



Development

Sustainable

Collaborate

Proactive

Global

Information and Communications Technology. Life Sciences. Energy Research.

Vision

Partnership

Strategic

Catalyst

Technology

Alberta Science and Research Authority 2001

A foundation for the future.

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## ASRA Mission

To enhance the contributions of science and research to the sustainable prosperity and the quality of life of all Albertans.

### ASRA Mandate

ASRA works in partnership with government departments, agencies and other stakeholders to:

- Stimulate research and development and related scientific activities in Alberta.
- Develop science and research policies and priorities compatible with economic and social priorities of the government.
- Conduct annual reviews and evaluations of all government science and research policies, priorities and programs.
- Develop and monitor a financial management plan for government science and research investments.
- Promote communication on matters related to science and research.
- Encourage Alberta's science and research sector to attain international competitiveness and recognition as a leader.

### ASRA Vision

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

The future depends on knowledge. Around the world a thriving economy and a high standard of living are linked directly to how well knowledge is applied. The cycle of creating and cultivating new ideas is becoming increasingly competitive and those who foster it within their own borders will be richly rewarded.

## Setting a New Pace

Alberta must embrace this cycle to continue to prosper as a social and economic leader on the world's stage. That means the province must continue to actively support research and develop innovations by investing in excellent people and the necessary infrastructure to build a solid foundation for future generations of Albertans.

In the 1990s, the Government of Alberta foresaw the increased importance that science and technology would have on the future prosperity of the province. And while Alberta was home to some of the world's leading researchers, the majority of those researchers were working independently. In 1994 Premier Ralph Klein created the Alberta Science and Research Authority (ASRA) with the vision of coordinating all research and development throughout the province to increase the prosperity and enhance the well-being of Albertans. One of ASRA's roles would be to develop a strategic approach in order to capitalize on investments in research and technology.

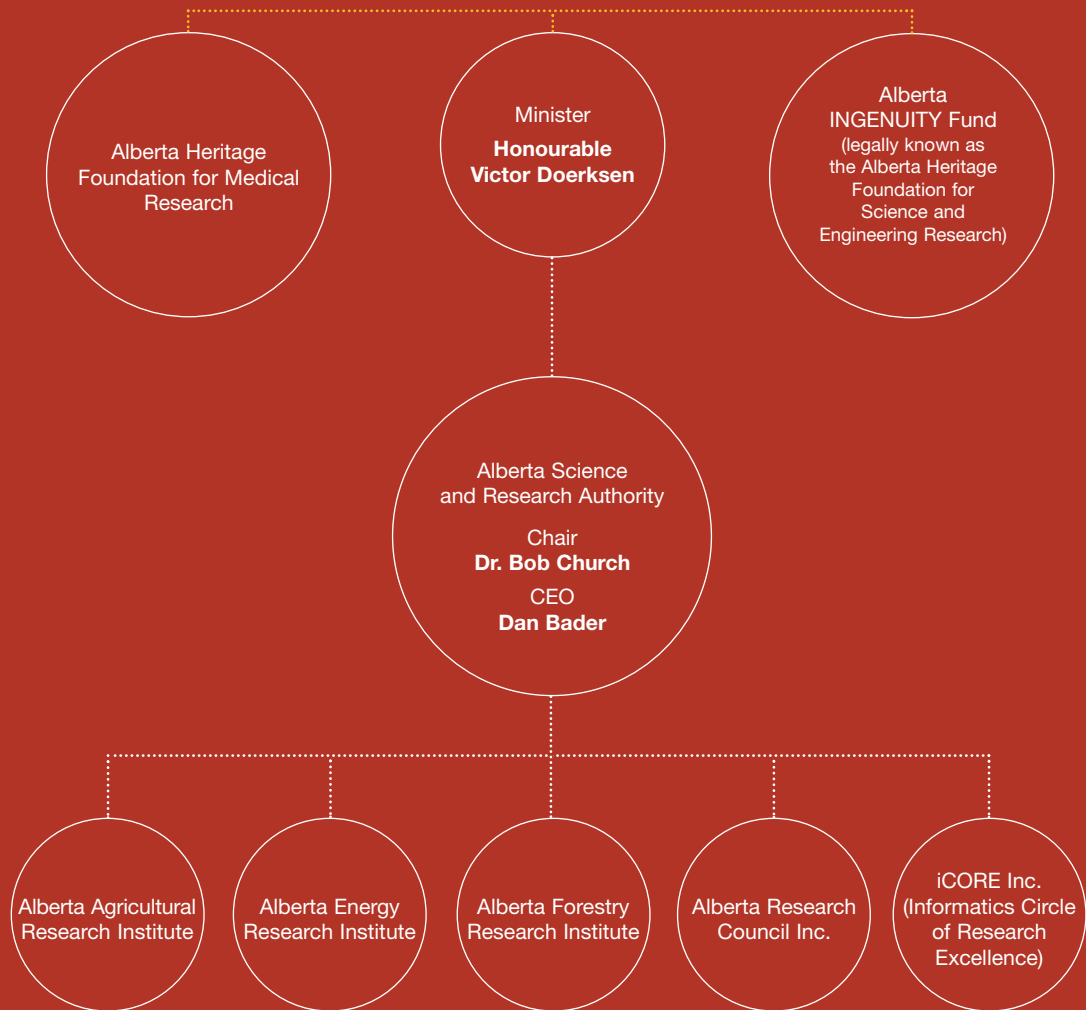
It was an ambitious assignment. And it's an assignment that ASRA's volunteer board members have embraced with great enthusiasm and success. As leaders in Alberta's academic, business and research communities, ASRA's board members are selected for their insight, their drive and their international reputation for excellence. They have turned Premier Klein's vision into a reality by ensuring government's continued and committed strategic investment in research and development conducted in Alberta.

Partnership and cooperation are cornerstones of ASRA's approach to advising the provincial government on science and research activities. It fosters unique partnerships between the Government of Alberta and the private sector, university and research institutes, and other government jurisdictions. While five specialized research and development agencies – each led by an independent board – operate under ASRA's umbrella, the Department of Innovation and Science serves as the operational hand implementing ASRA's strategic direction.

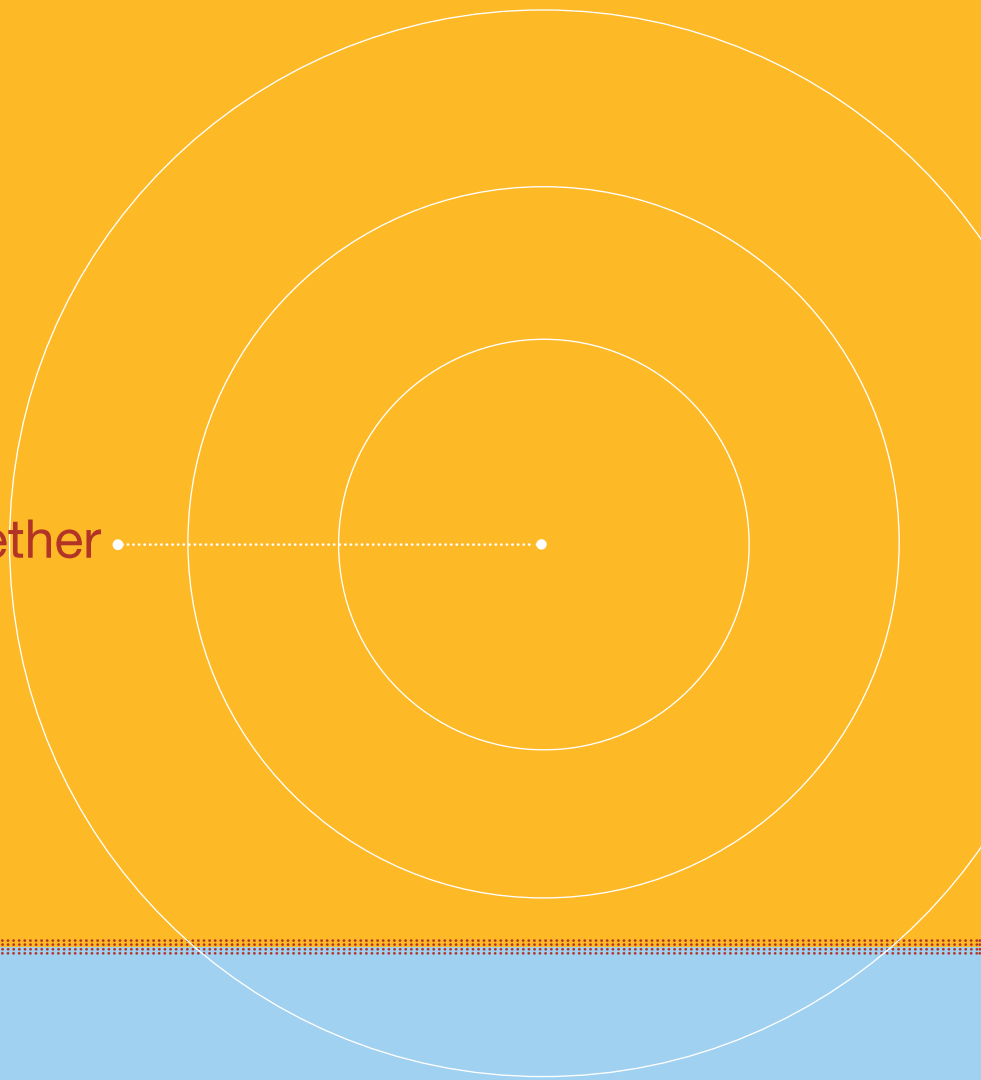
ASRA works with its partners to perform two core activities. It advises government on priorities and policies for science and research, and it recommends investments and facilitates strategic initiatives on how best to promote science and research across its three strategic priorities:

- Information and communications technology
- Life sciences
- Energy research

While each priority has its own distinct goals and challenges, they support one another, creating a unified strategic foundation from which Alberta can build. It is an infrastructure built with informed investment in research and development that will continue to make the most of Alberta's unmistakable advantages and attract the world's brightest scientists to Alberta.



Working together



### The Alberta Agricultural Research Institute

The Alberta Agricultural Research Institute (AARI) is the primary agency for funding, facilitating and coordinating strategic agricultural research for the province. AARI's mission is to enhance the economic contributions of a sustainable agriculture and food industry to Albertans through advanced research and improved technology. As part of this goal, AARI coordinates and supports agriculture and food research conducted by government, university and/or private sector organizations. [www.aari.ab.ca](http://www.aari.ab.ca)

### The Alberta Energy Research Institute

The Alberta Energy Research Institute (AERI) provides strategic direction to position Alberta for the future in energy development, and invests in research and technology to enhance the sustainable development of the province's abundant energy resources. AERI works with industry and other government ministries to promote innovations and advances that allow the energy sector to play a dominant role in the new economy through the development of value-added products and processes from hydrocarbons (conventional oil, oil sands, natural gas, coal bed methane and coal) and renewable energy sources. AERI promotes consortia and builds networks that integrate the knowledge, skills and investment potential of industry players, federal and provincial governments, research providers and universities. [www.aeri.ab.ca](http://www.aeri.ab.ca)

### The Alberta Forestry Research Institute

The newest research institute under the ASRA banner, the Alberta Forestry Research Institute (AFRI) will encourage and support private and public investment in the economic, environmental, ecological and community sustainability of Alberta's forestry sector. As this industry evolves to meet the needs and challenges of the 21<sup>st</sup> century, AFRI will provide valuable direction and set research priorities that will ensure a vibrant forestry industry within the context of a sustainable environment.

[www.innovation.gov.ab.ca](http://www.innovation.gov.ab.ca)

### The Alberta Research Council

The Alberta Research Council's (ARC) work spans a number of fields, from agriculture, biotechnology, energy, environment and forestry, to health and manufacturing. Primarily, ARC develops and commercializes technologies to give its customers a competitive advantage. It does this by performing applied research and development on a contract-for-fee basis, and co-venturing with others to develop new technologies. Return on investment comes from the commercialization of new products and services. As well, ARC conducts applied research for the public good and supports provincial science and technology needs and strategies. [www.arc.ab.ca](http://www.arc.ab.ca)

### The Informatics Circle Of Research Excellence

The Informatics Circle Of Research Excellence (iCORE) is part of the Government of Alberta's strategy to attract world-class information and communications technology (ICT) researchers to the province. In this way, it is able to enhance the work of teams already here and will establish Alberta as an international ICT leader. iCORE invests in people who are driven to solve fundamental and applied problems in information technology. In doing so, it creates a critical mass of research leaders focused on improving our future. [www.icore.ca](http://www.icore.ca)

## Message from the Minister



Research and innovation are important parts of the Alberta Advantage. For our province to remain competitive in the knowledge economy, we must continue to invest in scientific research and development, as well as in the necessary research infrastructure to support these activities. Establishing a solid foundation today puts us in a much stronger position tomorrow.

Alberta is building this foundation with the assistance of the Alberta Science and Research Authority (ASRA). Alberta continues to be a centre for research excellence, thanks to ASRA's commitment and vision and the strategic direction it sets.

*Information and Communications Technology (ICT): A Strategy for Alberta* was brought forward by ASRA in 1998, and today is an important component of Alberta's ICT sector. This strategy has paved the way for many world-class projects in this province, such as Alberta SuperNet, and is now breaking ground for other sectors that are important to the future prosperity of our province, such as life sciences and energy research.

Strategies have recently been developed for both life sciences and energy research. These strategies are expected to bring similar benefits to the Alberta economy and quality of life in our province, as the ICT strategy is doing.

ASRA also helps strengthen the foundation of this province by supporting projects that develop, attract and retain top researchers. Researchers, students and the private sector are just a few of those who benefit from ASRA's work.

While building a solid foundation takes time, ASRA's strategic direction is already producing benefits. ASRA funding is helping to develop revolutionary new medical techniques to fight cancer and recruit world-class ICT researchers and graduate students to Alberta. It has also helped establish a facility that will make Alberta the nation's centre of excellence for nanotechnology research.

ASRA's commitment to the future of this province is clear. It remains focused on enhancing the contributions of science and research in Alberta, and will continue to do its part to make this province the best place in North America, if not the world, to live, work and do business.

I look forward to continuing to work with ASRA to explore new opportunities that will create an even stronger knowledge economy and provide a better quality of life for all Albertans.

"Victor Doerksen"

Victor Doerksen, FCGA  
Minister



ASRA continues to invest in knowledge and the future of the province. We are building on the rich legacy of Alberta's natural resources and the strong work ethic of those visionaries who built this province. We are investing in research and innovation to ensure sustainable employment and prosperity for our children and grandchildren. We are building a solid foundation for our future.

*Alberta Science and Research Authority 2001: A foundation for the future* highlights the results of ASRA's strategic advice to the Alberta government over the last year. I would like to take this opportunity to acknowledge

those who helped formulate this strategic advice and who are helping make a difference here in Alberta.

In 2001, ASRA welcomed the Honourable Victor Doerksen as Minister of Innovation and Science, and Dan Bader as Deputy Minister of Innovation and Science and CEO of ASRA. Mr. Doerksen's leadership, along with the dedicated vision of David Lynch from the University of Alberta and Peter Hackett from the National Research Council, resulted in an innovative partnership to create the National Institute for Nanotechnology.

The Alberta Agricultural Research Institute (AARI) was transferred from Alberta Agriculture, Food and Rural Development to Alberta Innovation and Science, and joined the ASRA family. Under the leadership of co-chairs Butch Fischer and Neal Oberg, AARI's new board accepted the challenge of developing a strategy for agriculture research in cooperation with its stakeholders.

Under the leadership of co-chairs Len Bolger and Denis Ducharme, MLA for Bonnyville – Cold Lake, the Alberta Energy Research Institute presented the Alberta government with a strategy to manage carbon, hydrogen and nitrogen resources in the future.

The Alberta Forestry Research Institute (AFRI) was established in April 2001. AFRI Chair Ivan Strang, MLA for West Yellowhead, and a yet-to-be-named board will provide valuable direction and set research priorities that ensure a vibrant fibre industry in Alberta.

ASRA welcomed Marlene Graham, MLA for Calgary Lougheed, as the new Chair of the Alberta Research Council (ARC). Under John McDougall's guidance, ARC is developing a new strategy and redefining its role.

iCORE, under President Brian Unger, continues to attract world-class researchers to Alberta through its recruitment programs. In 2001, iCORE funded 44 new and 28 continuing graduate students in various ICT-related disciplines at post-secondary educational institutes in Alberta.

Several government departments implemented recommendations from the ASRA ICT Task Force. Alberta Learning provided funding to double the number of post-secondary education spaces for ICT training. Alberta Infrastructure supported the development of two ICT buildings, and Alberta Innovation and Science provided support for research infrastructure and initiated Alberta SuperNet.

## Chair's Message

Ruth Collins-Nakai, Chair of the Life Sciences Task Force, led numerous stakeholder meetings to develop a strategic plan for the life sciences sector.

A recommendation from the Commercialization Task Force co-chairs Mark Hlady, MLA for Calgary Mountainview, and David Kitchen resulted in the formation of Inno-centre Alberta, a not-for-profit corporation with the mandate to accelerate the creation and growth of new high-tech companies in Alberta.

The Strategic Investment Committee, chaired by Ed Fitzhenry, had a busy year as a result of federal funding initiatives such as the Canada Foundation for Innovation, Genome Canada and the Canada Research Chairs program. As a result, new terms of reference for a strategic investment and finance committee are being developed.

ASRA was involved in number of national and international initiatives in 2001, including the Alberta Synchrotron Institute, Genome Prairie and the Banff International Research Station for Mathematical Innovation and Discovery, which is a joint effort between ASRA, the Natural Science and Engineering Research Council of Canada, the US National Science Foundation and the Banff Centre.

I would like to thank all the ASRA board members for their commitment, hard work and enthusiastic support of our initiatives. I would also like to thank the dedicated ASRA staff for their professionalism and expertise. A special thank you to Ron Dyck and Howard Tennant for their initiative and dedication to ASRA.

On behalf of the ASRA board, I would like to extend my appreciation to Premier Ralph Klein, Minister of Innovation and Science Victor Doerksen and the members of Cabinet and Caucus who have provided support for and encouraged our efforts to further develop Alberta's knowledge-based economy.

"Dr. Robert Church"

Dr. Robert Church, CM, AOE, PhD, LLD  
ASRA Chair

# Enthusiasm

ASRA's achievements over the past year are a testimony to the energy and enthusiasm of ASRA's volunteer board members and Alberta's research community.

Together, their commitment to establish Alberta as a world leader in research and development is second only to their collective vision for the province, as demonstrated by the following highlights:

- Helping establish the National Institute for Nanotechnology at the University of Alberta.
- Creating an integrated energy strategy for the province's abundant natural resources.
- Funding Genome Prairie's work to provide leadership and focus for genomics research and development in Western Canada.
- Supporting the development of the Alberta Ingenuity Fund to stimulate research in science and engineering in the province.
- Facilitating the relocation of the Alberta Agricultural Research Institute under the umbrella of Alberta Innovation and Science.
- Facilitating the creation of Alberta Synchrotron Institute to ensure access for Alberta researchers to the Canadian Light Source, Canada's first synchrotron facility.
- Helping create the Banff International Research Station for Mathematical Innovation and Discovery.
- Establishing the Information and Communications Technology Implementation Committee.
- Signing the Alberta SuperNet contract, which represents an important accomplishment from ASRA's 1998 ICT strategy.

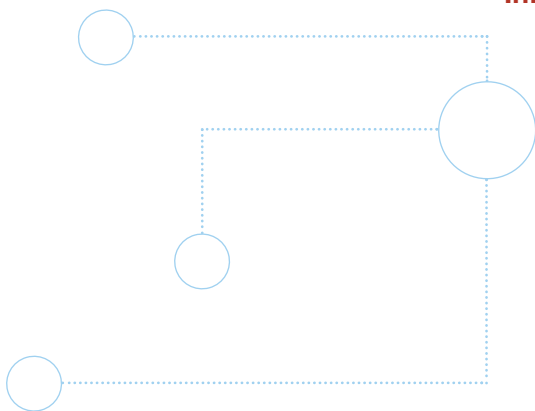
Individually, each of these achievements is significant. Together, they represent a dynamic and cutting edge research and development environment that is open for business and ready to take on the world.

Proactive

Global

Technology





### What is ASRA's ICT strategy?

Recognizing the economic and social benefits of establishing a strong ICT industry in Alberta, ASRA developed the Information and Communications Technology (ICT) Strategy in 1998.

The strategy identifies four pillars – education, infrastructure, research and development, and business growth – to build and sustain a vibrant ICT industry in the province.

The strategy is available on-line at [www.asra.ab.ca](http://www.asra.ab.ca)

### Enhancing the Alberta Advantage

Information and communications technology (ICT) is one of the world's strongest, fastest growing economic sectors. The foundation for telecommunications, electronics, computing, medicine, advanced materials and manufacturing industries, ICT is projected to grow at a rate of 9 per cent over the next 10 to 15 years to an estimated worth of \$2 trillion.

Alberta is home to major commercial users of ICT products. Thanks to this strong user presence, combined with an active research and development community, Alberta is making strides to become a global leader in ICT.

Since ASRA released its ICT strategy in 1998, various groups in both the private and public sectors have embraced the strategy and are putting it to good use. This clear and common direction has opened doors to progressive collaboration between all areas of government and the private sector in each of the four pillars identified in the ICT strategy.

### Progress

*Investing in education.* ASRA is making sure the talent within the province's borders receives the support it deserves. In response to ASRA's recommendation, the Government of Alberta invested \$51 million through Alberta Learning's **Access Fund** to double the number of training spaces in ICT programs in Alberta's universities, public colleges, technical institutes and publicly funded, accredited private colleges. Part of this investment has been used to develop ICT buildings at the University of Alberta, the University of Calgary, the Northern Alberta Institute of Technology and the Southern Alberta Institute of Technology. These high-quality facilities will help focus greater national and international attention on Alberta. Meanwhile, Alberta Learning is also creating educational opportunities through ICT-focused curricula and programs.

## Information and Communications Technology

*Developing an ICT infrastructure.* **Alberta SuperNet** represents the most significant achievement to date in establishing new ICT infrastructure in the province. Developed in response to ASRA's vision to connect Albertans to the world, SuperNet will provide affordable, high-speed network connections and Internet access to all libraries, schools, hospitals, and provincial government offices throughout the province, connecting 4,700 facilities in 422 communities within three years. See page 15 for more information on the SuperNet success story.

*Investing in world-class research and development.* ASRA's ICT strategy has served as a catalyst to effectively bring bright minds together. The Government of Alberta recently signed a **Memorandum of Understanding with Singapore** to develop relationships between Alberta's and Singapore's brightest and best ICT researchers. Similarly, the Banff International Research Station for Mathematical Innovation and Discovery is a collaborative Canada-US venture that will create an environment where mathematical scientists can come to do "blue sky" thinking, exchange ideas and knowledge, and develop methods within mathematical and other related sciences.

Since ASRA created iCORE last year, iCORE has provided funding to approximately 90 top ICT graduate students in Alberta. This year, iCORE funded 44 new and 28 continuing graduate students in computer science, electrical and computer engineering, and other ICT-related disciplines.

Through iCORE, ASRA has actively worked to bring world-class ICT experts into the province. In fact, iCORE has already established **nine world-class research teams** who are working in wireless, software engineering, microelectronics, nanotechnology, cryptography and high performance computing. Having drawn these leaders to Alberta, even more investment has followed from within the province, the rest of Canada and international sources. And conditions are primed for even more exciting growth in ICT in the years to come.

iCORE operates **four research grant programs** for research chairs, industry chairs, graduate students and recruitment activities. Since it was established in 1999, iCORE has provided \$22 million in awards and has attracted over \$80 million in additional research funding to Alberta. For more information on the exciting work being done by iCORE, visit **[www.icore.ca](http://www.icore.ca)**

In response to guidance from ASRA, the Government of Alberta continues to support **TRLabs**, Western Canada's leading research consortium in ICT. **TRLabs** operates five laboratories in Western Canada where university professors, graduate students, industrial sponsors and staff researchers work together to conduct applied research. This collaborative research program bridges the gap between academia and industry to produce original competitive research. **[www.trlabs.ca](http://www.trlabs.ca)**

*Encouraging ICT business.* Individuals from some of the world's leading ICT organizations will continue to partner with the Alberta government to oversee and advise the government on implementing ICT strategies. These individuals make up ASRA's **ICT Implementation Committee** and are responsible for both the strategic and operational aspects of the province's ICT strategy. Through the Minister of Innovation and Science, they advise the Government of Alberta on how best to implement the province's strategy. ASRA's ICT Implementation Committee will continue to look at expanding priority areas for the future, including e-learning, e-health, e-government, e-commerce and wireless communication.

ASRA is one of the founding partners of **Inno-centre Alberta** (ICA), which is demonstrating to the world how growth can be fostered, not just in the ICT sector, but also in a variety of business sectors. A private, not-for-profit company, ICA is designed to accelerate the creation and growth of new technology companies in Alberta. It provides experienced business resources to Alberta companies whose high-tech concepts show significant commercial promise.

### Where do we go from here?

Juristictions around the world have identified ICT as a priority and are rapidly becoming leaders in this area. Alberta has also recognized the benefits of a healthy ICT sector. By continuing to merge the efforts of the private and public sectors with the educational and research communities, Alberta is positioned to become an ICT centre of excellence.

ASRA has taken significant steps to lay a foundation that will allow the province to fulfill the objectives of the ICT strategy and is committed to sustaining a business climate in Alberta that supports and encourages a strong ICT sector.

The establishment of the ICT Implementation Committee reinforces ASRA's commitment to the future of ICT in this province. This group will provide clear direction on steps that need to be taken in order for this province to be recognized globally as an ICT centre of excellence.

And what does a strong ICT sector mean for the province? An excellent health care system. Access to first class education. A vibrant, growing economy. A better quality of life. A foundation for the future.

# Future

Science and engineering affect almost every part of our daily lives – from the food we grow and eat, to the computers we use for work and play, to the machinery that runs our farms, oil fields, factories and offices.

Recognizing the need to stimulate research in these sectors, ASRA recommended the Alberta government establish the Alberta Ingenuity Fund (legally known as the Alberta Heritage Foundation for Science and Engineering Research) and create a \$500 million endowment. If provincial finances permit, the endowment will grow to \$1 billion by 2005.

Alberta Ingenuity, an independent, arms length organization that reports directly to the Minister of Innovation and Science, uses the endowment to promote the effective use of Alberta's science and engineering resources, support cooperation and minimize duplication of research, and encourage young Albertans to pursue careers in science and engineering. Through its various research grant programs, Alberta Ingenuity supports the strong science and engineering base at Alberta's post-secondary educational institutions and related industries.

Alberta Ingenuity grants complement ASRA's research support to the province, and that of many other private and public funding agencies. In 2001, Alberta Ingenuity launched four grant programs aimed at helping the Alberta research community keep its top people and recruit more. The first Studentships were awarded to graduate students working on projects ranging from animal ecology to sour oil wells and global warming.

Alberta Ingenuity's new Research Centres Program was established in response to recommendations from national and international experts who advised that Alberta Ingenuity would have the greatest impact if the majority of funding concentrated on existing areas of strength most likely to benefit Albertans.

The creation of the Alberta Ingenuity Fund is a prime example of how ASRA facilitates and encourages investment to ensure that Alberta's future in the knowledge economy is bright. For more information on the Alberta Ingenuity Fund, visit [www.albertaingenuity.ca](http://www.albertaingenuity.ca)

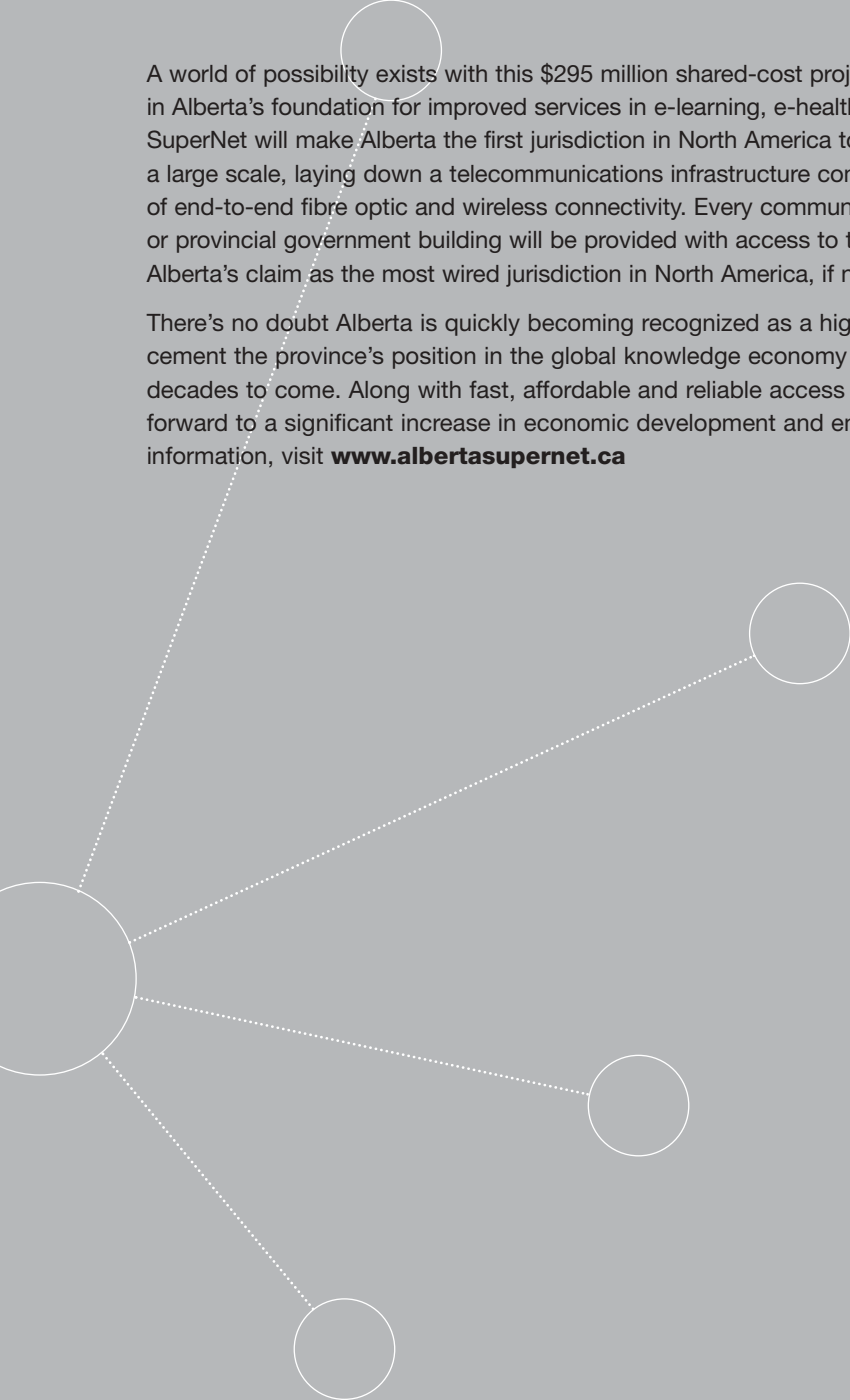
# e-Volution

Alberta is a province with a geography as varied as it is vast. As a result, closing the digital divide between urban and rural Albertans has remained a dream... until now. ASRA's vision to have the entire province participating in and benefiting from a growing knowledge economy is becoming a reality, as Alberta Innovation and Science prepares to implement Alberta SuperNet.

Currently, only larger urban centres and some nearby communities have access to high-speed broadband network services. But within the next three years, approximately 4,700 hospitals, libraries, schools and provincial government facilities in 422 communities throughout Alberta will have access to the various applications that will run over the SuperNet network. These applications will include Internet, video and private networks, to name a few.

By accessing the SuperNet infrastructure, libraries in remote communities will have faster access to more resources and information, providing them with the same type of Internet and network access to which their urban counterparts are accustomed. Rural physicians will be able to provide services supported by high-speed broadband applications, such as real-time ultrasound, health records transfer, telehealth learning and telepsychiatry. And entrepreneurs in remote communities will have access to markets around the world. In short, SuperNet will bring the world to rural Alberta.

No small task, SuperNet features the collaboration of many players from both the private and public sectors. ASRA's ICT strategy recommends developing Alberta's ICT structure, stressing that "given the freedom to compete, the private sector will provide appropriate high-performance broadband service throughout Alberta." SuperNet fulfills this recommendation with its project consortium of private sector companies led by Bell Intrigna and Axia. In fact, competition is required by the SuperNet contract, with the stipulation that the network infrastructure remain open to all suppliers.



A world of possibility exists with this \$295 million shared-cost project, which serves as the cornerstone in Alberta's foundation for improved services in e-learning, e-health, e-government and e-commerce. SuperNet will make Alberta the first jurisdiction in North America to connect its communities on such a large scale, laying down a telecommunications infrastructure comprising over 12,000 kilometres of end-to-end fibre optic and wireless connectivity. Every community with a school, hospital, library or provincial government building will be provided with access to the SuperNet network, strengthening Alberta's claim as the most wired jurisdiction in North America, if not the world.

There's no doubt Alberta is quickly becoming recognized as a high-tech hub. SuperNet will help cement the province's position in the global knowledge economy and fuel a high-tech economy for decades to come. Along with fast, affordable and reliable access to the Internet, Albertans can look forward to a significant increase in economic development and employment opportunities. For more information, visit [www.albertasupernet.ca](http://www.albertasupernet.ca)

# Atom by atom

It's a rule known to every builder: the smaller the building blocks, the greater control over the finished product. Nanotechnology takes this principle to new heights, giving scientists the opportunity to construct and modify matter atom by atom, molecule by molecule.

Think of nanotechnology as Lego, but on a molecular or atomic level. A set of Lego consists of blocks of different sizes. Alone, each piece is not very functional. But when you put the blocks together one at a time, you can assemble devices or structures that are extremely functional, and then take them apart and build something different.

Scientists are learning how to assemble molecules or atoms to make structures that could be used for medical diagnoses or new electronic devices or new catalysts to transform one molecule into another. As a result, nanotechnology is considered to be the next major revolution in technology, with social and economic impacts expected to be larger than those of the computer revolution. It is expected to play a vital role in many areas, including health, computing science, energy, biotechnology, education, manufacturing and engineering.

16  
17

A partnership between the provincial and federal governments has made ASRA's vision of a National Research Council facility – and an international centre for excellence – a reality. The National Institute for Nanotechnology, to be built at the University of Alberta, is expected to attract a core of the world's best scientists. This world-class centre of excellence will be a multidisciplinary facility where researchers in physics, chemistry, engineering, biology, informatics, pharmacy and medicine will collaborate to explore the frontiers of science.

Alberta's universities already have an established reputation for excellence in nanotechnology and engineering, and the University of Alberta is an ideal location for the National Institute for Nanotechnology. It already has existing strengths in nanotechnology, engineering, medicine and computing science, and a number of excellent researchers working in these fields. The university's world-class facilities and equipment, and a highly supportive and receptive community in Edmonton, will ensure the National Institute for Nanotechnology remains competitive with the nanotechnology facilities in the United States, Europe and Asia.

ASRA's vision for an Alberta-based institute for nanotechnology will enable Canada to become a player in this growing field that experts predict will have economic impacts in the range of \$1 trillion per year within the next 10 to 15 years.

Life.

Promise.

Explore.



### Research comes to life

Globally, the life sciences sector is in the same position that the information technology sector was 20 years ago – poised to take off at a rate that is hard to imagine. Many expect that life sciences will dominate the world economy by the late 2020s.

It all stems from unlocking the genetic code of humans and a wide variety of plants and animals. This knowledge is already being used in health research to develop new pharmaceuticals to treat and cure diseases, as well as helping farmers improve their crops and explore new production methods. It's enabling the forestry sector to add value and improve sustainability. And it holds a promise to dramatically improve people's lives and sustain the environment.

Alberta's rich tradition of funding health and agriculture research puts the province in a position to benefit greatly from the predicted boom in life sciences. The Alberta government has built a strong foundation with its investments in the Alberta Heritage Foundation for Medical Research – which has a 20-year history of funding world class medical researchers – and the Alberta Agricultural Research Institute – with more than 25 years of research and technology transfer activities in the province – as well as with investments in university medical facilities by Alberta Health and Wellness, and Alberta Learning.

ASRA knows that with the development of sound strategies and continued investment in research infrastructure, Albertans will enjoy the ultimate return on investment – better health and an improved quality of life. Therefore, to ensure the province's continuing commitment to the life sciences sector, ASRA has recently developed a Life Sciences Strategy that will guide research and development for the health, social, economic and environmental benefit of all Albertans.

## Life Sciences

The building blocks of ASRA's Life Sciences Strategy are the strengths of three overlapping areas – **health and wellness, agriculture/food/forestry** and **environment**. Strategies to develop these areas will focus on:

- Increasing excellence in life science research and development.
- Increasing Alberta's dynamic life sciences workforce to meet demand.
- Developing an international reputation for responsible and ethical life sciences accomplishment.
- Growing Alberta life science business by 20 per cent by 2010.

Considerable work is already underway in each of these three areas. A strategic plan for health is already completed, and strategic plans for agriculture and forestry are actively being developed.

ASRA's Life Sciences Strategy will integrate Alberta's efforts across many sectors and will prepare the province to take advantage of economic opportunities and to address important social and ethical issues.

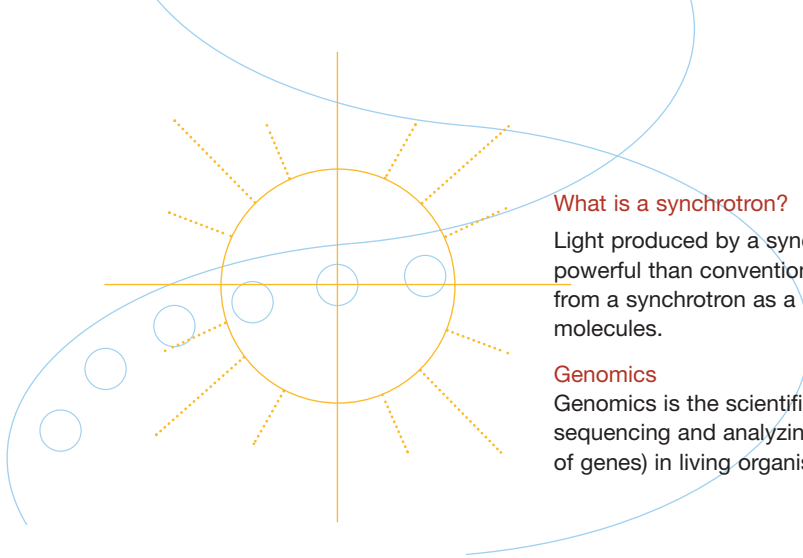
### Progress

Although ASRA's Life Sciences Strategy was only recently developed, each of the following achievements over the past year have been made possible directly by ASRA or through ASRA's leadership and vision.

ASRA successfully facilitated the creation of the **Alberta Synchrotron Institute** (ASI), a partnership of the University of Alberta, the University of Calgary and the University of Lethbridge, which will coordinate provincial access to Canadian Light Source, Canada's only synchrotron. This collaborative effort will put Alberta in a competitive position to attract and retain researchers. The ASI will also inform Alberta firms about manufacturing possibilities at Canadian Light Source. Finally, the ASI will be a liaison between researchers and industry to ensure innovative academic discoveries are quickly transferred into commercial and industrial applications. For more information, visit [www.asi-cls.ca](http://www.asi-cls.ca)

Working closely with Alberta's universities, ASRA identified **Genome Prairie** as a key project to strengthen ongoing research efforts in genomics. ASRA provided \$2 million to Genome Prairie to support its vision to become a world leader in genomic research. Genome Prairie is helping develop a strategic infrastructure in Canada, establishing networks among academic, government and industry researchers so they may collaborate on multidisciplinary, leading edge genomics research.

For more information visit, [www.genomeprairie.ca](http://www.genomeprairie.ca)



#### What is a synchrotron?

Light produced by a synchrotron is 1,000 times more powerful than conventional x-ray machines. Think of light from a synchrotron as a brilliant beam that illuminates molecules.

#### Genomics

Genomics is the scientific discipline of mapping, sequencing and analyzing genomes (very large numbers of genes) in living organisms.

In response to guidance from ASRA, Alberta strengthened its growing reputation as one of the world's leading centers of medical research with an investment of \$10 million to assist with further planning and development of two new **provincial health research facilities**. This provincial funding from Alberta Infrastructure and Alberta Innovation and Science helped draw additional funding from the federal government through the Canada Foundation for Innovation, and the Alberta Heritage Foundation for Medical Research, as well as private and community partners.

With funding support from ASRA, the **Alberta Research Council** (ARC) supports Alberta's science and technology mandate by directing government investment to applied research and development. Over the past year, ARC achieved a great deal in all of the building blocks of the life sciences sector:

- ARC's Telehealth Interoperability Laboratory is the only Canadian facility developing technical specifications for telehealth interoperability and validating vendor equipment for compliance.
- Work began with Agrimax Corporation to produce high-performance agriculture sulphur products for primary food production.
- ARC researchers worked with provincial and federal government agencies to find a way to provide farmers with a simple tool to determine sustainable rates for applying manure to land that takes both economic and environmental factors into account.
- ARC developed two new varieties of native grasses to help meet a growing demand for plant material that is suitable to reclaim disturbed land.
- ARC entered a strategic alliance with public and private sector partners to commercialize a cattle vaccine that promises to reduce the threat to humans of the deadly strain of E.coli 0157:H7.

## Life Sciences

According to a recent independent research report, ARC agricultural programs result in high rates of return for all involved. To learn more about this report or find out more about the good work being done by the Alberta Research Council, visit [www.arc.ab.ca](http://www.arc.ab.ca)

Also funded by ASRA, the **Alberta Agricultural Research Institute** (AARI) is committed to the province's life sciences sector. This year, AARI invested in a portfolio of research projects to meet the current and future needs of Albertans and the agriculture and food industry in Alberta.

The projects include:

- Enhancing the healthy components of food beyond the nutritional aspects, such as increasing the anti-carcinogenic qualities of milk, meat, and barley.
- Developing vaccines to improve animal health and new ways to vaccinate livestock to reduce injury.
- Increasing crops' resistance to insects and disease by using new genomic tools to better understand naturally occurring resistance.
- Developing best practices for crop and livestock management to improve the competitiveness and sustainability of the agriculture industry.

AARI is working in cooperation with collaborative, multi-disciplinary teams of researchers at universities and agricultural research facilities in Alberta and Western Canada. For more information on AARI, visit [www.aari.ab.ca](http://www.aari.ab.ca)

### Where do we go from here?

The province has built a solid life sciences foundation, but in order for it to continue to grow and evolve, Alberta must look beyond traditional boundaries and work closer than ever before with industry, universities and other governments.

ASRA's life science strategy will encourage the growth of life sciences through an approach that is:

- **Participatory** — as the life science sector develops, Albertans will be involved in discussions and direction setting.
- **Focused** — concentrating effort on Alberta's strengths and strategic opportunities.
- **Sustainable** — developing long-term investment and a clear commitment to the well-being of Albertans.
- **Integrated** — developing Alberta's life science sector by recognizing the need for high-quality people and public support, and by addressing the interactions and complexities of the continuum of research to commercialization.

Alberta is transforming its traditional economy and creating a new basis for economic, social and environmental excellence. The evolution of life sciences is an opportunity for the province to combine its knowledge and natural resources to create a bright and prosperous future for Alberta.



**Sustainability.**

**Impact.**

**Worldwide.**

### Preparing for tomorrow... today

Alberta's energy resources are unique. Nowhere else in the world does such a rich variety of natural resources – including conventional oil, natural gas, heavy oil, oil sands, coal and coal bed methane – exist in such abundance. Alberta's Athabasca oil sands alone contain more oil than Saudi Arabia's vast desert.

With this opportunity comes many challenges. The technologies necessary to extract and process Alberta's unique resources do not exist elsewhere, so Albertans have had to rely on their own ingenuity to develop Alberta's black gold. The Government of Alberta has long been committed to fostering the resourcefulness of Albertans in the energy sector. From developing steam assisted gravity drainage in the 1980s, to investigating ways to harvest natural gas from coalbeds today, government and industry have worked together to invest in technology and research, and find innovative ways to extract and process energy resources. In fact, all major technologies currently being used by Alberta's energy sector were developed as a direct result of government-industry collaboration. Without that partnership, Alberta's economy would not hold the current promise for growth.

The Alberta government's commitment to energy research is more important today than ever before. Alberta's conventional oil and gas supplies are declining rapidly and relying solely on current methods of production is not an option. Research is needed to develop ways to recover the significant amount of conventional oil that is left behind, as well as less energy intensive methods to extract heavy oil and bitumen. Research is also necessary to enable the energy sector to reduce the impact of greenhouse gases and other emissions.

ASRA is committed to fostering the innovative environment necessary to achieve all of these goals. Recognizing that 10 to 20 years are required for such research and development to come to fruition, ASRA knows Alberta must continue to create synergy among researchers and processors over the long term. ASRA will also ensure government invests strategically throughout the research-development-commercialization cycle. To that end, ASRA established the Alberta Energy Research Institute (AERI) to carry on work started by the Alberta Oil Sands Technology and Research Authority and become the unifying energy research body for the province.

## Energy Research

AERI is currently laying the foundation for an integrated and comprehensive research and development strategy over the next 20 years. The Alberta energy research strategy is intended to help transform separate sectors of the economy into an integrated energy industry focused on using Alberta's resources to their fullest potential. The emphasis will be on advancing technology, while effectively managing the carbon, hydrogen and nitrogen cycle to achieve high-value energy products and world-class environmental standards.

AERI's energy strategy has identified the following five goals:

- **Develop clean burning coal** to generate electricity. Also, use coal and other feedstocks to produce steam and hydrogen (for oil sands recovery upgrading and fuel cells), and use concentrated carbon dioxide streams to enhance conventional oil and gas recovery.
- **Upgrade oil sands technology** to allow Alberta to enhance the value obtained from bitumen and synthetic oil production, which is expected to quadruple in the next 20 years.
- **Manage carbon dioxide** and other emissions by developing technology that will use waste carbon dioxide to recover more conventional crude oil and to harvest natural gas from coal beds.
- **Improve oil and gas production** by investing in leading-edge research for improved recovery and less energy-intensive production.
- **Develop an energy research infrastructure** to support the emerging fuel cell industry and the hydrogen economy.

Progress is already being made on each of these goals. Through projects funded by AERI, the energy sector is working towards using by-products of one resource to further the development of another. With the ultimate goal being to use every by-product in an environmentally friendly way, companies are developing more efficient ways to do business and new areas of profitability. The result is economically viable and sustainable energy production from other natural resources, such as oil sands, coal and coal bed methane.

## Progress

AERI is completing the transition from the Alberta Oil Sands Technology and Research Authority, broadening its mandate from oil sands and heavy oil to include all forms of energy important to Alberta.

Through AERI, the Government of Alberta and ASRA are well positioned to participate with the private sector, universities and the federal government, advancing market-driven energy alternatives and building on the much needed research and development capability focused on Alberta's resources.

Several energy research projects are currently underway, including making oil sands operations more efficient, evaluating technologies and strategies for clean coal and fuel cell development, and controlling greenhouse gases from oil sands and coal burning operations.

AERI also continues to participate in a number of industry/government/academia joint programs. These programs are the most effective method of transferring technology developed with government funds to the industry that will develop resources to ensure the future of Alberta's energy sector.

These programs include:

- **Coordination of University Research for Synergy and Effectiveness** – a program with over 25 industry members that supports research initiatives at the University of Alberta and the University of Calgary. In 2000-01, AERI contributed \$2 million, which was matched by \$3.3 million from industry, Natural Sciences and Engineering Research Council of Canada and others.
- **AERI/ARC/Core Industry (AACI) program** – AERI, ARC and the industry members each contribute approximately \$1 million to this program. ARC conducts research into bitumen and heavy oil in situ recovery techniques. The AACI program provides the technical foundation that enables industry to minimize its risk and development costs, and maintain technology leadership on a world scale.
- **National Center for Upgrading Technology** – works with the federal government, ARC and industry partners to develop upgrading techniques to allow Alberta to maximize the value of its resources. Alberta contributes approximately 30 per cent of this \$9 million program.
- **Canadian Clean Power Coalition** – has four government participants and six industry participants. Short-term goals are to study the engineering options for cleaner coal-burning generation of electricity. Long-term plans are to retrofit an existing coal-burning plant and to build a greenfields plant, both of which will have emissions comparable to those from turbines, while removing greenhouse gases.
- **Zero Emission Coal Alliance** – an international group with the long-term goal of zero emissions from burning coal. The initial phases are being developed in the US, and AERI will receive knowledge gained from a large project without incurring all the costs.

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### Where do we go from here?

With the support of ASRA, AERI will continue to conduct research into these and other clean energy technologies to ensure Albertans get the value from the province's vast coal and oil sands resources, while maintaining competitive electricity prices and high environmental standards.

Through AERI, the relationship between government and the private sector promises continued innovation that will allow Alberta to unlock energy sources for the future. This will strengthen an already powerful science and engineering base in Alberta's post-secondary institutions and industrial sector, and will better prepare the province for a changing energy industry.

For more information on the good work being done by the Alberta Energy Research Institute and the future direction of Alberta's energy sector, visit [www.aeri.ab.ca](http://www.aeri.ab.ca)

Priorities.

Momentum.

Foundation.

## On the Horizon

The years ahead hold great promise for Alberta as ASRA's investments in its three strategic priorities – ICT, life sciences and energy research – will continue to pay dividends.

Thanks to the strength of ASRA's ICT strategy, the ICT sector will continue to provide Alberta with untold economic benefits, and will continue to provide the life sciences and energy sectors with breakthrough opportunities. As our knowledge and understanding of living things grows, the Life Sciences Strategy will play an increasingly important role in directing the development of applications for the health, social, economic and environmental benefits of all Albertans. And with a new strategic plan for the next 20 years, energy research will pay dividends as never before.

Over the past year, ASRA has laid a solid foundation for further progress. Alberta's research and development infrastructure has never been stronger, and ASRA's strategic approach has never been more sound. By adopting integrated strategies in its three strategic priorities, ASRA is creating momentum to carry Alberta forward as a leader in the new global economy.

By creating an environment that promotes innovation, recognizes that skilled people are the foundation for success, and provides opportunities for scientists and researchers of today and tomorrow, ASRA can build on this momentum and establish a solid foundation for the future.



## **Dan Bader, CEO**

*"Alberta's reputation as a world leader in research and development continues to grow. Enhancing this reputation is the excellent working relationship between ASRA and Alberta Innovation and Science. While ASRA serves as a strategic catalyst, setting the research agenda for our province, Innovation and Science puts that agenda into action. Thanks to this synergy, we continue to attract the attention of researchers and businesses looking to make the most of their intellectual and financial capital in Alberta."*

Dan Bader is the Deputy Minister of Alberta Innovation and Science. Since 1979, he has served in a variety of positions within the Alberta government, including Deputy Minister of Alberta Municipal Affairs, Deputy Minister of Strategic Information Technology Initiatives and Government of Alberta Chief Information Officer, and Deputy Minister of Public Works, Supply and Services. In his current role, he guides the ministry in making Alberta a magnet for national and international investment in innovative science, research, and information technology to enhance the sustainable prosperity and quality of life of all Albertans.



## **Albert Bell**

*"Research in Alberta extends beyond high-tech, scientific inquiries. We're also focused on promoting world-class life sciences research, which also includes the social sciences and humanities. By addressing issues related to the well-being of Alberta's children, families and communities - the most valuable resources of our province - we will be poised for success as we move into the new knowledge-based economy."*

Mr. Bell is President of Albert Bell Management Services Ltd. and is actively involved in the real estate industry. He has served on a range of civic commissions and committees including the Calgary Planning Commission, the Development Appeal Board, the Industrial Expansion Committee, and the Calgary Housing Commission. He has served as Chair and Board Member of the Construction Committee for the Calgary Center for Performing Arts. He was on the board of directors of the Calgary District Hospital Group for nine years and served as Chair the last three years.



## **Len Bolger**

*"Alberta's energy industry faces many challenges and to ignore those challenges would be to accept a decline in the industry. But ASRA, through AERI, is helping the industry meet those challenges head on. Our energy research strategy maps out a strong future for Alberta's industry. We can make it happen . . . it is in our hands."*

Mr. Bolger is co-founder and Chair of AdvaTech Homes Canada. He serves on a number of boards and committees including Director of the Canadian Institute for Advanced Research, Co-Chair, the Alberta Energy Research Institute and Chair of the Alberta Advisory Council on Electricity. He is also a Fellow of the Canadian Academy of Engineering.



## **John Brick**

*"In 1998, ASRA envisioned a thriving ICT industry in Alberta and recommended strategies to make that dream come true. As this report demonstrates, many of those strategies have been implemented, thanks to the leadership of government, education institutions and the extended ICT community. I compliment Albertans on their support of ASRA's ICT strategic recommendations. Future generations will benefit from our collective efforts."*

Mr. Brick is VP Sales Nortel Networks on the TELUS Account. He is chair of the ASRA ICT Task Force that published the *Information Communications Technology: A Strategy for Alberta* in November 1998 and serves on the executive committee. John is currently on the Board of Grant MacEwan Community College, TRILabs, and the ASTech foundation.



**Elizabeth Cannon**

*“ASRA has continued to lead the way in spearheading new initiatives to build Alberta’s future. With a focused strategy around Alberta’s key strengths, we are already seeing impressive results on the world stage.”*

Dr. Cannon is a professor with the Department of Geomatics Engineering at the University of Calgary. She also holds the NSERC/Petro-Canada Chair for Women in Science and Engineering (prairie region). She has published over 160 papers and reports, and in 1998 was named one of Canada’s Top 40 Under 40.



**Bob Church, Chair**

*“ASRA continues to invest in knowledge and the future of the province. We are building on the rich legacy of Alberta’s natural resources and the strong work ethic of those visionaries who built this province. We are investing in research and innovation to ensure sustainable employment and prosperity for our children and grandchildren. We are building a solid foundation for our future.”*

Dr. Church is Professor Emeritus of Medical Biochemistry, University of Calgary. He previously held positions as Associate Dean (Medical Research) and Founding Professor and Head of the Department of Medical Biochemistry at the University of Calgary. Dr. Church owns Lochend Luing Ranches in Airdrie. He has been a director of various companies including Ciba-Geigy, Neurosphere Ltd., Vencap Equities Alberta Ltd., and is Chair of the Alberta Science and Research Authority.



**Ruth Collins-Nakai**

*“Alberta is making progress in the life sciences sector. We have a community of researchers who are beginning to perceive the potential synergy that will arise with interdisciplinary and intersectoral innovative practices. For the benefit of the people of this province, we have to be open to new ways of thinking, new ideas and new means of organizing people and projects.”*

Dr. Collins-Nakai is a cardiologist, health care consultant and member of the staff of the Capital Health Authority in pediatric and adult congenital cardiology. She is a former professor of Pediatrics and Associate Dean in the Faculty of Medicine and Dentistry at the University of Alberta. Dr. Collins-Nakai is the President of the Canadian Cardiovascular Society and a member of the Governing Council of the Canadian Institutes of Health Research. She has served in the past in the capacity of President or Board Chair in such organizations as the Alberta Medical Association, American College of Cardiology and the Muttart Foundation.



**Pete Desai**

*“Alberta is a technological force because of government’s commitment and a community of innovative people with a can do attitude. This province is loaded with potential. I predict great advancements in plant and animal-related biotechnology through the convergence of our knowledge resources with our natural ones.”*

Dr. Desai is President of Desai and Desai Inc. and former Director of Research for Dow AgroSciences Canada Inc. He is currently Chair of the Genome Prairie Board and AgWest Biotech Inc. He also serves on boards of the Alberta Agriculture Research Institute (AARI), BioAlberta and ASTech. He is the Chairman of the National Research Council (NRC) Plant Biotech Advisory Committee.



### **Victor Doerksen**

*“Alberta is building a solid foundation with the assistance of ASRA and continues to be a centre for research excellence, thanks to ASRA’s commitment and vision and the strategic direction it sets. I look forward to continuing to work with ASRA to explore new opportunities that will create an even stronger knowledge economy and provide a better quality of life for all Albertans.”*

Mr. Doerksen is MLA for Red Deer South and is currently Minister of Alberta Innovation and Science and serves as Vice-Chair of the Standing Policy Committee on Learning and Employment. He has also completed several special projects in his role as MLA. He served on the implementation team on Accountability in Education, the Task Force on the Young Offenders Act, the Maintenance Enforcement and Access Committee, and the Task Force on Eye Care Services. Mr. Doerksen is a certified general accountant, which complements his previous education as a computer analyst/programmer.



### **Dennis Erker**

*“The amazing thing about Alberta is the people, the innovative ideas, and the iron will when a goal is set. ASRA’s role is to help the province outline achievable, sustainable, and yet commendable objectives, and to identify a larger vision for the future. Because of ASRA, the Government of Alberta’s commitment to technology, an outstanding community of scientists and researchers, plus a forward-thinking population, this province will surely succeed.”*

Mr. Erker is a partner with FE Advisory Group, President of FE Benefit Consultants Ltd. and currently serves on several public and private boards. He is a past president of the Board for the Edmonton Eskimos, former Governor of the Canadian Football League (CFL) and served on the Board for Worker’s Compensation, The Citadel and the Alberta Securities Commission. He plays an active community role with the University of Alberta and the Edmonton Community Foundation.



### **Ed Fitzhenry**

*“ASRA is about the future. Our initiatives have fostered best of class research with world leading scientists and that is enhancing Alberta’s quality of life as well as enriching our economy. ASRA’s strategy also stimulates scientific curiosity among our youth and develops an environment in which that curiosity will be fulfilled right here in Alberta.”*

Mr. Fitzhenry is President of Pathfinder Ventures, a Calgary-based investment company focused on start-up technology initiatives. He serves as a member of the board of the Alberta Science and Research Authority, the Alberta Research Council, Calgary Technologies Inc. and the Calgary Centre for Innovation Technology. He also chairs the Business Advisory Committee of the Calgary Airport Authority and is on the Management Advisory Committee of the University of Calgary, Faculty of Management.



### **Marvin Fritzier**

*“Imagination is a wonderful thing. In a province rich with heritage, resources and leadership, we have the opportunity to take innovative ideas and merge them with fiscally responsible strategies to secure Alberta’s future in the new economy. That is the role of ASRA – to articulate a vision for Alberta and see it is supported in a meaningful and productive way.”*

Dr. Fritzier currently holds The Arthritis Research Chair, Faculty of Medicine at the University of Calgary. He has received the Distinguished Alumni Award and a number of Gold Star Letters for Excellence in Teaching. He has served as the Associate Dean of Research and has served on a number of committees such as the Research Development Committee and the University Budget Committee.



**Peter Garrett**

*"I am very pleased and honoured to join the ASRA Board of Management. I believe that the leading edge R&D championed by ASRA will be instrumental in enabling well-diversified long-term economic growth in the province. Research leadership will drive dramatic growth of new technology-oriented industries, and enhance our already strong resource-based industries. The government has been very forward thinking in establishing ASRA and in seeking guidance from private sector leaders to maximize the return on our investment."*

Mr. Garrett is an electrical engineer with over 20 years of experience designing and manufacturing telecommunications systems. Most recently, he was Vice President of Wireless Access Development at Nortel Networks where he had global responsibility for development of Nortel's CDMA cellular products. He is currently Chief Operating Officer for Global Thermoelectric.



**Marlene Graham Q.C., Vice-Chair**

*"ASRA is a unique organization, designed and empowered to shape the direction of science, research and technology in Alberta. With the strength and diversity of its membership, ASRA is well qualified to provide the necessary leadership to ensure Alberta's economic well being now and into the future."*

Ms. Graham is MLA for Calgary-Lougheed, and serves as Chair of the Alberta Research Council and Vice-Chair of the Alberta Science and Research Authority. During her 21 years of practicing law in the province, she has held several different positions, including serving as Crown Counsel for the Attorney General of Alberta, Judicial District of Red Deer for six years before moving to a family law practice in Calgary. She has served as Chair of the Calgary Women Lawyers' Association and has maintained memberships in legal professional organizations including the Alberta Crown Attorneys Association, the Calgary Bar Association, and various sections of the Alberta Branch of the Canadian Bar Association, and the Legal Archives Society of Alberta. She has also served as Chair of the Unified Family Court Task Force, the Standing Committee on Private Bills, the Health Information Act Implementation Steering Committee. She is currently a member of the Standing Policy Committee on Economic Development and Finance.



**William Hunter**

*"There is no bigger danger in business than complacency. Industry must continually challenge itself to ensure that our business reflects the knowledge, leadership, values and visions of the best we have to offer. This is the role of ASRA - to ensure that we use science and research to constantly challenge ourselves to be the best in a rapidly evolving global environment."*

Mr. Hunter is President and Chief Operating Officer for Alberta-Pacific Forest Industries Inc. and serves on the Board of Directors. Mr. Hunter has held various Alberta-Pacific management positions including Vice President Operations/General Manager, Mill Manager, Operations Manager, Production Manager and various line Manager positions. He is President of the Alberta Chamber of Resources, and a member of the Canadian Pulp and Paper Association, the American Pulp and Paper Institute, the Premier's Climate Change Central Committee, and the Conference Board of Canada Aboriginal Committee.



**David Kitchen**

*"Some of the world's most advanced ICT centres have been achieved as a result of vision and collaboration between universities, government and the private sector. ASRA has a tremendous opportunity to play a significant role in facilitating a similar collaboration in Alberta."*

Mr. Kitchen was formerly the Senior Vice-President and General Manager, Alberta and Northwest Territories for the Royal Bank of Canada. He is currently Chairman of the Board of Trustees of Pembina Pipeline Income Fund and ICG Propane Income Fund. He is also Presiding Officer of the University of Calgary Foundation.



### **David Lynch**

*“ASRA adds value to Alberta by enabling us to take a fully-integrated, interdisciplinary approach to scientific and engineering research. For example, ASRA’s support of nanotechnology will create a platform technology, supporting the energy, life sciences and ICT strategies. From this very fundamental research work we will then see phenomenal applications of nanotechnology occurring in each of these three key ASRA priority areas.”*

Dr. Lynch is Dean of Engineering at the University of Alberta. Since joining the U of A in 1981 in the Department of Chemical Engineering, he has held positions of increasing responsibility within the Faculty of Engineering until his appointment as Dean in 1995. Dr. Lynch is a member of 14 corporate, public and volunteer boards, including the Canadian Engineering Accreditation Board, APEGGA Board of Examiners, Micralyne Inc. (formerly AMC), TRLabs, Alberta Energy Research Institute, and Climate Change Central. He has been an Alexander von Humboldt Research Fellow at the University of Erlangen-Nuremberg in Germany, and a McCalla Research Professor at the University of Alberta. Dr. Lynch has also received the AC Rutherford Award for Excellence in Undergraduate Teaching and is a Fellow of the Chemical Institute of Canada.



### **John Masters**

*“ASRA is empowered and indeed charged with the responsibility to ensure that Alberta will be at the forefront of leaders in research innovation and technology commercialization throughout the world.”*

Mr. Masters has been President and Chief Executive Officer of Calgary Technologies Inc. (CTI) since February 1998. He joined CTI as Director of INFOPORT™ in September 1994. He serves on the boards of the Alberta Economic Development Authority, World Teleport Association and World Technopolis Association, the Canadian Advanced Technology Alliance, University Technologies International Inc.’s Advisory Council, and the Calgary Airport Authority’s Business Development Committee.



### **John McDougall**

*“ASRA’s mandate is to ensure that Alberta’s innovation system is collectively engaged in activities that give us the highest return for our provincial investment, while reducing duplication and waste. To date, the focus has been on strengthening Alberta’s early-stage research infrastructure. I believe it is now time to turn our attention to strengthening the industrial and commercial portions of Alberta’s innovation system to capture the benefits of our R&D investments and to ensure continued economic growth here in Alberta.”*

Mr. McDougall is Managing Director and CEO of the Alberta Research Council, General Manager of McDougall and Secord, Chair of DBR Group of Companies and a director of PFB Corporation and Innocentre Alberta. He is a fellow of the Canadian Academy of Engineers and past-President of the Canadian Council of Professional Engineers, APEGGA and the Edmonton Chamber of Commerce. He has served as an advisor on public policy related to economic development, electricity deregulation, construction, trade, technology, and human resources.



### **Neal Oberg**

*“ASRA is committed to the future of our province. As a member of the board of the Alberta Agricultural Research Institute I have been fortunate to work closely with ASRA and have seen first hand the good work being done. ASRA has made a difference through collaboration, innovation and proactive thinking. As the province continues to evolve, ASRA’s strategic direction will continue to create a prosperous future for all Albertans.”*

Mr. Oberg is a farmer, rancher and partner in ENO Farms and a third generation, family owned and operated grain and beef cow operation in Forestburg. He is Co-Chair of AARI and CEO of a private Alberta company attempting to establish a viable strawboard facility and industry in Alberta. His is a member of the Alberta Arbitration and Mediation Society, the Alberta Institute of Agrologists, the Agricultural Institute of Canada, and the Canadian Agricultural Economics and Farm Management Society.



**Michael Percy**

*“Alberta is a centre for research excellence, thanks in part to the commitment and vision ASRA provides. As an advisory group of outstanding academic, business and community leaders, ASRA is strengthening the foundations of this province by supporting initiatives that develop, attract and retain top researchers. ASRA focuses on enhancing the contributions of science and research in the priority areas of energy, life sciences, and ICT, working to ensure Alberta remains the best place in North America to live, work and do business.”*

Dr. Percy is a Stanley A. Milner Professor and Dean of the School of Business at the University of Alberta. In addition to his teaching and research obligations in the Economics department and subsequently in the School of Business and elsewhere at the university, Dr. Percy has taken on a number of management roles over the last 18 years. These include Research Director for the Western Centre for Economic Research and Director of the Western Office of the Economic Council of Canada. He has, for many years, served as instructor in the School of Business’ senior executive development program and also teaches at the Banff School of Advanced Management. Dr. Percy also serves as a member of the board of EPCOR and is chair of their Governance Committee. He is also on the board of the Edmonton Chamber of Commerce and serves currently as vice-president. As well, Mike serves on the board of Matrikon, Tolko Forest Products and the Alberta Science and Research Authority. He co-chaired the Premier’s 1997 Economic Growth Summit.



**Glenn Rainbird**

*“ASRA has enabled the province to sharpen its aim. The volunteer board members bring a broad array of community connections, knowledge, experience and insights which help to develop provincial programs and initiatives designed to improve the prosperity of all Albertans.”*

Mr. Rainbird recently retired after a decade as President and CEO of TRILabs, Canada’s leading research consortium in information and communications technology. He is chair of the Edmonton Regional Airports Authority, and co-chair of the Greater Edmonton Competitiveness Strategy initiative. He also serves on the board of Industry Canada’s Communications Research Centre and advisory boards for the schools of business at Queen’s and Royal Roads universities. Included among his many past activities are roles as chair of the Canadian Corporate-Higher Education Forum, chair of the Canadian Network for the Advancement of Research, Industry and Education, chair of the Advisory Committee to the Government of Alberta on Information and Communications Technology Business Growth, a Colleague of Grant MacEwan Community College, and a Stollery Executive in Residence at the University of Alberta.



**Rob Rennie**

*“ASRA has led by example, supporting the government’s strategic goals by implementing sound research and development programs in partnership with the taxpayers and the policymakers of our province. The results are setting to stage for sustainable prosperity for all Albertans.”*

Dr. Rennie is Vice President South America for Agrium Inc. Previously he was Vice President New Products R&D for Agrium and prior to that he served as Manager of Ag Biologicals for Imperial Oil’s Chemical Division and Manager of Agricultural Sciences and Technology with Esso Chemical Canada. Dr. Rennie remains active in international agriculture and previously worked for the International Atomic Energy Agency of the United Nations.



**Frank Stanford**

*“ASRA’s bold leadership has laid a solid foundation for science and technology innovation in Alberta. Its clear vision for the future will provide Alberta with a strong competitive advantage in many areas for years to come.”*

Mr. Stanford is currently Vice President of Systems Products and Services for Westcoast Energy Inc. He has more than 20 years experience bringing Information Technology solutions to the energy industry. He has headed IT groups for exploration and production, geophysical processing and pipeline and midstream businesses. In addition, he was a key executive at an ASP (application service provider), helping it grow to become the largest in its area in North America. Mr. Stanford is involved with community and industry groups.



**Howard Tennant, Associate Chair, Board Operations**

*“ASRA continues to create opportunities for collaboration between government, private sector and Alberta’s research community, and the province is benefiting from the results. Our strong research community, sound infrastructure and positive business climate are keeping Alberta at the forefront, as ASRA works with its partners to build a solid foundation for the future.”*

Dr. Tennant is the retired President and Vice-Chancellor of the University of Lethbridge, and serves as a professor of management. Dr. Tennant has been the director of many boards, including BIOSTAR Inc., SED Electronics, and Systems Enterprise Development Corporation. He was also a member of the Selection Committee for the Order of Canada award.



**In Memory**

All of those associated with Jack McLeod were sorry to hear of his passing, after a valiant struggle with cancer. Jack was an original member of the ASRA board and will long be remembered by his colleagues for his important work on health research. He was a tireless contributor to ASRA, his community and his country. His common sense, smile and enthusiasm were infectious and touched many people.

**Jack McLeod**

**1931 – 2001**





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