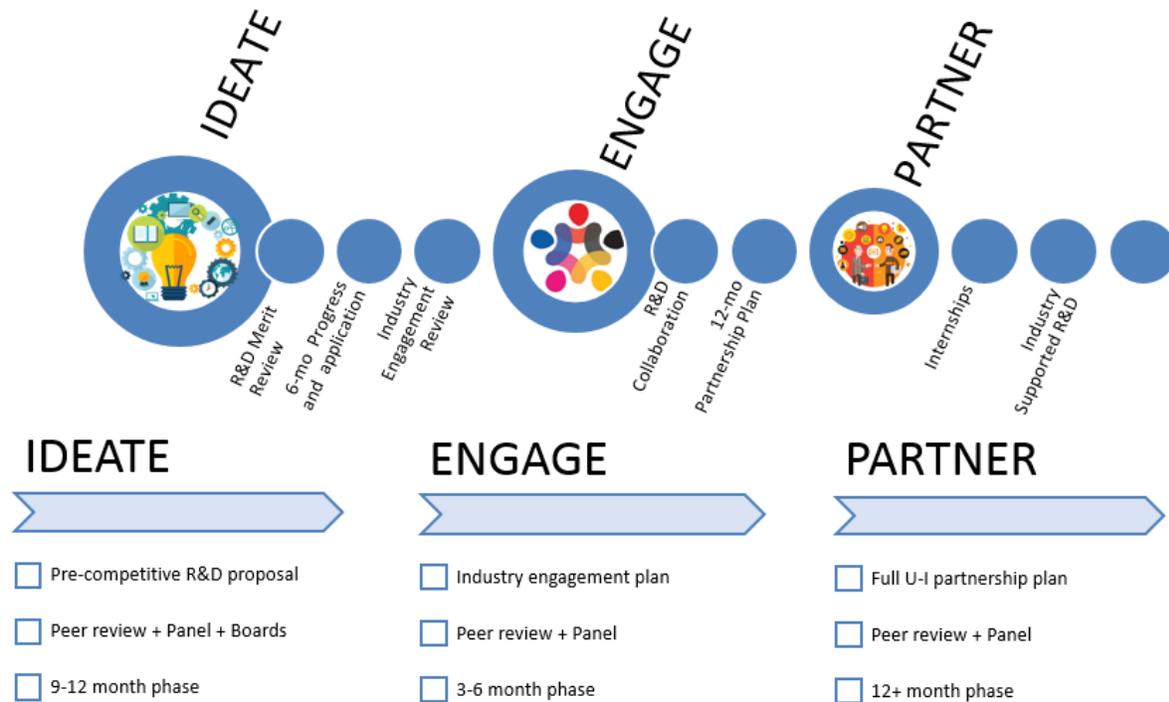
PIs (including Co-PIs) who are delinquent on reporting commitments to any of the KSEF/KSTC managed programs are not eligible to apply. Reporting requirements must be in compliance before an application will be entertained. Re-submission of a proposal that was previously not selected for funding is not allowed.

### **2.4 Award Process**

Applications are accepted from scientists and engineers at universities and colleges in Kentucky. A depiction of the grant process and the three stages is summarized in the graphic below. Solicitations are open ONLY for the IDEATE Phase or the initial phase. Awardees of the IDEATE Phase will be asked to submit an industry engagement plan at six months; a review panel will determine which IDEATE awards will move on to the ENGAGE Phase (second phase). At 12 months awardees participating will be eligible to submit a full partnership plan (PARTNER Phase). A Peer Review and Panel Review will determine which awardees move on to the final phase based on the partnership plans submitted. IDEATE Phase awardees who were not ready to apply for ENGAGE Phase at six months but have formed partnerships with industry, may be allowed to apply provided Partnership Phase requirements are met and

authorization is sought on time and in writing from KSEF's Executive Director.

# Milestones & Requirements



## IDEATE (1<sup>st</sup> Phase)

KSEF welcomes proposals for original research projects that propose high-risk, untested novel solutions to urgent societal and industry problems. The research ideas will be basic or applied in nature but guided and inspired by industry needs. The ideas proposed should generate knowledge with industry relevance. The value created and impact of the IDEATE project would be in the form of preliminary results that would substantiate an industry engagement in the form of letters of shared R&D interest. Collaboration with national research labs are encouraged in all phases of the program. Early engagement with national laboratories are most impactful. Project results are likely to be used in competing for federal and industry funds, they may also lead to the publication of new concepts with an industry partner.

The IDEATE project should describe a current industry and industrial problem to solve, propose future of innovation that will help industry, and describe the pains that their research aims to alleviate. In some instances, if an industry partner has already been engaged, the IDEATE project should include a description of the market segment the partners work with or wishes to expand into.

Project results will serve to help establish preliminary engagements with industry, and national laboratories, and guide the future of mutually supported research projects.

The most competitive proposals would include letters from industry colleagues expressing their interest in the line of work, and how the new knowledge could positively affect (e.g. pivot, reduce the risk of new lines of work, increase value of current work) their industry and their own lines of research,

potentially offering in-kind support. Letters of support from national laboratories are also encouraged. National lab investigators already partnering with industry could be partners on UPAIR proposals.

### **ENGAGE (2<sup>nd</sup> Phase)**

This phase is only open to IDEATE awardees. Successful IDEATE awardees will be encouraged to submit an ENGAGE proposal together with their six-month technical progress report. While during the IDEATE phase, the applicant's proposal envisioned solutions with industrial relevance, during the ENGAGE phase, applicants must have substantiated an agreement with industry to pursue lines of research of mutual interest. A successful ENGAGE proposal will include relevant letters of support from industry partners. The applicant will also be required to provide a university commitment and acknowledgement of university policies being fulfilled. At this stage, the applicant must have a conflict of interest management plan in place (i.e. a document drafted by the university that outlines how the university employees should manage working with the private partner). If appropriate, the applicant may also include the agreement on management of new discoveries and shared intellectual property (a requirement to apply for the last program phase).

### **PARTNER (3<sup>rd</sup> Phase)**

This phase is only open to IDEATE and/or ENGAGE awardees. ENGAGE awardees and IDEATE awardees who did not submit an ENGAGE proposal, will be eligible to submit a PARTNER proposal together with their technical progress report. This phase of the program seeks to support teams who have established a line of research of interest to industry. This phase of the program seeks to fund partnership that leverage the talent and resources of academe and industry, potentially generate advancements in technology, enhance R&D capacity of the state and cultivate a relevant, industry-ready workforce. An ideal PARTNER proposal would consider leveraging KSEF funding with the academic partner providing research infrastructure, human capital and expertise, and the industry partner providing in-kind support such as expertise relevant to industry R&D, opportunities for undergraduate and graduate workforce training, skill development and potential job placement. The synergistic activities within the partnership should aim to bridge the gap between academic and industry research. The types of technologies aimed at developing should be meaningful to industry and society.

## **2.5 Research Focus Area Priorities**

KSEF's portfolio is broad and diverse, addressing many fields and activities. Awards are made for the most promising ideas, selected through merit review of competitive applications for new and emerging opportunities, within and across all fields of science and engineering (i.e. in the five research areas: Biosciences, Environmental and Energy Technologies, Human Health Development, Information Technology and Communications, and Materials Science and Advanced Manufacturing). Proposals are expected to address precompetitive research areas identified among the S&T priorities for the state and the nation. Kentucky's Science & Technology plan targets include advanced manufacturing, sustainable manufacturing, life science and information and data center technologies, transportation distribution and logistics, and healthcare services. Currently, our state has budding research clusters in various parts of Kentucky with research areas of interest including education technologies, human health technologies, agriculture technologies, aerospace and defense engineering, artificial intelligence and augmented reality, and materials sciences.

## **2.6 Application and Award Process by Phase**

Phase	Description	Eligibility	Duration
IDEATE (1 <sup>st</sup> Phase)	Technical description of a R&D idea with urgent industry and societal impact.	Universities and Colleges ONLY	6-12 months
ENGAGE (2 <sup>nd</sup> Phase)	Plan to further align R&D for full engagement with industry (at six months)	IDEATE Awardees ONLY	3-6 months
PARTNER (3 <sup>rd</sup> Phase)	Full partnership plan with industry and future industry supported R&D (at 12-months)	IDEATE OR ENGAGE Awardees ONLY	12 months

### 3. Eligibility, Procedures & Submission Requirements

#### 3.1 Eligibility

##### 3.1.1 Universities and Colleges

KSEF welcomes applications from faculty who have a regular tenured or tenure-track appointment, or independent investigators with their own research lines and assigned laboratory space and funding, employed at any accredited Kentucky college or university.

Research faculty and independent researchers performing research activities within a center or institute under dependency of a director (or chief scientist), a letter from the center director certifying that the PI is an independent scientist/engineer who directs his/her own and others research, and manages his/her own project budget, should be provided for eligibility consideration by KSEF. This letter should be uploaded as an attachment properly labeled and will not count towards the maximum number of pages. It will be deleted after confirmation of appointment eligibility.

Adjunct faculty members, post-doctoral fellows, or graduate students are not eligible to act as a PI or Co-PI.

##### 3.1.2 For-profit Organizations

For-profit organizations are not eligible to apply as the leading institution. They may act as Co-PI or be part of the proposed partnership plan.

##### 3.1.3 Limit on Number of Applications and Awards per RFP

To apply, a proposal must be submitted during the open IDEATE solicitation timeframe. Only one proposal may be submitted per PI or Co-PI per round. No applicant may submit more than one proposal as PI or Co-PI per round.

The PI or Co-PIs or team members must be in good standing with all KSTC/KSEF managed programs. In other words, any applicant (PI, Co-PI or team member) delinquent on their reporting commitment with any of the KSTC/KSEF-managed programs must fulfill all award agreement requirements (e.g. reporting

requirements) before they are eligible to apply.

### 3.2 Application Submission Requirements

A printable PDF file of the application will be generated by the online application. The cover page and budget page for the application should be signed and delivered to the university grants management office or authorized official for further processing. The authorized official of the applying institution designated to bind the applicant to the budget and the RFP provisions will sign and deliver a high-quality scanned color PDF copy via email to KSEF's Program Manager at [KSEFpm@kstc.com](mailto:KSEFpm@kstc.com) **before the deadline posted on the current RFP.**

**NOTICE:** The applicant is responsible for submitting an original copy of the Cover Page and Budget page to an authorized official with sufficient time in advance. The authorized officials will sign email high-quality color copies to KSEF's Program Manager at [KSEFpm@kstc.com](mailto:KSEFpm@kstc.com). ONLY emailed signed/scanned copies of these documents are required. Emails containing such cover page and budget page should originate from the appropriate university office **ONLY**.

### 3.3 Submission Deadlines

The PI must submit an application via KSEF's online site <http://applications.kstc.com>, and the signed cover and budget pages (via authorized officer) to be received on or before the deadlines published on the RFP.

### 3.4 Online Submission Requirement

The application for the IDEATE Phase is submitted online through <http://applications.kstc.com>. To access a new application form, the PI is required to use her/his ID and password. Before creating a new account, please confirm if the PI is already registered with the KSTC databases. To do so, click on the appropriate link found below the login window. **If the PI is registered**, an entry exists for the PI within the KSEF/KSTC databases, the PI's e-mail will be recognized by the application software and an electronic confirmation containing the PI's user ID (e-mail address) and password will be sent to the PI's registered e-mail address, directly. **If the PI is NOT registered** within the KSTC databases (i.e. the PI has never submitted a previous application or has never attended any event organized by KSEF or KSTC), the PI will need to create a new account. Return to <http://applications.kstc.com> and create a new account following the link found below the log-in window.

The PI's permanent ID and password are, and will remain, linked to all past and future submissions including a proposal for a solicitation. Creating new identities when already registered with the KSTC databases may result in failure to access the PI's applications in the future.

The PI is responsible for securing his/her password to protect information on the application and outcome including the access to reviewers' comments by unauthorized people. Sharing of the password with others is the responsibility of, and at the discretion of, the PI.

### 3.5 Confirmation of Online Submission and Internal Review Results

The application will be received through the online application site once the applicant clicks "Review and Submit" and confirms submission intent. An email confirmation containing a time stamped copy of the

submitted proposal will be sent to the registered PI's email. Proposals submitted on time will undergo an internal administrative review. Confirmation of internal administrative review results, including timely receipt of signed cover page and budget page, will be posted on the application site as Application **Accepted or Not Accepted** of the submitted proposal.

### **3.6 Program Contact (UPDATED 04/25/18)**

Applicants may email the KSEF Staff with any questions regarding the program or the application process. Questions will be answered in the order they were received until the deadline for question submission is reached.

The KSEF Team, KSEF Program Manager  
Kentucky Science and Technology Corporation  
email: [KSEFpm@kstc.com](mailto:KSEFpm@kstc.com)  
phone: 859.246.3232 (for urgent needs only)

### **3.7 Acknowledgement of Receipt**

Upon finalizing the submission process, and if the submission occurs before the posted submission deadline, the online application site will automatically generate a PDF file of the submitted proposal with a time stamp. An automatically generated email containing a copy of the application proposal will be sent to the PI and KSEF Program Manager. Should the PI not receive such confirmation email, please contact KSEF Staff ([KSEFpm@kstc.com](mailto:KSEFpm@kstc.com)).

## **4. Application Preparation and Submission**

### **4.1 Proprietary or Privileged Information**

The abstract submitted with the application will be used to share with all potential reviewers. No proprietary ideas, trade secrets, privileged or confidential commercial or financial information that are not yet protected should be included in the abstract.

The application should not contain proprietary ideas unless it is necessary to convey an understanding of the proposed project. Clearly mark sections in the application that are considered proprietary or privileged information. Review the final document and verify that the sections intended to be protected are unmistakably marked. Should the application contain proprietary information, verify that the question on "Proprietary and Privileged Information" found on the Project Information section of the online application has been checked. KSEF will make every reasonable effort to prevent unauthorized access to such material. KSEF will disclose the proposal to assigned external reviewers for evaluation and to KSEF staff for administrative review. KSEF/KSTC is not responsible or liable for the unauthorized release of such material by another party.

### **4.2 Internal Administrative Review of Application**

Applications submitted on time undergo a three-tier administrative review process. Submitted applications are first reviewed by the KSEF Program Manager and the KSEF Executive Director, separately. The results of this first review are combined, discussed, and summarized. Summary information is presented by the KSEF Executive Director to KSTC's President and KSTC's Senior Vice

President for discussion. Applications that do not comply with program, eligibility and/or format requirements are individually scrutinized by the internal review staff members to ensure the application of guidelines across the board and in a fair manner. Final decisions to award an application are determined through a peer review and panel review, confirmed by the KSEF Advisory Board, and approved by the KSTC Executive Committee of the Advisory Board.

### **4.3 Engagement and Partnership Process**

Only proposals awarded funding during the IDEATE or first application phase will be eligible for the ENGAGE and later for the PARTNER phase.

At six months from the commencement of the contract, awardees will submit a milestone achievement report (technical report) and a collaboration and engagement agreement plan with industry. A panel will review the engagement plan and will determine the most competitive proposals to continue to the ENGAGE phase.

At 12 months from commencement of the contract, successful ENGAGE phase awardees, will submit milestone achievement report (technical report) and a full partnership plan. A panel will review the industry partnership plan and will determine the most competitive proposals that will continue to the PARTNER phase.

The purpose and requirements for the engagement plan and partnership plan are briefly summarized in the following sections. A detailed submission guideline will be provided to awardees only.

### **4.4 Application Content**

The proposed application should present the objectives and scientific or technological significance of the proposed work, suitable methods to be employed, qualifications of the investigators and the applicant organization, effect of the activity on the advancement of science and engineering, and amount of funding required. It should present the merits of the proposed project clearly and should be prepared with the care and thoroughness of a proposal as submitted to a federal agency. The information provided should be sufficient for external reviewers to evaluate the proposal based on its merit.

Applications are received **only** at the IDEATE phase. However, the overall goal of the program must be reflected and present on the narrative of the IDEATE application. The purpose of KSEF's UPAIR program is to expand Kentucky universities and colleges' capacity to innovate and cultivate a competitive industry-ready workforce by encouraging our research enterprise to engage on academe-industry partnerships. The funds should enable university and college scientists to align their research to areas of interest to industry, engage industry interested in collaborating on precompetitive industrially-inspired R&D, and finally form an academic-industry partnership to perform research in science, engineering, and technology areas of common interest. Ultimately, the program seeks to establish lasting partnerships between academe and a community of industries and national labs, driving innovation and commercialization efforts to benefit Kentucky's economy.

The program seeks to make high-risk investments that will help Kentucky to become a leader in science and technology developments that have industrial potential. The program solicits applications in most scientific research topics with promising societal impact.

IDEATE Phase is to identify and research a new idea while establishing relationships with industry. For the ENGAGE Phase, the main goal is to further explore the idea with support from industry while developing a collaboration agreement and partnership plan. The main input of the PARTNER Phase is the full partnership plan. Only IDEATE Phase awardees will be eligible to compete for the second phase, or ENGAGE Phase, and subsequent third phase, or PARTNER Phase, and will be contacted directly with application requirements. For reference, the general outline of the three-phase gate process is depicted on page 3.

For programmatic and data analysis purposes, applications should be categorized within one of the following five areas: Biosciences, Human Health and Development, Information Technology and Communications, Environmental and Energy Technologies, and Materials Science and Advanced Manufacturing.

#### **4.5 Sections of the Proposal**

A printable file will be generated as the last step during the online submission process. This file will contain the sections described below and will be available for the PI's review prior to final submission.

##### **4.5.1 Proposal Cover Sheet**

The proposal file generated will have a Cover Sheet where the PI's and Co-PI's names and contact information will be summarized. In addition, the Proposal Cover Sheet will reflect the grant category, research focus area, and target area (if applicable) for which the PI is applying as well as the title of the proposal, which should be, along with the requested budget amount and identification of potential or established industry partners.

The name and contact information of the official authorized to commit the organization in business, financial, and legal affairs will also be given on the Cover Sheet. An original signature of the authorized official is required.

The following information is needed, and in some cases required, for preparation and submission of the application (\*\*).

- **Principal Investigator (PI) Information**
  - PI Name, position held\*, and all contact information are required (\*unless Assistant, Associate, Full Professorship position, eligibility proof is required. See Section 3.1).
  - A website address (not required).
  - Mailing address (physical address, not post-office box).
  - PI KSEF and KSTC funding history – Is this the first time you (PI) have applied to a KSEF call for proposals? Have you (PI) ever been funded by KSEF before? Have you (PI) been funded by any other KSEF or KSTC programs?
  
- **Project Information**
  - Research focus area: select one option from Biosciences, Environmental and Energy Technologies, Human Health Development, Information Technology and Communications, and Materials Science and Advanced Manufacturing
  - Title: should be representative of the proposed work and brief.
  - Project duration and total amount of funds to be requested (consult the current RFP).

- Proprietary content.
  - Eligibility criteria (consult the current RFP) – PIs should be able to confirm all eligibility criteria to be considered for submission.
  - Abstract- summary of the proposed work in **300 words or less**
  - Five key words or terms that specifically describe the project.
  - Five specific key areas of research expertise as words or phrases (different from keywords) that describe potential reviewers' areas of work. KSEF will use this information to identify appropriate reviewers (suggested reviewers see section 4.5.12)
- **Co-PI(s) Information (if applicable)**
- PI Name, position held, and all contact information are required.
  - Mailing address (physical address).

\*\*Applications with any required missing information may be electronically and automatically disqualified.

#### 4.5.2 Project Summary: Abstract

A non-confidential project summary (maximum of 300 words), must be provided. By default, the online submission tools will auto-populate this section (Project Information- Abstract) with the abstract submitted with the application. It is advisable to revisit this section to better represent the application. The summary should provide rationale, vision, distinguishing features, statement of objectives and proposed activities that support innovation and transition to an industry partnership. It should also provide methods to be employed and the impact of the proposed activity on the advancement of new ideas and development of new technologies to solve a problem. The description should present the objectives and scientific or technological significance of the proposed work, brief overview of suitable methods to be employed, relevance to the program and anticipated impacts.

Please remember, information provided in the abstract should be non-confidential. Abstracts are shared with all contacted reviewers. If an award is made, the abstract will also be made public via our websites.

#### 4.5.3 Impact Statement

A public statement addressing the potential societal impacts of the proposed research must be provided. In a short statement (maximum of 150 words), describe how your proposed research may, in the long term, will lead to disruptive innovation, development of a STEM workforce, foment partnerships and collaborations with industry, allow researchers recognition as pioneers in a new area, increase economic competitiveness through commercialization and job growth in particular industries, and improve national security, etc.

#### 4.5.4 Proposal Budget (UPDATED 04/25/18)

A writable budget page (XLS) can be directly downloaded from application site. This form is necessary for the preparation of the proposal and will have to be signed by the PI and the authorized representative of the PI's institution. The signed document must be submitted to [KSEFpm@kstc.com](mailto:KSEFpm@kstc.com) within two working days after the application submission deadline.

The proposal budget should be presented in two formats: (1) numerically, using the appropriate number

of sheets of the KSEF budget page (XLS) provided online, and (2) in narrative, with explanation and justification of the requested budget amounts. Once the numerical budget page is completed, the PI will be able to upload it using the upload function of the online application software.

A. Budget Page

The budget page (XLS) will be available on the appropriate section of the online application system. **This budget page will have pre-set fixed Phase amounts and total funding amounts in accordance to the most current RFP released.**

B. Budget Narrative

The Budget Narrative should explain and justify the requested amounts in the following areas:

Personnel Costs – KSEF funds cannot be used to pay either PI or Co-PI salaries. For other personnel on the project, itemize to show the individual name, position title, estimated percent time commitment, and total cost for each category and for all personnel needs.

Fringe Benefits – Indicate the rate and show total cost.

Supplies and Materials – Itemize costs for chemicals, supplies, and other specific items which may appear to be out of the ordinary.

Travel Costs – In general, travel is not allowed unless it is necessary to complete or present the proposed work. When justified, only the cost for domestic travel will be allowed. A small travel budget will be included to travel to Lexington or Louisville to in the event a PI conference organized by KSTC. Attendance at the awardee conference is mandatory for the duration of the award.

External Services – Itemize and justify any external services or sub-contractual agreements.

Publication Costs – Allowed only at the end of the performance period.

Indirect Costs (**UPDATED 04/25/18**) – for UPAIR awards and UPAIR subawards will be limited to no more than ten percent of the direct costs excluding external contract costs.

Ineligible Direct Costs – Direct costs for application preparation, equipment\* purchase (including computers and software programs) and business entertainment are not chargeable to the KSEF grant.

\* Any device with a life of more than two years that costs \$1,000 or more and is inventoried will be considered equipment for the purpose of this RFP.

C. Budget Considerations

The following factors should be taken into consideration when preparing the budget:

Budget Appropriateness – The award budget will be reduced significantly if it is not in proportion to the proposed work.

Billing and Payment (**UPDATED 04/25/18**) – The Awardee institution will submit to KSTC an invoice every six months for reimbursement of expenses incurred in the preceding six months (**pre-set dates included in the contract**). The invoice will be reviewed and processed for payment within 30 days, if required deliverables have been received (e.g. semi-annual technical report), unless some additional information has been requested. No advance payment will be made in any case.

Budget Redirection – More than ten percent of funds will not be allowed to be moved from one budget line item to another without a written justification and prior written approval of KSEF. KSEF reserves the right to decline such a request.

Incurring Costs – Neither the Commonwealth of Kentucky nor KSTC/KSEF is liable for any cost incurred by the Awardee prior to the start date of the award as stated on the executed formal award agreement.

#### **4.5.5 IDEATE Phase Technical Section**

The technical section will include a clear statement of work including objectives, expected significance, relation to PI's longer-term goals, present state of knowledge in the field, and current work in PI's laboratory under other support. The narrative description should not only indicate the general plan of work but also include an adequate description of experimental methods and procedures to be used. The plan should also indicate the persons performing specific project tasks and collaborations, if any, with other faculty members or other institutions. Additionally, details on how students will be involved with or benefit from working on the project must be included. Key collaborations should be documented with a letter from the collaborator, specifically how industry collaborators will be engaged. These letters need to be uploaded as PDF attachments for submission with the online application. This section should also discuss why the proposed research work is important to industry; will address new potential markets, will revolutionize processes, or will develop new methods, among other reasons. If the transition to industry is known, include how that process will occur.

The narrative should describe how the proposed project will add value, make an impact on the solving a societal problem, and if this effort will stimulate and foster economic activity. A Gantt chart is required as a separate section to provide a clear understanding of the work schedule relative to different tasks proposed in the technical narrative; consider the grant starting on the suggested award start date provided in the RFP announcement. The technical narrative including the experimental methods and procedures should be supported with appropriate literature citations.

#### **4.5.6 Facilities, Equipment, and Collaborations**

The conduct of advanced research may require the use of sophisticated instrumentation or computer facilities. The PI should provide a detailed description of the availability and location of the facilities and accessibility to the equipment necessary to carry out the proposed work. The detail should be sufficient to enable reviewers to evaluate and score it appropriately.

#### **4.5.7 Current and Pending Support**

The PI's and Co-PI's current active grants and pending applications must be listed. Information required will include the project title, proposed or funded amounts, project period, and funding source (agency). The time/effort commitment of the PI and Co-PIs on each project, including on the proposed project, must be included.

#### 4.5.8 Biographical Sketches

Provide biographical sketches of PI and Co-PI. Each biographical sketch is limited to a maximum of one page and should include education, experience and a list of relevant publications. This section should not exceed a total of two pages.

#### 4.5.9 External Services and Consultant Commitment

If external services including consultants are required, documentary evidence showing their commitment, including the estimated cost, should be provided. Quotes from consultants or external contractors will be required at the time of award. Collaborations with industry should also be included and known in-kind and monetary support should be described and included in the budget. Letters can be uploaded as PDF attachments to the final proposal for online submission.

#### 4.5.10 Tasks, Deliverables, and Gantt Chart (UPDATED 04/25/18)

“Tasks” are activities that must be completed to achieve a proposed project goal. Break the project into tasks and subtasks. Tasks are short, have a start-date and end-date, and are significant undertakings. Start the task with a verb such as “Conduct”, “Create”, “Define”, instead of “will be done”. The proposed work should be divided into different technical tasks (and sub-tasks, if necessary) that together will help achieve the proposed objectives. How these tasks and sub-tasks will be conducted, who will be conducting each task, and what results will be obtained at the completion of each task should be clearly stated in the technical narrative section.

The proposal should also state what the PI will deliver to KSEF and when (e.g. Deliverables). The PI will deliver a technical report every six months and one at the end of the award period (**pre-set deliverables**). Other milestones will be a function of the proposed work, for example, assigning of a non-disclosure agreement, letters of interest from industry, submission of the filing of an invention disclosure or patent application, submission of a publication, the achievement of a milestone in the research process, a product or prototype testing, etc. The final deliverable should be a final report at the end of the award. In general terms, each tasks or a set of tasks correspond to the achievement of a particular deliverable.

A Gantt chart is a project planning tool that can be used to time tasks to complete a project. In a Gantt chart, each task takes up one row and the expected time for each task is represented by a horizontal bar, quantified in months. Although it is difficult to estimate the time/period required to perform a task, each task should have duration. In constructing a Gantt chart, keep the tasks to a manageable number. The online application tool will automatically generate the chart based on the information (label and time frame) provided for each task and/or deliverable.

#### 4.5.11 Files and Attachments

One or more additional pages may be available to upload application supporting material in PDF format. Support materials may include letters of commitment from collaborators, support letters from colleagues, enlarged pictures of figures already displayed on the technical narrative. No narratives should be uploaded. No attachments containing information that should have been entered in other sections should be included (i.e. substituting the required Gantt chart for an attachment when the first

was not completed). If in doubt, consult with KSEF Staff and obtain written confirmation (email will suffice) of the allowable exception with ample time before the submission deadline.

#### **4.5.12 Suggested Reviewers and Conflict of Interest**

The first section is designated for the PI to suggest research professionals from around the world who may be suitable candidates to comment on the proposal under consideration. The suggested peer reviewers a) must be independent researchers with an appointment at an accredited college or university outside of the Commonwealth of Kentucky (independent industry researchers are acceptable), b) she or he cannot be a current or recent collaborator or someone who has published with the PI or Co-PI within the past two years (Reviews submitted by current or recent collaborators will not be considered towards the final award decision). A minimum of five suggestions with names and current email addresses are required. All five suggested reviewers must be from different institutions. They **MUST NOT** be from Kentucky nor have a conflict or the appearance of a conflict of interest with the PI or Co-PIs. NOTE: all information must be provided, accurate information is required, and failure to comply may result in the dismissal of your proposal any time during the review process.

The list in the Potential Reviewer Conflicts section, if applicable, is meant for the PI to list external peer reviewers who should not be included to review her/his proposal and explain the reason for the potential conflict. KSEF will consider such requests while deciding the names of experts but may or may not accept the justification to exclude a specific expert. The PI will need to provide full name, current work institution, and current e-mail address.

#### **4.6 Application Format and Organization**

Each application should be prepared simply, providing a concise description of the applicant's ability to meet the requirements of the RFP. Emphasis should be on completeness and clarity of content.

The online application system will automatically format and organize certain sections of the application. This may include limiting the length of certain sections. For example, the Table of Contents, Cover Sheet, Abstract, Current and Pending, Gantt Chart sections will be automatically generated by the application platform and they will take up a minimum of one page each.

Application sections that are to be uploaded as separate files (i.e. Budget Narrative, Technical Narrative, Facilities and Collaboration, and Bio Sketches) should be prepared using letter size paper (8.5" by 11") and either a Times New Roman 12 font size or equivalent (except in figures and tables), with 1 1/4 line spacing (select the option "multiple" and 1.25 under spacing options) or greater.

The application's technical narrative **MUST** be formatted on a combination of font size, line spacing, and margins that do not exceed four lines of text on any given vertical inch of the page, or approximately 400 characters with spaces in those four lines of text, or 100 characters with spaces per linear line of text. Margins should be kept at Top 1"; Left 1", Right .75, Bottom .75".

The final PDF copy of your application must comply with these guidelines (i.e. the evaluation is made on the file submitted online via the application website).

The maximum application length, including items below, is 17 pages without counting the Table of Contents (**total of 18 pages including the Table of Contents**). The prescribed minimum/maximum length

of each section is provided below for the PI's reference.

The online application tool renders a page numbered PDF file with footers and side markings indicating the labels for each section. For best results and document readability DO NOT INCLUDE PAGE NUMBERS, FOOTERS or HEADERS to your application sections. Page length estimates are rough estimates since headings and subheadings are part of some of the pre-formatted pages.

<i>Section (required)</i>	<i>Length</i>	<i>File type</i>
<b>Table of Contents (TOC)</b>	(1 page not counted)	Auto-generated
<b>Cover Sheet</b>	1 page	Auto-generated
<b>Budget Page</b>	1 page	Upload "XLS" file
<b>Budget Narrative</b>	1 page	Upload PDF file
<b>Abstract</b>	1 page	Auto-generated
<b>Technical Narrative</b>	4 pages MAXIMUM (strict formatting applies)	Upload PDF file
<b>List of References</b>	1 page MAXIMUM	Upload PDF file
<b>Facilities&amp; Collaborations</b>	1 page	Upload PDF file
<b>Current/Pending Support</b>	1 page	Auto-generated
<b>Biosketches</b>	2 pages MAXIMUM	Upload PDF file
<b>Gantt Chart</b>	1 page	Auto-generated
<b>Attachments &amp; Letter of industry support</b>	3 pages MAXIMUM	Upload PDF file
<b>APPLICATION formatting in a nut shell</b>	<ul style="list-style-type: none"> <li>• <b>Total maximum pages, including the Table of Contents, is 18 pages: one page TOC, plus 14 pages technical, plus three pages attach</b></li> <li>• <b>Paper size 8.5" by 11"</b></li> <li>• <b>Spacing of the technical narrative not to exceed four lines of text per linear vertical inch (this will be confirmed to accept application)</b></li> <li>• <b>No footers, no headers, and no page numbers</b></li> <li>• <b>Narrative four pages MAXIMUM</b></li> <li>• <b>References one page MAXIMUM</b></li> <li>• <b>No figures as attachments</b></li> </ul>	

No copies of manuscripts or publications should be uploaded with the application.

#### **4.7 Official Submission of Cover Sheet and Budget Page**

An authorized official of the applying institution designated to bind the applicant to the budget and the RFP provisions shall sign and deliver a high-quality scanned color PDF copy via email to KSEF's Program Manager at [KSEFpm@kstc.com](mailto:KSEFpm@kstc.com) before the deadline posted on the most current RFP. ONLY scanned and emailed copies will be required. Emails containing such cover page and budget page should originate from the appropriate university ONLY.

#### **4.8 Internal Review of Submitted Application**

The PI must complete an application via KSEF's online site <http://applications.kstc.com>. An electronically submitted application is mandatory. Applications must be complete and respond to the solicitation goals

in order to be considered for evaluation. Applications must be submitted on or before the deadline and during the submission period published on the current RFP. Eligibility of the applicant must be confirmed before the deadline posted (e.g. report compliance requirements with KSTC programs must be completed and approved before the application period closes, appointment confirmation letters should be attached to the proposal).

Applications submitted on time will undergo a three-tier internal administrative review process. Submitted applications are first reviewed by the KSEF Program Manager. Applications presenting any of the issues listed below will be independently reviewed by KSEF Executive Director. The results of this first review are combined, discussed, and summarized. Summary information is presented by the KSEF Executive Director to KSTC's President, and CFO for discussion. Applications that do not comply with eligibility and/or format requirements are carefully scrutinized by the internal review staff members to ensure the application of guidelines across the board and in a fair manner. Final decisions to Accept or Not Accept an application is summarized by the KSEF Program Manager and later published on the application platform, viewable only by the PI.

**Failure to submit an application on time:**

Applications that are submitted on or around the time of closing are more likely to run into server errors and high internet traffic. The Kentucky Science and Engineering Foundation must receive the electronically submitted application no later than the due date and time published on the open RFP. Each application submission will be time-stamped electronically. Timely submission is the sole responsibility of the applicant. Applicants in previous rounds have required a minimum of three to four hours to complete their online applications. Consider data entry and uploading time requirements in relation to the submission deadline. KSEF/KSTC is not liable for disqualification of applications due to late submission.

**Failure to submit the application by omission:**

Online applications can be **saved** for later and retrieved for editing until the applicant deems it complete and ready for submission. Failure to click on the **submit option** is the responsibility of the applicant.

**Failure to submit a complete application or an application missing required sections.**

**Failure to comply with the required formats:**

- Number of page stipulation: Applications that exceed the page numbers allowed for **"ANY"** section that has a specified maximum page limit (i.e. at the required format, the technical narrative section must not exceed **FOUR** pages, the reference section must not exceed **one page**, the proposal as a whole must not exceed 17 pages, excluding TOC).
- References: Applications must contain literature references. A reference list of the material cited in the text must be included with the technical narrative section. Failure to include citation of referenced material may result in disqualification at any point after submission or during the peer review process. Reference citations should properly follow the guidelines of the PI's professional association or manuscript style.
- Format: It is required that the final document submitted is in a form appropriate for submission to peer reviewers. The section length is based on a Times New Roman 12 font size (except in figures and tables), with 1.25 inch line spacing (or the equivalent combination of font size and

spacing that will not exceed 4 lines of written text per vertical linear inch), and margins Top 1"; Left 1", Right .75, bottom .75" (reducing margin size may cause a distortion in the PDF rendered, confirm your proposal renders clearly).

- **Figures:** Figures must be included within the text in the Technical Narrative section. If the final document prepared has additional free pages, larger images may be attached in the appropriate tab (Files & Attachments). The final document, however, need not to exceed the maximum allowable length.

**Failure to comply with a scientific proposal format and missing sections:**

The PI should present her/his ideas in accordance with the scientific methods and rigor; the proposal should be prepared with care and thoroughness. Missing information, missing references, and/or missing referenced figures produce a poor quality and less competitive proposal. The PI should support statements made in the proposal with appropriate citations.

The abstract submitted with the application must clearly describe a hypothesis-driven project (i.e. objective or hypothesis and experimental methods must be described). The abstract should explain how the current idea is new and different, not an incremental improvement to prior work, and how it will lead to an industry partnership. [Note: The abstract should not include individual industry partner names, but describe in broad terms the nature of the current or envisioned collaboration

The technical narrative must contain sections describing the research background, significance or the proposed research work, methodology to be used to test the research hypothesis or objectives, in text references to background literature, a list of references, and how industry will be involved in the process. Each section of the proposed research work must contain sufficient detail to allow reviewers to evaluate the idea following the criteria for evaluation described on Section 5.1.1 of this document. Although it is not a requirement, the proposal may contain a preliminary results section.

**Failure to comply with on-time reporting for previously funded KSEF/KSTC managed programs.**

**Failure to submit signed cover and budget page before the RFP posted deadline.**

**Failure to provide required suggested reviewers.**

**Submission of multiple proposals per PI and/or Co-PI(s).**

**Submission of a proposals that are not scientifically distinct from or are a continuation of other projects supported by KSEF/KSTC.**

**Proposals for infrastructure development are not eligible.**

**Failure to satisfactorily demonstrate an eligible appointment of the PI.**

**Proposed work does not follow stipulated R&D scientific proposal.**

## 5. Review process, Award Selection, and Administration Information

### 5.1 Proposal Evaluation

In meeting its statutory responsibilities, KSEF seeks to support the most meritorious research. Peer reviews play a key role in the evaluation of research proposals. Reviewers will be required to provide both written comments, and a numerical and descriptive summary rating by employing the criteria provided in Section 5.1.1 and 5.1.2. The identity of reviewers and the numerical summary ratings of the applications will be kept confidential and not shared with applicants.

Proposals that are not within the scope of KSEF UPAIR Program will be deemed unresponsive by the technical review panel without further review. Examples could be, but are not limited to, a proposal for basic research aimed solely at discovery and/or fundamental knowledge generation without an existing industry partner support letter; a proposal for large-scale demonstration of existing technologies; or a proposal that represents incremental improvement to technologies developed under existing partnerships with industry

Additionally, KSEF reserves the right to reject any and all applications in whole or in part, and waive any informality or technical defects, if the best interest of the Commonwealth will be so served. In determination of awards the qualification of the applicant, quality of the research as judged by peer reviewers, distribution of the research focus areas and categories, conformity with the program guidelines, and availability of funds will be considered.

#### 5.1.1 Criteria for Evaluation

**Scientific Merit and Rationale** – The degree to which the proposal addresses an important issue, problem or opportunity and how the activity will advance the state of science or discipline through use and extension of state-of-the-art methods. The applicant demonstrates an understanding of existing and emerging competitive solutions and provides a rationale that support the innovation and its future impact (500 Points).

**Innovativeness and Industry Transition** – The degree to which the proposed approach is unique, technically sound, and aimed at solving identified societal and industry problems; alternatively, the degree to which the activity will focus on new types of important or potentially important issues. The potential market size, application to a market segment, job impact, and need should be addressed (350 Points).

**Team, Facilities, Qualifications and Past Record of Investigators** – The degree to which investigators are qualified by education, training and/or experience to execute the proposed activity; the record of achievement with previous finding, and the ability of identified facilities to accommodate the proposed work (150 Points).

#### 5.1.2 Summary Ratings

**Excellent** – Probably will fall among top 10 percent of applications in the area of research; high priority for support.

**Very Good** – Probably will fall among top third of applications in the area of research; should be

supported.

Good – Probably will fall among middle third of applications in the area of research; worthy of support.

Fair – Probably will fall among lowest third of applications in the area of research; unlikely to receive support.

Poor – Proposal has serious deficiencies; should not be supported.

## **5.2 Principals of the Proposal Selection Criteria**

The PI should consider and address the relative importance being placed on both the technical merit and broader impacts on the Commonwealth of Kentucky's economy and society. The following factors, as applicable, will be considered in determining project priority:

**New Innovation Opportunity and Soundness of Scientific Principles** – The degree to which the proposed project will foster and sustain innovation, and the potential impact it may have on the economic and/or societal well-being, will be a major consideration.

**Transition Potential to Industry-** This work has the potential to be revolutionary to the business of the industry partner in terms of market size, new offering(s), entry into adjacent markets, etc.

**Relevance to State's Priority Research Areas** – Projects demonstrating the greatest relevance to increase research capacity in priority research areas of the Commonwealth of Kentucky will receive consideration.

**Partnerships** – Likelihood of successful collaboration with industry partners and other organizations is a primary focus and necessary to reach the second and third phases of the program ENGAGE and PARTNER, respectively.

**Educational Development** – The project will incorporate mentoring opportunities, including internships for undergraduate students, and project-based research-learning opportunities (required for PARTNER Phase, optional on IDEATE and ENGAGE).

**Kentucky Focus** – Projects having a focus on issues of relevance to the Commonwealth of Kentucky will receive consideration.

**Appropriate Budget** – The proposed budget, given the level of effort proposed, should be shown to be appropriate. Proposed costs must be reasonable in light of the anticipated project benefits.

**Performance Capability** – The prior experience and the resources of the applicant should be shown to be sufficient to ensure their capability to perform the work being proposed.

**Appropriate Fit and Lack of Duplication** – The applicant should show originality of idea and how the proposed project complements (as appropriate) the previous, ongoing, or other planned efforts. KSEF funds should not be used to support a project currently funded through another source of state or federal funds.

Matching Funds – No matching funds, cash or in-kind, are required or requested for projects funded under the UPAIR program.

### **5.3 Notification of an Award**

It is the intention of KSEF to make notification of the award for the IDEATE Phase to the PI and the organization within two months of the online application submission. However, the award date may be changed without notice due to unexpected delays in the review and approval process. Copies of confidential review comments, excluding the identity of the peer reviewer/panel reviewer and their numerical scores, will be provided to the PI. Requests for copies of any other preliminary paperwork used in the decision-making process will not be accepted.

### **5.4 Award Conditions (UPDATED 04/25/18)**

An award agreement will include, among other items, the proposal reference number, amount of the award, duration, and any other conditions including the methods of billing, reimbursement, Gantt chart, and reporting requirements (see also Section 5.5.4). A copy of the approved budget will also be included, which may be different than the requested budget. If satisfactory progress is not made on the funded project, continuation of the award may be suspended. Continued funding of Awardee is contingent upon Awardee submitting and KSTC approving in writing a continuation budget, tasks and deliverables for ENGAGE and PARTNER Phases, and upon Awardee having complied with all the terms and provisions of the award agreement. An award may be canceled if no progress is made, if progress is unsatisfactory, or if the work conducted is different than the proposed work. Satisfactory progress is required to be considered for an ENGAGE or PARTNER phase. Continuation beyond IDEATE phase will be determined based on peer evaluation of proposed ENGAGE and PARTNER plans and by KSTC in its sole discretion. No deviation in the work plan may be made without the explicit prior written approval of KSEF. PI should contact KSEF to disclose any problems or needs to change in the work plan.

For further information on award modifications allowed, visit our website <http://ksef.kstc.com>.

### **5.5 Awardee Responsibilities**

#### **5.5.1 Acceptance of Proposal Content**

The contents of this RFP, the applicant's application and all other appropriate clauses required under State guidelines will become part of the contractual obligations if an award ensues. Failure of the successful applicant to accept all obligations may result in cancellation of the award.

#### **5.5.2 Fulfillment of the Project Personnel**

The Awardee will be required to secure professionally qualified personnel and/or subcontractors necessary to perform the work approved in the award. KSEF reserves the right to review the qualifications of key personnel assigned by the Awardee to the project to assure that this condition of the award is met.

### 5.5.3 Presentation Requirements

Awardees will be required to attend a PI meeting organized by KSEF/KSTC, and make a presentation on the progress of their project. Expenses related to travel and presentation are the responsibility of the Awardee. The expenses may be paid for with KSEF funds under the travel portion of the budget.

### 5.5.4 Reporting Requirements

KSEF has technical reporting requirements. Some of the requirements for UPAIR are different from previous KSEF awards. An online reporting tool is available at the application site: (<http://applications.kstc.com>).

	Report Type	Purpose	Required	Names
1	Semi-Annual Progress Report	To track adherence to proposed timeline for the project and to report key achievements and causes of delay	At six month intervals	S1, S3...
2	Annual and Final Technical Reports	To report the findings of the study and related achievements, progress developing industry	At the end of one year and the end of award period	Annual, Final
3	Industry Engagement Plan	ENGAGE Plan and progress report will be reviewed by a panel; awardees will move on to the ENGAGE phase	At six months in the IDEATE Phase	Industry Engagement
4	Industry Partner Plan	PARTNER Plan and progress report will be reviewed by a panel; awardees will move on to the PARTNER phase	At six months in the ENGAGE Phase	Industry Partnership
5	Post Award Report	To track PI's and Co-PI's professional growth and achievements after the end of each KSEF award	Annually, for five years following the end of the award period	P1, P2, P3, P4, and P5

Electronic reports are required on or before the deadlines as outlined on each Contract. Invoice payments are subject to project progress, and submission and acceptance of each respective report.

Post-award follow-up reports are required, and submitted annually for five years after submission of the Final Technical Report, to gather information on PI's professional growth and achievements. The report is inclusive of all professional activities and not limited to the KSEF award. The information provided in the post-award reports helps the Commonwealth to determine value of its investment (or return on its investment) in the KSEF Awardees, they provide an estimate of S&T Human Capital growth, and it helps determine if the KSEF program should continue to receive State funds each year.

### 5.5.5 Publication and Presentation Acknowledgement

The PI and Co-PIs will acknowledge in their manuscripts, reports and presentations, the financial support received from the Commonwealth of Kentucky through KSEF, an initiative of KSTC using the language provided in the Award Agreement.

#### **6. Future Requests for Proposal**

Applicants should go to the KSTC website ([www.kstc.com](http://www.kstc.com)) or the KSEF website (<http://ksef.kstc.com>) for RFP announcements. Information is also posted by KSEF on Twitter via @KSEF\_Team.