Lunch ~ N ~ Learn SEMINAR

NATIONAL C-FAR

NATIONAL COALITION FOR FOOD & AGRICULTURAL RESEARCH (NCFAR)

Program:

Genome Editing in Agriculture: Methods, Applications, and Governance

July 9, 2018
PROGRAM

Welcome and Introduction

ELIZABETH STULBERG
NCFAR REPRESENTATIVE

Distinguished Speaker

ADAM BOGDANOVE
PROFESSOR
CORNELL UNIVERSITY

Open Forum

Closing

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
Genome editing is the process of making precise, targeted sequence changes in the deoxyribonucleic acid of living cells and organisms. Recent advances have made genome editing widely applicable, offering the opportunity to rapidly advance basic and applied biology. In the face of the mounting food, fiber, feed, and fuel needs and the decreasing availability of land and water caused by global population growth, as well as the challenges climate change poses to agriculture, genome editing for crop and livestock improvement is garnering increasing attention. This issue paper describes how genome editing is performed, the types of “edits” that can be made, how the process relates to traditional breeding and conventional genetic engineering, and the potential limitations of the approach. The paper also presents an overview of the current landscape of governance of genome editing, including existing regulations, international agreements, and standards and codes of conduct, as well as a discussion of factors that affect governance, including comparison with other approaches to genetic modification, environmental and animal welfare impacts of specific applications, values of producers and consumers, and economic impacts, among others. Recognizing both that genome editing for crop and livestock improvement has the potential to substantially contribute to human welfare and sustainability and that successful deployment of genome editing in agriculture will benefit from science-informed, value-attentive regulation that promotes both innovation and transparency (alongside strategies to improve food distribution, decrease socioeconomic disparities, mitigate barriers to trade, and moderate political and market dependencies), the paper aims to provide a conceptual and knowledge-based foundation for regulatory agencies, policy- and lawmakers, private and public research institutions, industry, and the general public.

SPEAKER BIOGRAPHY
Dr. Adam Bogdanove is a professor of plant pathology and plant-microbe biology at Cornell University. He researches mechanisms of bacterial plant pathogenesis and plant defense to develop improved crop resistance to bacterial diseases, in part using genome editing. Bogdanove pioneered the use of TAL effector proteins from the plant pathogenic bacterium Xanthomonas as genome editing tools and has played a major role in the development of the field. He earned his B.S. in biology from Yale in 1987 and his Ph.D. in plant pathology from Cornell in 1997, and he carried out postdoctoral work at Purdue University and the Boyce Thompson Institute before joining the faculty at Iowa State in 2000 and moving to Cornell in 2012.
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