

THE PULSE

Summer 2019 • Holstein Association USA, Inc.



U.S. REGISTERED HOLSTEINS®

THE WORLD'S PERFECT COW

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HAUSA HOLDS BOARD MEETING IN APPLETON

The Holstein Association USA, Inc. (HAUSA) board of directors met June 23-24, 2019 in Wisconsin. Chaired by President Boyd Schaufelberger, the business meeting was held in conjunction with the 134th Annual Meeting and convention at the Red Lion Hotel Paper Valley.

Committee and management staff reports

The board heard reports from the Audit, Genetic Advancement, International, and Type Advisory committees.

The Board approved a recommendation from the Type Advisory Committee to investigate adding rear legs-side view back into the foot and leg composite at an appropriate weighting and a recommendation from the Genetic Advancement Committee to research formulating a dollar value for TPI® as a secondary number.

The Board heard an update on two genetics research projects which are currently underway and funded by the Holstein Association.

Dr. Christian Maltecca of North Carolina State University is the primary investigator for the research project which utilizes genomic information to increase genetic gain and minimize the unfavorable effects of inbreeding in the U.S. Holstein population. Lead researcher, Dr. Anna Denicol of the University of California-Davis is overseeing another project looking at breeding Holstein cows for heat tolerance using the slick hair gene.



FRONT ROW (l-r): Jonathan Lamb, Vice President; Barbara Casna, Chief Financial Officer/Treasurer; John M. Meyer, Chief Executive Officer/Executive Secretary; Corey Geiger, President; SECOND ROW: Peter Dueppengiesser, John Marshman, Steve Moff, Bill Genasci; THIRD ROW: Robert Webb, John S. Burket; FOURTH ROW: Steve Keene, Dale Drendel, John A. Andersen; FIFTH ROW: Benjamin Newberry, Dwight Rokey, Spencer Hackett



Outgoing President Boyd Schaufelberger of Illinois and retiring Director Mark Kerndt of Iowa

The Association is currently inviting research grant proposals with expected outcomes to benefit the profitability of Holstein cattle. Research may involve traditional production disciplines of genetics, nutrition, or reproduction as well as dairy foods or economics. The submission deadline is August 15, 2019. Applications will be reviewed, ranked, and the successful project announced later in the year.

Management staff updated the board of directors on the 2019 Management-by-Objective business plan and financial report.

Other news

During a dinner on June 24th, the board honored outgoing President Boyd Schaufelberger of Illinois and Director Mark Kerndt of Iowa.

Newly-elected President Corey Geiger of Wisconsin took the chair during a reorganization meeting of the board on June 27th. The board welcomed newly-elected Vice President Jonathan Lamb of New York, and Director Spencer Hackett of Minnesota (Region 6), along with returning Directors Steve Keene of Maine (Region 1), Benjamin Newberry of Georgia (Region 4), and Peter Dueppengiesser of Wisconsin (At-Large). Officers serve two-year terms, and directors serve three years.



LEADING THE HERD INTO THE FUTURE

Hundreds of visitors from around the world visit Regancrest Holsteins each year which is nestled in northeastern Iowa's rolling hills. Appropriately named because of the farm's location on Allamakee County's highest point, the Regan family has been raising top-quality Registered Holsteins® there for generations.

This year's Distinguished Young Holstein Breeder, Sheri Regan-Danhof, is encouraged by her family's history and is committed to advancing the dairy herd into the future.

Making her way through the freestall barn, Sheri admires some of her favorite cows. She heads to the maternity barn where a calf is about to be born. To Sheri, that is one of the most exhilarating parts about being on a farm. Seeing the calf's potential of what she might turn out to be as a two-year-old and beyond, Sheri says, is still an exciting part of the business.

A storied past

Sheri's grandparents, William and Angela, started the farm with Guernsey and grade Holstein cows in 1951. In those early years, it was William's progressive vision that advanced the herd. William was the first in the county to participate in DHIA testing, to use artificial insemination and employ embryo transfer.

"My grandparents set up a forward-thinking operation and established a foundation that we could grow on," Sheri says. "My grandfather saw that the most profitable cow wasn't necessarily the one he had, but was the one he would work to get. His choice to obtain Registered Holsteins set the path for years to come."



CEO John Meyer, Sheri Regan-Danhof and President Corey Geiger

The foundation William instilled in his children and grandchildren remains the core of what they do at Regancrest. They work every day to be better and perfect the art of breeding.

With 1,200 acres as her childhood playground, Sheri always enjoyed days spent on the farm, whether it was feeding calves, milking cows or

helping with registrations and classification. Working alongside her dad, Frank Regan, she was provided with a lot of learning opportunities.

"At a young age, I had a great passion for showing cows and the Registered Holstein part of our family's business," Sheri says. "Being able to register calves, study the pedigrees and know how those played out throughout our herd, was something I knew I wanted to be a part of and continue."

After attending Northeast Iowa Community College-Calmar to study business, Sheri returned to the farm and is now a partner in Regancrest Holsteins. She is actively involved in the genetics side of their operation, working to breed a better cow with each generation.

Recognized around the globe

Sheri's thirst for genetics stems from many visits with people from countries like Japan, Korea or China, who came to the farm for sought-after genetics. She enjoyed that side of the business and it is important to her that they maintain their position in the domestic and international genetic marketplace.

As Sheri walks in and out of the freestalls, she explains her perfect cow. It's important that the moderate-sized cow has a capacious udder and a high, wide rear udder with snug attachments, she says. The perfect cow will move on a good set of feet and legs, with flex to the hock, chest width, deep and open ribs, and a desirable set of hooks to pins.

Currently, the 900-cow herd at Regancrest Holsteins is milked three times a day in a double-16 herringbone parlor. They made the decision to go to three-times-a-day milking five years ago, in an effort to maximize stall space, parlor load and the number of cows in the herd. Overall herd health has improved since cows are being seen more often, Sheri says.

When it comes to breeding decisions, Regancrest is looking for bulls with positive DPR, not over eight-and-a-half on calving ease, and more than two points on type. Productive life is important, paired with a plus on milk and components. They want cows to have the width and capacity to milk.

Sheri says they've always prided themselves on having strong type, welded on udders, and sturdy feet and legs. If you're going to milk 100 or 1,000 of them, she says that is the kind of cow that can thrive anywhere.

At Regancrest, one of the most instrumental cows for Sheri was Regancrest-PR Barbie-ET EX-92 GMD DOM. Barbie epitomized the type that the breed was needing at the time, alongside the high index. She became a well-known name worldwide and helped advance

herd genetics for dairy producers around the globe.

Sheri describes Barbie as a well-balanced cow, with a wide rump and beautiful udder, and perfect feet and legs. Barbie was the foundation for cows that are thrifty, adapt to their environment and don't require a lot of extra work.



Frank Regan, Sheri Regan-Danhof, and Jason Danhof

Moving forward

"Being part of Holstein USA, I think it is very simple to say that they offer the opportunity to maximize and bring added profit to your cows," Sheri says. "They combine so much data that is out there for us to use, which in turn helps us to merchandise our best cow's progeny. We've really seen that true since the start of our farm back in the 50's through today."

Sheri and her husband, Jason, share an

enthusiasm for breeding, owning and developing fine animals. Together, they have developed the Danhof prefix.

Sheri is excited about Regan-Danhof Jedi Cashmere, scored VG-88 with an excellent mammary first lactation. Exemplifying great production with high type, she's transmitted that to her offspring. Sheri says she would like to have a barn full of Cashmere cows, because they tend to breed back every year and are trouble-free cows that milk well.

Cashmere has six offspring over 2,800 TPI. She is the dam of Regan-Danhof Gamechanger-ET, the number one TPI® Genomic Bull in the December 2017 genetic evaluations.

When Sheri returns home each night, she knows that tomorrow is a new day — calves will be born, representing new opportunities for the herd. She knows there is always more to learn, to experience and goals to set for the operation's future.

"My grandpa started this farm with an end goal to have a place for his family to be able to do what we love, be proud of what we do and create a legacy," Sheri explains. "For me, it's not just a job, it's my livelihood. I want to continue the legacy of Regancrest for generations to come."



ACTING ON A VISION

A defining mark of leadership is the ability to look ahead, identify opportunities and take action to move them forward. The 2019 Distinguished Leadership Award recipient, George A. Miller of Columbus, Ohio, dedicated his career to advancing dairy cattle genetics, and improving productivity for farmers around the world.

It only takes one decision to change a life, or an entire breed, forever. August 30, 1965 is a day that George will never forget. On a farm 50 miles west of Washington, D.C., Round Oak Rag Apple Elevation was born. George proposed the magical mating to his cousin, Ronald Hope, because he recognized something special in that genetic combination.

Elevation's dam, Round Oak Ivanhoe Eve EX-94 4E, traces back to Johanna Rag Apple Pabst. From the day he was born, Elevation stood apart, and he would go on to become a global breeding phenomenon.

Elevation has more than 80,000 daughters and at least 2.3 million granddaughters. It is estimated that more than 95 percent of all Holstein animals worldwide can trace their bloodlines back to Elevation. None of this would have been possible without George's vision of what could be, and his determination to see it through.

A passion for genetics

Hailing from Virginia, George grew up helping on his uncle's Round Oak Farm. He and Ronald worked with the milking herd, and it was there George developed an interest in the breeding aspect of the herd and pedigrees of Holstein cattle.

In 1943, George graduated as salutatorian from Lincoln High School in Virginia. He went on to study dairy husbandry at Virginia Polytechnic Institute (VPI) and graduated in 1952. During his time at VPI, he worked as the dairy's herdsman and was the dairy science club president. Thriving on education, George received his master's degree in dairy science from VPI in 1956.

George joined the Virginia Artificial Breeders Association (VABA) as a fieldman. Soon promoted to sales manager and then to general manager, George oversaw many new developments and changes to the dairy and A.I. industry.

During his tenure, VABA converted from liquid semen to a 100 percent frozen semen product. Together with other A.I. managers, he created United Semen Exchange. This

allowed small A.I. organizations, and the dairymen they served, to access a wider selection of sires.

George also helped VABA's sire selection committee negotiate Elevation's acquisition and developed relationships with Maryland and West Virginia bull studs to co-sample the young sire, resulting in a highly reliable proof.

Sharing his talents with Virginia breeders, George enjoyed offering advice on matings to help develop a sound herd. Respecting a farmer's time and finances, George directed the development of Do-It-Yourself insemination programs, reducing the costs of incorporating A.I. in their herds.

A true leader

In 1973, George was appointed Select Sires director of marketing and development. The role offered him the chance to successfully develop new markets, both domestically and internationally, causing semen sales to triple! He was also instrumental in expanding the Select Sires Federation from four to nine members.

He supervised the management and staffing of Select Sire's Prairie State, Cache Valley, Northwest, Northeast and Mid-Atlantic and East Tennessee divisions. George established the domestic distribution to California, Missouri, Nebraska, Colorado, Florida and West Tennessee, in addition to the international markets of Central and South America and Canada.

A lifelong student of Holstein ancestry, George is respected by Holstein enthusiasts everywhere. Although he retired in 1996, his example continues to inspire the dairy community and its leaders. A strong advocate for the U.S. Holstein cow, George enjoys sharing the opportunities presented by top U.S. Holstein sires to cattle breeders.

He relishes listening to breeders and discussing sires they are using. He also loves connecting with young people and sharing his passion for the dairy industry.

George authored several books including: "The Virginia Holstein Association's First 75 Years," "50 Year Anniversary of the VANC Select Sires" and "The Story of Loudoun's County Dairy Industry."

George's 40-year career in the A.I. industry, coupled with the revolutionary Elevation sire, has been an incredible contribution to the Holstein breed and the entire dairy community. His commitment and vision will continue to inspire for generations to come.



Jeff Ziegler, accepting on behalf of George Miller, with CEO John Meyer and President Corey Geiger.

THE ART OF DAIRY CATTLE BREEDING

For David Bachmann Sr., Sheboygan, Wis., dairy cattle breeding is a work of art. A reflection of Pinehurst Farms' progressive spirit, this year's Elite Breeder bred and developed a grand champion-caliber Registered Holstein® herd for over 50 years.

He's unmatched in the showing, and relentless in his goal of breeding better cows that are judged on how they look and perform in and out of the showing.

Pinehurst Farms is widely known as a world-class operation with some of the finest cattle ever bred. David has the uncanny eye to find a "diamond in the rough," take her home and turn her into a class winner.



CEO John Meyer, David Bachmann Sr. and President Corey Geiger

Inspired by history

In 1950, brothers David and Peter Bachmann purchased the farm from their grandfather, Peter Reiss. Over the years, David purchased additional land and added new buildings, bringing the farm to 800 acres and 300 Registered Holsteins.

David developed Pinehurst's herd so that it combined longevity with high lifetime production and superior type. His talent for breeding tremendous, deep pedigrees with long strings of Excellent cows, all with outstanding production records, is the envy of breeders worldwide. The majority of his herd was sired by his own bulls.

Through the years, David focused on efficient milk production and reproduction, leading to the outstanding performance of his cattle. His goal was for all heifers born at Pinehurst Farms to have 14 ancestors averaging 90 points, and the nearest seven dams averaging 1,000 pounds of fat.

The proof is in the results: David bred and developed two 97-point cows and 12, 96-point cows — while 44 animals scored 95 points or higher. He also bred in excess of 100 cows with more than 100,000 pounds of lifetime milk; and four with more than 300,000 pounds of lifetime milk.

A worldwide name

Pinehurst Farms, a 2013 Herd of Excellence, was home to many of the Holstein breed's great brood cows.

David is well-known for developing the Audrey Posch EX-93 2E GMD cow family. She has founded an uninterrupted 20-generation group of Excellent females. The legendary family has resulted in many generations of foundation cows.

David enjoyed the bull side of the business too. He excelled at identifying, proving and merchandising bulls. Pinehurst Peerless was his first All-American bull and the start of his export business.

During those years, especially to Japan, the export market was strong, and cattle were exported on a weekly basis. Pinehurst Farms also exported cattle to Croatia, Serbia, Hungary, Italy, Spain, Bulgaria, Turkey, Russia, France; and Asian countries including China. David also exported horses, ponies and mink.

A savvy marketer, David started working with Sonny Bartel at sales. He would read pedigrees while Sonny auctioneered. In 1968,

the impressive duo started the World Premier sale, and managed the event through 1991.

David ventured into the sale catalog business. Over the course of four decades, his team produced more than 700 catalogs.

In 1976, David's show string was the first to be named Premier Breeder and Premier Exhibitor at three national shows, repeated again in 1980. Pinehurst exhibited World Dairy Expo Grand Champions in four different breeds and two of them went on to be named Supreme Champion.

Among David's other accomplishments, Pinehurst Farms received more than 200 All-American nominees, over 50 All-American and Reserve All-American awards, and was named Premier Breeder or Exhibitor at 20 national shows.

An industry leader

David's commitment is not only apparent in Pinehurst Farms' outstanding achievements, but also in his service on Holstein Association USA's Board of Directors. During his tenure, from 1986 to 1994, David was a member of the finance committee, chaired that committee for two years, and served three years on the executive committee.

David's leadership was recognized by the dairy community with the Klussendorf Trophy in 1995 and the National Dairy Shrine's Distinguished Breeder award in 1996.

As someone who is always willing to share his knowledge and experience, many young breeders have gained expertise from his guidance and support. The positive impact of David Bachmann's influence on the Holstein breed has and will be felt for many years.



HOLSTEIN ENTHUSIASTS MAKE LEGENDAIRY LEAPS IN APPLETON, WISCONSIN

In the beautiful Fox Valley region of America's Dairyland, Registered Holstein breeders assembled for an annual celebration of the iconic, black-and-white Holstein cow. The 134th Annual Meeting of the Holstein Association USA and 2019 National Convention were held June 24 – June 27, 2019 in Appleton, Wisconsin.

134th Annual Meeting

A total of 126 delegates, representing 42 states were present. President Boyd Schaufelberger presided over the meeting, during which members heard reports from the president, CEO and treasurer, discussed current issues relating to the breed and Association, in addition delegates elected new directors to the board.

CEO John M. Meyer and President Boyd Schaufelberger provided updates on the overall status and activities of the Association. Barbara Casna shared a detailed report on 2018 financial performance. Meyer's and

Schaufelberger's addresses can be found on pages 4-9 of this issue and may be watched online at www.holsteinusa.com.

The Association congratulated 138 members for achieving 40-year member status and our 16 Herds of Excellence.

National Genetics Conference

Sponsored by Zoetis and Holstein Association USA, the National Genetics Conference was held in conjunction with the National Holstein Convention. This joint gathering brought together thought leaders in the dairy industry from around the world to advance dairy cattle genetics. It's been a decade since genomics came on the scene in April 2009 and this is a time to review what we have learned, examine where we are today, and address what the future might bring. Visit Holstein USA's YouTube channel for the conference videos.



Robert Miller, III.

Directors Elected

Retiring from the board of directors this year are President Boyd Schaufelberger, Illinois and Director Mark Kerndt, Iowa, of Region 6.

Elections were held Thursday afternoon for four seats on the Holstein Association USA board of directors. Corey Geiger of Wisconsin was elected president while Jonathan Lamb, New York, was elected vice president. Re-elected to their second three-year term on the board were Steve Keene, Maine, representing Region 1, Benjamin Newberry, Georgia, Region 4 Director and At-Large Director Peter Dueppengieser, Wisconsin. Elected to his first three-year term on the board is Region 6 Director Spencer Hackett, Minnesota.



40-YEAR MEMBERS front row (l-r): Martha Seifert, Vanessa Worden, Robert Sabo, Todd T. Stanek; back row: outgoing President Boyd Schaufelberger, Gerald F. and Janice K. Albrecht (medallion sponsor) and CEO John Meyer

Resolutions

Two resolutions regarding fees were brought forth, neither of which was supported by the board. Quoting from one of the resolutions, which was not supported by the Annual Meeting delegates, "Holstein USA adjust its fee schedule to not penalize Registered Holstein® breeders who do not submit male and female registration applications by the time the calf is three months only".

Quoting from the resolution from the Ohio Holstein Association, "A six month 'catch-up' program with registration and transfer fees reduced to \$10 each regardless of the animal's age". The board did not support this resolution that was passed by the Annual Meeting delegates.

Holstein Association USA's (HAUSA) average registration fee is currently \$10.95. Compared to HAUSA's average registration fee fifteen years ago of \$12.58, today's average fee is \$1.63 less than it was in 2003. The Association encourages early registration which historically has improved the accuracy of animal identification. Further, members who choose to participate in the Holstein COMPLETE® program receive a 24 percent discount over the ala carte purchase of the products and services bundled in Holstein COMPLETE. This offers a tremendous savings potential for members who participate in the program.

A third resolution of thanks that honored the Wisconsin Holstein Association hosts and its volunteers was presented by the Holstein Association USA board of directors. The Annual Meeting delegates wholeheartedly passed the resolution with a standing ovation.

Visit our YouTube channel for convention coverage



Alden and Amy Arthur, Iowa



2018 HERDS OF EXCELLENCE front row (l-r): Bruce and Brenda Long, Jeff Brantmeier, Charlie, Evelyn and John Hamilton; back row: outgoing President Boyd Schaufelberger, Tom Kestell, Chuck Maurer, David Koepke, Darrell and Bonita Richard, and CEO John Meyer

Gala Banquet

The Adult Banquet concluded the 2019 National Holstein Convention presented by the Wisconsin Holstein Association. Holstein Association USA's annual award winners were announced at the gala banquet on Thursday evening. Receiving the Distinguished Young Holstein Breeder award was Sheri L. Regan-Danhof of Regancrest Farms, Iowa. David Bachmann, Sr. of Pinehurst Farms from Sheboygan, Wisconsin received the Elite Breeder recognition, and George A. Miller of Columbus, Ohio was honored with the Distinguished Leadership award. Profiles of these honorees are included earlier in this issue on pages 10 through 13.

Visit Holstein USA's YouTube channel for videos of the State of the Association and President Addresses in addition to the Genetics Conference and Gala Banquet presentations.

Next year's 135th Holstein Association USA Annual Meeting and 2020 National Holstein Convention will be held June 22-26, 2020 in Lancaster, Pennsylvania.



Michael Schiller, Minn.



Christin, Paul, Charles and Julia Haynes, Vt.



Farm Wisconsin Discovery Center birthing barn

RESEARCH GRANT PROGRAM

Roger D. Shanks, Ph.D., Dairy Genetics Consultant

Research is an easy word to say, but many factors contribute to research. First, someone needs an idea or question to investigate. Then, a method to answer the question is required. The method may include an experimental design, data collection, analysis, interpretation and a written report. Ideally, application of research results will be implemented after the research is completed, but often further questions are raised that need to be addressed before implementation. Funding to support the process is extremely helpful to move toward implementation. Given that in March 2014 the Holstein Association board of directors approved using a portion of the Holstein Association reserve funds to support research, the Holstein Association USA research grant program was initiated in 2017. The underlying objective of the research grant program is to encourage research on Registered Holsteins®. Research proposals are solicited annually (next due date is August 15, 2019) and should address how research outcomes are expected to benefit the profitability of Holstein cattle. Specific details about the program can be found on Holstein Association website.

History

Twenty-two research proposals were received in 2017 with requests for almost 4 million dollars to support the research. One research project was selected for Holstein Association funding entitled “Utilizing genomic information to increase genetic gain and minimize the unfavorable effects of inbreeding in the US Holstein population.” This project with Dr. Christian Maltecca from North Carolina State University as principal investigator is nearing completion and some results from the project will be presented later in this article. Many of the other proposals received are moving forward with funding from other sources.

In 2018, seven research proposals were received with requests for over 1.3 million dollars to support the research. Again, one project was approved for funding by the Holstein board and the title of the project was “Breeding Holstein cows for heat tolerance using the slick hair gene”. This is a three year project led by Dr. Anna Denicol of the University of California Davis and initial progress on the project is very good. More details on this project will be presented at a later time as the project progresses.

Highlights of the research project on inbreeding

The main question addressed by Dr. Maltecca’s research project was “How can genomic information be employed to increase profitability by more efficiently managing genomic diversity in the Holstein breed?” Specific objectives of the research were to 1) evaluate different ways of measuring inbreeding with the goal of reduced accumulation of negative inbreeding effects and maintaining diversity, 2) identify haplotypes associated with negative inbreeding effects and 3) create a multiple

trait inbreeding index using measurements from objective one and haplotype effects from objective two.

Metrics to measure inbreeding

For objective one, four metrics were evaluated to measure inbreeding. These metrics included the traditional pedigree inbreeding based on probabilities and three metrics based on genomic information (Genomic Based Inbreeding, Runs of Homozygosity Based Inbreeding and Homozygosity By Descent Based Inbreeding). Although each metric was useful, the genomic data driven metrics were an improvement over probability based pedigree inbreeding.

Inbreeding depression from haplotypes

Haplotypes associated with negative effects from inbreeding were investigated for milk yield, protein yield, fat yield and productive life. Each of these traits were quantitative traits with many genes influencing the positive and negative contributions. Most effects were small. Dr. Maltecca was able to identify negative effects of inbreeding for these traits on all chromosomes of the cattle genome. To state this in another way, these four traits are influenced by many genes and the small effects of those genes are spread across every chromosome. At some locations on the chromosome, no negative effects were found. Other locations had negative effects for one of the traits or two of the traits. Some locations had negative effects from inbreeding on three or four traits. The new challenge then was to weight all of this diverse information in a manner that increases profitability of Holstein cattle.

Multi-trait inbreeding index

The mechanism to incorporate all of this diverse information on inbreeding depression is to apply an Inbreeding Load Matrix (ILM) in a mating program. Work continues on confirming appropriate weights for different segments of the genome. However, the research demonstrated that obtaining weights and incorporating information into a mating matrix is feasible.

Take home messages from the research project on inbreeding

- 1) Metrics based on data from the genome can be useful to help monitor inbreeding.
- 2) Potential haplotypes associated with inbreeding depression have been identified and need to be confirmed in a larger data set.
- 3) Inbreeding Load Matrix can capture detrimental effects of inbreeding in several traits and is one method to help control inbreeding through a mating program.

Dr. Maltecca is writing a research manuscript containing more details. After that manuscript has completed peer review and is approved for publication, additional information will be available to members.