



## 2004 ANNUAL REPORT

### Table of Contents

Letter from the Chairman & President.....	2-4
About the Authority.....	5
STUART Grant and Mini-grant Programs.....	6-8
TTAG Program.....	9-10
AMS.....	11-13
Seed Capital.....	14
Technology Development Program.....	15
Arkansas Science & Technology Authority Budget for Sfy04.....	16
Current Board of Directors.....	17
Staff.....	18
AMS Project Managers.....	19



Sept. 14, 2004

## 2004 ANNUAL REPORT

### Letter from the Chairman & President

#### Dear Governor Huckabee & Distinguished Legislators:

The Board of Directors and staff of the Arkansas Science & Technology Authority are pleased to submit to you the Authority's fiscal year 2004 Annual Report. The report summarizes the scientific and technological projects by which the Authority carries out its statutory mission to bring the benefits of science and advanced technology to the people and State of Arkansas.

The Authority's overall goal, as described in the Board's Strategic Plan, is to plan, promote, influence, and support the commercialization of research innovations through high quality programs and services, thereby helping to grow the Arkansas economy and increase per capita income.

The Board also adopted three programmatic goals: (1) to increase research activities in Arkansas, (2) to develop new products and firms, and (3) to maintain and transform existing enterprises into knowledge-based companies and increase their global competitiveness.

#### **Research**

The solicitation of basic research grant proposals was suspended and no investments were made in basic research or for research projects this year due to the lack of state funds. However, the need for research benefits to Arkansas has not waned in the view of the Authority, and its commitment to research is steadfast. The Authority believes that increasing externally funded research activities in higher education and improving science, technology, engineering, and mathematics education are essential building blocks for economic development and global competitiveness.

The STUART Grants and Mini-Grants supported by the Winthrop Rockefeller Foundation allowed the Authority to continue promoting innovative science education in middle school grades and examine student attitudes toward science in grades 5 through 8. One hundred and twenty-two Mini-Grant awards, totaling \$61,000, were made in 84 schools from 48 counties. Twenty-one STUART grant awards, totaling \$126,000 were made from 21 schools in 21 counties.

This year, the Winthrop Rockefeller Foundation awarded a grant to the Authority to plan and support the transition of the Authority's science teaching project to the Arkansas Community Foundation, to which the Foundation will provide an endowment to support the project on an ongoing basis.

The Authority continued to facilitate the Experimental Program to Stimulate Competitive Research (EPSCoR), which is charged with planning and implementing an effort to increase federally supported research at colleges and universities and bring Arkansas' science and engineering research to nationally and internationally competitive levels. The Authority's EPSCoR Advisory Committee evaluated 25 DOD pre-proposals and four DOE pre-proposals in response to the FY04 EPSCoR RFP solicitations. Two proposals were funded by federal agencies.

The Authority's staff played other important roles in the development of research and education. The Authority's Vice President Research sits on the advisory board of the Arkansas School for Mathematics Sciences, & the Arts, and the Authority's President sits on the Arkansas Biosciences Institute board and the Tobacco Settlement Commission.

### ***New Products and Firms***

The Authority's support of university research in previous years has helped develop new products and services around which new knowledge-based companies have formed and from which jobs are now spinning out of the universities. The Authority is working with several of these firms to explore the capital markets for financing. The Authority is also involved in a number of supportive entrepreneurial development activities, including Techpreneur and the Student Business Plan Competition.

The Authority did not fund any Seed Capital Investments during FY04. There are two reasons for this. First, the demand was lower because new investment tax credits – in which the Authority is deeply involved – assisted some companies that might otherwise have approached the Seed Capital Investment Program for support. Second, the Authority was particularly prudent because two-thirds of the revolving investment fund is in company investments and the tough market conditions for many of those companies required more focus on the existing investment portfolio. For example, several enterprises in which the Authority has invested, companies such as Integral Wave Technologies and Med-Evolve, obtained additional private equity investments. Vision Technologies and Art-Exchange have gone on to receive angel funds. Safe Foods was formed around Technology Development funds awarded by the Authority and has gained a great deal of backing and even national exposure on the CBS Evening News.

The Authority continued to support Phase Zero TTAG awards to small companies. The Authority invested a total of \$33,750 in nine Small Business Innovative Research (SBIR) projects. The nine projects led to the SBIR Program awarding \$1.3 million to six Arkansas based companies. A majority of the recipients of small business innovation research (SBIR) funds have either prepared proposals through the use of TTAG funds or were formed as a result of Authority funding from another program. The Authority uses TTAG funds to leverage federal awards, which then flow to the Small Business Development Center for SBIR outreach. It co-sponsors an SBIR conference that brings in speakers to discuss the SBIR process, and works with the Arkansas Department of Economic Development (ADED) to ensure that SBIR funds are counted as eligibility criteria to meet the ADED guideline requirements for the R&D tax credit.

The Authority's President serves on the Boards of the Arkansas Capital Corporation (ACC) and the Arkansas Commerce Capital Development Company (CCDC). The Authority and ADED review the applications in conjunction with the CCDC staff as part of CCDC's due diligence. It is the Authority's task to ensure the projects are technically feasible while ADED looks at the economic development aspects of the projects. The Authority has also informed technology-based businesses of the CCDC opportunity as part of an awareness campaign.

The Authority has supported the Arkansas Department of Economic Development's use of R&D Credits by coordinating with them on developing the rules, guidelines and procedures. The Authority has assisted with company presentations on how the tax credit could be used, and reviews applications and makes recommendations to the Director of the Arkansas Department of Economic Development.

The Winthrop Rockefeller Foundation's award to the Authority for "A Pilot Project on Entrepreneurship in Arkansas" has supported internships committed to legislative issues, such as raising the profile of Arkansas entrepreneurs, prioritizing and developing model legislation, and research support on educational improvement.

The Winthrop Rockefeller Foundation also funded a related project proposed by Accelerate Arkansas, a statewide volunteer organization created to help build and accelerate the state's knowledge-based industries. The Authority's VP Finance and President serve as members of Accelerate Arkansas.

***Maintain and Transform Existing Enterprises***

Arkansas Manufacturing Solutions (AMS), formerly the Arkansas Manufacturing Extension Network, continued to improve the performance, productivity, and profitability of Arkansas manufacturers through training and implementation projects that achieved tangible and measurable results. AMS served 203 Arkansas manufacturers with 303 projects in areas such as Lean Manufacturing, Six Sigma, Strategic Planning, ISO 9000, and Environmental, Health and Safety. In independent surveys, AMS clients reported \$58.6 million in increased and retained sales, \$8.5 million in cost savings, \$8.4 million in investments, and 1,062 jobs created or retained as a result of the AMS assistance they received.

TTAG data based on the National Institute of Standards and Technology evaluations showed a 4.65 out of 5.00 satisfaction rating, \$1,362,500 in increased sales and \$19,570,000 in retained sales.

***Management Services***

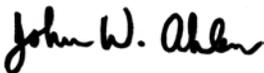
The Authority has endeavored to become a more efficient organization through the application of quality management. The Authority completed the first full year under the Performance Budgeting and Accountability System (PBAS). It initiated the process of biennial budgeting under this system and submitted a strategic plan for FY05-09, which was approved.

In 2004, the Authority continued to strive and evolve in serving the needs of Arkansans, as it sowed the scientific and technological seeds of a bountiful Arkansas harvest. It greatly appreciates your continued interest and support, and will continue to prepare the state to meet the challenges of our ever-changing technological world.

Sincerely,



J. Wylie Harris, Jr. Chairman of the Board

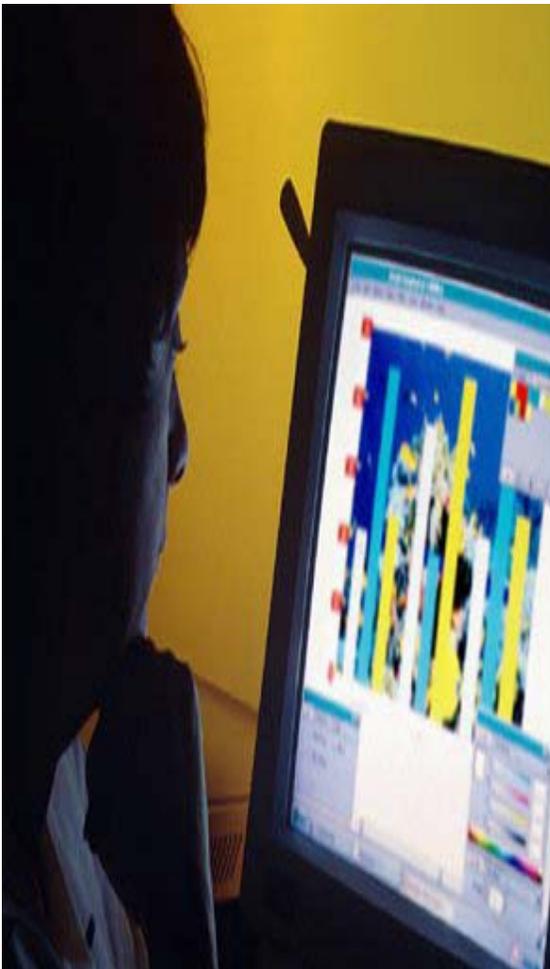
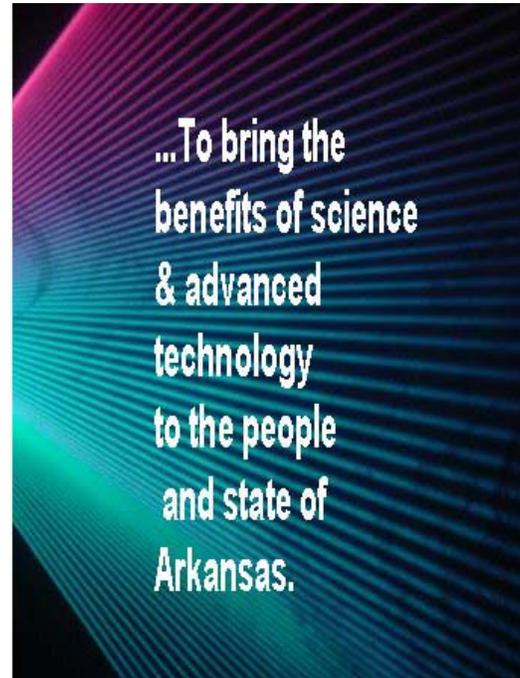


John W. Ahlen, Ph.D., President

## About the 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 to promote scientific research, technology development, business innovation, and math, science and engineering education.

The Authority is comprised of a Board of Directors, Advisory Committees and staff. The 14-member Board is appointed by the Governor 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 Authority's staff is led by the President, the chief executive officer, who is responsible for the agency's programs, services and support functions. The Authority's activities are divided into three programmatic areas that include research, development and technology.

The Board determines the allocation of funds to all projects supported by the Authority. Three 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 advice to the Authority. All of the Authority's activities are audited annually to ensure compliance with state and federal guidelines.

## STUART Grant and Mini-grant Programs

The STUART Grant Program provides funds to Arkansas public middle school teachers to use technology for science instruction. The Mini-grant Program provides funds to Arkansas public middle school teachers to purchase consumable items for student hands-on experiences in science.

### Program Description

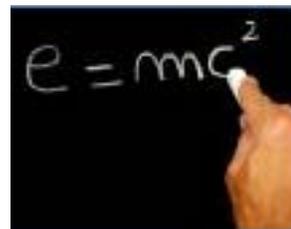
The Authority's STUART Grant Program provides a \$6,000 award to Arkansas teachers in grades five, six, seven, and eight to purchase a classroom participation system, a projector and a laptop computer. The Authority's Mini-grant Program provides a \$500 award to Arkansas teachers in grades five, six, seven, and eight to purchase consumable science materials.

### Awards

This year ASTA received 135 Mini-grant applications from 94 schools in 51 counties. The number of applications received increased by 33 percent from the previous year. One-hundred and twenty-two awards were made in 84 schools from 48 counties. A total of \$61,000 has been awarded.

ASTA received 70 STUART Grant applications from 63 schools in 38 counties. This application total is 2.5 times greater than that of the previous year. Twenty-one awards were made from 21 schools in 21 counties. A total of \$126,000 has been awarded.

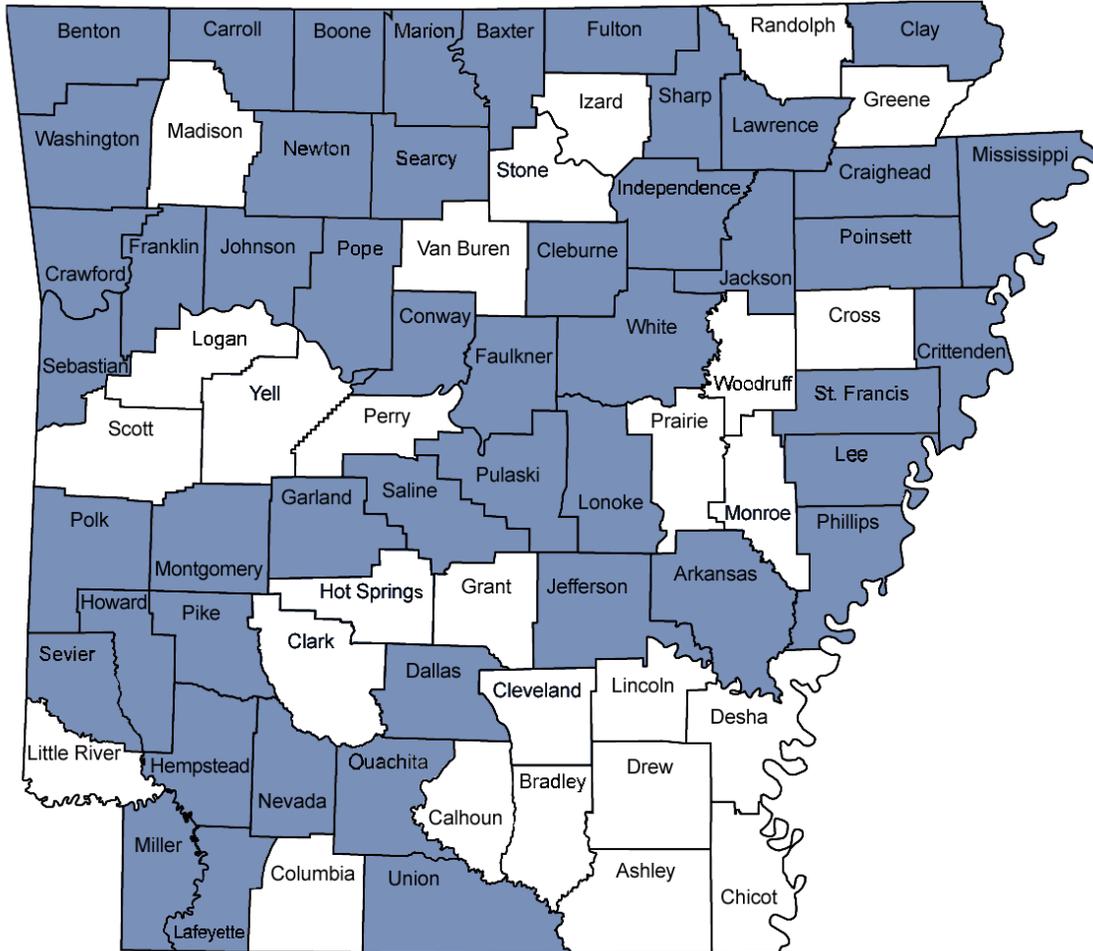
Individual teacher final report comments have indicated a positive impact on the performance of their students. Some teachers have indicated that the Mini-grant awards enhanced their professional development by allowing them to involve their students in additional science experiences. The introduction of the new technology with the STUART Grants has been beneficial to both the students and the teachers.



## Mini-grant Awards by County

One-hundred and twenty-two awards for 84 schools and 48 counties were given.

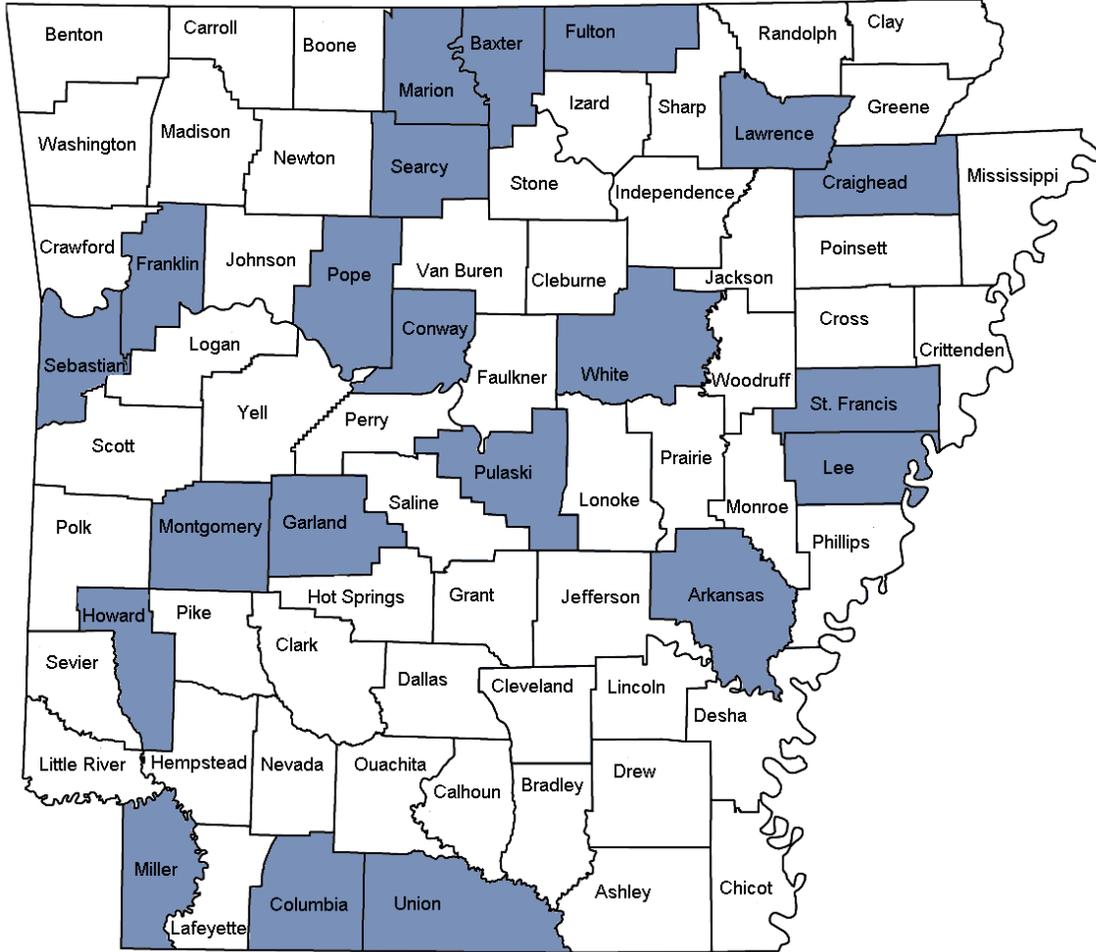
A total of \$61,000 (\$500 x 122) has been awarded.



## STUART Grant Awards by County

Twenty-one awards for twenty-one schools in twenty-one counties have been given.

A total of \$126,000 (\$6,000 x 21) has been awarded.



## Technology Transfer Assistance Grant Program

### Purpose

The Technology Transfer Assistance Grant Program (TTAG) assists Arkansas' enterprises in developing or improving products or processes through the transfer of technical solutions to technology-based, industry-driven problems, thus enhancing that enterprise's market competitiveness.

### Program Description

The Authority provides limited financial support for the transfer and deployment of innovative technology. The Authority will fund up to \$3,750 of costs associated with transferring new or existing technology from a qualified applicant -- such as a public or private enterprise, laboratory, college or university -- to an enterprise based in Arkansas. Up to \$5,000 of total project costs will be considered, with the first \$2,500 funded by the Authority; the remaining \$2,500 is cost-shared equally (50:50) between the Authority and the enterprise. Each enterprise is eligible to receive assistance for two technology transfer projects per year. Projects are evaluated on a competitive basis.

### Awards

In FY04, the Authority's Board of Directors authorized twenty-nine TTAG projects totaling \$104,157.00 through TTAG to help clients solve technical problems. The private sector invested an additional \$53,175.00 in these solutions. These investments assisted twenty-seven separate companies, located in nine counties, representing the following North American Industry Classification System (NAICS) groups. See table on following page.

### SBIR Related TTAG's:

In FY04, the Authority's Board of Director's invested in nine SBIR related projects in the amount of \$33,750. These nine projects led the SBIR Program to award \$1.3 million to six Arkansas based business.



## TTAG Grant Program- Continued

Industry Type	Number
Men's and Boys' Cut and Sew Apparel Contractors	1
Custom Computer Programming Services	1
Professional, Scientific, and Technical Services	2
Other Oilseed Processing	1
All Other Cut and Sew Apparel Manufacturing	1
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	1
Water Supply and Irrigation Systems	1
Engineering Services	2
Other Crushed and Broken Stone Mining and Quarrying	1
Research and Development in the Physical, Engineering, and Life Sciences	2
General Freight Trucking, Long-Distance, Less Than Truckload	2
Other Millwork (including Flooring)	1
Cutting Tool and Machine Tool Accessory Manufacturing	1
Testing Laboratories	1
Analytical Laboratory Instrument Manufacturing	2
Reconstituted Wood Product Manufacturing	1
Farm and Garden Machinery and Equipment Merchant Wholesalers	1
Crude Petroleum and Natural Gas Extraction	1
Process, Physical Distribution, and Logistics	1
Veneer, Plywood, and Engineered Wood Product Manufacturing	1
All Other Miscellaneous Chemical Product and Preparation Manufacturing	1
Aircraft Parts and Auxiliary Equipment Manufacturing	1
Precision Turned Product Manufacturing	1
Motor Vehicle Seating and Interior Trim Manufacturing	1
<b>Total</b>	<b>29</b>
Service Area	Number
Small Business Innovation Research (SBIR) Assistance	9
E-Commerce	3
Market Development	4
Product Development and Design	3
Quality Inspection	2
Automation/Robotics	1
Environmental	1
Process Improvement	6
<b>Total</b>	<b>29</b>
Client Profile	
Average Number of Employees	184
Average Age of Company	14 Years
Average Year of Corporation Founded	1989
Most Active County	Washington (13)
Average Authority Investment	\$3,591.62
Total Authority Investment	\$104,157.00
Average Client Investment	\$1,833.62
Total Client Investment	\$53,175.00

## Arkansas Manufacturing Solutions

### Purpose:

In April of 2004, Arkansas Manufacturing Extension Network changed its name to Arkansas Manufacturing Solutions (AMS). AMS is designed to improve Arkansas' manufacturing and industrial competitiveness through the delivery of comprehensive technical and business assistance services.

### AMS Description:

AMS is an affiliate of the National Institute of Standards and Technology Manufacturing Extension Partnership (NIST MEP). It strives to improve the quality, productivity and global competitiveness of Arkansas' small and medium-sized manufacturers by providing technical and business management assistance services.

AMS' primary partners are the University of Arkansas, Fayetteville; Southern Arkansas University Tech, Camden; Arkansas State University, Jonesboro; the University of Arkansas at Little Rock; Winrock International, Morrilton; Arkansas Institute for Performance Excellence; and Arkansas Department of Economic Development.

Eight field staff deliver services to manufacturers. Typical services include Lean Manufacturing, Quality Management Systems, Six Sigma, Environmental, Health & Safety Management Systems, and General Technical and Management Assistance.

### Awards:

For FY04, the Board authorized funding in the amount of \$997,477 to support the director and eight field staff: three at the University of Arkansas, Fayetteville; two at the University of Arkansas at Little Rock; one at Arkansas State University; one at Southern Arkansas University Tech; and one at Winrock International. The Board also authorized \$25,250 for partner activities.

The following improvements were reported by clients during the NIST MEP Survey of AMS projects completed from April 2002-March 2003 with Arkansas companies:

Increased or Retained Sales	\$58,611,800
Cost Savings	\$8,510,036
Company Investments	\$8,400,000
Jobs Created or Retained	1062



## Arkansas Manufacturing Solutions – Continued

In FY 04, AMS field staff completed 303 projects in the following manufacturing industries and service areas.

NAICS Grp.	Industry Type	Total
311	Food Manufacturing	16
312	Beverage & Tobacco Product Manufacturing	2
315	Apparel Manufacturing	4
316	Leather and Applied Product Manufacturing	4
321	Wood Product Manufacturing	30
322	Paper Manufacturing	9
323	Printing and Related Support Activities	5
324	Petroleum and Coal Product Manufacturing	1
325	Chemical Manufacturing	13
326	Plastic and Rubber Products Manufacturing	22
327	Nonmetallic Mineral Product Manufacturing	6
331	Primary Metal Manufacturing	11
332	Fabricated Meta Product Manufacturing	34
333	Machinery Manufacturing	41
334	Computer & Electronic Product Manufacturing	12
335	Electrical Equipment, Appliance & Component Mfg.	31
336	Transportation Equipment	23
337	Furniture and Related Product Manufacturing	18
339	Miscellaneous Manufacturing	2
	Other	19
	Total	303

Substance Description	Total
Business Systems Business Management	13
CAD/CAM/CAE	2
EDI/Communications/LAN	2
Environmental	41
General	4
Hman Resources	2
Market Development	5
Process Improvement	196
Product Development and Design	5
Quality Inspection	33
Total	303

Funding Received	
NIST Funding	\$923,426.15
Client Fees	\$454,570.00
State	\$259,027.00
Total	\$1,679,216.65

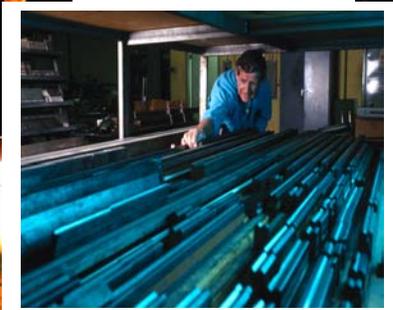
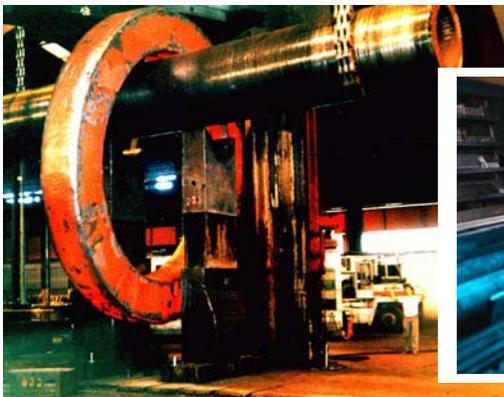
## Arkansas Manufacturing Solutions – Continued

The Authority's Board of Directors also authorized 30 AMS TTAG projects totaling \$107,717.50 through AMS TTAGs to help clients solve technical problems. The private sector invested an additional \$35,337.50 in these solutions. These investments assisted 26 separate companies, located in 16 counties representing the following North American Industrial Classification System (NAICS) groups:

NAICS Grp.	Industry Type	Number
311	Food Manufacturing	1
321	Wood Product Manufacturing	4
326	Plastic and Rubber Products Manufacturing	4
331	Primary Metal Manufacturing	2
332	Fabricated Meta Product Manufacturing	6
333	Machinery Manufacturing	1
334	Computer & Electronic Product Manufacturing	2
335	Electrical Equipment, Appliance & Component Mfg.	6
336	Transportation Equipment	1
337	Furniture and Related Product Manufacturing	1
	Other	2
	Total	30

Client Company Profile	
Average Number of Employees	224
Most Active Counties	Benton (4), Craighead (4), Sebastian (3), Washington (3)
Average Authority Investment	\$3590.58
Average Client Investment	\$1177.92

Services Rendered	Number
Business Systems/Business Management	1
E-Commerce	1
Environmental	4
Human Resources	1
Plant Layout/Manufacturing Cells	3
Process Improvement	6
Product Development and Design	2
Quality/Inspection	9
Other	3
Total:	30



## Seed Capital Investment Program

### Purpose

The Seed Capital Investment Program (SCIP) fosters the development of innovative technology-based businesses and projects that will stimulate economic growth and industrial competitiveness in Arkansas.

### Program Description

The Program assists in the initial capitalization or expansion of Arkansas-based businesses undertaking projects that are science or technology based and have a commercial or job creation potential. Each dollar invested by SCIP is leveraged by three dollars in matching funds from other sources. SCIP is limited to working capital and does not finance fixed assets.

### Investment

The Board approved one SCIP investment in FY04 for a total of \$250,000.

Proposal	Company	Description	Funds Approved	Amount Dispersed
04-S-01	TICKET SAGE	Portable Box Office Solutions	\$250,000.00	\$0.00
Total			\$250,000.00	\$0*



## Technology Development Program

### Purpose

The Technology Development Program (TDP) provides assistance in the development and commercialization of new technology-based products and processes through innovative technology development projects.

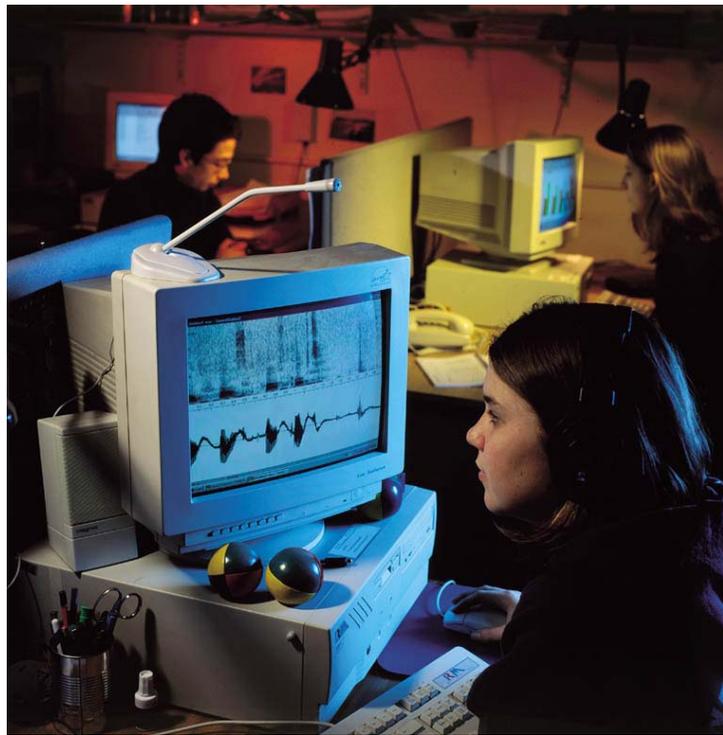
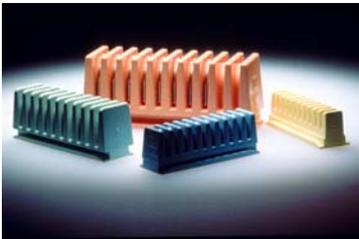
### Program Description

The Program may provide monies to qualified applicants if their proposed project possesses a well-defined and comprehensive project plan and promotes the purpose of the Authority. The maximum award is limited by law to \$50,000. Awards are considered investments with terms negotiated on a case-by-case basis with a maximum 5 percent royalty on net sales for a maximum period of 10 years.

### Investments

The Board approved one TDP investment of \$49,995 in FY04.

Proposals	Awarded	Description	Funds Approved
04-TDP-02	Arkansas Power Electronics International	Development of a High-Temperature Silicon Carbide Power Electronics Modules	\$49,995.00
<b>Total</b>			<b>\$49,995.00</b>



## ARKANSAS SCIENCE & TECHNOLOGY AUTHORITY BUDGET for Sfy04

APP/ALL	GENERAL REVENUE CHARACTER	APPROPRIATION BALANCES	BUDGET	Y-T-D EXPENSE	BALANCE
678/01	REGULAR SAL	492,867	509,218	504,671.00	4,547.00
	EXTRA HELP	12,000	5,012	1,800.00	3,212.00
	M&O	144,204	144,204	141,172.00	3,032.00
	FRINGE	135,946	130,894	128,801.00	2,093.00
	RESEARCH	0	0	0.00	0.00
	CONFERENCE	27,223	27,223	14,591.00	12,632.00
	PROF FEES	16,800	12,148	7,374.00	4,774.00
	CAPITAL OUTLAY	0	0	0.00	0.00
	M&R		0.00	0.00	0.00
	TECH DEV	154,352	154,152	154,152.00	0.00
	TOTAL ACT 299 Of 2003	983,392	982,851	952,561.00	30,290.00

General REVENUE allocation	994,691
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APP/ALL	CASH CHARACTER	APPROPRIATION BALANCES	BUDGET	Y-T-D EXPENSE	BALANCE
A87/01	SEED CAPITAL	1,900,000	1,900,000	0.00	1,900,000.00

APP/ALL	MEP FEDERAL CHARACTER	APPROPRIATION BALANCES	BUDGET	Y-T-D EXPENSE	BALANCE
919/02	REGULAR SAL	131,097	125,782	124,807.00	975.00
	M & O	124,456	120,656	77,627.00	43,029.00
	FRINGE	36,444	32,280	32,044.00	236.00
	GRANTS	200,000	200,000	151,660.00	48,340.00
	CONF FEES	37,928	37,928	20,619.00	17,309.00
	PROF FEES	50,000	50,000	32,250.00	17,750.00
	CAPITAL OUTLAY	0	3,800	3,612.00	188.00
	FIELD SERVICES	997,477	997,477	755,082.00	242,395.00
	MISC FEES	0	0	0.00	0.00
	TOTAL	1,577,402	1,567,923	1,197,701.00	370,222.00

Manufacturing Extension					
1ND	Total Act 1291 of 2003	750,000	259,027	259,027.00	0.00
ALTERNATIVE FUELS RESEARCH	Total Act 952 of 2003	4,000,000			
APP/ALL	WINTHROP ROCKEFELLER CHARACTER	APPROPRIATION BALANCES	BUDGET	Y-T-D EXPENSE	BALANCE
1FA	Mini Grants	135,000	192,000	191,525	475.00
	Pilot Project Entrepreneurship in Ar				
1FA	M & O		5,000		5,000.00
	Grants		151,250	36,146	115,104.00
			156,250	36,146	156,250

## Current Board of Directors

<p><b>J. Wylie Harris, Jr. - Chair</b> Oil, Mining &amp; Ranching Operations Salem Term Expires 2005</p>	<p><b>John White, Ph.D. - Vice Chair</b> Chancellor University of Arkansas at Fayetteville Term Expires 2006</p>
<p><b>Neil Rutger, Ph.D. - Secretary</b> Director and Supervisory Research Geneticist Dale Bumpers National Rice Research Center USDA Agricultural Research Service Term Expires 2005 <u>Authority Research Committee Chair</u></p>	<p><b>Merlin Augustine, Ed.D.</b> Financial Systems Coordinator University of Arkansas, Fayetteville Term Expires 2005</p>
<p><b>Johnny Hooks</b> Agency Field Executive for State Farm Insurance Term Expires 2008</p>	<p><b>David Eberdt</b> Private Sector Term Expires 2007</p>
<p><b>Harry Ward, M.D.</b> <u>Biography (pdf)</u> Professor of Medicine and Retired Chancellor University of Arkansas for Medical Sciences - Little Rock Term Expires 2006 <u>Executive Committee Chair</u></p>	<p><b>Bum Lee</b> Account Director Fidelity Information Services Term Expires 2007</p>
<p><b>D.W. May</b> <u>Biography (pdf)</u> May and Associates Bryant Term Expires 2006</p>	<p><b>Sue McGowan</b> Director of Economic Development/CEO Paragould /Greene County Chamber of Commerce Term Expires 2004 <u>Authority Investment Committee Chair</u></p>
<p><b>Steve Floyd</b> Arkansas Department of Higher Education - Little Rock Term Permanent</p>	<p><b>Robert Hall</b> Term Expires 2004</p>
<p><b>Gordon Knetzer</b> Owner Advance Construction Systems, Inc. Term Expires 2007</p>	<p><b>Rickey Williams</b> President &amp; Chief Executive Officer of Rickey Williams &amp; Associates, Inc. Term Expires 2007</p>

**Staff**

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<p><b>Scott Snider</b> Communications Mgr. (501) 683-4405 <a href="mailto:scott.snider@mail.state.ar.us">scott.snider@mail.state.ar.us</a></p>	<p><b>Cathy Ma</b> Research Program Mgr. (501) 683-4422 <a href="mailto:cathy.ma@mail.state.ar.us">cathy.ma@mail.state.ar.us</a></p>
<p><b>Ed Sartain</b> Fiscal Officer (501) 683-4416 <a href="mailto:ed.sartain@mail.state.ar.us">ed.sartain@mail.state.ar.us</a></p>	<p><b>Tiki S. Alexander</b> Accounting Supervisor (501) 683-4417 <a href="mailto:tiki.williams@mail.state.ar.us">tiki.williams@mail.state.ar.us</a></p>
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## AMS Project Managers

**Loren Berry**

*Project Manager*

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