



**Department of
Development**

Ted Strickland, Governor
Lee Fisher, Lt. Governor
Director, Ohio Department of Development

**Ohio Third Frontier
Research Commercialization Program**

**Fiscal Year 2009
Request for Proposals (RFP)**

- RFP Released – August 25, 2008
- Bidders Conferences – September 24, 2008
Biomedical: 1:00 PM
EPS: 3:00 PM
TechColumbus, 1275 Kinnear Rd., Columbus, OH.
- Letters of Intent due by 2:00 PM – October 1, 2008
- Written Questions – through October 31, 2008
- Proposals due by 2:00 PM – November 7, 2008
- Review and Award approximately – April, 2009



RFP Administered by:
The Ohio Department of Development
Technology and Innovation Division
77 South High Street, 25th Floor
Columbus, OH 43215



Department of Development

Ted Strickland, Governor

Lee Fisher, Lt. Governor

Director, Ohio Department of Development

August 25, 2008

To Prospective Bidders:

On behalf of the Ohio Department of Development and the Ohio Third Frontier Commission, I am pleased to provide you with the opportunity to submit proposals for the Ohio Third Frontier Research Commercialization Program. The accompanying Request for Proposal describes the purpose and goals of the program, the eligibility requirements, the content and structure requirements for your proposal, and a discussion of how the proposals will be evaluated through a competitive review process.

All awards by the Ohio Third Frontier Commission are made with the intent to stimulate economic prosperity in Ohio through investments in science and technology based economic development. Through these investments, Ohio will build collaborations and new capacity to conduct research and commercialization activities, support entrepreneurial activities, promote innovation in new product development, and attract new companies, talent, and capital to the state.

Our success to date has been remarkable. We have leveraged Ohio Third Frontier investments with over \$3 billion in additional funding, we have created over 6,500 direct jobs averaging over \$68,000 in salaries, and we have helped start, attract, and capitalize more than 450 companies. None of this success is possible without the creative ideas and business opportunities that you present to us through your response to our Request for Proposal.

I encourage you to consider responding to this opportunity and to review other request for proposals from the Ohio Third Frontier. Thank you for all the effort that you put into shaping the future of Ohio's new economy.

Sincerely yours,

A handwritten signature in blue ink, appearing to read "Lee Fisher".

Lee Fisher
Lt. Governor of Ohio
Director, Department of Development
Chair, Third Frontier Commission

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Research Commercialization Program

Fiscal Year 2009 Request for Proposals (RFP)

1. Statement of Solicitation

1.1 Introduction

This Request for Proposal (RFP) is being issued for grants to be awarded under the Ohio Third Frontier (OTF). The Ohio Third Frontier Commission (OTFC) reserves the right to fund any Proposal in full or in part, to request additional information to assist in the review process, to reject any or all Proposals responding to this RFP, and to re-issue the RFP and accept new Proposals if the OTFC determines that doing so is in the best interest of the State of Ohio. Issuing this RFP does not bind the State to make an award of Grant Funds. Any award of Grant Funds in respect to this RFP will be subject to availability of funds as provided in Ohio Revised Code Section 126.07.

All capitalized words and phrases not otherwise defined in this RFP have the meanings given them in Appendix A – Definitions.

All costs incurred in preparation of a Proposal shall be borne by the Lead Applicant. Proposal preparation costs are not recoverable from Grant Funds. The State shall not otherwise contribute to or be liable for the costs of Proposal preparation.

If requested, Lead Applicants must attend the OTFC meeting at which Proposals will be considered for funding. The funding decisions of the OTFC are final. All Lead Applicants will be notified of the outcome of their Proposals after the OTFC makes its funding decisions. Award of Grant Funds is subject to approval of the State's Controlling Board. If requested, Lead Applicants selected by the OTFC for funding must attend the Controlling Board meeting at which their Proposals for funding are to be considered.

The Ohio Department of Development (Development) administers this RFP. Development reserves the right to adjust the dates for this RFP for whatever reason it deems appropriate. Development's Technology and Innovation Division will administer all Grants made under this RFP.

1.2 The RFP Process

The RFP process will consist of the following steps:

- Release of RFP
- Bidders Conference (Optional)
- Letter of Intent
- Questions & Answers (Q&A)
- Submittal of Proposals
- Review and Evaluation of Proposals
- Recommendations, Decisions and Approvals
- Award and Grant Agreement Preparation and Execution

Each of these steps is discussed below.

1.2.1 Release of RFP

This RFP will be released by publication on the OTF website (www.thirdfrontier.com).

1.2.2 Bidders Conference (Optional)

A Bidders Conference will be held regarding this RFP. Attendance is encouraged, but is not mandatory. The conference will include a presentation by Development covering the intent and purpose of the RFP, the requirements of the RFP, and the evaluation process that will be used to determine awardees. Prospective Lead Applicants may submit written questions regarding the RFP to Development staff at the Bidders Conference. Answers to such questions will be provided at the Bidders Conference and posted on the OTF website.

1.2.3 Letter of Intent

A prospective Lead Applicant must submit a Letter of Intent (LOI) as a condition to submitting a Proposal. The LOI must include the following information: the prospective Lead Applicant's name, address, phone number; contact person, including e-mail address for the contact; proposed Project title, estimated Grant Funds to be requested, known Collaborators, and a one page summary of the proposed Project. Submitting an LOI does not obligate the prospective Lead Applicant to submit a Proposal. A Proposal will not be reviewed unless an LOI for such Proposal has been submitted by the LOI deadline.

Development will issue to each prospective Lead Applicant that submits an LOI an identification number for the anticipated Proposal. The identification number must appear on the Application Information Page of the Proposal. See Appendix B – Forms.

The LOI must be submitted by e-mail and received before the LOI deadline. The e-mail should be addressed to: 2009_RCP@development.ohio.gov with "2009 RCP LOI" appearing in the subject line.

1.2.4 Questions and Answers

All questions regarding this RFP must be submitted in writing via e-mail. Substantive questions and answers will be posted in a Frequently Asked Questions section at the OTF website. Questions should be sent to 2009_RCP@development.ohio.gov with a subject line "RCP Q&A". Development reserves the right to edit questions for brevity and clarity and to consolidate the same general question if received from more than one prospective Lead Applicant.

Do not contact Development staff or OTFC members directly with questions regarding this RFP.

1.2.5 Submittal of Proposal

It is the responsibility of each Lead Applicant to ensure that Development's Technology and Innovation Division receives Proposals at the prescribed place and by the submission deadline. Late Proposals will not be reviewed.

A Lead Applicant must ensure that a Proposal submitted in response to this RFP complies with all the requirements set forth in the RFP. All Lead Applicants are advised to read this RFP carefully to ensure a complete understanding of the Proposal requirements. In particular, the form, format, and content of all Proposals must follow

the directions provided in Sections 3, 4 and 5 and use the forms presented in Appendix B.

The Lead Applicant is solely responsible to ensure its Proposal is complete, accurate, responsive to the requirements of the RFP, and received by Development's Technology and Innovation Division on time. Incomplete Proposals and those not responsive to the requirements of this RFP may, at the discretion of Development, be excluded from evaluation or be evaluated as submitted.

Development may, but shall not be required to, request clarification of any inconsistency or manifest error that Development identifies during the administrative review process. All Proposals submitted in response to this RFP will be treated in the same manner in regard to identified inconsistencies or manifest error.

1.2.6 Review and Evaluation of Proposals

All Proposals are subject to an administrative review during which the Proposals are screened for compliance with RFP requirements. Proposals found to not comply with this RFP's requirements may be eliminated from the competition and not reviewed further.

Development uses external reviewers to read, evaluate, and rank the Proposals on their merits. The external reviewers will evaluate the Proposals based on the requirements, objectives, and criteria discussed in Sections 3, 4, and 5, and may interview potential awardees.

Prior to review, Development will implement a process with external reviewers to identify potential conflicts of interest on the part of individual reviewers and will take such steps as Development determines appropriate to avoid any such conflict.

External reviewers will create a rank-ordered list of Proposals recommended for funding, prepare a written set of comments about each Proposal, and brief Development staff about the risks and benefits of each Proposal.

In addition to the external review, Development may review Proposals to assess for each: (1) past performance of Lead Applicant and its team; (2) the Proposal's strategic fit with prior Third Frontier investments, other State investments, Development's Strategic Plan, and the Ohio Board of Regent's Strategic Plan; and (3) the impact of the proposed efforts on the State of Ohio's economy. The results of such review will be presented to the OTFC for its consideration.

1.2.7 Recommendations, Decision, and Approvals

The OTFC will take into account the external evaluations made during the review process and Development staff recommendations, and will exercise its independent judgment in making its selection. The funding decisions of the OTFC are final. If requested, Lead Applicants must attend the OTFC meeting at which Proposals are considered for funding.

All Lead Applicants will be notified of the outcome of their Proposals after the OTFC makes its funding decisions.

1.2.8 Award and Grant Agreement Preparation and Execution

Awards of Grant Funds will be made based on Proposals as submitted (including such modifications as may be agreed by the Lead Applicant), the Project budget, and any conditions set forth by the OTFC. The Grant will remain open for the duration of the Project, plus a three-year reporting period during which annual reports are required to be submitted to Development.

Following selection by the OTFC, an award of Grant Funds must be approved by the State's Controlling Board, a legislative body that reviews appropriation of State funds. Development will request Controlling Board review as soon as possible after the OTFC funding decision. The Controlling Board process normally takes a minimum of forty-five to sixty (45-60) days to complete.

Development will prepare a Grant Agreement. The Grant Agreement will incorporate the Proposal and Project budget, as either may have been modified by evaluation findings, funding decisions, or other terms or conditions consistent with the approval by the OTFC. Development may require the Lead Applicant to provide cash flow projections on a quarterly basis.

Grant Agreements are sent to Lead Applicants for review and signature. Development executes Grant Agreements on behalf of the OTFC after the Grant Agreement is accepted by the Lead Applicant. After Development executes the Grant Agreement, the Grant is entered on the State's accounting system and invoices may be submitted. Once the Grant Agreement is fully-executed, the Lead Applicant will be considered and referred to as a "Grantee."

A Grantee is required to complete the Project as described in the Grantee's Proposal as submitted and with only those modifications as agreed by the Grantee and Development in finalizing the Grant Agreement. Development will assign a Program Administrator who will work with the Grantee throughout the Project Period. Development staff and the Grantee will develop a series of performance metrics that will be used to measure progress on the Grant.

All Grantees will be required to submit to Development quarterly progress and metrics reports, as well as invoices and expenditures reports, to document achievement of Project milestones, to report Project-related success stories, and to submit post-Project completion annual reports for a period of three (3) years. All reports and invoices will be submitted in the form and format required by Development which may change from time to time.

From time to time during the Term of the Agreement, Grantee may organize conferences or other events open to industry representatives or the general public related to the Project, the subject matter of the Project or associated work of Grantee or its Collaborators. In consideration of the Grant, up to two (2) representatives of Grantor may attend such conferences and events for the purposes of sharing information between Grantee, its Collaborators and other constituents, and Grantor. Grantee shall provide Grantor reasonable advance notice of any such conferences and events. Grantor will not be charged registration fees to attend such events.

1.3 Mandatory Compliance

The following restrictions apply to all OTF Projects:

1.3.1 Human and Animal Research

For any Proposal that includes use of human subjects, the Lead Applicant's and each Collaborator's human subject policies and procedures must comply with the Code of Federal Regulations, Title 45, Part 46. For any Proposal that includes use of animal subjects, the Lead Applicant's and each Collaborator's animal subject policies and procedures must comply with US Code, Title 7, Sections 2131-2156.

1.3.2 Obligations to the State; Compliance with Laws

Grantees will be required to certify in the Grant Agreement that they do not owe: (1) any delinquent taxes to the State or a political subdivision of the State; (2) any moneys to the State or a state agency for the administration or enforcement of any environmental laws of the State; and (3) any other moneys to the State, a state agency or a political subdivision of the State that are past due, whether the amounts owed are being contested in a court of law or not.

Grant Agreements will require Grantees to comply with all applicable federal, state, and local laws in the performance of the Project. Grantees must accept full responsibility for payments of all unemployment compensation, insurance premiums, workers' compensation premiums, all income tax deductions, social security deductions, and any and all other taxes or payroll deductions required for all employees engaged by Grantees on the performance of the work authorized by the Grant Agreements.

1.3.3 Other Compliance

Grant Funds may not be used for research involving tissue obtained from aborted fetuses. (See Ohio Revised Code Section 2919.14)

2. The Ohio Third Frontier

2.1 Background

The OTF represents the State's largest-ever commitment to technology-based economic development. The OTF seeks to expand Ohio's high-tech research capabilities, promote technology commercialization and innovation, create technology-based businesses, and create high-paying jobs for generations to come. The ten-year, \$1.6 billion State of Ohio initiative is designed to:

- Increase the quantity of high quality research that has commercial relevance for Ohio;
- Expand the availability of investment capital needed to form and grow new companies;
- Grow and nurture an increasingly experienced pool of entrepreneurial management talent supported by organized systems of services and networking;
- Expand the availability of capital and assistance to support product innovation in established companies;
- Attract new-to-Ohio company activity that grows and strengthens the function of specific clusters of excellence; and

- Contribute to the expansion of a technically competent workforce that can support innovation and company growth in specific clusters of innovation.

The OTFC has overall responsibility for the OTF. In addition, a 16-member Third Frontier Advisory Board (TFAB) of leaders from industry, academia, and government was created to provide advice and counsel to the OTFC.

The OTFC and TFAB developed the following strategic operating guidelines that provide the framework for awarding OTF grants:

- Support the best the State has to offer, not just regions of the State;
- Anticipate and act on market opportunities;
- Demand strong industry involvement;
- Invest at the intersections of core competency areas;
- Recruit world-class talent and high-growth companies;
- Engage regional partners; and
- Emphasize accountability and use of metrics.

These strategic operating principles should be consulted and applied in the formulation of all Proposals submitted for OTF grants.

The OTFC also made the decision to focus OTF investments in the following priority areas: (1) research commercialization collaborations; (2) entrepreneurial support; (3) product development assistance; (4) company attraction; and (5) workforce development.

Further, the OTFC determined that the OTF should be focused in the Biomedical, Advanced/Alternative Energy, Instruments-Controls-Electronics, Advanced Materials, and Advanced Propulsion technology areas. Information Technology is considered an enabling technology area that supports research and commercialization in all technology areas.

2.2 Commercialization Framework

All OTF Programs share a common goal – to promote technology-based economic development within Ohio by funding activities that move technology from ideas to market. This goal requires the State to design programs, evaluate Proposals and Projects, leverage resources, and provide management oversight within the context of a commercialization framework. Development has adopted the Technology Commercialization Framework based on an extensive literature review on the subject.¹

The Commercialization Framework consists of three major components:

- A description of the five phases of commercialization, including an overview of two categories of activities and required proof within each phase – (i) the development of the technology, and (ii) the development of the commercial concept;
- A system of metrics (the ABC metrics) designed to provide objective interim measures of commercial progress well before the project can achieve traditional metrics (e.g. customers, revenues, profits, etc.); and

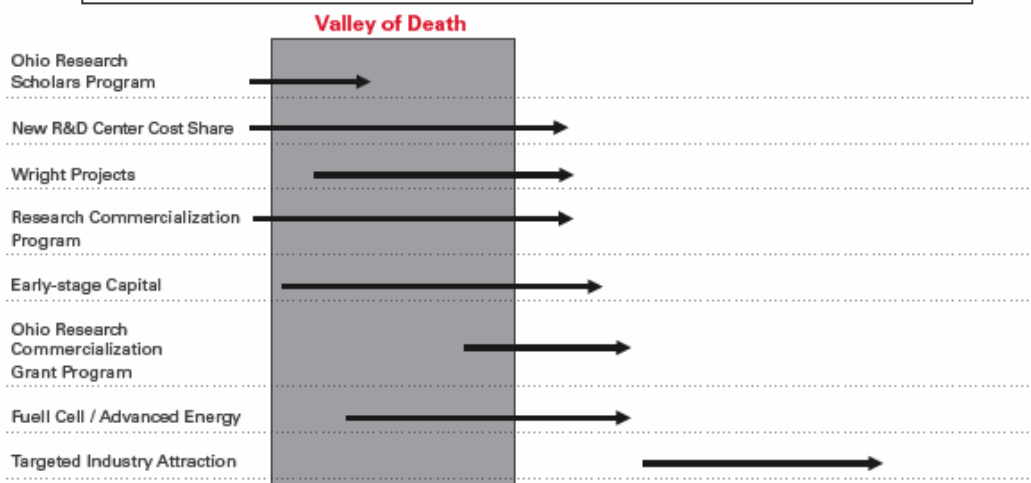
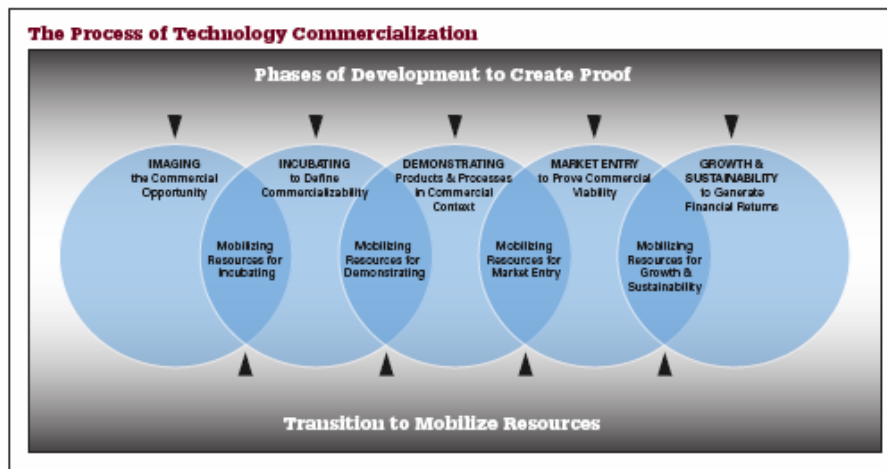
¹ BizLogx LLC, “The Technology Commercialization Framework”, September 30, 2004.

- A series of steps (the Analytical Framework) to help improve the probability of success or reduce the unproductive use of scarce resources.

The Phases of Commercialization

Figure 1 illustrates the five phases of commercialization: (1) Imagining, (2) Incubating, (3) Demonstrating, (4) Market Entry, and (5) Growth and Sustainability. In each phase, the primary goal is to generate the proof needed to attract resources required to move to and engage in the proof generating activities generally associated with the next phase of commercialization. The process is inherently iterative, with numerous starts, restarts, successes, and failures – sometimes within a particular phase and sometimes between phases. In Figure 1, each phase overlaps with the next to illustrate transitions, the process of interaction among investors, partners, customers, and the project team that results in the project’s acquisition of the resources necessary to enter the next phase of the commercialization. Although the project’s ability to attract resources, primarily in the form of funding, is fundamental to the measurement of commercial progress, resource acquisitions alone do not evidence commercialization. Only resource acquisitions that fund a transition demonstrate the project’s movement toward market.

Figure 1. Technology Commercialization Framework



To help determine the phase of commercialization, identify those activities most likely to lead to required resources, and measure progress, the Framework looks at two classes of activities: (i) the development of the technology, and (ii) the development of the commercial concept. The following chart (Figure 2) summarizes the activities, objectives, and desired proof within each class:

Figure 2. Summary of Commercialization Phases

Phase	Technology	Commercial Concept
IMAGINING	The <i>Imagining Phase</i> begins with the techno-market insight - the linking, if only in concept, of a technology and a market opportunity. Activities focus on the generation of a “proof of principle”, generally defined as the demonstration in a laboratory setting of critical components of the technology.	During the <i>Imagining Phase</i> , the commercial concept is highly speculative. Often, the concept is only supported by conjecture regarding technical viability and the market opportunity.
INCUBATING	The <i>Incubating Phase</i> focuses on the performance of the technology in context of product performance specifications. Activities revolve around defining required performance specifications and then determining whether the technology can meet those specifications. For the most part, the activities prove the technical capabilities in a laboratory rather than a commercial setting.	During the <i>Incubating Phase</i> , the participants define the commercial concept (business model and market opportunity). The commercial concept depends primarily on secondary rather than market research or proof. The commercial concept lacks market confirmation and is still highly speculative since the proof is primarily in the form of research and planning.
DEMONSTRATING	The <i>Demonstrating Phase</i> focuses on the performance of the technology in a commercial context – generally, in the hands of a current or prospective customer. In the <i>Demonstrating Phase</i> , the source of proof begins to switch from internal to external – from the lab to the market. Resource providers generally require the following types of proof: (i) the incorporation of the technology into a market-ready product with the performance characteristics required by prospective customers; (ii) evidence that the product meets the required performance specifications in the hands of customers; and (iii) evidence of manufacturing capabilities that meet performance, quality, and cost requirements (those assumed in the Commercial Concept or Business Plan).	During the <i>Demonstrating Phase</i> , participants create and refine a business plan based on direct evidence of the demand for the product. Proof generally takes the form of a limited number of sales to customers at or near the price projected in the business plan. Proof helps address through direct evidence that customers are willing to pay for and use the product, and that they are generating the expected value or benefits.

Phase	Technology	Commercial Concept
MARKET ENTRY	In the <i>Market Entry Phase</i> , the activities are those typically associated with the introduction of a new product to market by an existing business - production, quality, service, product performance. The company has embedded the technology in a product or service and is aggressively marketing the product or service to prospective customers. The product or service is used by an increasing number of existing customers. The opportunity has attracted the resources necessary to expand marketing, sales, and support.	In the <i>Market Entry Phase</i> , the activities are those that any business would engage in when attempting to determine the commercial value or viability of a new product or service. Types of proof include, but are not limited to, meeting sales forecasts, maintaining projected pricing and margins, achieving manufacturing efficiencies, and meeting production projections. The proof frequently focuses on direct feedback from the market, measured in terms of sales, revenue, margins and growth.
GROWTH & SUSTAINABILITY	The <i>Growth & Sustainability Phase</i> involves the execution of a comprehensive product development plan to increase market share and/or extend the existing or new technologies into new products, services, and markets.	In the <i>Growth & Sustainability Phase</i> , the objective is to achieve the ongoing growth of revenue, margins, and profits in ways typically associated with a viable and profitable business.

The ABC Metrics

Given the multiple phases and non-linear nature of commercialization, the years or sometimes decades between idea and market, and the lack of traditional measures (e.g. customers, revenues, and profits), all interested parties (e.g. the project team or company, the investors, and the State) found it difficult to answer the following question using objective evidence – “Is commercial progress being made?” To answer this question, the State developed and implemented a measurement framework that includes three categories of metrics, referred to as A Metrics, B Metrics, and C Metrics.

A Metrics are synonymous with attracting the resources required to engage in the next phase of commercialization (a Transition) and are the best evidence that a project is successfully progressing towards commercialization. A Metrics also include the acquisition of resources required to continue the generation of proof within the current phase, although repeated resource acquisitions without the occurrence of a Transition will, in most cases, lead to the conclusion that the project is not progressing towards commercialization. Almost always, A Metrics take the form of cash rather than in-kind or other similar contributions or investments.

B Metrics are tangible evidence that a project is on the path to achieving A Metrics. The relevant “tangible evidence” of a B Metric is the commitment of resources by the resource provider to evaluate the project for funding. As an example, an A Metric for a project in the Demonstrating Phase would be an investment by a venture capital fund to provide the resources necessary to engage in Market Entry Phase activities. A B Metric for this project might include a substantial Due Diligence effort by the investor and the subsequent receipt by the Lead Applicant of a term sheet detailing a potential investment.

C Metrics measure activities and are the equivalent of “project milestones.” These activities (e.g. hiring qualified personnel, preparing patent applications, preparing a business plan, achieving certain technical milestones, etc.) are often critically important, but do not represent evidence of progress toward the goal of Transition or commercial success. Rather, they indicate that the participants are executing their plan.

The primary distinction between the A and B Metrics and the C Metrics is that A and B Metrics measure the commitment of resources by a current or potential resource provider, while C Metrics measure activities and resource commitments by the project participants or by others who are not current or potential resource providers.

Post-award and within thirty (30) days of execution of the Grant Agreement, the Grantee will submit for Development’s approval a forecast of A Metrics that the Grantee anticipates generating as a result of the project. The forecast of A Metrics must include a description of the anticipated sources and amount of A Metrics. In describing the sources, the Grantee should be as specific as possible. The Grantee will also submit a project plan that includes the primary C Metrics (e.g. hiring a fund or project manager, anticipated deal flow [including sources], anticipated timing and amounts of investments, etc.) and related dates. Development, through the Grant Agreement and the activities of Program Administrators, will manage grants and investments in accordance with the agreed upon set of A and C metrics. Development will not require the Grantee to project B Metrics, but may require the Grantee to report on B Metrics when the A and C Metrics are insufficient to provide Development with a clear picture of progress or to explain unusual circumstances.

The Analytical Framework

Successful commercialization is about successful Transitions, and the Analytical Framework focuses on the mechanism of successful Transitions. The steps of the Analytical Framework are listed below.

1. Identify the appropriate phase of commercialization;
2. Determine the amount of resources required to complete the current and next phase of commercialization;
3. Identify resource providers who can fund the next phase of commercialization activities;
4. Determine the proof required by the targeted resource providers;
5. Identify the contextual factors that are likely to have a material impact on the chances of resource acquisition;
6. Determine the appropriate measures of success; and
7. Develop a plan to produce the proof the resource providers desire and a plan to pursue the Transition.

A more extensive discussion of the Commercialization Framework is found on the OTF web site at: http://www.ohiochannel.org/your_state/third_frontier_project/featured_publications.cfm.

2.3 Commercialization Questions

Many of the OTF Programs are focused on the Imagining, Incubating, and Demonstrating phases of the Commercialization Framework. The following guide may prove useful in identifying the phase of an opportunity and the type of work normally associated with that phase.

Imagining Phase

The following items are representative of the proof and related activities in the Imagining Phase:

- Develop the business case (e.g. market, potential customers, value proposition, and competitive alternatives);
- Develop a firm understanding of how the technology might be developed into a commercial application;
- Develop a proof of principle – demonstrate in a laboratory setting the critical components of the technology that enable the core functionality of the commercial application;
- Assess the work needed to achieve reduction to practice;
- Investigate the freedom to operate within the target markets and the constraints imposed by existing patents or other forms of IP; and
- Develop an intellectual property strategy for the application of this technology.

Incubating Phase

The following items are representative of the proof and related activities in the Incubating Phase:

- Develop a comprehensive business plan and financial projections;
- Perform the work necessary to understand how to adapt the technology to a commercial application that addresses the market needs;
- Confirm the “freedom to operate” for the IP in context of the commercial application and then acquire adequate IP protection for the technology and related applications to allow for market introduction;
- Complete the reduction to practice and produce a working model based on well-defined and fixed commercial specifications; and
- Produce product designs and production processes that support the manufacture of a reliable product at a cost reasonably consistent with the constraints of the particular market applications.

Demonstrating Phase

The following items are representative of the proof and related activities in the Demonstrating Phase:

- Finalize the technical and commercial specifications for the market ready version of the product;

- Produce prototypes in the approximate form and with the functionality required for general market release;
- Finalize a business plan including detailed plans for sales, marketing, pricing, financing, etc;
- Develop credible plans for manufacturing at or near the costs required by the business plan;
- Sell the product or service at or near the price contemplated by the business plan;
- Secure several customers who use the product in a commercial environment;
- Establish the reliability of the technology as embedded in a commercial product;
- Incorporate feedback from lead users into the design based on alpha and beta versions of the technology;
- Produce pilot runs that demonstrate functionality consistent with the product concept; and
- Secure facilities adequate for near-term production.

Market Entry Phase

In this Phase, the company attempts to prove the viability of the business opportunity. The proof and related activities in the Market Entry Phase are those generally associated with an ongoing business. Representative examples of proof and related activities are:

- Achieving quarterly and annual sales projections;
- Meeting production targets, including cost and quality requirements;
- Achieving financial performance measures, including, but not limited to price per unit, gross margins, operating margins, etc.; and
- Meeting product performance requirements in “real world” situations.

Growth and Sustainability Phase

In this Phase, the company attempts to establish the long-term viability of the business. As in the Market Entry Phase, the proof and related activities in the Growth and Sustainability Phase are also those generally associated with an ongoing business. Representative examples of proof and related activities are:

- Achieving quarterly and annual sales projections;
- Introducing new and improved products;
- Increasing revenues and profitability;
- Increasing market share; and
- Expanding into new markets.

The previous lists of activities are not meant to be exclusive. Rather, the purpose is to help Applicants and Grantees accurately identify the phase and scope of expected activities and required proof.

Applicants should consider and address how the ABC Metrics and Commercialization Framework relate to their investment strategies, and how progress by portfolio companies will be measured consistent with the Commercialization Framework.

Development will consider projects successful (A Metrics) if, at the proposed Project's completion, the Lead Applicant has invested in and/or provided services to opportunities or companies that have attracted follow-on funding to finance the next phase of commercialization.

3. Program Description

3.1 Purpose

The purpose of the Research Commercialization Program (RCP) is to create jobs and business opportunities within Ohio through development and commercialization of innovative technologies and new products that will have beneficial long-term economic impacts for Ohio. Proposed Projects should support an integrated program of a substantial scale and consistent high quality that will move Ohio toward a position of national leadership in the selected focus area.

3.2 Goals and Objectives

The specific goal of the RCP is to make Ohio a national leader in creating new jobs and business opportunities by commercializing technology-based products. A Lead Applicant should build on its existing strengths and form collaborations that are sufficiently large to bring national recognition to Ohio.

The specific objectives of the RCP are:

- To conduct applied research and development related to themes that have the potential for creating new products;
- To build sustainable partnerships between organizations that can develop and commercialize new products;
- To produce the technical and business information needed to secure additional funding;
- To use additional funding to accomplish the next phases of commercialization; and
- To advance the commercialization of generated products.

3.3 Eligibility

3.3.1 Technology Subject Matter

Proposals submitted in response to this RFP must be from already well-established research and development programs that will enter the next level in terms of both international prominence and commercial market applications. They must address large, complex and focused commercialization opportunities capable of significant industry and economic impact. Proposals also require the interaction or collaboration among multiple investigators and organizations. Such Projects must be mission- or goal-oriented, with clearly defined endpoints and deliverables that create infrastructure, scientific capacity to enhance future research endeavors, and commercial advances. The Project must realize near term (within 3 years of the start of the Project Period)

commercialization with the potential of on-going commercialization beyond the Project Period.

Engineering and Physical Science (EPS) Proposals may address any one or a combination of the following opportunity areas: Advanced/Alternative Energy; Instruments, Controls and Electronics; Advanced Materials; and Advanced Propulsion. Proposals submitted to the Third Frontier Fuel Cell Program or the Third Frontier Advanced Energy Program are not eligible to be submitted also to the RCP under this RFP.

Biomedical Proposals are limited to the following areas: human genetics and genomics, structural biology, biomedical engineering, computational biology, environmental biology and/or plant biology. For Projects involving drug development, diagnostics and therapeutics, or medical devices, the Project must be sufficiently advanced to formally compile and submit a Food and Drug Administration Investigational New Drug or Investigational Device Exemption application by the end of the three-year Project Period.

Information Technology is considered an enabling technology area that supports research and commercialization in all technology areas. Therefore, Information Technology is only eligible to the extent that it is a supportive component to an Advanced/Alternative Energy; Instruments, Controls and Electronics; Advanced Materials; Advanced Propulsion; or Biomedical Proposal.

3.3.2 Lead Applicant

Each Proposal must involve at least two organizations, and Development anticipates that most Proposals will involve multiple organizations. The Lead Applicant must either be an Ohio university, a public or private research organization in Ohio, or a for-profit firm in Ohio. Ohio for-profit firms are very strongly encouraged to serve as Lead Applicant. An Ohio university is an accredited institution of higher education in Ohio. A public or private research organization in Ohio is an organization having business lines that include research and development, that have a significant portion of their R&D activities in Ohio, and that have a Principal Place of Business in Ohio. An Ohio-based for-profit firm must already be licensed to do business in Ohio and have a Principal Place of Business in Ohio.

Each Proposal must designate one Lead Applicant, which will be responsible for the administration of the Proposal should it be awarded. The Lead Applicant must also serve as both administrative and technical director of the Project.

Proposals must demonstrate both the ability and experience of the Lead Applicant and Collaborators in commercializing products and the scientific ability and experience of the Lead Applicant and Collaborators to perform the work needed to produce evidence necessary to satisfy investors, regulators, and the market.

3.3.3 Collaborators and Committed End-Users

Proposals must include collaborations between two or more institutions or organizations that meet the eligibility requirements set forth above. All Collaborators must be represented by a Co-Investigator and have an itemized budget on Budget Form 3 (see Appendix B – Forms). A Collaborator must be designated on Budget Form 3 to receive RCP funds by way of a Subcontract/Sub-grant and/or to contribute Cost Share to fulfill the itemized budget component.

Since the goal of the OTF is to position Ohio as a leader in research commercialization, the collaboration of the Lead Applicant and all Collaborators must have the capability

for commercializing any resulting technology. Collaborators should be committed to the long-term commercialization of the technology and play a role in accomplishing that goal. A contribution of Cost Share resources by a Collaborator is evidence of that commitment. Teams with strong commercialization structures are preferred over Projects without access to the commercial market. Any commercialization that results must benefit Ohio through investment, sales, job creation, and/or business capitalization.

All Collaborators must submit a Letter of Commitment, as described in Section 5.3.13 of this RFP, signed by a representative authorized to commit the Collaborator to the proposed Project.

In addition, Proposals may also include one or more committed end-users. A committed end-user is a business or governmental entity that has a commercial interest in, and can anticipate commercial benefit from, the results of the proposed Project. A committed end-user may submit a letter consistent with the directions of Section 5.3.13. Committed end-users do not require designation on Budget Form 3.

3.4 Funding

Funding for the Engineering and Physical Sciences RCP will come from the Third Frontier Research and Development Fund established by Am. Sub. SB 236. Funding for the Biomedical RCP will come from the Biomedical Research and Technology Transfer Trust Fund that was established in 2000 by SB 192. Development anticipates awarding 4 to 6 grants in each of the two programs. Each grant will be in the range of \$2 to \$5 million. Indirect costs may not exceed 20 percent of the total direct costs reflected in the Project Budget. No more than 20 percent of the total direct costs requested in the Project Budget may be used for capital equipment, construction, or renovation costs.

3.5 Cost Share Requirements

3.5.1 Magnitude

The monetary value of the Cost Share commitment must be one dollar for every dollar of State Grant Funds requested (*i.e.*, a ratio of 1:1). All Cost Share must be identified in the Proposal by amount, proposed use, source, and method of valuing any in-kind Cost Share to be used. If the Cost Share ratio reflected in a Proposal exceeds 1:1, the higher Cost Share ratio will be used as a requirement for a grant awarded to that Proposal.

Cost Share must be documented on the budget forms and in a commitment letter from each organization contributing Cost Share signed by a representative authorized to commit the organization to the proposed Project and the Cost Share described. Cost Share cannot merely reiterate currently provided organizational resources, such as currently used space or equipment. The Cost Share must represent a specific new commitment, including the dollar amount or value, to the Project described in the Proposal.

In the evaluation of the Proposals, the nature and amounts of resources available for Cost Share will be considered, and the State considers favorably Proposals with Cost Shares that have flexibility with respect to its use (cash being the most flexible Cost Share commitment). Preference will be given to Proposals that pledge discretionary, unrestricted, and unallocated cash. Such cash must be available for any purpose deemed appropriate by the Lead Applicant and must appear on the financial records of the Lead Applicant.

3.5.2 Sources and Uses

Cost Share must be for allowable costs that are verifiable and auditable and consistent with Appendix C – Cost Share Guidelines. Cost Share must be used directly in support of the Project rather than coincidental or related/similar allocations. Cost Share must be necessary and reasonable to the Project objectives.

If an organization has a published indirect cost rate, un-recovered indirect costs (the difference between 20 percent and the published rate) may be used as Cost Share. Without a published rate, this program will allow duplication of the 20 percent rate that becomes an allowable expense used as Cost Share. Only indirect costs not fully recovered from the requested State Grant Funds are eligible to be used as Cost Share.

The expense of the Cost Share must take place during the Project Period. Cash Cost Share must be charged to resources of the Lead Applicant or Collaborator and documented within the financial books of the Lead Applicant or Collaborator, as the context requires. In addition to the requirements set forth in Appendix C, contributed equipment or space committed as in-kind Cost Share must have as its fair rental value a documented forgone charge or fee that otherwise would have accrued to the contributor for its use. This charge or fee must have otherwise been assessed and paid in the normal course of business on any other transaction.

OTF funding may not be used as Cost Share, and funds awarded under this RFP may not be used as Cost Share against other OTF Projects. Other State sources of Cost Share are allowed, as are in-kind contributions. However, Proposals having a higher percentage of cash and non-State sources of Cost Share of any kind relative to the total proposed Project budget will be considered more favorably in the evaluation.

3.5.3 Constraints

Resources, whether cash or in-kind, that have already been designated as Cost Share for some other award cannot be used as Cost Share for an RCP award. The Cost Share must be applied to the Project during the Project Period. Expenses incurred outside of the Grant Period do not count toward the Cost Share requirement. The basis for valuing in-kind Cost Share must be described and must be realistic and verifiable.

The Lead Applicant is solely responsible to have adequate funds to cover all expenses of the Project not covered by the Grant Funds awarded.

Grantees will be held accountable for the Cost Share ratio committed in the Proposal (Cost Share pledged divided by State Grant Funds requested) regardless of the actual amount of Grant Funds awarded. If a Lead Applicant proposes a higher Cost Share ratio than required, the Lead Applicant and its Collaborators may not, at any time later, lower the Cost Share ratio.

3.6 Term of Project

The term of RCP Grant Agreements will be six (6) years. The first three (3) years will be the Project Period during which the active work funded by the grant will take place. During the remaining three (3) years, annual reports detailing the overall status of research commercialization activities and the economic impacts of the Project will be required.

4. Evaluation Criteria

Only the most meritorious proposals are sought for funding. Proposals passing the administrative review will be evaluated based on responsiveness to all the requirements of this RFP and on the Lead Applicant's response to any additional information that may be requested by the external reviewers. Implicit in those requirements and evaluation criteria is the quality of the work plan, budget and Cost Share. The following criteria, however, have been designated with the highest relevance to and weighting for the RCP.

- Alignment of the Proposal with the RCP purpose, goals, objectives, eligibility, funding, and cost share requirements as described in Section 3 of this RFP
- Quality of the responses to the requirements of this RFP as outlined in Sections 5.3.6, 5.3.7, 5.3.8, 5.3.9, 5.3.10, 5.3.11, 5.3.12, and 5.3.13
- Compliance with this RFP's administrative requirements

The evaluation criteria are designed to support the mission and goals of the OTF and its various programs.

5. General Proposal Requirements

5.1 General Instructions

- Submit Letter of Intent and receive a Letter of Intent ID Number from Development.
- Submit separate Proposals for each proposed Project.
- Proposals must be submitted in the following manner:
 - One original paper copy marked as "Original" and one additional paper copy marked "Copy" and two CDs each containing a single unlocked PDF file of the Proposal.
- Proposals must be received at the location specified below before the RFP closes. Proposals may not be submitted by fax or e-mail.

Ohio Department of Development
Technology and Innovation Division
77 South High Street
25th Floor
Columbus, OH 43215
Attention: "RCP Program"

- Proposals are to be submitted on 8.5 x 11-inch paper.
- Margins must not be less than $\frac{3}{4}$ of an inch on all sides, with the exception of forms found in Appendix B of this RFP.
- Font must be 10 point or larger with no more than 6 lines of text per inch.
- All pages must be numbered consecutively using the format "Page [#] of [total number of pages]" (e.g., Page 2 of 25).
- The Proposal title, Lead Applicant name, and Letter of Intent number must appear at the bottom of each page.

- Proposals should not include color figures that cannot be understood when photocopied in black and white.
- The first page of the Proposal must be the Application Information Page.
- Do not include a cover or cover letter other than the Application Information Page.
- Proposals must be stapled once in the upper left hand corner and must not be bound.

5.2 Trade Secret Information

All Lead Applicants are strongly discouraged from including in a Proposal any information that the Lead Applicant considers to be a “trade secret,” as that term is defined in Section 1333.61(D) of the Ohio Revised Code. All information submitted in response to this RFP is public information unless a statutory exception exists that exempts it from public release. If any information in the Proposal is to be treated as a trade secret, the Proposal must:

- Identify each and every occurrence of the information within the Proposal with an asterisk before and after each line containing trade secret information and underline the trade secret information itself.
- Check the “Trade Secret Information Included” box on the Applicant Information Page.
- Include a page immediately after the Application Information Page that lists each page in the Proposal that includes trade secret information and the number of occurrences of trade secret information on that page.

To determine what qualifies as trade secret information, refer to the definition of “trade secret” in the Ohio Revised Code, which is reproduced below for reference:

- (D) “Trade Secret” means information, including the whole or any portion or phase of any scientific or technical information, design, process, procedure, formula, pattern, compilation, program, device, method, technique or improvement, or any business information or plans, financial information or listing of names, addresses, or telephone numbers, that satisfies both of the following:
- (1) It derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use.
 - (2) It is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

Development requires non-disclosure agreements from all non-Development persons who may have access to Proposals containing trade secret information, including evaluators.

5.3 Order and Content of Proposal Sections

5.3.1 Application Information Page

The first page of the Proposal must be the completed Applicant Information Page found in Appendix B to this RFP.

5.3.2 Trade Secret Information

This section of the Proposal must describe any trade secret information included in the Proposal. This page is only required and must be included if there is any information to be treated as a trade secret in the Proposal. Follow the instructions in Section 5.2 of the RFP.

5.3.3 Lead Applicant and Collaborator Information

Complete and include the Lead Applicant Contact Information Page. One individual may serve in more than one capacity.

Complete and include the Collaborator Information Form for each Collaborator. Letters of Commitment must appear in an Appendix to the Proposal.

5.3.4 Abstract

Prepare an Abstract that summarizes the proposed Project and its expected commercial and technical outcomes. This section should minimize use of jargon and technical language and be written so that a non-technical person can understand it. This section will be used in public documents, including press releases, and must be understandable by the general public. The Abstract may not contain any trade secret information.

5.3.5 Table of Contents

Prepare a Table of Contents with detail for three levels of headings in the Proposal. All Lead Applicants must use the requirements in this section of this RFP for the level 1 and 2 headings. This section should also include a list of Charts, Figures, and Tables that appear in the Proposal with a page number for each.

5.3.6 Technical Plan

This section of the proposal's narrative must contain information that addresses the following subject matter. The way in which the information is provided and the order of the content is at the discretion of the proposal author. The narrative should be written to best present the information to the evaluation team.

- **Understanding the Program Intent.** Demonstrate the Lead Applicant's understanding of the purpose of the OTF, the specific role of this RFP and how the proposed Project is consistent with these purposes. The Lead Applicant should address the relationship between product and process commercialization and the activities being proposed. The Lead Applicant must demonstrate that the Proposal is responsive to the long-term purposes of the OTF.
- **Problem Statement.** Describe the technical and commercial challenges to be addressed in the proposed Project and why solutions to these challenges will increase the likelihood of successfully achieving commercialization and other program objectives and goals. Evidence that the Lead Applicant understands the eventual customer needs and performance requirements is required.
- **Project Goals and Objectives.** Clearly state the goals and objectives of the proposed Project and each of its related sub-elements. The goals should cover both the long-term commercialization purposes of the proposed Project and other longer-term goals beneficial to Ohio. The objectives should be related to the research, development, and demonstration activities that will be performed and how they are expected to provide the evidence and proof needed to carry the technology forward into

phases of the Technology Commercialization Framework. The objectives should be expressed as Level A, Level B, and Level C Metrics as discussed in Section 2.2 and at the OTF website posting of the Technology Commercialization Framework:

http://www.ohiochannel.org/your_state/third_frontier_project/featured_publications.cfm.

• **Technical Approach and Work Plan.** Discuss the overall activities that are proposed to meet the proposed Project's goals and objectives. Important research techniques, methods, facilities, and equipment to be used in the proposed Project should be discussed and compared to alternative approaches. Key factors that will affect the success of the proposed Project should be identified as well as significant risk factors. The Lead Applicant may elect to organize the technical approach according to different areas of investigation. Also, identify all the tasks and activities that will be performed for each area of investigation. The tasks should be described in terms of their specific objectives, approaches, resources and outcomes. The description should be detailed enough to provide a clear indication of how progress will be made and measured.

• **Level of Scientific/Technical Merit.** Address significant scientific/technical objectives of the proposed Project which are original and innovative, as well as employ novel concepts, approaches or methods. These objectives must be important to the relevant discipline while having an impact on other disciplines. Accordingly, describe how the Project:

- Demonstrates the potential for new discoveries and understanding. Indicate what advancements beyond previous studies can be expected with respect to accuracy, validity, sensitivity, comprehensiveness, and range.
- Based on relevant research achievement to date, advances understanding and stimulates further modeling, theoretical descriptions and discoveries as well as continued research and education.
- Is scientifically and technologically feasible as supported by research results and findings to date and the conceptual framework, design, methods, with analyses that are adequately developed, well integrated, and appropriate to the objectives of the proposed Project.
- Generates the proof necessary to attract additional financial resources required to advance the technology toward successful commercialization.
- Involves the base of statewide research capacity that will support the future technological innovations required to fully realize the commercial potential and how those research capacities will be integrated into the research plan.

• **Deliverables.** Identify the deliverables from the proposed Project. Deliverables will include tangible evidence of commercialization and technical progress and other deliverables that the Lead Applicant deems significant for measuring progress.

• **Schedule.** Provide a schedule that graphically displays the duration of tasks, interactions between the tasks, and the timing of deliverables and other key milestones. The schedule should be based on weeks or months from authorization to proceed, rather than any firm, fixed calendar dates.

5.3.7 Commercialization Strategy

This section of the Proposal's narrative must contain information that addresses the following subject matter. The way in which the information is provided and the order of the content is at the discretion of the Proposal author. The narrative should be written to best present the information to the evaluation team.

• **Value Proposition.** Address what the specific value proposition is of the Lead Applicant's proposed approach and what are the differentiating benefits associated with the proposed technology as well as showing evidence to support the contention that the market values these benefits.

• **Management of IP.** Define how the Lead Applicant intends to manage new IP, describe how it will work with technology transfer offices and Collaborators to establish ownership rights, and how it will work with Ohio-based companies and/or investors to realize positive economic impacts from the business opportunities being realized and brought to fruition in Ohio from this IP.

• **Potential for Products.** Identify focused commercialization opportunity areas that will have significant industry (*i.e.*, market size and growth) and economic impacts that will have near-term (within 3 years of the start of the Project Period) benefit in Ohio in areas such as production, licensing and spin-off technology opportunities. The proposed Project must have already achieved at least Proof of Principle. Describe how technologies or products have a competitive advantage over existing and alternative technologies that can meet market needs and can lead to additional enabling technologies and further discoveries.

• **Size of Opportunity.** Demonstrate that the market is of sufficient size and has growth potential to positively impact the State. Provide an assessment of the market and realistic assumptions about the market share that potentially could be captured; potential customers; and competition and competing products.

• **Degree of Customer Readiness.** Define the functionality and market need that the proposed technology will address as evidenced by potential customer input, especially Collaborators who may also be eventual customers for the product or service.

• **Investment and Time to Market.** Describe the general magnitude of the investment needed to bring the product to market, and address how long the commercialization process will take.

• **Receptive Capital Markets.** Describe the potential for long-term financing to support the growth of a commercial enterprise. Evidence of interest in this technology by various sources of capital should be provided.

• **Potential for Leverage.** Define how the proposed Project is expected to leverage OTF funds with other sources of non-State funding, such as federal agencies, industry organizations, and private investors, to continue the research and commercialization activities during and beyond specific OTF funding. Goals and plans for leveraging OTF Grant Funds should be specifically defined.

• **Ability to Compete Globally.** Demonstrate an understanding of the global marketplace(s) and trends, competitor analysis and access and benefits to marketplace(s). Particular attention should be given to situations where initial markets and major competitors are global, where others have committed major resources to this technology, and where barriers to market entry favor large firms. Proposals will be evaluated on the basis of how well the Lead Applicant understands and can compete for international business opportunities.

• **Degree of Sustainable Competitive Advantage.** Demonstrate that the proposed Project fits within, or can create, an environment which enables Ohio to maintain a leading, competitive advantage. The advantage may be realized through the State's supply chain, labor base, research and other assets. Similarly, the advantage may be created from the IP and knowledge of the Lead Applicant and its Collaborators which provide assurance that commercialization will benefit Ohio.

• **Type of Business Model.** Identify the business model (new company formation, license to an existing company, *etc.*) the Lead Applicant and partners expect to implement and address the strengths and weaknesses of the current Lead Applicant and Collaborators with respect to implementing this business model.

• **Roles and Responsibilities.** Describe what the roles and responsibilities are of the Lead Applicant and Collaborators in the commercialization process.

In preparing this Commercialization Strategy section of the Proposal, the Lead Applicant must relate its commercialization plans and strategy to the Technology Commercialization Framework described in Section 2.2 of this RFP. In addition to the topics listed above, the Lead Applicant should specifically address the following questions about each product development opportunity that will be funded by the requested Grant Funds.

- What is the position of the proposed Project within the Commercialization Framework, as described in Section 2.2 of the RFP? Demonstrate an understanding of the commercialization process, resource requirements for commercialization, the type of knowledge that must be produced at the identified positioning stage, and who will likely be the next funding providers for the subsequent stage.
- What technical proof is required to convince additional investors to finance the next stage of work?
- How much will it cost to complete the technical proof and will the State's funding be adequate? If not, where will additional investment come from and does the Lead Applicant have a firm commitment of these resources?
- How much will it cost to perform the next phase of the commercialization process and what organizations provide the types of resources the Lead Applicant will need to conduct the next stage of the commercialization process?
- Does the Lead Applicant have any commitments from potential resource providers about their willingness to fund additional commercial phases?

These points will be used to establish the Level A and B metrics for the proposed Project. "Success" is achieved if the Lead Applicant and Collaborators acquire the resources needed to conduct the next phase of commercialization.

5.3.8 Projected Economic Impacts

This section of the Proposal's narrative must contain information that addresses the following subject matter. The way in which the information is provided and the order of the content is at the discretion of the Proposal author. The narrative should be written to best present the information to the evaluation team.

• **Impact on Ohio.** Demonstrate that the Project will have an impact on Ohio in one or more of the following areas: job creation (for-profit, not-for-profit, retained); personal wealth (average salary of jobs created); new sales of products; companies created or attracted to Ohio; follow-on investments (all stages of venture capital) and the receipt of new public or private funding (federal, industry, other) for sponsored research and technical services that fit within the expressed mission of the proposed Project; talent recruitment; and enhanced Ohio, national and/or international recognition, which leads to further interest and potential sources of funding and collaboration.

The Proposal must contain a realistic forecast of the direct employment, personal income, product revenue and other leverage for two points in time - the first being at

the completion of the active work on the Proposal and the second being five years thereafter. The Lead Applicant should document how the projections were developed and key assumptions used in the analysis. For example, if the projections are based on capturing a particular share of the market, the Proposal should indicate the magnitude of the market and the basis for the estimated market share. The Lead Applicant should identify the impacts for each distinct product or product platform that will come from the State investment. **The Lead Applicant should report only direct impacts, not secondary or tertiary impacts derived from economic models.**

- **Importance to Key Existing and Emerging Ohio Industry Drivers.** Provide evidence that industry sectors of importance to Ohio value the benefits of the proposed Project. This evidence includes a strong characterization and comparison of the intended technology, application area, and market compared to competing technologies.

5.3.9 Past Performance on Prior OTF Awards

This section is required only when the Lead Applicant is submitting a Proposal that is an extension of, or related to, the subject matter of a prior OTF Grant(s) to the Lead Applicant or one of its Collaborators. The Lead Applicant should discuss the objectives, progress, achievements, and impact of the prior Grant(s). Specific commercialization success, leverage received, identification and protection of IP, companies started and attracted, and employment impacts should be noted. Any major technical accomplishments can be highlighted in summary fashion. The past performance should be adequate to enable an external reviewer who is not familiar with the prior Grant(s) to assess progress and independently evaluate the results. Development may, but is under no duty to, provide past performance information to the external reviewers for any Lead Applicants that have prior Third Frontier Grants or have been the primary beneficiary of any Third Frontier Grants.

5.3.10 Alignment with and Linkage to Prior OTF Investments

This section of the Proposal's narrative must contain information that addresses the following subject matter. The way in which the information is provided and the order of the content is at the discretion of the Proposal author. The narrative should be written to best present the information to the evaluation team.

- **Alignment with Ohio Interests.** Demonstrate alignment with at a minimum one of the five technology areas of OTF focus: Advanced Materials; Biomedical; Instruments-Controls-Electronics; Advanced /Alternative Energy; and Advanced Propulsion. Information Technology is being recognized as a key enabling technology, relevant to all focus areas. To the extent practical, Proposals involving technologies at the intersection of two or more of the focus areas are preferred.

Demonstrate how the proposed activity builds on priorities identified in the 2006 Battelle study, *Strategically Aligning Ohio's Research and Technology Portfolio*, as well as the 2005 Deloitte study, *Industry-Based Competitive Strategies for Ohio*. The Battelle and Deloitte studies are available on the OTF website at:

http://www.ohiochannel.org/your_state/third_frontier_project/featured_publications.cfm.

In addition to these resources, applicants are encouraged to work with local technology and other economic development organizations to acquire the most current information on regional strengths and priorities.

- **Building on Prior OTF Investments.** Demonstrate how the Proposal builds on prior OTF investments which are listed on the OTF website or otherwise contributes to growing a defined cluster of previous investment activity.

This requirement extends to any Project funded by the OTF regardless of whether the Lead Applicant or its Collaborators were involved. The intent of this section is to understand how the proposed Project builds and extends capabilities, capacities, and commercialization initiatives previously funded by the OTF. If a proposed Project does not relate to any prior OTF investments, the Lead Applicant must alternatively summarize why this proposed Project is of critical importance to Ohio's economic future.

5.3.11 Experience and Qualifications

This section of the Proposal's narrative must contain information that addresses the following subject matter. The way in which the information is provided and the order of the content is at the discretion of the Proposal author. The narrative should be written to best present the information to the evaluation team.

- **Organizational Capabilities.** Provide a description of relevant organizational experience, capabilities, facilities and equipment, and financial conditions of the Lead Applicant and Collaborators. Provide detail sufficient to evaluate whether the Lead Applicant and Collaborators have the direct experience needed to perform both the technical and commercial work being proposed. The Lead Applicant should limit past project experience to activities that have occurred within the past five (5) years.

- **Demonstrated Leadership Assets.** Demonstrate commercialization, scientific, collaborative, regulatory and programmatic leadership experience and assets. Leadership should be evident at the individual, key personnel, corporate and collaborator levels in all critical phases of the proposed project to include research, IP protection, regulatory compliance, product development, leveraging of additional funding or investment capital, and commercialization. Also, demonstrate that the project has the highest level of support from both within the Lead Applicant's institution and from a proposed project's Collaborators, by commitments of cost share and/or in-kind support, and other evidence of committed support.

Identify the Principal Investigator, Co-Investigators and other Key Personnel who will be assigned to this proposed Project, their roles and responsibilities, and the rationale for their selection for key positions. One of the Key Personnel from the Lead Applicant must be designated as the technical director while another or the same member of Key Personnel must have the required skills and experience to serve as commercialization director. Address how the Key Personnel will monitor and maintain progress, control quality, resolve problems, and obtain advice on key decisions about the technical and commercial dimensions of the proposed Project. Also provide information about the management reporting structure among Key Personnel and the Lead Applicant.

- **Biographical Sketches.** Biographical information is limited to no more than ten (10) individuals whom the Lead Applicant considers key to the success of the Project. These ten (10) individuals should represent the proposed Project's leadership from the technical, commercial, and managerial perspectives and ideally should be drawn from personnel of the Lead Applicant as well as Collaborators. Biographical sketches shall be no more than one (1) page each and one sketch must be included for each Key Personnel up to the total of ten (10) individuals. The biographical information should present the relevant work history, technical experience, commercialization experience, project management experience, educational attainment, honors and recognitions, and selected recent publications that relate directly to the subject matter of the proposed Project. If a key position is to be filled upon award of a Grant, please provide either a job description for that position or a description of a candidate to whom the Lead Applicant has made a contingent offer.

5.3.12 Budget

The Lead Applicant must retain a significant percentage of the requested budget to be spent in-house for the efforts of the Lead Applicant. No more than 20 percent of the total direct State Grant Funds requested may be budgeted for indirect costs. No more than 20 percent of the total direct State Grant Funds requested may be used for capital equipment, construction, or renovation costs.

A rate of 20 percent of total direct costs may be used for facilities and administrative (F&A) indirect costs, but only on the operational portion of the budget. The difference between 20 percent and the Lead Applicant's federally approved facilities and administrative indirect costs rate agreement (or published indirect rate if no federally approved rate exists), and therefore the un-recovered F&A costs from the State funds requested, may be used as Cost Shared indirect costs. (Note: Lead Applicant will need to insert the percent differences into its formula on the budget form). However, the Lead Applicant's indirect cost rate may not also then be applied to Cost Shared direct costs and used as Cost Shared indirect costs. In those cases where the Lead Applicant does not have a federally negotiated and approved F&A rate agreement, the Lead Applicant is limited to using 20 percent of its Cost Shared direct costs as Cost Shared indirect costs and no other un-recovered indirect costs from the operating budget may be claimed.

Budget Form 1 (Appendix B) is to be used to present the total three-year budget plan for the funds requested and all Cost Share by the specific use categories listed on the form. The Cost Share presented on the form must be at least equal to the ratio of funds required by Development for this RFP. On the bottom half of the form, estimate the allocation of funds by project areas. Generally, these project areas will correspond to the developing technologies identified in the Commercialization Strategy as discussed in Section 5.3.7. However, there may be additional project areas focused on supporting research.

Please note that the Lead Applicant must identify its requirements for high performance computing facilities and services, including hardware, software, and infrastructure services in its Proposal. If a Lead Applicant's computing requirements exceed approximately \$100,000 for a proposed Project, the Lead Applicant will notify Development, and the Ohio Supercomputer Center may convene a panel of experts. The panel will review the Proposal to determine whether the Proposal's requirements can be met through Ohio Supercomputer Center facilities or through other means and report such information to the OTFC. All Lead Applicants are encouraged to consult with the Ohio Supercomputer Center in advance of submitting a Proposal with \$100,000 or more in high performance computing facilities, equipment, or infrastructure services.

Budget Form 2 (Appendix B) is to be used by the Lead Applicant. The total Grant Funds requested in the Proposal must be represented on this form as the Grant amounts that will be used by the Lead Applicant and Collaborators. The Subcontract/Sub-grant line on this form refers to the funds provided to Collaborators by the Lead Applicant or Cost Share provided by Collaborators.

Budget Form 3 (Appendix B) is to be completed for each Collaborator. A Collaborator is any entity that is receiving a Subcontract/Sub-grant from the Lead Applicant or is committing Cost Share to the proposed Project.

The total of the requested funds and Cost Share funds among the Collaborators' budget forms must equal the total corresponding amounts of the Subcontract/Sub-grant line reported in Budget Form 2.

Budget Form 4 Table of Cost Share (Appendix B) form requires the Lead Applicant to report the sources of Cost Share by entity and the kind of Cost Share from itself and all Collaborators. A Letter of Commitment on the Cost Share sources letterhead, signed by an authorized representative, must support each Cost Share amount claimed.

A detailed **Budget Narrative** should also be included covering an explanation of the costs for both the State Grant Funds requested **and** Cost Share committed.

5.3.13 Collaborator Information/Letters of Commitment

A Commitment Letter must be provided for each Cost Share provider and Collaborator identified in Budget Forms 3 and 4. Commitment letters may not be more than two (2) pages and may not include appendices or attachments. The letters must:

- Be submitted on the letterhead of the Collaborator;
- Include the name of the Lead Applicant, the title of the Proposal, and the LOI number assigned by Development;
- Briefly state the nature of the collaboration;
- State the duration of the collaboration;
- State the resources, other than Cost Share, the Collaborator is committing to the proposed Project;
- State how the proposed Project will contribute to the strategy of the Collaborator;
- State the specific amount of the commitment that matches the amount of Cost Share on the corresponding Budget Form 3;
- State the source of the commitment;
- State when the committed resources will be available to the Lead Applicant;
- Be dated and signed by a representative of the Collaborator with the authority to make the Cost Share commitment.

Other letters are allowed but only if they come from a committed end-user who has a commercial interest in, and can anticipate commercial benefit from, the results of the proposed Project. These other letters must describe the anticipated benefit and what advice and support the committed end-user will be providing in the way of market opportunities, knowledge of competing technologies, technological and/or commercial hurdles for the proposed Project, and parallel and supportive research efforts. Letters from committed end-users may not be more than two (2) pages and may not include appendices or attachments.

5.4 Page Limitations

Any pages beyond the page limits listed will be eliminated from the Proposal before it is sent for technical review and evaluation. Except as otherwise noted, appendices or other methods to augment the information presented in the Proposal are not allowed. Reference to web-based information to supplement the Narrative is not permitted, and such references will not be considered in the evaluation.

- Abstract – 1 page (500 words)
- Technical Plan – 20 pages (plus a maximum of 3 pages of “Footnotes” at the end of the Technical Plan)

- Commercialization Strategy – 15 pages
- Projected Economic Impact – 4 pages
- Past Performance on Prior OTF Awards – 4 pages (if applicable)
- Linkage to Prior OTF Investments – 4 pages
- Experience and Qualifications – 4 pages total including the Lead Applicant and all Collaborators
- Biographical Sketches – 10 pages (A maximum of 10 biographical sketches of Key Personnel and each bio is limited to 1 page)
- Budget – use specified forms
- Budget Narrative – 4 pages total
- Collaborator Information/Letters of Commitment (A maximum of 2 pages per letter and letters may only be submitted from Collaborators or committed end-users as defined in section 3.3.3 of this RFP. Letters may not have attachments or appended materials of any kind.)

APPENDICES

- A. Definitions
- B. Forms
- C. Cost Share Guidelines

Appendix A

Third Frontier Grant Programs

Definitions

Appendix A

Definitions

Collaborator – An individual not employed by or related to the Lead Applicant or an organization, institution, company or other legal entity that is not an affiliate of the Lead Applicant which is anticipated to receive State Grant Funds and/or is contributing to Cost Share. All Collaborators must be represented by a Co-Investigator.

Co-Investigator – See Principal Investigator.

Cost Share – See Appendix C.

Effective Date – The date upon which a Grant Agreement between a Lead Applicant and the State of Ohio is effective.

Equipment – Any item of equipment which both costs \$5,000 or more and has a useful life of more than one year.

Grant Accounts – Accounts established and maintained by a Grantee to record separately in its books and records receipt and use of Grant Funds and Cost Share.

Grant Agreement – A legal agreement setting forth the terms and conditions upon which Grant Funds are awarded and the respective rights and obligations of the Lead Applicant and the State of Ohio with respect to Grant Funds and the Project for which they are to be used.

Grant Funds - Financial assistance in the form of money awarded by a government agency to an eligible applicant in order to accomplish a public purpose of support or stimulation of development authorized by statute.

Indirect Cost – A cost that is incurred for common or joint objectives and therefore cannot be identified readily and specifically with a particular sponsored project but nevertheless is necessary to the operation of the organization. Also known as “Facilities & Administrative (F&A) cost.”

Key Personnel - Individuals from the Lead Applicant and/or Collaborators who represent a Project’s leadership from the technical, commercial, and managerial perspectives.

Lead Applicant – The entity that submits a Proposal and will be legally and financially responsible for the administration of any resulting award of Grant Funds.

OTF Website – www.thirdfrontier.com

Principal Investigator or PI – The individual responsible and accountable for designing, conducting, and monitoring the Project. “Co-Investigators” are two or more investigators who share the responsibilities of a Principal Investigator.

Principal Place of Business - A facility located in the State of Ohio where the Lead Applicant, who is registered with the Secretary of State to conduct business in Ohio, maintains physical operations managed by a senior representative of the Lead Applicant who is authorized to make decisions and to obligate the Lead Applicant and its resources. This facility must be owned by the Lead Applicant or be subject to a lease, the balance of which matches or exceeds the term of the Grant Period. The facility must be a recipient or beneficiary of a significant amount of the funds awarded to the Grantee.

Program Administrator – Personnel of the Ohio Department of Development assigned to monitor the progress of a Project awarded Grant Funds.

Project – The plan of activity or activities that make up the total scope of work for which an award of Grant Funds is requested and for which a Proposal is approved.

Project Completion Date – The date by which the Grantee shall complete the Project and incur all eligible expenses.

Project Period – The period of time from the Effective Date until the Project Completion Date.

Proof of Principal – A research effort to prove that the core ideas of a concept or theory are workable and feasible.

Proposal – A proposal as submitted by a Lead Applicant seeking an award of Grant Funds in response to a Request for Proposal issued for a particular Third Frontier Program.

Subcontract/Subgrant – A subcontract/subgrant is a legal agreement between a Grantee and an individual or entity that has expertise in a particular area or access to specialized resources or materials that the Grantee lacks. A subcontract/subgrant is identified in the proposal for performance of a specific function.

Supplies – Materials, including equipment, which both costs less than \$5,000 and has a useful life of less than one year.

Transition – The acquisition of the resources required to engage in the next phase of technology commercialization.

Appendix C

Third Frontier Grant Programs

Cost Share Guidelines

Appendix C

Cost Share Guidelines

Grantee will adhere to the cost share requirements set forth in this Appendix governing the identification and use of resources other than Grant Funds for eligible expenses of the Project.

The Cost Share Amount may be provided in cash or in kind as designated in sections 3.5 and 5.3.9 of the RFP. Cash and in-kind contributions to the Cost Share Amount may be as follows:

- A. Cash contributions counted against the Cost Share Amount includes eligible expenses of the Project (1) incurred to perform activities in direct support of the Project during the Project Period; (2) charged to resources of Grantee or of a subgrantee or subcontractor engaged by Grantee on the Project, and (3) documented in Grant Accounts or in the Grant-related financial books and records of the subgrantee or subcontractor, as the context requires. Cash contributions to the Cost Share Amount include resources other than Grant Funds provided by a third party to Grantee, a subgrantee or subcontractor, or to a parent organization specifically for the use or support of Grantee, a subgrantee or a subcontractor, which are actually used to perform Project activities.
- B. In-kind contributions to the Cost Share Amount include the value of goods and/or services which are an eligible expense of the Project (1) supplied by Grantee, a subgrantee, subcontractor or other third party during the Project Period, (2) received by Grantee, a subgrantee or subcontractor during the specific period to which the cost sharing or matching requirement applies and used by Grantee, a subgrantee or subcontractor to perform activities in direct support of the Project, but (3) which are not separately accounted for by Grantee in the Grant Accounts or by a subgrantee or subcontractor in its respective Grant-related financial books and records.

General Conditions and Restrictions:

- A. Contributions to the Cost Share Amount must be for eligible expenses consistent with the then-current version of Federal Office of Management and Budget Circular A-21 and must be accessible to verification and audit.
- B. Contributions to the Cost Share Amount must provide direct support for the Project. Expenditures that provide coincidental benefits to or support for the Project may not be counted against the Cost Share Amount. All resources counted against the Cost Share Amount must be necessary and reasonable considering the Project objectives and the activities to be performed as part of the Project.
- C. Contributions, whether cash or in-kind, may not be counted against the Cost Share Amount if the same resources are used to satisfy the cost share requirement of any other funding program.
- D. Contributions of financial support, both cash and in-kind, included as part of the Project's Cost Share Amount must be made between the Effective Date of the Grant Agreement and the Project Completion Date.
- E. Grantee may request Grantor approval of financial support for the Project that does not meet the cost share requirements set forth above. Any such request shall be made by Grantee in writing, and such financial support may be counted against the Cost Share Amount only if and to the extent approved by Grantor in writing prior to the contribution of such financial support. Grantor may give or withhold approval within its discretion.

F. Value of Contributed Goods and Services.

- 1.) Services are contributed to a Project (i.e., donated services) when an individual employed by the contributor of the donated services works to perform Project activities without charge to Grantee, a subgrantee or subcontractor. The value of donated services will be an amount equal to the individual's regular rate of pay from the contributor of the individual's services, including fringe benefits up to 30% of base pay, for the period of time during which the individual performs Project activities provided that the individual whose services are contributed performs functions for Grantee, a subgrantee or subcontractor equivalent to the services for which the individual is compensated by the contributor.
- 2.) The value of supplies and materials contributed to the Project will be an amount equal to the fair market value of such supplies and materials at the time they are contributed to Grantee, a subgrantee or subcontractor. Grantee shall provide documentation supporting its determination of the fair market value of such supplies and materials.
- 3.) In-kind contributions may include use of equipment and/or space (facilities) which are necessary and reasonable for the Project. The value of the use of equipment and/or space (facilities) will be an amount equal to their fair rental value of the equipment and/or space at the time it is contributed to Grantee, a subgrantee or subcontractor. Grantee shall provide documentation supporting its determination of the fair rental value of such equipment and/or space (facilities).
- 4.) In-kind contributions may include transfer of ownership to equipment, buildings, and/or land which are necessary and reasonable for the Project. The value of any such equipment, buildings, and/or land will be an amount equal to its respective fair market value at the time the equipment, buildings, and/or land is contributed to Grantee, a subgrantee or subcontractor. Grantee shall provide documentation supporting its determination of the fair market value of such equipment, buildings and/or land.

G. Documentation of all contributions to the Cost Share Amount must identify the source of the contribution and its address, state the value of the contribution (whether made in cash or in-kind), and provide as to any in-kind contribution a reasonably detailed description of the method of valuation of such contribution.

H. Grantee shall maintain in its records related to the Project documentation sufficient to verify all Project costs and contributions claimed as part of the Cost Share Amount, including the supporting documentation for valuation of in-kind contributions. Cost share documentation will be subject to inspection and audit as provided in the Grant Agreement.

I. Certification of Cost Share:

- 1.) The method and frequency of reporting contributions to the Cost Share Amount, whether made in cash or in-kind is the same as financial reporting for the Grant Funds.
- 2.) Grantee must identify cash and in-kind contributions to the Cost Share Amount in separate columns in its financial reports to Grantor.
- 3.) Grantee shall maintain during the Project Period an itemized list of in-kind contributions to the Cost Share Amount. Grantee shall make such list available to Grantor for review upon request.

- J. Modification of Cost Share Guidelines: Grantor may revise the Cost Share Guidelines from time to time. Any changes to the Cost Share Guidelines shall be effective upon delivery of written notice to Grantee and shall apply prospectively.