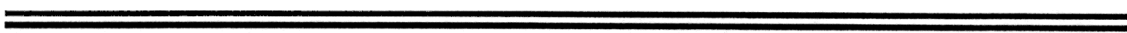


**ALBERTA SCIENCE AND RESEARCH
AUTHORITY**

1995/96 ANNUAL REPORT



Message from the Minister Responsible for Science and Research

In 1993, the Government of Alberta expressed a clear vision for Alberta's future in "Seizing Opportunity, Alberta's New Economic Development Strategy", which was based on input from hundreds of thousands of Albertans throughout the province. The vision described an economy that, on a sustainable basis, generates the wealth needed to maintain and enhance our quality of life. This economy would provide opportunities for meaningful work for our children, and our children's children, while protecting the environment in which we live and work. Science, technology, and industrial innovation were identified as critical components in achieving this vision.

The Premier's Council on Science and Technology (PCST) developed a provincial policy framework for science and technology in 1993. In early 1994, the PCST recommended "that a long-term strategic plan with both long and short term goals for Government of Alberta research and development (R&D) be developed and updated on an annual basis". The PCST further recommended "that a 'top body' be created to develop, implement, operate and evaluate the strategic plan". In September, 1994 the government created the Alberta Science and Research Authority (ASRA) as that "top body". I am honoured that the Premier asked me to become the Minister Responsible for Science and Research.

The first 18 months in the life of ASRA have been an exciting period of learning and growing. ASRA's Board of capable, dedicated Albertans has worked hard, along with the staff of the secretariat, to establish the framework for managing the government's investment in science and research. This annual report communicates the strategic framework that the board has established and outlines ASRA's major accomplishments in implementing these strategies during this start-up period. I want to thank all the members of the Authority and the hundreds of Albertans who have contributed their time and energy to assist ASRA in its deliberations.



Honourable Dianne Mirosch
Minister Responsible for Science and Research

Message from the Chairman of ASRA's Board of Management

Creating a diverse knowledge-intensive economy offers the greatest potential to create, on a sustainable basis, the wealth and employment needed to achieve Alberta's economic vision. By building on existing Alberta strengths, the knowledge-intensive sectors of advanced technology and life sciences can, within a decade, become major 'clusters', adding significantly to Alberta's economy and creating thousands of high quality jobs. Equally important, through technology, Alberta's resource sectors can become more competitive, and contribute many new world-traded products and services. The Alberta Science and Research Authority (ASRA) was created to ensure that Alberta has the science and research foundation that it needs to move into the 21st century and to ensure that Alberta derives the maximum benefit from its investments in science and research.

We build on a strong base - our excellent, scholarly-based universities provide outstanding, highly-qualified individuals and cutting edge science and technology; we have a strong, globally competitive, technology intensive private sector; the Alberta Economic Development Authority is demonstrating that the private sector and government can work together to achieve a common vision; the Alberta Science and Research Authority is facilitating a pan-Alberta approach to research and its applications.

The advice and ideas of all Albertans are important to us as we move forward. In this regard, we have consulted, and will continue to consult with Albertans through workshops, questionnaires, and small group discussions and meetings.

As you will read in this report, this first 18 months has seen significant progress in creating a management system to maximize the benefits derived from the province's investment in R&D. Nevertheless there are many challenges on the road ahead. Our R&D infrastructure is aging, the universities must be aided in their pursuit of scholarly excellence, we need a more entrepreneurial culture and enhanced access to investment capital to facilitate commercialization of the results of R&D.

I would like to thank my colleagues on the Board of Management for their dedication and commitment. I would also like to thank the staff of the Secretariat and the consultants who have worked with us for their hard work and the excellent results that have been achieved.

My colleagues and I are excited about ASRA's role in enhancing the effectiveness of science and research in Alberta. We look forward to working with Albertans to enhance the contribution of science and research to the sustainable prosperity and quality of life of all Albertans.



R.B. (Bob) Church
Chairman of the Board of Management
Alberta Science and Research Authority

Introduction

This report covers the period from September 1994 to March 31, 1996, the first 18 months in the life of the Alberta Science and Research Authority (ASRA). During this period, ASRA came into existence and created the organizational elements upon which its future contributions will be built. Although the tasks associated with launching this new and unique venture have been the focus of much of the organization's energy, ASRA has made a number of significant contributions to advancing science and research in Alberta, which are documented here.

The following chronology describes some of the important events in the life of ASRA during the reporting period.

- | | |
|--------------------------|--|
| September 15,1994 | Alberta Science and Research Authority was established by Premier Ralph Klein. The Honourable Dianne Mirosh was appointed Minister Responsible for Science and Research. |
| October 1994 | Alberta Science and Research Authority Board of Management was appointed comprising 18 members representing industry, universities and the public sector. |
| November 1994 | Alberta Science and Research Authority began a series of workshops to obtain public input into strategic directions. Groups in Edmonton, Calgary, and Lethbridge provided input to the process which was completed in April, 1995. |
| April 1995 | The report "Review and Prioritization of Alberta Government Science and Research Investment by the Science and Research Authority" by George Cornish was completed. |
| May 1995 | Alberta Science and Research Authority Board of Management defined the fundamental direction for ASRA by establishing the vision, mission, and strategies to guide the Authority. |
| September 15,1995 | The Science and Research Authority Act was proclaimed. |
| September 1995 | Dr. Robert J. (Bob) Fessenden was appointed as President of the Alberta Science and Research Authority. |

ASRA Board

ASRA is an independent Board of experienced and informed members of the business and research communities in Alberta who promote the accomplishment of the vision, mission, and goals for science and research in Alberta (Appendix 1) through their advice and guidance and through their active participation on issue focused task forces.

ASRA Staff

The Board is supported in its efforts by a small secretariat that undertakes studies at the Board's request (Appendix 1). To augment the secretariat, ASRA retained the services of consultants to assist with various Board task forces.

The base budget of the Premier's Council for Science and Technology, which was transferred to ASRA, was sufficient to cover some of the operating costs of the Authority. The Alberta Research Council provided invaluable assistance to ASRA during its start-up period by providing financial and infrastructure support prior to appropriation of sufficient funds to support ASRA operations.

ASRA Mandate

- Stimulate research and development and related scientific activities in Alberta;

Develop a science and research policy and priorities that are compatible with the economic and social priorities of the government;
- Conduct an annual review of all Government science and research policies, priorities, and programs and their compatibility with the economic and social policies and priorities of the Government and recommend to Executive Council the amount of public money that a program should receive;
- Develop and monitor a financial management plan for the science and research investments of the Government that maximizes returns to economic and social development, minimizes duplication and promotes co-operation;
- Promote communication on matters related to science and research among the science and research community, business community and general public;
- Encourage the science and research community and infrastructure in Alberta to attain international excellence, to enable Alberta to be internationally competitive

Evaluate applications for grants under the Science and Research Authority Act and Regulations;
- Carry out any other activities related to science and research that the Minister or the Board considers appropriate.

Vision

Albertans will enjoy sustainable prosperity and quality of life through science and research.

Mission

The mission of the Alberta Science and Research Authority (ASRA) is to enhance the contribution of science and research to the sustainable prosperity and quality of life of all Albertans.

Strategies for Science and Research in Alberta

1. Promote the establishment of a policy environment that encourages research and development and the application of technology for the economic and social development of the province.
2. Define key science and technology priorities and approaches to achieve the economic and social objectives of the Government.
3. Encourage the development and implementation of new high-value strategic science and research opportunities.
4. Monitor and evaluate all government supported science and research to ensure that it is addressing the key priorities and balances short, medium and long term provincial economic and social needs.
5. Recommend improved operational and strategic management of science and research activities to minimize duplication, address fragmentation and ensure maximum coordination and collaboration with industry, other provincial governments, and federal departments and agencies.
6. Promote an increase in the transfer, application, and commercialization of science and technology-based products, processes, and services for the creation of jobs and wealth.
7. Support and encourage excellence in the science and research community and infrastructure in Alberta to attain international excellence.
8. Increase public awareness, understanding, and appreciation of the importance of science and research to both the economy and quality of life.

Accomplishments

The discussion of accomplishments by ASRA during the reporting period is organized on the basis of the strategies identified by the Board.

Strategy 1 Promote the establishment of a policy environment that encourages research and development and the application of technology for the economic and social development of the province.

The policy framework for science and research in Alberta was developed by the Premier's Council on Science and Technology in January, 1993, through publication of "Alberta's Policy on Science, Technology, and Industry". This policy stated that "Alberta is committed to advancing science and technology as an integral part of the Province's economy and culture. It [Alberta] recognizes that science and technology is a wealth generator and a powerful mechanism that can help shape a . . . vibrant, knowledge-based economy".

The ASRA Board concluded that the existing policy framework was adequate for the present.

Strategy 2 Define key science and technology priorities and approaches to achieve the economic and social objectives of the Government.

Key Activities and Results

R&D Priorities

ASRA commissioned a task force on "R&D Priorities and Measurement" (Appendix 2) to develop a priority evaluation framework. The Task Force conducted a comprehensive review of the literature and attended the Natural Sciences & Engineering Research Council (NSERC) conference on research measurement held in Ottawa during the fall of 1995. On the basis of this investigation, the ASRA task force selected the methodology used successfully by the Australian research organization, Commonwealth Scientific and Industrial Research Organization (CSIRO), as the most advanced process in the world at this time. The CSIRO model formed the basis for the priority setting process used in the subsequent consultation during 1996/97.

Beginning in February 1996, ASRA initiated planning for a consultation process to define science and research priorities for Alberta using the framework developed by the initial task force. The consultation was conducted during 1996/97.

Commercialization of Biotechnology in Alberta

The ASRA Board identified the biotechnology industry as an important priority that required focused study. A task force under the chairmanship of Dr. Wm. Cochrane (Appendix 2) was commissioned to conduct a study of commercialization of biotechnology.

In November 1995, ASRA published the report, "*Commercialization of Biotechnology in Alberta*", based on a review of biotechnology research and industrial activities and organizations in Alberta. The report contained thirty-one (31) recommendations to assist in the successful commercialization of biotechnology, most of which concerned

the policy environment for biotechnology in Alberta. ASRA is ensuring that all of the recommendations are being actively pursued by the biotechnology community in Alberta.

Health Research Industry

In January 1996, four Ministries including Science and Research, Advanced Education and Career Development, Health, and Economic Development and Tourism, initiated a study of the health research industry in Alberta. ASRA has been providing secretariat support to the Health Research Industry Task Force, chaired by Mr. Fred Stewart.

Strategy 3 Encourage the development and implementation of new high-value strategic science and research opportunities.

Throughout the reporting period ASRA Board members and staff built and maintained networks to establish ASRA's contribution in enhancing science and research in Alberta.

Strategy 4 Monitor and evaluate all government supported science and research to ensure that it is addressing the key priorities and balances short, medium and long term provincial economic and social needs.

Key Activities and Results

Review and Prioritization of Government Science and Research

ASRA commissioned George Cornish to review R&D and Related Science Activity (RSA) identified in 1995/96 departmental budgets and to recommend a plan for an orderly review process. The resulting report, "*Review and Prioritization of Alberta Government Science and Research Investment by the Science and Research Authority*", was received by Cabinet on May 5, 1995. Cabinet accepted the recommendation that each ministry prepare a research business plan that was to be provided to ASRA for review.

Review of Departmental Research Business Plans

The first annual review of government supported science and research was conducted during the fall of 1995. Based on this review, the ASRA Board commissioned a more detailed study of a major portion of the provincial government's science and research infrastructure (see Strategy 5) and undertook to revise its 1996 guidelines to government departments and agencies with regard to research business plans for 1997/2000.

ASRA will conduct its second annual review of government supported science and research in September 1996. Recommendations pursuant to this review will be developed and submitted to Government in October 1996.

Strategy 5 Recommend improved operational and strategic management of science and research activities to minimize duplication, address fragmentation and ensure maximum coordination and collaboration with industry, other provincial governments, and federal departments and agencies.

Key Activities and Results

Information Technology and Telecommunications Infrastructure

The Premier's Council on Science and Technology undertook a study of the status of information technology and communications in Alberta. The study was conducted, under the chairmanship of Dr. Marshall M. Williams, during the fall and winter of 1994 with the report, "*Alberta's Information Technology and Telecommunications Infrastructure: Building on Our Strengths*", presented to the Minister in March, 1995. The report advised the Alberta government on its approach to information technology and telecommunications. This report was an important foundation for subsequent government actions including appointment of a Chief Information Officer for the Government of Alberta.

Science and Research Infrastructure Review

On the basis of the first annual review of government supported science and research (see Strategy 4), ASRA identified the need for a thorough review of the provincial government's intramural research infrastructure. Accordingly, in February, 1996, ASRA commissioned a task force (Appendix 2) to initiate a review of the science and research infrastructure in the following government departments and agencies:

- Alberta Agriculture, Food and Rural Development;
- Alberta Agricultural Research Institute;
- Alberta Economic Development and Tourism;
- Alberta Energy;
- Alberta Environmental Protection;
- Alberta Research Council;
- Alberta Transportation and Utilities.

The task force, in co-operation with the Technology and Research Advisory Committee (TRAC), will conduct the review during 1996/97.

Strategy 6 Promote an increase in the transfer, application, and commercialization of science and technology-based products, processes, and services for the creation of jobs and wealth.

Key Activities and Results

Barriers to Technology Commercialization in Alberta

In February 1996, the ASRA Board commissioned a Board task force (Appendix 2) to undertake a study of barriers to the development and commercialization of technology in Alberta. The task force retained Davitech Inc. to conduct the study, which was initiated early in 1996/97.

Strategy 7 Support and encourage excellence in the science and research community and infrastructure in Alberta to attain international excellence.

Key Activities and Results

Scholarly Activity in the Post Secondary System.

The Premier's Council on Science and Technology was commissioned by the Premier and the Ministers of Economic Development and Tourism and Advanced Education and Career Development to conduct a study to support a policy on government support of scholarly activity. This commission was subsequently transferred to ASRA. The task force under the chairmanship of Dr. Seamus O'Shea (Appendix 2) completed the study during spring 1995. The report, "*Scholarly Activity in the Post Secondary System*", was tabled in April, 1995.

Strategy 8 Increase public awareness, understanding, and appreciation of the importance of science and research to both the economy and quality of life.

Key Activities and Results

ASRA commissioned a Board task force (Appendix 2) to develop and monitor implementation of a communications program for the authority.

Meetings with Editorial Boards of Print Media

The task force met with the editorial Boards of the *Edmonton Journal*, *Edmonton Sun*, *Calgary Herald* and *Calgary Sun* to promote more exposure for science and research in these publications.

World Wide Web site established: <http://www.gov.ab.ca/~sra/index.html>

ASRA now has a profile on the international and domestic scenes and receives approximately 300 visits per week.

Selected Alberta Science and Research Success Stories

In the Spring of 1996, ASRA published approximately 40 stories of science and research projects supported by public funding that have produced social and economic benefits for Alberta.

Alberta Advantage Television Broadcast

ASRA participated with the Alberta Research Council, Economic Development and Tourism, Health and the Alberta Heritage Foundation for Medical Research in production of one program in the series entitled *Alberta Advantage*. The program illustrated the value of public funding of research and development for the social and economic benefits to Alberta.

National Science and Technology Week (NSTW)

Students and the public had the opportunity to experience the internet as a result of ASRA's participation in NSTW in October 1995. Following that event, ASRA facilitated the establishment of a broader based steering committee in Edmonton to oversee the planning for NSTW'96. ASRA also facilitated the joint official launch of NSTW with the Calgary and Edmonton Steering Committees.

Financial Report

During the start-up phase covered by the reporting period, responsibility for management of ASRA's financial resources was included in the expenditure envelop of other departments and agencies. Funds transferred from the Premier's Council on Science and Technology and personnel seconded from Economic Development and Tourism have been accounted for by that department. Both financial and personnel resources that were provided through the Alberta Research Council have been accounted for by the Alberta Research Council. ASRA will be reported as an independent agency beginning in 1996/97.

ASRA Reports

Alberta Science and Research Authority, 1995, The Commercialization of Biotechnology in Alberta: Alberta Science and Research Authority, 30 pp

Alberta Science and Research Authority, 1995, Scholarly Activity in the Post Secondary System: Premier's Council on Science and Technology, unpublished draft report April 24, 1995, 35 pp. (Available through ASRA)

Alberta Science and Research Authority, 1995, Review and Prioritization of Alberta Government Science and Research Investment by the Science and Research Authority: ASRA unpublished report, 35 pp.

Alberta Science and Research Authority, 1996, Selected Alberta Science and Research Success Stories: Alberta Science and Research Authority, 40 pp.

Premier's Council on Science and Technology., 1995, Alberta's Information Technology and Telecommunications Infrastructure: Building on Our Strengths:, prepared by Dr. Marshall Williams, 67 pp. (Available through ASRA)

Appendix 1 ASRA People

ASRA Board

Board Members	ASRA Role	Affiliation
Dr. Brian Barge	Resigned (Feb. 1996)	President Alberta Research Council
Mr. Albert Bell		President Albert Bell Development Consultants
Ms. Edwina Bobocel		Sr. Consultant, Community Ventures Limited
Dr. Len Bruton		Professor of Engineering, University of Calgary
Dr. Bob Church,	Chairman	Owner, Lochend Luing Ranch
Dr. William Cochrane		President, W.A. Cochrane & Associates Inc. and Director, MDS Health Ventures Inc.
Dr. Ruth Collins-Nakai		Associate Dean, Faculty of Medicine, University of Alberta
Dr. Robert Fessenden,	President, (Appointed Sept. 1995)	President, ASRA
Mr. Ian Hamilton	Resigned (April, 1996)	Bank of Montreal
Mr. Jack MacLeod		Shell Canada CEO (retired) Foothills Hospitals Foundation
Mr. John McDougall		President, McDougall and Secord Ltd., Poole Chair in Engineering Management, University of Alberta
The Honourable Dianne Mirosh		Minister Responsible for Science and Research, M.L.A. Calgary-Glenmore
Mr. Monte Montemurro		Senior Vice-President and Chief Technical Officer, Pan Canadian Petroleum Ltd.
Mr. Michael Pfeiffer		President and CEO, QC Data International
Mr. Glen Rainbird		President and CEO, TRILabs
Dr. Rob Rennie		Vice-President, Agrium Inc.
Mr. Ed Stelmach, MLA		M.L.A. Vegreville-Viking
Dr. Lorne Taylor, MLA,	Vice-Chairman	Chairman, Alberta Research Council, M.L.A. Cyprus-Medicine Hat
Mr. Ben Thorlakson		President, Thorlakson Feedyards

ASRA Staff

Staff Members	Responsibility	
Dr. Robert Fessenden	President	Secondment from ARC
Ms. Barbara Nyland	Director	Transferred from Premier's Council on Science and Technology
Dr. Charles Reichert	Senior Science Advisor	Secondment from ED&T (ARC)
Ms. Catherine Gordey	Communications Strategist	Secondment from ED&T
Ms. Arlane Caruk	Administrative Officer	Transferred from Premier's Council on Science and Technology
Ms. Marie Gillis	Administrative Assistant	Transferred from Premier's Council on Science and Technology
Mr. Marvin Mishio	Science Advisor	Secondment from ED&T

Appendix 2 -- ASRA Task Force Membership

R&D Priorities and Measurement Task Force

Task Force Members	Affiliation
Mr. John McDougall	ASRA Board, Chairman
Dr. Ruth Collins-Nakai	ASRA Board
Dr. Randall Morck	University of Alberta
Dr. Bob Weir	Viridian (Sherritt Gordon)
Mr. Tim Fell	TRLabs
Mr. Peter Tertzakian	ACUMEN Partners
Ms. Barbara Nyland	ASRA Staff
Mr. Marvin Mishio	ASRA Staff

Biotechnology Task Force

Task Force Members	Affiliation
Dr. William Cochrane	ASRA Board, Chairman
Dr. Ruth Collins-Nakai	ASRA Board
Dr. Rob Rennie	ASRA Board
Mr. Ian Hamilton	ASRA Board
Dr. Alfred Sailer	ACUMEN Partners
Ms. Barbara Nyland	ASRA Staff

Health Task Force

Task Force Members	Affiliation
Mr. Al Bell	ASRA Board, Chairman
Dr. Ruth Collins-Nakai	ASRA Board
Mr. Jack MacLeod	ASRA Board
Ms. Barbara Nyland	ASRA Staff

R&D Infrastructure Task Force

Task Force Members	Affiliation
Dr. Len Bruton	ASRA Board, Chairman
Mr. Ed Stelmach	ASRA Board
Mr. Jack MacLeod	ASRA Board
Mr. John McDougall	ASRA Board
Mr. Monte Montemurro	ASRA Board
Dr. Charles Reichert	ASRA Staff

Information Technology Task Force

Task Force Members	Affiliation
Mr. Michael Pfeiffer	ASRA Board, Chairman
Dr. Ruth Collins-Nakai	ASRA Board
Mr. Glen Rainbird	ASRA Board
Mr. Tom Ogaranko	Consultant

Financing Technology Commercialization Task Force

Task Force Members	Affiliation
Mr. Ian Hamilton	ASRA Board, Chair
Dr. Bob Church	ASRA Board
Ms. Edwina Bobocel	ASRA Board
Mr. Ed. Stelmach	ASRA Board
Mr. Ben Thorlakson	ASRA Board
Dr. Lorne Taylor	ASRA Board
Mr. Bill Croft	Calgary Research & Development Authority; AEDA Technology Task Force
Mr. Earl Nent	Alberta Economic Development and Tourism
Dr. Charles Reichert	ASRA Staff

Scholarly Activity Task Force

Task Force Members	Affiliation
Dr. Seamus O'Shea	University of Lethbridge, Chair
Dr. Len Bruton	ASRA Board
Mr. John (Jack) O'Neill	Jack O'Neill Consulting
Mr. John McDougall	ASRA Board
Dr. Rob Rennie	ASRA Board
Dr. Lorne Taylor	ASRA Board
Ms. Barbara Nyland	ASRA Staff

Communications Task Force

Task Force Members	Affiliation
Ms. Edwina Bobocel	ASRA Board, Chair
Mr. Al Bell	ASRA Board
Mr. Mark Patton	Minister's Office
Mr. Lloyd Avram	Nortel
Dr. Sharon Thomas	Calgary Board of Education
Ms. Barbara Nyland	ASRA Staff
Mr. Tom Ogaranko	Consultant
Ms. Catherine Gordey	ASRA Staff