Lunch~N~Learn SEMINAR

NATIONAL C-FAR

NATIONAL COALITION FOR FOOD & AGRICULTURAL RESEARCH (NCFAR)

Program:

BETTER WHISKEY THROUGH SCIENCE

Leveraging a Public Corn Breeding Program to Improve Regional Whiskey Flavors and Create New Industries

April 29, 2019
PROGRAM

Welcome and Introduction
DR. ELIZABETH STULBERG
NCFAR REPRESENTATIVE

Distinguished Speaker

DR. SETH MURRAY
DEPARTMENT OF AGRONOMY
TEXAS A&M UNIVERSITY

Open Forum

Closing
DR. ELIZABETH STULBERG

NCFAR is a nonprofit, nonpartisan, consensus-based and customer-led coalition that brings food, agriculture, nutrition, conservation and natural resource stakeholders together with the food and agriculture research and extension community, serving as a forum and a unified voice in support of sustaining and increasing public investment at the national level in food and agricultural research, extension, and education.
ABSTRACT
Consumption of whiskey in the U.S. continues to grow, as do the number of distilleries and consumers’ interest in both quality and novelty. You may wonder where differences between different whiskeys’ aroma and taste perceptions come from. Is it from the corn itself? To date, most distillers use the same, commodity yellow dent corn. They assume that there is no noticeable difference among varieties and growing locations. As such, there has been no scientific improvement of corn for whiskey. Surprisingly, we have found, for the first time, that there are significant differences in alcohol yields, flavor compounds, and aroma profiles among corn genetic varieties and growing environments. So can we use science to breed a corn that not only makes whiskey taste better but that reflects the regional environment, like regional and varietal terroir in wine? The USDA germplasm collection holds nearly 21,000 different varieties of corn with diverse characteristics from those easy to observe, like color (blue, white, yellow), to those that must be tested in the field, like disease resistance and regional adaptation. Within breeding programs, identifying and selecting the best varieties for whiskey will require advanced evaluation efforts, but given the size of the corn market, few companies will invest in the research and development needed. This role can still be met through the Land Grant missions of research, education and extension. Public corn breeding research had developed improved corn varieties, increasing U.S. yield nearly eight-fold! Fewer than five public corn breeding programs now exist across the country. However, like earlier innovative yield increases, public land grants and public breeding programs remain the most ideally positioned and responsive to emerging opportunities and industry needs, such as corn improved specifically for whiskey.

SPEAKER BIOGRAPHY
Seth Murray, Ph.D., is Associate Professor and Eugene Butler Endowed Chair in Agricultural Biotechnology in the Department of Soil and Crop Sciences at Texas A&M University. He received his PhD from Cornell University working on the genetics of bioenergy sorghum and a BS from Michigan State University where he co-founded the MSU student organic farm. His research program focuses on new approaches in high throughput field phenotyping (including unmanned aerial vehicles, i.e. drones), quantitative genetic discovery, gene to phene data analytics and applied maize (corn) breeding for yield, aflatoxin resistance and stress tolerance in Texas, as well as perenniality in maize and sorghum. He has released 9 elite yellow inbred and germplasm lines superior for yield and aflatoxin, two of which are now licensed to commercial industry with others under evaluation. He was the recipient of both CSSA and NAPB early career research awards. On sabbatical in 2017 he served as the Senior Advisor of Agricultural Systems in the Office of the Chief Scientist at USDA where he led visioning of long term research needs and a geospatial data integration initiatives.
SEMINAR SERIES DESCRIPTION

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