




Overview of the Technology Innovation Program




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TIP is Part of NIST



NIST assets include:

- \$931.5 million FY 2008 operating budget
- 2,800 employees
- 2,600 associates & facility users
- **NIST laboratories:** measurement and standards

- **Technology Innovation Program:** \$70 million FY 2008 including management of ongoing ATP awards
- **Manufacturing Extension Partnership:** centers in 440 locations nationwide to help small manufacturers
- **Baldrige National Quality Program**

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TIP Purpose ...

“Assisting United States businesses and institutions of higher education or other organizations, such as national laboratories and nonprofit research institutions, to support, promote, and accelerate innovation in the United States through high-risk, high-reward research in areas of critical national need.”

*America COMPETES Act
(PL 110-69)
August 9, 2007*



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Critical National Need Framework

- **TIP uses a Critical National Need identification and selection process to shape the scope of competitions and collaborative programs**
- **What is a Critical National Need?**
 - An area that justifies government attention because the magnitude of the problem is large and the societal challenges that need to be overcome are not being addressed, but could be addressed through high-risk, high-reward research



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White Paper Elements

- TIP evaluates topics for areas of critical national need using suggestions from industry and academia.
- We encourage you to send us a “white paper” in which you outline your idea for an area of critical national need:
 - What are considered to be large problems that are potentially inhibiting the growth and well-being of our nation today?
 - A white paper is NOT a proprietary project idea
- Explain how your idea is consistent with the criteria for selecting CNN areas described in the brochure:
 - 1) **Maps to Administration Guidance**
 - 2) **Justifies Government Attention**
 - 3) **Essentials for TIP Funding**

For Brochure: www.nist.gov/tip/



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TIP Societal Challenges

- **What is a TIP Societal Challenge?**
 - A problem or issue confronted by society that when not addressed could negatively affect the overall function and quality of life of the nation, and as such justify government attention
- **A Societal Challenge**
 - Represents a problem or issue, not a solution or answer
 - Requires a technical solution
 - Is sufficiently difficult to overcome that advancements across a multitude of areas is warranted

Competition topic areas are selected based on the need for meeting societal challenges



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Potential CNN Topic Areas

- Civil Infrastructure
- Complex Networks
- Energy
- Green Technologies
- Manufacturing
- Personalized Medicine
- Water

These seven areas represent the potential broad CNN topic areas that TIP has identified to date. However, this list is not exhaustive; TIP may select a different or more specific CNN.



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Civil Infrastructure...



- Poor road conditions cost U.S. motorists \$54 billion a year in repairs and operating costs.

- More than 33% of the nation's 600,000 bridges are rated structurally deficient or functionally obsolete.



Failure to reverse a trend of increasing highway infrastructure deterioration will lead to reductions in national and economic security, lower worker productivity, and a overall reduction in the quality of life.



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TIP *Water...*

Six billion gallons per day of clean, treated drinking water disappears, mostly due to old, leaking pipes and water mains...

Enough to serve the population of California!

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TIP *Key Features of TIP*

- **Novel Process:** address societal challenges not being addressed in areas of Critical National Need (CNN) with benefits that extend significantly beyond proposers
- **Promote Teaming:** businesses, academia, national labs, nonprofit research institutions and other organizations
- **Scientific & Technical Merit:** high-risk high-reward research
- **Transformational Results:** strong potential for advancing state-of-the-art and contributing to U.S. science and technology base
- **Societal Challenges:** justifies government attention
- **Clear Government Need:** no other funding sources are reasonably available

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Key Features of TIP (cont'd)

- **Funding**
 - Single company projects up to \$3M over a maximum of three years
 - Joint Venture (JV) projects may be funded up to \$9M over a maximum of five years
 - Note: TIP funds are for direct project costs only
- **Cost share**
 - At least 50% of the yearly total project costs – direct plus indirect
 - Composed of both cash and in-kind



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Key Features of TIP (cont'd)

- **Allows institutions of higher education to lead a joint venture R&D project**
- **Intellectual property**
 - Reside with U.S. company or any joint venture member (including a university joint venture member)
- **Opportunities for state involvement with R&D planning**
- **Program assessment and annual reports from Program and Advisory Board to Congress required**



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Eligibility

- **Single Company** – a small or medium-sized for-profit company doing a majority of its business in the US
- **Joint Venture** – A business arrangement that includes either
 - A. At least 2 separately owned small or medium-sized for-profit companies; **or**
 - B. At least 1 small or medium-sized for profit company and one institution of higher education or other organization such as a national laboratory, governmental laboratory (not NIST) or nonprofit research institute



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Eligibility: Large Company Participation in TIP

- Large company: Fortune 1000 companies (total revenues in excess of \$1.63B)
- Large companies **MAY**
 - Participate and receive funding as a contractor (with certain requirements/limitations)
 - Participate as a JV member and provide cost share
- Large companies **MAY NOT**
 - Receive Federal funds as a JV member



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TIP Award and Evaluation Criteria

- **Proposals are selected for funding based on:**
 - TIP Award Criteria (15 C.F.R. §296.22), and
 - TIP Evaluation Criteria (15 C.F.R. § 296.21)

*Peer Review is the Foundation
for all Proposal Evaluations and Decisions*



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TIP Award Criteria: The First Three

*First Three Award Criteria explain the need
for TIP financial support*

- Why is TIP support needed?
- Efforts to secure alternative funding
- Novelty of the proposed research (technology)



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TIP Award Criteria: The Remaining Three

The remaining three Award Criteria

- Scientific and technical merit and may result in intellectual property vesting in a U.S. entity
- Strong potential to advance the state-of-the-art and contribute to the U.S. science and technology knowledge base
- Strong potential to address areas of critical national need
 - Transforming the Nation's capacity to deal with major societal challenges
 - Generate substantial benefits to the Nation that extend significantly beyond the proposer

*These three TIP Award Criteria are expanded upon
within the TIP Evaluation Criteria*



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TIP Evaluation Criteria

- **Two Evaluation Criteria**
 - 1) Scientific and Technical (S&T) Merit (50%)
 - 2) Potential for S&T and National Impacts (50%)
- **Subject to multidisciplinary peer review**



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Evaluation Criterion

1) Scientific and Technical (S&T) Merit (50%)

- The research is novel
- Results have the potential to address the technical needs associated with a major societal challenge
- The research is high-risk, high reward
- The project has the key expertise and resources (e.g., data, equipment & facilities) necessary to accomplish the project
- The research plan is scientifically sound with tasks, milestones, timeline, decision points and alternate strategies



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Evaluation Criterion

2) Potential for Science, Technology and National Impacts (50%)

- **Establishes that the proposed research has strong potential**
 - For advancing the state-of-the-art and contributing significantly to the United States science and technology base, and
 - To address areas of Critical National Need through transforming the Nation's capacity to deal with a major societal challenge(s) that is not currently being addressed
 - To generate substantial benefits to the Nation that extend beyond the direct return to the proposer



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 - www.nist.gov/tip
- Register for the TIP mailing list
 - http://tipmailing.nist.gov/forms/mailling_list.cfm
- Archived TIP webcasts & 2008 Competition Info
 - http://www.nist.gov/tip/comp08_apply.html
- Helpful Resources
 - <http://www.nist.gov/tip/helpful.html>



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