NABC NEWS

Spring 2013 No. 46

Providing an open forum for exploring issues in agricultural biotechnology

NABC'S PRINCIPAL OBJECTIVES ARE TO:

- *provide an open forum for persons with different interests and concerns to come together to speak, to listen, to learn, and to participate in meaningful dialogue and evaluation of the potential impacts of agricultural biotechnology*
- *define issues and public policy options related to biotechnology in the food, agricultural, biobased industrial product, and environmental areas*
- *promote increased understanding of the scientific, economic, legislative, and social issues associated with agricultural biotechnology by compiling and disseminating information to interested people*
- *facilitate active communication among researchers, administrators, policymakers, practitioners, and other concerned people to ensure that all viewpoints contribute to the safe, efficacious and equitable development of biotechnology for the benefit of society*
- *sponsor meetings and workshops and publish and distribute reports that provide a foundation for addressing issues.*

Ralph W. F. Hardy, President
Allan Eaglesham, Executive Director
Susanne Lipari, Executive Coordinator
B15 Boyce Thompson Institute
Ithaca, NY 14853
607-254-4856 fax-254-8680
nabc@cornell.edu
http://nabc.cals.cornell.edu/

Letter from the Chair....

Graham G. Scoles
NABC Chair 2012–2013

A 1906 statement attributed to Luther Burbank—"We have recently advanced our knowledge of genetics to the point where we can manipulate life in a way never intended by nature…we must proceed with the utmost caution in the application of this new found knowledge"—has often been used by those of us offering presentations on GMOs as evidence that new technologies are often accompanied by concerns that, while needing to be considered, are often unfounded. In different times, a quote such as this could well have led to significant regulatory oversight of plant breeding with adverse impacts on crop development. Similar concerns may have been expressed when plant breeders began to make use of interspecific crosses as sources of desirable genes or when plant breeders made use of mutation as a source of variation. However, in the early 20th century, scientists were respected and trusted and looked up to; applying science to increase food production was not only accepted but even sometimes celebrated. As late as 1967, plant breeders' efforts with respect to triticale were featured in the *Star Trek* episode "The Trouble with Tribbles" in which the tribbles consumed a cargo of the super grain "quadrotriticale." Rachel Carson's *Silent Spring*, one of the first books to question the application of science and the role of scientists in a rapidly developing world, was only then becoming widely read.

When genetic engineering of crops became a reality and products started to come close to market, the world was a very different place. Those in the western world were concerned with the environmental effects of western advances. They had the luxury to be more concerned about their food than ever before (and had also been exposed to various food scares, particularly in Europe, such as BSE and dioxin contamination of feed). Groups such as Greenpeace and Friends of the Earth had developed to coordinate efforts around their various agendas; the mass media jumped on controversial issues such as GMOs to promote higher readerships and, finally, email and the Internet allowed rapid communication with less scrutiny of facts than ever before. As a result, governments felt pressured to step in and regulate the new technology of genetic engineering in new ways.

After 15 years of being planted on ever-increasing acreages in both the developed and developing worlds, there is no evidence that genetically engineered crops pose any risk to the environment or to the consumers of their products. However, in North America a regulatory system established many years ago, when such concerns were more prominent, remains in place. With some recent exceptions, only five large-acreage North American crops have been taken through the regulatory system and commercialized by a few multi-national agricultural biotechnology companies.

While public polls show that concerns about GMOs have declined, some opposition continues. If one digs deeper into the motivation of the strong opponents of GMOs, it becomes clear that their concerns are less related to environmental issues and safety and more related to the fact that only products developed by the large agricultural biotechnology companies have made it to market. In a sense, GMOs are seen as an Achilles heel by which to attack companies that have been successful in commercializing this

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NABC 25—Mark Your Calendars

Biotechnology and North American Specialty Crops: Linking Research, Regulation and Stakeholders

June 4–6, 2013
College Station, Texas

Heather Hirsch
Texas A&M University

Texas A&M AgriLife Research is proud to host NABC 25 at Texas A&M University, June 4–6, 2013. The conference—at the George Bush Presidential Library in College Station—will bring together government officials, academic researchers and industry leaders to discuss the roles of regulatory policy, genomic sciences and related topics in an attempt to catalyze progress and realize opportunities for improving agriculture, especially as it relates to specialty crops. There will be three keynote addresses and five plenary sessions and. After each session, Q&A panels will allow audience members to engage with the speakers.

We are pleased to share our outstanding line-up of speakers:

Keynote Presentations

- **Roger Beachy**, *President Emeritus, Donald Danforth Plant Science Center*
- **Brett Giroir**, *Vice Chancellor for Strategic Initiatives, Texas A&M University System*
- **Todd Staples**, *Commissioner, Texas Department of Agriculture*

Session 1: Meeting Overview

- Approved Uses–Papaya; Squash; Sweet Corn—**Dennis Gonsalves**, *Director, USDA Pacific Basin Agricultural Research Center*
- Benefits/Examples and Limitations—**Tony Shelton**, *Professor, Department of Entomology, Cornell University*
- Concerns—**Gregory Jaffe,** *Director, Biotechnology Project, Center for Science in the Public Interest*

Session 2: Case Studies

- Citrus-Greening Resistance—**Ricke Kress**, *President, Southern Gardens*
- Non-Browning Apples—**Neal Carter**, *President, Okanagan Specialty Fruits*
- Bringing Biotech Potatoes to Market—**Haven Baker**, *Vice President of Marketing Initiatives, JR Simplott*
- Vegetable Case Study—**John Purcell**, *Vice President of Technology Development, Monsanto*

Session 3: The Regulatory Process and Technology Access for Specialty Crops

- EPA—**Chris Wozniak**, *Biotechnology Special Assistant, U.S. Environmental Protection Agency*
- USDA/APHIS/BRS Regulations—**Michael Gregoire**, *Deputy Administrator, USDA/APHIS Biotechnology Regulatory Services*
- FDA—**Robert Merker**, *Supervisory Consumer Safety Officer, FDA/Center for Food Safety and Applied Nutrition*
- CFIA-Canada—**Patricia McAllister**, *Acting National Manager, Plant Biosafety Office, Canadian Food Inspection Agency*
- Regulatory Deregulation Process—**Scott Thenell**, *Owner and Principal Consultant, Thenell & Associates LLC*
- Cultural Shift—**Peter Schuerman**, *Director of Innovation Management, Texas A&M AgriLife Research*
- PIPRA—**Alan Bennett**, *Executive Director, Public Intellectual Property Resource for Agriculture, University of California-Davis*

Session 4: Perspectives from Relevant Groups

- Producers/Growers—**J Allan Carnes**, *Mayor, Uvalde, Texas*
- Establishing Risk/Benefit Analyses for GE Specialty Crops—**Thomas Redick**, *Global Environmental Ethics Counsel*
- SWOT Analysis of Texas Vegetable and Fruit Industry—**Bill McCutchen**, *Executive Associate Director, Texas A&M AgriLife Research*
- Specialty Crops Regulatory Assistance—**Alan McHughen**, *CE Plant Biotechologist, University of California-Riverside*
- Human Health Benefits from Specialty-Crop Foods—**Mary Ann Lila**, *Director, Plants for Human Health Institute, North Carolina State University*
- Synthetic Genomics—**Jim Flatt**, *Chief Technology Officer, Synthetic Genomics*

Session 5: Next Steps

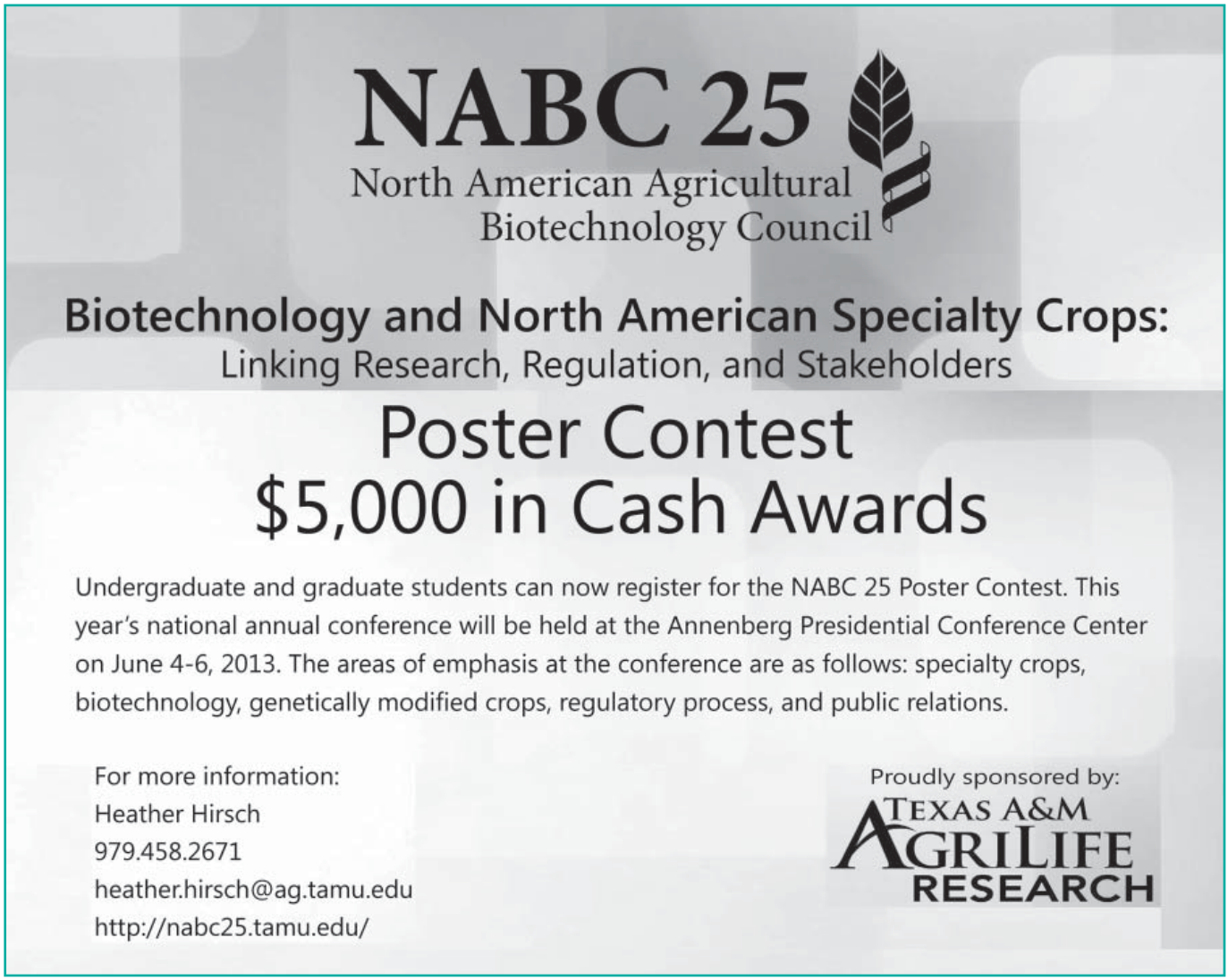
- Welcome and Breakout Reports—**Steve Pueppke**, *Associate Vice-President for Research & Graduate Studies, Michigan State University*
- Panel Discussion—**Steve Pueppke**, **Bill McCutchen**, **Tony Shelton** and **Gregory Jaffe**

Registration
Take advantage of the early-bird rate of $275. **We suggest early registration as participation will be limited to 300 registrants**, via http://nabc25.tamu.edu/. The late fee of $350 will apply from May 1, 2013. Students will receive a discounted registration rate at $175. The registration fee will cover: refreshments at all breaks, two breakfasts, two lunches, the evening reception, and the aggie prime rib dinner.

Accommodation
Conference participants should take advantage of special room rates that have been reserved at Hawthorn Suites and Hyatt Place for $120/night. These lodgings are adjacent to one another and NABC guests may take advantage of the amenities at either property. For your convenience, we will provide bus transportation to and from the hotel/conference. Additional information and rate codes are available via http://nabc25.tamu.edu/.

Student Voice
The *Student Voice* program has become important in attracting graduate students to participate in NABC conferences. NABC council members are urged to identify students interested in participating. One student from each member institution will receive a complimentary registration and up to US$750 from NABC to help defray travel and lodging expenses (http://nabc.cals.cornell.edu/studentvoice/index.cfm). *Student Voice* delegates will attend the plenary sessions and meet after Session 4 to identify issues and emerging themes. Their insights will be reported at the wrap-up session and published in *NABC Report 25*.■

Questions, comments and suggestions may be directed to
Rusty Carter
Texas A&M AgriLife Research–Corporate Relations
Rusty.Carter@tamu.edu
979-845-4272



Keynote Speakers

Roger Beachy, president emeritus of the Donald Danforth Plant Science Center, was the first director of the National Institute of Food and Agriculture (NIFA). Prior to this appointment, he served as the founding president of the Danforth Center.

From 1991 to 1998, he headed the Division of Plant Biology at The Scripps Research Institute. He was also professor and Scripps Family Chair in Cell Biology and co-director of the International Laboratory for Tropical Agricultural Biotechnology at Scripps. From 1978 to 1991, he was a member of the Biology Department at Washington University in St. Louis, where he was professor and director of the Center for Plant Science and Biotechnology. His research has produced more than 230 journal publications in virology and virus pathology, and regulation of gene expression in plants.

Dr. Beachy is a member of the US National Academy of Sciences and in 2001 received the Wolf Prize in Agriculture. He is a fellow in the American Association for the Advancement of Science, the American Academy of Microbiology, the National Academy of Science India, the Indian National Science Academy, and the Academy of Science of St. Louis.

He holds a PhD in plant pathology from Michigan State University and a BA in biology from Goshen College.■

Brett Giroir is vice chancellor for strategic initiatives for the Texas A&M University System and principal investigator for the Texas A&M Center for Innovation in Advanced Development and Manufacturing. The latter is a public-private partnership with the US Department of Health and Human Services designed to enhance the nation's emergency preparedness against emerging infectious diseases, including pandemic influenza, and chemical, biological, radiological and nuclear threats.

He is a former director of the Defense Sciences Office at the Defense Advanced Research Projects Agency (DARPA) and chair of the chemical and biological defense panel for the threat reduction advisory committee (TRAC) for the US Department of Defense.

Dr. Giroir received his undergraduate education at Harvard University and his medical training at the University of Texas Southwestern Medical Center. He has published frequently in basic science and as a clinical investigator, and currently holds professorships at the Texas A&M Colleges of Medicine and Engineering and has an adjunct appointment at the Texas A&M University Bush School of Government and Public Service. He is the recipient of the Texas A&M System Award for Innovation and the US Secretary of Defense Medal for Outstanding Public Service.■

From his earliest days of public service Agriculture Commissioner **Todd Staples** has championed such critical issues as protection of private property owners' rights, workers' compensation reform, school finance reform and improving the education of Texas' leaders of tomorrow. As head of the Texas Department of Agriculture, he is diligent in his efforts to support private-sector job creation and economic development across the state; improve consumer protection from the grocery store to the gas pump; lead true eminent-domain reform; and improve the healthy lifestyles of young Texans. He is also focused on the promotion of agricultural products and businesses using the GO TEXAN marketing program, and has expanded trade opportunities for Texan producers. He has accomplished these priorities with a philosophy that puts family and taxpayer interests first while focusing on efficiency.

Mr. Staples has a bachelor's degree in agricultural economics from Texas A&M University. He began serving in public office in 1989 when he was elected to the Palestine city council. In 1995 he was elected state representative and served three terms in the Texas House before being elected state senator in 2000, serving two terms. His public service continues today as agriculture commissioner. Following his first election in 2006, he was re-elected to a second term in 2010.■

The Student Voice at NABC

TRAVEL STIPEND AND FREE REGISTRATION TO ATTEND NABC 25
FOR ONE GRADUATE STUDENT FROM EACH NABC MEMBER INSTITUTION

HTTP://NABC.CALS.CORNELL.EDU/STUDENTVOICE/INDEX.CFM

Plenary Speakers

Haven Baker is the vice president of new market initiatives at the JR Simplot Company, a $4.5 billion private corporation with fertilizer, food and livestock divisions. At Simplot, Haven works on identifying and commercializing new technologies and opportunities across the agricultural space. He is the general manager of Simplot's plant-sciences business.

Dr. Baker has significant experience in the biotechnology industry, including working with several start-ups and managing a proteomics research lab at the Barnett Institute in Boston. Prior to joining Simplot, he also worked as an investment professional at Clarium, a global-macro hedge-fund company in New York.

Haven has a BS from Yale, a PhD in chemistry from Northeastern University, and an MBA from Harvard Business School. At Harvard, he worked with Clayton Christianson on concepts developed for the Social Innovation Fund.■

Alan Bennett is professor of plant sciences at the University of California, Davis. He earned BS and PhD degrees in plant biology at UC Davis and Cornell University, respectively, and has over 160 publications. His research has focused on molecular biology of tomato-fruit development and ripening; cell-wall disassembly; and intellectual property rights in agriculture. He is a fellow of the American Association for the Advancement of Science and a senior fellow of the California Council for Science and Technology. He has also served in a range of leadership positions at the University of California, including department chair, divisional associate dean in the College of Agricultural and Environmental Sciences, UC system-wide executive director of research administration and technology transfer, and associate vice chancellor for research at Davis. In these capacities, he has been responsible for research and teaching budgets, for establishing and overseeing research policy, and for the management of a portfolio of over 5,000 patented inventions, 700 active licenses and revenue in excess of $350 million.

In 2004, Dr. Bennett founded the Public Intellectual Property Resource for Agriculture (PIPRA) to accelerate the deployment of public-sector technologies for specialty and subsistence crops in developing countries. PIPRA has been supported by the Rockefeller and Bill & Melinda Gates Foundations as well as by numerous government agencies and private companies.■

J Allan Carnes is the managing partner of Winter Garden Produce, LLC, and vice president of the family farming operations at Carnes Farms. The family operations grow and ship fifteen hundred acres of vegetables annually, and have been in existence for over 60 years. He is a past president of the Texas Vegetable Association and he has been involved in agricultural issues on both the state and federal levels. He is active in food-safety legislation, labor and immigration debates, and multiple water issues.

He serves on a Rural Advisory Committee under the Texas Department of Agriculture and on the United Fresh Produce government relation board. He has been a director with the Texas Produce Association, South Texas Onion Committee and the National Council of Agriculture Employers. Besides his work on agricultural issues, J is currently the mayor of the city of Uvalde, before which he served on the city council for four years.■

Neal Carter is president and founder of Okanagan Specialty Fruits™ (OSF), a biotechnology company specializing in the creation of novel tree-fruit varieties. Outside of OSF, he and his wife, Louisa, grow and pack apples and cherries from their orchard in British Columbia's Okanagan Valley. For nearly 30 years, Neal has worked with numerous crops as a bioresource engineer around the globe, ranging from maize to mango, from growing to harvesting, packing, storage, processing and packaging. It was through this firsthand experience that he was persuaded that biotechnology can help agriculture meet the ever-expanding global demand for food.

The Carters founded OSF in 1996 in order to explore opportunities to utilize biotechnology to boost fruit consumption and sustainability. OSF's flagship project is the development of non-browning Arctic® apples, which have been engineered to resist browning by silencing genes that produce polyphenol oxidase. Arctic apples are currently progressing through the deregulation processes in Canada and the United States; availability in grocery stores is expected within a few years.

With apple consumption flat-to-declining for the past couple of decades, Mr. Carter believes that Arctic apples will provide a consumption trigger for the industry by providing numerous benefits throughout the supply chain.■

Jim Flatt is the chief technology officer at Synthetic Genomics, Inc., a leader in the development and application of synthetic biology for sustainable production of fuels and chemicals and applications in agriculture. He has been involved in the industrial biotechnology field for over 20 years. Prior to SGI, he was the executive vice president of research and development and operations at Mascoma Corporation, a leader in the development of cellulosic biofuels. Before joining Mascoma, he served as senior vice president of research for Martek Biosciences Corporation, leading the development of nutritional fatty acids from microalgae that are now included in many infant-formulas and other food products. And prior to Martek, he was involved in microbial biotechnology research at Merck and Monsanto.

Dr. Flatt received his undergraduate degree in chemical engineering from Massachusetts Institute of Technology and graduate degrees in chemical engineering from the University of California-Berkeley and University of Wisconsin-Madison. He served as chair of the industrial advisory board for the National Science Foundation Engineering Research Center for Marine Biotechnology at the Universities of Hawaii and California-Berkeley.■

Dennis Gonsalves was born and raised on a sugar plantation in Hawaii. He has been the director of the USDA Pacific Basin Agricultural Research Center in Hilo, Hawaii, since 2002. He received his BS in horticulture (1965) and MS in plant pathology (1968) from the University of Hawaii, and his PhD in plant pathology (1972) from the University of California at Davis. He worked at the University of Florida from 1972 to 1977 and at Cornell University from 1977 to 2002, rising to the endowed position of Liberty Hyde Bailey professor in 1995.

Dr. Gonsalves does fundamental and applied research to control plant viruses. He was appointed to the Agriculture Research Service Science Hall of Fame in 2007 and received the Presidential Distinguished Rank Award in 2009. He led the team that developed—through the public sector—the virus-resistant transgenic papaya that saved the papaya industry in Hawaii. For this work, they received the Alexander Von Humbolt Award in 2002 for the most significant accomplishment in American agriculture in the previous five years.■

Michael Gregoire is the deputy administrator for APHIS's Biotechnology Regulatory Services (BRS) program. He provides leadership and direction to ensure the safe development and introduction (importation, interstate movement, and field testing) of genetically engineered organisms. Prior to becoming deputy administrator for BRS in January 2008, he served as deputy administrator for policy and program development, providing leadership and guidance in the overall planning and formulation of USDA policies, programs, and activities. He was also responsible for the agency's budget, regulation development, and environmental compliance programs.

Mr. Gregoire began his federal career as a budget analyst with APHIS in 1978 and served in progressively responsible roles as an analyst and manager. From 1978 until 1992, he worked in the APHIS Budget and Accounting Division and served as the agency's budget officer for several years. From 1992 to 1995, he was the chief of staff to the APHIS administrator. In 1995, he assumed a leadership position in the agency's information technology organization and was named APHIS chief information officer in 1996.

He received a BA degree in political science from Niagara University in 1976 and a Master's degree in public administration from George Washington University in 1983.■

Gregory Jaffe is director of the biotechnology project for the Center for Science in the Public Interest (CSPI), an advocacy and educational organization that focuses on nutrition and health, food safety, alcohol policy, and sound science. CSPI was instrumental in pushing through the federal law to create the Nutrition Facts label with clear nutrition information which set standards for nutrition and health claims on food labels. CSPI is supported primarily by 800,000 subscribers to its Nutrition Action Healthletter.

Mr. Jaffe first worked as a trial attorney for the US Department of Justice's Environmental and Natural Resources Division for seven years. He then moved on to become senior counsel with the US Environmental Protection Agency Air Enforcement Division, before joining CSPI to direct the biotechnology project. Over the last decade, he has been a strong advocate for federal positions in federal court and frequently has spoken publicly on behalf of EPA. At EPA, he was awarded a bronze medal for commendable service, a special achievement award, and a gold medal for performance. He is a recognized expert on the US regulatory structure for agricultural biotechnology as well as consumer issues pertaining to agricultural biotechnology.

He earned his BA from Wesleyan University in biology and then received a degree from Harvard Law School.■

Rick Kress is president of Southern Gardens Citrus, a subsidiary of the US Sugar Corporation located in Clewiston. It is one of the largest grower of oranges in Florida and a major supplier of not-from-concentrate juice to the major brands and private-label grocery trade in the United States.

He graduated from Cornell University in 1973 with a BS degree in food science. His industry experience includes Libby's, Nestlé, Seneca Foods, and Northland Cranberries, Inc., in a variety of senior management positions from agriculture to sales and marketing.

Mr. Kress moved to Florida in 2005 to join the Southern Gardens Citrus management team. His arrival coincided with the occurrences of the current citrus-industry diseases, canker and greening. Southern Gardens Citrus and US Sugar have taken a proactive position in working with all factions of the state of Florida and the worldwide citrus industry in efforts to understand and deal with these disease challenges.

He serves on the Cornell University Institute of Food Science Advisory Council as well as the New York State Agricultural Experiment Station Advisory Council task force and is a past president of the Juice Products Association and Processed Apples Institute. Currently, he chairs the D. Glynn Davies Juice Products Association Scholarship program.■

Mary Ann Lila is director of the Plants for Human Health Institute (PHHI) at North Carolina State University on the NC Research Campus. She holds the endowed David H. Murdock chair, and is a professor in the Department of Food, Bioprocessing, and Nutrition Sciences. Through transdisciplinary discovery and outreach, the team at the PHHI is pioneering a dramatic shift in the way the American public views and uses food crops, not merely as a source of nutrients and flavorful calories, but as sources of powerful components that protect and enhance human health. Her research team focuses on wild and domesticated berries and their wide-ranging health benefits, including alleviation of the symptoms of diabetes and metabolic syndrome. Current efforts include a Bill & Melinda Gates Foundation Grand Exploration Challenges project in Zambia and projects in Egypt, Central Asia, Oceania, Mexico, Ecuador, Chile, subSaharan Africa and New Zealand.

Formerly (2006–2008), she was director of ACES Global Connect (the international arm of the College of Agriculture, Consumer and Environmental Sciences at the University of Illinois) and associate director of the Functional Foods for Health Program (1997–2000) at the University of Illinois. She is vice president of the Global Institute for BioExploration, an R&D network that promotes ethical, natural product-based pharmacological bioexploration to benefit human health and the environment in developing countries.■

Patricia McAllister is the acting national manager of the Plant Biosafety Office (PBO) at the Canadian Food Inspection Agency (CFIA) in Ottawa. The PBO is responsible for the confined field-trial program and the authorization for environmental release of plants with novel traits.

Ms. McAllister was born and raised on a farm in New Brunswick that produced seed potatoes, various vegetable crops and beef cattle. She received her Bachelor's degree in horticulture and a Master's degree in food science from the University of Guelph. She joined Alberta Agriculture and Rural Development as a seed-potato specialist in 1997 and has been with the CFIA since 2009.■

Bill McCutchen began his role as associate director of Texas A&M AgriLife Research within the Texas A&M University System in 2006, and was promoted to executive associate director in 2010. He facilitates oversight and direction of programs across Texas A&M AgriLife Research, including the development and implementation of strategic research initiatives. He also facilitates the development of intellectual property.

McCutchen earned his BS degree in 1987 and Master's in 1989, both in entomology, from Texas A&M University and was awarded Texas A&M's Distinguished Graduate Student Research Award in 1989. He received his doctorate from the University of California-Davis in 1993 and won the Young Scientist Award from the American Chemical Society in 1992.

In 2002, while at DuPont Agriculture & Nutrition, he was named a DuPont research fellow overseeing crop-protection research and development across both the agricultural biotechnology and chemistry programs. In 2007, he was presented with the Henry Wallace Agricultural Revolution Impact Award, DuPont's and Pioneer's most prestigious research award for agriculture. He has been granted and retains over 70 patents. Dr. McCutchen received the 2011 Excellence in Innovation Award for the Texas A&M University System in Recognition of Innovative Research and Commercialization. He serves on several executive committees and boards and was chair of NABC for 2010–2011.■

Alan McHughen is a public sector educator, scientist and consumer advocate. After earning his doctorate at Oxford University, he worked at Yale University and the University of Saskatchewan before joining the University of California, Riverside. A molecular geneticist with an interest in crop improvement and environmental sustainability, he helped develop US and Canadian regulations covering genetically engineered crops and foods. He served on a recent US National Academy of Sciences panel investigating the environmental effects of transgenic plants, and a second panel investigating the health effects of genetically modified foods. He is now past president and treasurer of the International Society for Biosafety Research.

Having developed internationally approved commercial crop varieties using both conventional breeding and genetic engineering techniques, Dr. McHughen has firsthand experience with the relevant issues from both sides of the regulatory process. As an educator and consumer advocate, he helps non-scientists understand the environmental and health impacts of both modern and traditional methods of food production. His book, *Pandora's Picnic Basket: The Potential and Hazards of Genetically Modified Foods*, explodes the myths and explores the genuine risks of GM technology.■

Robert Merker received his bachelor's degree in microbiology from the University of Illinois at Urbana-Champaign, and a PhD in microbiology from the University of California, Davis. After postdoctoral studies at the University of British Columbia and UC-Davis, he joined the Food and Drug Administration in 1991, where he did research on the outer surface of *Listeria monocytogenes*, acid tolerance in *Yersinia enterocolitica*, and the food safety of apple-cider production. In 2000, he became a consumer safety officer in the Office of Food Additive Safety.

He participated in the working group for the development of a Codex Alimentarius "Guideline for the Conduct of Food Safety Assessment of Foods Produced Using Recombinant-DNA Microorganisms." He also has worked on a wide variety of biotechnology-related issues for FDA, and was a member of an interagency task team that has developed and maintains a joint Internet site for government information about regulation of the products of modern biotechnology.

Dr. Merker was selected as a supervisory consumer safety officer in the Division of Petition Review in the Office of Food Additive Safety in July 2007, and moved to the Division of Biotechnology and GRAS Notice Review in 2010, where he supervises several regulatory and environmental specialists. He oversees FDA's Consultations on Food from New Plant Varieties.■

Steven Pueppke is associate vice president for research and graduate studies at Michigan State University and director of MSU AgBioResearch. He has university-wide responsibility for a portfolio of research focused on land use, water, climate change, food and agriculture, and renewable energy.

In 1968, he was awarded a BS degree from MSU and, in 1975, received his PhD in plant pathology from Cornell University. He is a former faculty member at universities in Florida, Missouri, and Illinois and served as guest professor at the University of Geneva, Switzerland, and Philipps University in Marburg, Germany. He is past president of the board of directors of the National Council on Food and Agricultural Research and past chair of NABC. He has served on the USDA Advisory Committee on Biotechnology and 21st Century Agriculture and on the Michigan Renewable Fuels Commission.

A fellow of the American Phytopathological Society and a member of numerous professional societies, including Phi Kappa Phi and Sigma Xi, Dr. Pueppke has coauthored 125 peer-reviewed scientific articles. In recognition of his efforts at building collaborations with French universities, he received the *Chevalier de l'Ordre des Palmes Académiques* from the Republic of France in 2008.■

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John Purcell is vice president for technology development for Monsanto Vegetables and serves on Monsanto's vegetable leadership team. In this role, he heads a global team responsible for supporting the commercialization of vegetable seed products in diverse markets. He is also a senior technology fellow at Monsanto.

Previously, he served on Monsanto's technology leadership team, in which capacity he oversaw a portfolio of technologies and products in the pipeline that bring increasing value to the cotton industry globally. Prior to that role, he held numerous positions in Monsanto's technology organization. He headed a research site in Mystic, Connecticut, and led a research program in Cambridge, UK, focusing on corn and wheat, respectively. Dr. Purcell spent more than 10 years at Monsanto's biotechnology R&D center in St. Louis, where he held jobs of increasing responsibility in the biotechnology research organization. For several years, he headed Monsanto's insect-control program. His role was later expanded to include all plant-protection research including insect, fungal and nematode pests.

Prior to joining Monsanto, he was a postdoctoral researcher at the US Department of Agriculture. His PhD was granted from the University of Massachusetts at Amherst on insect biochemistry. He is an inventor on several patents and an author of numerous scientific papers, reviews and book chapters.■

Thomas Redick represents clients in the high-technology and agricultural biotechnology industry sectors with issues relating to regulatory approval, liability avoidance and compliance with industry standards addressing socioeconomic and environmental impacts, particularly "sustainability" initiatives in agriculture and high technology. Before establishing a solo international environmental consulting practice in 2005 in St. Louis, he was a partner in Gallop, Johnson & Neuman LC in Clayton, Missouri.

He has a BA (1982) and a JD (1985) from the University of Michigan and is chair of the American Bar Association Section on Environment, Energy & Resources (ABA-SEER) Committee on Agricultural Management. After his appointment to represent ABA on the Council for Agricultural Science & Technology (CAST), he was the first attorney to be elected president of CAST in its 40-year history.

Mr. Redick represents US soybean producers on regulatory approval, liability avoidance, intellectual property, and antitrust issues. As their representative to the Global Industry Coalition, he attends meetings of the Cartagena Protocol on Biosafety. He has over 27 years experience practicing environmental and intellectual property law and is co-author of four books on liability prevention and emerging technologies.■

Tony Shelton is a professor of entomology and an international professor and associate director of international programs for Cornell's College of Agriculture and Life Sciences. He received his BA in classics and philosophy from St. Mary's College of California, and worked in business before returning to graduate studies at the University of California, Riverside, where he received his MS and PhD degrees. He began his academic career at Cornell in 1979 where his research focuses on developing sound insect-pest-management strategies for vegetables with spin-offs for other crops. Components of his program include insect population ecology, biological control, plant resistance, agricultural biotechnology, insecticide resistance, and risk assessment of insect-resistant genetically engineered crops. His program has a strong commitment to outreach education for the agricultural community, the general public and international agriculture, especially in India and China.

Dr. Shelton served as the associate director of research at the Cornell Experiment Station from 1993 through 2001. Among the awards he has received are the Entomological Society of America's Award for Integrated Pest Management and its Recognition Award for Research. He is a fellow of the Entomological Society of America.■

Scott Thenell is founder and managing partner of Thenell & Associates LLC, offering expert regulatory advice to companies that make and market genetically engineered plant products.

His career spans more than 30 years in technical and regulatory service to the food-processing and biotechnology-seed industries. Since 2001, he has helped clients reach their regulatory goals for biotechnology-derived food and energy crops, industrial products, biopesticides and soil additives. He is a co-founder of the Agricultural BioTech Regulatory Network, an international group of independent regulatory professionals serving the agricultural biotechnology industry from product concept to commercialization.

Mr. Thenell earned degrees in bacteriology from the University of Wisconsin-Madison and in regulatory science from the University of Southern California School of Pharmacy.■

Chris Wozniak received his training in plant pathology and life sciences at the University of Nebraska at Lincoln, where his research efforts focused on cell differentiation and morphogenesis in *Sorghum* bicolor. He worked in David Galbraith's laboratory at UNL, developing insect-resistant cotton and with Lowell Owens at the USDA-Agricultural Research Service, Beltsville, developing transformation protocols in sugarbeet. He then joined the Sugarbeet Research Unit of the USDA-Agricultural Research Service in Fargo, ND, where he worked on biological control of an insect pest.

After 18 years in plant-science research, he entered the world of regulatory science at the US Environmental Protection Agency Office of Pesticide Programs. He performed risk assessments of microbial and plant-based pesticides, particularly in the areas of human health and environmental consequences of gene flow.

For four years, Dr. Wozniak served as the national program leader for Food Biotechnology and Microbiology at the USDA's Cooperative States Research, Education and Extension Service. While at CSREES, he directed two competitive grant programs in the areas of microbial food safety and environmental risk assessment for products of biotechnology.

In 2008, he rejoined the EPA as a biotechnology special assistant in the Office of Pesticide Programs, focusing on issues of biotechnology policy, interagency coordination of biotech regulations, and environmental risk assessment of plant-incorporated protectants. ■

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technology. The opponents' concerns are more related to the role of such companies in the food chain than any potential risks from genetic engineering.

Ironically, public institutions and small companies that are also involved in crop breeding have been reluctant to contemplate using this technology in the same way as the large companies, although such crops could benefit significantly from its application. This is because the regulatory system put in place by governments (under pressure from opponents of the technology) has put application of the technology out of the reach of the smaller players. Deep pockets are required to move a product through the regulatory system, involving costs that public institutions and small companies cannot afford. In addition, the limited return on investment from smaller-acreage crops (which might well be bred by public institutions or small companies) has meant that they have not yet benefited from genetic engineering in the same way as the large-acreage crops. Thus, genetically engineered crops are seen as the sole purview of the large agricultural biotechnology companies and concerns that opponents have with GMOs are confounded by other concerns.

NABC 25, *Biotechnology and North American Specialty Crops: Linking Research, Regulation, and Stakeholders*, will bring together players from public agricultural research institutions and regulatory agencies to discuss the above challenges. Hopefully the presentations and discussions will identify a path forward by which these "orphan" genetically engineered crops with significant value to either the producer or consumer—or both—can be brought to market rather than sit on the shelf. Bill McCutchen and his staff at Texas A & M are organizing an excellent program and I hope to see you all there June 4–6. Seating is limited to 300, so please register early.

A special note to all NABC representatives regarding the *Student Voice*.

Please be sure to pass on NABC 25 information to appropriate colleagues whose graduate students might like to attend and participate in the *Student Voice* program. Remember that your institution's membership helps to provide free registration for one student and up to $750 towards their travel and accommodation. Many NABC-member institutions have not taken advantage of this opportunity—at minimal direct cost—to broaden exposure of one of their interested students to the intersection of science and policy. The *Student Voice* has become one of the distinguishing features of NABC's annual conferences, providing opportunities for graduate students to meet, interact, and work with colleagues from other member institutions as well as to present their work as posters. NABC 25 will be of particular interest to those students working in plant biotechnology. While they may be well acquainted with the nuts and bolts of the various transformation techniques, NABC 25 will expose them to a very different set of issues that confront those attempting to apply those techniques. It will serve them well as they embark on their careers, particularly providing them with information on issues they will face in taking products of transformation through to commercialization.■

GRAHAM J. SCOLES
ASSOCIATE DEAN FOR RESEARCH,
COLLEGE OF AGRICULTURE and Bioresources
UNIVERSITY OF SASKATCHEWAN

NABC Will Participate in BIO's *World Congress on Industrial Biotechnology and Bioprocessing*

Montréal, Canada, June 16–19, 2013

The *World Congress*—initiated in 2004 by the Biotechnology Industry Organization (BIO), the American Chemical Society and NABC—has become the world's largest conference on industrial biotechnology and the leading event for business leaders and policymakers in biofuels, biobased products, and renewable chemicals, which represent major market opportunities for agriculture (see *NABC Reports 12*, *19* and *20*).

NABC will have "supporting organization" status at the tenth *World Congress* in Montréal and will have a table in the exhibition area offering our reports, white papers, *etc.*, to the expected >1,000 attendees.

Five plenary sessions will highlight progress in next-generation biorefineries, renewable chemicals, biofuels, and building a sustainable biobased industry. And the breakout program will comprise six tracks and 35 sessions (many relevant to agriculture):

- Advanced Biofuels and Biorefinery Platforms
- Feedstock Crops and Biomass Supply
- Renewable Chemical Platforms and Biobased Materials
- Specialty Chemicals, Pharmaceutical Intermediates and Food Ingredients
- Synthetic Biology and Microbial Genomics
- Technical Presentations

More information on the program and registration and lodging details, *etc.*, are available at http://www.bio.org/worldcongress. Questions may be directed to worldcongress@bio.org.■

RECENT NABC WHITEPAPERS

Agriculture and the Changing Climate (2011)

Agricultural Water Security: Research and Development Prescription for Improving Water Use Efficiency, Availability and Quality (2010)

Food and Agricultural Research: Innovation to Transform Human Health (2009)

Agriculture and Forestry for Energy, Chemicals and Materials: The Road Forward (2007)

NORTH AMERICAN AGRICULTURAL BIOTECHNOLOGY COUNCIL

NABC 25: *Biotechnology and North American Specialty Crops: Linking Research, Regulation and Stakeholders*

June 4–6, 2013
College Station, Texas
http://nabc25.tamu.edu/

NABC
B15 Boyce Thompson Institute
Tower Road
Ithaca, NY 14853