



CONFERENCE PRESENTERS

2009 Fifth International Hydrail Conference



Fifth International Hydrail Conference

PRESENTERS

Nora Black

Nora Black, Associate AIA/CNU/ICA & CA at Duany Plater-Zyberk & Company, "DPZ", has experience in town planning and traditional neighborhood development, with a focus on Light Imprint urbanism. Prior to joining DPZ, she was an architectural/historical consultant to the Charlotte-Mecklenburg Historic Landmarks Commission.

She taught architectural/historical courses at Central Piedmont and Rowan-Cabarrus Community Colleges and consulted for several enterprises, including Charlotte Mecklenburg Schools. She is an active member of the American Institute of Architects at the state and local levels, serving on the AIA North Carolina Historic Committee and on the Board of Directors of AIA Charlotte for six years.

Black is a founding board member of the Charlotte Chapter of The Institute of Classical Architecture and Classical America.

Dr. Barry Burks

Dr. Burks is Associate Director of the Charlotte Research Institute at The University of North Carolina at Charlotte. He earned Ph.D. and M.S. degrees in Experimental Nuclear Physics from the University of North Carolina at Chapel Hill and a B.S. in Physics and Mathematics from Lynchburg College. He has over 30 years experience leading research, technology development and systems fabrication projects for the nuclear, environmental, and defense industries. Prior to joining CRI he was President of TPG Applied Technology, an engineering, fabrication, and construction services company in Knoxville, TN. Dr. Burks' special interest is development and application of remote systems technology.

Burks brought the International Hydrail Conference to UNC Charlotte because of the technology's potential for pollution and climate change mitigation and for new Green energy applications to transportation typifies where the Charlotte Research Institute and its Energy Production Infrastructure Center are leading the Charlotte area.

Monica Carney

Monica Carney is an urban designer with experience in town planning and traditional neighborhood development with the Charlotte office of Duany Plater-Zyberk & Company, (DPZ). She also worked on the development of Light Imprint and the Learning Cottages initiatives.

Carney is a contributor to the Light Imprint Handbook and to the Light Imprint website. Carney has Bachelor's degrees in Architecture and History from North Carolina State University in Raleigh, North Carolina and a Master's Degree in City and Regional Planning from Clemson University in South Carolina.

Fifth International Hydrail Conference

PRESENTERS

Nancy Carter

Nancy G. Carter, a Democrat, is now serving her fifth term representing East Charlotte neighborhoods on the Charlotte City Council. She has chaired the North Carolina League of Municipalities Long-range Planning Committee and Planning and Services Action Committees and Serves on the NC League Board of Directors.

Nationally Ms. Carter is a member of the National League of Cities Energy, Environment and National Resources Steering Committee and chaired the NLC Large Cities Council in 2009. She is a member of the Heritage Trolley and Streetcar Subcommittee of the American Public Transportation Association and the National Executive Board of the Climate Prosperity Project.

Both Ms. Carter and her District are strong proponents of a new east-west streetcar line linking East Charlotte neighborhoods with downtown and beyond. Her interest in this conference is that the availability of hydroly technology could help bring about the Charlotte Streetcar sooner, and at a much lower cost.

Dr. Seky Chang

Dr. Seky Chang is Principal Researcher at the Korea Railroad Research Institute (KRRRI). His professional interest in hydrail is in the development of a hybrid tram system including vehicle, infrastructure and operation; fuel cell application to railway transportation and putting to practical use a new transit system operated on rail. KRRRI is a national R&D institute directing the research activities and energy towards technology development and knowledge sharing in the following research areas: High speed train (350 km/h, to be commercialized soon); urban rail transit; light rail transit (rubber-tired AGT, commercialized); tilting trains and conventional lines.

Dr. Chang is involved in policy making for the TKR (Trans Korea Railway) and TSR (Trans Siberia Railway) network. KRRRI deals with conducting performance testing and certification of rail systems and components; securing rail safety and standardization of rail systems and components, and safety diagnosis. Korea's national interest in hydrail is due to its lack of domestic oil production and the public priority on high quality transportation.

Dr. Chang presented South Korea's hydrogen transit initiatives at two earlier hydrail conferences, Salisbury, NC, in 2007 and Valencia, Spain in 2008. The Korea Railroad Research Institute will host the Seventh International Hydrail Conference in Seoul in 2011.

Dmitry N. Grigorovich (presentation sent; deliver by Stan Thompson)

Dmitry N. Grigorovich is Principle Researcher at the All-Russian Scientific Research Institute for Railway Transportation. He is a graduate of the Moscow State University of Lines of Communication ("MIIT") with a specialty in automatics and telemechanics.

Fifth International Hydrail Conference

PRESENTERS

He is project director for a hydrogen fuel cell emissions-free power car to allow the laying of track in tunnel and subway systems, which is the subject of the presentation he has sent for delivery at the conference.

Dale Hill

Dale Hill founded Proterra in 2004, to design and manufacture advanced technology vehicles that are powered by clean, domestic fuels. Prior to Proterra, Dale founded TransTeq, the company that designed and manufactured the EcoMark Alternative Fueled Hybrid-Electric Vehicle for the Denver Regional Transit District. The 36, 45-foot, 116-passenger buses distribute 65,000 passengers throughout the Denver Downtown 16th St. Mall each day. In eight years of revenue service they have carried over 175 million passengers.

Over the years Hill has been involved in the design and manufacturing of a number of industry changing transportation solutions including the aluminum dump trailer industry for which he won the 1992 "Most Significant Contribution to the Trucking Industry" award. Dale has consulted for bus manufacturers internationally and is a frequent speaker for clean transportation solutions throughout North America.

Hill earned a Bachelor of Science in Mechanical Engineering from LeTourneau University in Longview, Texas. He holds three patents, is a member of the Society of Automotive Engineers and American Welding Society, and published several papers.

Jason Hoyle

Jason Hoyle is a Research Assistant at the Energy Center at Appalachian State University in Boone, NC. In 2005, because of the excellent work the Energy Center does for NC State Energy Office, Jason was drafted to organize the *First International Hydrail Conference* logistics, promotion, venue and technical aspects for presentations. In the process, he developed the website, www.hydrail.org.

The site is now visited monthly by an average of 800 individuals in 50 countries. It has played a crucial role in making the world aware of hydrail's potential and the annual Hydrail Conferences. Hoyle worked with colleagues in Denmark and Spain to make the Second and Fourth Hydrail Conferences successes.

This year, collaboration between Appalachian State University and The University of North Carolina at Charlotte has made the Fifth International Hydrail Conference possible.

Fifth International Hydrail Conference

PRESENTERS

Walter Kulyk (Keynote Speaker)

Walter Kulyk is a registered Professional Engineer and Director of the US Department of Transportation Office of Mobility Innovation at the Federal Transit Administration. He is in charge of executing U.S. Federal programs of research, analysis, demonstration, and evaluation affecting bus, rail, and ferry systems. These programs involve Bus Operations and Electric Drive Propulsion Subsystems; Intelligent Transportation Systems (ITS,) including those affecting bus and rail; Bus Rapid Transit Services; and Maglev. He has over 30 years of professional experience, including a tour of duty as an Air Force officer managing programs involving base operations, maintenance and construction. He has also worked in the Federal Aviation Administration conducting federal oversight for the design and construction of new airports and airport extensions.

With FTA he conducted federal oversight of Washington and Miami's Metro Rail design and construction programs. He directed research and demonstration programs involving rail construction technology, rail car subsystems, and advanced group rapid transit.

Kulyk directed the initiation, development, and management of innovative federal research and demonstration programs involving capital financing, joint development, privatized bus operations, transportation demand management, geographic information systems, livable communities, and turnkey construction.

In recent years, he directed efforts involving ITS subsystem development; Bus Rapid Transit demonstrations and guidelines; electric drive subsystem initiatives; and Maglev studies and tests.

Kevin Major

Kevin Major has a B.S. in physics from Bloomsburg University of Pennsylvania and has been at UNC Charlotte since 2007. Major is a graduate student in the nanoscale science Ph.D. program at UNC Charlotte and since 2008 has been working in the research lab of Dr. Sherine Obare.

His research focuses on developing and studying nanoscale catalysts for the production of hydrogen through water splitting. Recently a system has been developed that utilizes electron transfer between TiO₂ nanoparticles and colloidal Pt allowing for storage of electrons in the Pt nanoparticles and thus water splitting in the dark. This system is being studied both for hydrogen production as well as to further examine electron transfer.

Fifth International Hydrail Conference

PRESENTERS

Dr. Alistair Miller

Dr. Alistair I. Miller is Senior Scientific Associate in the Office of the Principal Scientist at Atomic Energy of Canada Limited. He holds a Bachelor of Science degree in Applied Chemistry from the University of Glasgow and a Ph.D. in Chemical Engineering from the University of London, Imperial College. He served as President of the Canadian Society for Chemical Engineering in 1997-98 and was a signatory to both the London and Melbourne Communiqués on Sustainable Development produced by the world's major chemical engineering societies.

In November, 1999, Dr. Miller published a paper which, along with a complementary subject dissertation by Dr. Max Wyman, sparked the activity in North Carolina that led to the first Hydrail Conference and the four others that have followed. His paper recommended that the CO₂ reduction policy should take into account the relative ease with which railways could be converted from diesel fuel to liquid hydrogen using fuel cells.

Dr. Miller's observations on the global biochemical consequences of excessive CO₂ are a sobering accent on the importance of hydrail's contribution.

Brian Nadolny, AICP

Brian Nadolny is Assistant Project Manager for CATS, the Charlotte Area Transit System. His areas of responsibility are the proposed North Corridor commuter rail connecting Charlotte to northern Mecklenburg County and the Mooresville-Mt. Mourne area; the Charlotte Gateway Station; and the proposed east-west Charlotte Streetcar Line. CATS' North Corridor is the line Mooresville has suggested be the first in the USA to introduce a hydrail commuter train.

Currently, Nadolny is also assisting in the preparation of engineering and design of the Charlotte Streetcar in which an analysis will be done to explore alternative technologies. He manages the Geographical Information System component of the projects. He works with the Charlotte-Mecklenburg Planning Commission and the four towns in the North Corridor to coordinate land use and station area planning. Mr. Nadolny joined the City of Charlotte in 1998 as a transportation planner in the Charlotte Department of Transportation. When CATS was formed in 2000, he joined the Development Division of CATS to work on the North and Northeast Corridor Major Investment Studies. He holds a Bachelor of Arts in Geography from the State University of New York at Geneseo.

Fifth International Hydrail Conference

PRESENTERS

Edward S. Parker PE

Edward (Ned) Parker is a rail vehicle engineer with 17 years experience designing and testing passenger and freight equipment. At LTK Engineering Services, he supports clients during rolling stock specification and competitive technology selection. He has developed numerical models that compare vehicle performance and fleet economics. He specializes in Diesel Multiple Unit (DMU) design, integration, power train development and testing. Parker is assisting the Denver Regional Transportation District to procure a mixed fleet of Electric Multiple Units (EMUs) and DMUs for new commuter rail operations.

Parker is a professional engineer with an M.S., Mechanical Engineering, from The University of Michigan and a B.S., Mechanical Engineering, from the University of Colorado. Even though Parker's expertise is in diesel, not hydrogen, his DMU-versus-EMU analysis presented last year at the American Public Transportation Association's Rail Conference so well informed the high and rising cost issue of external electrification that the Hydrail Conference planners felt its content is essential here as well.

Jennifer Roberts

Jennifer Watson Roberts is Chairman of the Mecklenburg County Board of Commissioners, serving her third term in office and second term as Chairman. She attended UNC-Chapel Hill on a Morehead Scholarship and holds Masters Degrees in International Affairs from Johns Hopkins University and European History from the University of Toronto.

While in office, she has become a leader in sustainability. Mecklenburg County's environmental leadership policy, supported by its Board of Commissioners, is a model for local governments in NC. Commissioner Roberts has led the Board's Natural Resources Committee for the entire period she has served. She chairs a forum for the Charlotte Regional Partnership where water resource collaboration is a dominant theme. She also chairs the CONNECT Council, an initiative of the Centralina Council of Governments (a Hydrail Conference sponsor) defining a regional vision for Charlotte-Mecklenburg in planning conservation and transportation. In 2008, she chaired the Metropolitan Transit Commission and will again in 2010. If hydrogen transit can play a role in Mecklenburg's committed transition to Green transportation, Ms. Roberts will be closely involved and supportive.

Fifth International Hydrail Conference

PRESENTERS

Robert (Bob) Stasko

Robert (Bob) Stasko is a business development professional at the Ontario Centre of Excellence for Energy in Toronto. He is a senior energy technology specialist who has worked in a wide range of management positions involving R&D, product development, market assessment and project implementation in the energy sector, both in Canada and abroad, for over 30 years. Stasko has worked in both the nuclear design and nuclear operations divisions of Ontario Hydro, as well as the marketing, energy management and R&D divisions of that organization.

His educational background consists of a BSc in Electrical Engineering and a MSc in Biomedical Engineering from the University of Toronto. He has completed post-graduate and advanced courses in Health Physics at the UK Atomic Energy Authority, Oxfordshire, and in Fusion Engineering at Oak Ridge National Labs, in Tennessee and the Lawrence Livermore National Labs in California. Bob has had significant international R&D experience including secondments to agencies in Germany, the UK and the USA.

Dr. William (Bill) Summers

Dr. William A. Summers is Program Manager in the Energy Security Department at Savannah River National Laboratory in Aiken, South Carolina where his research includes hydrogen production by high temperature water splitting. His areas of Interest are advanced energy systems and new product development. His past experience includes development of fuel cell power plants, hydrogen storage systems, alternative fuel vehicles, solar energy power plants, and nuclear hydrogen production plants.

Dr. Summers was the project manager for development of the world's first hydrogen hybrid electric transit bus and the first metal-hydride fueled industrial fuel cell vehicle. He currently serves as adjunct professor in Nuclear Engineering at the University of South Carolina.

Stan Thompson

Stan Thompson is a retired AT&T planner and futurist. He chairs HEAT, the all-volunteer Hydrogen Economy Advancement Team in Mooresville, NC, which—with Appalachian State University and other partners—produces the annual International Hydrail Conferences in the US and abroad. He has made hydrail presentations in the US, Canada, Belgium, UK, Italy and Spain and at several colleges and universities.

Thompson coined the word "hydrail" in a 2004 article in the *International Journal of Hydrogen Energy* and it has since become the generic term for hydrogen railway propulsion, Googling over 15,000 references. He has written newspaper and magazine articles on hydrail and on the hydrogen economy, including a February, 2007, story predicting hydrogen streetcars in *Passenger Transport*, the weekly newspaper of the American Public Transportation Association. Stan is a graduate of Pfeiffer University in Meisenheimer, NC. He lives on Lake Norman near Mooresville.
