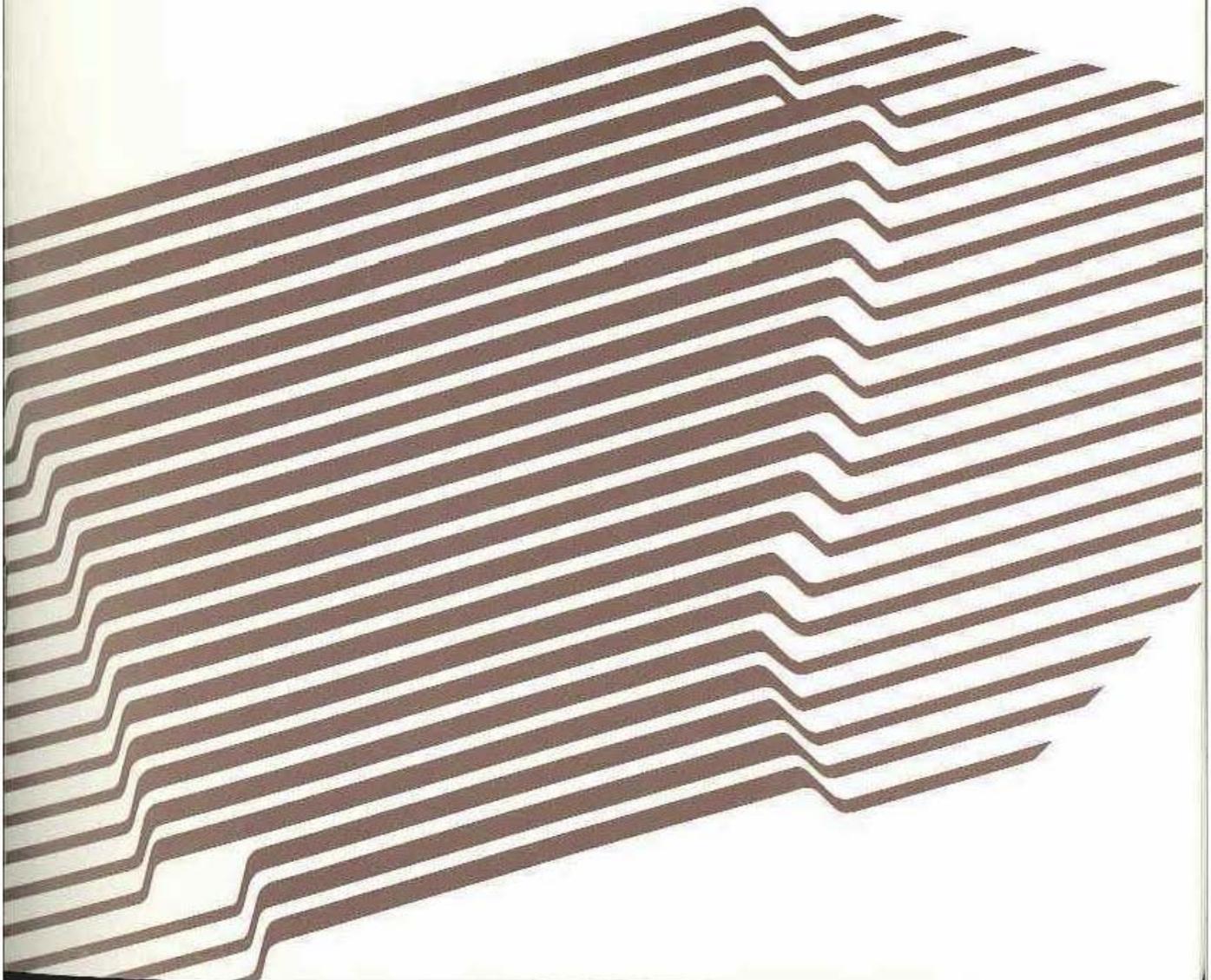


ARKANSAS SCIENCE &
TECHNOLOGY AUTHORITY



1984
Annual Report



BOARD AND COMMITTEES



BOARD OF DIRECTORS— 1983 AND 1984

*Mr. William Bowen, Vice Chairman,
Chief Executive Officer and Chairman of the Board
First Commercial Bank
Little Rock, Arkansas
Term expires: 1986*

*Mr. Bill Butler
Executive Vice President
Farmers Merchant Bank and Trust
Rogers, Arkansas
Term expires: 1985*

*Dr. Jocelyn Elders, Secretary
Department of Pediatrics
University of Arkansas Medical Sciences Campus
Little Rock, Arkansas
Term expires: 1986*

*Dr. Phyllis Garnett
Director
Department of Pollution Control and Ecology
Little Rock, Arkansas
Term expires: 1985*

*Dr. Ronald W. Hart, Chairman
Director
National Center for Toxicological Research
Jefferson, Arkansas
Term expires: 1987*

*Mr. Bart Lindsey
Executive Vice President
First National Bank
Helena, Arkansas
Term expires: 1986*

*Representative John Lipton
Warren, Arkansas
Term expires: 1989*

*Mr. Jerome McGee
Jonesboro, Arkansas
Term expires: 1990*

*Mr. Charles Mims
Division Vice President and Director
Sparrow Missile Systems
General Dynamics
East Camden, Arkansas
Term expires: 1988*

*Mr. Dick Nesbitt
East Camden, Arkansas
Served: 1983 and 1984*

*Dr. Joe Nix
Professor
Department of Chemistry
Ouachita Baptist University
Arkadelphia, Arkansas
Term expires: 1987*

*Dr. Paul Noland
Mayor of Fayetteville
Professor
Department of Animal Sciences
Fayetteville, Arkansas
Term expires: 1987*

*Mr. Louis Ramsay
Attorney
Hamsay Law Firm
Pine Bluff, Arkansas
Term expires: 1988*

*Honorable Sam Richardson
Justice of the Peace
Texarkana, Arkansas
Term expires: 1990*

*Dr. Lothar Schafer
Professor
Department of Chemistry
University of Arkansas
Fayetteville, Arkansas
Term expires: 1985*

*Mr. Cal D. Shepherd
Magnolia, Arkansas
Served: 1984*

*Dr. Win Thompson
Vice Chancellor for Finance and Administration
University of Arkansas
Term expires: 1990*

*Dr. William Willingham
Pine Bluff, Arkansas
Term expires: 1986*

ARKANSAS SCIENCE & TECHNOLOGY AUTHORITY BOARD OF DIRECTORS OFFICERS AND COMMITTEES 1984

EXECUTIVE COMMITTEE

*William H. Bowen
Jocelyn Elders
Ronald W. Hart
John Lipton
Louis Ramsay
Win Thompson*

OFFICERS OF THE BOARD OF DIRECTORS

*Ronald W. Hart, Chairman
William H. Bowen, Vice Chairman
Jocelyn Elders, Secretary*

RULES AND PROCEDURES COMMITTEE

*Louis Ramsay, Chairman
John Lipton
Charles Mims
Sam Richardson
Lothar Schafer*

BUDGET AND BOND COUNSEL COMMITTEE

*William H. Bowen, Chairman
Bart Lindsey
Jerome McGee
Joe Nix*

PLANNING COMMITTEE

*Win Thompson, Chairman
Jocelyn Elders
Phyllis Garnett
Paul Noland*

GOVERNMENT RELATIONS COMMITTEE

*John Lipton, Chairman
Bill Butler
Paul Noland
Louis Ramsay
Bill Willingham*

ARKANSAS SCIENCE & TECHNOLOGY AUTHORITY STAFF

*Dr. John W. Ahlen
Executive Director
Alice Rumph Smith
Deputy Director
Cassie Tavorn
Secretary
Sue Yarbrough
Secretary*



Bill Clinton
Governor



John W. Ahlen
Executive Director

FROM THE CHAIRMAN



Ronald W. Hart

February 25, 1985

Governor and Members of the 75th General Assembly
State Capitol Building
Little Rock, AR 72201

Dear Governor and Members of the 75th General Assembly:

Please find attached a copy of the Arkansas Science & Technology Authority's first annual report, which details the activities and accomplishments of the Authority from its inception through calendar year 1984. It is my pleasure, on behalf of the Authority's Board of Directors, to inform you that the Authority has accomplished in its first year more than what was originally anticipated. The Authority has established itself as the state's science agency, has conducted extensive planning activities, has participated in the formation of an economic development plan for the State of Arkansas, and has helped to elevate the image of Arkansas as a center for scientific and technological development.

The Authority has benefited from the contributions of many individuals to whom it expresses its gratitude.

Sincerely,

A handwritten signature in cursive script, appearing to read "Ronald W. Hart".

Ronald W. Hart, Ph.D.
Chairman of the Board

A PROFILE OF THE AUTHORITY

Science is an activity whose goal is gaining new knowledge and understanding about the physical environment. The application of that new knowledge to processes and products is the work of engineering and technology. Both science and technology are a part of the foundation of society and both are factors that cause change in society. The pace of this science- and technology-driven change is accelerating, and the need for public- and private-sector decision makers to have an understanding of science and technology is increasingly important.

Any economic development strategy that has as one of its goals the sustained growth of the economy requires attention along a broad front. Current economic development philosophy in about 30 states now focuses increasing attention on the parts of this front that are most important to science and technology. These parts include science and technology education, basic research, applied research, product development and establishment of entrepreneurial, advanced-technology environments such

as incubators and science parks.

Attention by state government to this part of the spectrum of economic development requires a substantial commitment in terms of financial resources and the realization that results are to be measured in the long term. For example, the discovery of nuclear magnetic resonance (NMR) was made in the 1940's, but it was not until the 1970's that NMR became commercially available as a medical imaging technology.

The advances of science and technology will be made and the associated benefits will be reaped. The question is, where will this development take place? It will happen where science and technology are nurtured, attended, encouraged, and supported.

Arkansas recognized this. With the establishment of the Arkansas Science & Technology Authority, the state acknowledged that technological progress is essential for a vigorous and competitive economy. This progress will come not only through the continued development and expansion of high technology indus-

tries, but through the systematic application of scientific and technological advances in manufacturing processes and equipment, biomedical sciences, agriculture and education.

Acting upon the recommendation of a Legislative Council Task Force comprised of business, academic, labor and financial leaders in the state, the General Assembly passed Act 859 of 1983, creating the new Authority. Governed by a 16-member Board of Directors appointed by Governor Bill Clinton from business and industry, academic institutions, the scientific community and state and local governments, the Authority represents a partnership that has been key to the success of advanced technology developments in other states.

THE MISSION

The Authority is mandated "to provide leadership, direction, incentives and technical assistance to enable this state and its people to gain the advantages and benefits of advanced science and technology."



THE CHARTER

The Authority's charter gives it broad powers to be used in carrying out its mission to develop the state's scientific and technological resources. These powers include the authority to buy and sell real estate, companies, and patents; to make loans and investments; and to issue revenue bonds.

The Authority's mandate gives it statutory authorization to invest its resources in creative incentive packages to stimulate the development of the state's scientific and technological base.

PROGRAMS

In 1984, the Arkansas Science & Technology Authority used its statutory powers in carrying out its mission through the following three programs:

PLANNING AND ADMINISTRATION. The planning and administration program is responsible for developing the Authority's action agenda and for administering the Authority's programs. Of particular importance are (1) developing and carrying out the long-range Arkansas 2020 Plan, (2) coordinating

its planning activities with other agencies, and (3) planning specific Science & Technology Authority projects, including project definition and feasibility.

TECHNOLOGY TRANSFER AND DEVELOPMENT. The purposes of the technology transfer and development program are to encourage and assist in the transfer of technology from laboratories and other sources to the marketplace and to develop the ability of business and industry to use science and advanced technology. Activities of special interest include (1) actively transferring technology, (2) providing technical assistance to the Arkansas Industrial Development Commission, and (3) developing biomedical resources in central Arkansas.

INVENTORY AND INFORMATION. The inventory and information program is designed to identify the scientific, engineering and technological resources of Arkansas, to catalog this information for use by public- and private-sector decision makers, and to engage in a public information and education effort to improve the image of Arkansas as a state

committed to supporting technology development.

ADMINISTRATION

The members of the Board of Directors of the Arkansas Science & Technology Authority are appointed by the Governor—with Senate confirmation—to staggered six-year terms. There are four standing committees of the Board: (1) the Rules and Procedures Committee, (2) the Budget and Bond Counsel Committee, (3) the Planning Committee, and (4) the Government Relations Committee. Officers of the Board are elected annually.

The Executive Director of the Authority is John W. Ahlen. Dr. Ahlen came to the Authority from the Science Unit of the Illinois Legislative Council. He received a Ph.D. in physiology with an emphasis in bioengineering from the University of Illinois at the Medical Center and is the author of numerous reports on technology and articles on science and public policy.

The Authority's office is located in the state's capital city, Little Rock.

THE FIRST YEAR IN REVIEW

SUMMARY OF 1983

The Authority's Board of Directors met for the first time in July 1983. The Board elected officers, organized itself into four working committees, and undertook the tasks of establishing an office and hiring staff. Ronald W. Hart, Ph.D., Director of the National Center for Toxicological Research in Jefferson, was elected chairman. William H. Bowen, President, Chief Executive Officer and Chairman of the Board of First Commercial Bank, was elected vice chairman. Jocelyn Elders, M.D., Professor of Pediatrics at the University of Arkansas for Medical Sciences, was elected secretary. The four committees of the Board were (1) Budget and Bond Counsel Committee, (2) Rules and Procedures Committee, (3) Advisory Committee and (4) Personnel Committee. The offices of the Authority were estab-

lished at 200 Main Street, Suite 210, in Little Rock.

1984—FIRST QUARTER

In the first quarter of 1984, the Board of Directors culminated its search for the Authority's first executive director, and shaped its agenda for the 1984 calendar year. All authorized staff positions were filled by mid-March. The mission of the Authority and the expectations of the Authority were explored in interviews with individuals who were instrumental in recommending the creation of the Science & Technology Authority.

SECOND QUARTER

In the second quarter of 1984, the Authority undertook two major projects. One of these projects had to do with the image of Arkansas as a place where scientific research and engineering

development were being done. In assessing the Authority's mission and expectations, it was found that there were many innovative technology-based enterprises and productive university and government laboratories in the state. These resources are scattered about the state and many of them are not known outside their locale. The Authority undertook to prepare, with the help of Combs & Company, a slide show explaining both the Authority's mission and Arkansas' rich scientific and technological resources.

The other major project was an intensive planning effort to determine the Authority's direction for the next three years. With the help of Arthur D. Little, Inc., the Authority brought together leaders in the state's scientific, engineering, educational and business communities to explore the state's scientific and technological resources, opportunities, and methods



to develop the resources and to take advantage of the opportunities. The planning effort showed numerous state needs that fit within the Authority's mission and identified numerous opportunities for future development. The Board of Directors met for two days in June to review the results of the focus groups and identified three priority areas: planning, inventorying Arkansas' scientific and technological resources, and transferring technology from university and government laboratories to the private sector. There was also consensus among the directors that there was a wealth of biomedical resources in central Arkansas that can be the basis of future development.

THIRD QUARTER

In early July, the Authority, in cooperation with the Arkansas Industrial Development Commission, assisted Congressman Beryl Anthony in

demonstrating the state's scientific, technological and industrial strengths to industrial representatives of the Scientific Apparatus Makers Association.

The Authority also began to establish itself as a central node in the network of scientists, engineers and technology-based businessmen inside Arkansas and outside the state's borders. This was due to efforts by members of the Board of Directors and staff. Dr. Hart, for example, developed a working paper for the National Governors' Association on how states could use federal laboratories in state economic development efforts. The network was extended as the Authority learned of the activities of Arkansas inventors and technology-driven businesses.

FOURTH QUARTER

The major undertakings of the Authority during the fourth quarter involved ad-

ressing questions of project finance and economic development. These activities were begun during the third quarter and grew in magnitude as Governor Clinton mapped out his economic development strategy for Arkansas through the next decade. The Authority's part in constructing the Governor's economic development program built on the Authority's earlier planning efforts. During this period, the Authority was aided in its efforts by the Counsel for Community Development, Inc. When Governor Clinton unveiled his economic development plan in December, he announced three proposed programs for the Authority: (1) a basic and applied research program, (2) an incubator program, and (3) a seed capital program. The Governor further recommended that the Authority's operating budget be more than doubled in the next biennium so that it could support these new initiatives.

A PLAN FOR SCIENCE & TECHNOLOGY DEVELOPMENT

The Arkansas Science & Technology Authority's enabling legislation gives it the broad mission to bring the benefits of science and advanced technology to the citizens of the state. In its first full year of operation, the Authority's Board of Directors concentrated on planning how to refine this broad mission into specific programs that would achieve the overall goal. Its planning effort yielded six well-defined programs, implementation of which is the Authority's main goal in the next biennium. These six programs are briefly discussed here.

PLANNING

The Authority's 1984 planning activities yielded valuable information and the Board of Directors recognized the value of a continuing planning effort. It is anticipated that implementation of the planning activities will provide the Authority, as well as public- and private-sector decision makers, with insights about the state's future. These insights will be gained through focus group meetings in which scientists, engineers, and business executives will share their concepts and impressions about the future for specific subject areas.

INVENTORY

The Authority's planning process uncovered the need for an inventory of Arkansas' scientific and technological resources. Such an inventory has numerous segments and multiple levels of detail. Eventually the inventory will include both public institutions and private enterprises that carry out scientific, engineering and technological innovation activities. The inventory would begin first with specific programs of excellence, and would ultimately include individuals engaged in these activities and perhaps even specialized scientific apparatus. Such a database would be made available to public- and private-sector decision makers.

TECHNOLOGY TRANSFER

The implementation of a technology transfer program will facilitate both (1) finding solutions to industrial problems and (2) identifying new products and processes and then helping to move the information from university and government laboratories to the private sector.

The following three programs were proposed for the Authority by Governor Bill Clinton as part of his



economic development program for the State of Arkansas:

BASIC AND APPLIED RESEARCH

This is a two-part program. First, the basic research component would continue in Arkansas a previously established effort sponsored by the National Science Foundation's Experimental Program to Stimulate Competitive Research (EPSCoR). The major objective of the basic research component is to elevate the reputation of Arkansas scientists so that they will become nationally competitive for federal research grants. The basic research component might also be directed at strengthening targeted fields of science so as to make them nationally recognized as fields of excellence. Second, the applied research component would have as its goal encouraging Arkansas enterprise to invest in university-based problem solving. For applied research projects that have an economic development or job-creation potential, the Authority would match the research investment by private enterprise. An Arkansas college or university would be the recipient of state funds in both the basic and

applied research components.

INCUBATORS

Incubators are facilities especially designed to foster success of new, small businesses. The Authority's incubator program would invite the State's colleges and universities to submit proposals for establishing university-based incubators for innovative new businesses. The incubators would not subsidize new enterprises, but would provide them with space, shared services (for example, secretarial and copying services) and access to scientific and engineering faculty, all for a minimum fixed fee.

SEED CAPITAL

The seed capital program would enable the Authority to invest in new businesses and new products and processes that are too risky to obtain commercial financing, and too small to attract venture capital. The three investment tools that would be used include an equity investment in up to forty-nine percent (49%) of an enterprise, a low-interest loan, or a royalty agreement centered on a new product or process. This is an investment program, not a grant program. The original investments would be recovered.

