

NABC

news

Winter 2000 no.20

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 insure 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*

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Letter from the Chair . . .

Each day for the past six months, I have been receiving from five to 10 e-mails detailing the current controversy surrounding the production and processing of genetically modified crops (GMC). The concern about GMC started in Europe but quickly spread to Canada, the Pacific Rim countries and the United States. Most of the controversy focuses on the unknown risks of consuming foods made from GMC, the need for labeling food containing GMC to allow consumers to make an informed choice, the impacts of GMC on non-target organisms and biodiversity, and the effects of multi-national companies controlling GMC seed on the future of small and subsistence farmers.

These are all legitimate issues for discussion and for scientific assessment.

Fortunately, the NABC was created twelve years ago to provide a forum for open discussion of all aspects of agricultural biotechnology. We strive for completely open dialogue involving all points of view regarding scientific, ethical and policy aspects of controversial issues. The NABC invites organizations and individuals with widely varying perspectives to attend our annual meetings to share ideas and discuss issues. Through thoughtful dialogue and compromise, we hope to find some common recommendations that can be provided to federal policy makers and regulators regarding contemporary issues in agricultural biotechnology.

The NABC has recently issued a pamphlet entitled *NABC Statement 2000 on Agricultural Biotechnology: Promises, Process, Regulations, and Dialogue*.

This statement presents the Council position regarding agricultural biotechnology. The statement provides factual information about the current status of agricultural biotechnology, the process of genetic modification, the regulatory process used to approve new GMC, and the offer to co-host an open forum with organizations and individuals concerned about the human health and environmental risks of genetically modified plants. Copies of this document are available from any Council member or from the NABC office.

The NABC is sponsoring two important upcoming events. On April 19, 2000, a small team of Council members will brief members of Congress and their staffs on the outcomes of the NABC 11 held in Lincoln, Nebraska in June 1999. This annual meeting addressed the issues of biotechnology and industry consolidation on sustainability of the world food supply. The next *Annual Meeting (NABC 12)* will be held in Orlando, Florida on May 11-13, 2000. The conference will focus on issues related to the biobased economy of the 21st century. I encourage everyone to attend this important and interesting meeting.

Darrell W. Nelson

Darrell W. Nelson
 Chair, NABC

Ralph Nader and James Woolsey NABC12 keynote speakers

With speakers like **Ralph Nader** and **James Woolsey** presenting the keynote speeches, and others including **Jerry Caulder**, **Daniel Reicher**, and **Paul Thompson** offering their perspectives on the biobased economy during plenary sessions, participants at NABC12 should have a lot to discuss and debate.

Scheduled for May 11-13, 2000 in Orlando, Florida, participants will focus their dialogue on the impacts of agriculture expanding into various biobased enterprises including the health, energy, chemical, and material industries. The biobased economy is emerging as one of the most significant new opportunities for agriculture and society in more than 100 years, as evidenced by several national activities in 1999 and 2000, including the Presidential Executive Order establishing a federal biobased initiative, the National Research Council report on Biobased Industrial Products, and the EPCOT Millennium exhibit that focuses on biobased products. Biobased products already in the marketplace include automobile bodies, liquid fuels, biodegradable polymers, fabrics and health care products.

In addition to hearing speakers in plenary sessions, participants will have the opportunity to dialogue and debate in workshops. These sessions provide an opportunity for all to speak, to listen, and to learn. In addition, they promote dialogue, establish a common knowledge base, identify areas of disagreement, and

allow participants to reach consensus, if possible, and make recommendations. Descriptions of the workshop opportunities can be found on page 8.

With rapid world population growth and changing consumer demands, sustained economic and social growth will depend upon a secure supply of raw material for manufacturing needs. Continued depletion of limited global natural resources supports the concept of supplying a major part of industrial production and energy needs through the use of renewable resources. The U.S. has a highly productive agricultural system which in addition to providing basic food, feed and fiber needs, can produce significant plant- and animal-based resources for use as basic building blocks in industrial production. Successful progress toward biobased industrial production will be achieved by an integrated, multi-disciplinary approach to research and development that combines talents from traditional agricultural disciplines with those from engineering, health sciences, information technology, physical sciences, economics, and others.

Use of biobased energy production may reduce our need for fossil fuels, which impact national and international security concerns. This will ensure our access to energy, may favorably impact balance of trade, create jobs in rural communities, and reduce military expenses that are used to ensure our access to foreign oil. Increased use of crop-based

agriculture for supplying inputs to a biobased economy will also influence the carbon cycle impacting favorably global warming. However, many economic, environmental and societal issues will develop from the use of plant/animal resources in a bio-based economy. Issues such as removal of productive farming land which could be used for food and feed production and replacing it with crop and animal production for use as biobased products must be addressed.

On Friday evening, NABC12 participants will also be treated to a special event at EPCOT, where they will tour the Millennium exhibit, see the fireworks, and have the opportunity to tour other exhibits.

**For a registration
packet visit the NABC
website —
[www.cals.cornell.edu/
extension/nabc](http://www.cals.cornell.edu/extension/nabc)
— or call the NABC at
607-254-4856**

Keynote Speakers



R. James Woolsey

R. James Woolsey is a partner in the law firm of Shea & Gardner in Washington, D.C. He returned to the firm in January 1995 after serving two years as Director of Central Intelligence.

Woolsey's law practice is in the fields of civil litigation, alternative dispute resolution, and corporate transactions. He has served recently as counsel for major American and overseas corporations in both commercial arbitration and the negotiation of joint ventures and other agreements. He serves regularly as both an arbitrator and a mediator in commercial disputes between major companies. He and Senator Richard Lugar co-authored in 1999 a major article on the biobased initiative.

Besides serving as Director of Central Intelligence, Woolsey has served in the U.S. government as: Ambassador to the Negotiations on Conventional Armed Forces in Europe (CFE), Vienna 1989 -1991; Undersecretary of the Navy, 1977-1979; and General Counsel to the U. S. Senate Committee on Armed Services, 1970-1973. He was also appointed by the President as Delegate at Large to the U.S.- Soviet Strategic Arms Reduction Talks (START) and Nuclear and Space Arms Talks (NSAT), and served in that capacity as an advisor on the U.S. Delegation to the Strategic Arms Limitation Talks (SALT I), Helsinki and Vienna, 1969-1970. He has been a member of: The Commission to Assess the Ballistic Missile Threat to the U. S. (Rumsfeld Commission), 1998; The President's Commission on Federal Ethics Law Reform, 1989; and the President's Blue Ribbon Commission on Defense Management (Packard Commission) 1985-1986. He is currently a Trustee of The Center for Strategic & International Studies, and Chairman of the Advisory Committee of the Clean Fuels Foundation.

He received his B. A. from Stanford University, an M. A. from Oxford University, where he was a Rhodes Scholar, and an LL.B. from Yale Law School, where he was Managing Editor of the Yale Law Journal.



Ralph Nader

Honored by Time Magazine as one of the 100 most influential Americans of the 20th Century, consumer activist Ralph Nader has devoted his life to giving ordinary people the tools they need to defend themselves against corporate negligence and government indifferences. In 1965, Nader took on the Goliath of the auto industry with his book, *Unsafe at any Speed*, a shocking expose of the disregard carmakers held for the safety of their customers. The Senate hearing into Nader's accusation and the motor vehicle laws that resulted catapulted Nader into the public sphere.

Nader quickly built on the momentum of that success. Working with lawmakers, he was instrumental in creating the Occupational Safety and Health Administration (OSHA), the Environmental Protection Agency (EPA) and the Consumer Products Safety Commission. Laws he helped draft and pass are the Safe Drinking Water Act, the Meat and Poultry Inspection rules, and the Freedom of Information Act. Working to empower the average American, Nader has formed numerous citizen groups, including the Center for Auto Safety, Public Citizen, Pension Rights Center, the Coalition for Universities in the Public Interest, and the student public interest research groups (PIRGs) that operate in over twenty states. In his latest citizen initiative, he is working with alumni classes, including his own at Princeton University and Harvard Law School, to redirect their efforts from parties and reunions to volunteerism and community projects.

His best-selling books include *Winning the Insurance Game*, *Why Women Pay More*, and *Getting the Best from your Doctor*. His most recent consumer education books are *Children First: A Parents' Guide to Fighting Corporate Predators* and *No Contest: Corporate Lawyers and the Perversion of Justice in America*. His message is simple and compelling: "To go through life as a non-citizen would be to feel that there's nothing you can do, that nobody's listening, that you don't matter. But to be a citizen is to enjoy the deep satisfaction of seeing pain prevented, misery avoided and injustice decline."

Plenary Speakers



Jerry Caulder

Jerry D. Caulder is the founder of Akkadix Corporation and serves as its Executive Chairman and CEO. Akkadix is an agricultural biotechnology company that will develop proprietary technology in the crop protection and seed industries. Previously, Caulder served as Mycogen Corporation's first President and CEO, and as Chairman and Chairman Emeritus of its board of directors.

Caulder is former Chairman of the Industrial Biotechnology Association, a predecessor to the Biotechnology Industry Association (BIO), and has served on BIO's board of directors and chaired its Food and Agriculture Section.

In 1998, Caulder was elected Executive Chairman of the Board and CEO of Myelos Neuroscience. He now serves as their Executive Chairman. He also serves as Director of Cilcorp Inc., an energy company. He is a member of the Advisory Council on Small Business and Agriculture of the Federal Reserve of San Francisco, a member of the California Governor's Council on Science and Technology, a trustee of the Rubeen H. Fleet Space Center in San Diego, and serves as director of the World Agriculture Forum in St. Louis.

Caulder earned a B.S. degree in biology from Southeast Missouri State University, and a M.S. and Ph.D. in agronomy and plant physiology from the University of Missouri.



J. Gregory Zeikus

J. Gregory Zeikus is the President and CEO of MBI International, a premier research and development organization for biobased industrial products. MBI has 16 years of experience in taking research inventions made primarily at universities and federal labs and converting them into commercializable products and services. Since 1994, MBI has started 11 new biobased companies and has out-licensed numerous technologies to existing businesses worldwide.

Prior to joining MBI, Zeikus was a Professor in the Department of Bacteriology at the University of Wisconsin-Madison. He received his B.A. from the University of South Florida in 1967, and his Ph.D. in Molecular Biology from Indiana University in 1970. Currently Zeikus holds 20 patents and has published 300 research articles.

Research in Zeikus' lab focuses on the design and control of industrial biocatalysts. His work on the design and control of industrial biocatalysts includes the engineering of thermozyms and proteins and genetic engineering techniques: Improving microbial organic acids and alcohol fermentation by metabolic engineering of pathways; and electrochemical control of metabolism including using electricity as an electron donor for growth and metabolite production.

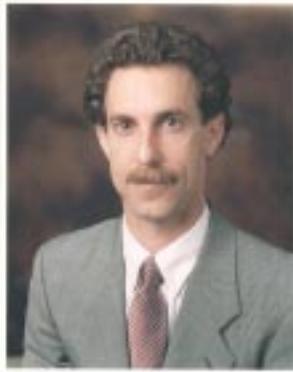


Robert R. Dorsch

Robert R. Dorsch is currently Director, Biotechnology Development, in DuPont's Central Research & Development. He joined the Company in 1972 at the Experimental Station in Wilmington, Delaware. He led efforts to develop and apply sophisticated process technology to gain better control and lower cost. In 1986 Dorsch and his team joined DuPont Pharmaceuticals R&D and Pharma's New Business Development unit launching the SteriCell® Product family.

In 1990 through 1993, Dorsch was General Manager, DePuy*DuPont Orthopaedics, DuPont's joint venture, in applying Biomaterials to the orthopedic joint replacement industry. Growth from zero to \$20MM with a 45 percent pretax margin was achieved. In 1994 Dorsch became Director, Biotechnology Strategic Planning, for Central R&D and initiated the first phases of the Biomaterials thrust. Currently he is working at the technology/business interface with potential external partners and influencing business target selection.

Dorsch received a B.S. in physics from Renssaeler Polytechnic Institute and a Ph.D. in chemical physics from the University of Maryland. His postdoctoral work was at the University of Rochester under a NIH Fellowship.



Dan W. Reicher

Dan W. Reicher was nominated by President Bill Clinton and confirmed by the U.S. Senate as Assistant Secretary of Energy for Energy Efficiency and Renewable Energy in 1997. He also serves as the Department's environmental Executive under Presidential Executive Order 13101, and as a member of the executive board of the White House Climate Change Task Force.

Reicher has more than 20 years experience in environmental and energy policy and law. From 1985 to 1992 he was an attorney with the Natural Resources Defense Council where he focused primarily on federal environmental, energy and defense programs.

At DOE, Reicher has been engaged in policy and management in many areas, including energy efficiency, renewable energy, climate change, electric utility restructuring, clean air, environmental clean-up, nuclear waste management, nuclear nonproliferation, and land conservation. He has also been involved with the Department's international energy, environmental and security programs.

Reicher received his B.A. from Dartmouth College and his J.D. from Stanford Law School. He co-edited a book entitled *Controlling the Atom in the 21st Century* (Westview Press) and was the author of the environmental law treatise *Sustainable Environmental Law* (West Publishing).



Patricia B. Swan

Patricia B. Swan is Professor of human nutrition in the Department of Food Science and Human Nutrition at Iowa State University. Previously she was Vice Provost for Research and Advanced Studies, and Dean of the graduate college at Iowa State University.

Prior to joining ISU, Swan was a professor in the Department of Food Science and Nutrition and Associate Dean of the Graduate School of the University of Minnesota where she had been a member of the faculty since 1964. She received her undergraduate degree from the University of North Carolina at Greensboro, and her M.S. and Ph.D. degrees from the University of Wisconsin. Swan has done research on the vitamin B6 requirements of men; the metabolism of large amounts of selenium in animals; and ways in which diet affects the metabolism of muscles.

Swan is an active member of the American Society for Nutritional Sciences. She has also served as a member of the Human Nutrition Board of Scientific Counselors for the USDA, and as a member of the editorial board of the *Journal of Nutrition*. She previously served as a member of the National Agricultural Biotechnology Council (Chair 1996-97), the USDA Advisory Committee on the National Research Initiative, and the Board on Agriculture of the National Research Council.



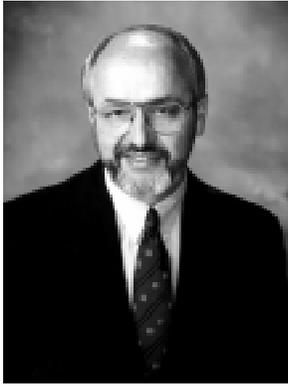
Lynn D. Rundle

Lynn D. Rundle has been the CEO of the 21st Century Alliance since January 1996 and was named General Manager of the 21st Century Grain Processing Cooperative in March 1997. The Alliance was started in 1996 and currently has more than 750 farmers/producers in eight states with a vision to investing in value added agriculture businesses. Kansas State University recently named Rundle the Outstanding Young Alumnus of the College of Agriculture.

Rundle previously was Executive Vice President of the Kansas Association of Wheat Growers, where he was responsible for government relations, administration and communications for the agricultural association from 1994 – 1997.

Rundle started a vocational agricultural program at Jackson Heights High School in 1982 and taught agriculture there for seven years. He was a national winner of the outstanding vocational agriculture teacher award given by the National Vocational Agriculture Association, a two time winner of the outstanding VO-AG program in Kansas, and in 1989 was awarded the Outstanding Vocational Teacher Award for Agriculture by the Kansas Vocational Association.

Rundle received his B.A. from Kansas State University in Agriculture in 1981 and a M.A. in Agriculture Education in 1982.



Roger E. Wyse, PhD.

Dr. Roger Wyse is Managing Director of Burrill & Company, a private merchant bank focused in the life sciences. In that role he has lead the development of Burrill & Company's agriculture related activities in venture capital investing, partnering and spinout of technology from large companies.

Wyse served as CEO of Third Wave AgBio Inc. and is currently founding CEO of AniGenics, an animal genomics company. In addition, he serves on the board of several non-profit organizations.

Immediately prior to joining Burrill & Company, Wyse served for five years as Dean of the College of Agriculture and Life Sciences at the University of Wisconsin-Madison.



Paul B. Thompson

Trained in Philosophy, Paul B. Thompson has conducted research and teaching programs on controversial issues in the U.S. and global food systems for over twenty years. He has published books and essays on world hunger, the international acceptability of genetically engineered foods and crops, and on agrarianism and U.S. agriculture policy. His current research focuses on the ethical and political significance of technologically induced risk. Thompson speaks frequently to scientific, farm and lay audiences on the bioethics of genetically engineered crops and livestock.

Thompson is a founding member and former President of the Agriculture, Food and Human Values Association. He served on the USDA Agricultural Biotechnology Research Advisory committee from 1994 to 1996.

Thompson was a member of the Texas A&M University faculties of Philosophy and Agricultural Economics for 16 years, where he was also Director of Texas A&M's Center for Biotechnology Policy and Ethics. He assumed the Joyce and Edward E. Brewster Chair of Applied Ethics at Purdue University in 1997. Thompson holds the rank of Distinguished Professor and teaches in the Department of Philosophy at Purdue. He also is Director of Purdue's Center for Food Animal Productivity and Well Being.



Cynthia Rosenzweig

Cynthia Rosenzweig is a research scientist at the National Aeronautic and Space Administration Goddard Institute for Space Studies, where she is a leader of the Climate Impacts Group. She is an adjunct Senior Research Scientist at the Columbia University Earth Institute, and an adjunct Professor at Barnard College.

Rosenzweig earned degrees from Rutgers University and the University of Massachusetts. Her research focuses on the potential impacts of environmental change, including increasing carbon dioxide, global warming and El Nino, on regional, national, and global scales. Rosenzweig is currently leading the Metropolitan East Coast Regional for the U.S. National Assessment of Climate Variability and Change. She heads a NASA Interdisciplinary Science Team on the Impacts of Climatic Variability on AgroEcosystems, and recently lead an interdisciplinary study for the U.S. Environmental Protection Agency on Climate Change, Agriculture, and Food Security with participating scientists in 25 countries. She is the co-author with Daniel Hillel of *Climate Change and the Global Harvest: Potential Impacts of the Greenhouse Effect on Agriculture*, published in 1998 by Oxford University Press.

Meeting Details

Registration

The meeting will be held at the Clarion Hotel in Orlando, FL. Advance registration is recommended. The registration fee for early registration (4/7/00) and faculty, staff and students of a NABC member institution is \$225.00. The registration fee includes materials, breaks, continental breakfasts, lunch on May 12th and 13th, dinner on the 11th, entrance to EPCOT and dinner on the 12th, and a copy of the meeting publication, **NABC Report 12**.

Registration after April 7, 2000 will be \$250.00 for those not affiliated with a NABC member institution. Cancellations will be accepted minus a \$25 processing fee. No refunds will be granted after May 5, 2000, however, substitutions will be accepted. Walk-in registrants will be accepted, subject to availability.

A registration form is available via the NABC website— <http://www.cals.cornell.edu/extension/nabc> — or by calling the NABC at 607-254-4856.

Accommodations

A limited number of rooms have been reserved at the Clarion Hotel, which is located at 9700 International Drive (407-996-9700), for \$110.00 per night, and the Quality Inn, which is located next door to the Clarion at 9000 International Drive (407-996-8585), for \$50.00 per night. The guaranteed rate expires April 7, 2000. To reserve a room, call the hotel and mention that you will be attending NABC 12.

Transportation

All major airline carriers provide service to and from Orlando. There are many shuttle services available at the Orlando International Airport and information is available at the Baggage Claim area. Taxis are also available.

Contact Information

For more information about the NABC12 program, contact Bill Brown, NABC12 Chair, at 352-392-1728, or via email at wfb@gnv.ifas.ufl.edu. For questions about the NABC, contact the NABC office at 607-254-4856 or via email at nabc@cornell.edu



Lois Levitan

Lois Levitan directs the Environmental Risk Analysis Program (ERAP) at Cornell University's Center for the Environment in Ithaca, New York. ERAP is an applied research and outreach program, helping citizens and policy-makers interpret scientific information about risks and make informed decisions that appropriately balance levels of concern with levels of risk and social impact. Dr. Levitan studied anthropology at the University of Chicago, received her B.S. in Forest Biology from the SUNY College of Environmental Science and Forestry, and her graduate degrees from Cornell's Department of Natural Resources. She began her twenty-plus year career in field biology and environmental policy working as a research entomologist and beekeeper, but in recent years has focused on issues at the interface between natural and social systems.



Ann Thayer

Ann Thayer has been a member of the Chemical and Engineering News staff for 11 years. For the past three years she has been C&EN's Houston Bureau Head and for four years prior to that was head of its Northeast News Bureau. She writes for the business department of the magazine, covering areas that include corporate and technology management, pharmaceutical and agricultural biotechnology issues, and e-commerce.

Before joining C&EN, Thayer was a postdoctoral member of technical staff at AT&T Bell laboratories. She received her doctorate in physical chemistry from the University of California, Berkeley, and a Master of Science degree from the University of East Anglia, Norwich, England, under a Fulbright Fellowship. Her undergraduate degree is from Mount Holyoke College, South Hadley, MA.

Additional speaker confirmed

Roger K. Conway, Director of the Office of Energy Policy, will join the program to provide the USDA's perspective on the government's role in the biobased economy.

Director since 1990, Conway has led many interagency and interdepartmental efforts, presented results of special analysis and technical information, and represented policy positions of the Department on a variety of sensitive issues. He has served as the Department representative for such activities as the Depart-

ment of Energy's (DOE) National Energy Strategy, DOE Oil and Gas Initiative, and the White House Bioenergy Initiative. For his efforts as group leader, Conway was awarded the Department's highest honor in 1993, the Distinguished Service Award, for innovative interagency coordination to develop and implement the Secretary's initiative to enhance USDA's biofuels activities.

Workshop Information

Workshops provide an opportunity for all participants to listen, speak, and learn. They are designed to promote dialogue, establish a common knowledge base, identify areas of disagreement, reach consensus if possible, and develop recommendations. Advance registration is required to participate in the workshop.

ROLES OF ACADEMIA, INDUSTRY, AND GOVERNMENT: The expansion of agriculture into health, energy, chemicals, and materials will require new skills/staffing, additional research and development investment, specialized facilities, and commercialization investment. What should be the roles of academe, government, and industry for a most

efficacious expansion of this biobased opportunity? How can government facilitate the development of these areas with their economic, environment, and health benefits?

INTERACTION OF PRODUCER AND INDUSTRY: What will be the relationship of the farmer/grower to the processing industry? Will the farmer/grower be a contractor, or will he or she be a member of a cooperative who owns all or part of the processing company? How does a processor assure an adequate long-term local supply of crops for a major processing facility?

FOOD & ENVIRONMENTAL ISSUES: What will be the impact of the expanded biobased economy on food — quantity, price? Is there enough agricultural land, including that now

underutilized, for food and biobased industrial products? What will be the local, regional, national, and global environmental impacts of the biobased economy — global climate change, local and regional air pollution, local pollution by processing residues?



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**Dated
Information
Enclosed**