The Nanotechnology Institute™ (NTI) is southeastern Pennsylvania’s first multi-institutional partnership created to accelerate nanotechnology research, commercialization and company formation.

This technology powerhouse was created in 2000 by Ben Franklin Technology Partners of Southeastern Pennsylvania (BFTP/SEP), Drexel University and the University of Pennsylvania. Today, the NTI accelerates regional economic development by connecting industry with university assets through its thirteen-member research institutions. The NTI receives funding from Pennsylvania’s Ben Franklin Technology Development Authority.

A review of the NTI was recently published in the Nanotechnology Law & Business Journal.

The Pennsylvania Department of Community and Economic Development’s “Technology Investment Office looks to NTI as a valued partner in harnessing the technology-based economic development opportunities within Pennsylvania’s nanotechnology community.”

- Secretary C. Alan Walker, DCED

Accomplishments

- $284M Leveraged
- 60+ Businesses Assisted
- 821 IP Assets Managed
- 67 Technologies Licensed
- 200+ Jobs Created
- 116 Projects Funded
- 43 Companies Created
- $16.3M Deployed

Clients

Vascular Magnetics

[vascualarmagnetics.com]

Vascular Magnetics, Inc. licensed a revolutionary nanoparticle-based, magnetically-targeted drug delivery system for the treatment of peripheral artery disease (PAD). This technology, developed by Dr. Robert Levy at Children’s Hospital of Philadelphia, received $550,000 in funding from the NTI over the last five years. It also received funding from the NIH, American Heart Association, and most recently, the University City Science Center’s QED Program. The company identified key manufacturers for its stents and nanoparticles, and is currently in early discussions with the FDA.

Eqalix

:eqalix.com:

Optofluidics

:opfluid.com:

Graphene Frontiers

:graphenefrontiers.com:
NTI created the Nanotechnology Commercialization Group (NCG) to be a single point-of-contact system across the institutional partners, providing robust business development services with streamlined Intellectual Property (IP) and licensing processes. NCG pools intellectual property from participating institutions, providing a community technology transfer service with expertise to promote nanotechnology commercialization.

**PROGRAMS**

The Program to Support Translational Research Fund (PSTR) fuels the research of commercially feasible technology recommended by the NCG to move from concept into enterprise development. Funding consideration is based on assessment of commercial potential, patent protection, and the ability of the funded studies to add significant value to the technology.

Sponsored Research Agreements (SRAs) are an important and widely used mechanism for industry sponsorship of directed research in university laboratories. In this type of arrangement, one or more companies fund a university researcher or research team to conduct a specific project with defined objectives of interest to the companies. Typically, SRAs are used to perform specific tasks on known potential products or developing technologies. The NTI plays a vital role by matching the development needs of its corporate members to university laboratories, and providing matching funds to accelerate the development.

The NanoApplications Fund (NAF) accelerates technology development for small companies by facilitating and funding research and development partnerships between smaller companies and NTI member research institutions.

The PA RapidNanoNet grants provide funding to PA companies to use this network of facilities to move their technology toward commercialization. Activities focus on industry-based developers of nano-innovations using regional providers and experts of advanced nanotechnology instrumentation and capabilities. Where necessary, the NTI assists companies in identifying appropriate facilities.

The NTI assembled ten facilities to participate in this network. Together these facilities represent one of the most comprehensive and extensive facility networks in the country. They occupy more than 25,000 ft² of space, providing cutting edge services with more than 30 expert staff to assist researchers and companies. One is located at the National Institute of Standards and Technology (NIST), and the other facilities are located at six universities across Pennsylvania.

**There are Thirteen Member Research Institutions within the NTI Framework:**

- Children’s Hospital of Philadelphia
- Drexel University
- Fox Chase Cancer Center
- Harrisburg University of Science & Technology
- Lehigh University
- Millersville University
- Philadelphia University
- Temple University
- Thomas Jefferson University
- University of Pennsylvania
- University of the Sciences in Philadelphia
- Villanova University
- Widener University
## 2012 - 2013 FUNDED PROJECTS

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<th>TECHNOLOGY SECTOR</th>
<th>PROJECT</th>
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<td><strong>Life Sciences</strong></td>
<td><strong>Point of Testing Molecular Detection of Pathogens in Food:</strong> University of Pennsylvania</td>
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<td><strong>Sensors</strong></td>
<td><strong>Biomolecular Functionalization of Large-Area Graphene for Programmable Ligand Detection:</strong> University of Pennsylvania</td>
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<td><strong>BioMaterials</strong></td>
<td><strong>Single Molecule NanoTweezers:</strong> Optofluidics, Inc.</td>
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<td><strong>Materials</strong></td>
<td><strong>Nanoengineered Coatings for Preventing Catheter Related Bloodstream Infections:</strong> University of Pennsylvania, and Thomas Jefferson University</td>
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<td><strong>Energy/Water</strong></td>
<td><strong>Alimentary Protein Scaffolds for Enhancing Wound Healing:</strong> Temple University and Eqalix, Inc.</td>
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<td><strong>NanoMaterials</strong></td>
<td><strong>Nanoscale Toughening of Epoxy Resins Using Bio-Based Additives:</strong> Drexel University</td>
</tr>
<tr>
<td><strong>Energy/Water</strong></td>
<td><strong>Highly Conductive Nanostructured Membranes for Batteries:</strong> Drexel University and University of Pennsylvania</td>
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</tbody>
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## NTI Management

### Oversight:

- **Deborah Crawford, Ph.D.**
  Senior Vice Provost for Research
  Drexel University

- **Steven J. Fluharty, Ph.D.**
  Senior Vice Provost for Research;
  Professor of Pharmacology, Psychology and Neuroscience
  University of Pennsylvania

- **RoseAnn B. Rosenthal**
  President and Chief Executive Officer
  Ben Franklin Technology Partners of Southeastern Pennsylvania

### Operations:

- **Anthony P. Green, Ph.D.**
  Ben Franklin Director, NTI;
  Vice President of Technology Commercialization: Life Sciences,
  Ben Franklin Technology Partners of Southeastern Pennsylvania

- **Michele S. Marcolongo, Ph.D.**
  Principal Investigator, NTI;
  Senior Associate Vice Provost for Translational Research;
  Professor of Materials Science & Engineering,
  Drexel University

- **Karen I. Winey, Ph.D.**
  Principal Investigator, NTI;
  Professor, Department of Materials Science & Engineering,
  University of Pennsylvania

- **Erli Chen, Ph.D.**
  Director, Nanotechnology Commercialization Group, NTI;
  Director of Nanotechnology Licensing, Center for Technology Transfer,
  University of Pennsylvania

### The NTI

The NTI is an initiative of the Pennsylvania Department of Community and Economic Development, and is funded by the Ben Franklin Technology Development Authority.