



Agricultural Research Service (USDA)  
**MIDWEST AREA**  
**BIOENERGY RESEARCH FORUM**

## ABOUT OUR SPEAKERS

**Thomas Binder** Ph.D., is a Senior Vice President of Archer Daniels Midlands' Research Division. He joined ADM in 1986 as a research scientist and has held various management positions in process development and fermentation research.

Dr. Binder holds B. S. degrees in biology and chemistry from Fort Hays State University and a Ph.D. degree in biochemistry from Iowa State University. He also has post doctoral experience in medicinal chemistry from the University of Iowa.

Dr. Binder has carried out research in a variety of areas while at ADM and has developed processes for the manufacture of high purity dextrose, lysine and tocopherols. He is author or co-author of 11 patents and 8 peer reviewed publications. He currently serves on the Federal Advisory Committee for Biomass Research.

**Rick Brenner** was named the Assistant Administrator in ARS for Technology Transfer in October 2004. In this capacity, he represents the Secretary of Agriculture on issues pertaining to management of intellectual property arising from USDA research, and has the delegated authority for licensing inventions developed through intramural research in any of the USDA agencies. He is a member of AUTM, the Agency Representative to the Federal Laboratory Consortium for USDA, and the Interagency Working Group for Technology Transfer convened monthly by the Department of Commerce Office of Technology Policy.

Prior to this position, Dr. Brenner served as the Deputy Assistant Administrator for the Office of Technology Transfer (OTT), USDA-ARS, from August 2001, where he managed much of the daily operations on CRADAs, patents, and licensing. From 1984, Dr. Brenner served as a Research Entomologist and later as a Research Leader for ARS in Gainesville, Florida, following a 2-year research assignment in Chiapas, Mexico. Career awards include Outstanding Senior Scientist, USDA Award for Superior Service, ARS Technology Transfer Awards, an FLC Technology Transfer Award, and the "Pollution Prevention Project of the Year," award in 1999 under the Strategic Environmental Research and Development Program, jointly awarded by the Department of Defense, Department of Energy, and the EPA.

Dr. Brenner has a Ph.D. in medical entomology from Cornell University, and 2 degrees from the University of Illinois.

**Michael Casler** is a Research Geneticist with USDA-ARS in Madison, WI. He has conducted genetics, breeding, and agronomic research on perennial grasses for 32 years. He has developed improved varieties of forage grasses for use in hay production systems, management-intensive grazing systems, and bioenergy feedstock production systems.

Dr. Casler's genetic research is focused on identification of quality traits to improve feedstock quality and utilization in both forage and bioenergy systems, evolution and domestication of perennial grasses, and quantitative genetics and breeding methods for perennial grasses.

His switchgrass breeding program is focused on bioenergy feedstock production systems; specific objectives of this program deal with improving cold/freezing tolerance of lowland types of switchgrass, improving biomass yield and quality (largely measured as lignin concentration) of both upland and lowland types, development of new and more efficient breeding and selection systems, identification of regional gene pools to define the most appropriate and efficient deployment of switchgrass germplasm on a regional basis, and development of hybrid varieties and hybrid seed production systems for switchgrass.

Dr. Casler is the author of 159 refereed publications and is credited with 4 released cultivars, plus 4 more in the process of release.

**Michael Cotta** is the Research Leader of the Fermentation Biotechnology Research Unit, National Center for Agricultural Utilization Research (NCAUR) in Peoria, Illinois, USA. He obtained his B.S. and M.S. degrees in Animal Science from the University of California at Davis in 1977 and 1979, respectively and earned a Ph.D. in Dairy Science from the University of Illinois in 1985. He joined the USDA, Agricultural Research Service at the Northern Regional Research Center, Peoria, Illinois, as a Research Microbiologist in October 1984 and became Research Leader of the Fermentation Biotechnology Research Unit in 2000, his current position.

Recognized for his leadership in ARS biofuels research, Dr. Cotta also serves as the Chairman-elect of the Fermentation and Biotechnology Division of the American Society of Microbiology. He is the author of over 100 research publications, book chapters, and proceedings and is frequently invited to give presentations and chair symposia on bioenergy research.

**Doug Karlen** is a Supervisory Soil Scientist with the USDA-Agricultural Research Service (ARS) at the National Soil Tilth Laboratory in Ames, IA. He has been with the USDA-ARS for 29 years and currently serves as Research Leader for the Soil and Water Quality Research Unit at the NSTL. Dr. Karlen also serves as co-leader for the ARS Renewable Energy Assessment Project (REAP) team, a multi-location effort focusing on sustainability of harvesting crop residues for bioenergy and is currently serving on a National Academy of Sciences Panel focused on "Alternative Liquid Transportation Fuels."

Dr. Karlen's research program uses soil quality assessment as a tool to quantify effects of soil and crop management practices including tillage, crop rotation, nutrient management, manure management and most recently crop residue removal on the sustainability of agricultural management systems. He is a native of Wisconsin and has his B.S., M.S. and Ph.D. degrees from the University of Wisconsin – Madison, Michigan State University, and Kansas State University, respectively. He is author or co-author for 158 refereed journal articles and more than 100 refereed proceedings, book chapters, and non-technical publications. Dr. Karlen is a Fellow of the American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America. He is also recognized as an adjunct Professor in the Agronomy Department at Iowa State University and by the Soil, Crop, and Entomology Department at Clemson University.

**Bryan R. Moser** was trained in the total synthesis of marine and terrestrial natural products and derivatives which exhibit significant anticancer behavior. He adapted his skills to the development of novel bio-based additives for biodiesel in his current position as a Research Chemist at the National Center for Agricultural Utilization Research with the Agricultural Research Service in Peoria, IL.

Dr. Moser received his B.S. and Ph.D. degrees in organic chemistry from the New Mexico Institute of Mining and Technology and Arizona State University, respectively. In his career, Dr. Moser has fourteen peer reviewed publications and one patent which span research topics such as the synthesis of anticancer compounds, synthesis of bio-based biodiesel additives, evaluation of natural materials as additives in biodiesel, and evaluation of alternative feedstocks for biodiesel production. Dr. Moser is an active member of the American Oil Chemists' Society, the American Chemical Society, and the American Association for the Advancement Science.

**Joseph Rich** is the Research Leader of the Bioproducts and Biocatalysis Research Unit, National Center for Agricultural Utilization Research (NCAUR) in Peoria, Illinois, USA. He obtained his B.S. degrees in Chemical Engineering from Iowa State University (1989) and a Ph.D. in Biochemical Engineering from the University of Iowa (1996).

Prior to joining the USDA, Agricultural Research Service in January 2007, Dr. Rich was with the Biosciences Division of Albany Molecular Research (now AMRI), the High Throughput Analysis facility at Northwestern University and Baxter Healthcare. His research focuses on developing novel applications of biocatalysts. He is the author of over 30 research publications, patents, book chapters, and proceedings.

**Badal Saha** is a Research Chemist in the Fermentation Biotechnology Research Unit, National Center for Agricultural Utilization Research, in Peoria, IL. He was previously a Research Scientist, Michigan Biotechnology Institute. Dr. Saha did post-doctoral research at the University of Maryland, College Park after earning M.S. (1981) and Ph.D. (1984) in Microbial Technology from Kyushu University, Japan. He obtained his B.Sc. (Hons) and M. Sc. Degrees in Biochemistry from the University of Dhaka, Bangladesh and a Postgraduate Diploma in Microbiology and Biotechnology from Osaka University, Japan.

Dr. Saha has over 30 years of research experience in aerobic and anaerobic fermentation technology, and industrial enzymology. He has authored 137 research publications that include book chapters, review articles and 5 patents, and has given 80 meeting presentations and 37 invited seminars. Dr. Saha has edited 4 books and organized/chaired 27 symposiums/sessions at national and international meetings. Currently, he serves on the Editorial Board of 7 journals and as a Director of the Society for Industrial Microbiology. He is a Fellow of the American Academy of Microbiology.

**Steven Shafer** is the Deputy Administrator for Natural Resources and Sustainable Agricultural Systems, Agricultural Research Service, U.S. Department of Agriculture (NRSAS, ARS, USDA). He leads the comprehensive NRSAS programs that support researchers at seventy locations developing the technologies and strategies needed to help farmers, ranchers, and other managers effectively steward the diverse agricultural mosaic spread across the Nation. The nationally coordinated research programs emphasize developing technologies that are economical to use and systems that support profitable production and enhance the Nation's vast renewable natural resource base on both private and public lands. The programs encompass research on soil, water, and air resources; global change; biofuels; manure and byproduct utilization; pastures, forages, and rangelands; and agricultural system competitiveness and sustainability.

Dr. Shafer has devoted his entire career to the USDA, conducting research on impacts of air quality on plants and soils as an ARS scientist; performing analyses related to pest risks associated with trade policies as an APHIS scientist; reviewing the scientific basis of USDA's major rules as Deputy Director of the Office of Risk Assessment and Cost-Benefit Analysis;

serving as National Program Leader for the ARS Global Change National Program; managing the eight-state ARS Midwest Area as Associate Area Director and then Area Director; and currently leading NRSAS as Deputy Administrator. He has B.S. and M.S. degrees from The Ohio State University and a Ph.D. from North Carolina State University, all in plant pathology.

**Brian Wrenn** has been the Research Director at the National Corn-to-Ethanol Research Center at Southern Illinois University in Edwardsville since September 2007. Before assuming this position, he had spent the previous nine years, beginning in 1998, on the faculty in the Environmental Engineering Science Program and the Department of Civil Engineering at Washington University in St. Louis. While at Washington University, Dr. Wrenn supervised the research of 11 graduate students and 17 undergraduates and obtained nearly \$1.5 million in extramural support for his research program.

For over 15 years, Dr. Wrenn has conducted research in environmental biotechnology and bioenergy, including the production of fuel ethanol, DDGS quality, bioremediation, water and wastewater treatment, and fate and transport of contaminants in the environment. Dr. Wrenn received a Ph.D. in Environmental Science from the Civil Engineering Department at the University of Illinois at Urbana-Champaign, a M.S. in Biological Oceanography from the University of Miami, and a B.S. in Biochemistry from the University of Illinois at Urbana-Champaign. He has over 30 publications in peer-reviewed journals, has coauthored two books, and has made numerous conference presentations.