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Omtvedt Innovation Awards
Presented to Chris Calkins, Steven Jones,
Rodger Johnson, and Sheila Scheideler
by
John C. Owens
NU Vice President and IANR Harlan Vice Chancellor
October 21, 2004

It's a great pleasure to welcome you to this very first recognition ceremony for the Omtvedt Innovation Awards. We are present here to honor innovation and strengths of the Institute of Agriculture and Natural Resources, and certainly the four faculty members receiving today's awards are greatly deserving of this recognition. Just hearing about their work is gratifying!

Their research and creative activities are sources of pride in their department, in the Institute, and in the University. And they have contributed so much to the livestock and poultry industries, as well as to consumers nationwide.

We are able to provide these awards today because of the generosity of Leone and the late Neal Harlan, great friends of the Institute of Agriculture and Natural Resources and great friends of the University of Nebraska. Neal and Lee had the vision and the foresight necessary to realize the importance of recognizing and supporting outstanding strengths and innovative work among all the people who make up the Institute.

The Harlans honored Irv Omtvedt on his retirement as Vice President and Vice Chancellor with significant funding to support the Omtvedt Innovation Awards. These awards recognize areas of strength and promise within the Institute, as well as innovative research and programming by our faculty, our staff, and our students.

We are so appreciative of the Harlan's support for the Institute, and for their belief in the work we do here, as well as in its importance. The four awards we make today are for outstanding examples of strong, innovative work of benefit to the meat industry, our producers, and consumers everywhere. Therefore, I am especially pleased to present these first four Omtvedt Innovation Awards to the talented scientists we honor today.

We'll begin our recognition of these four researchers with two scientists who often work together as part of a collaborative team awarded the 2004 International Meat Secretariat Prize for Meat Science and Technology. The team received this award for outstanding beef muscle profiling research. Dr. Chris Calkins and Dr. Steven Jones are the two IANR scientists who were awarded this prize. I will recognize them in alphabetical order.

The International Meat Secretariat Award for Meat Science and Technology is awarded in alternate years to individuals or groups whose recent

discoveries or contributions significantly benefit the international beef industry. This was the first time ever that a United States research team has earned the prize.

Dr. Chris Calkins, would you please come forward?

Dr. Chris Calkins led Nebraska's portion of the research team that initially evaluated more than 5,500 muscle samples in the beef carcass, looking for untapped potential in beef cuts commonly used for ground beef or roasts. That number of samples now has grown to over 10,000 muscle samples.

Results of this important and innovative work provided comprehensive information about the muscles of the previously undervalued beef chuck and round, leading to value-added cuts now available across the nation and beyond. Due in large part to this work, the entire meat industry has changed its thinking about how best to cut and use these muscles.

One result of this outstanding research is the flat iron steak, which now is utilized internationally. The flat iron steak is racking up impressive sales both in retail sales and in food service. Dr. Calkins helped identify the potential of the flat iron and helped make it work in the marketplace.

Today, more than 1,300 restaurants serve the flat iron steak and other value cuts derived from the research headed by Dr. Calkins. The prospect is for

10 million pounds of flat iron steaks to be sold annually. The increase in the value of the chuck["] alone["] is valued at more than \$50 per head, compared to 1998 prices.

We["] commend["] Dr. Calkins for 24 years of extremely valuable work. His research also includes consumer~~-~~preferences for beef, innovative~~-~~processing, live~~-~~animal~~-~~traits, meat palatability, composition of cooked~~-~~pork, and so much more. Enhancing cuts from older cows and working with flavor~~-~~issues in beef are just two['] of the future research areas we can look forward to hearing["] more about["] from this outstanding scientist.

Congratulations, Dr. Calkins.

Dr. Steven Jones, would you please come forward?

I am so very pleased to recognize["] your role['] in the innovative research and knowledge distribution["] leading['] to receiving the International Meat Secretariat~~-~~Prize for Meat Science and Technology.

Dr. Steven Jones is known for his innovative~~-~~use of technology to further knowledge about muscle~~-~~profiling and anatomy of meat animals, both in the classroom and for the industry. He was among the["] first["] in his field to use computer-based presentations in undergraduate classes. Dr. Jones continues to

use a variety of approaches, such as interactive lessons and Internet components, to enhance learning for his students and for the meat animal industry.

He uses technology to provide a sophisticated approach so industry can better understand bovine muscular and skeletal anatomy, necessary for beef-cutting procedures. Interactive packages of 3-dimensional and 2-dimensional graphic simulations of muscles and bones make the information a valuable teaching tool in universities. The beef industry uses the information to develop even more boneless muscle cuts. Processors use it to develop new techniques.

Available by CD-ROM, on a bovine myology Web site, and in a soon-to-be published manual, the information offers the first beef myology update since the 1960s. bovine.unl.edu has become the industry standard as it finds ways to separate beef muscles into boneless cuts that maximize tenderness, and to better market them.

Available in five foreign languages, the bovine.unl.edu Web site receives nearly 1 million hits per year -- 35 percent of them industry-related. This truly is an innovative melding of knowledge and new technology capabilities for innovative teaching and study.

Dr. Jones' 20 years of research include studies into muscle growth and

other factors in the live-animal that affect meat quality. He has co-authored a porcine myology Web site, as well. We're looking forward to even more information on meat science, primarily about beef, being compiled into a single Web site that will be 'the' knowledge-base to go to, as Dr. Jones continues his work.

Congratulations, Dr. Jones.

Our next Omtvedt Innovative Award recipient to be recognized today is a member of our Department of Animal Science who works in the area of poultry. Dr. Sheila Scheideler, would you come forward, please?

Dr. Sheila Scheideler recognized the need for people to increase their intake of Omega 3 fatty acids, which are known to reduce heart-disease risk-factors. Her research led to Omega Eggs, which look, taste, and cook like ordinary-eggs but are a much richer source of beneficial Omega 3 fatty acids -- 350 milligrams compared with 60 milligrams in regular eggs. The eggs also have 180 milligrams of cholesterol compared with about 250 milligrams in regular eggs, and a third-less saturated-fat. Dr. Scheideler developed the management-program to produce these eggs in an economical way. The University of Nebraska-Lincoln received a patent on Omega Eggs in 1999. The eggs

currently are sold in HyVee food stores and are used as ingredients in certain baby-food formulas.

After working successfully to improve the inside of the egg, Dr. Scheideler turned her focus to the outside of the egg. Her work has shown that eggshells destined for waste can, instead, be combined with phosphoric acid to develop monocalcium or dicalcium phosphate, which are the most common phosphorus-supplements for use in livestock and poultry feeds. Eggshell-derived phosphorus-supplements are worth \$180 to \$220 per ton.

This technology now is in the process of being utilized at a North Carolina plant, which will develop these supplements and then sell them to poultry producers.

UNL received a second patent on her work with eggshells in 2003. Her eggshell research also holds the promise to reduce waste in our nation's landfills.

Dr. Scheideler's work in the field of poultry and nutrition has resulted in her receiving the American Feed Industry Association Nutrition Research Award from the Poultry Science Association. The award, which is selected by peers, is given for original, distinctive work that demonstrates sound research for poultry nutrition.

Dr. Scheideler now has turned her focus to helping poultry producers adapt technology to ensure they produce their products in consumer-friendly ways through proper housing and nutrition.

Congratulations Dr. Scheideler.

Although our final Omtvedt Innovative Award recipient is unable to be with us, we are pleased to honor him and his work here today. He is visiting his mother in Bismarck, North Dakota, and that trip has been planned for months, and I told him when there's a conflict between seeing one's mom and something else, always choose to visit your mom!

Dr. Rodger Johnson's landmark research in genetic selection in pigs has resulted in vastly-increased litter sizes. He developed the unique Nebraska Index Line, the only university-developed swine-line released to commercial industry in the last 30 years.

Dr. Johnson's 23 years of innovative research focused on discovering whether selecting pigs based on reproductive traits could better increase litter-size. His was the first research to demonstrate that persistent, careful selection for reproductive traits actually boosts litter size.

Dr. Johnson's goal was to better-understand the genetic components of

litter-size when he began breeding and selecting the Nebraska Index Line in 1981. He selected pigs based on key reproductive traits, such as ovulation rate and embryo survival. After 18 generations, the Nebraska Index Line "averaged" 13.5 pigs per litter in the last three generations, compared with the 9.5 per litter "average" in the control line. His work is extremely valuable to understanding the physiological mechanisms controlling ovulation rates.

The Nebraska Index Line was "released" to the swine industry in 1997. Since then, nearly a dozen breeding companies and individual breeders have bought samples of it.

Selected only for litter size, the Nebraska Index Line lacks modern growth and carcass qualities. It's useful for "crossbreeding" in a sophisticated breeding program where litter-size can "complement" other superior performance traits.

Offspring from the Nebraska Index Line were the only university-developed pigs that participated in a National Pork Producers Council "evaluation." Crossbred females, the result of crossing the Nebraska Index Line with a Monsanto Choice Genetics line, produced 42 percent more live pigs during the NPPC Maternal Line National Genetic Evaluation Program than the average of the five other "industry lines" tested.

More recently, Dr. Johnson has researched the genetic mechanisms

involved in resistance to Porcine Reproductive and Respiratory Syndrome, or PRRS. PRRS is the most serious economic disease the swine industry faces. It can cause poor reproductive performance and even death. Dr. Johnson is working to find the genes in pigs responsible for disease resistance. Please extend your congratulations to Rodger when he returns to campus.

We are so very proud of the strong, innovative research activities honored here today, and of the faculty who have conducted this fine work. This recognition is so well-deserved by each of you. I also am extraordinarily pleased and excited that we now have the opportunity and, indeed, the financial means necessary to pay tribute to faculty ^{and others} for their extraordinary levels of scholarship and creativity, as well as for their intellectual contributions which have expanded the boundaries of knowledge and have enriched the lives of so many people. This level of recognition is due, entirely, to the foresight and generosity of Neal and Lee Harlan. Lee, thank you and your family for your extraordinary contributions to the University of Nebraska and to the citizens of our state.

Let's acknowledge our Omtvedt Innovative Award honorees one more time with a hearty round of applause expressing our congratulations.

Thank you.