Enriquez Highlights Global Changes

Recognized futurist and thought leader Juan Enriquez challenges Angus breeders to "embrace change."

by **KINDRA GORDON,** *field editor*

Juan Enriquez was introduced as a "thought leader" and "someone who lives in the future" as he was called to the stage to deliver keynote remarks kicking off the second International Genomics Symposium, which was hosted as part of the 2016 Angus Convention Nov. 5 in Indianapolis, Ind. The symposium was sponsored by Neogen GeneSeek Operations.

Enriquez is recognized as one of the world's leading authorities on the profound changes that genomics and other life sciences will bring about in business, technology, politics and society.

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>
> *— Juan Enriquez*

Enriquez shared a series of examples — from Uber to three-D printers — that have proven to be industry game changers.

Regarding Uber, he noted that in less than a decade the company has proven to be a formidable competition to traditional taxis, and today Uber is worth $68 billion. For perspective, that equates to the entire economy of Uruguay and is greater than the value of 70% of Fortune 500 companies. Uber is now more valuable than Ford, GM and Honda combined.

"These are big disruptions," said Enriquez.

Moreover, he pointed out that urbanites are realizing if they travel fewer than 9,500 miles annually, it's cheaper to just take Uber rather than owning a car. Enriquez joked, "When fewer people buy cars, they have more money to eat out and have steak."

Jesting aside, he pointed to the future when Uber may team with autonomous cars, which could drive costs down even more because the expense to pay a driver has been removed. Enriquez hypothesized that this could mean even fewer cars are purchased, and if more cars go away, streets change, malls change, shipping changes, steel production changes, infrastructure changes, cement production goes down. He pointed to the fact that autonomous cars could result in fewer accidents and joked, "even lawyers and stoplights could go away."

PHOTOS BY LEANN SCHLEICHER, ANGUS MEDIA

Left: "Waves of technology keep washing over countries, businesses and industries and causing change," said Juan Enriquez, recognized as one of the world's leading authorities on the profound changes that genomics and other life sciences will bring about in business, technology, politics and society. "You've got to be ready. Brands that adapt survive and thrive." To watch a segment on *The Angus Report* featuring the International Genomics Symposium, visit *http://bit.ly/IGS-TAR*.

Don't say no to technology

International Genomics Symposium panelists urge members to embrace technology, innovation.

To wrap up the International Genomics Symposium Saturday morning, Nov. 5, at the 2016 Angus Convention in Indianapolis, Ind., three experts gathered for a panel discussion moderated by John Pollak, director of the U.S. Meat Animal Research Center (USMARC) in Clay Center, Neb. Panelists included Ben Hayes, Dan Moser and Stephen Miller.

Australian Ben Hayes leads the "1,000 Bull Genomes Project," an initiative that aims to accelerate the rate of genetic gain in domestic cattle, while preserving high standards for animal health and welfare. Hayes offered a worldwide look at how genomic profiling of animals is shortening generation interval and improving breeding accuracy of beef cattle.

From left, John Pollak, director of the U.S. Meat Animal Research Center at Clay Center, Neb., led a panel discussion with genomics thought leaders Stephen Miller of Angus Genetics Inc., Ben Hayes of the "1,000 Bull Genomes Project" and Dan Moser of AGI. Listen to the full panel discussion at *http://bit.ly/IGS-panel*.

Dan Moser, president of Angus Genetics Inc. (AGI), offered insight into what the affiliate company of the American Angus Association has done, will continue to do and is presently working on to improve the Angus breed through precision genetics, testing and breeding practices.

AGI's Director of Genetic Research Stephen Miller commended the future of genomics in domestic cattle breeding, saying, "Don't say 'no' to technology," and asserting that producers must be open to new technology to continue to improve their herds and the Angus breed as a whole.

What's now, and what's ahead

Moser started off the discussion by telling Pollak that in years previous he would have "never believed" the advancements in genomics the industry has seen, and that we should "embrace them," and remain prepared for challenges along the way.

Hayes's goal is to make genomic evaluations effective across breeds and to improve the accuracy and effectiveness of those evaluations in *Bos indicus* cattle. Rather than just "snapshots across the genome," Hayes said he wants to "nail the traits that are causing differences."

Moser revealed that AGI hopes to soon release an expected progeny difference (EPD) value for carcass tenderness in Angus cattle. He also pointed out work toward EPDs involving regional adaptability, including values for things like fescue tolerance and high-altitude disease.

Miller pointed out AGI's progress on structured sire evaluation, and commercial traits and their impacts on cattle health and performance at the feedlot.

Hayes mentioned that he would like to set the stage for a "consumer acceptability EPD," by testing steaks ordered by customers and restaurants, and breeding cattle to produce meat with characteristics most favorable to consumers.

All panelists agreed that the value of genomic testing is clear, and that producers, researchers and consumers will continue to improve the technology and benefit from it in the years to come.

The second-annual International Genomics Symposium was sponsored by Neogen GeneSeek Operations.

Listen to the full panel discussion at *http://bit.ly/IGS-panel*. For more news from the Angus Convention — including summaries, speaker presentations, photos, videos and much more — visit the convention newsroom at *www.angus.media/news/Angus-Convention*.

— **Shelby Mettlen,** *assistant editor*

Juan Enriquez says the focus among scientists is life code. He explained that life code is what every life form on the planet is made from — "from clover and a piece of hay to sheep and politicians."

"These are big systemic changes," he noted, and added that, in comparison to many other countries around the world — notably Europe, instead of encouraging innovation there tends to be a time warp to continue using methods and technologies of past generations.

"It's neat to live in the U.S., where change is embraced," he said.

He also commented, "Waves of technology keep washing over countries, businesses and industries and causing change … and you've got to be ready. Brands that adapt survive and thrive."

Shifting to genetics and the future, Enriquez says the focus among scientists is life code. He explained that life code is what every life form on the planet is made from — "from clover and a piece of hay to sheep and politicians."

He noted that adenine, thymine, guanine and cytosine — ATGC — are the four nucleotides found in all DNA.

"All life is coded in the same letters," said Enriquez. "That makes life forms programmable. Change a couple letters and an orange becomes a tangerine, or a grapefruit or a lemon."

To this Enriquez also said, "That means all life is code. That is important, because you can read code, copy code, edit code. … That means we are increasingly in charge of evolution."

The future of this technology will require moral and ethical considerations, he admitted. "It gives you choices. Some you want; some you may not."

He closed saying, "I don't know the right road [for your organization] to take, but I do know things are going to change." He complimented the Angus breed saying, "Trends and technology matter, and you are ahead because you are here talking about genetics and branding and the future."

Read more of Enriquez's thoughts in the book he co-authored titled *Evolving Ourselves: How Unnatural Selection and Nonrandom Mutation are Changing Life on Earth*, which is available via Amazon.

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"As soon as you can pull a tail hair or get a sample of DNA from the animal, you can get back these genomic breeding values and start to make selective decisions about those animals," Ben Hayes, leader of the "1,000 Bull Genomes Project" in Australia, told those attending the International Genomics Symposium at the 2016 Angus Convention. Listen to Hayes's presentation at *http://bit.ly/IGS-Hayes-audio* or access his PowerPoint at *http://bit.ly/IGS-Hayes*.