

Request for Proposal (RFP)

Nanotechnology Asset Mapping for the Philadelphia CMSA

by the **Ben Franklin Technology Partners of Southeastern Pennsylvania**

July 25, 2001

The Ben Franklin Technology Partners of Southeastern Pennsylvania invites you to submit a proposal to provide the research and analysis for a prescribed asset mapping for the 4-state Philadelphia CMSA.

Service: Development and Analysis of Nanotechnology Asset Mapping
Timing: 120 days from award of contract, with intermediate deliverables
Bids due: August 15, 2001
Contact: Robert E. Gittler, Coordinator, Regional Initiatives, Ben Franklin Technology Partners of Southeastern Pennsylvania, 11 Penn Center, Suite 1100, 1835 Market Street, Philadelphia, Pa. 19103, Phone: (215) 972-6700 x3222, Fax: (215) 972-5139, email: robert@sep.benfranklin.org

The **Ben Franklin Technology Partners of Southeastern Pennsylvania** (BFTP/SEP) is a not-for-profit corporation founded in 1983 as part of a statewide network to foster the growth and success of the technology sector in Pennsylvania. Ben Franklin provides seed capital and entrepreneurial services to start-up and emerging growth companies, and assists established firms with new product and process development. Ben Franklin also provides economic analysis and business information research.

Ben Franklin has allocated a budget to develop an asset mapping study of the Nanotechnology sector in the four-state Philadelphia CMSA. A key objective of the engagement is to facilitate comparison of the region's Nanotechnology sector with other regions, and benchmark performance in this sector to enable longitudinal comparisons in the future. Another primary objective is to provide data and analysis critical to informing policy decisions for the **Nanotechnology Institute (NTI)**, a regional consortium dedicated to the research and commercialization of nanotechnology (a detailed description of the NTI is enclosed in the attachments). The research would provide a taxonomy for the study of Nanotechnology, quantify and analyze the supportive regional infrastructure, and provide data that highlight areas requiring improvement.

The study would secondarily provide information that could be used to promote Greater Philadelphia's role as an early leader in Nanotechnology.

BFTP/SEP is supported in this endeavor by Arthur Anderson LLP. It is likely that Arthur Anderson will be conducting interviews of certain identified (larger, Pennsylvania) firms at the CFO level. The respondent should envision appropriate roles for each party (i.e., Arthur Anderson and the respondent) in a team approach that views the financial and technical profiles of Nanotechnology

firms, and anticipate the coordination of efforts. This coordination would apply to neither smaller firms nor those outside of Pennsylvania.

Respondents will also be required to attend a meeting to make a short presentation to the selection committee on August 22, 2001, in the afternoon.

Required components follow:

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Nanotechnology Asset Mapping Study

Purpose: The purpose of this study is to examine and evaluate, (where possible with quantitative measures), the Nanotechnology industry in the Philadelphia CMSA. Findings will a) inform policy of numerous organizations and governmental entities b) support the Nanotechnology Institute, and c) provide a benchmark for future study of the industry, both over time and relative to other regions of the country.

The following scope of work identifies specific areas to be included in the study. However, it is not obligatory to use this as a rigid outline for the study, nor should it exclude other considerations identified by the respondent. The successful proposal will

1. Identify technology clusters within the Nanotechnology field

Given the status of nano as an emerging technology, the preparation of a taxonomy is an integral part of this study. The emphasis throughout the study should be on bio/pharma and any other subsectors the respondent identifies as significant in the region, with less significant subsectors identified and scanned as potential for a follow-up study. The Nanotechnology sectors include but are not limited to:

- a. Bio/Pharma-Nano (emphasis)
 - i. Start with SIC codes as identified on p. 23 of 1997 BFTP Report “Pennsylvania’s Biotechnology and Pharmaceutical Industry”(for purposes of continuity, longitudinal comparison)
- b. Other Nanotechnology Sectors
 - i. Are there prospective NAICS codes?
 - ii. Chemicals
 - iii. Advanced Materials
 1. metals
 2. ceramics
 3. textiles
 - iv. Energy & Environmental
 - v. Nanodevices, Nanoelectronics, and Nanosensors (MEMS, robotics?)
 - vi. Nanoscale Processes
 - vii. Manufacturing & Engineering

- viii. Development of “indigenous” classifications – (are there categories that would exist only in nano?)

2. **Assess emerging technology strengths**

In this section an evaluation of the region’s “technology status” provides the framework for understanding technology’s role in the local economy. It also underscores the need to emphasize technology as a prime driver of future regional economic growth.

- a. **Economic Overview**
 - i. Share of technology employment
 - ii. Employment and establishment forecasts
 - iii. Comparative employment gains
 - iv. Alignment of existing clusters with industry outlook (BLS Employment forecasts)
 - b. **Research & Engineering Assets**
 - i. Universities
 - 1. Curricula as applicable to subject
 - a. Four-year institutions, as well as community colleges and other two-year institutions.
 - 2. Faculty/Endowed Chairs as applicable to subject
 - 3. Laboratory facilities and equipment (Also see Section 3 below)
 - ii. Private R&D (in-house as well as funded/out-sourced)
 - iii. Government R&D
 - iv. Technology Transfer and Commercialization
 - c. **Quantification of R&D “output”**
 - i. Patents
 - ii. R&D expenditures
 - iii. NIH/NSF grants
 - iv. Products and Applications
- ## 3. **Industry Requirements with Qualitative Assessment**
- a. Labor Force
 - b. Infrastructure
 - c. Capital requirements (including venture capital, angel networks, etc.)
 - d. Business climate
 - e. Cost of living/taxes
 - f. Amenities
- ## 4. **Industry Perspective on Region**
- a. Regional SWOT Analysis vis-à-vis technology industries
- ## 5. **Competitive Analysis**
- i. Competing regions and comparative strengths

- ii. Other initiatives across US; significant international initiatives to which we should be paying attention
- iii. Nanotechnology Institute
- iv. Other world centers/initiatives
- v. Identification of potential strategic partners

6. Location of Clusters by ZIP Code & County

- a. Intra-regional mapping of existing firms and significant assets, by subsector if possible

7. Real Estate Market Overview

A comprehensive study throughout the CMSA is certainly well beyond the scope of this assignment. However, it is useful to scan the region in general terms, identify submarkets that may be especially conducive (or not) to the birth and growth of Nanotechnology firms in all their stages and types, and compare the appropriate real estate market considerations (rentals, vacancy rates/availability, construction costs, energy costs, etc.) to competing regions.

- a. General
 - i. Inventory & Occupancy/Vacancy Rates
 - ii. By space type, as appropriate
 - iii. Rental Rates
 - iv. Sectoral requirements, existing and future demand
- b. Specific
 - i. Evaluation of submarkets
 - ii. Facility requirements for Nanotechnology
 - iii. Supply & demand profile for specialized space

8. Findings/Analysis of Opportunities

- a. Identification of Opportunities
 - i. By organizational type or sector
 - ii. Feasibility and Framework for Execution
 - iii. Action items

Your response to this RFP should give:

- A description of your proposed approach to the required data collection and development. *There is a need for a level of preliminary information by early October 2001. Please identify what degree of information you believe will be attainable.*
- A general description of your business.
- A list of clients and engagements performed by your firm.
- List of all subconsultants or partners, if any.

- An estimate of timing, cost and payment terms.
- Anticipated direct costs should be identified and included in the final cost estimate.

Proposals should be sent to: Robert Gittler, Coordinator: Regional Initiatives, Ben Franklin Technology Partners of Southeastern Pennsylvania, 11 Penn Center, Suite 1100, 1835 Market Street, Philadelphia, PA 19103. Fax: 215-972-5588. Email: robert@sep.benfranklin.org

Attachments:

1. Geographic coverage - County Listing
2. BFTP Biotechnology and Pharmaceutical Industry Study – available at <http://www.benfranklin.org/pages/indgrouF.htm>
3. Nanotechnology Institute literature

Attachment 1: Geographic universe

Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD CMSA

Atlantic-Cape May, NJ PMSA

Atlantic County
Cape May County

Philadelphia, PA-NJ PMSA

Burlington County, NJ
Camden County, NJ
Gloucester County, NJ
Salem County, NJ
Bucks County, PA
Chester County, PA
Delaware County, PA
Montgomery County, PA
Philadelphia County, PA

Vineland-Millville-Bridgeton, NJ PMSA

Cumberland County

Wilmington-Newark, DE-MD PMSA

New Castle County, DE
Cecil County, MD

Note: please also include Mercer County, New Jersey.

WORKING ALLIANCES

ORGANIZING PARTNERS

Ben Franklin Technology Partners of Southeastern Pennsylvania | Drexel University | University of Pennsylvania
Commonwealth of Pennsylvania

GOVERNMENT

National Institutes of Health
National Science Foundation
Department of Defense
Department of Energy
Picatinny Arsenal
Aberdeen Proving Ground
Rodman Materials Center

CORPORATE

Centocor
Cephalon
CGS
Checkpoint Genetics
Collagenix
Elan Pharmaceutical Technologies
FMC
GlaxoSmithKline
Immuncion
Kensey Nash Corporation
LifeSensors
MACH I
Merck
Synthes USA
(Outreach to 91 Regional SME's)

REGIONAL

Delaware Valley Industrial Resource Center
New Jersey Economic Development Authority
Pennsylvania Economy League
Eastern Technology Council
Delaware Biotechnology Incubator
Delaware River Port Authority
New Jersey Science and Technology Council
Delaware Economic Development Office
Federal Reserve Bank of Philadelphia
Greater Philadelphia Chamber of Commerce
Greater Philadelphia First

VENTURE CAPITAL

SR One
TL Ventures

UNIVERSITIES & RESEARCH INSTITUTIONS

University of Pennsylvania
Drexel University
Princeton University
Johns Hopkins University
Temple University
Villanova University
Lehigh University
Penn State University
Widener University
University of Delaware
University of Maryland
Rutgers University
Haverford College
Bryn Mawr College
Swarthmore College
New Jersey Institute of Technology
Sarnoff Labs
Fraunhofer Institute
The Wistar Institute

MEDICAL

Temple Medical College
Fox Chase Medical Center
Hahnemann Medical College
Thomas Jefferson Medical College
Children's Hospital of Philadelphia
University of Pennsylvania Medical Center

EDUCATION & WORKFORCE DEVELOPMENT

Bucks County Community College
Camden County Community College
Delaware County Community College
Montgomery County Community College
Delaware Technology & Community College
Harford Community College
Community College of Philadelphia
Greater Philadelphia Productivity Consortium
Philadelphia Workforce Development Corporation

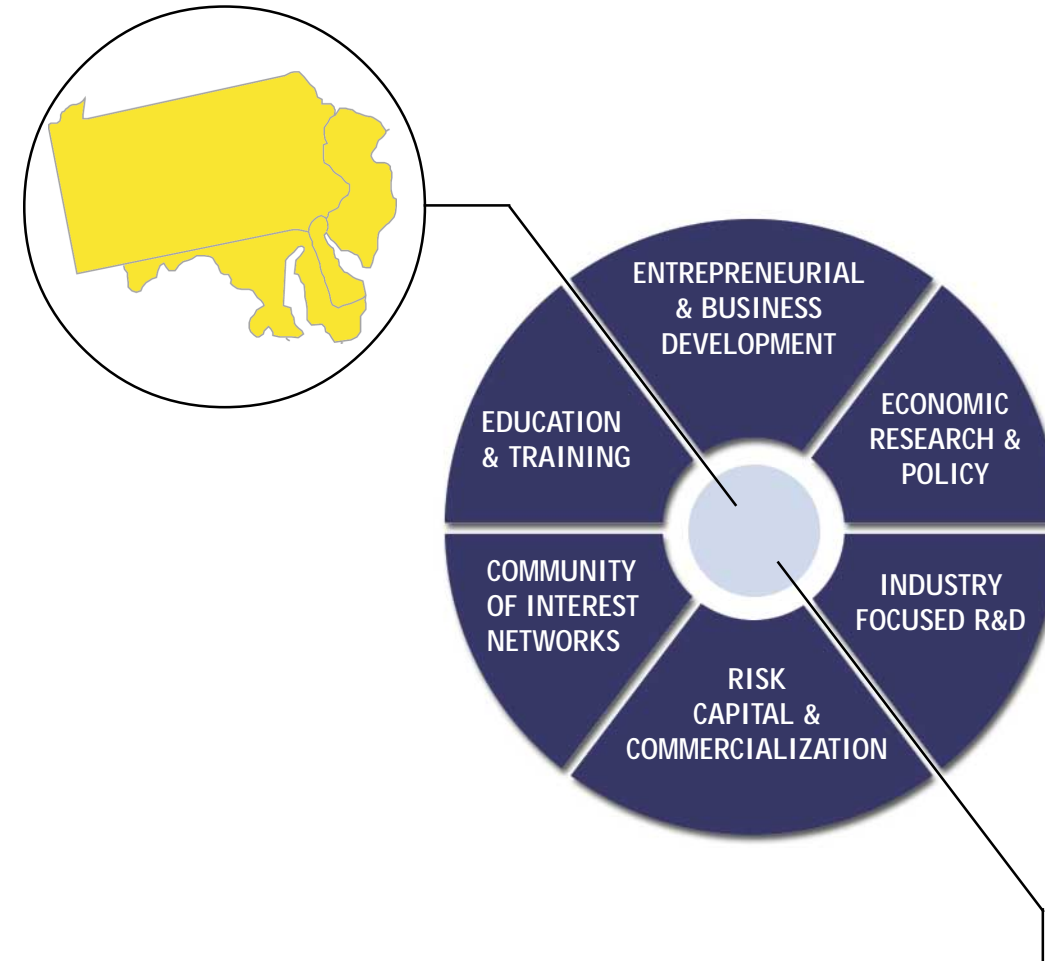
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THE NANOTECHNOLOGY INSTITUTE

“The impact of nanotechnology on the health, wealth and lives of people will be at least the equivalent to the combined influences of microelectronics, medical imaging, computer-aided engineering and man-made polymers developed in this century.”

National Science and Technology Council, Committee on Technology. *National Nanotechnology Initiative: Leading to the Next Industrial Revolution.* Supplement to the President's FY 2001 Budget. Feb. 2000.



THE NANOTECHNOLOGY INSTITUTE

- A Collaborative Enterprise
- A Multi-State Initiative
- A Multi-Institutional/Disciplinary Research and Development Approach

THE NANOTECHNOLOGY INSTITUTE

- A **Collaborative Enterprise** among academic and research institutions, corporate partners, private investors, government and economic development organizations.
- A **Multi-State Initiative** involving Pennsylvania, New Jersey, Delaware, and Maryland and supported by emerging international alliances with Japan, Italy and the United Kingdom.
- A **Multi-Institutional/Disciplinary Research and Development Approach** to facilitate the transfer and commercialization of discoveries and intellectual knowledge that support rapid application of nanotechnology to the life sciences sector and the creation of new enterprises organized around this technology.



WORKFORCE DEVELOPMENT

- High School Outreach Center
- Community College Associate's Degree

COMMERCIALIZATION

- Commercial Development either through *Licensing* of technology opportunities to commercial partners or *Company Formation* supported by dedicated investment capital to leverage SBIR awards and pre-seed investments as well as BFTP/SEP's full network of services to facilitate viable partnering opportunities and product commercialization.

RESEARCH & DEVELOPMENT

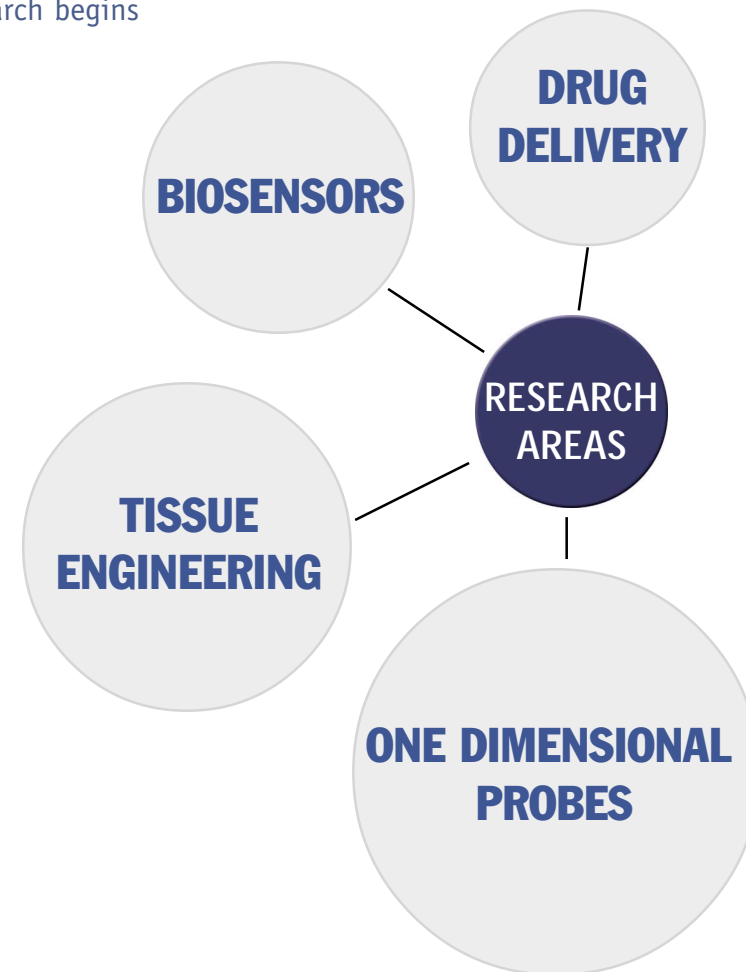
THE NANOTECHNOLOGY INSTITUTE will establish a baseline of the region's assets and inform strategies for economic development. Research begins with the Proprietary Databases of over 300 regional companies.

VISION

THE NANOTECHNOLOGY INSTITUTE will be the nucleating force and catalyst to transform the Mid-Atlantic region into the

NANOTECH REGION

The institute is unifying corporate, academic, and government partners to conduct nanotechnology research and development to produce high commercial returns.



INSTITUTE FUNDING

Ben Franklin Technology Partners of Southeastern Pennsylvania: **\$2.05 Million**

Department of Defense DURINT: **\$1.75 Million over five years**

Commonwealth of Pennsylvania through Pennsylvania Technology Investment Authority: **\$10.8 Million over three years**

