

Workshop Bios

Waste to Energy: Advances and Opportunities for Ohio's Livestock & Food Processing Industries
Wooster, OH April 7, 2009

Dale Arnold

Director, Energy Programs
Ohio Farm Bureau Federation
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Dale Arnold has been Director of Energy Services for the Ohio Farm Bureau Federation since 1995. During his tenure he has managed self-help energy aggregation purchasing groups, on-site energy production and engineering for both fuel and electric power. Dale represents farm, small business and residential energy consumers on utility customer advisory boards; working groups with the Ohio Consumers Counsel and PUCO and is chairman of the state's Public Benefits Advisory Board.

He is a member of the Ohio Department of Development's (ODOD) Wind Working Group and Biomass Task Force. Over the past six years he has lead action teams focusing on technical evaluation, education/outreach, and community planning – all dealing with energy use.

Dale is a native of Knox County, where his family can trace their involvement in Ohio agriculture starting in the 1820's.

Timothy (Tim) Berlekamp

Director of Planning and Projects
Solid Waste Authority of Central Ohio
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Mr. Berlekamp (Tim) has held the position of Director of Planning and Projects for the Solid Waste Authority of Central Ohio since September of 2004. Prior to his moving to the Columbus Area, Mr. Berlekamp was the Executive Director of the Mahoning County Solid Waste Management District and prior to that the Executive Director of the Ottawa, Sandusky and Seneca County Solid Waste District. Mr. Berlekamp was elected to the position of Seneca County Commissioner from 1985-1991 while farming the family farm. He was an Air Traffic Controller from 1974 – 1981, is a veteran of the US Navy, and is married with three children and two grandchildren.

William R. Brown

President
Acrion Technologies, Inc.
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Bill is a co-founder of Acrion Technologies, Inc., Cleveland, Ohio. He is responsible for overall corporate administration and management. His background in chemical process engineering

includes application of separation technologies to the chemical, synthetic fuels, and biogas industries. Bill has been involved for over thirty years in the design, construction, operation, and debugging of pilot plant equipment, with special emphasis on development of applications using liquid and solid carbon dioxide for gas purification. He is a registered professional (chemical) engineer in Ohio.

John Cuttica

Midwest CHP Application Center
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John J. Cuttica is Coordinator of Energy and Environment Programs at UIC/ERC. Mr. Cuttica has over twenty-five years of experience in the energy field. During his career, he has been directly responsible for End Use Energy Programs aimed at the development and commercialization of advanced electric and natural gas technologies and products. These products have both expanded major new markets opportunities and significantly improved the efficient use of energy. As the former VP/General Manager at the Gas Research Institute for 18 years, Mr. Cuttica directed program activities that resulted in 43 new products reaching commercial reality, 112 patents issued, and 101 patents covered by 38 commercial licenses successfully negotiated and signed. Mr. Cuttica has been deeply involved in the RD&D of such relevant technologies as fuel cells, micro-turbines, heat actuated heat pumps, desiccants, and reciprocating engine and gas turbine efficiency improvements. Most recently at the ERC, Mr Cuttica established the Midwest CHP Application Center, a US DOE funded activity aimed at the implementation of CHP technologies in the twelve State Midwest Region. Under his direction, the center has conducted over thirty CHP site feasibility analyses, over 25 targeted market CHP training workshops, and assisted in numerous CHP site implementations. Mr. Cuttica holds a B.S. in Electrical Engineering and a Masters in Engineering Administration.

Steve Dvorak

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Stephen Dvorak, P.E., obtained a degree in Industrial/Mechanical Engineering from the University of Wisconsin-Madison. Upon graduation, Stephen joined the MBA program at Madison. He earned his designation of Professional Engineer in 1977.

In 1989, Stephen founded an environmental engineering firm, known today as GHD, Inc. Since 2001, GHD has designed its unique, patented mixed plug-flow digester systems for dairy and poultry farms, as well as beef feedlots, across the nation. GHD truly is the leader of on-farm anaerobic digestion technology in the United States, with currently 38 farms operating a GHD digester and another 14 under construction.

Kimberly Gibson

Assistant to the Governor's Energy Advisor
Ohio Air Quality Development Authority
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As Assistant to Governor Strickland's Energy Advisor, Kimberly works to position Ohio's research & development capabilities and utilize its workforce to advance clean energy technologies that improve efficiency, spur innovation and grow Ohio's jobs and economy. She joins the Energy Advisor's office to assist the design and implementation of the state's energy policy.

Kimberly worked in a similar capacity for Lt. Governor Fisher as Special Assistant for Energy, Transportation and Regional Collaboration at the Ohio Department of Development. Her current projects include coordinating state's approach to climate change and sustainability issues.

Kimberly joins Governor Strickland's team following her work as Manager of Policy and Regional Programs, for the Mid-Ohio Regional Planning Commission. Regional Connections, her most recent project was a seven county effort to build a regional framework for growth and development decisions in central Ohio. While at MORPC, Kimberly also worked on behalf of Ohio's metropolitan planning organizations and regional councils before the Ohio legislature with primary expertise in the areas of transportation, land use, economic development and air quality.

In 2002, Kimberly returned to Ohio from Washington D.C. where she was an analyst with the Brookings Institution Center on Urban & Metropolitan Policy. While at Brookings, Kimberly worked with top scholars in the field of transportation, regional economics and metropolitan change. She is currently an adjunct professor in City and Regional Planning for the Austin E. Knowlton School of Architecture at the Ohio State University.

In 1999 Kimberly helped found the Ohio First Suburbs Consortium, a statewide grassroots group dedicated to ensuring the competitive future of mature communities. The group now has chapters in several states and is recognized by the National League of Cities. Kimberly's work with first suburbs will be featured in a PBS documentary this Spring titled, "A Crack in the Pavement". She was awarded Planner of the Year (2004) by the Ohio Planning Conference – central Ohio section. Kimberly was also chosen for the Forty Under 40 award by Columbus Business First for 2006.

A native of Cincinnati, Kimberly grew up on a small farm in Clermont County. Kimberly currently makes her home in the Victorian Village neighborhood of Columbus.

Anne Goodge

Program Director
Ohio Biomass Energy Program, The Public Utilities Commission of Ohio
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Anne is the Program Director for the Ohio Biomass Energy Program of the Public Utilities Commission of Ohio (PUCO). She serves as Chair of the Steering Committee of the Great Lakes Regional Biomass Partnership. She also serves on the staff of the PUCO Energy & Environment Department. She has a B.A. in Government and Environmental Studies from Oberlin College.

Craig E. Kasper

Senior Energy Consultant
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Craig Kasper creates alternative and renewable energy opportunities in the public and private sectors; identifies, designs and implements energy efficiency improvements for commercial and industrial customers; and works with electric utilities on various infrastructure upgrades.

Craig founded K&H Energy Services (K&H) in May 1999 to help industrial customers maintain a competitive position in their market place by identifying and acting upon energy efficiency opportunities. K&H has operated as a division of Hull since 2005 and became a fully-integrated brand of Hull in 2009, continuing to offer the same quality electrical engineering, control systems automation and electrical safety services, as well as development of alternative and renewable energy projects.

Craig spent over 38 years with Cleveland Electric Illuminating Co., Centerior Energy Co. and FirstEnergy Co. in both supervisory and executive management positions in field operations and corporate engineering. (FirstEnergy is an investor-owned electric utility holding company serving 2.2 million gas and electric customers in Ohio and western Pennsylvania.) Before he retired from FirstEnergy, he was responsible for construction, operation and maintenance of large power substations, both company-owned and customer-owned. He also served as Director of Transmission, Distribution and Fossil Plant Engineering for Centerior Energy Service Company.

Craig holds a Bachelor of Science in Electrical Engineering from Cleveland State University and a Master of Business Administration from Kent State University.

Melvin R. Kurtz

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Since 1971, Kurtz has founded, directed, and operated several businesses from start up to millions in annual sales through effective business planning, creative sales techniques, and innovative marketing. His accomplishments also include initiating well planned and executed acquisitions and mergers. Kurtz is currently the chief executive advisor for several corporations and leads the US industry for Schmack BioEnergy, LLC.

Michael Maringer

Technical Specialist
Industrial Fluid Management
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Worked 32 years for the Campbell Soup Company in Napoleon, Ohio – Manager of Services and Utilities. Mike is a certified Class IV Operator in both Water and Wastewater Treatment from the State of Ohio and a certified Grade WT5 Water Treatment Operator from the State of Indiana. Currently, Mike is employed at Industrial Fluid Management as a Technical Specialist and serves as

the Operator of Record for the Campbell Soup facility in Napoleon, Ohio. Mike holds a Bachelor of Science degree in Hydrogeology from the Defiance College.

Norma S. McDonald

Operating Manager

Phase 3 Renewables

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Norma McDonald is the Operating Manager and owner of Phase 3 Renewables, a 4-year old company focused on working with farmers to simultaneously address growing environmental challenges and create new profit centers. Norma grew up on a 100-acre farm in Michigan, the youngest of 10 children. After graduating from University of Wisconsin and serving as an officer in the US Marines, she joined Procter & Gamble of Cincinnati, where she held a variety of positions in chemical purchasing, business development and intellectual property monetization, including five years focused on the commercialization of biodegradable plastics derived from fermentation and three years purchasing the company's \$400 million+ of detergent enzymes. She has now returned to her agricultural roots, with a passion for commercialization of farm waste to energy systems and synergistic biobased products. Phase 3's accomplishments in the last three years include (1) designing and implementing the country's first operational farm-based biogas to pipeline quality gas upgrading system, (2) design and construction of the world's largest biogas upgrading facility connected to a centralized digester, (3) design and construction of the country's first skid-mounted biogas upgrading system for converting dairy biogas to compressed biomethane and use as vehicle fuel, and (4) co-developed the first flex-fuel combined heat and power system capable of running on natural gas, propane or biogas. Phase 3 serves as an Industry Advisor to the College of Agricultural and Biosystems Engineering at Michigan State University, and has recently begun collaboration with an Ohio company for the production of algae using digester effluent.

Randy Monhemius

USDA - Rural Development, Ohio

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Randy Monhemius has been working for the USDA Rural Development for 20 years. Within the last 3 years he has added the promotion and administration of the Rural Energy for America Program to his duties. Other programs that he administers includes the Business & Industry Loan Guarantee Program and the Rural Business Enterprise Grant program.

Patrick O'Loughlin

Chief Operating Officer, Vice President, Engineering & Power Supply

Buckeye Power, Inc.

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Patrick O'Loughlin has been with Buckeye Power since 2002 as Vice President, Engineering and Power Supply. He added the additional responsibilities of Chief Operating Officer in 2007. His specific responsibilities include management of Buckeye's power generation resources, arranging for transmission services, oversight of the Buckeye load management system and

IT/communication systems, as well as management oversight of all Buckeye Power operations. Pat currently is Buckeye's representative on several PJM committees, to the Midwest ISO and ReliabilityFirst. Prior to joining Buckeye Power he worked for Dayton Power & Light for approximately 19 years in various management positions including management of DPL's wholesale power business, and management of both power and natural gas system operations. He has served the electric power industry as a past Chairman of the East Central Area Reliability Council (ECAR) Operations Panel and as ECAR's representative to the North American Electric Reliability Council (NERC) Operating Committee. Pat is a graduate of Miami University in Oxford, Ohio holding both a Master of Environmental Sciences degree and a BS in Engineering Physics. Pat and his wife Nancy have four children and reside in Dublin, Ohio.

Dr. F. William (Bill) Ravlin

Associate Director
The Ohio State University
Ohio Agricultural Research and Development Center
Professor, Department of Entomology
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Dr. Ravlin's received his doctorate in entomology from Michigan State University in 1980. In that same year he became assistant professor at Virginia Tech and was promoted to full professor in 1994. While at Virginia Tech he served as the Integrated Pest Management curriculum coordinator, Extension project leader, and Virginia IPM coordinator. In 1998 he joined Ohio State University's Ohio Agricultural Research and Development Center (OARDC) where his responsibilities include: enhancing the research capacity of faculty, forming interdisciplinary teams, strategic planning, contract and grant administration, and resource allocation. He also leads joint-funded research and Extension programs in technology commercialization and economic development.

Mark R. Shanahan

Executive Director
Ohio Air Quality Development Authority (OAQDA)
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Mark R. Shanahan is the executive director of the Ohio Air Quality Development Authority (OAQDA) and its Clean Air Resource Center. Appointed in 1989, he oversees the management of more than \$1.6 billion in outstanding bond issues as well as the Authority's research and special project programs.

On January 17, 2007, Governor Ted Strickland created the position of Governor's Energy Advisor through Executive Order 2007-02 and appointed Dr. Shanahan to the position. In that role, he is responsible for coordinating state agencies' efforts to develop a comprehensive Ohio energy policy and to implement the Governor's order to significantly reduce state agency energy consumption.

Mr. Shanahan oversees the work of the Ohio Coal Development Office, one of the nation's leading clean coal technology research, development and deployment programs. Since 1994, he has served as Ohio's Clean Air Ombudsman for small business.

He is the Governor's delegated representative on the Third Frontier Commission. An active member of the Air & Waste Management Association, he has just completed a term as group coordinator for the Technical Council's Environmental Management Group.

Shanahan earned his Ph.D. from Case Western Reserve University. He received his M.A. (with honors) from the University of Pennsylvania and graduated from Boston College (magna cum laude, Phi Beta Kappa).

Dr. Floyd L. Schanbacher

Professor, Dept. of Animal Sciences
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Initial training in chemistry, biochemistry, and physiology founded a career in research on the biochemistry, cell biology, and physiology of lactation and milk at the animal, cellular, and molecular biology levels. A central focus has been the cellular and molecular regulation, structure/function relationships, and expression of milk proteins as bioactive agents involved in disease defenses and cell regulation, and the role of inflammatory responses by mammary or other tissues as contributors to physiological effects, dysregulation, or disease, and their amelioration by naturally-occurring pharmacological agents.

Experience with biochemical and molecular biology processes of tissue regulation was recently applied toward the biological conversion of biomass to energy through anaerobic digestion. Our recently developed program for the study of anaerobic digestion of biomass, focused on an integrated approach toward Ohio's abundant but diverse high-strength food processing biomass wastes and lower-energy livestock wastes to support a biomass-based distributed renewable energy strategy. This program now includes and integrates biomass analysis and geo-referenced inventory, anaerobic microbiology and biochemistry, anaerobic digester technology, other complementary biomass conversion technologies, and Ohio's fuel cell development in a multi-disciplinary program to utilize and optimize anaerobic digestion of animal and agricultural biomass wastes for production of energy for improved energy sufficiency and the economy of rural areas while decreasing negative environmental and social impact for agriculture and industry. Since 2005, Schanbacher has served as OARDC/OSU's Director of the Ohio Third Frontier Biomass to Energy Program.

Dr. Schanbacher has a BS in Chemistry & Biology from Northwestern Okla. State University, a MS in Biochemistry from Okla. State University, and a PhD in Biochemistry from Okla. State University.

Tony Sutor

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Tony has spent the past seven years at the State of Ohio in the Department of Development working as a Program Manager for the Ohio Energy Office and Office of Energy Efficiency. His most recent assignments included:

- Managing the EnVinta One-2-Five Program-a program that utilizes a Software Diagnostic tool to establish a Business Process for energy related issues in manufacturing, commercial and institutional facilities.
- Management of Distributed Generation/Fuel Cell commercialization programs for OEE, including a recent distributed energy solicitation which leveraged \$16.0 MM of projects with \$1.0 MM of grant funding
- Managing the technical review process for Ohio Power Siting Board applications for ODOD
- Promoting Ohio's Energy Efficiency Revolving Loan Fund (\$100 MM) to Business clients; performing technical review of loan applications.
- Managing the technical review process of Ohio House Bill 264 (Ohio Public School Energy Efficiency Program-Performance Contracting) for Ohio School Facilities Commission

Prior to joining the Ohio Department of Development, Tony spent 22 years working for a large natural gas utility in numerous capacities including management of a technical consulting team, business contract negotiations, sales management and account management.

Leon D. Weaver V.M.D.

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BRIDGEWATER DAIRY L.L.C. and BRIDGEWATER FARMING L.L.C. are operated by Leon, his wife Nancy (a C.P.A.) and son Chris, the dairy manger. Chris has a B.S. in Managerial Economics from the University of California, Davis. In addition to caring for and milking the cows, the farm grows 2600 acres of corn; 1000 acres of alfalfa; 400 acres of soybeans and 400 acres of wheat. The farm participates in the USDA Conservation Reserve Program, Warm Seasons Grasses Program, the Lake Erie Watershed Buffer (CREP) Strip Program and the Conservation Security Program. The operations employ approximately 45 people.

The dairy rolling herd average is 23,000 lbs (2X milking) . Heifer calves are raised from three months of age to late pregnancy in multiple locations in Kentucky and Missouri. Holstein bull calves (steers) are fed to fat cattle slaughter weights at locations in Indiana and other west central corn belt states. The dairy manages livestock nutrients using sand-manure separation technology; anaerobic digestion and cogeneration of electricity, partial composting and recycling of manure solids as bedding, and implementation of CNMP's on application sites.

Industry Positions (current): Ohio Livestock Coalition – Board of Directors, Ohio Dairy Producers – Board of Directors, Ohio Dairy Industry Forum – Past President, Ohio Dept of Ag – Livestock Environmental Permitting Program Advisory Board, USDA Air Quality Task Force

Previous Academic Positions: Faculty Member (1983-1997) and Director (1988-1996)- University of California, Davis

Previous Dairy Veterinary Practice Positions: Private Dairy Practice and Management Consultant, Western U.S. & Mexico (1980 -1997), Partner, Chino Valley Veterinary Group, Ontario, California (1972 - 1980)