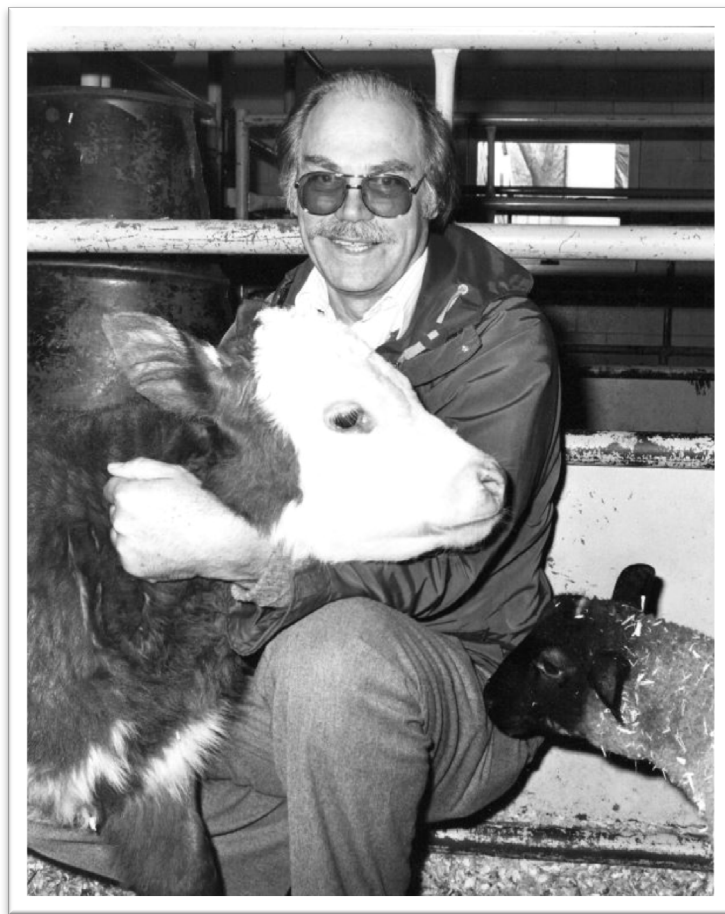




ROY BERG
KINSELLA RANCH FIELD DAY
AUGUST 13, 2014



in memoriam



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Our accomplished past ...
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ALES 100 Opening Celebration

**Professor M.S.
Swaminathan**

**"Is global nutritional security
attainable in our lifetime?"**

Followed by a conversation
about leadership and scientific
discoveries with the
Right Honourable Kim Campbell,
Founding Principal, Peter
Lougheed Leadership College

**October 22, 2014
3:30 PM – 5:30 PM
Myer Horowitz Theatre,
University of Alberta**

A light dessert reception will follow

For more information, visit
ales100.ualberta.ca



UNIVERSITY OF ALBERTA
FACULTY OF AGRICULTURAL,
LIFE & ENVIRONMENTAL SCIENCES



KINSELLA RANCH: THE PAST

In 1955, Dr. Roy Berg and Dr. Laird McElroy, Head of Animal Science at the University of Alberta, decided to launch an experimental cross-breeding program. To start, they would need a few hundred cows to avoid inbreeding, a herd of purebred cows for comparison—and lots of land and money.

They persuaded the provincial minister of Agriculture that their proposal would be an excellent use of \$200,000 from the Horned Cattle Trust Fund. And so, the province bought a 5,554-acre parcel of land at Kinsella for under \$100,000—cheap, even in those days—under an arrangement to lease the land to the university for \$1/year. The rest of the money was spent on cattle and facilities, including a bull performance testing station. The lease was handed over to the University in January 1961.

But the ranch still needed staff. Hugh Campbell, the first manager, immediately hired a young lad (claiming to be 20 because he wanted the job so much), Gary Minchau. Campbell and Minchau fenced two sections of land and overwintered about 100 cows and heifers that first year.

The “Kinsella experiment” was straightforward enough. It aimed to answer the question: would progress in improving beef production traits be faster starting from a purebred or crossbred foundation? Concentrating on growth rate in males and fertility in females, it quickly became evident that the hybrids outperformed the purebreds—and the gap in productivity grew wider with time.

Some 20 years later, Frank Jacobs a well-known cattleman, said that Kinsella was perhaps the smartest investment ever made by any government anywhere. “*Well one reason is that research work at Kinsella indicates that selective cross-breeding, combined with realistic selection, will increase production by more than 30 per cent over conventional one breed systems. Try to estimate what that could mean in an industry which generated \$1.1 billion in the province in 1979.*”

But the real genius of the program was the opportunity it provided to study cattle and range management at every level, from pure science to applied ranching. The ranch itself and every calf born on it became part of a continuing series of experiments. The breeding study was supposed to last 30 years, although the superiority of hybrid breeding was proven in less than half that time.

By 1991, some 600 scientific publications and countless extension articles had come out of the ranch. In addition, countless undergraduate, graduate and post-doctoral students had conducted their research on the ranch, contributed to the world’s scientific knowledge and extended the knowledge to the fully applied level of the working rancher.



WEDNESDAY MORNING, AUGUST 13

09:00 – 09:30 **Arrival, Coffee and Cinnamon Buns**



09:30 – 11:00 **Tour of Research Station, Herds and Methods**

11:00 – 12:00 **Roy Berg Dedication Ceremony**

Welcoming Remarks

Stan Blade, Dean Faculty of ALES, University of Alberta

Greetings from University of Alberta

Lorne Babiuk, Vice President Research, University of Alberta

Roy Berg's Legacy

Mick Price, Professor Emeritus, University of Alberta

Impact on the Beef Industry

John Buckley, Beefbooster Inc.

Industry, Research and Education

Bob Church, Professor Emeritus, University of Calgary

Message from the Berg Family

Ruth Ball (née Berg)

Closing Remarks

Stan Blade, Dean Faculty of ALES, University of Alberta

12:00 – 13:00 **Lunch**





WEDNESDAY AFTERNOON, AUGUST 13

- 13:00 – 13:15 **Message from the Government of Alberta**
The Hon. Richard Starke, Minister of Tourism, Parks and Recreation;
MLA, Vermillion-Lloydminster
- 13:15 – 13:30 **Livestock Gentec: Next Steps**
Graham Plastow, Livestock Gentec
- 13:30 – 14:30 **Crossbreeding and the Economics of Improvement in Commercial Cattle**
Peter Fennessy, AbacusBio, NZ
- 14:30 – 16:45 **Guided Tours**
Improving Beef Production with Functional Genomics
or
Rangeland Ecology in a Changing World
- 16:45 – 17:45 **Networking and Cocktails**
- 17:45 – 18:45 **Dinner**
- 18:45 – 19:00 **Presentation: GrowSafe Student Poster Awards**
Alison Sunstrum, GrowSafe Systems
- 19:00 **Closing Remarks**
Stan Blade, Dean Faculty of ALES, University of Alberta





Livestock Gentec would like to thank...

Roy Berg and the teams who, over the years, have been dedicated to creating what is now the Roy Berg Kinsella Research Station.

Employees Who Contributed to Building the Ranch

John Bobyak
Clint Lysgaard
Ron Shippy
Ray Ball
Dale Petersen
Chuck Dockstader
Dave Crawford (current)
Don McDonald

Managers and Supervisors

Hugh Campbell
Harlan Fulton
Claire Findlay
Thorcuill Macdonald
Laraine Strafford
Gary Minchau
Barry Irving (current)
Jack Welch
Vern Erickson (current)

Current Professors in Addition to Gentec

Edward Bork
J.C. Cahill
Cameron Carlyle

Professors Who Based Their Career on the Ranch

Roy Berg
Mick Price
Art Bailey
Mak Makarechian
Laki Goonewardene

Current Employees

Dale Paterson
Richard Albert
Kailynn Hollinger

Signed,
The Gentec Research Team

*John Basarab
Heather Bruce
Carolyn Fitzsimmons
Leluo Guan
Changxi Li
Steve Miller
Steve Moore
Graham Plastow
Paul Stothard
Zhiquan Wang*



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DR. ROY BERG, 1927-2012

Rather than try to condense a very full life into one page, Dr. Mick Price offered two anecdotes that illustrate the extent to which Roy Berg was an iconoclast and individualist.

“There’s a story about a mother who watches her son, a recruit in the army, parade past her and comments that he is the only one in step....”

Berg needed cross-bred cattle for Kinsella. Among the heifers he bought were 30-odd animals from Neil Harvie of the Glenbow Ranch. Harvie instructed Berg to pick from his Angus heifers, which were all bred to Charolais. However, watching Berg expertly cut the best animals, Harvie began to sweat. Unconcerned, Berg finished his task, looked up at Harvie and pointed to the group of animals he wanted—the culls.



“Roy wasn’t concerned that his opinion was different; that he didn’t want what other cattlemen wanted. Anybody else would have said that he was out of step but Roy simply marched to the beat of his own drum. Neil remained a good friend and staunch supporter of Kinsella.”

~ ~ ~ ~ ~

“Forty years ago, the lecture was the standard way of transmitting information. Roy didn’t see any point in lectures. He liked to tell this story, which probably isn’t true.”

Berg was lecturing on the important traits to measure in a cow. One of them, he said, is birth weight, which is difficult to measure because the rancher is rarely present when the calf is born, doesn’t find it until it’s too late and when he does, the cow is likely to freight-train him on the spot. And how do you weigh a calf in the field, anyway? He offered this solution. Keep a plank on your horse or truck when you’re checking calves. When you find one, balance the plank on a rock, drape the calf over one end and pile stones on the other end until they balance. Then guess the weight of the stones.

“Roy said that not a single student laughed. He realized that nobody in the room was thinking, they were just recording what they heard. He gave up on lectures after that.”



KINSELLA RANCH: CURRENT ERA

Cattle-handling systems, individual feed intake systems and data acquisition systems are just some of the state of the art facilities that support a new long-term research program. But they are the result of continual diversification and re-specialization.

After Dr. Roy Berg retired in 1994, the various strains of cattle at the Kinsella ranch were bred into a single herd. The result was a three-way cross, complete with the genetic variability that Berg believed was the foundation of all selection programs, that forms the basis of the current Kinsella commercial cows. The Double Muscle, Peewees and Cripples (carring the arthrypogosis gene) were discontinued.

Angus bulls were used extensively from 2000–2004, adding a distinctive black colouration to the current cow herd. Another significant selection criteria on the sire side was added in 1995—a threshold of 94-pound birth weight for bull calves. Those that achieved this and the highest average daily gain were selected as herd sires. It was thought this birthweight threshold would place a negative selection on frame creep, while maintaining upward pressure on average daily gain.

In the late 1990s, the Alberta Deer Producers' Association encouraged the university to establish a deer research herd. Kinsella was the logical location. Very soon, staff were hand-rearing over 50 orphaned fawns from all corners of Alberta. The orphan fawn program lasted for three years and resulted in base herds of 20 mule deer and 40 whitetail breeding females. A herd of 20

breeding bison females were also housed at the ranch. Forays into diversified livestock research proved to be a short-term endeavour, and the last elk were moved to a private operator in 2008.

The Canada Foundation for Innovation funded, among other things, the initial purchase of the Growsafe™ system. Ten bunks were installed in 2000, another 10 in 2004 and a further 20 in 2012, resulting in current one-time capacity of 320 head. Immediately after the first installation, Dr. Steve Moore began using the system to produce data on individual animal feed consumption and creating cross-correlations between their genetics and their phenotypic expression (how they perform and react to their environment). “Genomics” is the basis for almost all beef research at the ranch today.





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The interest in genomics and Kinsella's resources resulted in an expansion of the cattle herd. In 2006, Agriculture and Agri-Food Canada (AAFC) was modifying the cattle resources at its OneFour Research SubStation, and declared 188 purebred Angus and 126 purebred Charolais cows as surplus. An agreement between the University and CALRT (Canada-Alberta Livestock Research Trust), which managed the herd, saw that CALRT would retain ownership of the cows, while Kinsella would own the offspring and the revenue. A complementary research agreement with AAFC brought two AAFC beef research scientists to the university. In short order, the 300 cows were moved to Kinsella.

This caused a small problem: insufficient land and facilities for a larger herd and growing research program. AARD's Cornelia Kreplin conducted an inventory of research resources, which revealed an immediate need to buy more land. Funds were appropriated for to do just that. The adjacent Cathton Ranch was purchased, almost doubling the size of the Kinsella ranch to 12,100 acres. A final capital improvement grant was used in 2011 to build new and improve the aging animal handling infrastructure present on the original and new Kinsella Research Ranch.

Investments in research resources are yielding the expected results. Every cow on the ranch is used in two research protocols: some are used three or four times. Careful management and timing ensure that research projects do not interfere with each other. The ranch houses research herds of purebred Angus and Charolais, and the three-way cross from Berg's original strains remains the largest in terms of numbers. New facilities include a state-of-the-art animal processing building and system, numerous pasture corrals for collecting field data, and one of the largest installations of Growsafe bunks on the continent.





KINSELLA RANCH: THE FUTURE

The Kinsella ranch will continue to be an invaluable resource for researchers, students and producers in Alberta, Canada and the world as we search for better ways of raising livestock and managing our environment. The possibilities and opportunities are endless and exciting.

Recently, sustainability has become a hot topic: that is, managing land and water in a way that minimizes impacts or enhances our environment, while maintaining animal health and welfare in an economically stable manner. This and food safety will determine the success of the beef industry, and be at the top of the ranch's research list.

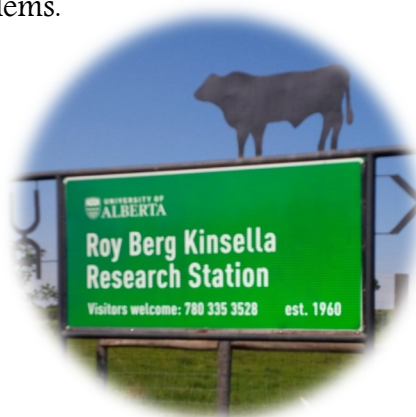
Genomics will be at the forefront of cattle breeding research. Berg's research improved fertility, calving ease, growth rates, and hardiness: genomics research will increase the accuracy of predicting those traits and include new traits like feed efficiency, enhanced immune response, carcass quality, and survivability in a challenging environment.

Ecological goods and services, which includes quantifying carbon sequestration on various types of rangeland, and the effects of grazing on rangeland ecology and biodiversity will be another priority. This will fall under the UofA's new Rangeland Research Institute (RRI) and the Mattheis research ranch in Duchess, Alberta.

Collaboration will also be a priority. That approach is firmly embedded in the DNA of Livestock Gentec and the Faculty of ALES. Researchers have collaborated on projects at both ranches and other research herds in Alberta and Canada to share ideas, maximize the use of limited research dollars and avoid duplication. They collaborate with the Lacombe Research Centre (AAFC and AARD), Olds and Lakeland colleges, the universities of Guelph and Manitoba, and many others. Most of these efforts include industry partners who ensure that research helps solve real-world problems.

The future will see even more disciplines joining their efforts to take Canadian beef production and rangeland management to new heights.

Berg would be proud that his legacy continues to change the world of beef cattle through a focus on industry application. The Roy Berg Kinsella, Mattheis and other Alberta beef research stations contribute to what may be the largest cattle and rangeland research capacity in North America—and possibly the world.





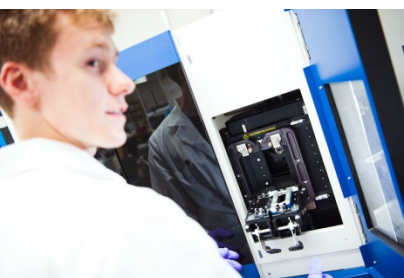
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For more information on how to get involved,
contact Dr. Graham Plastow at 780.492.1496 or plastow@ualberta.ca



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