

ANNOUNCEMENT OF FEDERAL FUNDING OPPORTUNITY

EXECUTIVE SUMMARY

- **Federal Agency Name:** Advanced Technology Program (ATP), National Institute of Standards and Technology (NIST), Technology Administration, Department of Commerce
- **Funding Opportunity Title:** Advanced Technology Program
- **Announcement Type:** Initial Announcement
- **Funding Opportunity Number:** 2007-ATP-01
- **Catalog of Federal Domestic Assistance (CFDA) Number:** 11.612, Advanced Technology Program
- **Dates:** The due date for submission of proposals is 3 p.m. Eastern Time, Monday, May 21, 2007.
- **Proposal Submission Address:**
 - Paper submission: National Institute of Standards and Technology
Advanced Technology Program
100 Bureau Drive, Stop 4701
Gaithersburg, MD 20899-4701
 - Electronic submission: www.grants.gov
- **Funding Opportunity Description:** ATP provides cost-shared multi-year funding to single companies and to industry-led joint ventures to accelerate the development of challenging, high risk technologies with the potential for significant commercial payoffs and widespread benefits for the nation. This unique government-industry partnership aids companies in accelerating the development of emerging or enabling technologies that lead to revolutionary new products and industrial processes and services that can compete in rapidly changing world markets. ATP challenges the research and development (R&D) community to take on higher technical risk projects with commensurately higher potential payoffs for the nation than they would otherwise pursue.

Total Amount to be Awarded: Fiscal year 2007 appropriations include funds in the amount of approximately \$60 million for new ATP awards. Approximately 60 awards are anticipated.
- **Anticipated Amounts:** A single company can receive up to a total of \$2 million for R&D activities for up to 3 years. ATP funds may only be used to pay direct costs for single-company recipients. Single company recipients are responsible for funding all of their indirect/overhead costs. A joint venture can receive funds for R&D activities for up to 5 years with no funding limitation other than the announced availability of funds.
- **Funding Instrument:** Cooperative Agreement

- **Who Is Eligible:** U.S.-owned, single, for-profit companies and industry-led joint ventures may apply for ATP funding. In addition, companies incorporated in the United States that have parent companies incorporated in another country may apply.
- **Cost Sharing Requirements:** Small- (as defined at 15 C.F.R. 295.2) and medium-sized companies applying as single-company proposers are not required to provide cost sharing of direct costs. However, they may propose to pay a portion of the direct costs in addition to all indirect costs throughout the project. Large companies applying as single-company proposers must cost share at least 60 percent of the yearly total project costs (direct plus all of the indirect costs). A large company is defined as any business, including any parent company plus related subsidiaries, having annual revenues in excess of \$3.960 billion. (Note that this number will likely be updated annually and will be noted in future annual announcements of availability of funds and revised editions of the ATP Proposal Preparation Kit.) Joint ventures must cost share more than 50 percent of the yearly total project costs (direct plus indirect costs).
- **Where to obtain the ATP Proposal Preparation Kit:** Submit an electronic request at <http://www.atp.nist.gov/atp/atpform.htm> or call ATP at 1-800-ATP-FUND (1-800-287-3863). The Kit is also available at <http://www.atp.nist.gov/atp/helpful.htm>. Note that ATP is mailing the Kit to all individuals whose names are currently on the ATP mailing list. Those individuals need not contact ATP to request a copy.
- **Public Meetings (Proposers' Conferences):** ATP is holding several public meetings (Proposers' Conferences) at several locations around the country. These meetings provide general information regarding the program, tips on preparing proposals, and the opportunity for questions and answers. Proprietary technical or business discussions about specific project ideas with NIST staff are not permitted at these conferences or at any time before submitting the proposal to ATP. Therefore, you should not expect to have proprietary issues addressed at proposers' conferences. NIST/ATP staff will not critique proprietary project ideas while they are being developed by a proposer. However, NIST/ATP staff will, at any time, answer questions that you may have about our project selection criteria, selection process, eligibility requirements, cost-sharing requirements, and the general characteristics of a competitive ATP proposal.

ATP Proposers' Conferences are being held **from 9 a.m. – 12:30 p.m.** local time on the following dates and locations:

April 13, 2007: NIST Red Auditorium, 100 Bureau Drive, Gaithersburg, MD (301-975-2776)

April 16, 2007: Hyatt Regency Dearborn Fairlane Town Center, Dearborn, Detroit, MI (313-593-1234)

April 18, 2007: Hyatt Harborside at Boston's Logan International Airport, 101 Harborside Drive, Boston, MA (617-568-1234)

April 18, 2007: Los Angeles Airport Marriott, 5855 West Century Blvd., Los Angeles, CA (310-641-5700)

April 20, 2007: Hilton Austin Airport, 9515 Hotel Drive, Austin, TX (512-385-6767)

No registration fee will be charged. Presentation materials from proposers' conferences will be made available on the ATP website.

Pre-registration Required By April 9, 2007 for all Proposers' Conferences as follows:

NIST Gaithersburg Conference: Due to increased security at NIST, **NO on-site registrations** will be accepted and all attendees **MUST** be pre-registered. Photo identification must be presented at the NIST main gate to be admitted to the April 13, 2007 conference. Attendees must wear their conference badge at all times while on the NIST campus. Same day registration will be allowed at the other locations.

Electronic Registration: At <https://rproxy.nist.gov/CRS/>. Please select the ATP Proposers' Conference and appropriate data to register for the meeting of your choice.

Telephone Registration: Call 301-975-2776.

Fax Registration: Provide the following and fax to 301-948-2067: last name, first name; title; organization; room or mail code, city, state, zip code, country; telephone; facsimile; e-mail; any special needs; and the meeting date and location.

FULL ANNOUNCEMENT TEXT

I. Funding Opportunity Description

In 1990, ATP began to provide cost-shared multi-year funding to single companies and to industry-led joint ventures to accelerate the development and dissemination of challenging, high risk technologies with the potential for significant commercial payoffs and widespread benefits for the nation. This unique government-industry partnership aids companies in accelerating the development of emerging or enabling technologies that lead to revolutionary new products and industrial processes and services that can compete in rapidly changing world markets. ATP challenges the research and development (R&D) community to take on higher technical risk with commensurately higher potential payoffs for the nation than they would otherwise pursue.

ATP is soliciting proposals in all technology areas (Competition Number 2007-A) as well as four broad Crosscutting Areas of National Interest. Four broad Crosscutting Areas of National Interest for the 2007 Competition provide a framework that links a diversity of technical areas to broad-based economic and societal benefits that are important for technological competitiveness and are well-known priorities for the nation. The areas of interest are each multi-disciplinary technological areas that impact a multitude of industry sectors and applications, and represent technology frontiers with many high-technical risk challenges. They also represent areas where teaming among industry, universities, government labs, and regional centers of excellence is likely to be highly competitive due to the nature of the technical challenges and the potential for economic benefits. The four areas are:

- Technologies for Advanced and Complex Systems (Competition 2007-B),
- Challenges in Advanced Materials and Devices (Competition 2007-C),
- 21st Century Manufacturing (Competition 2007-D), and
- Nanotechnology (Competition 2007-E).

Industry roadmaps, reports by the National Academy of Sciences and other respected bodies – for example *Rising Above the Gathering Storm* (National Academy of Sciences), *An Ocean Blueprint* (U.S. Commission on Ocean Policy), or *The Global Competitiveness Report* (World Economic Forum) - and federal government science and technology plans - for example, The President's *American Competitiveness Initiative*, *The National Nanotechnology Initiative*, or The White House National

Economic Council's *Advanced Energy Initiative* - all contribute to the formulation of the four ATP Crosscutting Areas of National Interest for the 2007 Competition, and point to the spectrum of future benefits.

Non-exclusive examples of what can be considered to be within each area are provided within the discussion that follows. Proposers are expected to identify and briefly explain within the proposal's Executive Summary the rationale for why the proposal best fits one of the Crosscutting Areas of National Interest, and the primary societal and economic benefits the team expects to accomplish if the technical and business plans are successful. It is expected that the national need framework of the crosscutting areas will guide proposers to more specifically target in their proposal all the potential for broad-based economic benefits that a successful project could enable.

If a proposal has a primary impact in one of the four areas to solve a challenging problem that would result in broad societal and economic benefits to the nation, consider proposing under that area interest. If the primary impact of the proposal better fits one area over another, but has significant secondary benefits to another area(s), propose under the area of primary impact and include descriptions of the benefits to the other areas, as applicable.

AREA 1: Technologies for Advanced and Complex Systems

"Systems science is capable of networking specialized sciences and fields of knowledge, and integrate concrete knowledge about specific situations into complex problem solving processes."

Eberhard Umbach, International Society for the Systems Sciences

The frontiers of science and technology often occur where fields of knowledge intersect to meet an unprecedented problem within a complex or new to the world system. The field of complex systems is highly interdisciplinary and seeks to deliver solutions to complex phenomena or objectives. New to the world advanced systems frequently includes or must deliver technical functionality that pulls from divergent fields of science and technology. Thus high technical risk can occur when new technologies and the integration of new technologies with existing approaches is needed to reach market objectives, including those that have clear societal and economic benefits to the nation.

New advanced and complex systems of national interest will benefit from accelerating the incorporation of advanced concepts and critical platform approaches from basic research and engineering into technologies for the marketplace.

Examples of benefit areas include (not exclusive list):

- **Life Science System Discovery Tools & Methods** (i.e., for health, agriculture, aquaculture, or bioprocessing systems)
- **Ocean and Lake System Management, Monitoring and Cultivation Technologies** (i.e., fish and aquatic plant systems for food or energy, etc.)
- **Information Systems** (i.e., for networks, security, managing complex data sets, or healthcare systems)
- **Energy System Technologies** (i.e., adaptable distributed energy systems, alternative energy systems, energy efficiency, etc.)
- **Environmental System Technologies** (i.e., green process technologies, pollution prevention, slowing climate change, monitoring systems, etc.)

AREA 2: Challenges in Advanced Materials and Devices

"Materials with tailored functionality (such as high strength, electronic, or optical properties) are critical to modern technologies."

Materials are the physical substances used in production or manufacturing, and are used across industry. They are the physical building blocks of the world and commerce. Materials typically include polymers, metals, ceramics, biomaterials, building materials, nanomaterials, and various types of composites. Advanced materials have strategic importance due to their tailored and unique characteristics, and their wide range of potential applications.

Materials science and engineering R&D has the goal of bringing new materials with superior properties and advanced processing techniques to the market for industry and consumers. Materials science and engineering R&D is inherently interdisciplinary, with strong connections to physics, chemistry, biology and the engineering fields.

Advancements in new functional materials enable altogether new types of devices and structures. These new devices and structures frequently demand superior material properties and processing not currently available. The information age, for example, has been spurred by innovations in electrical, optical, magnetic devices, and would not have been possible without innovations in advanced materials. Thus advanced materials and devices contribute to the advancement of a number of applications, including medicine and health, information and communication, national security and space, transportation, structural materials, textiles, agriculture and food science, and the environment.

This area of national interest includes proposals in which the primary R&D focus features innovations in advanced materials, materials processing, and/or functional devices that have application within any of a number of uses important to U.S. industry.

Examples of benefit areas include (not exclusive list):

- **Energy and Power Technologies** (i.e. membranes for fuel cells, fuel cell stacks, high power electronics, etc.)
- **Electronics and Photonics** (i.e. novel nanoelectronic or optical materials and functional devices, magnetics, etc.)
- **Microsystem Devices** (i.e. MEMS, etc.)
- **Broadband Networks and Communications** (i.e. integrated optical devices, switches, etc.)
- **Healthcare Diagnostics and Assays** (i.e., for the environment, agriculture, aquaculture, food processing and safety, healthcare platform technologies, etc.)
- **Composite materials** (i.e. or industry, transportation, buildings, etc.)
- **Recycling materials** (e.g. for industrial or consumer use)

AREA 3: 21st Century Manufacturing

“Manufacturing is an essential part of our economy. Not only are manufactured goods the currency of world trade, but manufacturing is what creates wealth.”

Dr. G. Wayne Clough, in Congressional testimony, 2005
President, Georgia Institute of Technology

Manufacturing creates items of greater value through the application of physical, chemical and biological processes that alter the geometry, properties, composition and/or appearance of a given starting material to make parts or products. These parts or products are both intermediate and finished goods for sale to others. The effort includes all intermediate processes required for the production and integration of a

product's components. Some industries, such as semiconductor and steel manufacturers, use the term fabrication. Others, including the chemical or food industry, use the term processing. In 2005, the U.S. manufacturing sector, in terms of GDP, represented close to \$1.5 trillion.¹

Today, U.S. manufacturers are challenged as never before. They are on the front lines of the most intense global competition in history. The Manufacturing Institute states “*A strong and vibrant domestic manufacturing base promotes workforce and R&D investments and keeps the innovation process functioning, fostering productivity, competitiveness and economic growth.*” To succeed globally, manufacturing must be sufficiently linked up to the new sciences and technologies - emerging fields like nanotechnology, biotechnology, multifunctional materials, process design, broadband communications, and others. For small- and medium-sized manufacturers, innovation, flexibility, speed to market and closeness to the customer are characteristics to be successful.

This crosscutting area of interest includes proposals in which the primary R&D focus is on developments that will be commercialized in manufacturing applications, or where the results can enable or can be adapted to advanced manufacturing processes and/or systems. The primary technical innovation should be in the field of manufacturing, and the R&D should address technical issues that enhance manufacturing.

Examples of benefit areas include (not exclusive list):

- **Computer and Electronic or Photonic Products** (i.e. for networks, information systems, etc.)
- **Motor Vehicles and Mechanical Products** (i.e. for automotive, aerospace, discrete piece-parts, machinery, etc.)
- **Biomufacturing/Bioprocessing** (i.e., for pharmaceuticals, fuels, chemicals etc.)
- **Bulk Materials** (i.e., metal, composites, paper, polymers etc.)
- **Chemical or Material Processing** (i.e., for chemicals, plastics, raw materials, etc.)
- **Manufacturing Systems and Controls** (i.e. communications, simulations, systems integration, etc.)
- **Energy** (i.e. for power generation, storage, conservation, management, etc.)
- **Food Processing** (i.e. for food, beverages, etc.)

AREA 4: Nanotechnology

“Nanotechnology’ touches upon a broad array of disciplines, including chemistry, biology, physics, computational science, and engineering. Like information technology, nanotechnology has the potential to impact virtually every industry, from aerospace and energy to healthcare and agriculture.”

The National Nanotechnology Initiative at Five Years:
Assessment and Recommendations of the National Nanotechnology Advisory Panel
May 2005

The federal government first acted on the potential of nanotechnology in Fiscal Year (FY) 2001 through the establishment of the National Nanotechnology Initiative (NNI).² The NNI identifies seven essential investment areas in nanotechnology innovation, referred to as Program Component Areas (PCAs).³ Four NNI innovation PCAs that are applicable to cost-shared projects funded by ATP include the following.

¹ The Facts About Modern Manufacturing, National Association of Manufacturers, 2006, http://www.nam.org/s_nam/bin.asp?CID=201507&DID=230620&DOC=FILE.PDF

² <http://www.nano.gov/>

³ The National Nanotechnology Initiative – Supplement to the President’s 2006 Budget, National Science, Engineering, and Technology Subcommittee, Committee on Technology, National Science and Technology Council, March 2005.

- Cutting edge **instrumentation research, metrology and standards**: R&D pertaining to the tools needed to advance nanotechnology research and commercialization, including next-generation instrumentation for characterization, measurement, synthesis, and design of materials, structures, devices, and systems.
- Precise **nanomanufacturing**: R&D aimed at enabling scaled-up, reliable, cost-effective manufacturing of nanoscale materials, structures, devices and systems. This also includes R&D and integration of ultra-miniaturized top-down processes and increasingly complex bottom-up or self-assembly processes.
- New **nanomaterials**: Research aimed at discovery of novel nanoscale and nanostructured materials and at a comprehensive understanding of the properties of nanomaterials – ranging across length scales, and including interface interactions. It also includes R&D leading to the ability to design and synthesize, in a controlled manner, nanostructured materials with targeted properties.
- **Nanoscale devices and systems**: R&D that applies the principles of nanoscale science and engineering to create novel, or to improve existing, devices and systems. This includes the incorporation of nanoscale or nanostructured materials to achieve improved performance or new functionality. The enabling science and technology must be at the nanoscale, but the systems and devices themselves are not restricted to that size.

This Crosscutting Area of Interest includes proposals in which the primary R&D focus is in nanotechnology. Nanotechnology is the understanding and control of matter at dimensions of roughly 1 to 100 nanometers (10^{-9} m). Encompassing nanoscale science, engineering, and technology, nanotechnology involves imaging, measuring, modeling, and manipulating matter at this length scale. At this level, the physical, chemical, and biological properties of materials differ in fundamental and valuable ways from the properties of individual atoms and molecules or bulk matter. Nanotechnology R&D is directed toward understanding and creating improved materials, devices, and systems that exploit these new properties.

Examples of benefit areas include (not exclusive list):

- **Life Sciences, Biotechnology, Healthcare** (i.e., nano-particles to detect and treat diseases)
- **Electronics and Photonics** (i.e. hardware that incorporates nanotechnology innovation, etc.)
- **Information Technology** (i.e. systems, networks, software, etc.)
- **Energy Systems** (i.e. alternative fuels, power sources, conservation, etc.)
- **Advanced Materials** (i.e., polymers, catalysts, metals, composites, etc.)

The ATP statute originated in the Omnibus Trade and Competitiveness Act of 1988 (Pub. L. 100-418) and was amended by the American Technology Preeminence Act of 1991 (Pub. L. 102-245). This law has been codified at 15 U.S.C. 278n. The ATP implementing regulations are published at 15 C.F.R. Part 295, as amended.

II. Award Information

Fiscal year 2007 appropriations include funds in the amount of approximately \$60 million for new ATP awards. Approximately 60 awards are anticipated. In past competitions, the range of funding has been \$434,176 to \$31,478,000, with an average of \$2,945,003. The anticipated start date is October 1, 2007. The period of performance depends on the R&D activity proposed.

A single company can receive up to a total of \$2 million for R&D activities for up to 3 years. A joint venture can receive funds for R&D activities for up to 5 years with no funding limitation other than the announced availability of funds.

Companies currently receiving ATP funding for existing ATP projects do not have to compete annually to receive continued funding of their projects. Continuation funding is based on satisfactory performance and availability of funds. Existing funded companies, however, may submit new proposals for ATP funding under this competition.

The funding instrument used in ATP awards is a "cooperative agreement." Through the use of the cooperative agreement, ATP fosters a government-industry partnership to accomplish a public purpose of support or stimulation. ATP plays a substantial role by providing technical assistance and monitoring the technical work, business progress, and expenditure of federal funds.

III. Eligibility Information

1. Eligible Applicants/Proposers

U.S.-owned, single, for-profit companies and industry-led joint ventures may apply for ATP funding. In addition, companies incorporated in the United States that have parent companies incorporated in another country may apply. The term company means a for-profit organization, including sole proprietorships, partnerships, limited-liability companies (LLCs), and corporations (15 C.F.R. § 295.2).

- a. **Single Company** – a single small, medium, or large for-profit company, including an LLC. The single company must be substantially involved in the R&D, with a leadership role in programmatically steering the project and facilitating definition of the research agenda. A single company can receive up to a total of \$2 million for R&D activities for up to 3 years. ATP funds may only be used to pay direct costs for single-company recipients. Single company recipients are responsible for funding all of their indirect/overhead costs.
- b. **Joint Venture** – at least two separately owned for-profit companies, both of which are substantially involved in the R&D and both of which are contributing to the cost-sharing requirement. ATP joint ventures consist of companies that formally agree (i.e., sign a Joint Venture Agreement) to collaborate on the R&D and establish an effective plan to commercialize the technology if successful. In addition to comprising at least two separately owned for-profit companies, a joint venture may include additional for-profit companies and other organizations, e.g., universities, government laboratories (except NIST), independent research organizations, and non-profit organizations, that perform research and that may or may not contribute nonfederal funds to the project. A joint venture can receive funds for R&D activities for up to 5 years with no funding limitation other than the announced availability of funds.

A company incorporated in the United States that has a parent company incorporated in another country is eligible to apply for and receive an ATP award if it meets the conditions in the ATP legislation (15 U.S.C. § 278n(d)(9)) and regulations (15 C.F.R. § 295.3). Before making the final award, ATP will make a foreign-eligibility finding based on these conditions regarding the company's participation in the ATP project. The foreign eligibility finding involves the collection of evidence of whether the following conditions are met:

- a. The company's participation in the ATP project is in the economic interest of the United States, and

b. The home country of the parent company provides all of the following:

- (1) comparable opportunities for U.S.-owned companies to participate in government-funded programs similar to ATP,
- (2) comparable local investment opportunities for U.S.-owned companies, and
- (3) adequate and effective protection of U.S.-owned companies' intellectual property rights.

ATP takes responsibility for gathering information related to the above requirements. The submitting organization must provide information requested on the Foreign-Owned Company Questionnaire that relates to the role of the foreign-owned company in the project to help address foreign eligibility requirement a. above.

It is important, however, that the information requested on the Foreign-Owned Company Questionnaire be provided in a complete form at the time of proposal submission because it is used to assess the foreign-owned proposer's ability to bring about economic benefits to the United States. Information requested on the Foreign-Owned Company Questionnaire relates to evidence that the company's participation is in the economic interest of the United States as stated in 3.a. above and includes the following:

Commitment to Project:

- (1) A sound justification that the involvement by the company and its role in the project is necessary to achieve the technical or commercial objectives of the project;
- (2) Evidence that the company makes investments in research, development, and manufacturing in the United States (the location and square footage of facilities and special equipment where the project will be carried out);
- (3) Evidence that the company makes significant contributions to employment in the United States (number of employees);

Commercialization Plans:

- (1) Evidence that the company agrees to promote the manufacture of products within the United States resulting from ATP-supported technology and to procure supplies from competitive U.S. suppliers (for instance, will they incorporate the technology into existing product lines or processes, or will they develop new products or processes?); and
- (2) Other factors relevant to the project's potential to produce broad-based economic benefits for the United States (i.e., licensing arrangements).

2. Cost Sharing or Matching Requirement

Small- (as defined at 15 C.F.R. 295.2) and medium-sized companies applying as single-company proposers are not required to provide cost sharing of direct costs. However, they may propose to pay a portion of the direct costs in addition to all indirect costs throughout the project. Proposing to cost-share direct costs will not increase the likelihood that a small- or medium-sized company will be selected for an award. If a single company proposes to pay direct costs and the proposal is selected for funding, the single company's direct cost share commitment will become a requirement in the cooperative agreement award. The single company will be responsible for meeting its committed cost share in accordance with the approved budget incorporated in the cooperative agreement award.

Large companies applying as single-company proposers must cost share at least 60 percent of the yearly total project costs (direct plus all of the indirect costs). A large company is defined as any business, including any parent company plus related subsidiaries, having annual revenues in excess of \$3.960 billion. (Note that this number will likely be updated annually and will be noted in future annual announcements of availability of funds and revised editions of the ATP Proposal Preparation Kit.)

Joint ventures must cost share more than 50 percent of the yearly total project costs (direct plus indirect costs).

If an award is issued to a joint venture, each joint venture participant will be responsible for meeting its committed cost share in accordance with the approved budget incorporated in the cooperative agreement award. No joint venture participant will be responsible for the cost-share commitment of any other joint venture participant. However, with the agreement of the joint venture participants, along with notification to the NIST Grants Officer, a joint venture participant that has exceeded its cost-share commitment may allow its excess cost share to be applied to the cost-share deficit of another joint venture participant, so that the overall joint venture cost share is met.

Cost sharing is that portion of the project costs not borne by the federal government and includes direct and indirect costs. Sources of revenue to satisfy the required cost share include cash and in-kind contributions. Cash contributions can be from recipient, state, county, city, or other nonfederal sources. In-kind contributions can be made by recipients or nonfederal third parties (excluding subcontractors) and can include, but are not limited to, equipment, research tools, software, and supplies. Except as specified in 15 C.F.R. § 295.25, the value of in-kind contributions shall be determined in accordance with 15 C.F.R. § 14.23. The value of in-kind contributions will be prorated according to the share of total use dedicated to the ATP project. Labor/personnel costs are not in-kind contributions; they are cash contributions. ATP limits the total value of in-kind contributions that can be used to satisfy the cost share to 30 percent of the nonfederal share of the total project costs.

Any cost sharing must be in accordance with the “cost sharing or matching” provisions of 15 C.F.R. Part 14, *Uniform Administrative Requirements for Grants and Cooperative Agreements With Institutions of Higher Education, Hospitals, Other Non-Profit, and Commercial Organizations* (<http://www.atp.nist.gov/atp/helpful.htm>).

Funds derived from federal sources may not be used to meet the cost-share requirement. Additionally, subcontractors may not contribute towards the cost-share requirement.

As with the federal share, any costs included as cost share must be allowable under the following applicable federal cost principles: 1) For-profit companies: 48 C.F.R. Part 31; 2) Universities: 2 C.F.R. Subtitle A, Chapter II, Part 220 (OMB Circular A-21); 3) Nonprofit organizations: 2 C.F.R. Subtitle A, Chapter II, Part 230 (OMB Circular A-122); and 4) Hospitals: 45 C.F.R. Part 74, Appendix E. These cost principles are available at <http://www.atp.nist.gov/atp/helpful.htm>.

Letters of commitment; letters of support; and letters of corroboration, documenting efforts to secure other funding, required or as appropriate, are identified in the ATP Proposal Preparation Kit in Chapter 3.

3. Ineligible Projects

- a. Straightforward improvements of existing products or product development.
- b. Projects that are basic research.

- c. Projects that are Phase II, III, or IV clinical trials. ATP rarely funds Phase I clinical trials and reserves the right not to fund a Phase I clinical trial. The portion of a Phase I trial that may be funded must be critical to meeting the scientific and technological merit selection criterion and the trial must be essential for completion of the study. The definitions of all phases of clinical trials are provided in the *ATP Guidelines and Documentation Requirements for Research Involving Human & Animal Subjects* located at <http://www.atp.nist.gov/atp/helpful.htm>.
- d. Pre-commercial-scale demonstration projects where the emphasis is on demonstrating that some technology works on a large scale or is economically sound rather than on R&D that advances the state of the art.
- e. Projects that ATP believes would likely be completed without ATP funds in the same time frame or nearly the same time frame, or with the same scale or scope.
- f. Predominantly straightforward, routine data gathering (e.g., creation of voluntary consensus standards, data gathering/handbook preparation, testing of materials, or unbounded research aimed at basic discovery science) or application of standard engineering practices.
- g. Projects that are simply a follow-on or a continuation of tasks previously funded in ATP projects from essentially the same proposing team.
- h. Projects in which the only risk is market oriented—that is, the risk that the end product may not be embraced by the marketplace.
- i. Projects with software work, that are predominantly about final product details and product development, and that have *significant* testing that involve users outside the research team to determine if the software meets the original research objectives, are likely to be either uncompetitive or possibly ineligible for funding. However, R&D projects with limited software testing, involving users outside of the research team, may be considered eligible costs within an ATP award when the testing is critical to meeting the scientific and technological merit selection criterion and the testing is essential for completion of the proposed research. These types of projects may also be considered to involve human subjects in research.

IV. Application/Proposal and Submission Information

1. Address to Request Application/Proposal Package

The April 2007 version of the ATP Proposal Preparation Kit must be used to prepare and submit all proposals under the fiscal year 2007 competition. To obtain a copy of the Kit, submit an electronic request at <http://www.atp.nist.gov/atp/atpform.htm> or call ATP at 1-800-ATP-FUND (1-800-287-3863). The Kit is also available at <http://www.atp.nist.gov/atp/helpful.htm>. Note that ATP is mailing the Kit to all individuals whose names are currently on the ATP mailing list. Those individuals need not contact ATP to request a copy

Information on electronic proposal submissions via grants.gov is available in the Kit.

The Kit contains proposal cover sheets, other required forms, and all the necessary guidelines for developing an ATP proposal. All proposals must be prepared in accordance with the guidelines in the Kit.

2. Content and Form of Application/Proposal Submission

All paper (hard copy) and electronic proposal submission requirements are discussed in detail in Chapters 2 and 3 of the ATP Proposal Preparation Kit, which is available at <http://www.atp.nist.gov/atp/atpform.htm>. The Kit also includes the “Checklist/Reminders for Submission

of an ATP Proposal” as Exhibit 1, the “Human Subjects Determination Checklist” as Exhibit 2, and General Instructions for Submitting ATP Proposals Electronically Via Grants.gov as Exhibit 3 to assist potential proposers in their proposal preparation and submission. Additionally, all of the required forms and budget narrative are included in the ATP Kit as Exhibits.

ATP does not accept pre-proposals, unsolicited proposals, or letters of intent.

3. **Submission Dates and Times**

The due date for submission of proposals is 3 p.m. Eastern Time, Monday, May 21, 2007. This deadline applies to any mode of proposal submission, including hand-delivery, courier, express mailing, and electronic. Do not wait until the last minute to submit a proposal. ATP will not make any allowances for late submissions, including incomplete Grants.gov registration.

Any proposals not received by the due date will not be considered and will be returned to the proposer without review. ATP determines whether a proposal has been submitted before the deadline by date/time stamping the proposals as they are physically received in the ATP office or in the case of electronic submission, as the time stamped on the automatically generated notification indicating successful submission.

4. **Intergovernmental Review**

ATP does not involve the mandatory payment of any matching funds from state or local government and does not affect directly any state or local government. Accordingly, the Department of Commerce has determined that Executive Order 12372, "Intergovernmental Review of Federal Programs" is not applicable to this program.

5. **Funding Restrictions**

- a. **Indirect Costs (IDC).** For single company recipients, no federal funds will be authorized for IDC; however, an applicant/proposer may provide for IDC benefits under his/her portion of cost sharing. For joint venture recipients, federal funds will be authorized for IDC.
- b. **Indirect Cost Rate.** Regardless of any approved indirect cost rate applicable to the award, the maximum dollar amount of allocable indirect costs for which the Department of Commerce will reimburse the recipient shall be the lesser of the line item amount for the federal share of indirect costs contained in the approved budget of the award, or the federal share of the total allocable indirect costs of the award based on the indirect cost rate approved by an oversight or cognizant federal agency and current at the time the cost was incurred, provided the rate is approved on or before the award end date.
- c. **Allowable Costs.** Funds awarded cannot necessarily pay for all the costs that the recipient might incur in the course of carrying out the project. Allowable costs are determined by reference to the following applicable federal costs principles: 1) For-profit companies: 48 C.F.R. Part 31; 2) Universities: 2 C.F.R. Subtitle A, Chapter II, Part 220 (OMB Circular A-21); 3) Nonprofit organizations: 2 C.F.R. Subtitle A, Chapter II, Part 230 (OMB Circular A-122); and 4) Hospitals: 45 C.F.R. Part 74, Appendix E. These cost principles are available at <http://www.atp.nist.gov/atp/helpful.htm>.

- d. **Unallowable/Ineligible Costs.** The following items, regardless of whether they are allowable under the federal cost principles, are unallowable under ATP:
- 1) Bid and proposal costs unless they are incorporated into a federally approved indirect cost rate.
 - 2) Construction costs for new buildings or extensive renovations of existing laboratory buildings. However, costs for the construction of experimental research and development facilities to be located within a new or existing building are allowable provided that the equipment or facilities are essential for carrying out the proposed scientific and technical project and are approved by the NIST Grants Officer.
 - 3) For research involving human and/or animal subjects, any costs used to secure Institutional Review Board or Institutional Animal Care and Use Committee approvals before the award or during the award.
 - 4) General purpose office equipment and supplies that are not used exclusively for the research, e.g., office computers, printers, copiers, paper, pens, and toner cartridges.
 - 5) Indirect costs for single-company recipients, which must be absorbed by the company. (Note that with large businesses submitting proposals as single-company proposers, indirect costs absorbed by the large business may be used to meet the cost-sharing requirement.)
 - 6) Marketing, sales, or commercialization costs, including marketing surveys, commercialization studies, and general business planning, unless they are included in a federally approved indirect cost rate.
 - 7) Office furniture costs, unless they are included in a federally approved indirect cost rate.
 - 8) Patent costs and legal fees, unless they are included in a federally approved indirect cost rate.
 - 9) Preaward costs.
 - 10) Profit, management fees, interest on borrowed funds, or facilities capital cost of money.
 - 11) Relocation costs, unless they are included in a federally approved indirect cost rate.
 - 12) Subcontractor expenses such as those for office supplies and conferences/workshops.
 - 13) Subcontracts to another part of the same company or to another company with identical or nearly identical ownership. Work proposed by another part of the same company or by another company with identical or nearly identical ownership should be shown as funded through interorganizational transfers that do not contain profit. Interorganizational transfers should be broken down in the appropriate budget categories.
 - 14) Tuition costs. However, a university participating in an ATP project as a subcontractor or as a joint venture partner may charge ATP for tuition remission or other forms of compensation in lieu of wages paid to university students working on ATP projects but only as provided in OMB Circular A-21, Section J.41. In such cases, tuition remission would be considered a cash contribution rather than an in-kind contribution.
- e. **Award Requirements.** The award form for the cooperative agreement and award terms and conditions are available on the ATP web site at <http://www.atp.nist.gov/atp/helpful.htm>.
6. **Other Submission Requirements.** ATP proposals may be submitted in hard copy or in electronic format as follows:
- Paper submission: National Institute of Standards and Technology
Advanced Technology Program
100 Bureau Drive, Stop 4701
Gaithersburg, MD 20899-4701
 - Electronic submission: www.grants.gov

V. Application/Proposal Review Information

1. Criteria

The evaluation criteria used to select a proposal for funding and their respective weights are found in 15 C.F.R. § 295.6 and are listed below. No proposal will be funded unless ATP determines that it has scientific and technological merit and that the proposed technology has strong potential for broad-based economic benefits for the nation. Additionally, no proposal will be funded that does not require federal support, that is product development rather than high-risk R&D, that does not display an appropriate level of commitment from the proposer, or that does not have adequate technical and commercialization plans. Meeting the scientific and technological merit criterion will not make up for major flaws in the potential for broad-based economic benefits selection criterion and vice versa. Detailed guidance on how to address the selection criteria is provided in Chapter 3 of the ATP Proposal Preparation Kit, which is available on the ATP web site at <http://www.atp.nist.gov/atp/helpful.htm>.

- a. **Scientific and Technological Merit (50 percent).** This selection criterion has three critical components: (1) Technical Innovation, (2) Technical Risk With Evidence of Scientific Feasibility, and (3) Technical Plan. The proposed technology must be highly innovative. The research must be challenging, with high technical risk. It must be aimed at overcoming an important problem (or problems) or exploiting a promising opportunity. The technical leverage of the technology must be adequately explained. The research must have a strong potential for advancing the state of the art and contributing significantly to the U.S. scientific and technical knowledge base. The technical plan must be clear and concise and must clearly identify the core innovation, the technical approach, the major technical hurdles, and the attendant risks, and it must clearly establish feasibility through adequately detailed plans linked to major technical barriers. The plan must address the questions of “what, how, where, when, why, and by whom” in substantial detail. ATP will assess the proposing team’s relevant experience for pursuing the technical plan. The team carrying out the work must demonstrate the high level of scientific/technical expertise needed to conduct the R&D and have access to the necessary research facilities.
- b. **Potential for Broad-Based Economic Benefits (50 percent).** This selection criterion has three critical components: (1) National Economic Benefits, (2) Need for ATP Funding, and (3) Pathway to Economic Benefits. The proposed technology must have a strong potential to generate substantial benefits for the nation that extend significantly beyond the direct returns to the proposing organization(s). The proposal must explain why ATP support is needed and what difference ATP funding is expected to make in terms of what will be accomplished with the ATP funding versus without it. The pathway to economic benefits must be described, including the proposer’s plan for getting the technology into commercial use as well as additional routes that might be taken to achieve broader diffusion of the technology. The proposal should identify the expected returns that the proposer expects to gain as well as returns that are expected to accrue to others—that is, spillover effects. ATP will assess the proposer’s relevant experience and level of commitment to the project, the project’s organizational structure and management plan, including the extent to which participation by small businesses is encouraged and is a key component in a joint venture proposal; and for large single-company proposers, the extent to which subcontractor/subrecipient teaming arrangements are featured and are a key component of the proposal.

2. Review and Selection Process

All proposals are selected based on a multi-stage peer-review process, as described in 15 C.F.R. § 295.4. All proposals are carefully reviewed by technical and business experts against the established ATP

evaluation/selection criteria. A Source Evaluation Board (SEB) (a committee made up of nine federal employees) reviews proposals and makes recommendations for funding to a Selecting Official based on the technical and business evaluations and the selection criteria. The SEB ratings shall provide a rank order to the Selecting Official for final recommendation to the NIST Grants Officer. The Selecting Official shall recommend for award in rank order unless a proposal is justified to be selected out of rank order based upon the availability of funds, the adherence to ATP selection criteria, or the appropriate distribution of funds among technologies and their applications.

NIST reserves the right to deny awards in any case where NIST determines that a reasonable doubt exists regarding a proposer's ability to comply with ATP requirements or to handle Federal funds responsibly. All funding decisions are final and cannot be appealed. NIST/ATP reserves the right to negotiate the cost and scope of the proposed work with the proposers who have been selected to receive awards. For example, NIST/ATP may require that the proposer delete from the scope of work a particular task that is deemed by NIST/ATP to be product development or otherwise inappropriate for ATP support. All funding decisions are final and cannot be appealed.

3. Additional Information

- a. Semi-finalist proposals will be ranked in numerical order.
- b. Proposers may not submit replacement and/or revised pages and/or documents for any portion of a proposal once that portion has been submitted unless specifically requested by NIST.
- c. A proposer may submit a proposal that is a revised version of a proposal submitted to a previous ATP competition. NIST will examine such proposals to determine whether substantial revisions have been made. Where the revisions are determined not to be substantial, NIST reserves the right to score and rank, or where appropriate, to reject, such proposals based on reviews of the previously submitted proposal.
- d. One copy of each non-responsive or non-selected proposal will be retained for ten (10) years for record keeping purposes. The remaining copies will be destroyed. After 10 years the remaining copy will be destroyed.

VI. Award Administration Information

1. Award Notices

A successful proposer will be notified of award through the receipt of an obligated/approved Financial Assistance Award (CD-450) document signed by the NIST Grants Officer that is the cooperative agreement award. The cooperative agreement will include the award period, the budget, special award conditions, ATP General Terms and Conditions, Department of Commerce Financial Assistance Standard Terms and Conditions, and will incorporate the applicable federal cost principles, and applicable policy and regulatory references that will govern the award. The cooperative agreement is sent to the successful proposer via surface mail and requires a counter-signature of an authorized official. The cooperative agreement award document, i.e., CD-450 and award terms and conditions are available at <http://www.atp.nist.gov/atp/helpful.htm>.

2. Administrative and National Policy Requirements

- a. **Department of Commerce Pre-Award Notification Requirements.** The Department of Commerce Pre-Award Notification Requirements for Grants and Cooperative Agreements: The Department of Commerce Pre-Award Notification Requirements for Grants and Cooperative Agreements contained in the *Federal Register* notice of December 30, 2004 (69 FR 78389) is applicable to this announcement. On the form SF-424 (R&R), the applicant's 9-digit Dun and Bradstreet Data Universal Numbering System (DUNS) number must be entered in the Organizational DUNS line.
- b. **Intellectual Property Requirements.** Title to any inventions arising from an ATP-funded project must be held by a for-profit company, or companies, incorporated or organized in the United States. A university, government laboratory, independent research organization, or other nonprofit organization cannot retain title to patents, although such organizations can receive mutually agreeable payments (either one-time or continuing) from the company or companies holding title to the patent. However, a for-profit corporation organized by a university can be considered a for-profit company for the purpose of retaining title to patents arising from an ATP award. In such a case, documentation of the for-profit status must be provided in the proposal. If your organization is not a for-profit company but plans to be involved in an ATP project, you will not be able to retain title to any patentable inventions arising from the ATP project. Please make sure your legal department is aware that ATP cannot waive this mandated provision (15 U.S.C. § 278n(d)(11)(A) and 15 C.F.R. § 295.2 and 295.8). Title to any such invention shall not be transferred or passed, except to a for-profit company organized in the United States, until the expiration of the first patent obtained in connection with such invention.

The United States reserves a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States any patentable invention arising from an ATP award. The federal government shall not, however, in the exercise of such license, publicly disclose proprietary information related to the license. The federal government also has march-in rights in accordance with 15 C.F.R. § 295.8. Since its inception in 1990, ATP has not exercised its march-in rights nor has it used its nontransferable, irrevocable, paid-up license.

- c. **Projects Involving Human Subjects.** Research involving human subjects must be in compliance with applicable Federal regulations and NIST policies for the protection of human subjects. Human subjects research involves interactions with live human subjects or the use of data, images, tissue, and/or cells/cell lines (including those used for control purposes) from human subjects. Research involving human subjects may include activities such as the use of image and/or audio recording of people, taking surveys or using survey data, using databases containing personal information, testing software with volunteers, and many tasks beyond those within traditional biomedical research. A Human Subjects Determination Checklist is included in the April 2007 *ATP Proposal Preparation Kit* as Exhibit 2 (<http://www.atp.nist.gov/atp/helpful.htm>) to assist you in determining whether your proposal has human subjects involvement, which would require additional documents with your proposal. Detailed information regarding the use of human subjects in research projects and required documentation is available in the *ATP Guidelines and Documentation Requirements for Research Involving Human & Animal Subjects* located at <http://www.atp.nist.gov/atp/helpful.htm> or by calling 1-800-287-3863.
- d. **Projects Involving Animal Subjects.** Research involving animal subjects must be in compliance with applicable federal regulations and NIST policies for the protection of animal subjects. Vertebrate animal research involves live animals that are being cared for, euthanized, or used by the project participants to accomplish research goals or for teaching or testing. The regulations do not apply to

animal tissues purchased from commercial processors or tissue banks or to uses of preexisting images of animals (e.g., a wildlife documentary or pictures of animals in newscasts). The regulations do apply to any animals that are housed and cared for by a project participant and used for custom collection of biological samples or observation data of health and behavior. Detailed information regarding the use of animal subjects in research projects and required documentation is available in the *ATP Guidelines and Documentation Requirements for Research Involving Human & Animal Subjects* located at <http://www.atp.nist.gov/atp/helpful.htm> or by calling 1-800-287-3863.

3. Reporting

Award Recipients shall provide access to information that is required to assess the project's progress throughout the project life cycle. In addition to monitoring the technical work, NIST requires business information pertaining to the project during the life of the project and for six years after its end to assess progress towards commercialization, the degree of adoption of the technology, and the impact of the project on the economy. The following reports are required:

a. Technical Performance Reports

Award Recipients shall submit technical performance reports in triplicate (one original and two copies). Two copies shall be submitted to the ATP Project Manager and the original report to the NIST Grants Officer in the same frequency as the Financial Status Report (SF-269). Technical performance reports shall contain information as prescribed in 15 C.F.R. 14.51.

b. Business Reports

Award Recipients shall submit business reports in accordance with the "Guidelines for Reporting on Business Progress and Economic Impacts," which are included in the ATP General Terms and Conditions available at <http://www.atp.nist.gov/atp/helpful.htm>.

c. Financial Reports

For ATP Recipients, Article A.01 of the Department of Commerce (DOC) Financial Assistance Standard Terms and Conditions dated January 2005 (http://oamweb.osec.doc.gov/GMD_interimManual.html) is revised as follows:

Award Recipients shall submit a "Financial Status Report" (SF-269) on a calendar quarter basis for the periods ending March 31, June 30, September 30, and December 31, or any portion thereof, unless otherwise specified in a special award condition. Reports are due no later than 30 days following the end of each reporting period. A final SF-269 shall be submitted within 90 days after the expiration date of the award.

All financial reports shall be submitted in triplicate (one original and two copies) to the NIST Grants Officer.

VII. Agency Contact(s)

Questions for ATP should be directed to the following contact persons:

Subject Area	Point of Contact
Administrative, budget, cost-sharing, and eligibility questions	Barbara Lambis Phone: 301-975-4447 Fax: 301-869-1150 E-mail: barbara.lambis@nist.gov
Human and/or animal subjects used in research	Lawrence Uhteg Phone: 301-975-8779 Fax: 301-548-1087 E-mail: lawrence.uhteg@nist.gov
Project selection criteria and other programmatic questions	Barbara Cuthill Phone: 301-975-3273 Fax: 301-975-2147 E-mail: barbara.cuthill@nist.gov
Electronic proposal submission	Christopher Hunton Phone: 301-975-5718 Fax: 301-840-5976 E-mail: christopher.hunton@nist.gov
Foreign participation as single-company proposers, joint ventures, and subcontractors	Kathleen McTigue Phone: 301-975-8530 Fax: 301-975-4776 E-mail: kathleen.mctigue@nist.gov
Grant and cooperative agreement rules and regulations	Nadine DeJesus Phone: 301-975-6080 Fax: 301-840-5976 E-mail: nadine.dejesus@nist.gov

VIII. Other Information

1. **Confidential/Proprietary Information.** All individuals who have access to proposals submitted to ATP must sign nondisclosure agreements. The government will protect confidential/proprietary information about business operations and trade secrets possessed by any company or participant to the full extent of the law. Such information will be withheld from disclosure pursuant to the following statutes, which can be found <http://www.atp.nist.gov/atp/helpful.htm>.
 - a. ATP Statute – 15 U.S.C. § 278n(d)(5).
 - b. Trade Secrets Act – 18 U.S.C. § 1905.
 - c. Freedom of Information Act (FOIA) – 5 U.S.C. § 552(b).
 - d. Economic Espionage Act – 18 U.S.C. § 1832.

In view of the above, proposers are advised that proposals are unlikely to be competitive if significant technical and/or business details are omitted due to the proposer's reluctance to reveal confidential information.

2. **Public Meetings (Proposers Conferences).** This year ATP is holding several public meetings (Proposers' Conferences) at several locations around the country. These meetings provide general information regarding the program, tips on preparing proposals, and the opportunity for questions and

answers. Proprietary technical or business discussions about specific project ideas with NIST staff are not permitted at these conferences or at any time before submitting the proposal to ATP. Therefore, you should not expect to have proprietary issues addressed at proposers' conferences. NIST/ATP staff will not critique proprietary project ideas while they are being developed by a proposer. However, NIST/ATP staff will, at any time, answer questions that you may have about our project selection criteria, selection process, eligibility requirements, cost-sharing requirements, and the general characteristics of a competitive ATP proposal.

ATP Proposers' Conferences are being held **from 9 a.m. – 12:30 p.m.** local time on the following dates and locations:

April 13, 2007: NIST Red Auditorium, 100 Bureau Drive, Gaithersburg, MD (301-975-2776)

April 16, 2007: Hyatt Regency Dearborn Fairlane Town Center, Dearborn, Detroit, MI (313-593-1234)

April 18, 2007: Hyatt Harborside at Boston's Logan International Airport, 101 Harborside Drive, Boston, MA (617-568-1234)

April 18, 2007: Los Angeles Airport Marriott, 5855 West Century Blvd., Los Angeles, CA (310-641-5700)

April 20, 2007: Hilton Austin Airport, 9515 Hotel Drive, Austin, TX (512-385-6767)

No registration fee will be charged. Presentation materials from proposers' conferences will be made available on the ATP website.

Pre-registration Required By April 9, 2007 for all Proposers' Conferences as follows:

NIST Gaithersburg Conference: Due to increased security at NIST, **NO on-site registrations** will be accepted and all attendees **MUST** be pre-registered. Photo identification must be presented at the NIST main gate to be admitted to the April 13, 2007 conference. Attendees must wear their conference badge at all times while on the NIST campus. Same day registration will be allowed at the other locations.

Electronic Registration: At <https://rproxy.nist.gov/CRS/>. Please select the ATP Proposers' Conference and appropriate data to register for the meeting of your choice.

Telephone Registration: Call 301-975-2776.

Fax Registration: Provide the following and fax to 301-948-2067: last name, first name; title; organization; room or mail code, city, state, zip code, country; telephone; facsimile; e-mail; any special needs; and the meeting date and location.