# Nomination of Austin C. Murray
# for the Canadian Centre for Swine Improvement
# Brian Kennedy Memorial Award


## Dr. Austin Carlos Murray
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## Biography

Born a Maritimer and son of a Baptist preacher and educator, Austin Murray was raised for the most part around Moncton, New Brunswick. His memories as a youth include competitive sports, vegetable gardening and raising chickens. Having an agricultural background, he spent his early summers working on dairy farms.

Austin graduated high school during a one-year stay in Dalton, Pennsylvania. He returned to Canada to attend Nova Scotia Agricultural College. He achieved a B.Sc. (Agr.) from Macdonald College of McGill University. After graduation, he headed west in 1967. He was granted his Ph.D. from the Medical Faculty at the University of Alberta, while being trained as a muscle protein biochemist. After a post-doctoral stay at the John Curtin School of Medical Research of the Australian National University, and a stint as research associate researching muscle membranes in the Department of Pharmacology at the University of Alberta, Austin returned to agriculture by accepting a Research Scientist position at the Agriculture and Agri-Food Canada Research Centre in Lacombe, Alberta. He resides in Lacombe with his family.

Austin was awarded the Governor-General's Medal for highest standing in his class at Macdonald College in 1967 and received the Pork Industry Leadership Award at the Alberta Pork Congress in 1992.

## Contribution to Performance Testing in Swine

**Dr. Murray serves on the Genetics Committee (Advisory) of CCSI. In the past, he has frequently reported to those responsible for overseeing the swine improvement program in Canada.**

**Although not a geneticist, Austin has accepted the challenge of dealing with the Halothane gene and the impact of PSS/PSE on hog carcass and muscle quality. His research group initiated a program of halothane and blood marker evaluation that extended across**

**Western Canada and into Ontario. It resulted in the halothane testing and blood evaluation on approximately 8000 pigs in purebred herds and the development of strategies for removal of this gene mutation within these herds. This undoubtedly had an effect on the frequency of PSS-related swine deaths and the incidence of PSE pork in market hogs within Canada.**

After the DNA sequence giving rise to the Halothane gene was elucidated, Dr. Murray's research group conducted DNA testing in Ontario and Alberta to determine gene frequencies within breeds as well as to determine the impact of this Halothane gene on the frequency of PSE pork and on the frequency of swine deaths during transport to, and lairage at the abattoir.

Until recently, most of Austin's "direct" interaction with swine genetic improvement was in the above-regard. Much of his other research had an indirect effect. Currently, there is a great deal of discussion relating to the inclusion of muscle quality traits within selection indices, which once more give him an opportunity to contribute directly to swine genetic improvement.

**Austin has accepted the role of primary researcher in a project funded by CCSI and WSTA in helping to develop an EBV index for meat quality. Hogs slaughtered at OLYMEL in Red Deer and measured at Lacombe Research Centre have their data evaluated for determining meat qualities. This extensive program in Western Canada will be included in the national database in determining the genetic EBVs for meat quality.**

## Provincial, National and International Contributions

During the past 28 years of working at the Lacombe Research Centre, Dr. Murray has gained expertise in many aspects of meat science, covering subject areas ranging from animal production to meat processing to molecular structure of muscles. His main research interests include sources of variation in meat quality and methods for assessing pork quality. Austin has been involved in several National surveys to characterize carcass and meat quality of Canadian pigs. He has developed or modified the methods to assess pork quality. He has studied the effects of the Halothane gene and pre-slaughter management (feed restriction and mixing) on pig carcass and muscle quality. He has investigated the marbling levels of Alberta pigs as well as the relationship of marbling to muscle quality traits. The increased selection for leanness in market hogs has contributed to reduced marbling in major muscle cuts.

Austin's current research includes the investigation for methods to determine belly quality in pigs, the assessment of muscle quality traits by near infrared spectroscopy (NIR), the assessment of muscle quality traits using digital imagery and the use of proteomic approaches to the improvement of pig carcasses and muscle quality.

A number of Dr. Murray's research studies that he has solely or jointly designed and conducted are summarized below:

1. Pre-slaughter management
2. Muscle Chilling Rate

3. Methods for the Assessment of Pork Quality
4. Additional Current Research
    a. Study of gene products (proteomics) and their relationship to carcass yield and meat quality using a two-dimensional electrophoresis approach
    b. Use of digital images for the assessment of pork color
    c. Frequency of marbling in Western Canadian hogs and appropriate marbling levels and fat content of pork

Dr. Murray is involved in studies that have secured approximately $500,000 in research funding, in addition to the standard Agriculture and Agri-Food Canada A-base funding assigned to his projects.

Dr. Murray has been, and is, involved as a research collaborator and as a consultant for other researchers. In addition, he has consulted to individual purebred breeders, for larger breeding companies (PIC, Designed Genetics, PEAK Swine Genetics, Thames Bend Farms, Genetiporc), for the packing industry (Fletcher's, OLYMEL, Maple Leaf Foods, Genetiporc) and for other industry-oriented institutions (Food Technology Centre, Charlottetown).

Dr. Murray has chaired various National and International Conferences:

- Banff Pork Seminar
- Alberta Pork Annual General Meeting
- Manitoba Pork Annual General Meeting
- Canadian Meat Science Association Annual Symposium
- Meat Chilling Workshop (U.S.)
- PH Workshop (U.S.)
- 1st International Virtual Conference on Pork Quality (Brazil)

Dr. Murray continues to maintain contact with international researchers, partially through participating in meetings such as the Congress of Meat Science and Technology. Information exchange with NPPC (U.S.) and various American researchers is frequent.