

Testimony of Jack A. Bobo

Chief Executive Officer

Futurity

Joint Hearing of the U.S. House of Representatives Subcommittees on:

Biotechnology, Horticulture, and Research; and

Subcommittee on Livestock and Foreign Agriculture

AGRICULTURAL BIOTECHNOLOGY: 21ST CENTURY ADVANCEMENTS AND APPLICATIONS

October 26, 2021

Good morning, Chairwoman Plaskett, Chairman Costa, Ranking Member Baird, Ranking Member Johnson, and members of the Subcommittees. I am Jack Bobo, CEO of Futurity, a food foresight company. Prior to joining Futurity, I served for four years as the Chief Communications Officer and Senior Vice President for Global Policy for Intrexon Corporation, a synthetic biology company, which has since rebranded as Precigen. While you may not be familiar with the Intrexon name, you are likely familiar with some of the company's subsidiaries which included Okanagan Specialty Fruits, developer of the non-browning Arctic Apple, Oxitec developer of the genetically engineered mosquitoes that targeted the vector for zika and yellow fever, Viagen, the market leader in animal cloning, and Trans Ova Genetics, a market leader in animal genetics. I also previously served on the board of AquaBounty Technologies, which developed the AquaAdvantage salmon.

Prior to joining Intrexon I served for 12 years as the senior advisor for global biotechnology at the U.S. Department of State under four secretaries and during two administrations. I also ran the Department's Biotechnology Division in the Economic Bureau. During that time, I traveled to approximately 50 countries meeting with ministers, parliaments, executives, scientists and students to discuss biotechnology policy and regulations. I also participated in and/or led numerous biotech trade negotiations. In 2015 I was recognized by Scientific American as one of the one hundred most influential people in biotechnology.

In my current role as CEO of Futurity I work with food technology startups and big food brands to help them understand what the future of food looks like and where consumer attitudes are going so they can navigate an ever more complex world. Earlier this year I published the report: 'The role of innovation in transforming the global food system.'¹ Most recently I published the book, 'Why smart people make bad food choices.'

¹ <https://www.agshowcase.com/the-role-of-innovation-in-transforming-the-global-food-system>

I am pleased to be here today to discuss *Agricultural Biotechnology: 21st Century Advancements and Applications*.

There can be no more important topic than the future of agriculture because the future of the planet depends on the actions we take about the food we eat over the next three decades. Agriculture will either save the planet or destroy it.

Despite producing more food than ever, there are still nearly 800 million people undernourished and over 2 billion people facing moderate to severe food insecurity. The situation has grown more severe as COVID-19 has led to increasing unemployment, which disproportionately impacts lower income communities. Meanwhile, about 2 billion people are overweight or obese, contributing to a growing incidence of food related diseases. At the same time, an estimated one-third of all food produced globally is lost or goes to waste.

Climate change is creating more challenges to food production due extreme weather conditions, such as droughts, floods, and fires around the world. However, our global food system is also a part of the problem. The footprint of agriculture is enormous in terms of land, water, and climate change.

In fact, forty percent of all the land on earth that could be used for agriculture is being used for agriculture today. The amount of cropland is the size of South America and the amount of pasture land is the size of Africa. In terms of water, there is nothing more important than agriculture as well. Seventy percent of all freshwater is used for agriculture. The Colorado River, the fifth largest river in America no longer flows to the sea, largely because of agricultural withdrawals. Ten to fifteen percent of greenhouse gas emissions come from agriculture and another ten to fifteen percent from deforestation, eighty percent of which is caused by agriculture. As if that weren't bad enough, eighty percent of biodiversity loss is also caused by agriculture.

Unfortunately, the situation is likely to get worse before it gets better. The global population is expected to increase by an additional two billion people by 2050. Demand for food is expected to rise even faster as a result of increasing incomes. As a result, we will need fifty to sixty percent more food by 2050.

Despite this incredible challenge, there is also reason for hope. Over the last 50 years the global food system has managed to increase production faster than the growth in global population, leading to significant reductions in hunger as a percent of population. If we were farming today using 1960s technology, we would need an additional 1 billion hectares of land to produce the food we do today, which is more than a quarter of the 3.6 billion hectares of forest remaining on the planet.

Transforming the food system to be more sustainable and resilient provides one of the best opportunities to make change for the better. Counterintuitively, agriculture is both the biggest driver of deforestation and the biggest protector of forests through productivity gains. An improved food system will not only promote rich biodiversity and ecosystems, but people who are resilient and empowered as well.

Many organizations are waking to these challenges and calling for changes to how food is produced, processed, and consumed, from the United Nations to the World Economic Forum. By considering the food system as a whole, we are better positioned to understand problems and to address them, in a more connected and integrated way.

Decisions about how and what to grow inevitably result in tradeoffs. Over the last fifty years, advances in farming practices and technologies, such as the Green Revolution, dramatically reduced global hunger as well as deforestation, but they also had negative consequences, including eutrophication of waterways, reduced soil fertility, soil erosion and toxicity, diminishing water resources, and pollution of ground water. The alternative, of course, was greater hunger and starvation, which would have also had negative impacts on the environment.

To address the very real challenges faced by people and the planet we need all tools at our disposal. Initiatives aimed at transforming the food system cannot succeed in delivering the benefits desired without acknowledging the role innovation played in the past and ensuring that it plays an equally robust role in the future. This includes advances in food production that regenerate soil and sequester carbon, but also innovations that allow more food to be produced on the same land using fewer inputs.

My remarks today focus on the role of agricultural biotechnology in contributing to a more sustainable, just, and nutritious future, not because it is a silver bullet, but because it is an important tool. We could as easily spend our time discussing the critical importance of cover crops, field margins and intercropping, but those are topics for another day and other subcommittees.

My fellow panelists will provide more detailed examples of the contributions of plant and animal biotechnology to sustainability and health, but I would like to illustrate the importance with a few examples.

Thirty to forty percent of all food produced in America is wasted. Food waste exacts a terrible toll in terms of the environment. Potatoes and apples are the second and third most wasted food items (bread is number one). Non-browning versions of these products are already available. Wider adoption of these varieties would benefit the environment and consumers, as well as the bottom line of producers. Similar benefits will accrue from the deployment of animal biotech products such as the AquAdvantage salmon, which could add jobs domestically and reduce U.S. dependence on \$3 billion in Atlantic salmon imports.

Globally, the picture is quite diverse. We see some countries forging ahead with deployment of genetically engineered and gene-edited products, while others continue to put in place regulatory barriers to adoption.

In Asia, Japan has traditionally taken a cautious approach agricultural biotechnology. However, the country has taken a great leap forward this year with the placing on the market of the first plant and animal gene-edited products—a tomato with a healthier nutrient profile and a meatier fish. Japanese regulations allow such products to be marketed without the regulatory

hoops required of a genetically engineered food product, though they must be registered with the Ministry of Health.

On the other hand, the European Union took a step in the other direction last week with the Parliament's adoption of the Commission's Farm to Fork Strategy (FtF), which would move gene editing regulations in the direction of genetically engineered food products rather than regulating them like their conventional counterparts. This outcome occurred despite a concerted effort on the part of academic and research communities in Europe to limit the regulatory hurdles for these products to promote innovation and accelerate adoption.

Studies conducted on the impact of the FtF Strategy by the USDA,² HFFA Research,³ the Joint Research Centre of the EU (JRC),⁴ Kiel University as well as Wageningen University and Research (WUR)⁵ all conclude that this strategy would have several significant negative impacts in terms of emissions, imports and hunger.

For example, the JRC study anticipates that the decrease of between 40 and 60 percent of GHG emissions from European agriculture from the implementation of Farm to Fork targets will lead to outsourcing European agricultural production, including its agricultural footprint (and emissions) to third countries. The Kiel University study projects that Europe could become a net food importer, in direct contradiction to the European Commission's expressed strategic goals. Finally, the USDA study concludes that the targets set out in the Farm to Fork strategy could lead to food insecurity for 22 million people.

Consumer acceptance of agricultural biotechnology continues to lag behind the global consensus among regulators in the safety of products currently on the market as well as confidence in the technology from the scientific community. Over the last decade public discourse about the technology has become muted as consumer groups have focused on other issues such as highly processed foods.

Despite the lack of understanding among the general population about the science behind agriculture biotechnology, vague concerns about the technology remain and are reflected in consumer purchases of products labeled non-GMO. This is similar to consumer behavior around many other food ingredients, nutrients and chemicals found in food, from the stigma of gluten to synthetic pesticides, which are based in fear rather than an assessment or understanding of actual risk.

What will it take for the U.S. to remain a leader in the field?

The United States has long held a comfortable lead in the development and application of new agricultural biotechnologies, but that leadership is now in doubt. This can be seen in the recent advances in product development and regulatory approval of products in Japan in the case of gene editing. It is also on display in other areas of food technology such as cell-cultured or cell-

² <https://www.fas.usda.gov/newsroom/economic-and-food-security-impacts-eu-farm-fork-strategy>

³ <https://hffa-research.com/wp-content/uploads/2021/05/HFFA-Research-The-socio-economic-and-environmental-values-of-plant-breeding-in-the-EU.pdf>

⁴ <https://publications.jrc.ec.europa.eu/repository/handle/JRC121368>

⁵ [https://grain-club.de/fileadmin/user_upload/Dokumente/Farm to fork Studie Executive Summary EN.pdf](https://grain-club.de/fileadmin/user_upload/Dokumente/Farm_to_fork_Studie_Executive_Summary_EN.pdf)

cultivated meat with governments in Singapore and Israel giving the greenlight to products ahead of U.S. regulatory agencies despite the long head start by U.S. technology developers.

Agricultural biotechnology, including genetic engineering and gene-editing tools, offers tremendous opportunities to develop new products from a wide range of public and private sector actors around the world to address some of the global challenges mentioned previously. The policies adopted and implemented in the United States will set an example for the rest of the world, which will ultimately determine the extent to which these technologies contribute meaningfully to a more sustainable food system.

Appropriate policies can incentivize investments from public and private sector stakeholders as well as promote consumer trust in the food system. It is critical both that the U.S. pursues a transparent, predictable and science-based regulatory approach that is risk-based and that the Federal government works closely with the global scientific community and other nations to promote harmonized policies around the world. The United States must also invest heavily in agricultural research, which currently lags far behind investments in medical research despite the fact that food-related illnesses are one of the major drivers of healthcare costs.

In conclusion, innovation is the only way to produce fifty percent more food using less land and water and while dramatically reducing emissions. Agriculture has a long history of reducing emissions while increasing output. For example, a bushel of corn today results in 35 percent fewer greenhouse gas emissions and requires 40 percent less land, 50 percent less water, and results in 60 percent less erosion than a bushel produced in 1980.

In order to see even greater gains over the next 30 years we must prioritize investments in agriculture and development of policies that promote more sustainable outcomes. This will ensure that the United States remains the global leader in technology development and, more importantly, provides leadership to the rest of the world to follow suit. If we are successful then agriculture will indeed save the planet.

Thank you for providing me this opportunity to discuss this critical topic. I'll be happy to take your questions.

Biography

Jack Bobo is the CEO of Futurity, a food foresight company that advises companies, foundations and governments on emerging food trends and consumer attitudes and behaviors related to the future of food. He is also the author of the 'Why smart people make bad food choices.' Recognized by Scientific American in 2015 as one of the 100 most influential people in biotechnology, Jack is a global thought leader who has delivered more than 500 speeches in 50 countries. He previously served as the Chief Communications Officer and Senior Vice President for Global Policy and Government Affairs at Intrexon Corporation. Prior to joining Intrexon Jack worked at the U.S. Department of State for thirteen years as a senior advisor for global food policy. An attorney with a scientific background, Jack received from Indiana University a J.D., M.S. in Environmental Science, B.S. in biology and B.A. in psychology and chemistry.

Jack A. Bobo

10912 Martingale Ct, Potomac, MD 20854 · Cell: (202) 836-1377 · Jack@FuturityFood.com

EDUCATION

<u>Cambridge University</u> , Cambridge, UK	Law Fellow, 1996
<u>Indiana University School of Law</u> , Bloomington, IN	J.D., <i>Cum laude</i> , 1996
<u>Indiana University School of Public and Environmental Affairs</u>	M.Sc. Environmental Science, 1996
<u>Université de Paris-Sud</u> , Paris, FRANCE	Certificat d'Administration Publique, 1993
<u>Indiana University</u> , Bloomington, IN	B.S., Biology; B.A., Psychology/Chemistry, 1989

WORK EXPERIENCE

Why Smart People Make Bad Food Choices *May 2021 – Present*
Author

'Why smart people make bad food choices' explores the hidden drivers of the global obesity epidemic and what it will take to reverse the trend. The book dives into the psychology and environmental factors that guide our choices and examines the history of America's growing appetite for food that led to the current crisis. The book proposes a new path--free from fad diets and pop science--based on the latest research in behavioral science, to reshape our food environment to make healthy choices the default.

Chief Executive Officer *April 2019 – Present*
Futurity

- Keynote Speaker – Keynote speaker on the future of food and agriculture, the role of science and technology in sustainably and nutritiously feeding the world in 2050 and how farmers, scientists, executives and government officials can better communicate with the public
- Strategic Foresight – Futures forecasting on food trends, consumer attitudes, disruptive technologies and strategic planning for food, agriculture and tech companies and organizations.
- Sustainability – Provides food and agriculture organizations with the tools and knowledge they need to actively manage their economic, social and environmental impacts to improve the global food system.
- Communications – Advises companies on communication and policy strategy, risk communication.
- Social License – Helps organizations build brand trust and transparency to make the most of opportunities and challenges based on a deep understanding of cognitive science, marketing and policy.
- Training Courses – Foresight Analysis, Understanding Food Trends, Building Brand Trust.

Accomplishments: Successfully worked with cell-based meat companies to end the use of the term "clean meat".

Ag Tech Advisor

NEOM

December 2020 – Present

Elo Life Systems

July 2020 – Present

Kentucky Fresh Harvest

July 2020 – Present

DMI Advisory Council

May 2019 – October 2020

Rockefeller Foundation

January 2020 – December 2020

**Chief Communications Officer and
Senior VP Global Policy and Government Affairs**

July 2015 – April 2019

Intrexon Corporation

- Reported directly to the CEO and Chief Operations Officer.

- Managed internal and external policy, strategic communications and government affairs for a 1000+ employee biotechnology company and its subsidiaries, with operations in nearly a dozen countries.
- Responsible for developing and communicating the company's vision to external stakeholders.
- Government affairs activities related to domestic and international activities in nearly a dozen countries around the world, including managing relationships with biotechnology and food industry associations and organizations.
- Supervisory responsibilities included **seven direct reports, a dozen indirect reports** in subsidiaries and more than **one dozen outside consultants, attorneys, public relations experts and lobbyists**.

Accomplishments:

- Worked with members of Congress to amend Food, Drug and Cosmetic Act to allow Emergency Use Authority for New Animal Drugs.
- Worked with members of Congress to remove Appropriations language requiring mandatory labeling of genetically engineered salmon.
- Worked with FDA and senior White House officials to finalize approval of AquAdvantage salmon.

Senior Advisor for Global Food Policy

July 2008 – July 2015

U.S. Department of State

- Led and participated in dozens of agricultural trade discussions including negotiations in South Korea, Malaysia, China, and Europe.
- **Named by Scientific American one of the 100 most influential people in biotechnology today.**
- Briefed senior U.S. officials at the Departments of State and Agriculture as well as the White House Office of the U.S. Trade Representative on agricultural trade and development policy issues.
- Responsible for global outreach to foreign audiences and senior foreign officials on global agricultural trends, sustainability, climate change, food security, biofuels, and biotechnology.
- Spoke and presented on behalf of the Department at international conferences and meetings to present U.S. trade and development policy positions to foreign and domestic audiences, including journalists, policy makers, farmers and scientists.

Chief, Biotechnology and Textile Trade Division

July 2011 – September 2014

U.S. Department of State, Washington, DC 20520

- Advised senior State Department officials on food policy, trade, food security, and consumer issues related to Presidential initiatives like Feed the Future and the National Export Initiative.
- Led or participated in bilateral trade discussions and negotiations.
- Managed staff of **five officers**.
- Administered more than **\$5 million in outreach funds over 10 years** for the Economic Bureau to conduct speaker programs, conferences and other activities overseas to further U.S. food security, trade and agricultural policies.

Deputy Chief, Biotechnology and Textile Trade Division

July 2005 – July 2008

U.S. Department of State

- Led U.S. delegations to bilateral trade negotiations with senior foreign officials, related to the Korean and Malaysian Free Trade Agreements.
- Represented the Department's views on trade policy in international negotiations and meetings at the WTO and the Codex Alimentarius Commission.
- Supervised personnel on wide range of development, trade, and international regulatory issues.

Trade Policy Adviser, Office of Agriculture, Biotech and Trade Policy

May 2002 – July 2005

U.S. Department of State, Washington, DC 20520

- Advised senior officials on agriculture, food security, biotechnology, and climate policy in Africa, Asia and Europe.
- Represented the Department in interagency meeting and international meetings with foreign audiences.

Attorney

June 2000 – May 2002

Crowell & Moring LLP, Washington, DC 20004

- Provided legal analysis and research on a wide variety of issues related to the biotechnology and agriculture industries.
- Conducted research on antitrust, large litigation and natural resource matters.

Supervising Attorney

February 2000 – May 2000

Staffwise Legal, Washington, DC

- Led teams of 40 plus attorneys and paralegals on antitrust and litigation matters.
- Managed privilege review teams on document production involving millions of pages of documents.

Project Manager for IT Policy

August 1997 – January 2000

Integrated Computer Engineering, Arlington, VA

Science Teacher (Peace Corps Volunteer)

June 1989 – August 1991

United States Peace Corps, Mekambo, Gabon

BOARD EXPERIENCE

Member of the Board

October 2015 – April 2019

AquaBounty

- Established the mission of the company and assure that all actions are related to and adhere to that mission.
- Set overall policy for the company and provide oversight for the actions of corporate officers and executives.
- Provided financial oversight for the company.

Member of the Board – Distinguished Alumni Council

July 2014 – Present

Indiana University School of Public and Environmental Affairs

- The IU School of Public and Environmental Affairs is the top ranked public affairs school in the nation.
- The Distinguished Alumni Council helps chart the path of educational progress for the school.
- Utilize national and global connections to raise the School's profile among key audiences.
- Advise the School on changes in the labor market that may impact current curricula.
- Critique and suggest innovations in SPEA competencies and progress.
- Help SPEA develop marketing and recruitment strategies that will attract the best students.
- Reach out to outstanding prospective students to provide information about SPEA.

Member of the Board – Center for Constitutional Democracy

January 2013 – Present

Indiana University Maurer School of Law

- The CCD is a pioneer in the development of the emerging discipline of constitutional design, which provides an in-depth understanding of how law contributes to democratic institutions, democratic practices, and democratic cultural evolution. The CCD trains students in this evolving area of expertise, preparing them to support reform and to promote peace and justice in a global environment.
- Utilize connections to enhance fundraising for the Center.
- Help develop and market the program as a leading global center on constitutional law.

PUBLICATIONS

Bobo, Jack A., *Why smart people make bad food choices*, Mango Publishing, 2021

- Bobo, Jack A., *What Behavioural Science and Risk Communication Tell Us about the Future of Food*, European Journal of Risk Regulation, Volume 10, Issue 2, November 2020, pp. 1-9.
- Bobo, Jack A., et al, *Are Soda Taxes Good Policy for Combatting Obesity and Malnutrition?*, European Journal of Risk Regulation, Volume 10, Issue 2, June 2019, pp. 412-418
- Bobo, Jack A., et al, *Knowing Is Not Believing: Values Trump Science Every Time*, European Journal of Risk Regulation, Volume 8, Issue 2, June 2017, pp. 424-427
- Bobo, Jack A., et al, *Predictably Irrational Consumer Food Preferences*, European Journal of Risk Regulation, Volume 7, Issue 3 (2016) pp. 604-609
- Bobo, Jack A., *Science in a Modern World*, Australasian Biotechnology, Volume 25, Issue 2, (2015) pp. 40-41
- Bobo, Jack A., *Commentary: Is this the age of science denialism?*, Volume 15, Issue 3, African Journal of Food, Agriculture, Nutrition and Development, June (2015)
- Bobo, Jack A., et al, *Pink Slime, Raw Milk and the Tweetification of Risk*, European Journal of Risk Regulation, Volume 6, Issue 1 (2015), pp. 141-144
- Bobo, Jack A., et al, *Pink Slime versus Garbage Chic: A Consideration of the Impact of Framing on Consumer Behavior Towards Food Waste*, European Journal of Risk Regulation, Volume 6, Issue 3 (2015), pp. 445-447
- Bobo, Jack A., et al, *Strategic Study of Biotechnology Research in CGIAR*, Independent Science and Partnership Council, December (2014)
- Bobo, Jack A., et al, *Food Security Is National Security*, National Geographic Blog, October (2014)
- Bobo, Jack, *Can agriculture save the planet before it destroys it?* DipNote, State Department Blog, April (2014)
- Bobo, Jack A., et al, *Successful Agricultural Innovation in Emerging Economies*, Cambridge University Press (2013)
- Bobo, Jack A., *Two Decades of GE Labeling Debate Draw to an End: Will Anybody Notice?*, 48 Idaho L. Rev. 251 (2012)
- Bobo, Jack A., *The Role of International Agreements in Achieving Food Security: How Many Lawyers Does It Take to Feed a Village?*, 40 VAND. J. TRANSNAT'L L. 937 (2007)
- Bobo, Jack A., *Software Workers for the New Millennium: Global Competitiveness Hangs in the Balance*, National Software Alliance (1998)
- Bobo, Jack A., *The effect on Antarctic science of an Antarctic liability regime*, Polar Record, Volume 33, Issue 187, pp. 341-345 (1997)

NEWS PROGRAMS

2021

Food insecurity in America, CGTN (August 6, 2021)

The impact of Covid on global food security (August 3, 2021)

Impact of Covid on consumer behavior, CGTN (February 17, 2021)
Food riots in India, CGTN (February 6, 2021)

2020

Thanksgiving in the time of covid, CGTN (November 26, 2020)
How has Covid impacted global hunger with Rachelle Akuffo, [CGTN \(October 16, 2020\)](#)
Farmers Face Distribution Challenges, Jack Bobo with Elaine Reyes, [CGTN \(May 6, 2020\)](#)
Covid-19 and Our Food System, Jack Bobo with Veronica Dudo, [NJNN \(April 21, 2020\)](#)
Global Food Supply During the Pandemic, Jack Bobo with Elaine Reyes, [CGTN \(April 20, 2020\)](#)
Concerns After Outbreaks Close US Meat Facilities, Jack Bobo with Veronica Dudo, [NJNN \(April 16, 2020\)](#)
Impact on US Food Supply, Jack Bobo with Veronica Dudo, [NJNN \(April 6, 2020\)](#)
Covid Effects on the Food Supply, Jack Bobo with Rachelle Akuffo, [CGTN \(April 4, 2020\)](#)
Zero Waste Movement, Jack Bobo with Rachelle Akuffo, [CGTN \(January 25\)](#)

TRAINING/WORKSHOPS/SEMINARS/SPEECHES (Partial List)

More than 400 speeches and presentations delivered in 50+ countries since 2002

2021

Johns Hopkins University Berman Institute
Institute for the Advancement of Food and Nutrition Sciences
Institute of Food Technologists UK
Cereals and Grains
US Grains Council
Land Expo
Animal Agriculture Alliance UN Food System Public Dialogue
Ag Innovation Showcase
Animal Health Innovation USA
National Pork Industry Conference
Reciprocal Meat Conference – American Meat Science Association
Sweden Food Tech
Advancing Animal Welfare
Google Food Lab
Nourish Movement
Ag for Life
IU Community Earth Day
Alltech One Health and Wellness
World Agri Tech Innovation Summit

2020

[Plant and Animal Genomics Conference](#), San Diego, CA
Farm Foundation, Washington, DC
Certified Crop Adviser Conference, London, Canada
Nitrogen Sustainability Summit, Sonoma, CA
Safe Food California (Postponed)
Food Industry Asia (Postponed)
American Spice Trade Association (Postponed)
Purchasing Seminar (Postponed)
Alltech ONE Conference

Sustainability Conference
Ag Innovation Showcase
Indiana University Career Workshop
Bush Brothers Leadership Summit
US Apple Association
University of Florida Leadership
National Securities Corporation
Bayer Leadership
Texas A&M

2019

Women in Food and Agriculture Summit, Amsterdam, The Netherlands
CropLife Brazil, Brasilia, Brazil
Bragato Wine Conference, Napier, New Zealand
CEC 2019, Indianapolis, Indiana
Sustainable Nutrition, College Station, TX
TWIN Catalyst, Amsterdam, The Netherlands
Iowa State University, Ames, IA
TWIN Global, Chicago, IL
Citi Group, Keynote, Park City, UT
Coca-Cola, Series of seminars, Atlanta, GA
Apple Processors, Keynote, Sea Island, GA
Grupo Bimbo, Seminar, Toronto, Canada
Inventures, Panelist, Calgary, Canada
Seeds & Chips, Panelist, Milan, Italy
Alternative Protein Show, Speaker, Consumer Protein Trends, San Francisco, CA
FarmTech, Keynote, Future of Food, Calgary, Canada
National Farmers Union, Keynote, Future of Food, Birmingham, UK
USDA AgOutlook Forum, Panelist, Future of Gene Edited Animals, Rosslyn, VA
NASDA Annual Meeting, Washington, DC
National Food Policy Conference, Consumer Federation of America

2018

Society for Risk Analysis, Panelist, Understanding Consumer Behavior, New Orleans, LA
TEDxTysons, Addressing Consumers Food Fears, Tysons, VA
GrowCanada, Keynote, Future of Food, Ottawa, Canada
World Women Summit, Speaker, Future of Food, Little Rock, Arkansas
TWIN Global, Panelist, Future of Food, Chicago, IL
Agricultural Biotech International Conference (ABIC), Keynote, Biotech Trends, Weifang, China
Chinese Journalist Seminar, Understanding Risk, Weifang, China
Chinese Journalists Seminar, Future of Food, Beijing, China
Granular Conference, Keynote, Future of Food, San Francisco, CA
New Harvest, Consumer Food Trends and Cell-based Meat, MIT, Boston, MA
Future FoodTech, Panelist, Food Trends, Brooklyn, NY
Impact '18, Speaker, Biotech Trends, Krakow, Poland
AgTech Nexus, Speaker, Food Trends, Boston, MA
Society for In Vitro Biology, Speaker, Consumer Perspectives, St Louis, MO
Alltech One Conference, Speaker, Consumer Food Trends, Lexington, KY
Food Evolution Panel, Lexington, KY
Silicon Valley Agtech Conference, Speaker, Disruptive Trends, San Francisco, CA
AAPEX Ag Management Conference, Keynote, Food Trends, New Orleans, LA

IDFA Dairy Forum, Speaker, Future of Food, Palm Springs, CA

2017

Guest Lecturer, Future of Food, Indiana University Department of Biology, Bloomington, IN
FNCE, Academy of Nutrition and Dietetics, Chicago, IL
New Harvest Forum, Speaker, Psychology of Cell-based Meat, New York, NY
Peace Corps Headquarters, Washington, DC
Women in AgriBusiness, Keynote, Future of Food, Minneapolis, MN
American Phytopathological Society, Keynote, Future of Food, San Antonio, TX
British Royal Society, Speaker, Future Research Trends, Chicheley Hall, UK
Biotechnology Innovation Organization, Speaker, Biotech Trends, San Diego, CA
Alltech ONE Conference, Keynote, Future of Food, Lexington, KY
National Association of Flour Distributors, Keynote, Future Food Trends, West Palm Beach, FL
Biodesign Challenge Webinar, Food Challenges, Washington, DC
University of Missouri, Speaker, Science of Food Communication, Columbia, MO
Ag Future of America, Keynote, Future of Food, San Antonio, TX
Bayer AgVocacy Forum, San Antonio, TX
2018 USDA Ag Outlook Forum, Lunch Speaker, Washington, DC
Nutrients for Life, Keynote, Phoenix, AZ
Indiana University School of Public and Environmental Affairs, Keynote, Washington, DC

2016

AACC International, Speaker, Food Trends, Savannah, GA
Ag for Life, Dinner Speaker, Future of Food, Calgary, CA
SXSW Eco (speech 1), Speaker, Biotech Insects, Austin, TX
SXSW Eco (speech 2), Speaker, Ethics of Biotechnology, Austin, TX
North Carolina Marine Biotech and Seafood Symposium, Keynote, Food Trends, Research Triangle Park, NC
Foreign Service Institute, Speaker, Food Trends, Washington, DC
NZBio, Speaker, Future of Food, Auckland, New Zealand
Agricultural Science Association, Keynote, Future of Food, Kilkenny, Ireland
Roslin Institute, Keynote, Consumer Perceptions, Edinburgh, Scotland
International Union for Conservation of Nature (IUCN), (speech 1), Speaker, GE Insects, Honolulu, Hawaii
IUCN, (speech 2), Panelist, Biotech Tools for Conservation, Honolulu, Hawaii
Australian Grains Industry Conference, Keynote, Food Trends, Melbourne, Australia
Life Sciences Queensland, Keynote, Food Technology, Brisbane, Australia
Grain Growers Conference, Keynote, Food Trends, Grand Forks, ND
State Department Public-Private Sector Engagement on Zika, Speaker, GE Insects, Washington, DC
Leadership Summit on Synthetic Biology, Wilson Center, Panelist, GE Tools for Conservation, Washington, DC
BIO International Conference, Speaker, GE Insects, San Francisco, CA
FoodBev Forum, Speaker, Food Trends Miami, FL
FoodFluence, Speaker, Consumer Attitudes, London, UK
North Carolina State Future of Food, Keynote, Food Trends, Raleigh, NC
DC Ag Club, Keynote, Future of Food, Washington, DC
7th Annual Food Quality, Safety & Analysis Symposium, Speaker, Food Trends, Arlington, VA

2015

Cereals Conference, United Kingdom
Montana Grain Growers, Keynote, Future of Food, Great Falls, MT
Global Bioeconomy Conference, Speaker, Food Biotechnology, Berlin, Germany
Tr-State Wheat Conference, Keynote, Future of Food, Spokane, WA
Pepsico Management Conference, Speaker, Food Trends, Harrison, New York

Institute of Food Technologists, Keynote, Future of Food, Dalian, China
US Chamber of Commerce, Keynote, Food Trends, Shanghai, China
IU School of Public and Environmental Affairs, Speaker, Food Trends, Bloomington, IN
ABIC, Future of Food, Speaker, Melbourne, Australia
Life Sciences Queensland, Keynote, Food Innovation, Brisbane, Australia
National Barley Growers Association, Keynote, Future of Food, Washington, DC
US Canola Association, Keynote, Future of Food, Washington, DC
Soybean Leadership College, Speaker, Future of Food, St Louis, MO
International Life Sciences Institute Annual Meeting, Speaker, Food Trends, Phoenix, AZ
Elliott School of International Affairs, Speaker, Innovation, Washington, DC
Lycee Technique Agricole, Luxembourg
US Embassy, Luxembourg
Food Safety Summit, Baltimore

2014

I20 Innovation Conference, Speaker, Food Innovation, Brisbane, Australia
ARD2014, Speaker, Development Trends, Manila, Philippines
Sigma Xi Annual Conference, Keynote, Food and Water, Glendale, AZ
Agriculture Future of America, Speaker, Food Trends, Kansas City, MO
Westminster Food & Nutrition Forum, Speaker, Food Trends, London, UK
Morningside College, Keynote, Future of Food, Sioux City, IA
Global AgInvesting Asia, Speaker, Food Trends, Singapore
Genetic Modification Advisory Committee, Keynote, Consumer Attitudes, Singapore
Agro-Biotech Institute, Keynote, Future of Food, Kuala Lumpur, Malaysia
University of Missouri, Speaker, Consumer Attitudes, Columbia, MO
Foreign Service Institute, Communicating Science, Virginia
Reciprocal Meat Conference, Speaker, Food Trends, Madison, WI
Agriculture Trade Conference, Keynote, Future of Food, Paris, France
Food Security Conference, Panelist, Consumer Attitudes, Minneapolis, MN
Peace Corps, Washington, DC
GMA Science Forum, Speaker, Future of Food, Washington, DC
Eisenhower School for National Security and Resource Strategy, Speaker, Food Trends, Washington, DC
State Department Bioeconomy Conference, Speaker, Biotech Trends, Washington, DC
Food Security Seminar, Speaker, Food Technologies, Rome, Italy
Berkeley School of Law, Speaker, Food Policy, Berkeley, CA
Berkeley School of Public Health, Speaker, Food Trends, Berkeley, CA
AFFI-Con, Speaker, Food Trends, San Diego, CA
Earth Institute, Columbia University, Speaker, Future of Food, New York City, NY

PODCASTS / WEBINARS / INTERVIEWS

2021

12+ podcasts

2020

Sound Bites Podcast

Sustainability Alliance

Alltech Podcast (Upcoming May)

Cainthus Webinar (Upcoming May)

2019

[Our 10,000 Year Challenge](#), Interview with Rob Wolcott
[Real Agriculture](#), Radio Interview at FarmTech Canada

2018

[Does soda tax work?](#) US News and World Report
[Public Perceptions and Choosing Your Battles](#), Ag-West Bio
[Sorting through science and food messaging](#), Foodtario website
[“Clean” meat needs a rebrand](#), New Food Economy website
[Cell-Based Meat Companies](#), Food Navigator
[Clean Meat, Craft Meat, or Something Else?](#) Paul Shapiro Blog
[Vegan America Project](#)
[How We Talk about Meat Grown without Animals](#), Good Food Institute
[Q&A with Jack Bobo](#), Successful Farming
[Beef without the cow? Fake meat debate heats up](#), NebraskaTV website
[Current biotech regulations create animal and plant approval blocks and bottlenecks but gene editing may open the door](#), Genetic Literacy Project website
[Simulation Podcast](#), Global Food Trends, San Francisco, CA
[Silicon Valley Agtech Conference](#), Podcast, San Francisco, CA
[Early dialogue critical for plant breeding innovations](#), American Soybean Association website
[Using Communication to Zap Mosquito-Borne Diseases](#), Johns Hopkins University

2017

[Do we need an international body to regulate genetic engineering?](#) Gizmodo
[Proposed U.S. biotech rules raise industry hopes and anxieties](#), Science website
[New Harvest Recap](#), Medium New Harvest Blog
[Why former Defense Secretary Ash Carter fears biotechnology more than nukes](#), Real Clear Life
Institute of Food Technologists Webinar, Food Trends, Washington, DC
[Disrupting the Discussion](#), Web Interview, Alltech, Lexington, KY
[BIO International Conference](#), Web Interview, San Diego, CA
[Ag innovation for the next 35 years](#), Alltech website
[Disruptive Marketing](#), Woodruff Report
[Agriculture Future of America](#)
[Gluten Free, Non GMO Water](#), Dakota Farmer
[Consumer Awareness Increasing in Food Production](#), Washington Ag Network
[APS Annual Meeting Recap](#), International Society for Plant-Biome Interactions Website
[Food and Ag Leaders Emphasize Collaboration to Feed the World](#), Bayer Blog

2016

[Public will overcome fear when they realize benefits](#), National Business Review, New Zealand
[Agriculture: The power to save the earth](#), Let's grow together Website
[The one thing Hillary cares most about when it comes to food](#), Mother Jones
[Low cost gene editing is the next wave of GM technology](#), The Independent, Ireland
[What this dietician wants her friends to know about GM](#), Christine Bloom Blog
[A biotech evangelist seeks a Zika dividend](#), New York Times
[The next 35 years is the most important](#), Stuart Meikle
[Selling controversial Zika fighting plan to the public](#), Baltimore Sun
[Wie die US-Verhandler Europas Verbraucherschutz angreifen](#), Sueddeutsche Zeitung
[Brave New World](#), Wheat Life Magazine (p 43)
[Getting More from Less](#), Symbio Laboratories

2015

[Towards a sustainable food supply: myths and realities](#), ConAgra Webinar
[NAMI Report: Feeding the world, saving the planet](#), Meat + Poultry Website
[ASA Soybean Leadership College Attendees Learn New Skills](#), American Soybean Association website
[Farmers Feeding the World](#), Web Interview
[Milan Expo](#), World Fair, Web Interview
[Making bioeconomy work for sustainable development](#), NEB-Agro Website
[Lycee Technique Agricole Presentation Summary](#), Embassy Luxembourg Website
[Thought Leadership](#), Gardiner Foundation
[Genetically Modified Salmon Approved by FDA](#), Future Timeline
[United States promotion of GM foods in Mexico](#), Yadira Ixchel Martínez Pantoja Thesis

2014

[EuropaBio](#), Web Interview, Brussels, Belgium
[Can agriculture save the planet](#) (Part 1), Okanaga Specialty Fruits Blog
[Can agriculture save the planet](#) (Part 2), Okanaga Specialty Fruits Blog
[State Department Official](#), The Weekly Standard

Truth in Testimony Disclosure Form

In accordance with Rule XI, clause 2(g)(5)* of the *Rules of the House of Representatives*, witnesses are asked to disclose the following information. Please complete this form electronically by filling in the provided blanks.

Committee: Agriculture

Subcommittee: Livestock and Foreign Agriculture

Hearing Date: 10/26/2021

Hearing Title :

“Agricultural Biotechnology: 21st Century Advancements and Applications.”

Witness Name: Jack Bobo

Position/Title: CEO

Witness Type: Governmental Non-governmental

Are you representing yourself or an organization? Self Organization

If you are representing an organization, please list what entity or entities you are representing:

FOR WITNESSES APPEARING IN A NON-GOVERNMENTAL CAPACITY

Please complete the following fields. If necessary, attach additional sheet(s) to provide more information.

Are you a fiduciary—including, but not limited to, a director, officer, advisor, or resident agent—of any organization or entity that has an interest in the subject matter of the hearing? If so, please list the name of the organization(s) or entities.

I am an advisor to Elo Life Systems

Please list any federal grants or contracts (including subgrants or subcontracts) related to the hearing's subject matter that you, the organization(s) you represent, or entities for which you serve as a fiduciary have received in the past thirty-six months from the date of the hearing. Include the source and amount of each grant or contract.

None

Please list any contracts, grants, or payments originating with a foreign government and related to the hearing's subject that you, the organization(s) you represent, or entities for which you serve as a fiduciary have received in the past thirty-six months from the date of the hearing. Include the amount and country of origin of each contract or payment.

None

Please complete the following fields. If necessary, attach additional sheet(s) to provide more information.

- I have attached a written statement of proposed testimony.
- I have attached my curriculum vitae or biography.

* Rule XI, clause 2(g)(5), of the U.S. House of Representatives provides:

(5)(A) Each committee shall, to the greatest extent practicable, require witnesses who appear before it to submit in advance written statements of proposed testimony and to limit their initial presentations to the committee to brief summaries thereof.

(B) In the case of a witness appearing in a non-governmental capacity, a written statement of proposed testimony shall include— (i) a curriculum vitae; (ii) a disclosure of any Federal grants or contracts, or contracts, grants, or payments originating with a foreign government, received during the past 36 months by the witness or by an entity represented by the witness and related to the subject matter of the hearing; and (iii) a disclosure of whether the witness is a fiduciary (including, but not limited to, a director, officer, advisor, or resident agent) of any organization or entity that has an interest in the subject matter of the hearing.

(C) The disclosure referred to in subdivision (B)(iii) shall include— (i) the amount and source of each Federal grant (or subgrant thereof) or contract (or subcontract thereof) related to the subject matter of the hearing; and (ii) the amount and country of origin of any payment or contract related to the subject matter of the hearing originating with a foreign government.

(D) Such statements, with appropriate redactions to protect the privacy or security of the witness, shall be made publicly available in electronic form 24 hours before the witness appears to the extent practicable, but not later than one day after the witness appears.