

**PRESENTATION**

**Speaker: James C. Collins**  
October 13, 2016 - 10:30 a.m.

*Introduction*

**Ambassador Kenneth M. Quinn**

President - World Food Prize Foundation

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We're so fortunate to have another dynamic business leader, Jim Collins, Executive Vice President of DuPont, who's here. Want to invite him and Paul Schickler, our Council of Advisors member, to please come up on the stage. And I'm going to turn to Paul to do the introduction of Jim, but I just want to say one thing. I was in Milan about a year or so ago, and there was a terrific panel put on there by Jim Burrell and looking at the future. And the question was – Can we feed nine billion people? And your economist intelligence unit member who was there said, "No, not without innovation." And that's what DuPont and DuPont Pioneer is about.

Paul Schickler has been for ten years the president of DuPont Pioneer, a great friend. He and his wife are very personally generous in supporting our youth program, and so my pleasure, Paul, to turn to you.

**Paul Schickler**

President, DuPont Pioneer

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Thank you, Ambassador Quinn, thank you for those remarks. And it's so great to follow the previous program. I think that really sets the tone not only for the day but also for the message that you will be hearing from DuPont.

It is wonderful to be part of the 30<sup>th</sup> year anniversary of the World Food Prize. If I look back over that 30 years, you know, typically we identify an issue that needs focus. Whether that's food security, women, rural development, water, climate change, sustainability, an issue is focused upon. And, Ambassador Quinn, it's wonderful that this year that focus is on nutrition. Because if I look to the future, I do believe that we'll have a chance to continue to make progress on food security, on being resilient for climate change, and on improving rural development. I think we can do that. I think we can do that through innovation.

But nutrition brings us another challenge, and I think that challenge is at a higher level; and as a result, I think we need to address that and address it now. But DuPont's business model and our objectives line up precisely with the current challenges that we face, as well as nutrition into the future. Our business model is focused upon increasing agricultural productivity. It's focused on delivering sustainability, and it is focused upon improving nutrition. And we bring

that all together by working at the local level so that we can drive solutions to farmers everywhere in the world.

Now, as I look again to the future, I'm even more excited about DuPont's capability to do just that – bring innovation to all these areas. And we're going to do that because of the impending merger, Dow and DuPont coming together, and more importantly the creation of a publicly traded agriculturally focused, independent organization that will drive innovation to the future, again, solely focused upon agriculture. And I think that by doing that, we'll continue to make strides at even a greater rate on driving agricultural productivity, innovation and ultimately improved nutrition.

So I've got the pleasure of introducing the person who will lead that journey on into the future, bringing forth the new vision of the agricultural company that I just described, Jim Collins. Jim is the executive vice president for DuPont. Since he first joined DuPont in 1984 as an engineer, he has held a number of positions in sales, project management, and in marketing. He has advanced through several roles in global responsibility, including president of DuPont's Crop Protection. Most recently, he was president in 2011 of DuPont Industrial Biosciences and mainly led in the development, the planning and ultimately the grand opening of the DuPont cellulosic ethanol facility right down the road in Nevada, Iowa. After completion of the proposed merger between DuPont and Dow, Jim will become Chief Operating Officer of the resulting agricultural business.

Jim graduated from Christian Brothers College in Memphis, Tennessee, with a degree in chemical engineering and has an MBA from the University of Delaware. He's active in professional and community organizations and serves on the board of directors for Crop Life, International, Grocery Manufacturers Association, Christian Brothers University, and the U.S. China Business Council. He also serves on the Advisory Board for the University of Delaware's Alfred Lerner College of Business and Economics and on the Board of Trustees of the Hagley Museum and Library. A supporter of youth, education and leadership, Jim served on the Executive Board of the Chester County Boy Scouts and has received an honorary American FFA degree for his efforts in promoting agriculture among youth.

I have known Jim for more than 15 years, and I am excited that he is going to bring to the agricultural company that will result from the DuPont/Dow merger. What I know about him is his knowledge, his experience and passion in agriculture will bring certainty to the expanded innovation that we need in agricultural sustainability and nutrition.

Please join me in welcoming Jim Collins.

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**John C. Collins, Jr.**

Executive Vice President, DuPont

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Thank you so much, Paul, for that introduction. As Paul said, we've been friends and we've been colleagues for a long time, and I've always benefited from Paul's great mentorship over the years. And, thank you, Ambassador Quinn, for the opportunity to be here today.

On behalf of all of the DuPont employees around the world, I would like to personally offer my congratulations to the 2016 World Food Prize Laureates. You know, their work in biofortification has combined to enhance the nutrition and wellbeing of ten million people around the world, and that will undoubtedly benefit hundreds of millions more in decades to come.

I would also like to recognize that this is the 30<sup>th</sup> anniversary of the World Food Prize, initiated by Dr. Norman Borlaug. And I can't think of a better tribute to Dr. Borlaug than this event every year that brings together so many people that work so hard to achieve his dream of feeding this world.

Food is life. In every corner of the world, cultures, societies and families are often centered around food. Beyond providing nourishment that our bodies require, food is the center of holiday traditions, family celebrations and a cultural identity. But we are all faced with the same question—How is something that is so vital to sustain life, carries such a significant cultural connection, and is central to our celebrations around the world, so scarce for so many people?

Now, our world faces a multifaceted challenge when it comes to food. On one hand, 800 million people in our world are chronically undernourished. The previous speaker did a very nice job of sharing those statistics, and we know the impact of undernourishment can last a lifetime. As we heard, in a child's first two years, undernourishment can lead to stunted physical and mental growth; children who go to school undernourished can't reach their full potential. And adults who are undernourished as children earned 20% less than adults who were not, and they are more likely to contract chronic diseases, according to the Healthy Food for a Healthy World Report by the Chicago Council on Global Affairs. And the cycle continues to future generations as each year 17 million children are born undernourished due to the mother's lack of nutrition before and during pregnancy.

So we have 800 million undernourished people. Yet, we have 1.4 billion people, nearly twice the number of undernourished, that are overweight or obese. Considering both obesity and undernourishment, malnutrition affects one in two people on the planet. Now, while undernourishment rates are slowly declining, obesity is expected to increase, leaving many nations facing the dual burden of both undernourishment and obesity at the same time.

The global malnutrition epidemic is costly as well; it's costly to social welfare, to our health systems, to our economies, the environment, and most obviously to human life. And turning the tide on escalating projections will require a food system revolution that connects the agriculture, food and health sector. It will require growing the market for healthy foods and giving billions of people more access to the nutrients they need to thrive.

You know, the challenge is pretty straightforward—how do we make healthy available and affordable to everyone? Now, the solutions to this simple challenge are complicated and will require a commitment and a coordination for years to come. And that's one of the reasons why this year's focus on food as medicine and biofortification, I believe, is so timely; because it highlights that important duality of the food security challenge. The focus should not just be on calories but also on improving the nutrient density of food. Biofortification is an especially effective strategy in many developing countries that rely on one or maybe even only two staple crops to get a majority of their nutrition.

So as I thought about this topic, I believe there are three essential ingredients to addressing our challenge today and tomorrow. And those are innovation, education and communication. Now, all three of those must be done in some sort of collaborative effort with others to deliver the nutritionally rich food and have the greatest impact on the populations where we need it the most.

At DuPont we have made public commitments in all of these areas. You know, it's in the spirit of – *What gets measured gets done* – we announced a series of food security goals in 2012. We set targets in three areas of innovating to feed the world, to engage and educate our youth, and working to communicate and help to improve rural communities.

So let's begin with that first ingredient around innovation. I believe innovation is a requirement to sustainably fortify food and to create national security. Our global food security goals commitment as DuPont is to invest \$10 billion in research and development and launch 4,000 new products by 2020. Now, I see that pledge as an opportunity to bring 4,000 new ways to produce food, 4,000 ways to improve nutrition, boost food safety, and to reduce food waste around the world. That's 4,000 new ways to improve lives through food.

Now, food and agricultural systems in Southeast Asia and Africa and other parts of the world have struggled to raise enough food to meet the population needs. And while agriculture accounts for about 4% of jobs in developed nations, it employs about half of the populations in over 50 countries around the world. And more than 40% of the world's jobs are connected to agriculture. So for 1.3 billion people on our planet, food is not only life, it's their livelihood as well.

Now, because farmers are working with living plants in a living world, the target to meet these food production goals is constantly moving. They face the pressures from a changing climate, urbanization, natural disasters and even more. So we must work to provide tools to help farmers maintain their productivity and profitability despite these factors that are essentially out of their control.

Therefore, I believe smallholder farmers are going to be critical to this food security. You know, in a majority of the communities and countries, smallholder farmers, many of whom are women, provide up to 80% of the food supply. Now, however, many of those are trapped in a cycle of subsistence and poverty, so breaking that cycle requires a step change in productivity.

The good news is that smallholder farmers can also be tremendous agents of innovation in their communities when given the resources and support to do so. You know, I've had the opportunity... I lived and worked in Asia for about five years. I had the opportunity to travel in many of the developing countries in Southeast Asia and places in India. And I saw this firsthand where we deployed brand-new technologies and we were able to create substantial step changes in productivity. And in one village I had a young woman approach me one day and say... You know, she fed her family for the last year. Her children went to school, there was fuel for the vehicles to transport their crops, thanks to new technology that was launched by companies like DuPont. So I've seen this happen.

So I have a few examples of innovating with and for farmers that I can get excited about that we're working on in the future.

In the Mekong Delta area of Vietnam, farmers are working to improve their profitability by trying to raise two crops in one year. You know, they raise rice during the rainy season, and they operate shrimp farms during the dry season. This practice allows them more financial stability for their families; however, the salt water that they use to raise shrimp results in very high salt levels in the soils and limits their rice yield compared to others.

DuPont Pioneer agronomists and researchers worked with local farmers to introduce a hybrid rice seed that is much more tolerant to those high salinity levels. That new hybrid yields 30 to 40% more per hectare than their open-pollinated varieties, and these are varieties the farmers have been planting for years.

So for a small farming couple in Vietnam, that 30 to 40% yield increase is the difference between barely surviving and building a newer, safer home for their family and ensuring that their children go to school. For them, food is not only life – producing more food provides the opportunity for a better and a more secure life for his entire family.

Now, the widespread adoption of biotech crops is another example of where farmers are seeing the value of this innovation technology that we're working on. In 2015 farmers around the world reached a milestone of 20 years of commercializing biotech crops. According to the ISAAA, biotech crops have now been planted by up to 18 million farmers around the world, making it the fastest-growing adopted crop technology in recent times. Global planted hectares for biotech crops have increased a hundredfold, from about 1.7 million hectares in 1996 to 180 million hectares in 2015.

So we know the driver behind the growth and adoption of biotech crops is the agronomic, environmental, economic and social benefits that have been delivered to farmers around the world. You know, a global meta-analysis of about 150 studies over the last 20 years has reported that on average GM technology adoption has reduced chemical pesticide usage by 37%, has increased average crop yields by 22%, and has increased farmer profitability by 68%.

Now, the most inspiring examples of those benefits can be seen on farms in rural communities like I mentioned in the developing world. Yield increases from biotech crops, along with improved management practices, are truly changing lives. In 2015 developing countries planted biotech soybeans, maize, cotton, canola, eggplants, papaya and poplar on nearly a hundred million acres.

Now, we've seen significant accomplishments, but yet there is much more to do, as we are all discussing here this week. And to meet that challenge of that growing population, more is not only expected, but more is going to be demanded. We are looking at a very rich pipeline, working with our own company, universities, public-private partnerships that can allow us to bring some of those benefits to market much more quickly. We're seeing huge potential with advanced breeding technologies that allow a very specific and exact changes to the DNA of a plant. We have a very detailed understanding of the genome of corn and other staple crops, thanks to the decades of research and sharing of information by our scientists all around the world. So we can use these new advanced breeding technologies to promote things like drought tolerance and disease resistance to protect plant health and to increase crop yields. It can also provide a direct consumer benefit, like removing food allergens and producing much healthier oils.

So we've talked a lot about these technologies to improve seeds that are planted by farmers, but that's only one part of a very large picture. Chemistry or crop protection products are also an important part of improving food production and preserving food quality around the world. A great example of that is—after a pest crisis that crippled rice production in many Asian countries and led to some substantial political turmoil back in Indonesia in 2008, our DuPont teams worked with farmers and the local organizations to find some new solutions.

One successful tool was the introduction of Rynaxypyr, one of our newest insecticides. Now, in order to bring that product to market much more quickly to the farmers who needed it, we launched several integrated teams that worked together to streamline our product development process and to get that promising new chemistry more quickly through the health and environmental assessments that were required to safely launch the product. The result? Rynaxypyr allowed rice farmers to control devastating pests and ensured both food security and political security.

So food is life. Providing farmers with tools they need to increase food production can also be the key to maintaining peaceful, productive communities.

And while we continue to innovate to promote farmer productivity, we cannot lose the focus on the imperative to promote nutrition. Many new products come from joint efforts of agriculture, the nutrition and health industries, where scientists are combining their in-depth knowledge of food with leading-edge science to solve a variety of nutritional challenges. So the theme for this year's Borlaug Dialogue, *Let Food be thy Medicine*, is a perfect fit for the work that is being done in this important arena.

Whether it's a soy-based supplement that boosts the nutritional value of a traditional food in Africa or a shelf-stable milk supplement with important vitamins for school milk programs in China or a probiotic for expectant mothers and babies that helps prevent the development of allergies and eczema in young children, we are providing every day; and proving that food can be both nourishment and medicine.

Now, at DuPont, we're thrilled to be part of an initiative that we call the African Biofortified Sorghum Project, or ABS, which is working to really improve the nutritional value of sorghum to benefit millions across Africa. Now, while sorghum is the primary food source for millions, it lacks the essential nutrients. Now, I'd be really happy to stand up here for the next 15 minutes and talk about this public-private partnership between African Harvest and DuPont and several other organizations. I'm really excited about the potential here. But instead of listening to me, why don't we listen to some of the researchers who are doing the work. Let's let them tell their story.

VIDEO

Great. You know, I am very excited about this ground-breaking innovation. It's the ability to take technology that we develop for corn and apply it to sorghum very, very rapidly. So this project really shines, the main point that we talked about, about not underestimating the role agriculture innovation can play in making measurable impacts in terms of not only the basic caloric intake but helping with nutrition and health.

Now, during the last ten years of the project, you're also able to see on here, we've been able to provide research and training opportunities to African students and scientists. Their experience

will deliver returns well beyond this biofortified sorghum project as they take their learnings now to other projects with other countries and companies all across Africa and hopefully all around the world. So once again, we have the opportunity to bring the theme, *Let Food be thy Medicine*, to life.

And while we're facing great challenge in food production and food security, as Paul indicated and I agree with him, I am confident that innovation from these sectors can deliver the advancements that we need to fix this issue and life-enhancing food supplies for generations to come. So innovation is critical. And its value will be limited if we don't inspire the next generation of leaders across food, ag and nutrition.

That's why it's important, I believe, for us to talk a moment about that second ingredient, education. From providing training to farmers so they can share these great new ideas with their peers, to creating educational opportunities for youth, I'm a true believer that learning should never stop. Now, we work with governments, local communities, schools and communities around the world to develop local, sustainable skills of knowledge of growers of all ages. And we often take the model of a program that has worked in one part of the world and tailor it to the needs of another region. So whether it's 4-H or FFA or ag in the classroom that we host in the U.S., to our engagement with two million young people in the world to transfer knowledge in sustainable food and ag, we are working to inspire that next generation to make a difference.

Now, shirking this responsibility of preparing today's youth for tomorrow, I believe, is just not an option. It is our responsibility to get our young folks excited about the challenge of feeding the world and then providing them opportunities to become part of that and to become the next generation of leaders.

I am pleased by how we're playing a role in this massive effort around the world. One initiative is being led out of our nutrition and health business. They sponsor an awards program with the Gansu Agricultural University in China to encourage environmentally conscious and scientific leadership among the animal science graduate students. And one of the reasons I'm so excited and passionate about working in food and agriculture is that we have an opportunity to both learn and teach every day. We have employees, researchers and agronomists working in 90 countries around the world, studying how our products are performing, trying new management practices, and sharing what they learn with local growers.

Now, this on-the-ground education is the foundation of our business, and it's also how I believe we will all work together to meet that challenge of providing food sustainably for nine billion people. So food is life. And only by sharing what we've learned we will ensure that everyone has access for what they need for a healthy, productive life.

So, finally, that third ingredient that I mentioned earlier in meeting this challenge we face, I believe, is in communication. You know, at DuPont, we live, work and listen in the communities where we develop and sell our products, with a goal of understanding the concerns and questions that people have locally about what we do. We operate with transparency, we host tours, forums, meetings, and a variety of other ways to share our story with anyone who is interested; and we work hard to understand their perspectives. And we are also raising our families in these local communities. Just like you, we care deeply about what our children are eating and the quality of the land that they will inherit.

As new, innovative technologies are developed and are put to work, our first priority has always been efficacy and safety. Efficacy is how our products perform in delivering the benefits that we say it will across all of these conditions, and safety for the environment for the farmer and the food chain.

You know, in order to deliver these solutions, we need to make a difference in the 800 million undernourished people. We need to be able to develop and introduce solutions in a very timely and predictable manner. Now, this means working in partnerships with governments, with agencies to establish a clear, transparent process for regulatory and safety testing in order to deliver the most important technologies and products to folks who need it the most around the world.

So as part of our food security goal to improve rural communities, we have actively looked for ways to engage in new partnerships with new technologies. You know, just last month we announced a new partnership with the International Maize and Wheat Improvement Center in Mexico, and we'll be working with them to find ways to apply CRISPR-Cas technology that I discussed earlier. Now, that first project will be to address a lethal disease in Sub-Saharan Africa in corn. This disease can reduce maize production by up to 32%. It was first discovered in 2011, and it now affects nearly a quarter of the maize produced in Kenya, resulting in an annual loss of about \$100 million to the country's farmers, and it's now spreading to neighboring countries. So I'm excited that we will be able to work with CIMMYT to adopt and accomplish this task and halt these yield-robbing diseases, and I look forward to sharing updates about this project as we go forward.

You know, at DuPont, we're committed to continuing the conversations that we've started in all aspects of food production and those that lead to innovation and locally driven solutions. Our doors are open, and so are our ears.

Food is life. We must ensure that lifesaving technologies will endure because we are communicating and making them available to growers who need them most.

So as I started, I said that global food security is about calories and nutrition. Addressing only one of those won't solve the challenge. So I believe that we have the ingredients to deliver an abundant supply of healthy food to everyone. It will take innovation to develop these new solutions. It will take education to share them in the local communities, and it will take communication to ensure that those solutions are implemented in a responsible and relevant, sustainable way.

Now, my personal goal and my challenge to each of you is to listen and learn from everyone that you meet here at the World Food Prize event this week. Then do the same when you return to your jobs, your schools or your farms. Just as our experiences with food are unique and influential, so are our perspectives on food production. Share those perspectives. Take time to engage with and understand the perspectives of others, even those you might not agree with.

I believe that together we can ensure that food, with its life-giving, life-sustaining and life-enhancing powers, is available and affordable to all.

Thanks for the opportunity here today.