

2008 PROPOSAL PACKAGE

**APPLICATION to the
NANOTECHNOLOGY
COMMERCIALIZATION GROUP
of the
NANOTECHNOLOGY INSTITUTE
PROGRAM to SUPPORT
TRANSLATIONAL RESEARCH
PROOF of CONCEPT FUND**

JUNE 1, 2008

APPLICATION TO
NANOTECHNOLOGY COMMERCIALIZATION GROUP
PROGRAM FOR SUPPORT of TRANSLATIONAL RESEARCH
PROOF of CONCEPT (PoC) FUND

**THE NANOTECHNOLOGY INSTITUTE
2008 PROPOSAL PACKAGE**

Funding Period and Deadline:	Rolling – ending September 30, 2009. Fund will be available from June 1, 2008. Grants will be for a one-year period and eligible for renewal.
Size of Award:	Phase I: \$30 – 60K; Phase II: \$100-250K.
Eligibility:	Universities, preferably with industry partners, whose proposals are based on intellectual properties from NTI member institutions and are registered by the Nanotechnology Commercialization Group (NCG).
Company Match:	While not required, matching funds will strengthen the grant application.
Form of Investment:	Milestone-based grant
Intellectual Property:	Project proposal must be based on intellectual properties owned by NTI member institutions, such as patents, copyrights, and provisional patent applications.
Application Fee:	None
Directions for Submission:	Submit original and disk file to: Erli Chen Director of Nanotechnology Licensing Center for Technology Transfer University of Pennsylvania Left Bank Commons 3160 Chestnut Street, Suite 200 Philadelphia, PA 19104-6283 Tel: 215-898-9272 Fax: 215-898-9519 Or email to: chen@ctt.upenn.edu

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A complete submission includes:

- A hard-copy or scanned/e-mailed original proposal bearing all authorized signatures.
- The submission must include:
 - 1) A detailed technical proposal, with work plan and milestones,
 - 2) Evidence of any contractual agreements needed to carry out the proposed work, and
 - 3) Other requirements as noted throughout this document.

Questions:

215-898-9272

NTI University Affiliates: CHOP, Fox Chase Cancer Center, Drexel University, Haverford College, Thomas Jefferson University, Millersville University, University of Pennsylvania, University of the Sciences in Philadelphia, Temple University, Villanova University, Widener University

Funding under this program is made possible by the Commonwealth of Pennsylvania under the Ben Franklin Technology Development Authority and the Nanotechnology Institute.

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I. Program Description

A. Overview

The Nanotechnology Institute (NTI) was formed in 2000 as a partnership among Ben Franklin Technology Partners of Southeastern Pennsylvania (BFTP/SEP), Drexel University and the University of Pennsylvania, to support regional economic development, connecting university assets in medicine, biotechnology and nanotechnology to the pharma/biotech industrial cluster in the region. The NTI was seeded with a technology grant whose cumulative value is \$16.3M (2000-2006) from the Commonwealth of Pennsylvania's Ben Franklin Technology Development Authority (BFTDA), administered through the Department of Community & Economic Development (DCED).

The mission of the NTI is to act as the catalyst for enterprise creation using nanotechnology as an enabler for the development of new products and processes; orchestrating the creation and efficient transfer of intellectual property from the universities into area companies and new businesses; helping to educate & build a skilled technical workforce, and organizing, communicating and marketing the assets of the region with a unified voice. The role of the Nanotechnology Commercialization Group (NCG) within the NTI is to create a region-wide pool of university-based nanotechnology intellectual property, provide a community technology transfer service and a single point of negotiation for intellectual property licensing.

The NTI Program to Support Translational Research includes a Proof of Concept (PoC) Fund designed to fund proof-of-concept studies for emerging technologies from our NTI University Affiliates and support the growth and development of the regional nanotechnology and related industries through access to critical assets, including key R&D faculty expertise, facilities, specialized equipment and networks. The technology focus of the PoC Fund application need not be on the pharma/biotech sector (the stated focus of NTI), but it must utilize nanotechnology in its product development and address viable commercial markets.

B. Funding & Eligibility

- Awards through the PoC Fund are \$30K-50K per project for Phase I (seed projects), and \$100K-250K per project for Phase II.

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- Proposed project has to be based on intellectual properties from NTI member institutions and are registered by the NCG.
- Awards are made to faculty/staff expressly to perform proof-of-concept studies and/or prototype development.
- Awards may be used to engage the nanotechnology expert services of faculty and/or facilities and equipment of an NTI research partner institution. (If necessary, the NTI will assist a company to identify an appropriate university with which to work.)
- PoC Fund applications may include for-profit company partners of any size and location (partnering with Pennsylvania companies is encouraged).

C. Terms of the Grant

- The award is in the form of a milestone-based grant
- Payments will be made according to the following schedule:
 - 50% upon signing of the grant agreement
 - 40% upon reaching identified milestone
 - 10% upon completion of the project and receipt of grant report
- The NCG Oversight Committee retains the authority to determine if the identified milestone has been satisfied.

D. Use of PoC Funds

PoC Funds may be used for personnel, materials/supplies, consulting fees, and other direct R&D expenses, as well as technical feasibility assessment, field testing, and other efforts related to the project. Funds should be spent before September 30, 2009; therefore the proposed project should be designed and scaled to be completed accordingly.

Ineligible expenses include office or lab rent, equipment purchase, travel, meals & entertainment, market studies or market research, grant writing, business plan writing, patent protection and any other activities not directly related to technology development.

II. Program Requirements

A. Agreements in Advance:

1) Sponsored Research

If the grant application includes sponsored research with a for-profit company, the applicant must show evidence of a signed agreement for the specific services stated in the project work plan. Typically, this involves developing a joint statement of work and agreement involving the university principal investigator (PI), the university sponsored

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research office, and the company representative. A joint statement of the proposed work must be provided with the application.

2) Collaborative Research between NTI Partner Institutions

If the grant application is based on collaborative research between faculty/staff at multiple NTI partner institutions, the grant application must show evidence of a signed agreement between the project partners for the specific services stated in the project work plan. Typically, this involves developing a joint statement of work and agreement involving the university principal investigators (PIs) and the university sponsored research offices. A joint statement of the proposed work and signed agreement must be provided with the application.

3) Sub-Contracted Research

If the grant application includes any sub-contracted services, a quote for the services from a qualified vendor must be provided with the grant application.

4) Intellectual Property

All Faculty/Staff involved in the project must follow the patent policy in place within their individual university or research institution.

For grant applications involving academic/industry collaboration

The company retains complete ownership of all technology developed before the start of NTI funding, as well as any technology developed by its employees during the project. For new technology developed by the research institution, or collaboratively, by the company and the research institution, the NTI requires that the company negotiate an agreement with the university regarding ownership rights to any intellectual property developed by the university partner in servicing this contract prior to final funding approval. The NCG will review and approve the IP agreement between the institution and the company.

B. Evidence of Match Commitment (if applicable)

While not required, commitment of matching funds will result in a stronger grant application. If matching funds will be included in the project proposal, evidence of the match commitment, typically a letter, must be submitted with the proposal to the NCG from each source of matching support for the project. These commitments may be contingent on award of the NTI funding. The letter of support should be addressed to the principal investigator indicated on the grant application cover sheet. See Appendix A for a template letter of support.

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III. Review Process

The evaluation of grant applications is expected to be completed approximately **six (6) weeks** from the closing date. The time may vary slightly depending on the volume of applications.

The NTI maintains the confidentiality of proposals. The NTI staff and reviewers sign non-disclosure agreements with the NTI. NTI universities/faculty have existing confidentiality agreements in-place with the NTI, as a condition for their participation. Proposals should include enough information for reviewers to make informed decisions on the merits of the proposed work. All proprietary information should be clearly marked.

Both technical and commercialization reviews are made to ensure that proposals are based on sound scientific and technical principles, that the development and commercialization program is reasonable, and that the proposals are likely to create positive economic benefits and employment in Pennsylvania. While product development timelines vary widely, projects demonstrating steady progress toward timely commercialization and job creation receive priority consideration.

Technical and commercial reviews will be performed by the PoC Fund Review Committee. The Review Committee is comprised of reviewers with demonstrated technology development and commercialization expertise drawn from regional universities, industry, and venture funding organizations. As part of the review process, applicants may be asked to respond to questions from the reviewers.

The proposal evaluation criteria include:

- Application of viable nanotechnology in product or process;
- Significance of the commercial opportunity, such as market value and level of acceptance, as well as social impact;
- Qualifications of the company & faculty PI;
- Adequacy & achievability of work plan & milestones;
- Near term (3-5 yrs) timelines for commercialization;
- Estimated quantitative financial impact of the development;
- Plan for follow-on funding addressed.

IV. Post-Award Procedures

A. Funding Agreement

The NTI will enter into a grant agreement with the awardees. If industry-university sponsored research is a component of the grant application, the grant application must include proof of having negotiated and executed joint research and intellectual property

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agreements. Grant proceeds may be disbursed as described below after final execution of the agreement.

B. Funds Disbursement

1. After execution of the grant agreement, an amount up to 50% of the grant value may be invoiced immediately to begin work.
2. Upon achieving agreed mid-point milestones, awardees may invoice 40% of the grant amount.
3. The remaining 10% may be invoiced together with the final project and expenditure reports which are required at the end of the project period.

C. Reporting

Award recipients are required to submit a semi-annual progress report and a final project and expenditure report to the NCG at the conclusion of the project period. The final project report is a brief narrative description of the project accomplishments as per the milestones described in the proposal, and future project plans. The expenditure report requires an accounting for the expenditures of the awardee and any participating organizations or sub-contractees during the project.

D. Project Tracking & Management

The NCG, on behalf of the NTI, will actively monitor the projects during the funding period. NCG members are available for advice and consultation. Awardees are encouraged to contact the NCG member as needed throughout the entire project period.

The Commonwealth of Pennsylvania requires an annual performance survey of NTI funded projects. The survey includes information on the number of jobs created, the number of products commercialized, annual revenues, and the amount of private dollars raised. Awardees are required to keep accurate and verifiable records which can be submitted annually.

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PoC FUND GRANT APPLICATION

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Your proposal should include the following elements if applicable:

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II. Non-Confidential Executive Summary

III. R&D Proposal

1). Technical and Commercial Information

A. Problem Statement

B. Program of Work

C. Commercialization Potential

2). Contractual Agreements (if applicable)

3). Project Budget

4). Attachments

A. Letter(s) of Commitment from Matching Funds Source(s) (if applicable)

B. Resume/Curricula Vita

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PROPOSAL COVER PAGE

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PROPOSAL TITLE: _____

Name of Principal Investigator: _____ Title: _____

Company/University/Institution: _____ Telephone: _____

Address: _____

City: _____

State: _____ Zip: _____ Telephone: _____

E-Mail: _____ Web Site Address: _____

Please state the general technology field that is the focus of this PSTR application.

Intellectual Property: Provide title, patent or application numbers (include indication of provisional status), docket numbers, and titles of all Intellectual Property involved in this application.

Patent Title _____

Patent/Provisional Application Number _____

Docket Number _____

Patent Owner (must be a NTI member institution) _____

If a for-profit company is involved, is there a license or option to license in place?

Yes No

Amount Requested from NTI (max. \$60K -Ph I; max. \$250K-Ph II): \$ _____

Total Project Budget: \$ _____

*Please make sure these amounts match those listed on your project budget sheet.

Disclaimer: The submission of the proposal shall not create any rights on behalf of the submitter, contractual or otherwise. The submission of a proposal does not constitute or create any legally binding or enforceable agreement or commitment on the part of NTI other than to maintain the confidentiality of proposal information identified as confidential. No past or future action, or course of conduct by NTI, will give rise to or serve as a basis for any legally

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enforceable duties or obligations on NTI other than to maintain the confidentiality of proposal information identified as confidential.

Signature of Authorized Official at Applicant Company:

Signature: _____ Date: _____

Type or Print Name and Title: _____

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NON-CONFIDENTIAL EXECUTIVE SUMMARY

Proposal Title

Company/University/Institute Name(s)

Provide a two-page maximum executive summary of the project addressing each of the following:

- 1) a description of the technology and the project plan
- 2) an assessment of the market need, and
- 3) anticipated outcome and economic benefits of the project.

* Information provided in this Executive Summary may be used as needed by the NTI and all affiliates in public communications about the NTI and NCG programs and initiatives. Grant applicant and partners acknowledge that information provided in the Executive Summary may be made available to the public at any time by any method.

R&D PROPOSAL

Technical and Commercial Activities

A. Problem Statement. Address each of the following. Use a maximum of five (5) pages.

1. Identify the goals and objectives of the project.
2. Describe the present state of the technology that forms the basis of the project.
3. What is limiting in the current technology that makes improved technology desirable?
4. Identify competing technologies and the advantage(s) of the proposed technology.

B. Program of Work. Address the following. Use a maximum of ten (10) pages.

1. Describe the method(s) you will use to meet the technical goals. Include any preliminary data that support your choice of methodology and the feasibility of the proposed project.
2. Describe in detail the specific work to be carried out.
3. Specify the role of each participating organization and where the work will be conducted.
4. Summarize the facilities available to the project, whether at the university/non-profit laboratories, the company work site(s), or identified service providers.
5. Describe the roles of the key personnel in the project. Summarize the qualifications of the project's management and technical team members, showing how their education and work experience qualify them for the project. Append a **brief three (3) page** curriculum vitae of each team member. (Please attach resume/CV to the end of the proposal.)

C. Commercialization Potential. Address the following. Use a maximum of two (2) pages.

Identify the target market(s) for the product/process to be developed in the project. Briefly describe the market size, target customers, and competition. Support for this market study can be obtained from BFTP Business Information Services (BIS) led by Fred Strawbridge: fred@sep.benfranklin.org.

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D. Contractual Agreements. Briefly describe any university-industry or sub-contract arrangements addressing the following (maximum of two (2) pages; provide attachments as needed).

In the case of university-industry collaborative research:

- A. Attach the signed intellectual property agreement between the company and the university/non-profit institution. (this is required for the grant application)
- B. Has a contractual relationship between the company and the university/non-profit institution been signed? If not, when will a contract be signed?
- C. Describe any business relationship (e.g., employee, consultant) that the principals, directors, officers, employees or advisors of the firm(s) have with the university or non-profit partner.

For sub-contracted research:

- A. Has a qualified service provider been identified?
- B. Have quotes for services indicated in Program of Work been obtained? If so, please attach.

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PROJECT BUDGET

Budgets should clearly show how PoC funds will be used to achieve project goals. Please review the eligible expenses and budget guidelines below before preparing your project budget. While not required, matching funds will strengthen the grant application. If matching funds are included in the grant application, please be sure to identify the source(s) and use(s) of matching funds in the budget section.

Expenditures are categorized as: personnel, consultants and subcontracts, and other direct expenditures. Note that PoC Funds cannot be used to fund indirect costs. All NTI member institutions have agreed to waive indirect cost requirements. Please also note the following:

1. Personnel for the project should be listed individually by their place of employment, together with their title and their time allocation to the project. Identify all students supported by PoC funds, listing stipends and tuition separately.

University contribution of faculty release time, student stipends, and benefits should be listed as university personnel expenditure.

2. Note: Equipment may not be purchased with PoC funds. The Fund may, however, be used for the rental of equipment. If funds are needed for this purpose the rental cost should be shown in the column under Other Direct Costs.

If a company contributes equipment to the research partner as an outright gift, the full value of the equipment (less the standard educational discount) should be listed, under Company In-kind.

Equipment on loan to the research institution for a limited time should be valued at its annual equivalent rental cost.

3. Identify consultants and subcontracts and attach quotes for services at the end of the grant application.
4. Other direct costs include materials, cost of equipment use, travel directly related to the R&D or to its commercialization, printing, library search fees, etc.

Any materials purchased or manufactured by the company for the project should be listed as expenditures by the company even in the case where they are subsequently given to the research institution.

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5. The company may not include its indirect costs which are supported by its own funds as part of its contribution to a project.

However, any party may include any of its indirect costs which are paid for by federal contract, foundation, or other sources as a contribution to the project.

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Appendix A

Template Letter of Support for Matching Funds Commitment

(Company letterhead)

Dear _____:

This letter represents a commitment by (*name of company*) to provide \$ _____ in matching support for the project entitled " _____ ". This R&D project is the result of joint discussion and agreement between (*name of non-profit institution*) and our company.

Of this support, \$ _____ is a cash payment to (*name of non-profit institution*) to carry out its work on this project. [Our company is also giving (*name of non-profit institution*) equipment valued at \$ _____ (its value after discounting the purchase price by any applicable educational discount).]

We are also providing \$ _____ in in-kind support, including the salary cost of personnel, use of company equipment, materials, and other services devoted to this project.

In addition, our company will be receiving \$ _____ from (*name of funding source*) to support our work on this project. This support is documented in the attached letter from (*name of funding source*).

All funding is for the period ending _____.
Our company agrees to abide by the NTI program policies & procedures.

Sincerely,

Signature

Title