

# Applications of Remote Sensing Technologies for Transportation Data Collection

## 2004 Workshop Speakers

**Brenda Burroughs, Orbimage Corporation** - Brenda Burroughs has more than 16 years of sales and marketing experience in high tech markets. She has extensive knowledge and background in the GIS/Remote Sensing Applications and Conversion/Digitizing services. She began her career in 1989 selling satellite imagery. Over the last 7 years she has expanded her knowledge and experience to include aerial imagery acquisition and production and digital mapping services.

As Senior Director of Sales and Marketing for Orbimage, she is responsible for developing and supporting the Business Partner Network, as well as working with strategic partners in developing new business opportunities and initiatives.

**Rick Church, University of California at Santa Barbara** – Dr. Church is a Professor of Geography at the University of California, Santa Barbara and past Chairman of the Department of Geography. He has served as a consultant to a number of companies and agencies on a wide variety of problems. In 1991 he, along with two former graduate students, started ISERA GROUP, Inc. ISERA specializes in scheduling systems for manpower deployment, as well as systems for scheduling training activities. ISERA software is now used by the US NAVY in a variety of settings from recruit training to flight training schools and has been purchased by the German Air Force and the Australian Army. Professor Church served as President from 1991-1998 and Chairman of the Board until 2001 when the firm was sold to a venture capital group. He is a co-inventor on a US Patent on estimating manpower needs for emergency medical systems from computerized data systems.

**Rodney Floyd, Florida Department of Transportation** – Mr. Floyd manages the Highway Data Collection/Quality Control Section in the Transportation Statistics Office for FDOT. He is a graduate of Florida A&M University with a degree in Computer Information Systems. With 18 years of experience with the FDOT, he has been responsible for providing technical assistance, developing procedures and handbooks, providing training and promoting data collection processes in the District Offices that provide timely, accurate and high quality Planning oriented highway data for transportation decision making needs. Much of his work is with the FDOT's mainframe highway database. He is also responsible for the Department's Digital Videolog operations and quality control for the Planning highway data collection program.

**David Gibson, Federal Highway Administration** – Mr. Gibson is a registered Professional Traffic Engineer. He is a graduate of Virginia Polytechnic Institute where he also obtained his masters degree in transportation engineering in 1972. He is a traffic research engineer for the Federal Highway Administration, where his main interests are the utilization of sensors for data collection and analysis and the use of real time control systems. He previously worked for the Washington, DC Department of Transportation and the US Army Mobility Equipment Research and Development Center.

**Kathleen Hancock, Virginia Polytechnic University** – Dr. Kathleen Hancock is the Associate Director for the Center for Geospatial Information Technology and an Associate Professor in Civil and Environmental Engineering at Virginia Tech. Her research interests include the application of spatial analysis and geographic information systems and intelligent mapping for engineering problem solving; freight planning in transportation; highway safety including crash data analysis, cost/benefit analysis for highway safety, roadside safety feature design and development, static dynamic, full-scale and computer simulation testing of roadside safety features.

She serves on National Academy of Science and Transportation Research Board and related committees, review committees for the National Science Foundation and was the student chapter advisor of Tau Beta Pi for the past four years. Among her honors, Dr. Hancock received the Outstanding Service Award in 1998 from the University of Massachusetts and was a Lilly Teaching Fellow during 1996-1997.

**Art Kalinski, Atlanta Regional Council** - Art Kalinski is the GIS Manager for the Atlanta Regional Commission. Formerly a career Naval Officer, he established the Navy's first GIS and used it to complete the 1988 military base closure study. After finishing graduate work in GIS at the University of North Carolina, he joined ARC and headed up the effort to publish ARC's GIS data on CD-ROM's, known as the Economic Development Information System (EDIS). He also set up the State's first ArcView Learning Center housed at ARC. He has done extensive work at ARC using multimedia tools to publish CDs and DVDs that include GIS data, imagery, photographs, digital video and now high resolution oblique imagery.

**Thomas Marchessault, U.S, Department of Transportation** - Mr. Marchessault is currently the Associate Administrator (acting) for Innovation, Research and Education in the Research and Special Programs Administration of the U.S. Department of Transportation. He has more than 30 years experience in the Office of the Secretary of Transportation's Policy Office, and served as a primary architect in the development of a number of U.S. DOT technology programs, including the Intelligent Transportation Systems Program and the Remote Sensing in Transportation Program.

Mr. Marchessault played a key role in the 1999 Report to Congress recommending the establishment of the RS program with NASA. Since that time he has been a member of the DOT/NASA Program Oversight Committee guiding the conduct of this program.

Mr. Marchessault received his undergraduate training in Economics at the University of Massachusetts in Boston and did his graduate studies in Economics at the University of Maryland.

**Stan Morain, University of New Mexico** - Dr. Morain is the Chair of Geography and Director of the Earth Data Analysis Center (EDAC) at the University of New Mexico. During his tenure at UNM, he has pursued a career in geography, remote sensing, and spatial analysis through teaching, research and application projects. Since 1973 he has consulted and contracted with the United Nations/Food and Agriculture Organization (UN/FAO), UNDP, and to the United States Agency for International Development (US/AID) on projects aimed at inserting modern spectral and spatial analysis techniques into developing countries.

Professionally, Dr. Morain has served the American Society for Photogrammetry and Remote Sensing as past National President; past Program Director, and Convention Director; past Chairman for both the Remote Sensing Applications Division and Joint ASPRS/ACSM Education Committees; past Secretary of the InterSociety Liaison Committee; past member of the Joint Satellite Mapping and Remote Sensing Committee; past Correspondent for Commission VI of ISPRS; and past member of the ASPRS Finance and Review Committee. In 2000, Dr. Morain was elected President of Commission - I of the International Society for Photogrammetry and Remote Sensing (ISPRS) focused on Sensors, Platforms, and Imagery. His Commission covered the period 2000-2004. In July 2004, he was elected Treasurer of ISPRS.

**Val Noronha, University of California at Santa Barbara** - Dr. Val Noronha is Director of the Vehicle Intelligence and Transportation Analysis Laboratory at the University of California, Santa Barbara, and Project Director of the National Consortium on Remote Sensing in Transportation - Infrastructure. He received his PhD in Geography from the University of Western Ontario in 1985, winning the Nystrom PhD of the Year award from the Association of American Geographers. He has worked in academia at the University of Alberta in Canada, and since 1990 as a consultant to federal, state, local and private sector clients in Canada, Australia and the U.S. In transportation he has worked on location expression and standards testing, centerline mapping, data modeling, remote sensing applications, GPS probes and data fusion, and transit utilization. He is a participant in the European-American Sustainable Transportation Analysis and Research initiative.

**Dar Roberts, University of California at Santa Barbara** - Dr. Roberts has taught at UCSB since 1994 and worked with imaging spectrometry for over 20 years. His research interests, primarily using remote sensing technology, include spectroscopy, land-use land-cover change, fire danger assessment and vegetation analysis, primarily using remote sensing. He has worked with a large variety of sensors, including hyperspectral thermal (SEBASS), several hyperspectral VNIR sensors (AIS, HYDICE, Hyperion, HYMAP, AVIRIS), active sensors (SAR, LIDAR, IFSAR) and broad band data (MSS, ETM+, TM, IKONOS, MODIS). Research sites include the Boreal forests of Canada, much of the western United States, all of North Africa, Madagascar and the Brazilian Amazon. He has been a major participant in several large campaigns, including DOE sponsored research at the Wind River Canopy Crane site in south-central Washington and LBA in Brazil. Recently he has worked in urban environments, studying the spectral properties of urban materials and evaluating methods for mapping urban infrastructure

including road quality. He teaches advanced remote sensing courses in optical and microwave remote sensing.

**Demin Xiong, Oak Ridge National Laboratories** - Dr. Xiong is a staff research scientist and project leader at the National Transportation Research Center of the Oak Ridge National Laboratory (ORNL). He has and is currently serving as the principal investigator and technical lead for numerous research and development projects that have been funded by U.S. DOT, DOE, DOD, HUD, NASA, and state DOTs in areas of GIS, remote sensing, and transportation analysis. He has developed innovative spatial algorithms and software tools for automated network matching and conflation, automated road network extraction from high resolution images, daytime and dynamic population estimation, intermodal freight flow routing and analysis on national multimodal transportation networks, and for national highway network design and evaluation. In addition to his employment with ORNL, he has served as a private consultant for the Province of British Columbia, Canada and for Virginia DOT on issues of transportation database design, database management, and road network mapping. Dr. Xiong is also an adjunct professor at Pellissippi State Technical Community College of Knoxville.