



Accelerating and supporting nanotechnology commercialization in Pennsylvania through industry, university and investor partnerships.

Request for Proposals #10

Idea Submissions Deadline: July 29, 2011 (EOB)
Final Proposal Deadline: August 17, 2011 (5PM EST.)
Award Announcement: approx. November 2, 2011

Informational Webinars: The Center will be hosting a series of webinars to review the Center's model, proposal submission and evaluation process. *There is also a special webinar planned to address the commercialization strategy*

Wednesday, June 22, 2011

Idea submission closes on July 13, 2011

Wednesday, July 13, 2011

Proposal Deadline Wednesday, August 17, 2011

Any changes to the schedule will be reflected on the Centers website, pananocenter.org.

Proposal Ideas: The Idea Submission is a 2- page document describing (a) technology – describe the uniqueness and the stage of development (b) commercialization path –provide an overview of the commercial plan, that include established or potential partnerships, to implement the proposed development. In response, the Center will provide written feedback on how well the project idea fits the proposal criteria and the Center's mission for funding. **The Center will be accepting Idea Submissions from June 9 – July 29, 2011.**

The Idea Submission Template is available on the website. Note that submitting an Idea Submission, is not required but highly recommended.

Grant Program Description:

The Pennsylvania NanoMaterials Commercialization Center (the Center) with the support of the Department of Community and Economic Development of the Commonwealth of Pennsylvania (DCED) and the Air Force Research Laboratories (AFRL) will be making available a total of \$700,000 to fund and accelerate the commercialization of advanced nanomaterials technology. There are two funding opportunities: **\$35,000 for pre-commercialization** projects and **\$185,000 for commercialization** projects.

Pre-Commercialization Funding – The request for funding must not exceed \$35,000. University researchers and companies located in Pennsylvania are eligible to propose and execute the projects. The Center has developed a unique partnership model that translates to the proposing teams consisting of a combination of universities, small and/or large companies. Engaging and establishing interest from potential partners that include commercial and/or customers is a requirement of the submission. In the event you require assistance to initiate these collaborations the Center may be contacted to identify match making opportunities.

Matching contribution in direct support of the proposed program is required: the equivalent of 100% of funds requested (e.g. \$35K funds requested = \$35K matching requirement). Examples of acceptable types of matching contributions include cash, in-kind labor or laboratory expenses, or overhead expenses as it applies to universities.

The proposed program must not exceed 6 months in duration. The Center will accept repeat proposals that were unsuccessful in a prior funding round. We encourage these teams to engage the Center and apply the feedback received from the review committee to any new and improved applications. Contact the Program Manager, Leoné Hermans-Blackburn leonehb@pananocenter.org or 412.918.4239 for more information.

Commercialization Funding - The request for funding must not exceed \$185,000. Any Pennsylvania based company is eligible to propose and execute the projects. The Center has developed a unique partnership model which encourages the proposing teams have universities, small and/or large companies as contributing partners to the proposed development. This collaborative approach produces an innovative technology supported by a business development team with experience in the market, customer base and manufacturing; components necessary for commercial success. Confirmation of partner relationships (i.e. Letter/s of Support) and/or evidence for potential collaboration is required. In the event that a Joint Development Agreement between partners and/or collaborators has been initiated the Center requires that all IP issues between the parties have been resolved and the agreement has been executed before the start of a project with the Center.

Matching contribution in direct support of the proposed program is required: a minimum match contribution of 50% of the funds requested (e.g. \$185,000 funds requested = \$92,500 matching funds required). Examples of acceptable types of matching contributions include cash, in-kind labor or laboratory expenses (materials, services and equipment). The latter could include sub-contracting costs.

The proposed program must not exceed 12-months in duration. The Center will accept proposals that were unsuccessful in a prior funding round. We encourage these teams to engage the Center and apply the feedback received from the review committee to any new and improved applications. Contact the Program Manager, Leoné Hermans-Blackburn (leonehb@pananocenter.org or 412.918.4239) for more information.

Proposal Format and Assessment Criteria: Proposals must use the template provided on the website. **Commercialization proposals must not exceed 20 pages – this refers to the *body* of the proposal and excludes all supplemental documentation.** All submissions and supporting documents must be provided electronically and emailed to the Program Manager, Leoné Hermans-Blackburn, leonehb@pananocenter.org. **Identify all files submitted with a file name that clearly indicates the affiliation of the primary proposer.**

The following proposal outline is required.

Pre-Commercialization Proposal:

Template available at www.pananocenter.org

All pre-commercialization proposals will be scored in accordance with the following 5 criteria and approximate weighting as described below.

- | | |
|---------------------------------------|-----|
| 1. Technical Innovation and Viability | 40% |
| 2. Market and Customer Appeal | 30% |
| 3. IP Status | 5% |
| 4. Project Plan | 20% |
| 5. Project Budget Summary | 5% |

1. **Proposal Cover Page** – Insert the contact details of the primary investigator of the proposing team and other proposing team members.
2. **Executive Summary** – Provide a succinct summary of the technical and commercial project description at a level that can be understood by a technically competent non-specialist. Proposers should identify the novelty/originality of the proposed work and state how, in what areas, or in what form the proposed product/process will be used by industry. The executive summary should not exceed 1-page.
3. **Technical Innovation and Viability** - The proposed work should be placed in the context of similar, related and competing efforts being carried out. Include data that shows lab scale reproducibility and the support the technical claims. Describe the current stage of the technological developments (1= fundamental research; 2= invention disclosure; 3= product samples available; 4= patent filed; 5= patent issued; 6= customer sampled). Clearly describe the technological development the funding will support.
4. **Market and Customer Appeal** - Describe the potential new product application/s. Provide a summary of any communications with potential customer(s) and/or other parties that have expressed an interest in the technology development. If it applies, Include evidence, e.g. Letter/s of Support, clearly indicating a level of commitment for the development and/or evaluation of one or more product applications.
5. **Intellectual Property Rights** – Provide a statement on the current status of the intellectual property - include (a) information on patent(s) filed and issued and (b) an explanation of the proposer’s access to and right to practice the technology both needed for and developed during the proposed project.

Proposing teams are encouraged to the standard Pre-Commercialization Subrecipient Agreement.

6. **Project Plan** – The project duration is estimated to not exceed 6 months. Include a project goal statement that speaks to *both* the technical and commercial goals. Milestone 1 is defined as project kick-off and could have as deliverable signed copies of any outstanding agreements. The remaining milestones are divided into a technical and commercial component. For each technical and commercial component include the task descriptions and the deliverables for that milestone period. Each task description must provide sufficient detail for reviewers to understand the scope of the proposed work and how the goal of the project will be reached. The project plan must reflect the contribution from the commercial partners that have been identified in the proposal. **Plan for a minimum of two milestone review meetings.** Proposers must use the format provided. If the format is not applied, proposals may be returned.

7. **Project Budget Summary** – proposed direct and indirect costs for personnel, materials, subcontractors and/or supplies etc. The use of grant funds to purchase equipment (assets or non-consumables) is strongly discouraged. Identify the amount and allocation (use same categories as for grant funds) of the matching funds.

NOTE: The total grant amount will be divided into 3 payments. First payment will be allocated to Milestone 1, defined as the project kickoff. The second payment will be for Milestone 2 and the third payment will be delayed until after Milestone 3 has been completed and all close-out documents have been received and the project concluded. Other suggestions for the payment may be considered by the Center.

8. **Supplemental Documentation** – Strongly recommended, but not required.
 - (a) Matching fund contribution - A letter describing the type and total amount of matching funds must be submitted on institution letterhead from authorized personnel.
 - (b) Letter of Support - If different from (a) provide a letter of support from the party expressing interest in the development of the technology.

Commercialization Proposal

Template available at www.pananocenter.org

1. Technical Innovation and Viability	25%
2. Market and Customer Need	20%
3. Commercialization Strategy	20%
4. IP Status and Value Proposition to the Center	5%
5. Project Plan	25%
6. Project Budget Summary	5%

1. Proposal Cover Page – Insert the contact details of the primary investigator of the proposing team and the names and affiliations of any other proposing team members.

1. Executive Summary – Provide a succinct project description of the technical and commercial components of the project at a level that can be understood by a technically competent non-specialist. Proposers should identify the novelty/originality of the proposed work and state how, in what areas, or in what form the proposed product/process will be used

by industry. Highlight the company and partner core competencies. **The executive summary should not exceed 1-page.**

2. **Technical Innovation and Viability** – Identify how the proposal fits within the technology thrusts outlined in the Center’s Technology Roadmap. Clearly explain how the proposed technology solution is innovative and can be distinguished from existing work in the technical area. The proposed work should be placed in the context of similar, related and competing efforts being carried out. Include data that shows lab scale reproducibility and substantiate the technical claims. Describe the stage of the development with regard to the product development cycle. Clearly outline the development the grant funds will support. The Center does not support fundamental research or fund development that is merely a modification to an existing technology or process.
3. **Market and Customer Need** – *Qualify and quantify* the market potential. Provide reputable, *current* and relevant market analysis to support the claims for the opportunity to enter the market. This should include the size of the current market, potential customers, impact of competitive technologies etc. Show that a partner, if it applies, (e.g. commercialization partner or customer) can demonstrate credibility in understanding the marketplace need. Identify potential customers for the technology and include evidence, for e.g. a Letter of Support, clearly indicating a level of commitment for the development of the selected product application. Provide a statement to outline how the outcome of the proposed development could benefit the future growth of Pennsylvania companies.
4. **Commercialization Strategy** – The proposal must clearly demonstrate that the proposing team has considered both the current state of the technology, the expected commercialization goal of the project, and the proposed steps that will be taken to reach this goal. The Center has developed a unique partner model that requires a collaboration arrangement between startup entities, established companies and/or universities. The established company can be a company of any size, but must have the ability to commercialize and produce saleable products. The proposal should describe the relationship that has been established between the primary proposer and/or commercial partners and any non-commercial researchers or other partners in the proposal. This information should be included in the Definition of Roles Agreement signed by all members of the proposing team. This agreement is shown in Appendix D. ***The Center only supports projects from U.S. owned companies with substantial research or manufacturing facilities located in Pennsylvania.***

Each proposal submitted to the Center should provide a brief description by the proposing team outlining their ideas on the next steps after the conclusion of the project. Examples include: licensing by one of the commercial partners, licensing to non-partner companies, and/or seeking funding from venture capital companies.

5. **Intellectual Property Rights and Value Proposition** – Provide a statement on the current status of the intellectual property - include (a) information on patent(s) filed and issued and (b) an explanation of the proposer’s access to and right to practice the technology both needed for and developed during the proposed project.

Proposing teams are encouraged to review the IP policy documents as it applies:

- (i) **University IP policy** - For company-university partnership teams, the Center has a clearly defined IP Policy in place with Carnegie Mellon University, The Pennsylvania State University, the University of Pittsburgh, and Lehigh University. If the proposing team involves one of these four universities, the Center requires that the proposed work and partnership follow the Center's pre-defined University IP policy. This policy can be obtained via the Center's website.
- (ii) **Company IP Policy** – For company-company partnerships, the Center also has a general IP policy applicable to the relationship between the Center and company-company teams.

Provide a statement explaining the proposed value proposition to the Center.

The proposal should define the value proposition to the Center. This value proposition should a business case for why the Center should fund the project. The proposing team is encouraged to suggest areas of mutual benefit to the Center and the proposing team.

Each proposal submission that does not involve one of the four partner universities should include the Field of Use (FOU) document. This document will use the format described in Appendix E.

- 6. **Project Plan: Milestones and Deliverables** – Provide a succinct technical and commercial objective statement. Describe the task descriptions and clearly explain deliverables for each of the technical and commercial milestones for the duration of the project. For each task description provide sufficient detail for reviewers to understand the scope of the proposed work and how the goal of the project will be reached. Proposers must use the format provided. If the format is not applied, proposals may be returned.

The project plan should clearly identify commercialization milestones such as prototype development, reaching agreements with customers, continued market analysis, customer prototype evaluation, etc.

- 7. **Project Budget Summary** – proposed direct and indirect costs for personnel, materials, subcontractors and/or supplies etc. The use of grant funds to purchase equipment (assets or non-consumables) is strongly discouraged. In addition, indicate the matching funds that will be contributed and the allocation in the similar categories listed above. The budget must be provided using the sample format. If the sample format is not applied the proposal may be returned.

NOTE: The project length on average is 12 months +/- 2 months. Approximately 10-15% of the grant is paid in Milestone 1, defined as the project kickoff. An amount equal to 7% of the funds awarded must be allocated as a “reserve fund” for any un-anticipated problems which arise during the execution of the project. As part of the project proposal, these reserve funds are not to be assigned to any labor or materials for the deliverables in the statement of work (SOW). These monies will be allocated, with joint approval of both the Center and the project company during the project using the center's change order process. The funds will be used to ensure the timely execution of the project deliverables according to the SOW.

Then another 10% is held until all close-out documents have been received and the project concluded. The remaining funds are *typically* spread over 3 Milestone periods. Other suggestions for the payment may be considered by the Center.

Required Documentation

- (A) Subrecipient Agreement Review Form
- (B) Definition of Roles Agreement
- (C) Due Diligence Form
- (D) Retained Field of use Form
- (E) Letter of Support - provide a letter/s of support from the partner and/or collaborator expressing clear interest in the development of the technology. The level of c
- (F) Matching fund contribution - A letter describing the type and total amount of matching funds must be submitted on institution letterhead from authorized personnel.
- (G) W-9 Form

Evaluation: Proposal reviews will be carried out according to the following criteria – a combination of technical and commercial content. Approximate for each section is as follows:

Pre-Commercialization Proposal:

The pre-commercialization proposals are designed as fast-track program not exceeding 6 months in duration. The goal is to ready a proposed technology based on advanced nanomaterial research to qualify for the commercialization program. The stage of development is that proof-of-concept (including lab scale data) has been established with the one or more of the following elements being outstanding: targeted application not identified, potential customers need to be contacted and interest established, commercial partners need to be identified and level of commitment documented, market analysis incomplete etc.

- 1. Technical Innovation and Viability (~ 40%)
- 2. Market and Customer Appeal (~ 30%)
- 3. IP Status (~5%)
- 4. Project Plan (~20%)
- 5. Match Requirement and Budget (~5%)

Commercialization Proposal:

- | | |
|--|-----|
| 1. Technical Innovation and Viability | 25% |
| 2. Market and Customer Need | 20% |
| 3. Commercialization Strategy | 20% |
| 4. IP Status and Value Proposition to the Center | 5% |
| 5. Project Plan | 25% |
| 6. Project Budget Summary | 5% |

1. Technical Innovation and Viability (~ 25%)
Reviewers will be asked to evaluate how well the proposal fits the Center's Technology Roadmap and establish whether the proposed technology is unique and has a relevant market appeal. The stage of the technological development in the product development cycle and associated proof-of concept data will be an important consideration to the evaluation.
2. Definition of Market and Customer Need (~ 20%)
The reviewers will be looking for a clear and current analysis of the market potential for the proposed technology application.
3. Commercialization Strategy (includes Future Plans and Partners) (~20%)
The path to commercialization in the context of the proposed technology must be outlined clearly in **commercialization milestones**. The reviewers are looking for *who* is involved, with particular consideration to partnerships (company-company and/or company-university), customer feedback-evaluation loops, and finally addressing the *how* and *how much* for the commercialization efforts. The merits of the proposal will also be based on how the funding will impact potential economic development. The reviewers will look for evidence of company and university collaborations, licensing opportunities, new product offerings, job creation etc.
4. IP Status and Value to the Center (~5%)
This section must include an explanation of the proposing team's access to and right to practice the technology both needed for and developed during the proposed project.
5. Project Plan (~25%)
The reviewers are charged with establishing the feasibility of the proposed project plan. The details outlined for each of the milestones both technical and commercial must be specific to the primary goal of the project and include the input of the partners and/or customers.
6. Budget, Financials, and Match (~5%)
The reviewers will evaluate the appropriateness of the budget in reference to the proposed project plan. The matching fund contributions are considered a requirement.

Selection Process: Award recommendations will be made by the Center's Technical Advisory Committee (TAC) and will require approval by the Pennsylvania NanoMaterials Commercialization Center Governing Board. The TAC is made up of representatives from; universities, small and large companies and government laboratories, and certain commercialization organizations. The individual members share expertise in advanced nanomaterial technology and the commercialization and business development of new products. The first pass review is an independent review by the TAC. The scores are assimilated and the proposals are ranked for discussion purposes. The TAC convenes to review and evaluate the merit of each proposal and make recommendations for funding to the Board. Reviewers that have been identified as posing a Conflict of Interest will not partake in the review and selection deliberations for the proposals. The names and affiliations of the TAC and Board members are available on the center website. The Center staff, TAC and Board members have signed confidentiality agreements and are required to respect the confidentiality of the information provided in proposals.

Project Management: The Centers Program Manager will monitor progress of each project, schedule and approve project milestone review meetings. Project review meetings will be scheduled to fall within 3-5 days of the Milestone completion date. A written milestone report is due within 3 days of the milestone review meeting. Either a conference call or meeting will be scheduled to review the milestone tasks and deliverables. When the report is approved, the milestone invoice can be submitted to the Center for payment.

All correspondence and questions on this solicitation should be directed to the Program Manager.

Program Manager

Leoné Hermans-Blackburn, Ph.D.

2000 Technology Drive, Suite 100

Pittsburgh, PA 15219

Phone: 412.918.4239

E-mail: leonehb@pananocenter.org