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RD / COMMISSION — TECHNOLOGY TRANSFER PROGRAMS

RESEARCH GRANTS — TECHNOLOGY CENTERS — VENTURE CAPITAL PROGRAMS — TAX INCENTIVES

EQUITY / ROYALTY INVESTMENT PROGRAMS — SEED C

D MANAGERIAL ASSISTANCE PROGRAMS — RESEARCH PARKS — TECHNICAL TRAINING

STATE TECHNOLOGY PROGRAMS IN THE UNITED STATES

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1986

ERNOR'S OFFICE OF SCIENCE AND TECHNOLOGY

EPARTMENT OF ENERGY AND ECONOMIC DEVELOPMENT

STATE TECHNOLOGY PROGRAMS IN THE UNITED STATES

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PREFACE

The purpose of this report is to provide a picture of what U.S. states are doing to promote technological innovation and job creation in their respective states. This publication is not intended to be a definitive source of technology programs, rather to serve as a guide to the types of programs in place across the nation. More detailed information may be obtained from the individual states.

The report was produced from information provided to the Minnesota Governor's Office of Science and Technology by the individual states. States were contacted by telephone during the months of June and July, 1986. In addition to telephone interviews, the states provided written materials on their programs. In an effort to make this report as complete and accurate as possible, after the materials were reviewed, additional telephone contacts were made to states to confirm and/or clarify the information provided. This report is, however, limited to the programs reported to this office by the individual states. Because technology programs are administered by a wide variety of agencies and organizations, some states' summaries are more comprehensive than others.

Additionally, this report contains only those technology programs that receive, or have in the past received, direct state funding. General university research programs are not included unless they were established as a specific part of a state economic development strategy.

This report is divided into two sections. The first section contains a general overview of technology programs and initiatives in the United States. The second section is comprised of brief summaries of activities by individual states.

Stephen Young and Barbara Larsen made the initial state contacts and assisted in the writing of the report. Typing and proofreading services were expertly performed by Debbie Kunkel.

OVERVIEW

Across the country many states are pumping millions of dollars into new initiatives and programs for the promotion of technological innovation in hope of strengthening their economies. Although state technology development programs are as varied as the states, the desired end result is the same: economic diversification through the creation of new jobs, new firms, and a more competitive position for existing industries.

Forty-three states currently have at least one program specifically designed to encourage technological innovation. Programs range from limited managerial and technical assistance to comprehensive, multi-million dollar programs. Some states are investing in only one type of technology program, while other states are attacking the problem from different fronts by investing in a number of areas simultaneously. The following is a brief summary of some typical types of state technology programs.

STATE PROGRAMS

Technology Offices. Thirty states have boards, commissions, authorities, or offices to oversee or administer state technology programs. The most common type of structure is a public/private partnership including representatives of the private sector, university, and government. They may be an independent public agency, a private nonprofit corporation, or an advisor to the governor and other state policy decision makers. Their duties and responsibilities range from the administration of multi-million dollar technology centers and grant making authority to dissemination of information and advice.

Technology/Research Centers. One way in which states are promoting the development of technology is through research or technology centers. These centers, sometimes called "advanced technology centers" or "centers of excellence," are usually located at or are affiliated with a university. The centers generally concentrate their studies in a particular field (i.e., biotechnology, microelectronics). The area of concentration is usually based on the strengths of the university and/or the major industries in the state. By creating a pool of technological expertise in a particular field, the center can serve as a magnet to related industries. It may assist in the creation of new firms through the development of new products and processes, attract new industries to the state or enable mature existing industries to become more competitive through the application of advanced technology processes or products.

Research Grants. Research grants are a common component of many state technology development strategies. The grants are usually made to universities based on joint proposals from the university and a private sector sponsor. Most often, these grants require a certain level of matching funds from the private sector. A key element in the grant approval is usually its potential for future job creation.

Research Parks. Research parks are planned groupings of technology companies, often near universities, that encourage university/private industry relationships. They are designed to draw industry to a particular location and the inclusion of incubator facilities within the park also encourages the development of new businesses.

Incubators. Incubator facilities provide below-market rates for office and lab space for start-up companies. In addition, shared support services such as clerical, reception, and computer services are often available at incubator facilities. Generally a company's stay in an incubator is limited. Once a company has progressed to a specified point, it is expected to move out, making room for new start-up companies. Incubators are frequently located in advanced technology centers and commercial research parks.

Technology Transfer. The purpose of technology transfer programs is to facilitate the transfer of newly-created technologies from the laboratory to the private sector for the start-up of new businesses, to add product lines to established firms, or to introduce new technologies into mature industries in order to retain and strengthen the state's existing economic base. This goal may be achieved through information exchange as well as active out-reach programs which seek users for existing advanced technologies.

Technical/Managerial Assistance. Nearly half the states have programs designed to provide technical or managerial assistance to technology companies. The assistance may be in the form of general business management information such as personnel, accounting and legal advice, or it may provide companies or individuals with product evaluation and referrals to larger established companies with similar interests. Other services such as start-up and early stage financing referrals may also be provided.

Seed/Venture Capital. States have become involved in seed and venture capital programs to provide early-stage financing to entrepreneurs who have been unable to secure funds from traditional sources. Funds are provided for projects that are at a very early stage or that offer job creation potential but do not appear to have the return on investment expected by traditional venture capitalists.

FINANCING TECHNOLOGY PROGRAMS

Distribution of Funds. Over $700 million of FY1986 funding for state technology programs were identified by the Minnesota Governor's Office of Science and Technology. Nationally, the largest share (40.8 percent) was earmarked for technology or research centers. States spent over $285 million establishing and operating centers of excellence and advanced technology centers in FY1986.

Venture and seed capital accounted for another 23.8 percent of total technology expenditures. Venture capital pools comprised 21.2 percent and seed capital 1.6 percent. As seed capital has historically been difficult to secure, some states have turned to investing public employee pension funds as a source for investments in start-up companies.

Research parks and incubator facilities represent 5.6 percent and 5.2 percent respectively of state technology expenditures. The remaining 7 percent is split among equity/royalty programs (2.0 percent), technical/managerial assistance programs (1.5 percent), technology transfer programs (1.2 percent), technology offices, boards, or commissions (1.2 percent) and specialized technology training programs (1.1 percent).

Funding Levels. Funding levels for state technology programs vary from nothing to nearly $100 million a year. While seven states have no special allocation for technology programs, six states invest more than $30 million annually to promote technological innovation. Old industrial states appear to be the biggest spenders. Pennsylvania spent nearly $100 million in FY1986 on technology programs. New Jersey ($60.8 million), Michigan ($58.3 million), Massachusetts ($35.1 million), Georgia ($31.0 million) and Illinois ($30.5 million) round out the list of states that spent over $30 million in FY1986 to promote technological innovation in their states.

With the exception of New Hampshire and Vermont, the states that are not investing in technology programs are rural states without a solid technology industrial base on which to build. New Hampshire and Vermont are benefiting from the "spill-over" of the strong Massachusetts technology program.

Per Capita Funding. Of those states with technology programs, state spending on a per capita basis ranges from $0.11 (Nevada) to $10.68 (Hawaii). States spending the most per capita are Hawaii ($10.68), Arizona ($8.47), Pennsylvania ($8.42), New Jersey ($8.04), New Mexico ($6.55), Michigan ($6.42), and Massachusetts ($6.04).

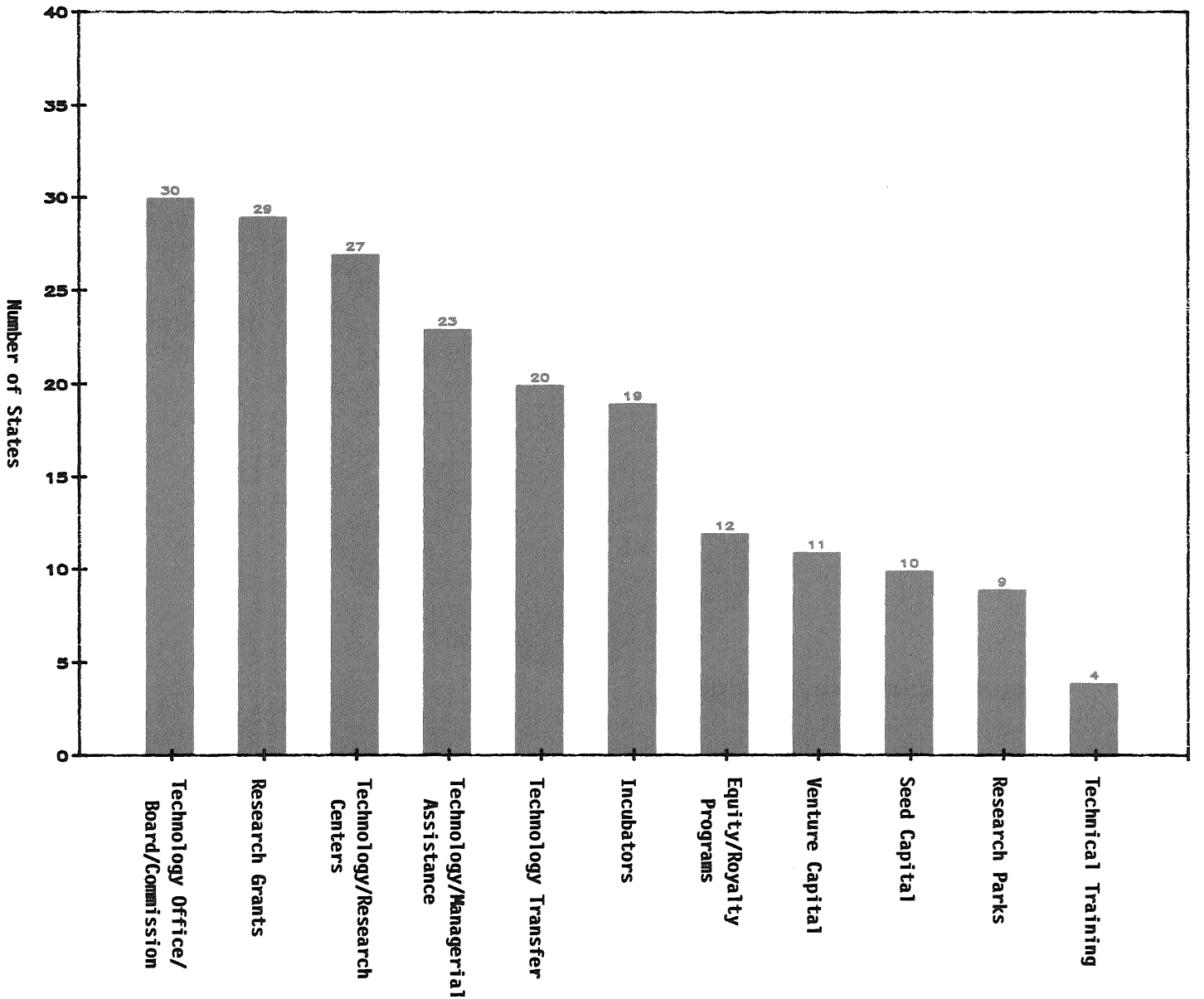
Source of Funding. The majority of funds for technological innovation have come from state general funds. However, at least seven states provide some support of their programs through bond issues, three states through state lotteries and parimutuel gambling, and one state with offshore oil revenues. Additionally, 14 states have provided special one-time funding for initial capitalization of programs.

Table 1

STATE TECHNOLOGY INITIATIVES

STATE	TECHNOLOGY OFFICE/BOARD /COMMISSION	TECHNOLOGY/ MANAGERIAL ASSISTANCE	INCUBATORS	SEED CAPITAL	VENTURE CAPITAL	TAX INCENTIVES	EQUITY/ROYAL PROGRAMS	TECHNOLOGY/ RESEARCH CENTERS	RESEARCH GRANTS	TECHNOLOGY TRANSFER	TECHNICAL TRAINING	RESEARCH PARK
ALABAMA		X	X						X	X		
ALASKA												
ARIZONA		X						X		X		X
ARKANSAS	X		X	X				X	X	X		
CALIFORNIA									X			
COLORADO	X							X	X			
CONNECTICUT	X	X		X			X					X
DELAWARE	X	X										X
FLORIDA	X			X				X	X		X	
GEORGIA	X	X	X					X				
HAWAII	X				X			X				X
IDAHO												
ILLINOIS	X	X	X		X		X			X		
INDIANA	X	X		X	X	X	X		X	X		
IOWA	X	X	X		X	X	X	X	X	X		
KANSAS	X			X	X	X		X	X			
KENTUCKY	X							X				
LOUISIANNA			X						X			
MAINE	X								X			
MARYLAND	X								X	X		
MASSACHUSETTS							X	X	X		X	X
MICHIGAN	X	X	X		X		X	X	X	X		
MINNESOTA	X	X			X	X	X	X	X	X		X
MISSISSIPPI		X	X			X		X		X	X	
MISSOURI	X	X	X	X		X		X	X	X		X
MONTANA	X	X		X			X		X	X		
NEBRASKA		X	X	X			X	X	X			
NEVADA												
NEW HAMPSHIRE												
NEW JERSEY	X		X					X	X	X		
NEW MEXICO	X	X			X			X	X	X		
NEW YORK	X	X	X		X		X	X	X			
NORTH CAROLINA	X		X				X	X	X			
NORTH DAKOTA		X								X		
OHIO	X		X				X	X	X	X		
OKLAHOMA						X			X	X		
OREGON	X	X		X					X			
PENNSYLVANIA	X	X	X	X	X	X		X	X	X		
RHODE ISLAND	X								X			
SOUTH CAROLINA	X								X		X	X
SOUTH DAKOTA												
TENNESSEE	X	X						X				X
TEXAS	X	X						X		X		
UTAH					X			X				
VERMONT			X							X		
VIRGINIA		X	X					X	X			
WASHINGTON	X	X	X			X		X				
WEST VIRGINIA												
WISCONSIN								X	X			
WYOMING												

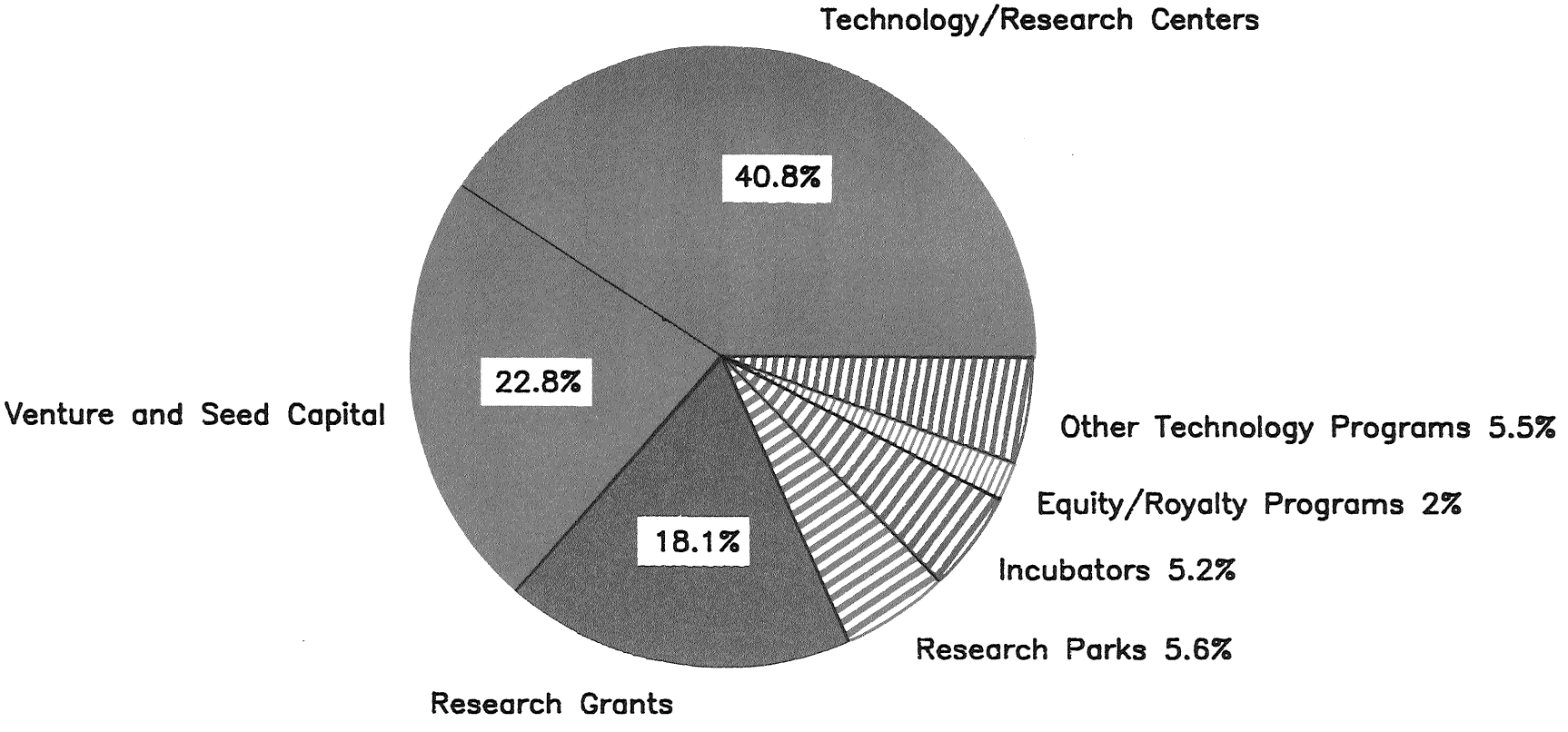
Graph 1
State Technology Initiatives



Graph 1 shows the types of technology initiatives employed by states and the number of states with each program in FY1986.

Graph 2

Percent of Technology Program Funding
by Type of Program



Graph 2 shows the percentage distribution of the $700 million designated for technology programs by type of program for FY1986.

Table 2

STATE FUNDING FOR TECHNOLOGY INITIATIVES

STATE	TOTAL STATE FUNDING	STATE GENERAL FUNDS*	INITIAL STATE FUNDING	BOND ISSUE	MISC. FUNDING SOURCES**
ALABAMA	$10,508,500	508,500	10,000,000		
ALASKA	0				
ARIZONA[1]	26,000,000	6,000,000	20,000,000		
ARKANSAS[2]	6,500,000	6,500,000			
CALIFORNIA	6,550,000	6,550,000			
COLORADO[2]	1,200,000	1,200,000			
CONNECTICUT	4,000,000	4,000,000			
DELAWARE	650,000	200,000	450,000		
FLORIDA	9,750,000	9,750,000			
GEORGIA	31,000,000	1,000,000	30,000,000		
HAWAII	11,260,000	760,000		10,500,000	
IDAHO	0				
ILLINOIS	30,467,000	9,567,000	2,000,000	18,900,000	
INDIANA	10,600,000	10,600,000			
IOWA	15,400,000	800,000			14,600,000
KANSAS[3]	11,363,000	10,973,000	390,000		
KENTUCKY	13,400,000	3,400,000		10,000,000	
LOUISIANA[4]	20,000,000				20,000,000
MAINE	200,000	200,000			
MARYLAND	6,500,000	6,500,000			
MASSACHUSETTS	35,148,000	9,148,000	6,000,000	20,000,000	
MICHIGAN	58,300,000	29,600,000	3,700,000	25,000,000	
MINNESOTA[2]	24,339,000	18,339,000			6,000,000
MISSISSIPPI	11,600,000	7,600,000	4,000,000		
MISSOURI	7,165,000	7,165,000			
MONTANA[2]	1,700,000	1,700,000			
NEBRASKA	2,264,000	2,264,000			
NEVADA	100,000	100,000			
NEW HAMPSHIRE	0				
NEW JERSEY	60,836,000	18,836,000		42,000,000	
NEW MEXICO	9,500,000	9,500,000			
NEW YORK	20,979,000	20,979,000			
NORTH CAROLINA	22,050,000	22,050,000			
NORTH DAKOTA[2]	635,000	135,000	500,000		
OHIO[2]	38,400,000	38,400,000			
OKLAHOMA	2,000,000	2,000,000			
OREGON[2]	13,000,000				13,000,000
PENNSYLVANIA	99,750,000	49,750,000		50,000,000	
RHODE ISLAND[5]	2,000,000	2,000,000			
SOUTH CAROLINA[6]	500,000		500,000		
SOUTH DAKOTA	0				
TENNESSEE	4,200,000	200,000	4,000,000		
TEXAS	2,200,000	2,200,000			
UTAH	4,500,000	2,000,000	2,500,000		
VERMONT	0				
VIRGINIA	10,000,000	10,000,000			
WASHINGTON[2]	3,951,000	3,851,000	100,000		
WEST VIRGINIA	0				
WISCONSIN[2]	7,000,000	7,000,000			
WYOMING	0				

*State general funds are for FY87 unless otherwise noted.
**Miscellaneous sources include state pension funds, lottery funds, and offshore oil funds.

1. $6 million in state general funds is for 1985 through 1990.

2. Figures given are the total for FY86 and FY87.

3. This figure includes expected fund from the state lottery and parimutel gambling.

4. Offshore oil funds is the source of an expected $20 to $30 million in FY87. However, with oil prices at their current level, the funding may not even reach the $20 million mark.

5. 1986 data.

6. Initial funding in 1983; no further funding.

Table 3

State Technology Expenditures Per Capita

State	Funding	Population	Per Capita
Alabama	$10,508,500	4,021,000	2.61
Alaska	0	521,000	0.00
Arizona	27,000,000	3,187,000	8.47
Arkansas	3,250,000	2,359,000	1.38
California	6,550,000	26,365,000	0.25
Colorado	600,000	3,231,000	0.19
Connecticut	4,000,000	3,174,000	1.26
Delaware	650,000	622,000	1.05
Florida	9,750,000	11,366,000	0.86
Georgia	31,000,000	5,976,000	5.19
Hawaii	11,260,000	1,054,000	10.68
Idaho	0	1,005,000	0.00
Illinois	30,467,000	11,535,000	2.64
Indiana	10,600,000	5,499,000	1.93
Iowa	15,400,000	2,884,000	5.34
Kansas	11,363,000	2,450,000	4.64
Kentucky	13,400,000	3,726,000	3.60
Louisiana	20,000,000	4,481,000	4.46
Maine	200,000	1,164,000	0.17
Maryland	6,500,000	4,392,000	1.48
Massachusetts	35,148,000	5,822,000	6.04
Michigan	58,300,000	9,088,000	6.42
Minnesota	12,169,500	4,193,000	2.90
Mississippi	11,600,000	2,613,000	4.44
Missouri	7,165,000	5,029,000	1.42
Montana	850,000	826,000	1.03
Nebraska	2,264,000	1,606,000	1.41
Nevada	100,000	936,000	0.11
New Hampshire	0	998,000	0.00
New Jersey	60,836,000	7,562,000	8.04
New Mexico	9,500,000	1,450,000	6.55
New York	20,979,000	17,783,000	1.18
North Carolina	22,050,000	6,255,000	3.53
North Dakota	317,500	685,000	0.46
Ohio	19,200,000	10,744,000	1.79
Oklahoma	2,000,000	3,301,000	0.61
Oregon	6,500,000	2,687,000	2.42
Pennsylvania	99,750,000	11,853,000	8.42
Rhode Island	2,000,000	968,000	2.07
South Carolina	500,000	3,347,000	0.15
South Dakota	0	708,000	0.00
Tennessee	4,200,000	4,762,000	0.88
Texas	2,200,000	16,370,000	0.13
Utah	4,500,000	1,645,000	2.74
Vermont	0	535,000	0.00
Virginia	10,000,000	5,706,000	1.75
Washington	1,975,500	4,409,000	0.45
West Virginia	0	1,936,000	0.00
Wisconsin	3,500,000	4,774,000	0.73
Wyoming	0	509,000	0.00

Graph 3

State Technology Funding Levels FY1986

Graph 4

Per Capita Expenditures FY1986

ALABAMA

Alabama does not have a specific state office or private nonprofit corporation designed to promote high technology growth and development. Since the end of World War II, Alabama has been a major center for U.S. rocket and space research. Some of the burgeoning space related development at Alabama's space centers and universities include: developing a space station, optical computing technology, and a space shield; setting up a Space Power Institute; and the researching of protein crystal growth in space. Some of the state's programs in high technology include the following:

- RESEARCH GRANTS - The Alabama Research Institute provides research grants to institutes, colleges, universities, and individual faculty members to pursue both basic and applied research. Only researchers with established research records will be funded and funds will not be provided for the development of products for direct commercial marketing.

- TECHNICAL AND MANAGERIAL ASSISTANCE - The Alabama High Technology Assistance Center provides technical and management assistance, technology transfer between university researching and private corporations, assistance in locating research funding, assistance on patents, copyrights, and sources of government contracts.

- TECHNICAL AND MANAGERIAL ASSISTANCE - The Auburn Technical Assistance Center provides management and technical assistance, and technology transfer between university researchers and private corporations.

- INCUBATOR PROGRAMS - The Center for the Advancement of Developing Industries (CADI) is an industry, university, government partnership that assists high technology industries and businesses market new products based on advanced technology.

FUNDING SOURCE: State general funds.

TOTAL STATE FUNDING: $508,500 (FY87), $10 million (initial)

BUDGET: Alabama Research Institute - $10 million (initial)
- Alabama High Technology Assistance Center - $34,500 (FY87)
- Auburn Technical Assistance Center - $80,000 (FY87)
Center for the Advancement of Developing Industries - $394,000 (FY87)

ALASKA

From 1978 to 1983 Alaska had a Council on Science and Technology. In 1983 the funding for the Council was cut. The Governor does, however, have a science advisor who is responsible for informing the Governor about science and technology issues and proposing initiatives in these areas. Additionally, in 1986 the state legislature authorized the formation of a four-member commission to direct the state's research efforts. The Alaska Research Policy Act requires that the Commission focus its attention on health, data management, alternative energy, and agriculture research issues.

TOTAL STATE FUNDING: None.

ARIZONA

Arizona does not have an office or council dedicated to promoting advanced technology industry and development. However, the Office of Economic Planning and Development's responsibilities include assessing the state's technology needs and capabilities and advising the Governor on policies for technology development, innovation, and financing. Programs directed specifically at advanced technology areas include the following:

- TECHNOLOGY CENTERS - With state support, Arizona State University has developed a Center of Excellence in Engineering. The Center's goal is to become one of the nation's foremost education and research centers. The Center specializes in six areas: solid state electronics, computers and computer science, computer aided processes, energy systems, transportation systems, and thermosciences; and has just added a seventh, telecommunications.

- RESEARCH PARKS - Arizona State University is assisting in the development of the University Research Park. Operated as a non-profit corporation, the Park is intended to create university/industry linkages, promote University research, and advance graduate student research. The park will offer space for both independent development and privately-built multi-tenant incubator facilities. Grounds for the park were sold to the corporation by the University for $1; other funding comes from private sources. Although the state has not directly financed the Park, it has assisted its creation by passing legislation facilitating the operation and development of the Park.

- TECHNICAL AND MANAGERIAL ASSISTANCE - The state's Office of New Business Development provides marketing and planning services for start-up companies in both high technology and general industry. It offers analysis of businesses, financial counseling, and a foreign trade group. In addition, the Office has a computerized network of state businesses that it uses to promote cooperation among normally competitive businesses.

- TECHNOLOGY TRANSFER - In order to facilitate the transfer of technology from the university to the public sector, the 1986 Legislature passed a bill allowing public employees (normally university researchers) to hold patents and to participate actively in private enterprise without leaving state employment.

FUNDING SOURCE: State general funds.

TOTAL STATE FUNDING: $26 million (1985-90)

BUDGET: Center of Excellence - $20 million (initial investment), $6 million (1985-90)
Research Park - No direct state funds.

ARKANSAS

The Arkansas Science and Technology Authority, created in 1983, serves as the center of the promotion of high-technology industry in the state. The Authority is intended to provide leadership, direction, incentives, and technical assistance to enable Arkansas to gain the advantages and benefits of advanced science and technology. Activities of the Authority include:

- SEED CAPITAL - The Authority makes seed capital investments in high technology companies, either in the form of loans or purchase of limited amounts of stock.

- RESEARCH GRANTS - The Authority awards grants to universities and colleges conducting basic and applied research where the institution provides funds to match the amount of the grant.

- INCUBATOR PROGRAMS - Through this program, the Authority encourages the creation of incubators in colleges and universities for high-tech enterprises.

- TECHNOLOGY CENTERS - The Authority is attempting to create a biomedical corridor tied to the federal center for toxicological research and the federal government's nerve gas plant near Pine Bluff.

- TECHNOLOGY TRANSFER - The Technology Transfer program links university and government labs with private industry. It also has developed an inventory of the state's scientific and technological resources, including both public and private enterprises involved in scientific, technical, and engineering innovating activities.

FUNDING SOURCE: State general funds.

TOTAL STATE FUNDING: $6.5 million (FY86-87)

BUDGET: Authority (total) - $6.5 million (FY86-87)
Operations - $1.0 million
Seed Capital - $1.8 million
Incubator Program - $1.9 million
Applied Research Grants - $1.8 million

CALIFORNIA

California, home of Silicon Valley, is a long time leader in high technology, due primarily to early investment by the federal government in defense research and development and the state's technically-oriented higher education institutions. Therefore, it has not had to rely on extensive state initiatives to encourage high technology development and industry. Currently, their efforts are limited to the following programs:

- RESEARCH GRANTS - Under the Microelectronics Innovation and Computer Research Opportunities (MICRO) program, the state funds basic and applied research at state universities. Funds are granted by a board composed of members of state government, the university system, and industry. Projects must be proposed by university researchers and must pass a peer review process. An industry source must be located to match the amount of the grant to assure its commercial potential before approval will be given. The program also provides fellowships for graduate students in the fields covered by MICRO.

- NEW RESEARCH GRANT PROGRAM - Beginning in 1985, the State has funded the Biotechnology Research and Education Program. The program has three goals: support biotechnology research; promote training at the post-graduate, graduate and undergraduate level; and inform government, industry, and the public about developments in biotechnology and the implications of those developments. Funds are granted to research and training programs proposed by multidisciplinary faculty member groups at the University of California, Los Angeles. In addition, the program organizes workshops and course development in biotechnology fields.

FUNDING SOURCE: State general funds.

TOTAL STATE FUNDING: $6.55 million (FY87)

BUDGET: MICRO - $5.05 million (FY87)
Biotechnology Research and Education Program - $1.5 million (annually)

COLORADO

The Science and Technology Advisory Board was formed in 1983 to identify problems and opportunities within the state's scientific community and present them to the Governor and provide a link between scientific and technological resources at research institutions and state government. Another organization, the Colorado Advanced Technology Institute (CATI), has been charged with the responsibility of establishing research centers of excellence at existing educational facilities, expanding existing research, and increasing the participation of the private sector in technology research areas. The Colorado Advanced Technology Institute's programs include the following:

- CENTERS OF EXCELLENCE - The Advanced Materials Center, a four-year university consortium, will focus its research efforts on polymers and amorphous materials. The Center will also award seed capital grants of $5,000 to university researchers for projects in this area. A statewide Supercomputer Network Center is almost complete, and the Center for Artificial Intelligence and Optoelectronics is still in the planning stage.

FUNDING SOURCE: State general funds.

TOTAL STATE FUNDING: $1.2 million (FY86-87)

BUDGET: Colorado Advanced Technology Institute - $1.2 million (FY86-87)

CONNECTICUT

At the forefront of Connecticut's high technology growth strategy is the Governor's Technology Advisory Board. The Board's primary function is to keep the state's development incentives innovative by studying whether additional financial, tax incentives, or other programs would benefit Connecticut.

The Connecticut Product Development Corporation (CPDC), formed in 1972, is one of the country's oldest public investment corporations and is the center of Connecticut's comprehensive high technology strategy. Although CPDC is not strictly a high technology development operation, it provides financial investment to develop new products with job creation and market potential. Included among programs administered by CPDC:

- SEED CAPITAL/ROYALTY INVESTMENT - The CPDC provides risk capital financing to companies who are developing new products or processes. In return, the Corporation receives a limited royalty on the sale of the product. Up to 60 percent of the eligible costs of the project can be provided.

- LOANS - The Connecticut Innovation Development Loan Program (CID) provides direct loans to established businesses with a developed advanced technology product. Loans are from $40,000 to $200,000 on a dollar-for-dollar matching basis with financing raised from other sources.

ADDITIONAL PROGRAMS:

- INFORMATION/NETWORKING - The Connecticut Technology Assistance Center, a division of the Connecticut Department of Economic Development, provides a wide range of information to high technology companies and entrepreneurs on public and private sector programs and technical, financial, research, and educational services. Additionally the Center provides marketing, planning, managerial, and sales assistance, and will link high tech entrepreneurs or companies with other needed resources.

- RESEARCH PARKS - Science Park (located in New Haven) provides incubator space for start-up technology companies and is a working link with the science and technology resources and laboratories at Yale University. Additionally, the Park is located within an Urban Enterprise Zone and tenants are eligible for Enterprise Zone benefits. The state has provided approximately $2.5 million for infrastructure for the Park.

FUNDING SOURCE: State general funds, bond issue.

TOTAL STATE FUNDING: $4.0 million (FY86-87)

BUDGET: Connecticut Product Development Corporation, Total - $4.0 million (FY86-87)
- Royalty Investment - $2 million (FY86-87)
- Innovation Development Loan Program - $1.5 million (FY86-87)

Connecticut Technology Assistance Center - No breakout is available for this program.

DELAWARE

The Science, Engineering, and Technology (SET) Services Office, originally established as part of an NSF program to provide scientific and technical advice to state legislatures, continues to serve as a resource to legislators despite the demise of the NSF program. The University of Delaware has provided essential support to continue the Council's efforts, which include the publication of a newsletter for legislators. The state has no office or body specifically created to promote technology-related business and development. Programs for general business that are available to high technology firms include:

- RESEARCH PARKS - The Lewes Campus of the University of Delaware has a Research Park Marine Sciences Complex intended to promote the research and development of marine technologies. Constructed with state and federal funds and run through the school's College of Marine Sciences, it is now funded through University funds. The College is heavily industry-oriented, with approximately one-half of its total funding going for sponsored research.

- TECHNICAL AND MANAGERIAL ASSISTANCE - The Delaware Development Office assists companies with regulatory problems and facilitates employment and training services for new and expanding businesses. The Office is conducting a year-long study of the needs of technology-based industries. Currently in draft form, the study identifies food processing, polymers, electrical and scientific equipment, among other areas, as industries that the state should target.

FUNDING SOURCE: State general funds.

TOTAL STATE FUNDING: $470,000 (FY87)

BUDGET: Science, Engineering, and Technology Services - $20,000 (annually)
Research Park Marine Sciences Complex - $450,000 (initial funding)

FLORIDA

The High Technology and Industry (HTI) Council was established in 1983 to serve as the coordinating element in the state's high technology initiatives. Since that time, the Council has been granted a more active role in supporting advanced technology research and industrial development. It administers or supports the following programs:

- RESEARCH GRANTS - Under the Applied Research Grant Program, the HTI Council awards funds to innovative research projects that encourage industry-university partnerships. The aim of the program is to support projects that will revolutionize high technology industry in Florida and establish the state as an undisputed leader in high technology research and development. 22 projects were given original funding in 1985 and continued financial support in 1986; four new projects were also given initial funding.

- SEED CAPITAL - In FY87, the newly created High Technology Innovation Research and Development Board will establish the process for applying for seed capital monies. The fund is intended to commercialize technology by providing equity financing for research and development activities of small high technology businesses. The HTI Council will administer the fund and provide staff support for the Board.

- TECHNICAL TRAINING - The Centers of Electronics Emphasis Program has established 10 centers located at community colleges and vo-tech schools around the state dedicated to improving electronics training programs. The centers will receive special curricula and equipment enabling them to produce the quality and quantity of students needed by high technology industry. Plans are currently underway to establish five more centers in specialized areas of electronics.

- TECHNOLOGY CENTERS - The HTI Council provides funding for research and continued study in electro-optics, lasers, materials sciences, microelectronics, and biomedicine at centers located throughout the state.

FUNDING SOURCE: General state funds, trust fund.

TOTAL STATE FUNDING: $9.75 million (FY87)

BUDGET: High Technology and Industry Council, Total - $9.75 million (FY87)
- Applied Research Grant - $3.65 million (FY1987)
- Innovation Research and Development - $1.5 million (FY1987)
- Centers of Electronics Emphasis - $1.3 million (FY1987)
- Technology Centers - $3.3 million (total for all centers, FY1987)

GEORGIA

The Advanced Technology Development Center (ATDC), was established in 1980 by the state and Georgia Institute of Technology to promote coordination between high-technology industries and the state's high technology resources. Center programs include the following:

- INCUBATOR PROGRAMS - ATDC provides low-cost incubator space on the Georgia Tech campus for groups developing new products and small technology-based start-ups. The incubator has a research facility for testing and prototype manufacturing.

- TECHNICAL AND MANAGERIAL ASSISTANCE - ATDC provides technical, financial and management assistance to new businesses. A recently created program, the Technical Executive Round Table, serves as a peer support group for small and medium sized companies. The program receives some state funding but members are charged a membership fee plus an additional attendance fee.

ADDITIONAL PROGRAMS:

- TECHNOLOGY CENTERS - The Georgia Research Consortium is a cooperative program linking and coordinating research and high technology projects of the state's colleges and universities in cooperative ventures with business and industry. The Consortium's activities are coordinated by a Research Consortium Policy Committee comprised of university faculty and industrial leaders from the private sector who are appointed by the Governor. A major responsibility of the Consortium is to provide financial support to establish Centers of Excellence in the research universities of Georgia.

FUNDING SOURCE: State general funds.

TOTAL STATE FUNDING: $1 million (FY87), $30 million (initial FY86)

BUDGET: Advanced Technology Development Center - $1 million (FY87)
Georgia Research Consortium - $30 million (initial)

HAWAII

Hawaii operates a number of technology-focused programs from its Department of Planning and Economic Development. Its major program is the High Technology Development Corporation, a quasi-public organization that works to coordinate high technology industrial development by advocating for high technology industry concerns; serving as a liaison between industry, government, and the University of Hawaii; promoting Hawaii as a good location for technology firms; and sponsoring research projects with the potential for developing new products and processes. Hawaii's programs include the following:

- RESEARCH PARKS - The High Technology Development Corporation has been responsible for the development of the Hawaii Ocean Science and Technology Park. The park, which includes the federal Natural Energy Laboratory, focuses on technologies appropriate to Hawaii, including aquaculture and oceanology.

- RESEARCH CENTERS - The Pacific International Center for High Technology Research was established in 1983. It directs a joint U.S.-Japanese cooperative research program in advanced technologies with state funding and private sector participation and support.

- VENTURE CAPITAL - The Department of Planning and Economic Development administers the Hawaii Invention Development Program which provides loans of up to $50,000 to help businesses develop product prototypes and bring inventions to the marketplace. Loans may be used to acquire new equipment, machinery, materials, or supplies or as working capital.

FUNDING SOURCE: State general funds, bond issue.

TOTAL STATE FUNDING: $760,000 (FY87), $10.5 million (bond issue)

BUDGET: High Technology Development Corporation - $100,000 (annually)
Hawaii Ocean Science and Technology Park - $10.5 million (bond issue)
Pacific International Center for High Technology Research - $500,000 (FY87)
Hawaii Invention Development Program - $160,000 (FY87)

IDAHO

Idaho does not have a program specifically focusing on technological innovation. However, the Idaho Department of Commerce has a Division of Economic Development that provides assistance to general business in obtaining development financing, business relocation, and international business.

TOTAL STATE FUNDING: None

ILLINOIS

The Governor's Commission on Science and Technology, established in 1981, is charged with developing and promoting high technology in Illinois. The Commission serves primarily as an advisory board, proposing and planning state initiatives, encouraging ties between industry and educational resources, and coordinating state efforts towards high technology. Additional high technology initiatives include:

- EQUITY/ROYALTY INVESTMENTS - The Equity Investment Fund provides financing to technology-based companies for land, buildings, machinery, working capital, expenses, research and development. One-third of a project's total cost can be funded, up to $250,000. Investments from this revolving loan fund are recouped through royalties, participation certificates, or repurchase of company stock. The fund is also used to provide loans for the Small Business Loan Program.

- INCUBATOR PROGRAMS - In 1982, the Chicago Technology Park was established by the state and the city of Chicago. The Park is operated by a nonprofit corporation and is focused primarily on biotechnology businesses. Services provided include consulting with university faculty, computer and library facilities, and contacts with venture capital sources in addition to providing laboratory and office facilities.

- NEW INCUBATOR PROGRAMS - Through the Small Business Incubator Loan Fund, the 1985 Illinois Legislature provided funding for forgivable loans and matching grants to universities and local governments to help set up small business incubators. Criteria for the establishment of an incubator include local unemployment rates and diverse community support. Seven incubators primarily for high technology firms have been established at universities around the state and nine others for general business are also operating. Total resources available for FY87 are $12 million.

- VENTURE CAPITAL - The Illinois Venture Fund was jointly founded by the state and a private firm, Frontenac Venture Company. Funds are used to provide equity capital for start-up and early stage companies working on product or prototype development, testing and production, and initial marketing. Frontenac manages the fund and is responsible for all investment decisions.

- TECHNICAL AND MANAGERIAL ASSISTANCE - The Illinois Resource Network works to establish links from business, government agencies, and educators to university faculty experts. The Network has a computerized data base of faculty members at 12 state campuses providing consulting in such areas as product development, production problems, marketing, and program development.

- FINANCING PROGRAMS - The Capital Development Board is directed by the state to obtain financing and oversee the development of facilities at the request of the Legislature. The Board uses capital bond sales to finance such projects as the incubator facilities at the Chicago Technology Park and the Microelectronics Center at the University of Illinois.

In 1985, the State passed the Illinois Technology Commercialization Grants-In-Aid act, creating the program now known as I-TEC. Its objective is to promote technology transfer, new business development, and create jobs in the state. The program includes:

- TECHNOLOGY TRANSFER - The state has funded 12 Technology Commercialization Centers to promote technology transfer. Located at universities and federal laboratories around the state, the Centers attempt to produce and commercialize new ideas and products. Technical assistance is available at each center to develop technology-based products and businesses.

- EQUITY/ROYALTY INVESTMENTS - Also part of the I-TEC program, the Business Innovation Fund provides financing to businesses using a university's assistance to advance technology, create new products, or improve manufacturing processes. Loans are available for up to $100,000 for projects matched by private resources. A royalty agreement reimburses the State when the product is marketed.

FUNDING SOURCE: State general funds, bond sales.

TOTAL STATE FUNDING: $10.537 to 12.537 million (FY87), $18.9 million (bond issue)

BUDGET: Equity Investment Fund - $1-2 million (FY87)
Chicago Technology Park - Total - $1.387 to $2.387 million (FY87)
Illinois Venture Fund - $2 million (initial funding)
Illinois Resource Network - $150,000 (FY87)
Capital Development Bond - $18.9 million (bond issue)
I-TEC - $6 million (FY87)

INDIANA

The Corporation for Science and Technology (CST) plays the lead role in the effort to promote the advancement of technology-based industry in Indiana. CST, established in 1982, was created to encourage the development of high technology in the state. Its function is to serve as a catalyst in drawing together the resources of the private, public, and educational sectors to foster the development of technology-based research and industry. The following programs are operated by the Corporation:

- RESEARCH GRANTS - The CST promotes research projects through grants, loans and contracts. This program is geared to application oriented research that must lead to a product, process, service, or other marketable item to enhance Indiana's economy.

- TECHNOLOGY TRANSFER - The CST offers an evaluation service of new or little-known technologies to determine if they are marketable, and if so, attempts to find a company to employ the technology.

- TECHNICAL AND MANAGERIAL ASSISTANCE - The CST conducts surveys, seminars, workshops, and disseminates information to facilitate the growth and development of science and technology in Indiana.

Another organization, the Corporation for Innovation Development (CID), works very closely with CST. This privately owned venture capital fund investment company, operates the following programs:

- SEED/VENTURE CAPITAL FUND - The CID provides seed and venture capital for new businesses.

- EQUITY/ROYALTY INVESTMENTS - CID funds are available to established businesses for equity and loan financing.

- TAX INCENTIVES - Indiana allows up to $5 million in tax credits to investors in CID.

ADDITIONAL PROGRAMS:

- TECHNICAL AND MANAGERIAL ASSISTANCE - The Institute for New Business Ventures is another important organization in Indiana's program to foster the growth of high technology in the state. The Institute's mission is to identify and build a pool of new and existing growth oriented small businesses, provide training and technical expertise to entrepreneurs, and link new businesses to established management, technical, and financial resources.

- VENTURE CAPITAL NETWORK - The Indiana Seed Capital Network is a computerized data base program intended to match the financing needs of entrepreneurs with the resources of private investors.

FUNDING SOURCE: State general funds and private funds.

TOTAL STATE FUNDING: $10.6 million

BUDGET: CST - $10 million (annually)
Research grants - $8.9 million (annually)
Research and Technology Investment Program - $100,000 (annually)
Technical Analysis and Target Development Program - $200,000 (annually)
Administration - $800,000 (annually)
Institute for New Business Ventures - $600,000 (1986-87)

IOWA

The Iowa High Technology Council works to promote the development of high technology industry in the state. It provides ongoing policy advice to state government policy makers on science and technology issues, coordinates public efforts in the area, and proposes new initiatives for industry expansion. Other high tech initiatives include:

- EQUITY/ROYALTY INVESTMENTS - The Product Development Corporation (PDC), created in 1983 and now under the umbrella of the Department of Economic Development, provides financing for projects ready for commercial application. Projects can be a product, process or technique that is marketable but promoters have been unable to obtain financing from conventional commercial sources. The PDC will provide a portion of project cost up to a specified dollar maximum, with funds distributed as eligible costs are incurred. Projects have been funded in amounts from $75,000 to $300,000.

- RESEARCH GRANTS - The Department of Economic Development, administers the Economic and Research and Development Grant Program which endows faculty chairs, establishes research centers and conducts research in genetics, molecular biology, biotechnology, laser science, and other specified areas. Criteria for approval of grants include: job development, significance of proposal in its field, feasibility, and availability of facilities and support. Grants must be matched by funds from other sources, up to 25 percent of which may come from the eligible applicant.

- TECHNOLOGY CENTERS - Under the Iowa Innovation Program, inventors can receive technical and marketability reviews of their product from the Center for Industrial Research and Service (CIRAS). The review includes a complete technical feasibility statement, detailed marketing analysis, and a preliminary patent search. Staff of the University of Iowa, where the Center is located, are involved in the evaluation. The Center has also recently established a technology transfer program.

- INCUBATOR PROGRAMS - There are two incubator facilities in the state, Iowa State Innovation Systems (ISIS) at Iowa State University and the Technology Innovation Center at the University of Iowa, providing office space, counseling, other services, and a point of contact for information available from the universities. Advanced technology firms are the favored occupants of both incubators. No state funds were allocated for the operation of the incubators in FY87 as they are expected to be self-supporting by FY87. They may, however, apply for funding under the new Small Business Incubator Program.

- INCUBATOR PROGRAMS - Currently under development, the Small Business Incubator Program will provide grants to Iowa communities to establish incubator facilities for new businesses. Some matching funds will be required.

ADDITIONAL PROGRAMS:

- TAX INCENTIVES - Investors in the privately owned and operated Iowa Venture Capital Fund receive a five percent state income tax credit on their initial investment. The fund is intended to support smaller venture capital needs of $50,000 to $100,000. It was created through the sale of $15 million in securities by the state to the public.

FUNDING SOURCE: State general funds and state lottery.

TOTAL STATE FUNDING: $800,000 (FY87, general funds), up to $14.6 million (FY87 Lottery)

BUDGET: Product Development Corporation - up to $2 million (FY87)
Research grants - $900,000 - up to $10 million (FY87)
Center for Industrial Research and Service - $800,000 (FY87)
Small Business Incubators - up to $2.6 million (FY87)

NOTE: All State Funding in FY87 for the above programs except the Center for Industrial Research and Services will be from the state lottery rather than general state funds.

KANSAS

In 1983, the State Legislature established the Kansas Advanced Technology Commission (ATC) to oversee high technology development, make policy recommendations, encourage new technology growth, and facilitate industry/university relations. Kansas Technology Enterprise Corporation, a state owned quasi-public corporation, will become functional in the middle of the fiscal year and assume the responsibilities of the Kansas Advanced Technology Commission. The State's programs include:

- TECHNOLOGY CENTERS - A Centers of Excellence program was started in 1983 to enhance the state's economy by utilizing basic and applied university research and technology transfer. Three Centers have been established in bio-analytical research, artificial intelligence and automated control systems, and a center for productivity.

- RESEARCH GRANTS - The Research Matching Grant Program accepts proposals for university research projects. The state funds 40 percent of the project cost with private industry providing the other 60 percent.

- SEED CAPITAL - Kansas Technology Enterprise Corporation will create a seed capital fund for research and development and in return will obtain equity/royalty reimbursements. The details of this program have not been finalized.

ADDITIONAL PROGRAMS:

- VENTURE CAPITAL - Funds will be available January 1987 through Kansas Venture Capital, Inc. The program is defined primarily by what it excludes. Investments can not be made in oil, cattle, retail, or real-estate. Kansas Venture Capital investors are eligible for a 6-1/2 percent tax credit.

FUNDING SOURCE: State general funds, State Lottery, Parimutuel Gambling.

TOTAL STATE FUNDING: $10,972,000 (FY87), $390,000 (initial funding)

BUDGET: Centers of Excellence - $172,000 (FY87), $390,000 (initial funding)
Research Matching Grants - $800,000 (FY87)
Venture Capital - $10 million (FY87)

KENTUCKY

The Office of Business and Technology opened in 1986 within the Kentucky Commerce Cabinet. Its purpose is to establish ties between the university system and the economic development process, expedite and unify state technology transfer efforts, develop locally-initiated technologies, and encourage new technology-intensive companies to locate in the state. The Office also provides counseling to small businesses and assistance in identifying state and federal procurement opportunities and other sources of financial assistance. Other programs providing technology-related assistance to businesses include:

- TECHNOLOGY CENTER - The Center for Robotics and Manufacturing Systems is currently under development at the University of Kentucky in Louisville. The 1986 Legislature is providing funding for the Center that will conduct graduate level academic research and transmit the knowledge gained through such research to industries across the state.

FUNDING SOURCE: State general funds, bond issue.

TOTAL STATE FUNDING: $ 3.4 million (FY87)
$10 million bond issue

BUDGET: Office of Business and Technology - $200,000 (FY87)
Center for Robotics and Manufacturing, total - $13.2 million (FY87)
Operating funds - $ 3.2 million (FY87)
Bonding Authority - $10 million (initial funding)

LOUISIANA

Because of a recent drop in oil prices, Louisiana has postponed the implementation of a coordinated program to promote high technology in the state. As a result, the proposed Louisiana Science and Technology Foundation did not receive funding for FY87. Additionally, lack of funds prompted the closing of a technical innovation center at Louisiana State. The state legislature did, however, fund the following program:

- TECHNOLOGY DEVELOPMENT LOANS - The Small Business Development Program is being established to provide second stage financing for advanced technology and innovation development, similar to the federal SBIR program. In addition, it will manage a guaranteed loan fund, a research grant program, and develop incubator facilities.

FUNDING SOURCE: Offshore oil funds

TOTAL STATE FUNDING: $20-32 million (FY87)

BUDGET: Small Business Development - $20-32 million (FY87)

MAINE

The Maine Science and Technology Board was created in 1984 to serve as the center of the state's science and technology related activities. The Board assists Maine businesses in the utilization of technology to become more competitive, challenges the educational institutions to be more responsive to the changing needs of businesses and the workforce, and promotes public awareness and adaptability of scientific and technological change. The Board is considering developing an incubator program and establishing an equity financing fund. Other efforts supported by the Board include:

° RESEARCH GRANTS - The Board has awarded six planning grants for Technological Innovation Programs. The general purpose of these programs is to encourage the rapid adaptation of new technologies by Maine industries. The programs will be operated as partnerships among educational and/or nonprofit organizations and specific industries. Grants must be matched by private funds. Initial planning grants were awarded to a biotechnology consortium, a fisheries technology institute, and several centers of excellence including food processing, hazardous materials/handling, and computer applications to production. The Board is in the process of reviewing the proposals and will award implementation grants in the future as funding becomes available.

FUNDING SOURCE: State general funds.

TOTAL STATE FUNDING: $200,000 (FY87)

BUDGET: Maine Science and Technology Board, Total - $200,000 (FY87)
- Operations - $75,000 (FY87)
- Technical Innovation Programs - $125,000 (FY87)

MARYLAND

The Maryland High Technology Roundtable acts as advisor and consultant to the Governor and the Legislature on advanced technology issues. Comprised of public and private sector leaders, the Roundtable focuses its efforts on advising the state on capital formation, technical education, engineering programs at the state's universities, and industrial retraining. Other state high technology initiatives include:

- TECHNOLOGY CENTERS - The Engineering Research Center was established in 1983 to contribute to the state's leadership in high-technology evolution through education. Its primary goal is to create working relationships linking college resources and industry by fostering cooperative projects between university faculty and businesses.

- RESEARCH CENTERS - Under the umbrella of the Maryland Biotechnology Institute, three new research centers have been authorized and are in various stages of completion. The centers, the Center for Advanced Research in Biotechnology, the Center for Marine Biotechnology, and the Center for Medical Biotechnology, will perform basic and applied research in specific biotechnology areas.

- TECHNOLOGY TRANSFER - The Technology Extension Service began assisting businesses with product development and innovation in 1978. The Extension Service helps firms adopt new technologies and links the firms with technical resources provided by the state's universities and federal laboratories. Funded by and headquartered at the Engineering Research Center, the Service has five offices around the state.

FUNDING SOURCE: State general funds.

TOTAL STATE FUNDING: $6.5 million (FY87)

BUDGET: Engineering Research Center - $2 million (FY87)
Center for Advanced Research in Biotechnology - $1.5 million (FY87)
Center for Marine Biotechnology - $1.5 million (FY87)
Center for Medical Biotechnology - $1.5 million (FY87)

MASSACHUSETTS

Massachusetts has created several programs to foster new business in advanced technology fields and promote research. Massachusetts' technology-related efforts include:

- TECHNOLOGY CENTERS - The Centers of Excellence program is intended to capitalize on the strong academic resources of the state in four areas: polymer science, biotechnology, marine sciences, and photovoltaics. These centers are tied to various universities and institutes throughout the state.

- RESEARCH GRANTS - In order to expand the Centers of Excellence program, the Massachusetts Centers of Excellence Corporation (MCEC), was established in 1985 as a quasi-public organization with two purposes. First, it promotes the development of the Centers of Excellence. Second, it provides research grants to projects proposed as a collaborative effort by business and educational and/or research institutions. Grants will be given to projects in marine science, polymer science and technology, and biotechnology that show significant potential for generating increased and enhanced employment and educational opportunities. Awards are intended to be between $10,000 and $50,000 and matching contributions are required.

- TECHNOLOGY CENTERS - The Massachusetts Technology Park Corporation was created as a quasi-public corporation to establish and operate one or more educational centers with design, fabrication and testing facilities, and training programs needed by specific businesses and industries. Its first major project is construction of the Massachusetts Microelectronics Center.

- EQUITY/ROYALTY INVESTMENTS - The Massachusetts Technology Development Corporation (MTDC) was created in 1979 with a combination of state and federal funds but now is run solely on state funds. This quasi-public organization provides direct financial assistance through debt or equity investments in the form of long-term notes or purchase of common stock. It is an independent state agency which provides a source of capital to new and expanding technology-based companies in the state. In addition to its investment program, the MTDC has programs to provide management assistance and to assist companies in finding private investors.

- TECHNICAL TRAINING - The Bay State Skills Corporation, another quasi-public corporation created by the state, awards grants to education and training institutions which link up with private companies. Training is provided for jobs in high growth fields, normally in high technology areas. Businesses must provide 50 percent of the costs in cash, equipment, and other direct or in-kind resources.

FUNDING SOURCE: State general funds, bond issue.

TOTAL STATE FUNDING; $35.148 million (FY87)

BUDGET: Massachusetts Technology Development Corporation - $948,000 (FY87)
Technology Park Corporation - $20 million (initial funding, bond issue)
National Polymer Center - $6 million (initial funding, FY87 general fund)
Bay State Skills Corporation - $7 million (annually)
Massachusetts Centers of Excellence Corporation - $1.2 million (FY87)

MICHIGAN

Michigan has a comprehensive program to stimulate the growth of new industries and bolster its traditional industries. The Michigan High Technology Task Force, which was appointed by the Governor in 1981, was responsible for the coordination of all state, regional, and local high-technology efforts. It has since become a privately funded nonprofit corporation that works to develop science and technology resources in the state.

The Michigan Strategic Fund provides funding for several programs in the state related to high technology. In addition to a loan insurance program and a minority business fund for general business, the Fund is developing a seed capital program. Other programs funded through this office include:

- TECHNOLOGY CENTERS - As part of the Centers of Excellence program, the state has funded four independent nonprofit centers in cooperation with private industry. Each center works to develop and test new products in proven technological fields. The newly established Michigan Materials Processing Institutes, will research polymer-based composites and other new industrial materials. The Industrial Technology Institute works in industrial automation and computer integrated manufacturing. The Michigan Biotechnology Institute develops new products and processes in agricultural and forestry areas. The Metropolitan Center for High Technology works in computer-related, medical, and other technologies.

- INCUBATOR PROGRAMS - A major part of the Metropolitan Center for High Technology has been the creation of incubator space for new technology businesses. In cooperation with Wayne State University, the incubator provides skills training for employees, consulting services, and new product development assistance.

- EQUITY/ROYALTY PROGRAMS - The Michigan Product Development Corporation will fund product-specific investments in prototype development and marketing activities as companies move toward commercialization of a new product. The corporation is run by two private companies that co-invest their own funds along with the state allocation. A projected royalty return of roughly 20 percent annualized return on investment over five years is required.

- RESEARCH GRANTS - The State Research Fund provides grants ranging from $20,000 to $50,000 for research and development projects proven feasible but not yet to completed prototype level. Technological innovation projects may be developed by a college or university in cooperation with a business or developed by a business alone. The project initiator must match 25 percent of the grant awarded in cash.

The Michigan Department of Commerce directs programs providing assistance to technology-related businesses. The Michigan Innovation and Technology Services (MITS) provides technical and training assistance to manufacturing firms seeking to modernize their facilities through the use of technology development and transfer. It also provides assistance to entrepreneurs in assessing business plans and new technologies, market studies, and obtaining capital. In addition to the funding listed below, MITS can draw funds from the Department of Labor and the Michigan Strategic Fund. Under the MITS umbrella are the following programs:

- TECHNICAL AND MANAGERIAL ASSISTANCE - The Technology Deployment Services is designed specifically to assist businesses considering adoption of new, computer-based manufacturing technologies and tools. The Office of New Enterprise Services aids entrepreneurs with business start-ups and expansions from innovation-based products. The Office provides basic business information and referrals, business plan reviews, and assistance in obtaining financing.

- TECHNOLOGY TRANSFER - The Technology Transfer Network links university faculty and state and local business assistance programs with individual firms. Six technology transfer centers have been created at universities and the Department of Commerce.

- VENTURE CAPITAL - The Department of Treasury operates the $500 million Michigan Venture Capital Fund which provides venture capital, primarily to high technology, high growth firms. The fund was created in 1983 from the State Employee Retirement Fund. Funding is available to both new technologies and later-stage high technology firms with a unique product or service. Investments are made in the form of stock or convertible debentures, with the state providing no more than 40 percent of the required amount.

The Office of Management and Budget operate the Research Excellence and Economic Development Fund to increase basic and applied research at Michigan universities, particularly in three areas: biotechnology, industrial technology, and manufacturing materials. Funded projects include the Center for Machine Intelligence, the Center for Research on Integrated Manufacturing, and the Center for Advanced Electronics and Optics Technology.

FUNDING SOURCE: State general funds, oil and gas royalties, state employee pension funds, bond issue.

TOTAL STATE FUNDING: $32.8 million (annually), $25.5 million for Technology Centers (since 1983)

BUDGET: Michigan Strategic Fund, Total - $5.547 million
Centers of Excellence program - $2.67 million (annually)
Michigan Product Development Corporation, Total - $2.877 million
Loan fund - $2.7 million (initial, FY87)
Operations - $177,000 (FY87)
State Research Fund - $500,000 (annually)
Michigan Innovation and Technology Services, Total - $1.753 million
Michigan Technology Deployment Service and the Office of New Enterprise Services - $1.3 million (1986)
Technology Transfer Network - $453,000 (1986)
Research Excellence and Economic Development Fund - $25 million
Technology Center, Total - $25.5 million (since 1983)
Michigan Materials Processing Institute - $1 million (initial)
Industrial Technology Institute - $17.5 million (since 1983)
Michigan Biotechnology Institute - $3.5 million (since 1983)
Metropolitan Center for High Technology - $3.5 million (since 1983)

MINNESOTA

The Governor's Office of Science and Technology was created in 1983 to conduct research on science and technology policy issues, advise the Governor and chief policy makers on state science and technology policy, build closer ties among government, education, and industry, expand the science and technology resources of the state, and make the existing resources widely known. Within this Office are three activities - the Biomedical/Health Systems Office, the Office of Software Technology Development, and the Council on Biotechnology. Other programs designed to encourage technological innovation include:

- RESEARCH CENTERS - The following state-funded research centers are located on various campuses of the University of Minnesota: The Institute for Advanced Studies in Biological Process Technology was created to stimulate and support multidisciplinary cooperation in relevant university research and training programs and to promote an expanded collaboration between the University, industry, and government. The Mineral Resources Research Center conducts research in fundamentals, copper-nickel, and iron ore and steel studies.

- TECHNOLOGY CENTERS - The Natural Resources Research Institute, which concentrates on biomass development, energy, water, and minerals, provides research and development assistance to local businesses in areas such as initial marketing, financing, and various other elements of production where commercial application of a product is feasible. The Microelectronics and Information Sciences Center was established to sponsor and conduct research in microelectronics and information sciences, to strengthen the educational offerings of the University in these areas, and to enhance university-industry linkages. The Science and Technology Resource Center, located at Southwest State University, was developed to encourage and assist inventors, entrepreneurs, and small businesses to develop new products and processes for the continued economic development of southwestern Minnesota. The Center provides space, equipment and technical assistance through the University, as well as market analysis, training for employees, and assistance in locating seed capital to establish business enterprises.

- TECHNICAL AND MANAGERIAL ASSISTANCE - Minnesota Project Innovation (MPI) is a nonprofit organization created to promote and support innovative small business research and development in the state. MPI assists Minnesotans secure funding through the federal Small Business Innovation Research (SBIR) Grant Program.

- EQUITY/ROYALTY INVESTMENTS - The Technology Product Loan Program, Office of Software Technology Development, administered by the Minnesota Energy and Economic Development Authority, makes loans up to $250,000 at below-market rates for the development and marketing of software products. Loans can be used for working capital and/or equipment and must be paid back in three years for working capital and four years for equipment. To help offset the financial risk, the state negotiates royalties of up to 25 percent of the net receipts of the product. Royalty payments extend for the first seven years after the loan is granted.

- TAX INCENTIVES - Minnesota provides a Technology Transfer Credit that can be claimed against taxes in an amount equal to 30 percent of the net value of a technology transferred to a certified small business located in the Technology Corridor project area. The credit is limited to $300,000 and the receiver of the technology cannot be a subsidiary or affiliate of the company claiming the tax credit.

- TECHNOLOGY PARK - The Minnesota Technology Corridor, located in an area connecting downtown Minneapolis with the University of Minnesota, will be home to major research, computer, incubator, and other technology-oriented companies. The new University Supercomputer Institute is located in the Corridor.

- VENTURE CAPITAL - The Minnesota State Investment Board provided $6 million in fiscal year 1986 to establish a state venture capital fund. A private investment corporation will manage the Superior Ventures fund as well as raise an additional $30 million in funds for seed capital, expansion, management buy-outs, and limited partnership-type investments. The additional funds may come from pension and profit-sharing plans, endowments, and foundations.

- GRANTS PROGRAM - The Enterprise Development Partnership program, operated by the Higher Education Coordinating Board, awards grants to community coalitions with projects that draw on untapped community resources to assist local entrepreneurs with the ultimate goal of job creation. The proposals are judged on the basis of their entrepreneurial focus, community support, participation of local leaders, and local understanding of the program's goals. Grants have been awarded for the development of small business incubators, start-up monies for seed capital funds, management assistance centers, and programs to improve coordination of training and counseling by local educational institutions.

ADDITIONAL PROGRAMS:

- TECHNOLOGY TRANSFER - The Midwest Technology Development Institute (MTDI) is a nonprofit corporation founded by Midwestern states to foster cooperative research and development and more efficient and equitable transfer of technology. MTDI, which is located in Minnesota, is governed by a board of directors composed of industry, labor, university, and government representatives appointed by the governors of member states.

- TECHNICAL AND MANAGERIAL ASSISTANCE - The Minnesota Cooperation Office (MCO) was formed in 1979 to increase the number and quality of jobs and job creation potential within the private sector by providing management assistance for the start-up and growth of new, innovative businesses in Minnesota. This nonprofit corporation provides consulting capabilities to assist with strategic business planning, product and market evaluation, and financial planning. The MCO received $20,000 in federal funds (EDA) in 1979 and an additional $20,000 from the Department of Energy and Economic Development in 1980. It is currently funded by corporate and foundation contributions, but expects to be self-sufficient in the future through the equity position it takes in small companies in return for its services.

FUNDING SOURCE: State general funds, state pension funds.

TOTAL STATE FUNDING: $18.339 million (FY86-87), $6 million (1986 pension funds)

BUDGET: Governor's Office of Science and Technology, total - $2.609 million (FY86-87)
- Operating budget - $1.339 million (FY86-87)
- Minnesota Project Innovation - $120,000 (FY86-87)
- Midwest Technology Development Institute - $1.0 million (FY86-87)

Institute for Advanced Studies in Biological Process Technology - $600,000 (FY86-87)
Mineral Resources Research Center - $1.43 million (FY86-87)
Natural Resources Research Institute - $4.7 million (FY86-87)
Microelectronics and Information Sciences Center - $1.3 million (FY86-87)
Science and Technology Resource Center - $1.1 million (FY86-87)
Enterprise Development Partnership - $600,000 (FY86-87)
Technology Product Loan Program - There is no separate breakout for this program.
Minnesota Technology Corridor/Supercomputer Institute - $6 million (1986)
Superior Ventures - $6 million (1986 - pension funds)

MISSISSIPPI

Mississippi does not have a specific state office designed to promote high technology business and development. The state has focused its high technology initiatives in two areas: enhancing education and training in the state and promoting the transfer of technology from public resources to the private sector. The following programs are intended to aid in these efforts:

- TECHNICAL AND MANAGERIAL ASSISTANCE - The Mississippi Research and Development Center (MRDC) offers several services to both public and private sector enterprises. It serves as the center of information on Mississippi communities, labor supply, manufacturing and service industries. It has assistance programs for business in management, marketing, finance, and industrial engineering.

- TECHNOLOGY TRANSFER - Created in 1985, the Institute for Technology Development (ITD) conducts and transfers scientific research into useful technology for commercial applications. A private, nonprofit corporation with state and federal funding, the ITD conducts applied research in six areas: living systems, acoustics, polymer development, biomaterials/biomedical engineering, microelectronics, and space remote sensing.

- NEW TECHNOLOGY TRANSFER PROGRAM - The state is developing, with ITD and federal assistance, the Mississippi Technology Transfer Center. Located on the grounds of the National Space and Technology Laboratory, the Center will offer some 40,000 square feet of laboratory space for the development and commercialization of space technology. National research and state business assistance agencies will be located in the Center.

- INCUBATOR PROGRAMS - The state is in the process of creating a small business incubator facility. As currently conceived, the incubator will have two parts, one developed by the private sector specifically for high technology industry and one by the public sector for general small business.

- TAX INCENTIVES - Under the Advanced Technology Initiative Act, qualified businesses in high technology or ones using advanced technology processes can obtain a tax credit of $1,000 per net new employee and exemption from sales and use tax for the purchases construction materials or equipment and machinery.

- TECHNICAL TRAINING - Through the Vocational Education Program, the state provides industrial training for high technology jobs. Included in the program are a series of workshops in advanced technology skills. Mobile training units provide courses in computer-aided design, metal-working, and robotics.

FUNDING SOURCE: State general funds.

TOTAL STATE FUNDING: $11.6 million (FY87)

BUDGET: Mississippi Research and Development Center - $3.6 million (FY87)
Institute for Technology Development - $4 million (annually, 1985-89)
Technology Transfer Center - $4 million (initial funding, FY87)

MISSOURI

The Missouri Corporation for Science and Technology (MCS&T) was created in 1983 as the center of the state's activities for economic growth through science and technology. The MCS&T is a private not-for-profit corporation that supplements its limited state allocation by raising funds from the private sector. Their activities have produced the following:

- TECHNOLOGY CENTERS - Four innovation centers were created by the Missouri Corporation for Science and Technology and the Department of Economic Development to provide technical, managerial, organizational, financial funding, marketing, and other assistance to either existing or new science and technology-based businesses. The centers, which are affiliated with major universities, specialize in research ranging from agriculture and plant biotechnology to telecommunications and microelectronics. All centers are required to be not-for-profit corporations with separate incubators established as for profit corporations to provide income streams and profit potential.

- TECHNICAL AND MANAGERIAL ASSISTANCE - The Technical Idea Evaluation (TIE), developed by the MCS&T provides an early evaluation of technical ideas and may (if there is technical and commercial potential) be referred to one of the innovation centers.

- RESEARCH PARKS - There is one research park located on the Columbus campus and the University of Missouri is pursuing the development of two others: the North Campus Development Park and the Weldon-Spring Missouri Research Park.

- SEED CAPITAL/TAX INCENTIVES - The Corporation for Science and Technology and the four innovation centers will set up and develop separate seed capital funds. Private contributions to the seed fund will receive a 30 percent state tax credit. A total of $10 million in tax credits is available.

- INCUBATOR PROGRAMS - The Small Business Incubator Program (just passed by the State Legislature) will provide up to 50 percent of project costs. Centers for Advanced Technologies are in the planning stage but no funding has been authorized. The centers will be affiliated with universities and incorporate both basic and applied research, development, and technology transfer.

- RESEARCH GRANTS - The Applied Projects Fund awards grants to four-year higher education institutions for the purpose of taking existing knowledge, processes, and technologies and applying them to a particular economic situation.

ADDITIONAL PROGRAM

- TECHNOLOGY TRANSFER - The Center for Technology Development located on the University of Missouri-Rolla, facilitates technology transfer between businesses and the University, assists in locating funding and provides overall assistance to the development of high technology businesses.

FUNDING SOURCE: State general funds.

TOTAL STATE FUNDING: $7.165 million (FY87)

BUDGET: Missouri Corporation for Science and Technology - $65,000 (FY87)
Innovation Centers - $1.6 million (FY87)
Centers for Advanced Technologies - funding pending - requesting $2 million
North Research Park - $2.5 million (FY87)
Weldon Spring Research Park - $2.5 million (FY87)
Incubator Program - funding pending
Applied Projects Fund - $500,000 (FY87)

MONTANA

The Montana Science and Technology Alliance, a division of the Department of Commerce, was established as a public-private partnership to encourage scientific and technological development within the state to keep pace with a transforming economic structure and to create new jobs and expand small business opportunities. The Alliance has four programs:

- RESEARCH GRANTS - Under the Research Capability Development program, investments will be used to create new research and strengthen existing research, development, and technology transfer centers, consortiums, and other arrangements supporting in-state industry-university cooperative research and development efforts. Investments will support the establishment of applied research centers and the acquisition of staff and equipment in selected technology areas. Matching funds are required.

- RESEARCH GRANTS - The Applied Technology Research program provides project-oriented grants. The Alliance invests in technology development projects of industry, universities, colleges, and other research and development organizations leading to a product or process intended for commercialization and production in Montana. Matching funds are required. Projects should have high potential for commercialization leading to in-state economic development and the creation of jobs. A payback of a portion of gross proceeds would accrue to the Alliance.

- TECHNICAL AND MANAGERIAL ASSISTANCE - Investments in the Technical Assistance and Technology Transfer program provide technical assistance, training and information to new and established firms in developing and utilizing technology. Investments support programs providing, among other things, technical and commercialization assistance, technology training, access to technology and business information systems, and the transfer of advanced manufacturing technology to small businesses.

- SEED CAPITAL - Under the Seed Capital Financial Investment program, funds provide financial leverage to encourage private sector seed capital investment for early stage financing of applied technology commercialization. Moneys available for risk-capital investments in new products are expected to be recovered through a payback of a portion of gross proceeds. Investment opportunities too large for funding by this program would be accepted, evaluated, and referred to other investing agencies or organizations for possible investment.

FUNDING SOURCE: State general funds.

TOTAL STATE FUNDING: $1.7 million (FY86-87 biennium)

BUDGET: Science and Technology Alliance - $1.7 million (FY86-87 biennium)

NEBRASKA

Nebraska does not have an executive office or commission specifically designed to encourage the development of high technology business and development. The state's Department of Economic Development manages and/or provides funding support for several programs related to technology development, including the following:

- TECHNICAL AND MANAGERIAL ASSISTANCE - The Nebraska Technical Assistance Center, located at the University of Nebraska-Lincoln, is a cooperative state and university effort. It serves as a clearinghouse for matching technical needs of entrepreneurs with available resources in areas such as management, marketing, and financial assistance; diagnostic technical assistance; and information about new technologies. The Center also aids in non-legal patent searches and coordinates certain educational activities.

- RESEARCH GRANTS - Under the Patent Management Program, the Department of Economic Development has patents and collects the royalties on a sugar product (ester). A firm in Japan is licensed to market the product. (It is waiting for approval from the FDA in the U.S.). Royalties received are used to fund the Food Processing Center and passed to the State Agricultural Products Research Fund to finance research on other agricultural products at the state's universities. Funds are granted on criteria established by the Department.

- TECHNOLOGY CENTERS - The Food Processing Center conducts research on efficient processing of crops and livestock, new crop development, and related areas. The Center also offers services in systems evaluation, product testing and marketing, personnel development, and information dissemination.

ADDITIONAL PROGRAMS:

- TECHNOLOGY DEVELOPMENT PROGRAMS - The state has just passed legislation creating the Research and Development Authority. The Authority will have several programs to promote high technology business and development. It will include a Business Investment Fund to provide seed capital for incubator facilities and for development of technologies. Investments will be made in the form of purchase of up to 49 percent of the qualified securities of an enterprise. An Applied Research Fund will be created to finance applied research at educational and public institutions and private enterprises. The fund will provide up to 60 percent of the cost of a project that passes a peer review process and that has commercial application and job creation potential. A return to the Authority will be made through patent rights or royalties. A technology transfer program will also be established. The Authority has the power to conduct bond sales to raise funding for its efforts.

FUNDING SOURCE: State general funds, royalties.

TOTAL STATE FUNDING: $2.264 million (FY87)

BUDGET: Technical Assistance Center - $84,000 (FY87)
State Agricultural Research Fund - $130,000 (FY87)
Food Processing Center - $50,000 (FY87)
Research and Development Authority - $2 million (FY87)

NEVADA

The Nevada Commission on Economic Development is seeking to augment the state's prosperous gaming and tourism economy with high technology. In the State Plan of Economic Diversification and Development a proposal has been drafted to be presented to the state legislature in January 1987 to establish a state Office of Innovation and Technology. This Office would promote the establishment and expansion of technology in the state by convening a state conference on science and technology; working with federal programs such as EPSCORE and SBIR; creating a grants budget for research projects; and assisting in technological development through seed and venture capital funding.

FUNDING SOURCE (PROPOSED): State general funds, nuclear waste surcharge.

TOTAL STATE FUNDING (PROPOSED): $100,000 to $125,000 plus additional grant money.

NEW HAMPSHIRE

New Hampshire does not have an executive office or commission designed to promote high technology business and development. However, private groups in the state have developed several efforts to promote high technology business.

TOTAL STATE FUNDING: None

NEW JERSEY

The Governor's Commission on Science and Technology, which was created in 1982 and made a permanent state agency in 1985, is the focal point of science and technology activities in New Jersey. The Commission's purpose is to develop a comprehensive plan and make policy recommendations to foster a high technology economy. A primary objective is to strengthen linkages between New Jersey's industries and universities for applied research, with government facilitating these relationships. Programs initiated so far include the following:

- TECHNOLOGY CENTERS - Four Advanced Technology Centers have been established in the fields of biotechnology, food science, industrial ceramics and fiber optics, and computer assistance to industrial productivity. The purpose of the centers is to assist the innovation process, and conduct and speed up the transfer of basic scientific research to product/process development and commercialization.

- RESEARCH GRANTS - Under the Innovation Partnership Grant Program, grants are awarded to innovators and research teams at educational institutions. A matching amount from private industry must be obtained to assure that the research will be of tangible interest to industry.

- TECHNOLOGY TRANSFER - Technology Extension Centers provide professional education, conferences, and information exchanges regarding new technologies in cancer therapy, polymer processing, information services, and fisheries and aqua-culture. Services are directed primarily to helping small and medium-sized firms modernize.

- INCUBATOR PROGRAMS - The Business Incubator Program provides financial support to privately proposed and organized incubator facilities. Matching funds must be obtained for the development of the incubators. Three incubators have been approved for financing to date.

- VENTURE CAPITAL NETWORK - A new program, the Venture Capital Network will match private venture investors "of means" (not professional venture capitalists) with entrepreneurs. This will be done by charging the investor a fee to gain access to the computer data base which contains information on the entrepreneurs and their ideas.

- RESEARCH GRANTS - As part of the Bridge Financing Program, the Commission will provide "bridge" grants to New Jersey recipients of federal SBIR Phase I grants that have applied for Phase II grants. The grants will provide financial support for the period between the two federal phases. Grants of up to $40,000 will be awarded on a competitive basis to firms applying to the Commission.

ADDITIONAL PROGRAMS:

- VENTURE CAPITAL - The Governor is considering allowing the use of the state's public employee pension funds for the creation of a venture capital pool. Although it has not been approved, the proposal would allow for the use of a specified percentage (percent to be determined at a later date) of the $9 to $10 billion fund to be used for venture capital.

FUNDING SOURCE: State general funds, bond issue.

TOTAL STATE FUNDING: $18.836 million (FY87), $42 million (bond issue)

BUDGET: Science and Technology Commission - $18.836 million (FY87)
- Innovation Partnership Grants - $1.5 million (FY87)
- Venture Capital Network - $7,500 (FY87)
- Bridge Financing Program - $250,000 (FY87)
- Technology Extension Centers - included in Science and Technology Commission total, breakout for this program is not available.
- Incubator Program - included in Science and Technology Commission total, breakout for this program is not available.
- Advanced Technology Centers - $42 million (initial, bond issue)

NEW MEXICO

The 1986 State Legislature created the New Mexico Science and Technology Commission to advise the state and make recommendations on technological innovation, technical excellence, research and development, and other science and technology projects conducted at research institutes and institutions of higher education in the state. The focus of these efforts is the Rio Grande Research Corridor, in which five federal laboratories are located. The Commission serves as the Board of the New Mexico Research and Development Institute described below. It also has budget approval and makes recommendations for the following programs designed to encourage the development of the Corridor:

- TECHNOLOGY CENTERS - The 1983 Legislature created five Centers of Technical Excellence tied to the state's university system. Each center provides research services to one or more of the federal laboratories. The Centers specialize in computer research, plant genetics, high technology materials, non-invasive medical technology, and explosive technology. After five years of state funding the Centers are expected to be self-supporting.

- TECHNOLOGY TRANSFER - The state has established two Technology Innovation Centers to promote the transfer of technology developed at the federal laboratories and the centers of Technical Excellence. The Innovation Centers also assist inventors and technology development companies in planning, financial packaging, and resource acquisition. These Centers are also expected to be self-supporting after five years of state funding.

- RESEARCH GRANTS - The New Mexico Research and Development Institute provides grants for well-planned business ventures for the resolution of specific technological uncertainties before actual business gets underway. Grants are available for projects near commercialization as well as those in the early stages of research.

ADDITIONAL PROGRAM:

- VENTURE CAPITAL - The New Mexico Business Development Corporation is a state chartered, privately owned corporation that provides risk capital for sound business ventures. Funding is available for new product and market development or for equipment purchased for the purpose of expansion and modernization. The Corporation works directly with banks, savings and loan associations, and credit unions.

FUNDING SOURCE: State general funds.

TOTAL STATE FUNDING: $9.5 million (FY87)

BUDGET: Centers of Technical Excellence - $5.5 million (FY87)
Technology Innovation Centers - $500,000 (FY87)
Research and Development Institute - $3.5 million (FY87)

NEW YORK

The New York Science and Technology Foundation, established in 1982, coordinates the State's efforts to stimulate research and encourage technological innovation. The Foundation's mission is to assume a central role in promoting research and development; to support and encourage technological innovations; to diffuse benefits derived from new developments in science and technology; and to strengthen the state's leadership position as a research and development center. The Foundation's program areas include:

- EQUITY/ROYALTY INVESTMENT - The Corporation for Innovation Development Program makes direct investments in young advanced technology companies in need of start-up capital. Program services include loans (debt), equity loans, stock or royalty rights, investment capital, market development assistance, product development assistance, and assistance in locating venture capital. To qualify for direct financial assistance from the revolving loan fund, businesses must obtain other sources of capital; generally a ratio of $3 from other sources to $1 of Foundation funding is required.

- TECHNOLOGY CENTERS - Under the Centers for Advanced Technology Program, seven cooperative research and development centers have been formed by partnerships among New York's universities, private industry, and government. These centers concentrate on computers and information systems, agricultural biotechnology, telecommunications, health care devices, medical biotechnology, computer applications and software engineering, and optical engineering. Each works toward increased collaboration with industry and government in applied research and development, technology transfer, and commercial application of new technologies.

- RESEARCH GRANTS - The Research and Development Grant Program is designed to stimulate and assist research and development and its applications for commercial use. Grants, averaging $25,000, are given to support projects at university and not-for-profit laboratories which have a distinct potential for industrial application and commercialization.

- TECHNOLOGY DEVELOPMENT PROGRAMS - The Foundation provides support to regional organizations promoting advanced technology through the Technology Development Organization Program. It awards matching grants to organizations established for the promotion, attraction, stimulation, development and expansion of technology oriented activities.

- TECHNOLOGY TRANSFER - Under the Productivity Development Program, the Foundation awards grants to help manufacturers study how the application of new technologies can help restore competitiveness to traditional industries. Matching funds between $20,000 and $25,000 are given to firms based on the size of the firm, its need for productivity improvements to remain competitive, and willingness to contribute to the project.

- RESEARCH GRANTS - The Small Business Innovation Research Program awards matching research contracts to New York small technology businesses which have received Federal Phase I SBIR contracts, and have applied for Phase II awards. The firm must have fewer than 250 employees and meet residence, work performance, and cost criteria to qualify.

° TECHNICAL AND MANAGERIAL ASSISTANCE - The Industrial Innovation Extension Service, a pilot project in 1985-86, is a state-wide network of field representatives giving one to one counseling and technical assistance to individual manufacturing businesses. Each representative is a qualified engineer and also provides contacts with university and community college resources.

° TECHNOLOGY AND DEVELOPMENT PROGRAMS - The Foundation financially supports various other technology efforts and studies, including a SuperComputer Institute, incubator facilities, planning grants to establish two new Advanced Technology Centers in advanced manufacturing, and a study to examine the feasibility of High Schools of Excellence.

ADDITIONAL PROGRAMS:

° VENTURE CAPITAL - The New York State Business Venture Partnership is a venture capital fund supported by the New York State Common Retirement Fund and the New York State Teacher's Retirement System with $50 million and $20 million respectively. The funds, managed by a private corporation, are used to fund New York businesses in the start-up or secondary stages, or invest in leveraged buy-outs. Equity and other instruments with equity conversion features are the preferred investment.

FUNDING SOURCE: State general funds, pension funds

TOTAL STATE FUNDING: $20,979,400 (FY87), $70 million (pension funds)

BUDGET: New York Science and Technology Foundation, total - $20,979,400 (FY87)
- Operations and carry-over funds - $3,798,400 (FY87)
- Corporation for Innovation Development - $1.6 million (FY87)
- Centers for Advanced Technology - $7 million (FY87)
- Research and Development Grants - $1 million (FY87)
- Technology Development Organizations - $975,000 (FY87)
- Productivity Development - $150,000 (FY87)
- SBIR Promotion Program - $3,081,000 (FY87)
- Industrial Innovation Extension Service - $500,000 (FY87)
- Support Programs - $2,875,000 (FY87)

New York State Business Ventures Partnership - $70 million

NORTH CAROLINA

State leadership in promoting the growth of science and technology in North Carolina is shared by the North Carolina Board of Science and Technology and the North Carolina Technology Development Authority.

The North Carolina Board of Science and Technology was reestablished in 1979 to identify and support research needs of public and private agencies, institutions, and to recommend policies, procedures, organizational structures, and financial requirements that will promote effective use of scientific and technological resources. The Board is involved in the following:

- RESEARCH GRANTS - The Small Business Research Grants Program makes competitive grants to support research carrying significant potential for advancing the state's economic and social development. In general, the Board will provide only initial funding for the projects.

- TECHNOLOGY CENTERS - The Board proposed and helped develop two technology centers, the North Carolina Biotechnology Center and the Microelectronics Center of North Carolina. The Biotechnology Center, organized as a nonprofit corporation, is developing an administrative center for its efforts. It works primarily in two areas, providing competitive grants to University researchers working on projects likely to lead to products and technology development, and providing unsolicited grants to aid in the development of the research potential of the state. The Microelectronics Center is a development laboratory and works with five state universities and the Research Park Institute, developing state resources and encouraging university-industry cooperation.

The North Carolina Technology Development Authority, which was created in 1983 to stimulate new and expanded high technology business ventures, operates the following programs:

- INCUBATOR PROGRAMS - Under the Incubator Facilities Program, the Authority will provide up to $200,000 for the development of state incubator facilities. The program funds rural incubators for manufacturing firms.

- ROYALTY INVESTMENTS - The Innovation Research Fund provides royalty financing up to $50,000 for the research and development activities of small businesses. Funds can be used to secure technical and management advice, purchase scientific equipment and materials, and conduct research leading to the development of new or improved products, processes, and services.

ADDITIONAL PROGRAMS:

- TECHNICAL AND MANAGERIAL ASSISTANCE - The Science and Technology Research Center, part of the Department of Commerce, provides technical assistance to businesses in all areas. It takes requests and puts together bibliographies of information from available state and federal data bases. It is funded by the state and NASA and receives fees from its clients for its services.

FUNDING SOURCE: State general funds.

TOTAL STATE FUNDING: $22.05 million (FY87)

BUDGET: Small Business Research Grants - $150,000 (FY87)
Biotechnology Center - $7.7 million (FY87)
Microelectronics Center - $13 million (FY87)
Technology Development Authority - $1.2 million (FY87)
Incubator Facilities Program - $600,000 (FY87)
Innovation Research Fund - $600,000 (FY87)

NORTH DAKOTA

North Dakota does not have a specific agency or commission for the promotion of science and technology. It has, however, developed several programs to encourage technology development, including the following.

- TECHNICAL ASSISTANCE - The Center for Innovation and Business Development offers a program for entrepreneurs. For a small fee, it works with the developer in such areas as technical evaluation of ideas, marketing and business plans, and aids in location of seed and venture capital. The Center also works to transfer technology from the University of North Dakota and other public research institutions to private industry.

- TECHNOLOGY TRANSFER - The Robert Perkin's Engineering Center for Technology Transfer, located in North Dakota State University, and a part of the Quest for Technology program at Control Data, works to facilitate the transfer of technology to local businesses. In addition to providing access to Control Data's worldwide information networks and data bases, the Center has CAD/CAM facilities available for state manufacturers created to improve design and manufacturing processes, and programs to assist in curriculum development and marketing demonstrations.

FUNDING SOURCE: State general funds.

TOTAL STATE FUNDING: $135,000 (FY86-87), $500,000 (initial)

BUDGET: Center for Innovation and Business Development - $135,000 (FY86-87)
Robert Perkins Engineering Center for Technology Transfer - $500,000 (1984 initial investment for computer purchase)

OHIO

The Thomas Alva Edison Partnership Program, administered by Ohio's Department of Development, was created to encourage state economic development through technical innovation. The program was designed to foster cooperative research and development efforts involving business and educational institutions, generating new technologies, new products, and jobs. The Edison program includes the following initiatives:

- RESEARCH GRANTS - The Edison Seed Development Fund provides matching grants to support joint university-industry applied research and development activities for both early stage feasibility studies (from $10,000 to $50,000) and advanced applied research (up to $250,000). In the latter type grant, the State seeks a return on its investment in the form of a royalty agreement.

- TECHNOLOGY CENTERS - The Edison Technology Centers bring together business, academic, and other relevant institutions to establish specialized centers of research. Six centers have been created so far focusing on advanced manufacturing, welding, polymers, animal biotechnology, and information technologies. The state provides matching support to contributions by the private sector for the formation of the centers. The Centers are intended to perform early stage research, contract research for individual organizations, create technology transfer mechanisms, and promote scientific education.

- INCUBATOR PROGRAMS - Edison Incubators provide basic business services such as accounting, legal advice and secretarial help to entrepreneurs and new technology-based companies. Each of the six university-located incubators is managed by academic/business partnerships.

- TECHNOLOGY TRANSFER - Under the Tie-Ins Program, an organized and ongoing structure has been established within participating universities and colleges that will identify, evaluate, and document the commercial potential of their technological assets and faculty resources. Its objective is to encourage the eventual transfer of these newly-recognized technologies to the private sector for the start-up of new businesses or as additions to the product lines of established firms.

ADDITIONAL PROGRAMS:

- TECHNOLOGY TRANSFER - The Ohio Technology Transfer Organization works out of the state's 24 state supported technical and community colleges and four major universities. It serves as a link to technical and management experts for Ohio businesses on such issues as marketing, production techniques, training, business management, and technical questions.

FUNDING SOURCE: State general funds.

TOTAL STATE FUNDING: $38.4 million (FY86-87 biennium)

BUDGET: Edison Partnership Program - $35 million (FY86-87 biennium)
- Advanced Technology Centers - $36 million (since 1984)
- Incubators - $1.5 million (since 1984)
Ohio Technology Transfer Organization - $3.4 million (FY86-87 biennium)

OKLAHOMA

In 1986, the Science and Technology Advisory Committee was established to succeed the Council of Science and Technology, which produced its final report and recommendations in 1985. The Committee is designed to be a permanent not-for-profit organization that will carry out the recommendations of the Council. The Committee will administer the following programs:

- RESEARCH GRANTS - The Most Fund was created by the Oklahoma 1986 Legislature to provide research grants to university scholars and research projects. Program details of how the fund will operate are in the development stage.

- TAX INCENTIVES - Beginning January 1, 1987, a tax credit will be allowed for investments in qualified venture capital companies. The credit will be 20 percent of the amount invested. If the amount of the credit exceeds the income tax obligation, the excess may be carried forward as a credit against future tax liabilities for up to three years. In order for a venture capital company to qualify for this program, it must have capitalization of at least $5 million and invest at least two-thirds of their funds in Oklahoma business ventures.

FUNDING SOURCE: State general funds.

TOTAL STATE FUNDING: $2 million (FY87)

BUDGET: Technology Advisory Committee, Total - $2 million (FY87)
Operations - $100,000 (FY87)
Most Fund - $1.9 million (FY87)

OREGON

The 1985 Oregon legislature authorized the formation of a nonprofit public corporation, the Oregon Resource and Technology Development Corporation, to foster innovation in existing Oregon industries and aid in the development of new technology based businesses in the state. This corporation provides services in three main areas:

- SEED CAPITAL - The Corporation operates the Resource and Development Seed Capital Fund which provides funds for the development of technically innovative products or processes.

- RESEARCH GRANTS - The Corporation administers the Applied Research Fund which provides applied research grants to both private businesses and educational institutions.

- TECHNICAL AND MANAGERIAL ASSISTANCE - The Corporation provides managerial and technical referral services to small, new, and emerging businesses.

FUNDING SOURCE: State lottery.

TOTAL STATE FUNDING: $13 million (FY86-87)

BUDGET: Oregon Resource and Technology Development Corporation, Total - $13 million (FY86-87)
- Seed Capital Fund - $10.16 million (FY86-87);
- Applied Research Grants program - $2.54 million (FY86-87);
- Administration - $300,000 (FY86-87).

PENNSYLVANIA

At the forefront of Pennsylvania's efforts to stimulate technological innovation and business growth is the Ben Franklin Partnership Program. The Partnership links representatives from education, business, labor, and government to support the development of new technology and the creation of new businesses. Included among its programs are:

- TECHNOLOGY CENTERS - The Challenge Grant Program for Technical Innovation established four Advanced Technology Centers. State funds are matched by private contributions to create each technology center, each of which concentrates on four to five areas ranging from Pennsylvania coal and microelectronics to biotechnology. Each center also oversees the development and operation of incubator facilities in close affiliation with universities and local organizations across the state.

- INCUBATOR PROGRAMS - Pennsylvania was the first state to sponsor an incubator facility over 16 years ago. The state now has twenty incubators operated or supported by the Advanced Technology Centers. In 1984, the Small Business Incubator Loan Program was established to assist in providing financing for new incubator facilities.

- TECHNICAL AND MANAGERIAL ASSISTANCE - Entrepreneurial assistance such as managerial, financial, and technical services are available at the technology centers. They aid in the start-up of new firms as well as assisting established businesses.

- SEED CAPITAL - Under the Seed Capital Fund Program, seed capital is available for small businesses from four separate funds established by the technology centers and matched three to one by outside investments. Funds are used for product conceptualization and development.

- RESEARCH GRANTS - Grants are available to small businesses (less than 250 employees) for feasibility studies and applied research under the Small Business Research "Seed" Grant Program.

- GRANTS FOR EQUIPMENT - The Engineering School Equipment Grant Program provided the Partnership with a special fund to provide grants to state colleges and universities for the acquisition of new engineering equipment and the upgrading of existing equipment.

- TAX INCENTIVES - Under the Economic Revitalization program, the Partnership and the Department of Commerce permits up to $25 million in tax credits to investors for investments in high technology projects, including the use of advanced technologies in traditional manufacturing industries.

ADDITIONAL PROGRAMS

- LOAN PROGRAMS - The Industrial Development Authority, a state loan source, has targeted 25 percent of its fund specifically for advanced technology businesses. In addition, the Authority makes loans to public and private organizations for the establishment of small business, high technology incubators.

- VENTURE CAPITAL - The state has passed legislation permitting the use of state pension funds for venture capital investment. Up to a maximum of one percent or $100 million may be invested. As of December 1985, $51 million had been invested in six venture capital firms.

- TECHNOLOGY TRANSFER - Under the PennTAP program, technology is transferred from the Ben Franklin Partnership and other research and development programs to new and existing industries in the state.

FUNDING SOURCE: State general funds, bond issue, pension funds.

TOTAL STATE FUNDING: $62.25 million (FY87), $51 million (pension funds)

BUDGET: Ben Franklin Partnership Program - $49.5 million (FY87)
Ben Franklin Partnership Board - $500,000 (FY87)
Advanced Technology Centers - $25 million (FY87)
Incubator Facilities - $17 million (bond issue)
Seed Capital Venture Challenge Grant Program - $3 million (bond issue, FY85-87)
Research Grants - $1 million (state appropriation, FY87)
Engineering School Equipment Grants - $3 million (bond issue)
Industrial Development Authority - $50 million
PennTAP - $250,000 (FY87)

RHODE ISLAND

The Rhode Island Partnership for Science and Technology was initiated in April, 1985 and became operational in February, 1986 as a nonprofit, cooperative effort of state government, academic institutions, and the private sector. The government acts as a catalyst by providing state financed, applied research matching grants to link and expand research and technology interests of private and research institutions and facilitate the state's economic growth.

- RESEARCH GRANTS - The Partnership solicits proposals, primarily but not exclusively, from the following areas: medical and pharmaceutical technology; engineering industrial technology; and food technology. Funding proposals are only accepted for applied research that have the potential for preserving or creating jobs in Rhode Island, and are a collaborative effort from at least one Rhode Island university, hospital, or other nonprofit organization and include at least one commercial, for-profit corporation or business.

FUNDING SOURCE: Rhode Island Port Authority.

TOTAL STATE FUNDING: $2 million (1986)

BUDGET: Rhode Island Partnership for Science and Technology - $2 million (1986)

SOUTH CAROLINA

The South Carolina Research Authority was created in 1983 as a public corporation with revenue-generating potential. Its purpose is to enhance the research capabilities of the state's public and private institutions, to establish a continuing forum in the research community, and to promote the development of high technology industries and research facilities in the state. The most visible aspects of the Authority's efforts have been the following:

° RESEARCH PARKS - The state provided the land for the creation of three research parks developed by the Authority. The Parks, which are tied to the state's university system, specialize in robotics, electronics and computers, and medical and life sciences.

° RESEARCH GRANTS - Any revenue in excess of operating expenses obtained by the Authority from the above research parks is to be used for grants for basic research. These grants are to be awarded on a merit basis to those projects which are of a basic research nature, are relevant to the industries located in South Carolina, and which have the best probability of leading to industrial applications.

ADDITIONAL PROGRAM:

° TECHNICAL TRAINING - The state has a training program for positions in high technology fields. Training is offered at resource centers in such fields as robotics, machine operation, computer design, microprocessors, and advanced office systems.

FUNDING SOURCE: State general funds.

TOTAL STATE FUNDING: $500,000 (initial 1983 funding)

BUDGET: Research Authority -- $500,000 (initial 1983 funding, no further funding)
Research Parks - Deeded lands to the Authority
Research Grants - No direct state funding - revenue from research parks

SOUTH DAKOTA

South Dakota's economic strategy does not include a specific plan or government agency to promote the growth of high technology industry. It has, however, developed several financing programs and tax incentives for new or expanding businesses that can be utilized by technology companies.

TOTAL STATE FUNDING: None

TENNESSEE

The high technology programs in Tennessee are generally initiated and dominated by the private sector. However, the state does promote technology development in a unified approach through the Tennessee Technology Foundation. The Foundation is the initial recipient of state appropriations, which then disseminates funds to various high technology programs in the state. The Foundation is a statewide, private, nonprofit corporation created to provide assistance to established or emerging high technology businesses. The Tennessee Technology Foundation oversees the following programs:

- RESEARCH PARK - The Tennessee Technology Corridor hosts an extensive and growing range of research institutions, some of which are the Oak Ridge National Laboratory (ORNL) operated by Martin Marietta Energy Systems (MMES) for the Department of Energy, the University of Tennessee (UT), the headquarters of the Tennessee Valley Authority (TVA), the Tennessee Center for Biotechnology, Institute for Advanced Studies in Measurements and Controls Science, and Engineering. Also in the area is the Oak Ridge Associates Universities (ORAU), a consortium of universities pooling resources and talent for research and development and technology transfer.

- TECHNICAL AND MANAGERIAL ASSISTANCE - The Southern Middle Tennessee High Technology Initiatives mission is to promote and market the resources of the southern midstate area with the emphasis being technology and entrepreneurial opportunities from the University of Tennessee Space Institute and the Arnold Engineering Development Center. Current objectives to be carried out include: a high-technology conference, development of a local coalition to make seed and venture capital available and the formation of joint UTSI/Industry research partnerships.

- RESEARCH PARKS - The Biomedical Research Zone (BRZ), a private enterprise with funding from local industry, education, government, and the Tennessee Technology Foundation, is located in the southwestern part of Tennessee. The BRZ is designed to house those engaged in basic and applied biomedical research. Some of the areas of interest include human implants, genetics, instrumentation, pharmaceuticals, and research software.

ADDITIONAL PROGRAM:

- RESEARCH PARKS - Two Centers of Excellence were begun in 1984 at Tennessee Tech University (TTU) with $2 million in state appropriations. One center will focus on research in manufacturing and technology use and the other will conduct research on water resources.

FUNDING SOURCE: State general funds.

TOTAL STATE FUNDING: $200,000 (FY87), $4 million (initial investment)

BUDGET: Tennessee Technology Foundation - $200,000 (FY87), $2 million (initial investment)
Centers of Excellence - $2 million (initial investment)

TEXAS

In 1984 Texas established the Texas Science and Technology Council to research, develop, and report to the Governor the means available to the state to become a national leader in science and technology. The Council's mandate is to make recommendations that will enable the state to promote technology development and transfer, increase the amount of basic and applied research conducted at state colleges and universities, increase the available pool of venture capital, develop a mechanism for direct state investment in high technology development, and promote potentially self-sustaining university ventures. The Council functions in an advisory capacity and does not operate any programs. However, the following technology programs are available:

- TECHNOLOGY TRANSFER - The Texas Innovation Information Network System (TIINS) provides technology transfer from academic researchers to entrepreneurs and industrialists through an information data base containing a range of information such as current research, new technologies, engineering developments, education, management, and venture capital.

- TECHNICAL AND MANAGERIAL ASSISTANCE - The Institute for Ventures in New Technology (INVENT) integrates science and engineering with the commercial disciplines of marketing, management, and finance to help determine the commercial potential of new ideas. This program was established in 1982 and is located on the Texas A&M campus.

- TECHNOLOGY CENTERS - The Technology Enterprises Development Center located at the University of Texas in Arlington, is a technology-based Small Business Development Center providing current technical information, engineering expertise, and business-related assistance.

- TECHNOLOGY DEVELOPMENT PROGRAMS - A new department, the Advanced Technology Department was created to coordinate all state activities in technology development and dissemination of information on those activiites. The Technology Training Board, a sub-division of this department, collects and disseminates information related to technology training, research, and job and industrial opportunities in the state.

FUNDING SOURCE: State general funds.

TOTAL STATE FUNDING: $2.2 million (FY87)

BUDGET: Science and Technology Council - Funding for Council not available (part of Governor's Office)
Texas Innovation Information Network System - $25,000 (FY87)
INVENT - $1 million (FY87)
Advanced Technology Department - $70,000 (FY87)
Technology Training Board - $25,000 (FY87)

UTAH

Utah does not have an office to oversee the state's activities to promote science and technology. However, it has developed the following initiatives to assist technological innovation:

- RESEARCH CENTERS - In 1985, the Legislature passed legislation creating the Centers of Excellence Program. The Centers are cooperative academic-industry research efforts located primarily at the state's universities and colleges. Fifteen Centers have been established with the purpose of development and commercialization of advanced technology in such fields as communications, biomedical technology, and alternative fuel technology. The state provides seed grants for the creation of Centers. The state will provide up to three years of funding at $150,000 to $500,000 annually for each Center. After three years, the Centers must be self-supporting. State grants must be matched 2:1 with 2 federal and/or private dollars to each state dollar.

- VENTURE CAPITAL - The Utah Technology Finance Corporation was created in 1983 to provide seed capital for privately run venture capital firms. As yet, no state money has been used because the state is constitutionally prevented from investing its monies in private enterprises. The legality of the corporation is expected to be resolved shortly in the state court system. One private venture capital firm has been created with the assistance of the Corporation but without direct state money.

FUNDING SOURCE: State general funds.

TOTAL STATE FUNDING: $2 million (FY87), $2.5 million (initial funding)

BUDGET: Centers of Excellence - $2.5 million (initial funding), $1 million (FY87)
Technology Finance Corporation - $1 million (FY87)

VERMONT

The State does not have one office or council directed towards high technology development and business. The Economic Development Department runs the Vermont Business Expansion programs that are intended to promote general business development. Aspects of the program include:

- TECHNOLOGY TRANSFER - Using NASA's Industrial Applications Database and the Economic Development Department links to the State's educational research facilities, the Department can help analyze markets, develop new products, and look for solutions to production problems.

- INCUBATOR PROGRAMS - The Economic Development Department will also help develop incubator facilities providing low rent and shared services to new businesses. Also offered are Entrepreneurship forums to link developing companies with the business resources who can help them.

FUNDING SOURCE: State general funds.

TOTAL STATE FUNDING: There is no breakout for technology programs.

VIRGINIA

Virginia's activities to promote science and technology revolve around the Center for Innovative Technology (CIT). CIT is a private, not-for-profit corporation established in 1984 by the Commonwealth of Virginia. Its primary function is to enhance the prosperity of Virginia through the transfer of university-based scientific research and technological resources to industry. CIT's programs include:

- TECHNOLOGY CENTERS - Four Research Institutes focusing on biotechnology, computer-aided engineering, information technology, and materials sciences and engineering have been established to conduct cooperative university/industry research projects and promote technology transfer.

- RESEARCH GRANTS - Research grants are awarded to various industry/university research projects in the areas of concentration at the above mentioned technology centers. The research projects are screened for commercial potential and must be cosponsored by private companies.

- INCUBATOR PROGRAMS - CIT assists incubator program start-up companies in locating low cost facilities near an appropriate university where it has access to existing information, state-of-the-art facilities and equipment, incubator space in which to design, construct, and test prototypes, and university expertise.

- TECHNICAL AND MANAGERIAL ASSISTANCE - The Center will also provide assistance to new companies once a product reaches the marketable stage. CIT will assist in marketing research methods for a product, recruiting a staff of skilled employees, and identifying sources of start-up funds. Additionally, CIT through university staff, offers management consulting services and workshops that focus on common problems and needs of technology start-up companies.

FUNDING SOURCE: State general funds.

TOTAL STATE FUNDING: $10 million (FY87)

BUDGET: Center for Innovative Technology - $10 million (FY87)

WASHINGTON

Since 1983 the Washington High Technology Coordination Board has been working to identify a strategic plan for high technology as well as to serve as a link between research and development resources and the needs of the technology industry, and to coordinate higher education issues. At the end of this year, the Board will cease operations and its role will be assumed by the Department of Economic Development and the Higher Education Coordinating Board. Some of the high technology initiatives resulting from this board are:

- TECHNOLOGY CENTERS - The Washington Technology Center was created to focus the state's research initiatives and technology based industries on the creation of commercially promising technology. The Center's research and training activities are concentrated in areas such as advanced materials, computer systems and software, biotechnology, integrated optics, and microsensors. Newly created technologies are transferred to private companies or entrepreneurial ventures for commercial development. The Center is also developing a Technology Assistance Program to assist small and mid-sized businesses by providing technological expertise, scientific information and consultation services.

- INCUBATOR PROGRAMS - The state's Commission on Vocational Education is assisting in the development of incubator facilities. The incubators will be developed and operated by a private, nonprofit group. The first such incubator, the Ranier Valley Enterprise Center, will open in the summer of 1986.

- TAX INCENTIVES - The New-Industry Tax Deferral program allows manufacturing, computer service, and research and development operations to defer payment of sales and use taxes on expenditures for new or expanded facilities. Under the Washington State Tax Credits Program, the same types of businesses may receive a tax credit of $1,000 for each new employee once employment in the firm has been increased at least 15 percent. The credit applies against the business and occupation tax.

FUNDING SOURCE: State general funds.

TOTAL STATE FUNDING: $3.951 million (FY86-87)

BUDGET: High Technology Coordination Board - $251,000 (FY86)
Technology Center - $3.6 million (FY86-87 biennium)
Incubator Facilities - $100,000 (initial, FY86)

WEST VIRGINIA

West Virginia does not have an office, council, or program specifically directed towards the development of high technology industry and research. It has developed several financing programs and tax incentives for new or expanding businesses that can be used by high technology industry.

TOTAL STATE FUNDING: None.

WISCONSIN

Wisconsin does not have a central state agency dedicated to coordinate the state's high technology promotional efforts. There are, however, several programs to encourage the growth of advanced technology industries in the state. Wisconsin's efforts include:

- RESEARCH GRANTS - Established in 1983, the Technology Development Fund grants funds to consortia of businesses and institutions of higher education in support of research and development of new products and processes. Grants are also made to the University of Wisconsin System to provide technical information and direct services needed by businesses. Required business contributions to the research proposal vary between 20 and 90 percent of the total cost.

- TECHNOLOGY CENTERS - The University system supports a large Centers of Excellence program, supporting approximately 20 Centers doing basic and applied research in such fields as microelectronics, biotechnology, superconductivity, and manufacturing systems.

FUNDING SOURCE: State general funds, bond issue.

TOTAL STATE FUNDING: $7 million (FY86-87)

BUDGET: Technology Development Fund - $3 million (FY86-87)
Centers of Excellence - $2 million (annually)

WYOMING

Although Wyoming does not have any programs specifically directed at developing high technology business or research in the state, there are several programs to promote general business development that technology companies can utilize.

TOTAL STATE FUNDING: None.