

Arkansas Science & Technology Authority Profile

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Arkansas Science & Technology Authority Profile.....	1
1. Age, Organization and Governance.....	1
About the Authority	1
Mission Statement and Legislative History	3
Board of Directors.....	6
2. Service Delivery Area.....	7
3. Leadership Team.....	8
4. Full-Time Equivalent (FTE) Employees	8
5. Financial Summary	11
6. Major Characteristics of the Service Region	11
7. General Types of Services and Products Offered.....	12
8. Main Requirements and Operating Constraints	13
8.a. Defined Role of the Authority.....	13
8.b. Special Requirements.....	14
9. Important Changes in Operations	14

1. **Age, Organization and Governance**

About the Authority

(Updated JWA, 08-09-07)

The Arkansas Science & Technology Authority (the Authority) was created by statute in 1983 with the mission to bring the benefits of science and advanced technology to the people and state of Arkansas. This mission is addressed by strategies developed by the Authority’s Board of Director’s “Leadership Survey,” which describes the Board’s priorities for Goals and Products and Services as shown:

Goals		Goal Rank
	Products and Services	Product Rank
	Increase Research Activities in Arkansas	1
	Arkansas Research Matching	Top Ten
	Basic Research Grants	Middle 70
	Centers	Bottom 10
	EPSCoR	Not Ranked

Goals		Goal Rank
	Products and Services	Product Rank
Improve STEM Education		2
	Math & Science Education [WRF]	Top Ten
Maintain and Transform Existing Enterprises into Knowledge-Based Companies		3
	Service Agreements	Middle 70
	Applied Research Grants	Middle 70
Develop New Products and Entrepreneurial Firms		4
	TTAG	Middle 70
	Technology Development	Middle 70
	Seed Capital Investments	Middle 70
	Economic Incentives [R&D Tax Credits]	Middle 70
	Economic Incentives [AEDC Tax Credits]	Middle 70
	Incubator Certification	Not Ranked
Increase Authority's Visibility		5
	Policy Reports	Middle 70
	Other	Not Ranked

The Authority is comprised of a Board of Directors, Advisory Committees, and staff. The Governor appoints a 14-member Board to staggered four-year terms. The Board has three directors who are scientists or engineers, two directors who are representatives of academic institutions, five directors who represent the private sector, three directors who represent the private sector and have knowledge and experience in the field of manufacturing, and the Director of the Department of Higher Education or the Director's designee.

The President is the Authority's the chief executive officer and is responsible for the agency's staff, programs, and management functions.

The Board determines the allocation of funds to all projects supported by the Authority. Three Board standing committees, comprised exclusively of members of the Board, make recommendations to the full Board. Advisory Committees, comprised of Board and non-Board members, offer additional inputs to the Authority. All of the Authority's activities are audited annually to ensure compliance with state and federal guidelines.

The Authority can be reached at:

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Mission Statement and Legislative History

(Revised JWA, 03-02-08)

The Arkansas Science & Technology Authority was created by **Act 859 of 1983** and given the mission **to bring the benefits of science and advanced technology to the people and state of Arkansas**. At present, the general strategies for achieving this goal are supporting scientific research, technological development, business innovation, and education at all levels. The Authority's role in these strategies is to develop and manage programs that empower others through competitive awards. The statutory authority for its activities is contained in the Arkansas Code Annotated, Section 15-3-101, et seq. [A digital copy of the Arkansas Code is available through the Arkansas General Assembly's website at <http://www.arkleg.state.ar.us/>. Copies of the Acts referenced (and **highlighted**) below are accessible on the Authority's website.]

Act 409 of 1985 amended the Authority's original legislation by adding the first five of nine new programs. These five programs would enable the Authority to provide financial assistance to technology-based industries and to support basic and applied research in Arkansas colleges and universities. These programs include the Seed Capital Investment Program, the Business Incubator Program, the Technology Transfer Program, the Basic Research Grant Program and the Applied Research Grant Program. **Act 740 of 1985** created the Research and Development Tax Credit for cash and new equipment used as a private match for the Applied Research Grant Program.

Act 210 of 1987 further amended the Authority's legislation and expanded the Authority's programmatic activities to include providing assistance to small businesses, helping them to identify and apply for funds under the federal Small Business Innovation Research (SBIR) Program. This federal program provides competitive grants to small businesses to research and develop innovative technology needed by the federal government. The Authority's SBIR activities began with building awareness and moved to small Technology Transfer Assistance Grants (TTAG) to help small firms prepare competitive SBIR proposals.

Act 803 of 1989 amended the Authority's legislation to include a new Centers for Applied Technology Program. The original concept was to create university-based centers where the results of scientific research could be more rapidly commercialized. The concept was modified so that program funds could also be used to match federal funds from the National Science Foundation under its Experimental Program to Stimulate Competitive Research (EPSCoR). The Congress has replicated the NSF EPSCoR program in NASA, the Department of Energy, the EPA, and other federal research agencies. Matching state funds for EPSCoR programs have been sought from the Centers Program. The joint federal and state budget first supported three NSF centers, the NASA space grant consortium, and the Material Handling Center. Department of Energy traineeships were matched with two grants of \$250,000 each from petroleum violation escrow funds. **Act 1545 of 1999** created the Arkansas Research Matching Fund which provides a unified mechanism for providing matching funds for EPSCoR and other research and development opportunities.

Act 271 of 1989 added the Technology Development Program to the Authority's enabling legislation. This Act is especially significant because it fills a gap between other programs. The gap is the one in which inventors, scientists and small businesses often find themselves; they have a good idea, but they don't have the modest resources needed to take the idea to the next stage of development. This program originally allowed the Authority to invest up to \$50,000 in the development of a working prototype. The legislation also allows the Authority to negotiate royalty paybacks of up to five percent of net sales for up to 10 years. This program was first funded in 1991 with a one-time grant of \$250,000 from petroleum violation escrow funds to be used for energy-related technology development. General Revenue funds were first appropriated in 1993 for technology transfer (TTAG) and development program awards. **Act 1232 of 2005** increases the upper limit of investments under the Technology Development Program from \$50,000 to \$100,000 per project.

Act 65 of 1995 increased membership on the Board of Directors by three, bringing the total membership to fourteen. The three additional members are representatives with manufacturing experience. The additions represent the Authority's increased activity in supporting Arkansas' industrial community and helped the state to receive a state-federal technology partnership award from the National Institute of Standards and Technology under the Manufacturing Extension Partnership.

Act 456 of 1995 authorizes the Authority to carry out programs to assist public education in preparing a more qualified workforce. The addition to the Authority's "power to carry out programs" formalizes its involvement in areas such as the Arkansas School for Mathematics and Sciences and to receive external support for educational activities.

Act 586 of 1995 authorizes, to the extent available time, personnel and other resources permit, all state-funded colleges and universities to provide research assistance to the Arkansas Science & Technology Authority to assist with planning to develop scientific, medical and technological commercial infrastructure enhancements to encourage qualified medical companies to locate in this state.

Act 1545 of 1999 added the Arkansas Research Matching Fund to the Authority's legislation. The purpose of the fund is to encourage, establish, and support basic and strategic research by providing a state match for federal agency awards to Arkansas colleges and universities. General Improvement funds were appropriated in 1999 and 2001 for the fund. **Act 417 of 2003** authorizes the Authority's Board of Directors, upon receipt of an application for matching funds to match federal funds from one (1) of the funding agencies identified in ACA 15-3-205, to determine the eligibility for matching funds based on a finding that the proposed research is in fields having long-term economic or commercial value to the state and which have been identified in the research and development plan approved by the Board of Directors of the Arkansas Science and Technology Authority. **Act 2265 of 2005** added the U.S. Department of Homeland Security to the list of federal agencies from which grants are eligible for matching funds.

Act 182 of 2003, [ACA 15-4-2701] the Consolidated Incentive Act, authorizes the Authority to issue research and development tax credits to companies that have been approved by the Arkansas Economic Development Commission to use such credits. **Act 1296 of 2005** and **Act 1596 of 2007** amend the Consolidated Incentive Act.

Act 857 of 2003 revises definitions about calculating capital gains and losses in a “qualified technology-based enterprise,” to use language similar to that in Act 182 of 2003 (referenced above) and Act 417 of 2003 (referenced above); this language refers to the Authority’s Research and Development Plan. Act 857 of 2003 also authorizes the Authority to certify “qualified technology incubators.”

Act 183 of 2005 formally authorizes the Authority to prepare, publish, amend, and distribute a research and development plan to guide investments in research and commercialization, strategic research, and technology-based enterprises. This amendment institutionalizes an activity begun in 1996 as part of a National Science Foundation EPSCoR grant. The R&D plan is specifically referenced in Act 182 of 2003, Act 417 of 2003, and Act 857 of 2003 (all of which are referenced above).

Act 2266 of 2005 [ACA 6-16-139] requires the Authority to develop a knowledge-based technology curriculum for use in grades seven through twelve.

Act 988 of 2007 provides immunity for civil liability [ACA 15-3-108] and allows Board members to access services offered by Arkansas Manufacturing Solutions in return for fees [ACA 15-3-112].

Act 1607 of 2007 [ACA 26-51-1103] increases the tax credit for qualified research expenditures and donations of new equipment to colleges and universities (established by Act 740 of 1985, referenced above) from 50% to 100% and increases the carry forward period from 3 to 9 years. This Research and Development Tax Credit is for cash and new equipment used as a private match for the Applied Research Grant Program.

Act 563 of 2007 [ACA 15-3-301] authorizes the Authority to support the creation of an alliance of research universities and the private sector (i.e., the Arkansas Research Alliance) to create jobs, increase research, and encourage economic development.

Act 604 of 2007 [ACA 4-113-103] authorizes the Authority to support Connect Arkansas by making grants from funds available for the purpose of establishing Connect Arkansas.

In summary:

- The Authority’s enabling legislation is contained in the Arkansas Code Annotated sections 15-3-101 et seq.
- The Research and Development Tax Credit is in the Arkansas Code Annotated sections 26-51-1101 et seq.
- The Consolidated Incentive Act is in the Arkansas Code Annotated sections 15-4-2701 et seq.

- The technology curriculum legislation is in the Arkansas Code Annotated section 6-16-137.
- Making grants from funds available for the purpose of establishing Connect Arkansas is authorized in the Arkansas Code Annotated section 4-113-103.

The broad role of the Authority, if not already apparent, can be seen by the statutory memberships that the Authority's president or designee has on other state entities, including:

- Arkansas Capital Corporation [**Act 410 of 1985**; ACA 15-4-901];
- Arkansas School for Mathematics, Sciences, and the Arts [**Act 259 of 1991** established the Arkansas School for Mathematics and Sciences; **Act 1305 of 2003** repealed the original legislation, added Arts to the name of the school, and moved the school to the University of Arkansas; the president of the Authority is an ex officio non voting member of the board of visitors (6-42-303)];
- Information Network of Arkansas [**Act 1139 of 1995**; ACA 25-27-101];
- Arkansas Biosciences Institute [Initiated Act 1 of 2000; ACA 19-12-115];
- Arkansas Tobacco Settlement Commission [Initiated Act 1 of 2000; ACA 19-12-101];
- Distance Learning Coordinating Council [**Act 1425 of 2005**, ACA 6-47-305];
- Arkansas Commission for Coordination of Educational Efforts [**Act 1936 of 2005** ACA 6-1-301]; and
- Venture Capital Investment Trust as defined in the Arkansas Risk Capital Matching Fund Act [**Act 1025 of 2007**; ACA 15-5-1603].

Another related involvement is with the Equity Investment Incentive Program [**Act 566 of 2007**; ACA 15-4-3301] at the Arkansas Economic Development Commission – a program previously in the Commerce Capital Development Company [**Act 860 of 2003**; ACA 15-4-1001] at the Arkansas Capital Corporation. The Authority and the Arkansas Development Finance Authority participate jointly in evaluating proposals with the Economic Development Commission,

Board of Directors

(Reviewed JWA, 06-10-03)

The Arkansas Science & Technology Authority is comprised of a Board of Directors and its staff. The Governor appoints the 14-member Board to staggered four-year terms.

The Board makes all decisions concerning the allocation of monies to projects funded under the Authority's programs, except the Technology Transfer Assistance Grants Program where the Board approves funding to the program and the President approves individual project funding. Three standing committees comprised exclusively of members of the Board make recommendations to the full Board. The committees deal respectively with technology extension, business development, and research. Staff functions are divided into a management support area and three programmatic areas that parallel the standing committees of the Board.

The Board’s Executive Committee deals with administrative issues.

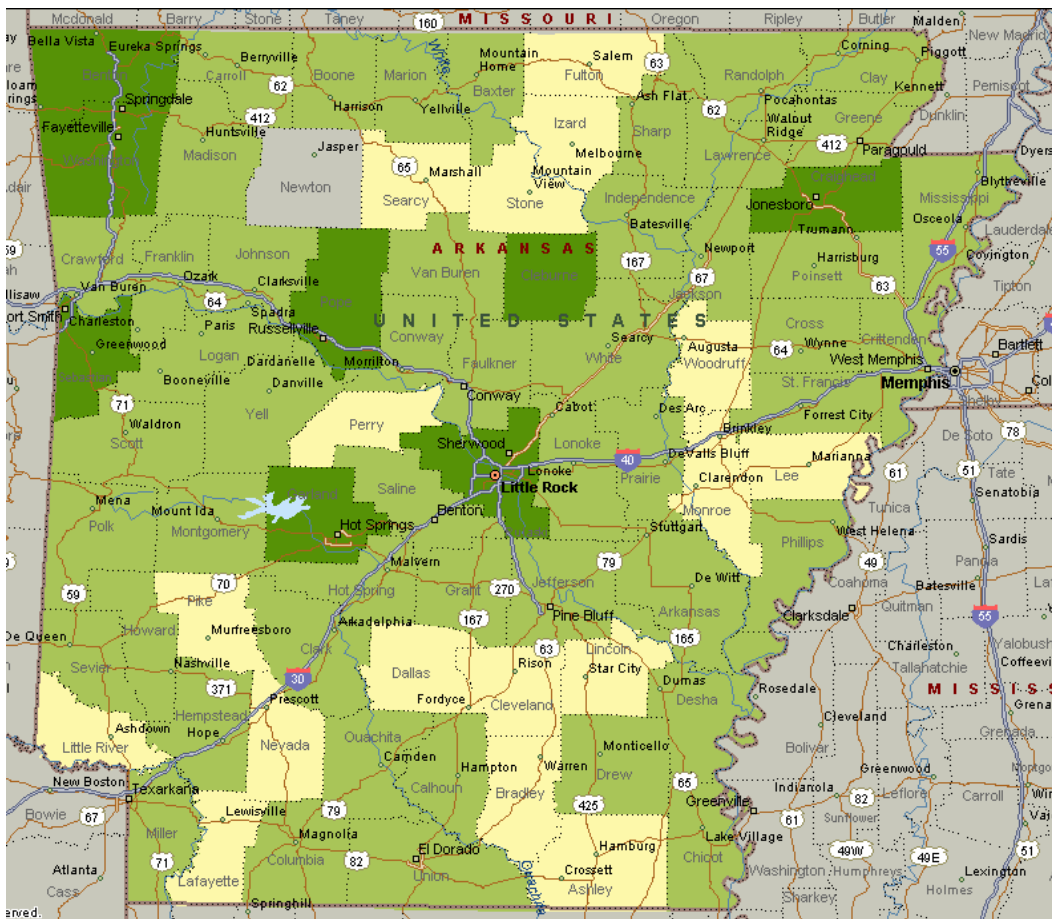
On-Line Resources	
Title	Link
The Board Policy Manual describes functions assigned by the Board to the Authority’s staff.	http://www.asta.arkansas.gov/publications/10-14-05%20Board%20Policy%20Manual.pdf
The Board Operating Guide describes responsibilities of the Board	http://www.asta.arkansas.gov/publications/10-14-05%20Board%20Ops%20Guide.pdf

2. Service Delivery Area

(Updated JWA, 03-02-08)

The Authority’s service delivery area is the state of Arkansas.

Through FY02, there have been a total of 4461 programmatic projects conducted in Arkansas and six outside Arkansas. The following map shows composite programmatic activity by county (legend: dark green = 100 to 999; light green = 10 to 99; yellow = 1 to 9; gray = 0).



3. Leadership Team

(Reviewed JWA, 06-10-03)

The Authority's staff leadership team includes the senior staff (the president and vice presidents) and the executive team (the president, executive vice president, and executive secretary).

The senior staff is responsible for program management, Board committee meetings, planning, procedures, and quality.

The executive team is responsible for meetings of the Board of Directors.

The Authority's value system is embodied in its mission and quality statements.

The Authority's direction is established through its strategic planning process.

The Authority's values and direction are communicated to the staff through:

- Weekly staff meetings,
- New employee orientation,
- Inclusion in the employee handbook, and
- [Under development: Posting individual elements throughout the office.]

Expectations are communicated to the staff through:

- Employee orientation,
- Employee handbook,
- Staff meetings,
- Quality Manual,
- Procedures,
- Values, and
- Expectations about office hours, work hours, attendance, and ethics.

The Authority's customer and stakeholder focus is communicated to all staff and reinforced by staff visits to stakeholder organizations.

Reinforcement of learning is provided through training opportunities, cross training, and flextime for classes outside the office.

4. Full-Time Equivalent (FTE) Employees

(Updated JWA, 08-09-07)

The Authority has a 12-person staff, which includes ten professional and two clerical positions. The Board has three additional federally funded positions. *For one fiscal year, FY 1996, the Authority had an information technology position to support the Governors Information Technology Advisory Board. Verify and get citation.*

The following discussion about the Authority’s staff uses the appropriation or payroll titles for the positions, which also have working titles that are used externally and appear, for instance, on business cards. The following table shows working titles and the corresponding payroll titles.

Working Title	Payroll Title
President	Executive Director
Vice President Finance	Assistant Director of Finance
Finance Program Manager	Finance Program Manager
Vice President Industry	
Operations Manager	Science & Technology Authority Assistant Director for Engineering
Management Project Analyst	Management Project Analyst
Accounting Supervisor	Accounting Supervisor
Vice President Research	Assistant Director of Research
Research Program Manager	Research Program Manager
STEM Grants Coordinator	Grants Coordinator
Executive Vice President	Assistant Director of Management Services
Research Project Analyst	Research Project Analyst
Information Systems Planner	Information Systems Planner
Fiscal Officer	Fiscal Officer
Communications Program Manager	Communications Program Manager
Business Controller	Business Controller
Executive Secretary	Executive Secretary

All staff positions are organized in the Authority’s Management Services Program. Staff activities are divided into three programmatic areas that parallel the programs in the Authority’s Strategic Plan. The Research and Commercialization Program supports the creation of new products and companies. The Technology and Extension Program supports transfer of technology and know-how to existing manufacturing and knowledge-based firms. The Management Services Program supports the activities of the Science & Technology Authority.

The **Assistant Director of Finance**, assisted by the **Finance Program Manager** is responsible for managing Seed Capital Investments, Technology Development, Technology Transfer Assistance Grants, and SBIR Assistance. The Board’s Investment Committee oversees these activities. The Assistant Director and Program Manager also provide technical assistance to Arkansas Manufacturing Solutions, a state-federal partnership under the federal Manufacturing Extension Partnership and the Research and Development Tax Credit activities under the Consolidated Incentive Act. In 2002, the Assistant Director played a central role in helping to organize the first Arkansas Venture Capital Forum.

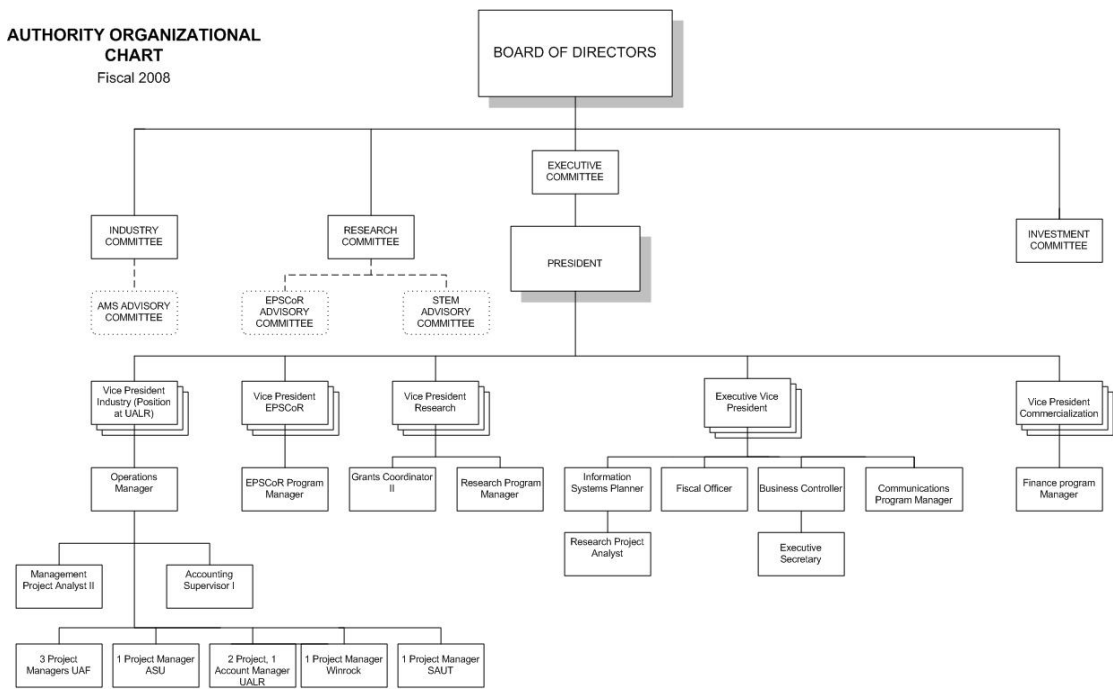
The **Assistant Director of Research** manages all research activities of the Authority, including Basic and Applied Research Grants, Centers for Applied Technology, support for the Experimental Program to Stimulate Competitive Research (EPSCoR), and the Arkansas Research Matching Fund and the Science Technology Engineering Mathematics (STEM) education initiatives. The Assistant Director of Research also monitors the Research and Development Tax Credits requested by private enterprises, which match applied research grants with cash or new equipment. The **Research**

Program Manager assists the Assistant Director in these activities, and the *Grants Coordinator* assists with the STEM initiatives. Research and STEM education activities are overseen by the Board’s Research Committee.

The Science & Technology Authority Network Administrator, whose position is administratively at UALR, but housed at the Authority, heads Arkansas Manufacturing Solutions, a cooperative agreement between the National Institute of Standards and Technology and the Authority. The Network Administrator is responsible for the three federally funded positions: the **Science & Technology Authority Assistant Director for Engineering, Management Project Analyst** and the **Accounting Supervisor**. They are responsible for the management and administration of the Cooperative Agreement. The Board’s Industry Committee oversees the activities.

The **Assistant Director of Management Services** is responsible for the day-to-day operations of the Authority. The **Research Project Analyst** is responsible for the Authority’s database and the **Information Systems Planner** is responsible for the Authority’s local area network and information technology. Fiscal activities are managed by the **Fiscal Officer**. The **Business Controller** is responsible for the procurement and personnel activities of the Authority as well as support of the Authority Board and Director. The **Executive Secretary** assists the Business controller. The **Communications Program Manager** is responsible for all external communications and public information activities for the Authority. Management services are overseen by the Board’s Executive Committee.

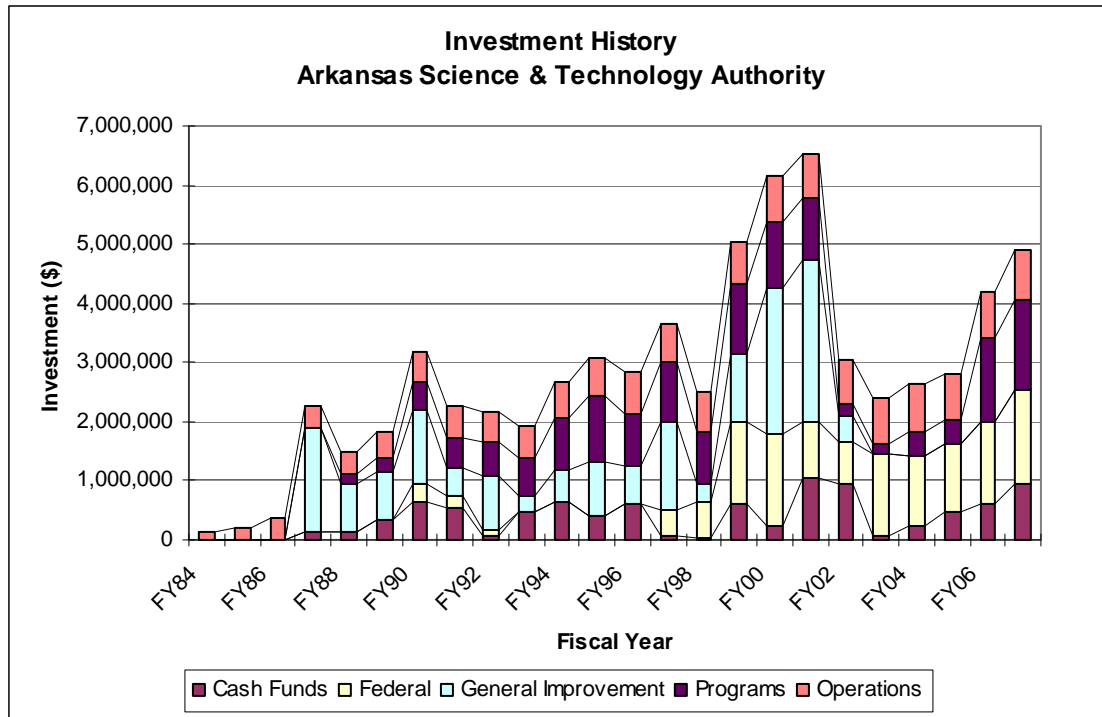
The **Executive Director** is the chief executive officer and has overall responsibility for the Authority’s programs and staff activities. The Executive Director is selected by the Board and serves at the pleasure of the Governor.



5. Financial Summary

(Updated JWA, 08-09-07)

The Authority's financial history is shown in the following chart.



6. Major Characteristics of the Service Region

(Updated JWA, 03-03-08)

National Science Foundation Science and Engineering Profile for Arkansas

Characteristic	State	U.S.	Rank
Doctoral scientists, 2003	2,940	566,330	37
Doctoral engineers, 2003	320	118,540	42
S&E doctorates awarded, 2005	116	27,974	40
Life sciences (%)	46	26	–
Engineering (%)	18	23	–
Physical sciences (%)	17	13	–
S&E and health postdoctorates in doctorate-granting institutions, 2005	133	48,601	38
S&E and health graduate students in doctorate-granting institutions, 2005	3,383	527,767	37
Population, 2005 (thousands)	2,779	300,322	33
Civilian labor force, 2005 (thousands)	1,362	150,717	33
Personal income per capita, 2005 (dollars)	26,641	34,495	48

Characteristic	State	U.S.	Rank
Federal spending			
Total expenditures, 2004 (\$millions)	19,489	2,136,440	33
R&D obligations, 2004 (\$millions)	141	98,936	47
Total R&D performance, 2004 (\$millions)	514	283,439	45
Industry R&D, 2004 (\$millions)	287	201,131	42
Academic R&D, 2005 (\$millions)	210	45,725	39
Life sciences (%)	75	60	–
Engineering (%)	11	15	–
Physical sciences (%)	7	8	–
SBIR awards, 2000–05	84	33,289	43
Utility patents issued to state residents, 2005	126	74,630	42
Gross domestic product, 2005 (\$billions)	87	12,492	34

7. **General Types of Services and Products Offered**

(Updated JWA, 03-03-08)

The general types of services and products offered are based on the enabling legislation, program rules, appropriations, and the Arkansas Science & Technology Authority’s Board of Director’s “Leadership Survey,” which defines the Authority’s goals and objectives. This was summarized in Section 1. Age, Organization and Governance.

The Authority’s overarching goal is: “To plan, promote, influence and support with high quality programs and services the commercialization of research innovations thereby helping to grow the Arkansas economy and increase per capita income.”

The Authority’s Board has designated five agency goals that contribute to the overarching goal. They are: (1) To increase research activities in Arkansas, (2) To improve STEM (Science, Technology, Engineering, and Mathematics) education at all levels, (3) To maintain and transform existing enterprises into knowledge-based companies and increase global competitiveness, (4) To develop new products and entrepreneurial firms and (5) To increase the Authority’s visibility through a comprehensive communications and public relations program.

7.1. To increase research activities in Arkansas, the Authority plans strategic state investments through the following research programs:

- Basic Research Grants Program.
- Applied Research Grants Program.
- Arkansas Research Matching Fund projects. Research Matching Funds, for college and university research activities, support for the National Science Foundation’s (NSF’s) EPSCoR program and the National Aeronautics and Space Administration’s (NASA) Space Grant Consortium.
- The Authority’s research emphasis is determined by the Authority’s Board of Directors and published in its Research and Development Plan.

Higher levels of federal research and development support correlate with higher per capita incomes.

7.2. To improve STEM education at all levels, the Authority seeks external grant support.

- With support from the Winthrop Rockefeller Foundation, the Authority will (1) continue the transition of the highly successful hands-on science teaching mini-grant and teachers-student interactive technology grant programs through Arkansas Community Foundation affiliates, (2) support the development of a web-based resource tool to facilitate access to teacher-utilized curriculum materials, and (3) empower teachers to generate enthusiasm in STEM classrooms around the state using projects that interest and engage students in STEM curriculum. These efforts result not only increased student competence in STEM skill sets but also produce increases in STEM career choices for these students as they advance.
- The support from the Winthrop Rockefeller Foundation led to the Authority's management of the outreach components of the National Science Foundation's ASSET Infrastructure grant under the NSF EPSCoR Program.

Higher educational achievement correlates with higher per capita incomes – especially in the sciences and engineering.

7.3. To maintain and transform existing enterprises into knowledge-based companies and increase global competitiveness, the Authority continues its state-federal technology partnership with the National Institute of Standards and Technology (NIST). The partnership allows the Authority, through the function of its Arkansas Manufacturing Solutions (AMS), to continue to meet the expressed needs of Arkansas manufacturers and provide them the tools to become world class competitors. AMS training includes topics such as Project Management, Lean Manufacturing, Lean for Office, Six Sigma, and OSHA and Safety training.

7.4. To develop new products and entrepreneurial firms, the Authority offers three programs.

- Technology Transfer Assistance Grants (TTAG) support enterprises participating in the federal Small Business Innovation Research Program.
- Technology Development Program supports enterprises developing new technologies.
- The Authority also provides start-up working capital through the Seed Capital Investment Program (SCIP).

Higher levels of entrepreneurship and venture capital investments correlate with higher per capita incomes.

8. Main Requirements and Operating Constraints

8.a. Defined Role of the Authority

The Authority is an instrumentality of the state of Arkansas, created by legislation, funded by state appropriations, and with its Board appointed by the Governor.

The Authority has the important strategic role to increase per capita income through the promotion of math, science, and engineering education, research, entrepreneurship, risk capital investments, and knowledge jobs.

Arkansas Manufacturing Solutions operates within the mission – to bring the benefits of science and advanced technology to the people and state of Arkansas – and the structure of the Authority.

8.b. Special Requirements

The Authority has been operating at a depressed level of funding since fiscal year 2001, but has seen important increases in recent years. Specifically:

- Basic Research Grants Program and Applied Research Grants Program have been unfunded since FY2001. Prior to FY2001, General Revenue funding for basic and applied research was \$900,000 per year.
- Arkansas Research Matching Fund projects was unfunded from FY2001, but has received state support at the reduced level of \$292,653 per year since FY200? Due to the efforts of Accelerate Arkansas. These limit matching funds have been used for support of the National Science Foundation's (NSF's) EPSCoR program and the National Aeronautics and Space Administration's (NASA) Space Grant Consortium.
- Tech Development support, for Technology Transfer Assistance Grants (TTAG) and Technology Development Program support, dropped from \$325,000 in FY2001 to \$156,975 per year General Revenue thereafter. This has limited Technology Development support to just one project per year.

9. *Important Changes in Operations*

The major change in operations has to do with losing a clerical staff position in FY2003, but facing ever increasing administrative staff responsibilities due to new legislation. The result is a perpetual sense of being short handed, while operating in an environment where there are increasing demands for know how regarding the knowledge-based economy.