



*Advanced Technology Program
Funding Opportunities
for High-Risk Research*

**2002 ATP Proposers'
Conferences**

NIST
National Institute of
Standards and Technology
Technology Administration
U.S. Department of Commerce



ATP's Mission ...

*To accelerate the development of
innovative technologies for
broad national benefit through
partnerships with the private sector.*



Exciting New Technologies ...



Bridging the Gap Between the Laboratory and the Marketplace

National Institute of Standards and Technology • U.S. Department of Commerce • Technology Administration



ATP is part of NIST

NIST's Mission ... Strengthen the U.S. economy and improve the quality of life by working with industry to develop and apply technology, measurements, and standards.



- 3,000 employees
- \$819 million annual budget
- 1,200 industrial partners
- 2,000 field agents
- 1,600 guest researchers
- \$1.5 billion co-funding of industry R&D
- National measurement standards

Helping America Measure Up

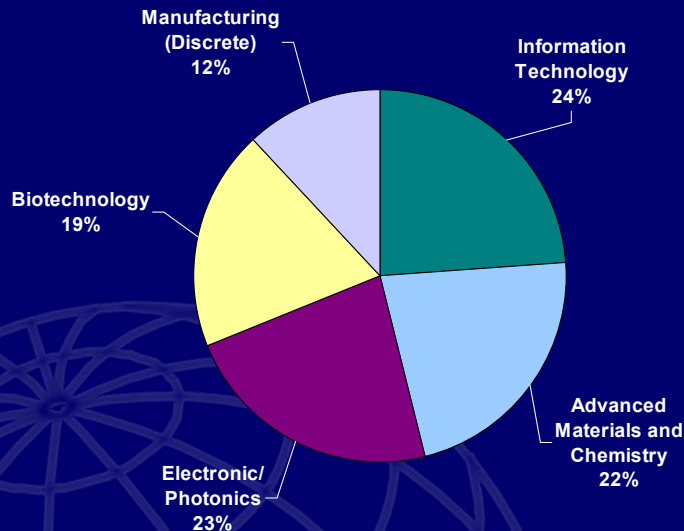
National Institute of Standards and Technology • U.S. Department of Commerce • Technology Administration



Twelve Years of Innovation

- Since 1990, **4,696 proposals** submitted to **42 competitions**, requesting **\$10.1 billion** from ATP
- **581 projects** awarded with **1,250 participants** and an equal number of subcontractors
- **185 joint ventures** and **396 single companies**
- **\$3.6 billion** of high-risk research funded
 - **ATP share = \$1.8 billion**
 - **Industry share = \$1.8 billion**
- Small businesses are thriving
 - **61% of projects led by small businesses**
- Over 150 universities participate
- Over 25 national laboratories participate

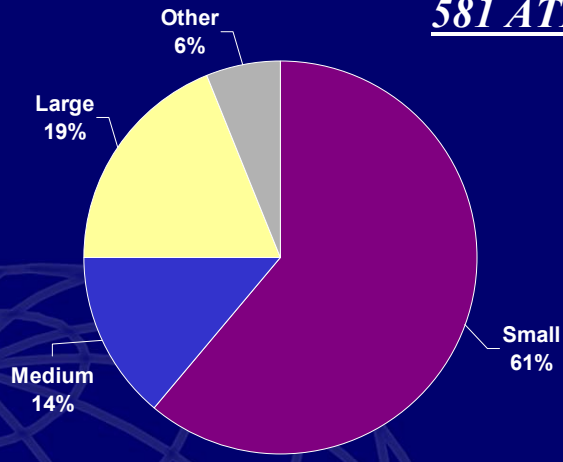
581 ATP Awards by Technology Area (As a Percent of \$1,800 M Awarded)



Forty-Two Competitions (1990-2001)

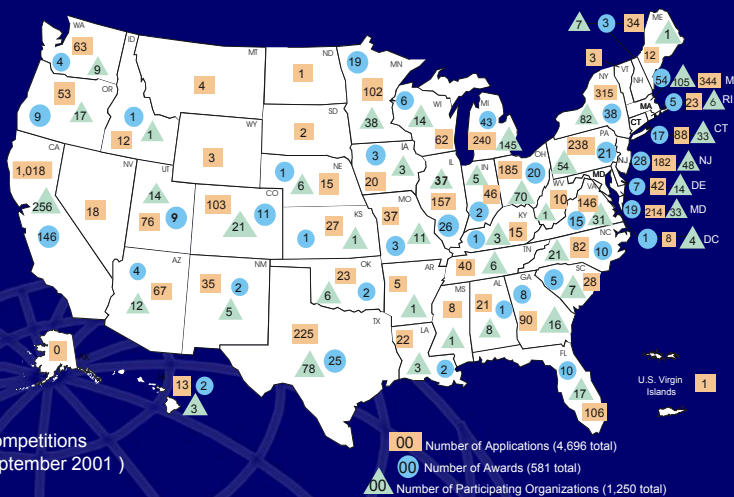
Distribution of Company Size Lead Companies

581 ATP Awards*



Forty-Two Competitions (1990-2001)

ATP Applications, Awards, & Participants by State*



*42 Competitions (1990 - September 2001)

* Geographic location is not a consideration in project selection. The ATP has an active outreach program that seeks to increase awareness across the entire nation of the program's opportunities for small, medium, and large businesses and other organizations. To date, ATP has received applications from organizations based in every state, except Alaska, and has provided funding to participating organizations located in 40 states, and the District of Columbia.



What Can ATP Do for You?

- Create sustainable technical advantage
 - we share in the risk of longer-range, higher-payoff research
 - you direct the research goals
 - ATP commits approximately \$1,000,000 per year per project
- You own the Intellectual Property Rights
 - U.S. for-profit companies keep rights to intellectual property from ATP-funded projects
- Encourage integration of **business** and **technical** planning
 - plan now for commercializing your research results
 - visit our website for info on how to write a business plan
 - attend ATP-sponsored workshops with venture capitalists



What Can ATP Do for You? (cont'd)

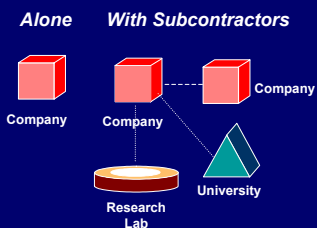
- Gain recognition within industrial and financial sectors
 - an ATP award will attract attention from investors, strategic partners, potential customers, and others
- Find partners thru our Website
 - visit ATP's Collaboration Bulletin Board
 - join ATP's Alliance Network List Server
- We are **Flexible** and **Fair**, but **Firm**
 - we will monitor your progress, but also be supportive if roadblocks appear as long as you commit to high-risk research

Is ATP Right for You?

- Are you looking to further your technical advantage by conducting challenging research?
- Is the risk primarily in your technical approach?
- Does your project have the potential to generate broad-based economic benefits for the United States?
- Are you committed to taking the research into the marketplace?

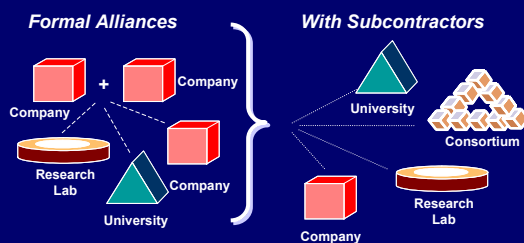
Two Ways to Apply ...

As a Single Company:



- For-profit company
- 3-year time limit
- \$2M award cap
- Company pays indirect costs
- Large companies cost share at least 60% of total project cost

As a Joint Venture:

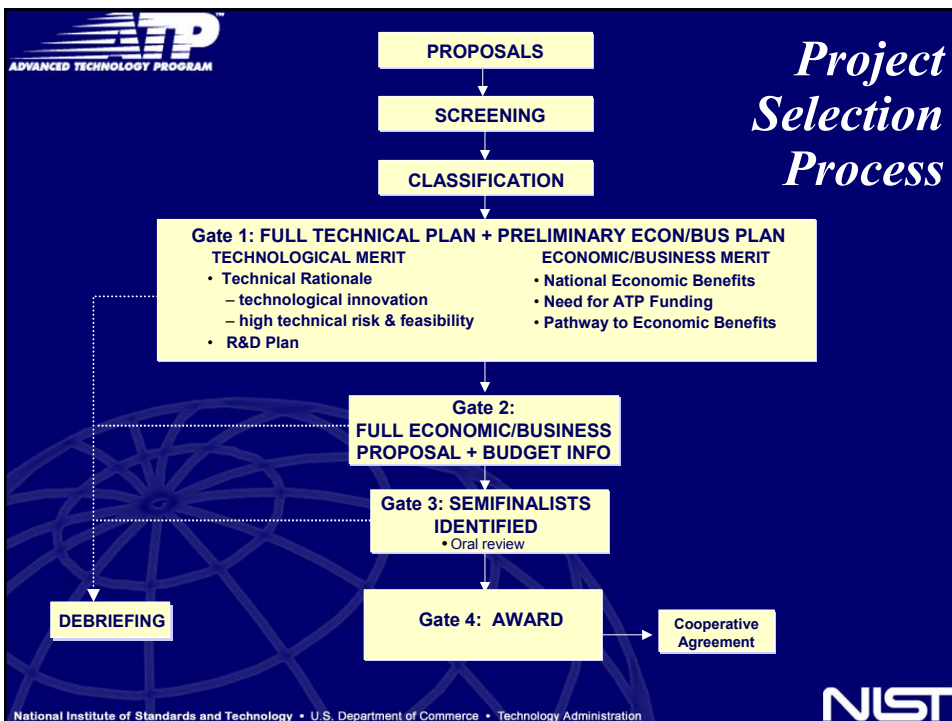


- At least 2 for-profit companies
- 5-year time limit
- No limit on award amount (other than availability of funds)
- Industry share >50% total cost

- *ATP encourages teaming arrangements*
- *Most projects involve alliances*

Two Major Criteria

- Scientific and Technological Merit (50%)
 - **Technical Rationale**
 - technological innovation
 - high technical risk & feasibility
 - **R&D Plan**
- Potential for Broad-Based Economic Benefits (50%)
 - **National Economic Benefits**
 - **Need for ATP Funding**
 - **Pathway to Economic Benefits**





Electronic Submission System (ESS)

The ESS allows proposers to submit proposals to ATP via the internet

Key features:

- User-friendly electronic forms
- Commonly used formats for narrative
- Digital signatures
- Secure submission

ess.atp.nist.gov



Electronic Submission System (ESS)

Requirements:

- Windows 95, 98, NT, or 2000
- Netscape or Internet Explorer 4.x or higher
- PDF, Microsoft Word, WordPerfect, or ASCII format for narrative
- Digital Certificate from ACES program

ess.atp.nist.gov

- **Gate 1:** Complete technical plan plus preliminary info on economic/business plan
- **Gate 2:** Full economic/business plan plus detailed budget information, if pass gate 1
- **Gate 3:** Semifinalist, if pass gate 2
- **Gate 4:** Award, if pass gate 3 and selected

For more details, refer to *ATP Proposal Preparation Kit (04/02)*

Gate 1: Complete Technical Plan

- Fully address “scientific and technological merit” selection criterion
 - **Technical Rationale**
 - **technological innovation**
 - **high technical risk & feasibility**
 - **R&D Plan**
- Single company -- **20 pages max**
- Joint venture -- **30 pages max**

Gate 1 (cont'd): Preliminary Info on Economic/Business Plan

- Briefly address “potential for broad-based economic benefits” selection criterion
 - **National Economic Benefits**
 - **Need for ATP Funding**
 - **Pathway to Economic Benefits**
- Single company -- **4 pages max**
- Joint venture -- **5 pages max**

Gate 2: Complete Economic/Business Plan

- Fully address “potential for broad-based economic benefits” selection criterion
 - **National Economic Benefits**
 - **Need for ATP Funding**
 - **Pathway to Economic Benefits**
- Single company -- **15 pages max**
- Joint venture -- **20 pages max**

Gate 2 (cont'd): Budget Info

- Submit a detailed budget data for the project
- Worksheets are included in the *ATP Proposal Preparation Kit (04/02)*
- Budget information is **not** included in page limit

Gate 3: Semifinalist

- If selected as a **semifinalist**, you will be invited to NIST for an oral review, and may be asked to provide written responses to questions for clarification

Gate 4: Award

- If selected, an award is made
- A cooperative agreement is issued by the NIST Grants Officer

Congratulations!

Think About Proposal as a Whole

- Identify the economic opportunity
- Name the technical barriers that stand in the way of realizing that opportunity
- Relate the specific R&D objectives to these barriers
- Show a detailed R&D plan for eliminating barriers
- Envision a commercialization strategy and plan for taking the proposed technology, once developed, to market
- Include the right team members to get the job done

Two Major Criteria

- Scientific and Technological Merit (50%)
 - **Technical Rationale**
 - technological innovation
 - high technical risk & feasibility
 - **R&D Plan**
- Potential for Broad-Based Economic Benefits (50%)
 - **National Economic Benefits**
 - **Need for ATP Funding**
 - **Pathway to Economic Benefits**

Business Drivers and Technical Planning

What is Needed for Technical Success?



What is Needed for Market Success?

Economic/Business Criterion

- Potential for Broad-Based Economic Benefits
 - Economic Benefits
 - Need for ATP Funding
 - Pathway to Economic Benefits

National Economic Benefits

ATP Perspective

*ATP cares about
net benefits for the nation*

Private Investor Perspective

*Private investors care about near
term return on their investment*

National Economic Benefits

- Describe the business opportunity. Why is it of economic importance to you and the nation?
- How will you benefit? How will others benefit (e.g. your customers, competitors, your industry, other industries, and the general public)?
- What is the business advantage of your technological approach over others? Quantify the magnitude of improvement.

National Economic Benefits (cont'd)

- Who are the potential users of the technology? How large are the markets and what are the growth trends? How will these markets change once the proposed technology is available?
- Be specific and give supporting evidence (quantitative and qualitative).

Need for ATP Funding

Describe the difference ATP can make

- Broader scale or scope of R&D?
 - Acceleration of R&D?
 - Greater collaboration?
- ... leading to greater national benefits faster?

What market opportunity will be missed without ATP funding?

Need for ATP Funding (cont'd)

Why does your project need public funds?

I need money for R&D



- Is the project “too risky” to obtain private or internal funding?
- Do you think your company won’t capture the major benefit?
- Where else have you looked for funding and why were you turned down?

Government?

Venture Capital?

Corporate Investment?

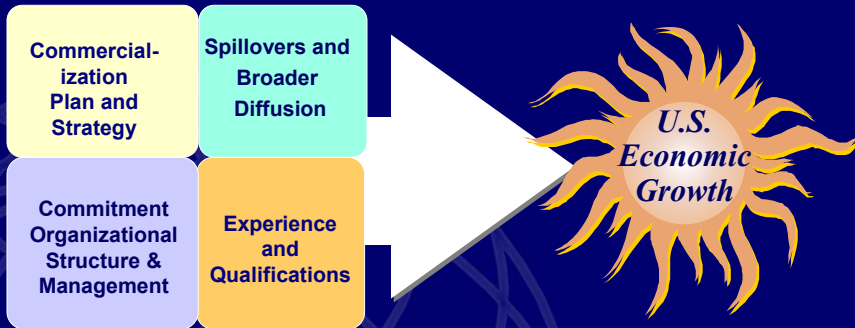
Personal Sources?

Institutional Loans?

Angel Investors?

Pathway to Economic Benefits

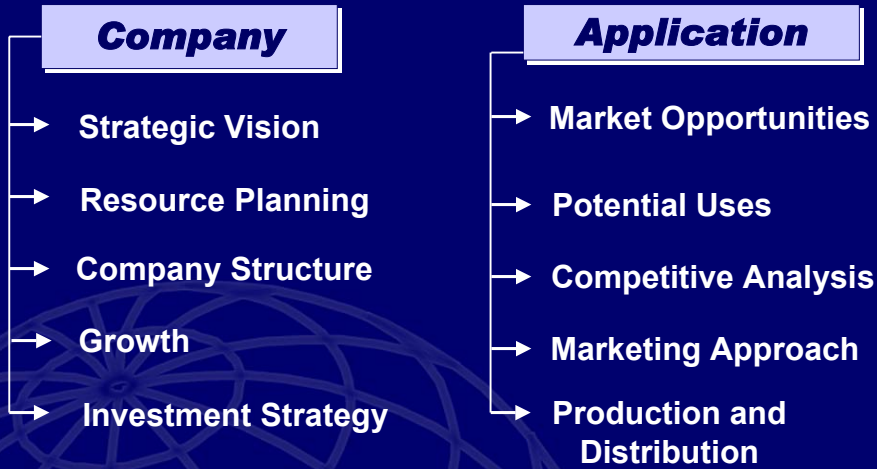
What is your **strategy**, **plan**, and **project structure** for realizing national economic benefits?



Pathway to Economic Benefits



Commercialization Plan



*Taking Technology from the Laboratory
to the Marketplace*

Commercialization Plan - Tips

- Begin planning for commercialization at the outset and involve your business staff
- Understand that a fantastic technology may capture the imagination but not necessarily the market
- Need a reasonably well developed commercialization plan for the technology

Broader Diffusion

- How will benefits of your technology reach others?
- How will new knowledge diffuse to others in the same or other industry sectors?
 - **publish results? patent? seek licensing partners? include user groups? form alliances?**
- What will you do to increase likelihood of diffusion beyond project participants?

Commitment

- Company resources
 - **human; financial; equipment; research facilities**
- Priority of project to the company
 - **involve highest appropriate level of management**
 - **strong company role; not just pass-through to subcontractors**
 - **every JV partner has a clear role**
- Evidence of customer/supplier/investor interest and support
 - **letters showing real interest and involvement**
 - **formal and informal alliances**
 - **other forms of active involvement**

Organizational Structure, Project Management, and Business Experience

- Roles/responsibilities of participants
 - **show qualified business personnel involved**
- Plan for managing project's tasks
- Business experience/track record of each company and its principals
- Evidence of financial viability

Common Proposal Weaknesses: Business

- Lacks connection between technical goals and business opportunity
- Insufficient evidence of economic benefits
- Poorly developed or no commercialization plan
- Insufficient plan for broader diffusion
- Insufficient plan for including critical business partners

Summary: Economic/Business Criterion

- Preliminary info briefly addressing “potential for broad-based economic benefits” selection criterion (**Gate 1**)
 - **single company (4 pages max)**
 - **joint venture (5 pages max)**
- Fully address “potential for broad-based economic benefits” selection criterion (**Gate 2, if your technical plan passes Gate 1**)
 - **single company (15 pages max)**
 - **joint venture (20 pages max)**

Business Drivers and Technical Planning

What is Needed for Technical Success?



What is Needed for Market Success?

Technical Merit Criterion

- Scientific and Technological Merit
 - Technical Rationale
 - **technological innovation**
 - **high technical risk & feasibility**
 - R&D Plan

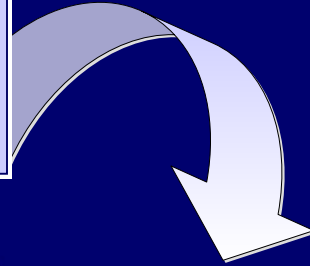
Rationale for Technical Merit

- Describe the innovation
 - **R&D goals? approach?**
 - **quantify objectives**
 - **compare to state of the art**
 - **unique with respect to current practice?**
- What is the high technical risk? What are the technical barriers?
- Provide evidence of feasibility of approach
- Show technical impact

How Could Success Create a Sustainable Technical Advantage

Does your idea...

- ✓ Extend the state of the art?
- ✓ Change the state of practice?
- ✓ Integrate multi-disciplinary technologies?



*Path Changing
R&D*

Technological Innovation

Your New Technology

*What are the project's goals?
What are the quantified targets?
What innovations are needed?*

**Your
Innovation**

Baseline: State of the Art

*Within the team?
Within the industry at large?*

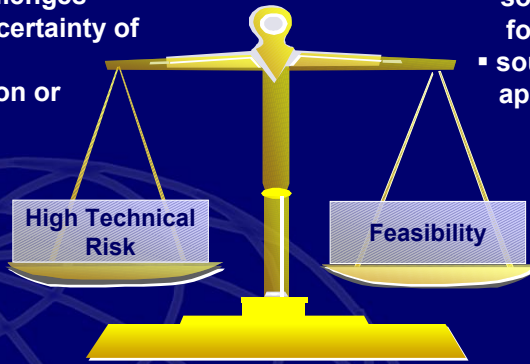
High Technical Risk and Feasibility

High Technical Risk

- technical challenges
- significant uncertainty of success
- risky innovation or integration

Feasibility

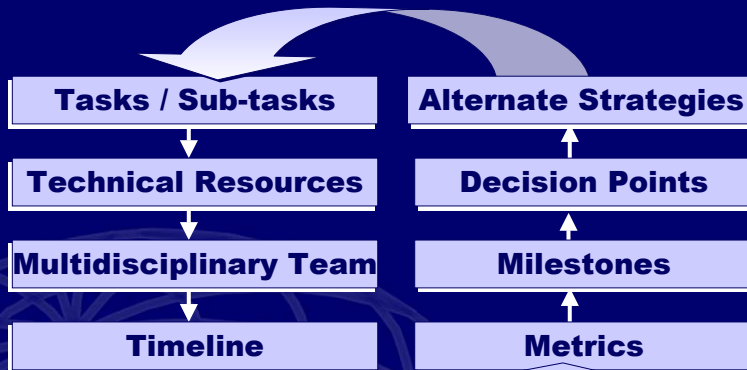
- sound scientific foundation
- sound engineering approach



Your ATP proposal should balance both!

R&D Plan

How will you achieve your goals?



Essential Elements of a Quality R&D Plan

Common Proposal Weaknesses: Technical

- Lacks sufficient detail
 - **How will you reach technical objectives?**
 - **What's innovative?**
 - **Why is a risky technical approach needed?**
- Unsupported assertions
- Outside ATP mission
 - **Low risk (e.g., product development)**
 - **Lacks demonstrated feasibility (e.g., basic research)**
 - **Scale-up or demo to only prove economically feasible**
- Lacks connection between technical goals and business opportunity

Summary: The Gated Approach

- **Gate 1:** Complete technical plan plus preliminary info on economic/business criterion
 - **If pass, go to Gate 2; otherwise debriefing**
- **Gate 2:** Full economic/business plan plus detailed budget information
 - **If pass, go to Gate 3; otherwise debriefing**
- **Gate 3:** Semifinalist (oral review)
 - **If pass, go to Gate 4; otherwise debriefing**
- **Gate 4:** Award, if pass gate 3 and selected

Administrative Highlights

- Intellectual property provisions
- Foreign-owned company participation
- Human and animal subjects
- Budget preparation
- Payments

Intellectual Property Provisions

- U.S. for-profits retain title to inventions
- Companies may license inventions
- Universities/non-profits may receive royalties; cannot own title; cannot be granted exclusive license to inventions
- Government reserves right to paid-up, royalty-free, non-exclusive license for governmental use; not exercised to date

Foreign-Owned Company Participation

- U.S.-incorporated subsidiary eligible to participate
- As with all projects, each company's participation must be:
 - **in the economic interest of United States**
- Parent's country of incorporation must afford U.S. companies:
 - **opportunities to participate in government-funded programs similar to ATP;**
 - **local investment opportunities; and**
 - **adequate and effective protection for intellectual property rights**
- Refer to "ATP Eligibility Criteria for U.S. Subsidiaries of Foreign-Owned Companies: Legislation, Implementation, and Results"

Human and Animal Subjects

- ATP funds projects involving human and/or animal subjects
- Must comply with applicable Federal rules
- Not limited to traditional biomedical research
- Refer to "**Guidelines and Documentation Requirements for Research Involving Human and Animal Subjects**"

- **Gate 1:** Submit page 3 of NIST-1262 (SA) or NIST-1263 (JV) with initial proposal
- **Gate 2:** Submit detailed budget narrative (*Exhibit 14 in ATP Kit*), if proposal passes Gate 1
- Identify:
 - **yearly project costs**
 - **direct costs**
 - **indirect costs**
 - **sources of funds/cost share**

- Any costs that can be identified specifically with a particular cost objective:
 - **personnel**
 - **fringe benefits**
(vacation, sick, insurance, retirement, etc.)
 - **travel**
 - **equipment**
 - **materials/supplies**
 - **subcontracts**
 - **other**

Indirect/Overhead Costs

- Any costs not directly identified with a single cost objective but identified with two or more final cost objectives:
 - **depreciation on buildings and equipment**
 - **facility operations and maintenance**
 - **general administration**
 - salaries/expenses of executive officers
 - personnel administration
 - accounting and auditing

Sources of Funds/ Cost Share

- Identify every source of cost share
 - **company**
 - **state/city/county**
 - **other non-Federal**
- Unallowable sources of cost share
 - **Federal funds**
 - **sunk costs**
 - **subcontractors**

Sources of Funds/ Cost Share (cont'd)

- Identify cash and in-kind
- In-kind
 - **equipment, research tools, software, supplies, etc.**
 - **limited to 30% of total cost share**
 - **value per 15 CFR Part 14.23**
 - **value in-kind transfers among JV partners per 15 CFR Part 295.25**

Payments

- Same day electronic payment
- Draw down should not exceed immediate need
- Method—Automated Standard Application for Payment System (ASAP)
- Normal payment rules apply
 - **Satisfactory performance**
 - **Timely submission of required reports**
 - **Meeting cost share**
- NIST can impose restrictions, if warranted

www.fms.treas.gov/asap/index.html

- ATP may require the recipient to provide an accounting system certification within 90 days of issuance of the award if:
 - **recipient has had no prior federal support;**
 - **concerns are raised about the recipient's financial management system; or**
 - **recipient is considered to be a high-risk.**
- Cost of certification may be included as "other" costs on NIST Form 1262 (SA) or 1263 (JV)

- Administrative Requirements
 - **15 CFR Part 14**
- Cost Principles
 - **48 CFR Part 31 (For-profits)**
 - **OMB Circular A-21 (Universities)**
 - **OMB Circular A-122 (Non-profits)**
 - **45 CFR Part 74, Appendix E (Hospitals)**

Hot links available on ATP website:

www.atp.nist.gov/alliance/roadmap.htm

www.atp.nist.gov/atp/helpful.htm

- **George White, Chief Grants and Agreements Management Division**
 - **Tel: (301) 975-8175**
 - **E-mail: george.white@nist.gov**
- **Marilyn Goldstein, Team Leader, ATP Awards**
 - **Tel: (301) 975-6359**
 - **E-mail: marilyn.goldstein@nist.gov**
- **Shamim Shaikh, Team Leader, Audits & Closeouts**
 - **Tel: (301) 975-5044**
 - **E-mail: shamim.shaikh@nist.gov**

ATP Website Resources



The screenshot shows the NIST ATP website interface. On the left, there is a navigation menu with sections: About ATP, ATP Partnerships, Fast Facts About ATP, Products and Services, and Resources for ATP Recipients. The main content area features a 'High-risk R&D areas' section, a '2001 Awards' section, and a '2002 Competition' section. On the right, there are sections for 'ATP Headlines', 'Media Announcements', 'Meetings and Events', and 'Presentations by ATP Staff'. A search bar is located at the bottom of the main content area.

FY2002 Competition

- **Federal Register Announcement:**
 - **Funding for new awards will not exceed \$60.7 million**
 - **Continued streamlined competition process**
 - **New ATP Proposal Preparation Kit (04/02)**
 - **Electronic submissions are optional to all proposers**
- **ATP automatically sends out *Kit* and announcements to mailing list**

FY2002 Competition Important Dates

- The Competition begins **April 22, 2002**
- Rolling Submission Deadlines are:
 - **Monday, June 10, 2002**
 - **Wednesday, July 31, 2002**
 - **Monday, September 30, 2002**



FY2002 Competition Important Dates

- To be considered for funding in FY 2002
 - **Potential proposers must submit their proposals by the first due date of June 10, 2002**
- All hand-delivered or electronically submitted proposals must be received by 3:00 PM Eastern time on the specified dates
- All other carrier delivered proposals **must be postmarked by the due dates** specified above and **received** no later than 3:00 P.M. Eastern time on:
 - **Monday, June 24, 2002;**
 - **Wednesday, August 14, 2002; or**
 - **Tuesday October 15, 2002, respectively.**

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Points of Contact

- Eligibility, Financial and Administrative Areas
 - **Barbara Lambis (301) 975-4447**
 - ***barbara.lambis@nist.gov***
- Project Selection Criteria and Process
 - **Bettijoyce Lide (301) 975-2218**
 - ***bettijoyce.lide@nist.gov***
- Electronic Submission System
 - **Susannah Schiller (301) 975-2852**
 - ***susannah.schiller@nist.gov***
- Human and Animal Subjects
 - **Tryn Stimart (301) 975-8779**
 - ***tryn.stimart@nist.gov***

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For Info on ATP and to Join Our Mailing List . . .

- Call toll-free: **1-800-ATP-FUND**
(1-800-287-3863)
- Fax your name and
address to: **301-926-9524**
- Send e-mail to: ***atp@nist.gov***
- Visit ATP's website: ***www.atp.nist.gov/***