

Plenary Speakers



Le Ann Blombeg is the research leader at the USDA-ARS animal biosciences and biotechnology laboratory at Beltsville, Maryland. Dr. Blombeg's focus is the elucidation and analysis of factors affecting embryonic, fetal or placental growth and/or development coincident with delayed growth/maturation in swine.



Adam Bogdanove is a professor of plant pathology and plant-microbe biology at Cornell University. His research centers on diseases of rice caused by the bacterial species *Xanthomonas oryzae*, with a special focus on TAL effectors, *i.e.* transcription factors injected by the bacterium into the plant to activate host genes during infection. He discovered the modular mechanism by which TAL effectors recognize their DNA targets and has pioneered the use of TAL effectors as customizable DNA-targeting domains for a variety of applications including genome editing and synthetic biology.

Dr. Bogdanove earned his BS degree in biology at Yale University in 1987, and his PhD in plant pathology at Cornell in 1997. Following postdoctoral work at Purdue University and later at the Boyce Thompson Institute, he joined the Department of Plant Pathology at Iowa State University in 2000 and moved to Cornell in 2012.



With an extensive background in molecular biology, **Greg Gocal** has been central in developing the *RTDS*[™] technology in plant and microbial systems. Currently, he leads the technology group at Cibus, and is part of the senior executive team tasked with exploring the many commercial opportunities to deliver on *RTDS*' potential applications. In the past, he has focused primarily on developing the molecular aspects of the technology, including target characterization, mutation discovery, molecular screening and assay development. Also, he has played a key role in the development of Cibus' first commercial product, *SU Canola*[™] (sulfonyleurea tolerant), and in helping achieve regulatory approval for this trait in Canada. Over the past decade his research leadership has led to multiple commercial partnerships for the company. In addition, his experience has expanded to include the development of key intellectual property through to products moving to market.

Dr. Gocal has authored numerous peer-reviewed publications, several book chapters and is a co-inventor of many patent applications within Cibus' patent estate. He earned a BSc in biochemistry/botany and an MSc in plant physiology from the University of Calgary, and received his PhD in plant molecular biology from the Australian National University.



Perry Hackett has 50 years of experience in molecular genetics and genetic engineering. He has degrees in physics (Stanford) and biophysics (University of Colorado). Since 1980, he has been a professor of genetics, cell biology and development at the University of Minnesota, where he is a founder of the Center for Genome Engineering. His focuses are on molecular genetics and genome research. Recently he has been developing methods for gene editing in large animals including livestock. He has used bacteria, fish, mice and dogs as model systems for investigating various transgenic technologies in vertebrate animals.

The *Sleeping Beauty* Transposon System, invented in his lab as a way of delivering genes to vertebrates, is in human clinical trials for treatment of lymphoma and other cancers. He is a cofounder of Discovery Genomics, to develop the *Sleeping Beauty* Transposon System for human gene therapy, and Recombinetics, to genetically engineer livestock for biomedical and agricultural purposes. Both companies are based on technologies developed in his and his students' labs. Currently, Dr. Hackett is the chief science officer of Recombinetics. He serves on three editorial boards and three scientific advisory boards in the areas of transgenesis, genome engineering and gene editing.



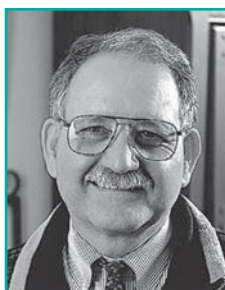
Neil Hoffman is the chief scientific advisor in the Office of the Deputy Administrator in Biotechnology Regulatory Services, USDA/APHIS. Prior to this role, he was director of the Environmental Risk Analysis Division in BRS from 2003 to 2008. Prior to joining BRS in 2003, he spent a year as a program director in the Molecular and Cellular Biology Division at the National Science Foundation. From 1999 to 2002, he was a research manager at Paradigm Genetics where he directed the research and development activities for the establishment of high-throughput platforms for discovery of stress genes, new herbicide targets, and the mode of action of herbicides. From 1988 to 1999, Dr. Hoffman was a faculty member of the Department of Plant Biology in the Carnegie Institution of Science where he worked in the area of chloroplast protein targeting.

He received his BS degree in biology from Cornell University and a PhD in plant physiology from the University of California, Davis.



Greg Jaffe is the director of the Project on Biotechnology for the Center for Science in the Public Interest (CSPI), a non-profit consumer organization. He joined CSPI in 2001 after a long and distinguished career in government service as a trial attorney for the US Department of Justice's Environmental and Natural Resources Division and as senior counsel with the US Environmental Protection Agency's Air Enforcement Division. Mr. Jaffe is a recognized expert on agricultural biotechnology and biosafety, on which topics he has published numerous articles and reports. He has worked on biosafety regulatory issues in the United States and throughout the world, including in Kenya, Uganda, Tanzania, Ghana, Nigeria, Malawi, South Africa, Indonesia, the Philippines and Vietnam. He was a member of the secretary of agriculture's Advisory Committee on Agricultural Biotechnology and 21st Century Agriculture from 2003 to 2008, and was reappointed in 2011. He was also a member of the Food and Drug Administration's Veterinary Medicine Advisory Committee from 2004 to 2008.

Jaffe earned his BA with high honors from Wesleyan University in biology and government and then received a law degree from Harvard Law School.



Drew Kershen is the Earl Sneed Centennial Professor of Law (Emeritus) at the University of Oklahoma. He has a BA from Notre Dame, a JD from the University of Texas, and an LL.M from Harvard. Professor Kershen taught at the University of Oklahoma from 1971 to 2012. He has served as a visiting professor at the University of Illinois Urbana-Champaign and the University of Kansas, and as a Fulbright teaching fellow to the Universidad José Cecilio del Valle in Tegucigalpa, Honduras.

In the past sixteen years, Kershen has focused his teaching, writing, and speaking on agricultural biotechnology law and policy issues. He has written extensively on legal liability, intellectual property, international trade, and regulatory issues in agricultural biotechnology. He has been a speaker at biotechnology conferences in many nations and has participated in international negotiations concerning agricultural biotechnology.

He is admitted to the Oklahoma Bar and the Bar of the United States Court for the Western District of Oklahoma.



Ann Ran is currently a postdoctoral fellow in Feng Zhang's laboratory at the Broad Institute of MIT and Harvard and a junior fellow at the Harvard Society of Fellows. She graduated *cum laude* with a BS from Yale in 2006, and received her PhD in biochemistry from Harvard in 2014. In the Zhang lab, she co-developed Cas9 for mammalian genome engineering and established methods for rapid generation of cell lines using Cas9, with reagents now widely distributed by Addgene.

Dr. Ran has presented her work on improving Cas9 specificity using the double-nicking method and elucidating Cas9 and guide-RNA structure-function relationships at a number of conferences. She received the Meselson Prize at Harvard for the "most beautiful experiment" in 2013 and was a finalist for the Regeneron Creative Innovations Prize.



Gary Rudgers is the global regulatory leader for new business at Dow AgroSciences in Indianapolis. Over the past six years with the company, he has worked to develop, assess and coordinate global regulatory strategies for emerging and leading biotech crops developed through novel plant technologies. In addition to his role at Dow AgroSciences, Dr. Rudgers chairs the CropLife International New Breeding Techniques (CLI-NBT) working group. Since 2013, this industry organization team has developed and distributed documentation on precision breeding applications to governments and regulatory bodies worldwide. As chair, he has represented the CLI-NBT working group at various international organizations, government agencies and international conferences.

Prior to joining Dow AgroSciences in 2008, Dr. Rudgers was one of the leading scientists to help launch the biotechnology company, Chromatin, Inc., in Chicago. From 2002 to 2008 he led the Chromatin molecular biology research team to develop and construct the first autonomous plant mini-chromosomes. Dr. Rudgers held a postdoctoral fellowship at the University of Chicago from 2001 to 2002 and received his PhD in molecular

microbiology and immunology from Baylor College of Medicine in Houston, Texas, in 2001.



Joachim Schiemann is director of the Institute for Biosafety in Plant Biotechnology at the Julius Kuehn Institute in the Federal Research Centre for Cultivated Plants and is an honorary professor at the University of Lüneburg. He received a PhD in biochemistry from Martin-Luther-University, Halle, in 1977. From 1976 to 1991 he worked as senior scientist at the Institute for Plant Biochemistry, Halle, and the Central Institute for Genetics and Crop Plants Research, Gatersleben. From 1991 to 2007 he was senior scientist at the Institute for Plant Virology, Microbiology and Biosafety in the Federal Biological Research Centre for Agriculture and Forestry, and was head of the Genetechnology and Biosafety Division.

Dr. Schiemann has been coordinating several national and EU-funded cluster projects on biosafety research. From 2000 to 2003 he was a member of the Scientific Committee on Plants of the European Commission at the Health & Consumer Protection Directorate-General, and from 2003 to 2009 was a member of the Panel on

Genetically Modified Organisms of the European Food Safety Authority. From 2002 to 2012 he served on the Executive Committee of the International Society for Biosafety Research (ISBR), and from 2004 to 2008 was president of ISBR. Since 2004, he has been a member of the steering council of the European technology platform, *Plants for the Future*.



Heather Shearer is a regulator with the Canadian Food Inspection Agency's Plant Biosafety Office (CFIA-PPBO), which oversees the environmental release of plants with novel traits. She joined the PBO after completing postdoctoral studies at the National Research Council Canada Plant Biotechnology Institute. Her educational background includes a PhD in plant agriculture from the University of Guelph, and an MSc in plant molecular biology from Queen's University.

Dr. Shearer particularly enjoys the aspects of her work that involve keeping policy relevant to rapidly developing technology and knowledge.



Martin Spalding received a BS degree in both environmental science and biochemistry in 1974, and an MMS in botany in 1976, from Washington State University. He received his PhD in plant physiology from the University of Wisconsin-Madison in 1979, was a postdoctoral associate at the University of Illinois-Urbana/Champaign until 1982 and was a visiting postdoctoral fellow at the Australian National University later that year. From 1982 to 1984, he was a postdoctoral associate and a research assistant professor in the US Department of Energy's Plant Research Laboratory at Michigan State University.

Dr. Spalding joined Iowa State University in 1984 as an assistant professor in the Department of Botany. He served as chair of the Interdepartmental Plant Physiology program at ISU from 1992 until 2000. In July 2003, he assumed the position of chair of the newly formed Department of Genetics, Development and Cell Biology, and served as chair of the Department of GDCB until July 2011, when he became interim associate dean for research and graduate studies in the College of Liberal Arts and Sciences, and formally accepted the position of associate dean in January 2013. Spalding also

became the director of the ISU Crop Bioengineering Consortium in July 2013.



Dan Voytas is a professor in the Department of Genetics, Cell Biology and Development at the University of Minnesota (UMN) and director of the UMN's Center for Genome Engineering.

He graduated from Harvard College in 1984 and received his PhD in genetics from Harvard Medical School in 1990. He conducted postdoctoral research at Johns Hopkins University School of Medicine where he was a fellow of the Life Science Research Foundation. In 1992, he joined the faculty at Iowa State University where he was promoted to associate professor in 1997 and to professor in 2001. In 2008, he joined the faculty at UMN.

Dr. Voytas advises agricultural biotechnology companies on the use of new methods of genome engineering for crop improvement and he serves as chief science officer for Collectis Plant Sciences in New Brighton, MN. He is an elected fellow of the American Association for the Advancement of Science.



Donald Weeks is the Maxcy Professor of Agriculture and Natural Resources in the Department of Biochemistry at the University of Nebraska-Lincoln. He received his BS from Purdue University and his PhD from the University of Illinois-Champaign/Urbana. He held professional positions at the Fox Chase Cancer Center in Philadelphia and the Zeecon Research Institute of Sandoz Agro, Inc., in Palo Alto, before joining UNL in 1989.

Dr. Weeks is a plant molecular biologist and biochemist. His earliest scientific contributions included discovery of mechanisms involved in protein synthesis in eukaryotic cells and development of systems for studies of gene regulation in plants and algae. He was a pioneer in the adoption of molecular biology and recombinant-DNA technologies in biological research. The Weeks laboratory at UNL was responsible for the development of dicamba herbicide-resistance gene technology that soon will be commercialized. Most recently, his laboratory has been involved in innovative research aimed at developing and applying new methods for targeted gene knockout

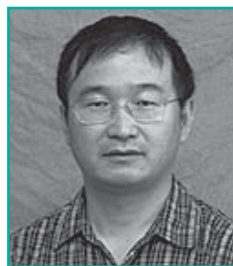
and gene replacement for use in improving important food crops.



Jeff Wolt is a risk analyst with Iowa State University where he specializes in research, teaching, and outreach activities relating to risks and benefits of modern plant agriculture. He obtained his doctorate at Auburn University and spent his early career on the faculty of the University of Tennessee and in industry. At ISU, he is a member of the Faculties of Agronomy, Toxicology and Environmental Sciences and he maintains an adjunct appointment in epidemiology at the University of Iowa.

Dr. Wolt has extensive experience in global and national risk assessment and issues management in relation to the commercialization and use of genetically engineered crops. His diverse research interests encompass environmental fate and effects, food safety and non-target risk assessment in relation to crop production and use. Also, he is interested in globally harmonized principles for biotechnology-risk assessment. Wolt currently serves on the US National Academy of Sciences committee to evaluate pesticide

risk-assessment methods for the state of California. He is a fellow of the American Society of Agronomy and the author of the text *Soil Solution Chemistry*.



Bing Yang's research interests focus on: the molecular mechanisms of plant/microbe interactions and crop disease-resistance engineering by using the bacterial blight of rice as a model; and development and application of uTALEN and CRISPR technologies for targeted genome editing in plants. Over the past 15 years, he has identified and characterized several important naturally occurring TAL effectors in the rice pathogen *Xanthomonas oryzae* for their disease-promoting ability, and, most recently, he has helped harness the disease-causing TAL effectors for targeted gene editing. His group generated the first disease-resistant crop species by using the TALEN technology.

Dr. Yang has a PhD in plant pathology from Kansas State University. He is an associate professor in the Department of Genetics, Development and Cell Biology at Iowa State University.

NORTH AMERICAN AGRICULTURAL BIOTECHNOLOGY COUNCIL

continued from page 1

and regulatory aspects. NABC 26 will bring together academic and industry scientists, students, representatives of regulatory agencies and institutions providing public opinion to engage in constructive dialogue with the objective to listen to the varied perspectives of each of these constituencies. The conference, hosted by Cornell University and the Boyce Thompson Institute, will be convened at Cornell University next October 8 and 9. The

organizing committee, chaired by Dr. Margaret Smith of Cornell University, has put together an excellent program with ample opportunity for audience interaction with speakers through panel discussions. As in recent years the

opinions of students will be captured via the *Student Voice* program. Besides the importance of the theme, NABC 26 will coincide with the peak season for fall colors in the Finger Lakes area—



Abel Ponce de León
Professor, Molecular Genetics
University of Minnesota

NABC
B15 Boyce Thompson Institute
Tower Road
Ithaca, NY 14853

