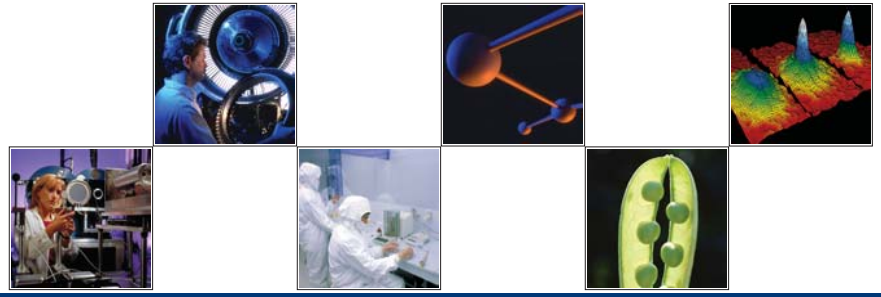
ADVANCED TECHNOLOGY PROGRAM

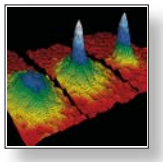
NIST
National Institute of Standards and Technology
Technology Administration, U.S. Department of Commerce

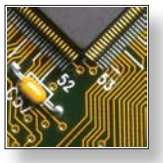
Survey of ATP Applicants 2000



Survey of ATP Applicants 2000

1. Why Do Companies Apply for ATP Funding?
2. Funding Sources for Innovative R&D
3. ATP Funds High Risk and Long Term R&D Projects
4. ATP Fosters New R&D Directions and Partnerships
5. ATP Helps Companies Work with Universities
6. ATP Promotes Public Benefits and Knowledge Diffusion
7. ATP Awards Attract Additional Funding
8. What Happens to Nonfunded Projects?
9. Time and Cost for ATP Proposal Preparation
10. Applicant Perceptions of the ATP Proposal Process
11. Descriptive Statistics for ATP Applicants: Company Size and R&D Effort
12. Survey of ATP Applicants 2000: Methodology and Respondent Characteristics

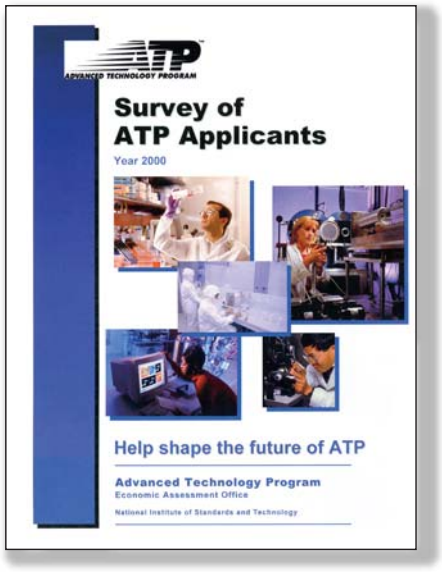


Survey of ATP Applicants 2000: An Introduction

The Advanced Technology Program (ATP) at the National Institute of Standards and Technology (NIST) supports innovation in the United States through competitively awarded funding to companies pursuing early-stage high-risk Research and Development (R&D). Each year, companies propose R&D projects to the ATP, and the project proposals are evaluated for technical and economic merit through a competitive review process.

In the competition for the year 2000, ATP evaluated 417 R&D project proposals involving 555 applicant organizations. Of these, 58 projects, representing 85 organizations, were selected for funding awards. The number of company applicants exceeds the number of project proposals submitted to ATP because some ATP projects are joint ventures.

ATP accelerates the development of innovative technologies for broad national benefit through partnerships with the private sector. To help assess the effectiveness and impact of the program, ATP's Economic Assessment Office (EAO) sponsored a survey of all company applicants to ATP in the year 2000 funding competition. The *Survey of Applicants 2000* is an important evaluation tool for assessing overall characteristics of applicants to ATP, as well as comparing program effects on awardees and nonawardees. The survey findings provide valuable evidence on the impact of ATP.



The new survey builds on a previous survey of applicants to ATP.† The survey research company Westat was hired to support survey development and data collection for the new survey. All for-profit company applicants to ATP in the year 2000 were included in the survey sample; other organizations, such as universities and non-profit organizations, were not included. Survey responses were obtained from a total of 346 companies, including 74 companies that were awarded funding as well as 272 companies not selected for an award.

The following series of factsheets present findings from the *Survey of Applicants 2000.*

1. Why Do Companies Apply for ATP Funding?
2. Funding Sources for Innovative R&D
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† See Feldman, M.P. & Kelley, M.R. (2001). *Winning an award from the Advanced Technology Program: Pursuing R&D strategies in the public interest and benefiting from a halo effect.* U.S. Department of Commerce, National Institute of Standards and Technology. NISTIR-6577.

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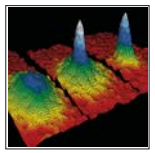
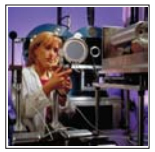
Why Do Companies Apply for ATP Funding?




The Advanced Technology Program (ATP) fosters innovation in the United States by partnering with industry to support high-risk Research and Development (R&D) with great potential for broad-based economic benefit. ATP also encourages R&D collaboration between companies and other organizations. The *Survey of ATP Applicants 2000* collected information on factors that are important to companies in their decision to apply to ATP.

Respondents were asked to indicate the importance of a number of factors in reaching their decision to apply for ATP funding. The factors can be grouped as follows:

a) ATP funding helps overcome unavailability or instability of internal company funding, or dependence of internal funding on external funding support

b) ATP funding provides external validation for the technological or commercial potential of the R&D project

c) ATP funding facilitates R&D collaboration among different organizations

Nearly all ATP applicants indicate that unavailability or instability of internal company funding, or dependence of internal funding on receiving external support, are important factors in their decision to apply to ATP

- *Internal company funding is not available.* 88 percent of applicants indicate this was "extremely important" or "very important" in their decision to apply to ATP. Another 10 percent report that it was "somewhat important." (See Figure 1.)
- *ATP provides stability of funding for the project over time.* 75 percent of applicants indicate this was "extremely important" or "very important" in their decision to apply to ATP. Another 17 percent report that it was "somewhat important."
- *Internal company funding and commitment to the project depend on receiving external funding.* 71 percent of applicants indicate this was "extremely important" or "very important" in their decision to apply to ATP. Another 17 percent report that it was "somewhat important."

Most ATP applicants indicate that external validation of the technological or commercial potential of the R&D project was an important factor in their decision to apply to ATP

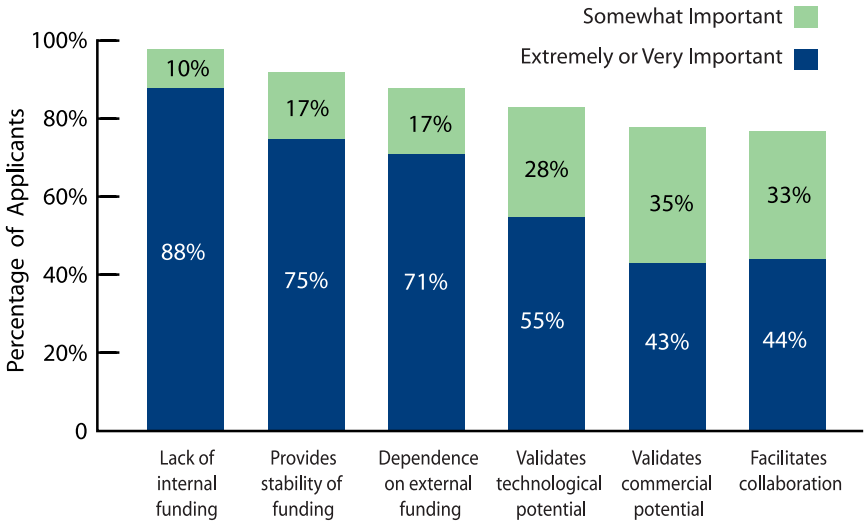
- *ATP funding provides external validation of the technological potential of the project.* 55 percent of applicants indicate this was "extremely important" or "very important" in their decision to apply to ATP. Another 28 percent report that it was "somewhat important."

- *ATP funding provides external validation of the commercial potential of the project.* 43 percent of applicants indicate this was "extremely important" or "very important" in their decision to apply to ATP. Another 35 percent report that it was "somewhat important."

Most ATP applicants indicate that fostering R&D collaboration among different organizations was an important factor in their decision to apply to ATP

- *ATP funding facilitates collaboration among different organizations.* 44 percent of applicants indicate this was "extremely important" or "very important" in their decision to apply to ATP. Another 33 percent report that it was "somewhat important."

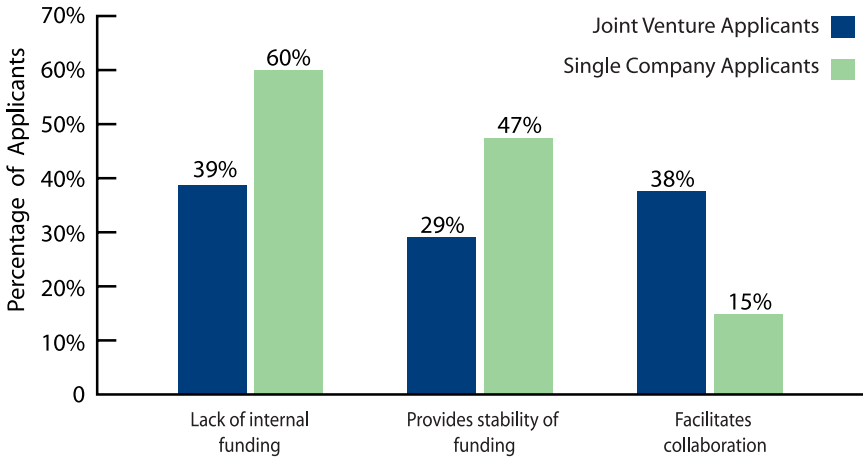
FIGURE 1.
Importance of Factors for Why Companies Apply to ATP



Single company applicants are more likely to emphasize the need for funding as the factor for applying to ATP, while joint venture applicants are more likely to emphasize the need to facilitate collaboration among organizations

- *Lack of internal funding.* 60 percent of Single Company applicants indicate that unavailability of internal company funding was "extremely important" in their decision to apply to ATP, compared to 39 percent for Joint Venture applicants. (See Figure 2.)
- *Provides stability of funding.* 47 percent of Single Company applicants indicate that stability of project funding was "extremely important" in their decision to apply to ATP, compared to 29 percent for Joint Venture applicants.
- *Facilitates collaboration.* 38 percent of Joint Venture applicants indicate that facilitating collaboration among different organizations was "extremely important" in their decision to apply to ATP, compared to 15 percent for Single Company applicants.

FIGURE 2.
Importance of Factors for Why Companies Apply to ATP: Single Company versus Joint Venture Applicants



Funding Sources For Innovative R&D

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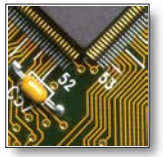


Companies typically focus their own Research and Development (R&D) dollars on product development efforts where outcomes are more certain, and often depend on external sources of support in order to pursue high-risk research. Through its cost-shared funding, the Advanced Technology Program (ATP) helps companies pursue early-stage high-risk R&D with the potential for broad-based economic benefit.

Evidence from the *Survey of ATP Applicants 2000* indicates that applicants obtain funding for innovative R&D from a number of external sources. Federal government programs, such as the ATP, are an important source of funding for high-risk R&D and play an important role relative to other sources of funding.†

Survey respondents were asked to indicate whether their company had received funding (for research in the area represented by the proposed ATP project) from the following external sources:

a) federal government programs (other than ATP)

b) state or local government programs

c) other companies

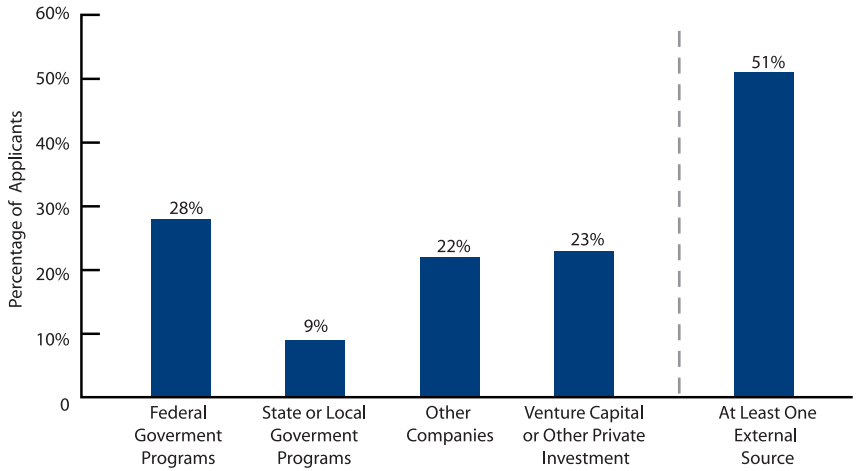
d) venture capital or other private investment

Respondents were asked to report their funding sources for the three years leading up to their proposal submission, and also to indicate how critical each reported source was for their company's research effort.

Half of all ATP applicants report receiving prior funding from external sources for the general research area of their proposed project

- 51 percent of applicants report receiving funding for their research area from at least one external source in the three years prior to the ATP proposal. (See Figure 1.)
- 28 percent of applicants report receiving funding from federal government programs, and 9 percent report receiving funding from state or local government programs.
- 22 percent report receiving funds from other companies, and 23 percent from venture capital or other private investment.

FIGURE 1.
Funding Sources Reported by ATP Applicants: Three Years Prior to ATP Proposal



† See Branscomb, L. and Auerswald, P. (2002). *Between Invention and Innovation: An Analysis of Funding for Early Stage Technology Development,* U.S. Department of Commerce, National Institute of Standards and Technology. NIST GCR 02-841.

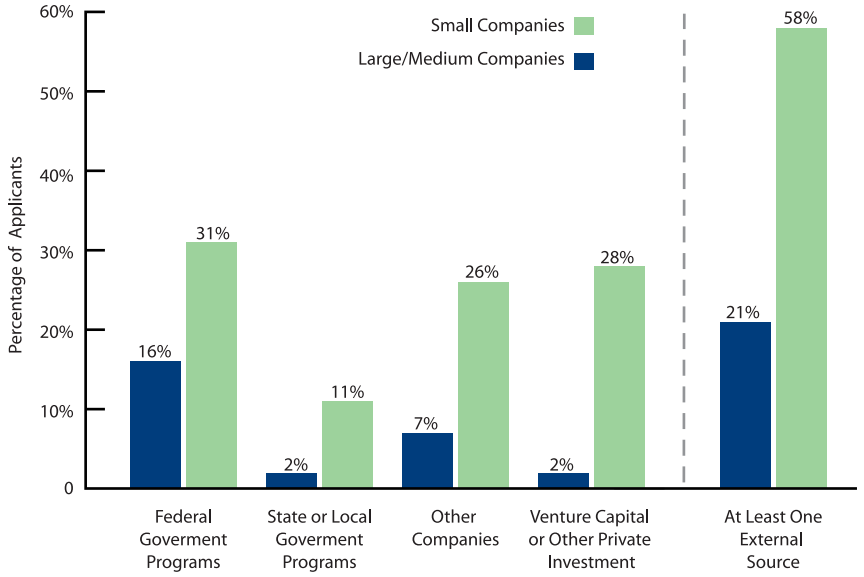
Many ATP applicants report that prior funding from an external source was "very critical" to their research in the area of their proposed project

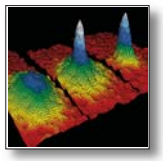
- 40 percent of applicants report that funding from an external source in the three years prior to the ATP proposal was "very critical" to their research effort.
- 19 percent of applicants received "very critical" funding from federal government programs; only 3 percent received such funding from state or local government programs.
- 12 percent of applicants received "very critical" funding from other companies, and 18 percent from venture capital or other private investment.

Small companies are more likely than large companies to have received prior funding from external sources for the research area of their proposed project

- In the three years leading up to the ATP proposal, 58 percent of small company applicants received funding from an external source for the research area of their proposed project, compared to 21 percent for larger companies. (See Figure 2.)
- Small companies are twice as likely as larger companies to have received prior funding from federal government programs, and almost four times as likely to have received prior funding from other companies.
- State and local government, and venture capital or other private investment represent significant sources of external funding for small companies, but not for larger companies.

FIGURE 2.
Sources of Funding Prior to ATP Proposal: Small Companies versus Large/Medium Companies



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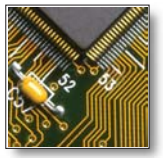


ATP Funds High Risk and Long Term R&D Projects

Innovative early-stage Research and Development (R&D) usually carries high technical risk, with a long time horizon to potential commercial benefit. Companies often cannot fund early-stage R&D on their own or through traditional sources of external funding. Through its cost-shared funding, the Advanced Technology Program (ATP) helps companies pursue high-risk long-term R&D.

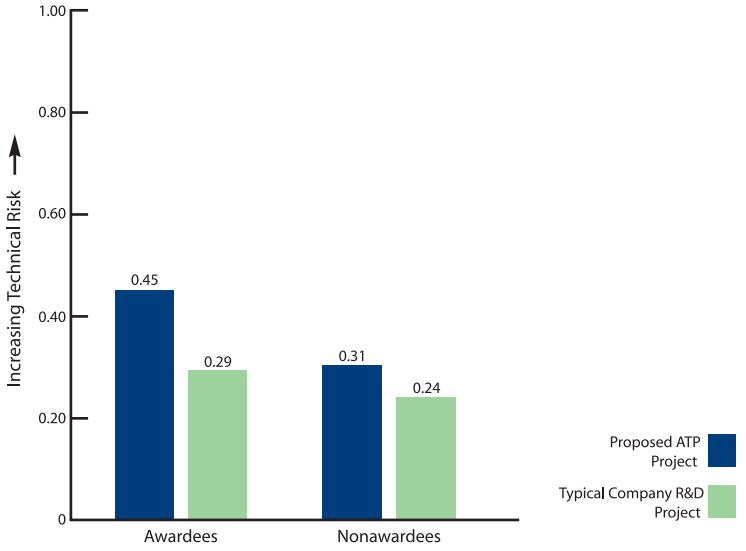
Evidence from the *Survey of ATP Applicants 2000* shows that ATP is successful in directing funding awards to R&D projects that have higher technical risk and longer time horizons than "typical" R&D projects.

A measure of technical risk is the probability that a project will not fully achieve its technical goals. Respondents were asked to estimate this probability, both for their proposed ATP project and a "typical" R&D project in their company.

ATP awarded projects have greater technical risk than nonawarded projects or "typical" R&D projects

- Among ATP awardees, the average estimate for the probability of *not* fully achieving technical goals is 0.45. Among nonawardees, the average estimated probability is only 0.31. (See Figure 1.)
- ATP awardees report a greater contrast between their proposed and typical R&D projects, compared to nonawardees.

FIGURE 1.
Technical Risk – Proposed ATP Projects and Typical Company R&D Projects



Notes: Technical risk is the probability, between 0 to 1, that a project will not fully achieve technical goals. Data shown are mean levels of technical risk as estimated by survey respondents.

A measure of time horizon is the expected number of years from start of project to first impact on company revenues. Respondents were asked to estimate the time to first revenue impact, for both their proposed ATP project and a "typical" R&D project at their company.

ATP awarded projects have longer time horizons than nonawarded projects or "typical" R&D projects

- Comparing the distribution of time horizons for proposed ATP projects between awardees and nonawardees shows that awardees expect a longer time to first revenue impact. (See Figure 2.)
- About half (54%) of ATP awardees expect a revenue time horizon of 4 years or more on their proposed ATP project, compared to one-third (33%) of nonawardees.
- ATP awardees and nonawardees have similar time horizons for "typical" R&D projects at their companies. (See Figure 3.)

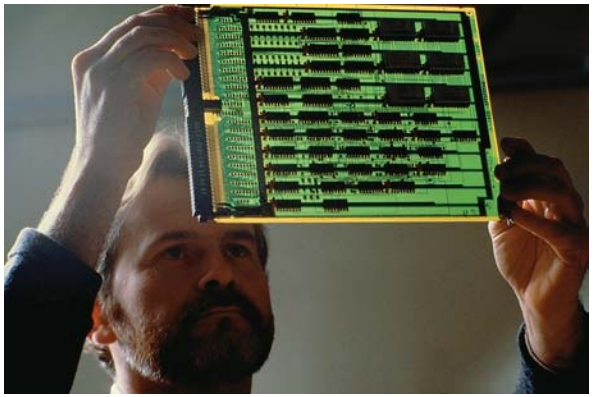


FIGURE 2.
Time Horizon for Proposed ATP Project
(Time to first revenue impact)

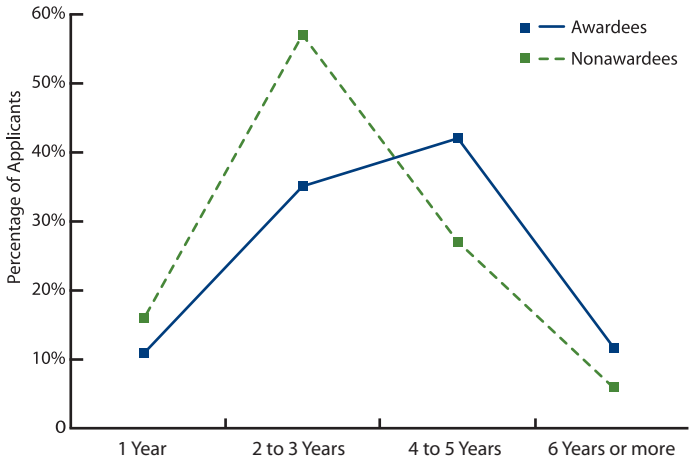
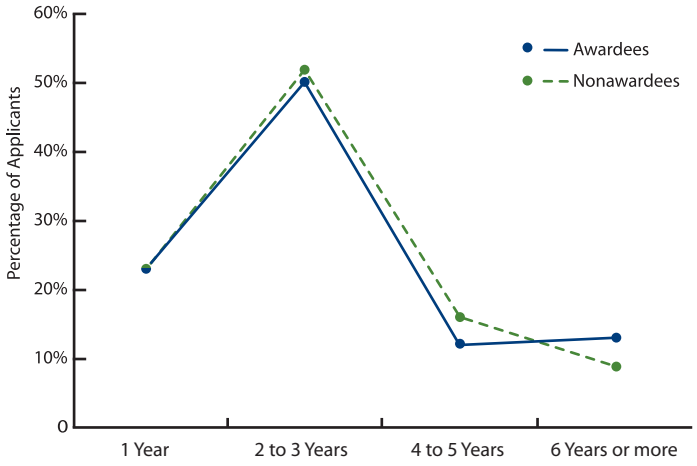
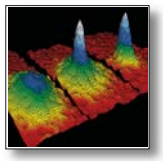


FIGURE 3.
Time Horizon for Typical Company R&D Project
(Time to first revenue impact)





ATP Fosters New R&D Directions and Partnerships

Through its cost-shared funding, the Advanced Technology Program (ATP) encourages companies to pursue new research directions that have the potential to lead to path-breaking technologies. ATP also encourages Research and Development (R&D) collaborations among companies and with other organizations to encourage infrastructural technical change across an industry and to address technology challenges that are larger than one company could address alone. Evidence from the *Survey of ATP Applicants 2000* shows that ATP is successfully fostering new directions and partnerships.

Respondents were asked to estimate the extent to which their proposed project represented a new R&D direction for their industry or technology field

Respondents were asked to estimate the extent to which their proposed project fostered:

a) new individual ties or contacts with other organizations

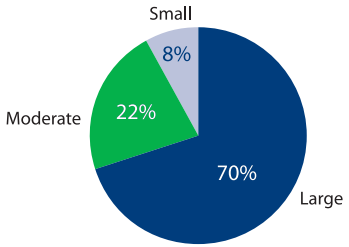
b) new company partnerships with other organizations

c) stronger company relationships with other organizations

Nearly all ATP applicants report their proposed project represented a new R&D direction for their industry or technology field

- 92 percent of applicants say their project was a new direction for their industry or technology field to a "large extent" or a "moderate extent." (See Figure 1.)

FIGURE 1.
Extent to which Proposed ATP Project Represents a New R&D Direction for the Industry or Technology Field



Most ATP applicants report their proposed project fostered new individual ties, new company partnerships, or stronger company relationships

- 69 percent of ATP applicants report their project fostered new individual ties to a "large extent" or a "moderate extent." (See Figure 2.)
- 61 percent of ATP applicants report their project fostered new company partnerships to a "large extent" or a "moderate extent." (See Figure 3.)
- 59 percent of ATP applicants report their project fostered stronger company relationships to a "large extent" or a "moderate extent." (See Figure 4.)

FIGURE 2.
Extent to which ATP Project Proposal Fostered New Individual Ties or Contacts with Other Organizations

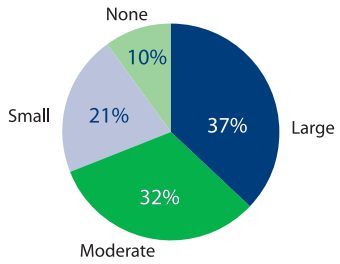


FIGURE 3.
Extent to which ATP Project Proposal Fostered New Company Partnerships with Other Organizations

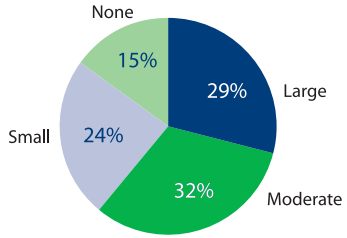
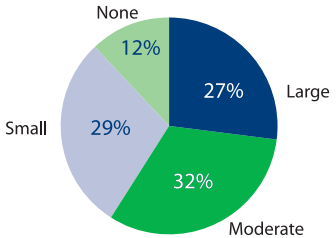


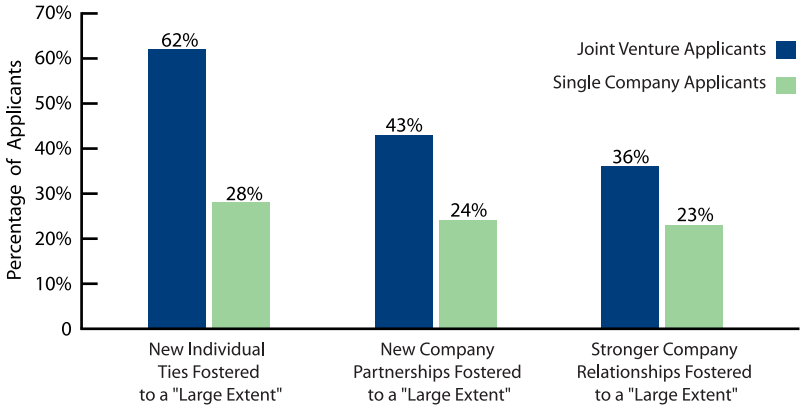
FIGURE 4.
Extent to which ATP Project Proposal Fostered Stronger Company Relationships with Other Organizations

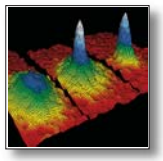


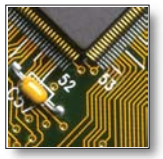
Joint Venture applicants are more likely than Single Company applicants to report that their proposed project fostered new ties and company relationships

- 62 percent of Joint Venture applicants report new individual ties or contacts to a "large extent," compared to 28 percent for Single Company applicants. (See Figure 5.)
- 43 percent of Joint Venture applicants report new company partnerships to a "large extent," compared to 24 percent for Single Company applicants.
- 36 percent of Joint Venture applicants report stronger company relationships to a "large extent," compared to 23 percent for Single Company applicants.

FIGURE 5.
New Ties and Company Relationships: Single Company versus Joint Venture Applicants





ATP Helps Companies Work with Universities

Research collaboration benefits both companies and universities. Universities contribute new ideas, as well as fundamental research understanding. Companies provide an opportunity to shape innovative ideas into practical industrial applications. Through its cost-shared funding, the Advanced Technology Program (ATP) encourages Research and Development (R&D) collaboration between companies, and with other organizations such as universities, as a means to achieving broader or more complex R&D goals. Evidence from the *Survey of ATP Applicants 2000* shows that ATP fosters collaboration between companies and universities.

Respondents were asked to estimate:

a) the degree to which their project was based on university research

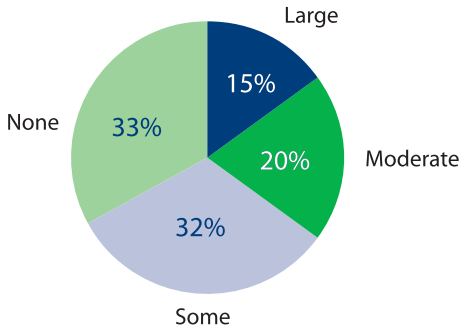
b) whether their project depended on technology licensed from a university

c) how critical was university involvement to their project

Two-thirds of ATP applicants proposed projects that were based on university research

- 15 percent of applicants proposed projects based to a "large degree" on university research, 20 percent to a "moderate degree," and 32 percent to "some degree." (See Figure 1.)
- By technology area, the percentage of applicants that reported their proposed project was based on university research to a "large" or "moderate" degree is as follows: Information Technology, 45 percent; Biotechnology, 45 percent; Materials/Chemistry, 31 percent; Electronics, 23 percent.

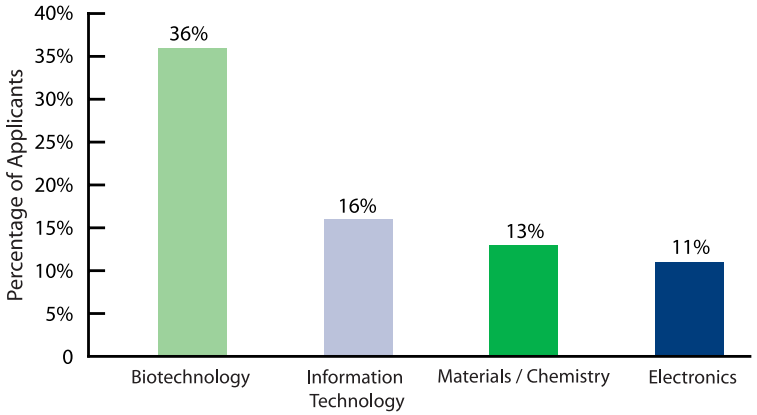
FIGURE 1.
Degree to which Proposed ATP Project Was Based on University Research



Nearly one in five ATP applicants proposed projects that depend on technology licensed from a university

- 18 percent of applicants proposed projects that depend on technology licensed from a university.
- By technology area, the percentage of applicants that reported their proposed project depended on technology licensed from universities is as follows: Biotechnology, 36 percent; Information Technology, 16 percent; Materials/ Chemistry, 13 percent; Electronics, 11 percent. (See Figure 2.)

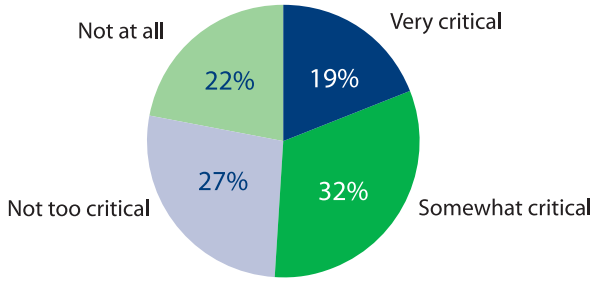
FIGURE 2.
ATP Applicants with Proposed Projects Based on University License, by Technology Area

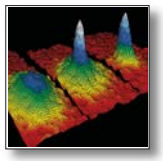


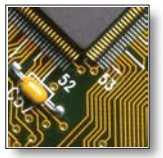
More than half of ATP applicants report that university involvement was critical to their proposed project

- 19 percent say university involvement was "very critical;" 32 percent report it was "somewhat critical." (See Figure 3.)
- By technology area, the percentage of applicants that reported university involvement was "very critical" to their proposed project is as follows: Information Technology, 31 percent; Biotechnology, 20 percent; Materials/ Chemistry, 16 percent; Electronics, 13 percent.

FIGURE 3.
How Critical Was University Involvement to Proposed ATP Project?






ATP Promotes Public Benefits and Knowledge Diffusion

In order to accelerate innovative technology for broad national benefit, the Advanced Technology Program (ATP) seeks to fund projects that promote public benefits, knowledge creation, and knowledge dissemination. Evidence from the *Survey of ATP Applicants 2000* indicates that ATP fosters proposals with public benefits and strong potential for knowledge creation and diffusion.

Survey respondents were asked to indicate the extent to which:

a) knowledge and results from their proposed project would be public in nature

b) knowledge from the project would be actively disseminated through publications and presentations

Respondents were also asked to indicate how important patent or copyright is as a means of establishing intellectual property and creating value from the R&D project.

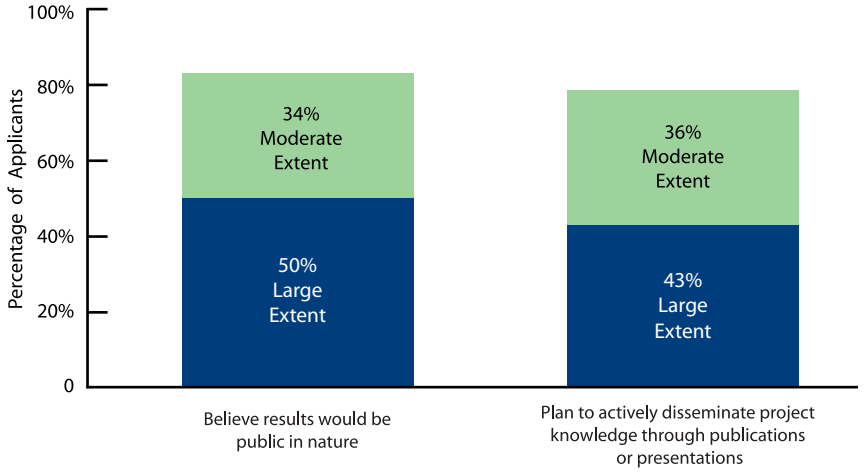
Most ATP applicants indicate that they believe that knowledge and results from their proposed project would be public in nature

- 50 percent of applicants report that they believe results from their project would be public in nature to a "large extent;" 34 percent of applicants report to a "moderate extent." (See Figure 1.)

Most ATP applicants indicate that they plan to actively disseminate knowledge from the project through publication or presentation of results

- 43 percent of applicants report that they plan to actively disseminate knowledge to a "large extent;" 36 percent of applicants report to a "moderate extent." (See Figure 1.)

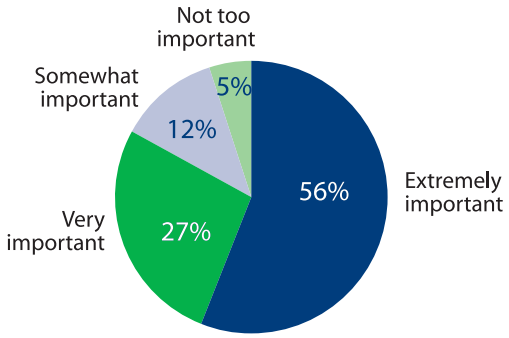
FIGURE 1.
Applicant Beliefs Regarding the Extent to which Project Knowledge would be Public and Actively Disseminated



Nearly all ATP applicants report that patent or copyright is important as a means of establishing intellectual property and creating value from their proposed project

- Patent or copyright provides legal protection of specified intellectual property. As such, a patent or copyright identifies specific knowledge creation and publishes a public record of the specific knowledge. The importance of patent or copyright to ATP applicants indicates the likelihood of knowledge creation and dissemination from ATP supported R&D projects.
- 83 percent of all applicants report that patent or copyright is "extremely important" (56%) or "very important" (27%) as a means of protecting intellectual property and creating value from their proposed ATP project. Another 12 percent report that it is "somewhat important." (See Figure 2.)

FIGURE 2.
Applicant Beliefs on the Importance of Patent or Copyright for Project Results



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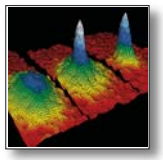
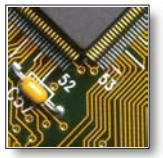
ATP Awards Attract Additional Funding





Company researchers often have difficulty obtaining funds for high-risk research, whether from internal company resources or from external sources of support. Through its cost-shared funding, the Advanced Technology Program (ATP) provides leverage to and validation of company efforts in high-risk research. Evidence from the *Survey of ATP Applicants 2000* shows that an ATP award helps the company to attract additional funding to a research area.

Respondents were asked to estimate:

a) the amount of funding their company devoted to the research area represented by their proposed ATP project in the 3 years leading up to the proposal

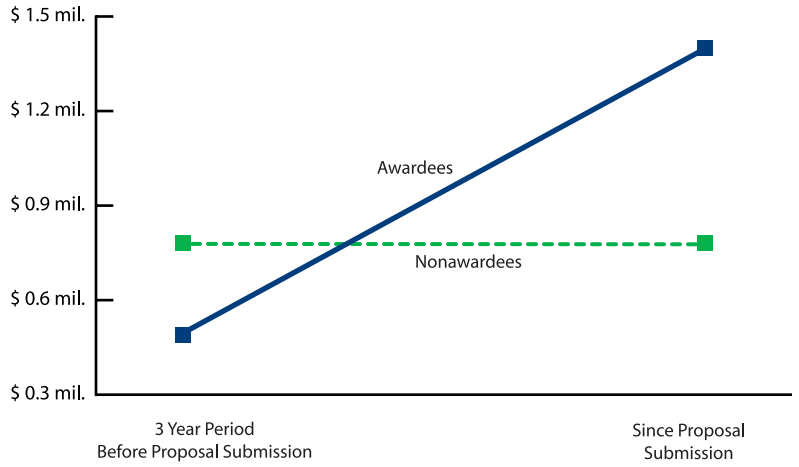
b) the amount of funding committed to the research area since proposal submission

Respondents also were asked to indicate how much of the funding came from internal company sources, and how much from external sources (government programs or outside investors).

ATP awards attract additional funding from internal company sources

- In the 3 years prior to submitting the proposal, ATP awardees on average devoted $490,000 in funding from internal sources to the research area represented by the proposed ATP project. Since submitting the proposal, company funding commitments increased to $1.4 million on average. (See Figure 1.)
- By comparison, nonawardees on average experienced no change in funding from internal sources in the research area of the proposed ATP project.
- Among ATP awardees, 72 percent indicate that funding from internal sources has increased since submitting the proposal, while among nonawardees only 28 percent indicate that internal funding has increased.

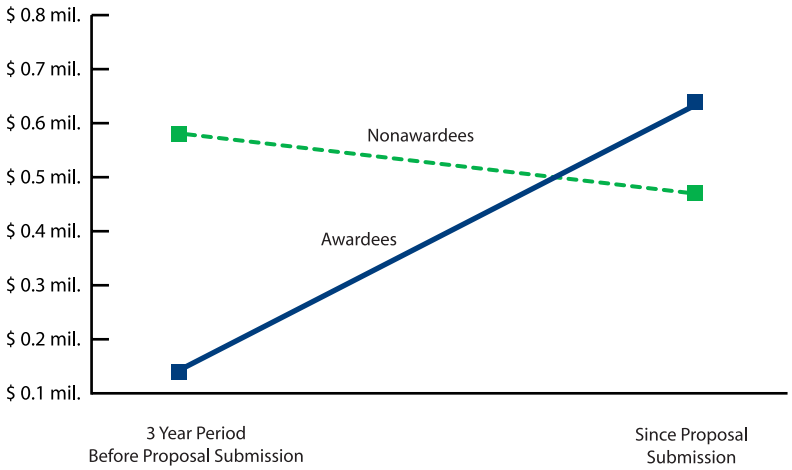
FIGURE 1.
Funding from Internal Sources Devoted to Research Area Represented by Proposed ATP Project

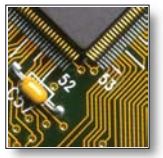


ATP awards attract additional funding from external sources

- In the 3 years prior to submitting the proposal, ATP awardees on average devoted $140,000 in funding from external sources to the research area represented by the proposed ATP project. Since submitting the proposal, funding commitments from external sources (excluding ATP) increased to $640,000 on average. (See Figure 2.)
- By comparison, nonawardees on average experienced a decline in funding from external sources in the research area of the proposed ATP projects.
- Among ATP awardees, 35 percent indicate that funding from external sources has increased since submitting the proposal, while among nonawardees only 18 percent indicate that external funding has increased.

FIGURE 2.
Funding from External Sources
Devoted to Research Area Represented by Proposed ATP Project





What Happens to Nonfunded Projects?

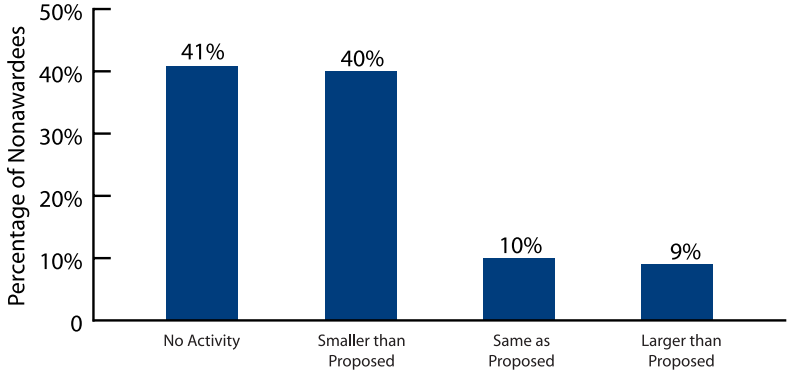
Through cost-shared funding awards, the Advanced Technology Program (ATP) helps companies pursue high-risk Research and Development (R&D) with great potential for broad-based economic benefit. To assess the funding impact of an ATP award, one can consider what happens to project proposals that are not selected for an award. Evidence from the *Survey of ATP Applicants 2000* indicates that without ATP support these projects are generally not carried out as originally proposed.

Nonawardees were asked to indicate whether they are currently carrying out any part of the project they proposed to ATP. They were asked to describe any current effort as larger, smaller, or about the same as originally proposed to ATP. This survey data was collected about 18 months after the conclusion of the ATP award competition in the year 2000.

Most nonfunded projects are either no longer active or have been greatly reduced in scope

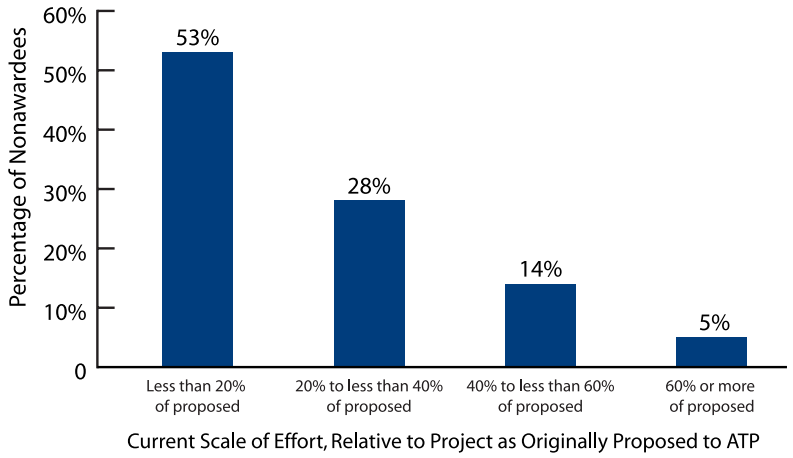
- When ATP decides not to fund a proposed project, the company applicants often do not carry out the work on their own. Among nonawardees, 41 percent report that their company is no longer pursuing any part of the project. (See Figure 1.)

FIGURE 1.
Current Status of Nonfunded Projects (Year 2000 ATP Competition)



- The majority of nonawardees still working on their proposed projects are doing so on a scale smaller than what was proposed to the ATP. (See Figure 1.)
- Among those reporting that their proposed projects are being conducted on a smaller scale, the vast majority (81%) indicate the project is now "less than 40 percent" of the scale initially proposed to the ATP. About half (53%) describe it as "less than 20 percent" of what was originally proposed. (See Figure 2.)

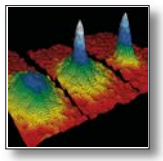
FIGURE 2.
Current Scale of Effort for Nonfunded Projects with Some Continued Company R&D Activity



Note: Data shown based on 106 nonawardees who reported they are still working on their proposed ATP project, though on a smaller scale than what was originally proposed.

Most nonfunded joint venture projects are no longer active as R&D collaborations

- ATP fosters R&D collaboration among companies by supporting research joint ventures, which allow companies to share the risk of R&D and gain synergies from combining complementary skills and resources.
- Among nonawardees asked to respond to the survey, there were 38 joint venture proposals. At least one company responded to the survey from each of these joint ventures.
- For about two-thirds of the 38 joint venture proposals, at least one company reports they are no longer working on any part of the proposed project (this may be an underestimate of the extent to which companies abandon these proposed joint venture projects, since companies no longer working on any part of the project are probably less likely to respond to the survey).

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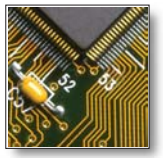


Time and Cost for ATP Proposal Preparation

Companies seeking to partner with the Advanced Technology Program (ATP) submit Research and Development (R&D) project proposals to the ATP. Project proposals are then evaluated for technical and economic merit in a rigorously competitive review process. The *Survey of ATP Applicants 2000* collected information on the amount of time and cost companies expended to prepare an ATP proposal.

Respondents were asked to indicate:

a) the total number of staff hours used in preparing their ATP proposal

b) the total cost to their company in preparing the proposal

Companies applying for an ATP award devote varying levels of resources to proposal preparation

- The median ATP applicant devoted 200 staff hours to their ATP proposal. The total company cost of preparing an ATP proposal for the median applicant was $17,500.
- Figure 1 shows the distribution of total staff hours devoted to ATP proposal preparation. Three-quarters of all applicants devoted less than 320 hours of staff time to their proposal.
- Figure 2 shows the distribution of cost to companies in preparing their ATP proposal. Three-quarters of all applicants spent less than $30,000.

FIGURE 1.
Total Staff Hours Used in Preparing ATP Proposal

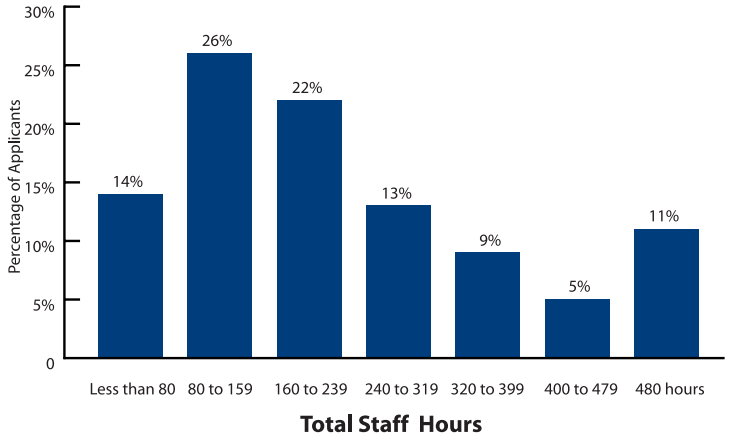
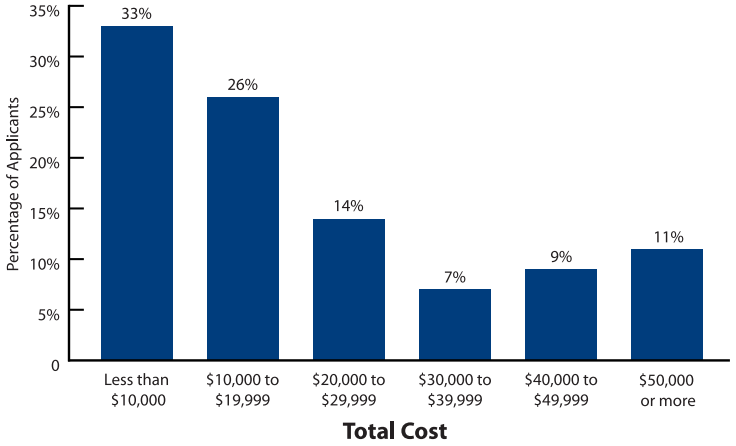


FIGURE 2.
Total Cost of Preparing ATP Proposal



Time and cost for ATP proposal preparation differs by applicant type

Joint Venture Companies and Single Companies

- Joint Venture Lead companies and Single companies devoted a similar amount of staff time to proposal preparation. Joint Venture Partner companies spent less time.
  - For both Joint Venture Lead companies and Single companies, the median amount of staff time was 200 hours, while for Joint Venture Partner companies the median was 120 hours. (See Figure 3.)
- Joint Venture Lead companies experienced higher total costs in preparing an ATP proposal, relative to Joint Venture Partner companies and Single companies.
  - The median cost for Joint Venture Lead companies was $25,000. For Joint Venture Partner companies the cost was $17,500, and for Single companies the cost was $12,500. (See Figure 4.)

Large Companies and Small Companies

- Large companies devoted more resources than small companies to ATP proposal preparation.
- Comparing total cost, the median for Large/Medium companies was twice that of Small companies ($25,000 versus $12,500). (See Figure 4.)

Awardees and Nonawardees

- ATP Awardees devoted more effort to preparing their proposals than Nonawardees.
- Comparing total cost of proposal preparation, the median cost for Awardees was $25,000, compared to $17,500 for Nonawardees. (See Figure 4.)

FIGURE 3.
Total Staff Hours Used in Preparing ATP Proposal, by Applicant Type

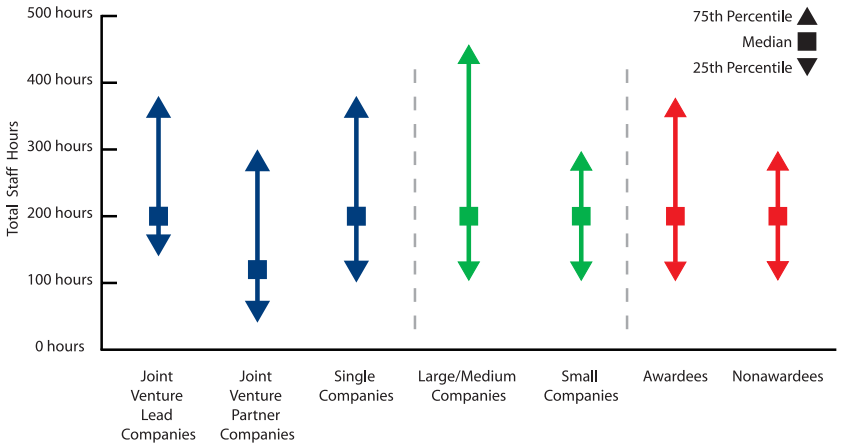
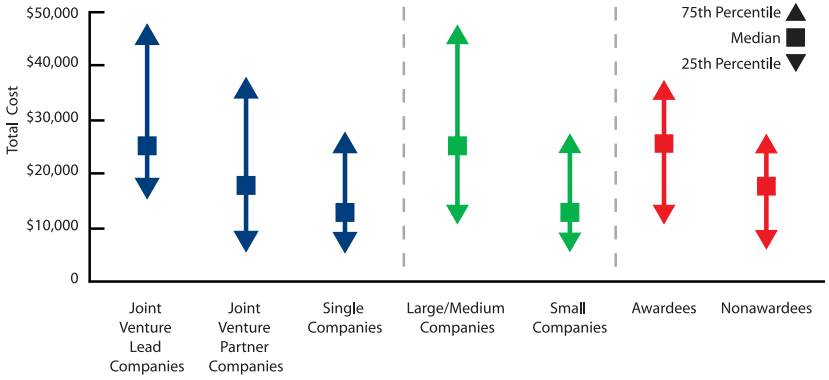
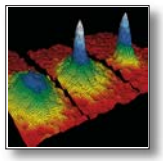


FIGURE 4.
Total Cost in Preparing ATP Proposal, by Applicant Type





Applicant Perceptions of the ATP Proposal Process

Companies seeking to partner with the Advanced Technology Program (ATP) submit Research and Development (R&D) project proposals to the ATP. Project proposals are then evaluated for technical and economic merit in a rigorous competitive review process.

ATP aims to make the proposal process useful to companies, and ensures fair and equal treatment of all applicants. The *Survey of ATP Applicants 2000* collected information about applicants' perceptions of the proposal process.

Respondents were asked to indicate:

a) how useful to their company was the process of preparing the ATP proposal

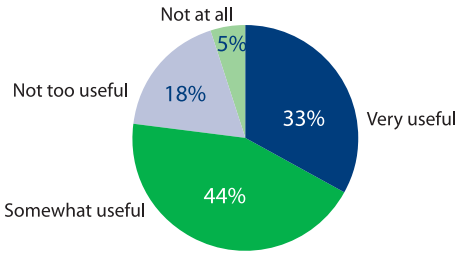
b) how useful to their company was information received from ATP during the review process

c) the extent to which they believed the ATP review and decision process was a fair process

Most applicants view the ATP proposal process as useful

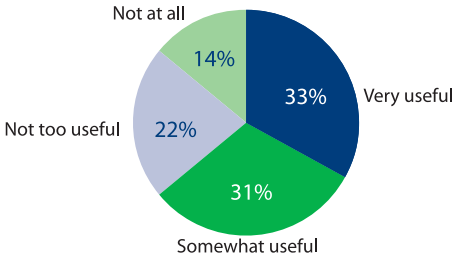
- Preparing an ATP proposal may be useful to an applicant for a variety of reasons. It may catalyze discussion and planning, focus attention on specific R&D or business issues, or clarify management commitment.
- Over three-quarters of all applicants report that the process of preparing an ATP proposal is "somewhat useful" or "very useful." (See Figure 1.)

FIGURE 1.
Usefulness to Company of Preparing the ATP Proposal



- During the proposal process, companies respond to questions from ATP in oral review regarding technical and business aspects of the project. In telephone debriefing of nonawardees, companies receive feedback on the strengths and weaknesses of their proposal against ATP criteria.
- Nearly two-thirds of all applicants regard the information received from ATP to be "somewhat useful" or "very useful." (See Figure 2.)

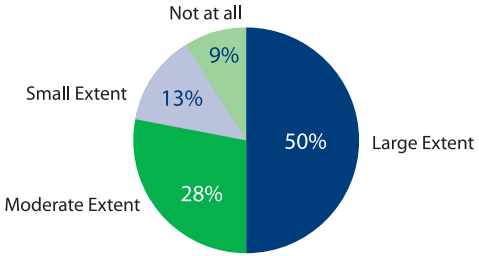
FIGURE 2.
Usefulness to Company of Information Received during ATP Proposal Process



Most applicants view the ATP proposal process as fair

- ATP places great emphasis on ensuring the integrity and fairness of the proposal review and decision process. All proposals are peer-reviewed by technical and business specialists and evaluated according to clearly established criteria.
- Over three-quarters of all applicants report that the ATP review and decision process is a fair process. Half of all applicants view it as being fair to "a large extent." Just over one-quarter believe the process to be fair to "a moderate extent." (See Figure 3).

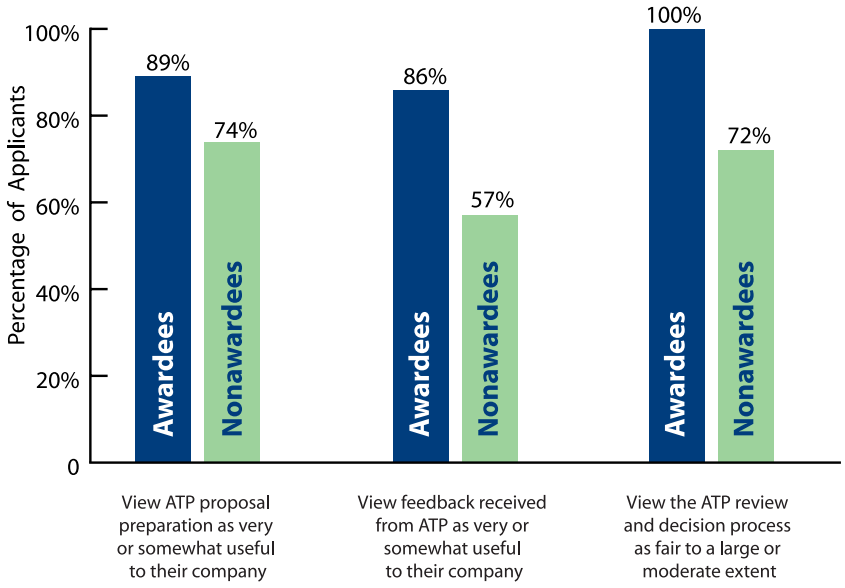
FIGURE 3.
Beliefs that the ATP Review and Decision Process is Fair

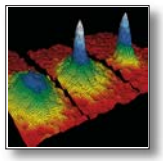


Both Awardees and Nonawardees view the ATP proposal process as useful and fair

- Not surprisingly, Awardees view the ATP proposal process more favorably than Nonawardees. (See Figure 4.)
- Still, most Nonawardees view the ATP proposal process favorably.
- About three-quarters (74%) of Nonawardees report that they found the process of preparing the ATP proposal to be useful.
- Over half (57%) of Nonawardees report that ATP feedback on their proposal was useful.
- Almost three-quarters (72%) of Nonawardees report that they believed the ATP proposal and decision process to be fair.

FIGURE 4.
Awardee and Nonawardee Perceptions of the ATP Proposal Process



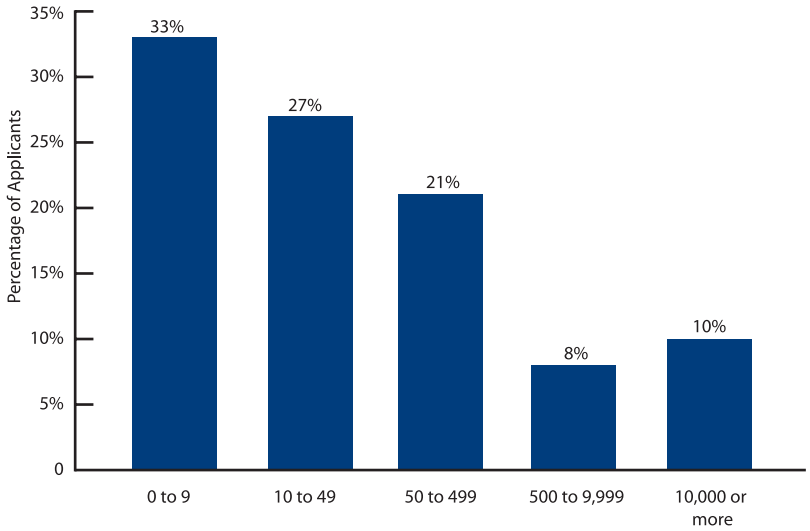
Descriptive Statistics for ATP Applicants: Company Size and R&D Effort

This factsheet presents information on company size and level of Research and Development (R&D) effort for applicants to the Advanced Technology Program (ATP) in the year 2000 competition. Data shown is from responses to the *Survey of ATP Applicants 2000*. The survey collected information on the number of employees and total revenues for the company as a whole, and the number of R&D employees and the R&D budget for the company unit applying to ATP.

Total Number of Employees

- Most companies applying to ATP are small companies. At the end of 2000, one-third of the year 2000 applicants had fewer than 10 employees, while another 27 percent had between 10 and 50 employees. Just under 20 percent had 500 employees or more. (See Figure 1.)

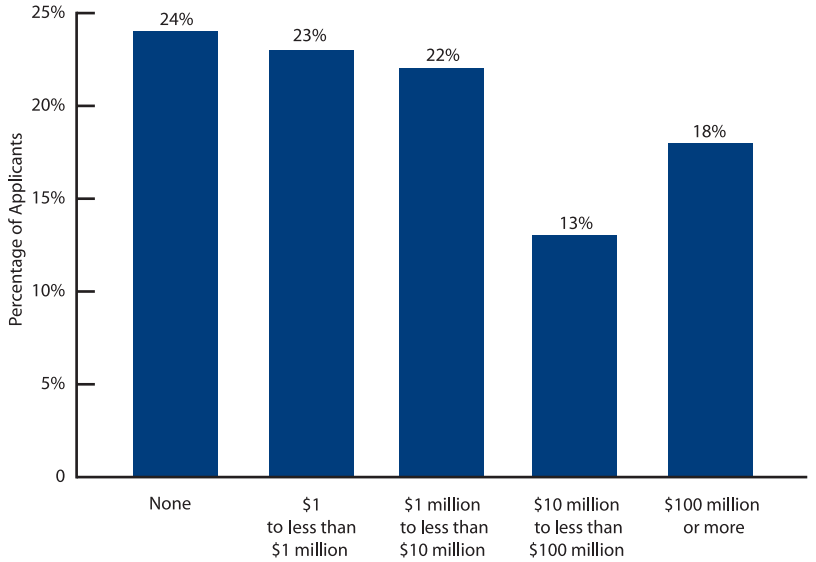
FIGURE 1.
Number of Employees among Year 2000 ATP Applicants



Total Company Revenues

- About one-quarter of all ATP applicants in 2000 had no company revenue. Another 23 percent had revenues of less than $1 million, and 22 percent had revenues between $1 million and $10 million. (See Figure 2.)

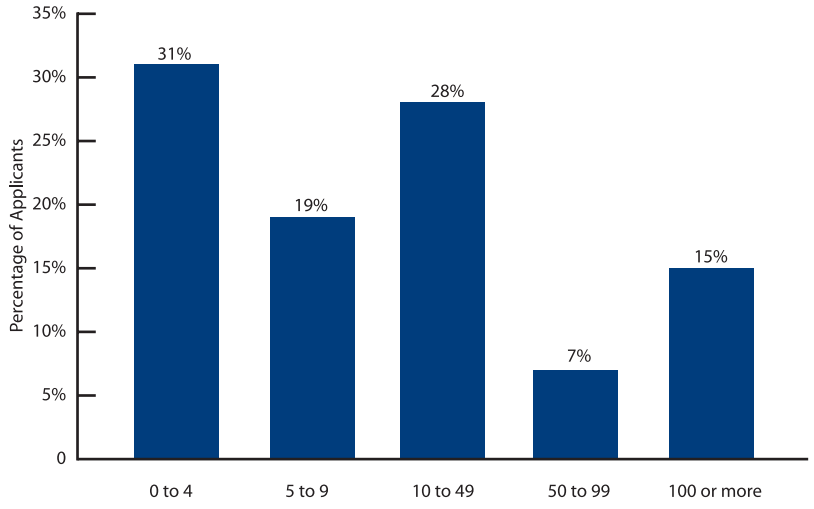
FIGURE 2.
Company Revenue among Year 2000 ATP Applicants



R&D Employees

- At the end of 2000, most applicants (78%) had fewer than 50 employees working in R&D (at the survey respondent's location). About one-third of applicants had fewer than 5 employees working in this role. (See Figure 3.)

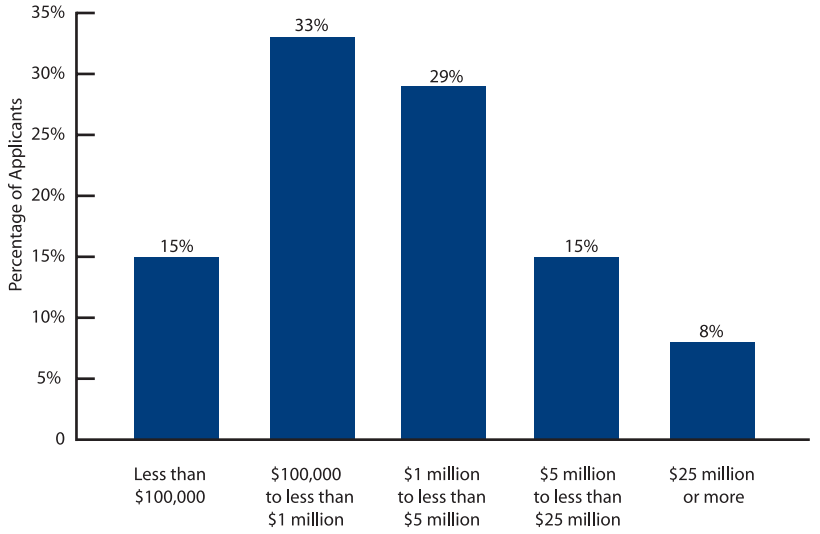
FIGURE 3.
Number of R&D Employees among Year 2000 ATP Applicants



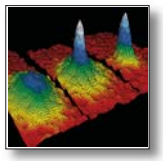
R&D Budget

- Most applicants (77%) in the year 2000 competition had R&D budgets of less than $5 million. 15 percent reported that their year 2000 R&D budgets (at the survey respondent's location) were less than $100,000. One-third reported their budget to be between $100,000 and $1 million. (See Figure 4.)

FIGURE 4.
R&D Budget among Year 2000 ATP Applicants



Survey of ATP Applicants 2000: Methodology and Respondent Characteristics


This information sheet summarizes the methodology for the *Survey of ATP Applicants 2000.* Information is presented on survey development, data collection procedures, survey response rates, and characteristics of respondents.

Survey Development

The survey used a mixed-mode methodology that included a mail survey questionnaire followed up by telephone interviews with those companies that did not respond by mail. ATP and Westat staff collaborated in developing the survey. All companies applying for funding in the year 2000 award competition were included in the survey. A limited number of applicants were considered ineligible (e.g., companies that submitted incomplete proposals, companies that withdrew from awarded projects). Altogether, 470 applicants were eligible to respond to the survey, including 77 companies that were selected for an ATP award and 393 companies that were not selected for funding. The number of company applicants exceeds the number of project proposals submitted to ATP (417) because some ATP projects are joint ventures.

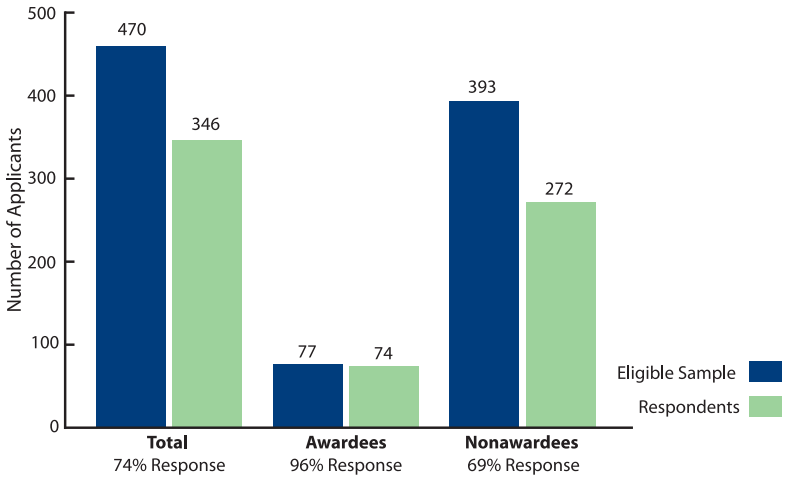
Data Collection

Data collection was carried out from November 2001 through February 2002. Following standard survey procedures, multiple contact attempts were made in order to maximize survey response rates. Advance letters describing the purpose of the survey were mailed to company contact persons who were responsible for the ATP project proposal in the year 2000. Survey questionnaires were mailed one week after the advance letter, with a second mailing of the questionnaire to nonresponding applicants three weeks after the initial questionnaire mailing. After another three weeks, Westat began contacting nonresponding applicants by telephone to collect the survey data. This telephone interview effort was aimed mainly at the nonawardee applicants.

Survey Response Rates

Of 470 applicants eligible to respond, a total of 346 responses were received, for an overall response rate of 74 percent. Among the 77 ATP awardees invited to respond, 74 responses were received (three by phone interview), yielding a response rate of 96 percent. Of the 393 nonawardees, 272 responses were received (of which 110 were by phone interview), yielding a response rate of 69 percent. Figure 1 shows the number of eligible sample applicants and the number of survey respondents.

FIGURE 1.
Number of ATP Applicants: Eligible Sample and Survey Respondents



Response Rate Comparisons

If companies that responded to the survey differed in some way from those that did not respond, these differences might create misleading survey results. To evaluate the possibility of nonresponse bias, response rates were compared for applicants in terms of the following characteristics:

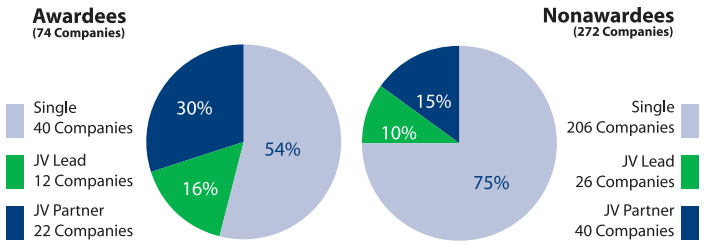
- Single Company versus Joint Venture
- Company Size (small, medium, large)†
- Technology Area (materials/chemistry, biotechnology, electronics, information technology)

These comparisons showed only small differences in response rates, suggesting little or no nonresponse bias in survey results related to the above characteristics.

Characteristics of Survey Respondents: Single Company versus Joint Venture

Figure 2 shows the distribution of survey respondents, for awardees and nonawardees, by single company versus joint venture applicant.

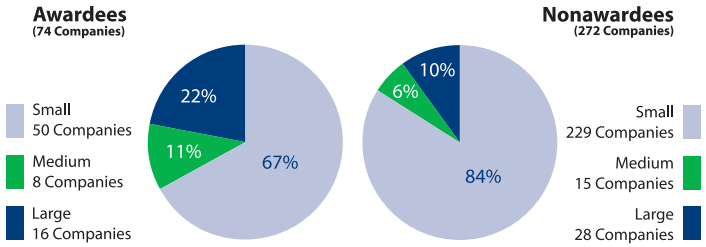
FIGURE 2.
Distribution of Survey Respondents: Single Company versus Joint Venture Applicants



Characteristics of Survey Respondents: Company Size

Figure 3 shows the distribution of survey respondents, for awardees and nonawardees, by company size of applicant.

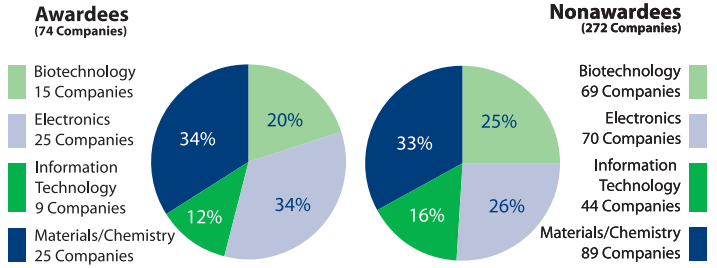
FIGURE 3.
Distribution of Survey Respondents: Applicants by Company Size



Characteristics of Survey Respondents: Technology Area

Figure 4 shows the distribution of survey respondents, for awardees and nonawardees, by technology area of applicant.

FIGURE 4.
Distribution of Survey Respondents: Applicants by Technology Area

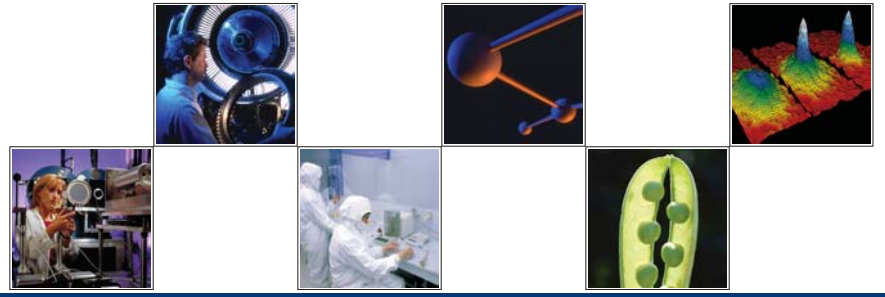


† For ATP, small companies have fewer than 500 employees; large companies are Fortune 500 companies; medium-sized companies are all others.

ADVANCED TECHNOLOGY PROGRAM

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

ATP's mission is to accelerate the development of innovative technologies for broad national benefit through partnerships with the private sector.



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