Registration
7:30 am - 4:30 pm

Introductory Remarks & Welcome
8:00 am - 8:15 am
Introductory Remarks
James Sturdevant, Chair, Pecora 16 Symposium, U.S. Geological Survey (USGS) National Center for Earth Resources Observation and Science (EROS)
Welcome to Sioux Falls and to the Pecora 16 Symposium
R.J. Thompson, Chief, USGS National Center for EROS

The Honorable Kathie L. Olsen, Associate Director, White House Office of Science and Technology Policy
8:15 am - 9:10 am

Discussion will focus on the role of the Federal government and, specifically, the Office of Science & Technology Policy (OSTP) in developing science and technology policy as it relates to land remote sensing. One of OSTP’s major roles is to build strong global partnerships and domestic partnerships with government, industry, and academia to obtain advice, facilitate collaborations, and evaluate new opportunities. This allows us to maximize the benefit from our Federal investments in science and technology. OSTP also leads the interagency effort to develop science an technology policies and budgets, and oversees the coordination of interagency research and development activities. Critical to this effort is the National Science and Technology Council (NSTC). NSTC activities, led out of OSTP, are the principal means for government agencies to develop joint priorities and coordinate interagency activities in science and technology. Several NSTC activities are ongoing that contribute to developing Federal research and development priorities for land remote sensing. In particular, two high priority interagency activities will be discussed: 1) the development of a strategic plan for water availability and quality research and development, and 2) the U.S. interagency support for the intergovernmental Global Earth Observation System of Systems (GEOSS).

Kathie L. Olsen is the Associate Director for Science for the Office of Science and Technology Policy in the Executive Office of the President. Her responsibilities include advising the President on science and technology, and providing leadership and coordination for our government’s role in the national science and technology enterprise. Prior to her current position, she was Chief Scientist at the National Aeronautics and Space Administration (May 1999-April 2002) and the Acting Associate Administrator for the new Enterprise in Biological and Physical Research (July 2000-March 2002). Olsen also served as the Senior Staff Associate for the Science and Technology Centers in the National Science Foundation Office of Integrative Activities. A graduate of Chatham College, Olsen earned her PhD in Neuroscience at the University of California, Irvine. She has received awards from the National Science Foundation Director’s Superior Accomplishment; Barry M. Goldwater Educator Award from the American Institute of Aeronautics and Astronautics-National Capital Section; the Barnard Medal of Distinction, and the NASA’s Outstanding Leadership Medal.

10:00 am - 7:00 pm
Exhibit Hall Open

10:00 am - 7:00 pm
Posters on display

10:00 am - 10:30 am
Break - Beverages available in Exhibit Hall

10:30 am – 12:00 noon
Concurrent Technical Sessions I

Land Use and Land Cover Mapping
Chair: Thomas Loveland, USGS National Center for EROS
Applications of the 2001 National Land Cover Database
Collin Homer, SAIC, Under Contract to the USGS National Center for EROS

Process and Challenges of Implementing the Multi-Resolution Land Characteristics 2001 Database for the Yukon Flats, Alaska
Damion Kintz, SAIC, Under Contract to the USGS National Center for EROS

The Future Face of Land Cover Mapping: Merging Medium and High Resolution Imagery to Produce Large Area Land Cover Maps
Michael Palmer, Space Imaging, Inc.
Andrew Brenner

Land Cover Mapping for a Five State Region: A Retrospective of the SWReGAP Project
John Lowry, Utah State University
Douglas Ramsey, Lisa Langs and Jessica Kirby
Spaceborne Land Remote Sensing Before, During, and After the Present EOS Era
Vincent V. Salomonson, NASA Goddard Space Flight Center (Emeritus)

The launch of TIROS-I in 1960 when viewed sparked a remarkable interest and growth in the use of spaceborne observations for gaining better understanding of processes and trends occurring in the Earth-atmosphere system. The launch and operation of Landsat-1 (then called Earth Resources Technology Satellite/ERTS-1) in 1972, and follow-on missions extending to Landsat-7, has had a profound impact on land science and related resource management activities around the world. More recently the NASA Earth Observing System (EOS) is taking the use of spaceborne observations for studying land, ocean, and atmospheric phenomena and related applications to a new plateau of accomplishment. The EOS Terra and Aqua missions are exemplary in that regard as evidenced by the advancing and growing use and application of observations from the ASTER, MODIS, MISR, AMSR, et al. instruments for land science in particular as well as other disciplines. The future following after the EOS series and other satellite missions now operating world-wide also looks bright, but not without very significant challenges associated with limited or declining budgets concurrently accompanied by increasing needs to better understand and predict the effects of climate change and anthropogenic activities on the sustainability and maintenance of the resources of the earth. It is clear that careful and strategic development of advanced technologies to provide better observations must be undertaken in the face of fiscal and related political constraints. Some of the general possibilities include, for example, increased use of hyperspectral, laser/lidar, and active microwave technologies along with more aggressive fusion of the observations from such instruments. Related, but equally challenging, steps need to be taken to provide easily accessed and processed, content-rich observations and results into the proper hands so that quantitatively-based, rigorous and well-founded conclusions can be made subsequently by decision-makers world-wide.

Vincent V. Salomonson is a Senior Scientist and Director of Earth Sciences (Emeritus) in the Earth Sciences Directorate at the Goddard Space Flight Center, NASA. He also serves as the Science Team Leader for the NASA Earth Observing System (EOS) facility called the Moderate Resolution Imaging Spectrometer (MODIS). Prior to being Senior Scientist he was the Director of the Earth Sciences Directorate at Goddard from 1990-2000, as the Deputy Director for Earth Sciences in the Space and Earth Sciences Directorate (1988-1990), Chief of the Laboratory for Terrestrial Physics (1980-1988), Project Scientist for Landsat 4 and 5 (1977-1989), the Head of the Hydrospheric Sciences Branch (1973-1980), and as a research meteorologist (1968-1973). Salomonson has served the IEEE Geoscience and Remote Sensing Society (GRS-S) and the ASPRS in several capacities, including as past president of ASPRS. He holds BS degrees in Agricultural Engineering and Meteorology from Colorado State University and the University of Utah respectively, an MS in Agricultural Engineering from Cornell University, and a PhD in Atmospheric Science from Colorado State University. He received the William T. Pecora award in 1987.
Disaster Response and Mitigation
Chair: Jesslyn Brown, SAIC, Under Contract to the USGS National Center for EROS

The Role of Remote Sensing in Improving Drought Decision Support
Jesslyn Brown, SAIC, Under Contract to the USGS National Center for EROS
Tsegaye Tadesse and Michael Hayes

USGS EROS Tsunami Response
Brenda Jones, SAIC, Under Contract to the USGS National Center for EROS

Remote Sensing of Eco-climatic Conditions Associated with the 2004 Desert Locust Outbreak in West Africa
Assaf Anyamba, Goddard Earth Sciences and Technology Center, UMBC, NASA Goddard Space Flight Center
Keith Crossman, Compton Tucker, Jennifer Small and Tim Love

ASTER Data Applications in Times of Crisis
Kenneth Duda, SAIC, Under Contract to the USGS National Center for EROS

Remote Sensing Policy I
Chair: Bruce Quirk, USGS National Center for EROS

Future of U.S. Commercial Remote Sensing from Space
Raymond Heidner, The Aerospace Corporation
JoeStraus

Value Pricing for Civilian Agency Imagery Portfolio Purchases
Frank Wong, The Aerospace Corporation

The Dynamic Market for Remotely Sensed Data
Kass Green, The Alta Vista Company

USGS Product Characterization Program
Philip Rufe, USGS

Education and Knowledge Transfer
Chair: Milda Vaitkus, University of Nebraska-Lincoln

Bringing Land Remote Sensing to the Public and the Classroom
Jeannie Allen, NASA Goddard Space Flight Center

The USGS AmericaView Program: Facilitating the Science and Use of Remote Sensing through a Joint Federal-State Education and Training Initiative
Theresa Crooks, AmericaView, Inc.
Buck Sharpton

SDView: Remote Sensing Partnerships, Infrastructure and Data for South Dakota
Mary O’Neill, South Dakota State University
Kevin Dalsted, Pravara Thanpura, David Clay, Sung Shin, Cheryl Reese, Jae H. Lee, Jungyeon Kim and Hee J. Jeon

GeoWall: Low-cost 3-Dimensional Display Technology for Land Remote Sensing
Brian Davis, SAIC, Under Contract to the USGS National Center for EROS
Paul Morin

Lidar
Chair: Jason Stoker, SAIC, Under Contract to the USGS National Center for EROS

Lidar Surface Extraction Performance vs. Laser Pulse Energy
Eva Paska, The Ohio State University
Charles Toth

Detection and Analysis of Characteristic Detail in Lidar-Derived Data Surfaces
Eric Kolstad, Mississippi State University
Charles O’Hara

Traffic Flow Estimate from LiDAR data: Operational Experiences
Shahram Moafipoor, The Ohio State University
Charles K. Toth and Dorota A.Grejner-Brzezinska

12:00 noon - 1:30 pm
Lunch in the Exhibit Hall
Included with full registration - ticket required

1:30 pm - 3:00 pm
Concurrent Technical Sessions II

U.S. Land Cover Change
Chair: Brian Wardlow, University of Kansas

Monitoring United States Land Use and Land Cover Change with Historical Landsat Data
Thomas Loveland, USGS National Center for EROS
Terry Sohl, Kristi Sayler, Mark Drummond, Roger Auch, and Rachel Kurtz

National Land Cover Database Change Product
Michael Coan, SAIC, Under Contract to the USGS National Center for EROS
Collin Homer

Oregon Forestland Change Mapping
Stephen Lennartz, Space Imaging, Inc.
Maria Fiorella

Projecting Land Use Change Through 2020 Using Theoretical, Statistical, and Deterministic Modeling Techniques
Terry Sohl, SAIC, Under Contract to the USGS National Center for EROS
Kristi Sayler and Thomas Loveland

Forestry I
Chair: James Vogelmann, SAIC, Under Contract to the USGS National Center for EROS

Using Multiple Satellite Sensors to Compare Temporal Longleaf Pine Leaf Area
Ryan Jensen, Indiana State University
Perry Hardin and Mark Jackson
Remote Sensing of Mangrove Forest Composition, Distribution, and Response to Environmental Stresses
Le Wang, Texas State University - San Marcos
Wayne Sousa

A Spectral Library of the Native Forests of New Zealand
Mike Tuohy, Massey University, New Zealand
Andreas Hueni

Expert Classification Technique for Mapping Teak Plantation Areas in Thailand
Siripun Taweesuk, Thammasat University, Thailand
Prasong Thammapala

Image Processing
Chair: Dennis Helder, South Dakota State University

Landsat 7 SLC-Off Gap-Filled Product Development
James Storey, SAIC Technical Services, USGS National Center for EROS
Pasquale Scaramuzza, Julia Barsi and Gail Schmidt

A First Approximation of Tasseled-Cap Values for the Advanced Land Imager
Michael Finn, USGS
Matthew Reed and E. Lynn Usery

Tasseled Cap Coefficients for the QuickBird-2 Sensor: Multiple Derivation Techniques and Comparison
Lance Yarbrough, University of Mississippi
Greg Easson and Joel Kuszmual

Study on the Relative Radiometric Gain Correction over the Dynamic Range of all Reflective Channels of the Landsat 5 Thematic Mapper
Sriharsha Madhavan, South Dakota State University
Dennis Helder

Panel Discussion: Multi-Platform Sensing and Sensor Networks in the Face of Large Scale Natural Disasters: What could have our profession done to better prepare for the Tsunami disaster?
Sponsored by ISPRS WG I/3 - Multi-Platform Sensing and Sensor Networks
We, as humans, often wonder, what could we have we done to lessen the enormity of the Tsunami disaster? And for us, as remote sensing professionals, the question becomes far more imposing, if not guilt inducing. Did we have the pieces, from a technological point of view, to precisely anticipate the time of the first wave to overcome the shores of these unassuming cities and villages?

The short answer is that available imaging systems alone cannot provide the data required for an adequate early warning system for a disaster of this kind. But to combine traditional remote sensing with other systems, such as seismological detectors and ocean wave sensors, would certainly provide a far better early warning system. Such a system would possibly be adequate to avert the enormous humanitarian, economic and environmental impact a similar disaster may bring about.

The premise for this panel session is that the integration of ground- and ocean-based sensors, with airborne and space-borne systems, can provide an enhanced capability in comprehensive monitoring, modeling, validation, and early warning. This panel will discuss the concept of Multi-Platform Sensing and Sensor Networks, the technological issues, operational aspects and potential funding sources.

Organizer and Chair: Raad Saleh, Global Sensing Group

Panelists:
Khaled S. Al-Damegh, Astronomy and Geophysics Research Institute, Saudi Arabia
Tarek Rashid, University of Oklahoma
José L. Colomer, Institut Cartographic de Catalunya, Spain
Brenda K. Jones, SAIC, Under Contract to the USGS National Center for EROS

Policy II
Panel Discussion: Commercial Remote Sensing Space Policy - 2 Years Later

The President authorized a new national policy on April 25, 2003 that establishes guidance and implementation actions for commercial remote sensing space capabilities. This goal of this policy is to advance and protect U.S. national security and foreign policy interests by maintaining the nation’s leadership in remote sensing space activities, and by sustaining and enhancing the U.S. remote sensing industry. This panel will focus on various implementation challenges and achievements over the past 2 years to foster economic growth, contribute to environmental stewardship, and enable scientific and technological excellence.

Organizer and Chair: Tahara Moreno, NOAA

Panelists:
Jay Feuquay, USGS
Joanne Gabrynowicz, University of Mississippi
Michael Hales, NOAA
Kevin O’Connell, Center for Intelligence Research and Analysis
Matthew O’Connell, ORBIMAGE

Geology and Soils
Chair: Charles Trautwein, USGS National Center for EROS

Geologic Mapping through Linear Spectral Unmixing of MTI Imagery
Paul Pope, Los Alamos National Laboratory
Mary Greene

Soil Cohesion Analysis in the Tableland Coast in Northeast Region of Brazil through ASTER Images (VNIR and SWIR)
Rosangela Santos, Universidade Estadual De Feira De Santana, Brazil
José Alberto Quintanilha
Tuesday, October 25, 2005

Exploitation of ASTER Imagery in Mining-related Environmental Management
Stephane Chevrel, BRGM, France
Anne Bourguignon, Francis Cottard and Yann Itard

Investigating Environmental Problems in the Khorat Plateau, NE-Thailand
Friedrich Kuehn, Federal Institute for Geosciences and Natural Resources (BGR), Germany
Namphon Khampilang, Sakda Khundee, Tippawan Onsongchan, Suree Teerarungsingul, Akkaphun Wannakomol, and Weerachat Wiwegwin

Sensors I
Chair: David Meyer, SAIC, Under Contract to the USGS National Center for EROS

Results of USGS Testing of Digital Aerial Systems: Products and Future Characterization Methods
Donald Moe, SAIC, Under Contract to the USGS National Center for EROS
Philip Rufe and Jon Christopherson

ALOS: Filling the Gap for Earth Observations
Donald Atwood, Alaska Satellite Facility
Scott Arko

An Inexpensive Unmanned Aerial Vehicle for Limited-Area Photography
Perry Hardin, Brigham Young University
Mark Jackson and Ryan Jensen

On-Orbit Generic Sensor Modeling and Modulation Transfer Function (MTF) Simulation
Taeyoung Choi, South Dakota State University
Dennis Helder

3:00 pm - 3:30 pm
Break - Beverages available in Exhibit Hall

3:30 pm - 5:00 pm
Concurrent Technical Sessions III

Land Use/Land Cover Assessment
Chair: Guoxiang Liu, Clemson University

Enhanced Land Cover Classification in a Tropical Kenya Landscape
T.J. Baldyga, University of Wyoming
S.N. Miller, K.L. Driese, R. Sivanpillai, and C. Maina-Gichaba

Tracking Environmental Change in Southern Senegal using High Resolution Satellite Imagery
Eric Wood, SAIC, Under Contract to the USGS National Center for EROS
Gray Tappan

Yonghong Zhang, Chinese Academy of Surveying and Mapping, China
Jixian Zhang, Jicheng Zhao, Jin Ma, Yinxuan Cao, and Yan Long

Forestry II
Chair: Paul Greenfield, USDA Forest Service

Assessing Biomass and Forest Area Classifications from MODIS While Increasing the Number of Forest Inventory Data Panels
Dumitu Salajaniu, USDA Southern Research Station, Forest Inventory and Analysis

Efficacy of Radarsat-1 Synthetic Aperture Radar Imagery for Improving Landsat Thematic Mapper-based Image Classification of Forest Cover Types
Mark Nelson, USDA Forest Service, North Central Research Station

Classification and Forest Parameter Extraction of Patagonian Lenga Forests with ASTER and Landsat ETM+ Data
Sandra Eckert, University of Zurich, Switzerland
José Lencinas and Tobias Kellenberger

Forestry Coverage Multitemporal and Multispectral Study in Dolomiti Territory
Bruno Marcolongo, C.N.R. - I.R.P.I., Italy
Alessandro Angerer

Water Resources I
Chair: Robert Vincent, Bowling Green State University

Mapping the Bacterial Content of Surface Waters with Landsat TM Data: Importance for Monitoring Global Surface Sources of Potable Water
Robert K. Vincent, Bowling Green State University
R. McKay, L. McKay, Mamoon Al-Rshaidat, Kevin Czajkowski, Thomas Bridgeman, and Jeffrey Savino

Computer Animation of Cyanobacteria Blooms in Lake Erie from July-October, 2003 As Mapped from SeaWiFS Data with a New Phycocyanin Algorithm
Padmanava Dash, Bowling Green State University
Robert K. Vincent

Perennial/Intermittent Stream Classification using GIS and Remote Sensing Information in the Upper Midwest
Miguel Restrepo, SAIC, Under Contract to the USGS National Center for EROS
Pamela Waisanen and Bruce Worstell

Current and Future Applications of Remote Sensing for Routine Monitoring of Surface Water
Kwabena Asante, SAIC, Under Contract to the USGS National Center for EROS

Biophysical Characterization
Chair: Marguerite Madden, University of Georgia

Time Lag and Seasonality Considerations in Evaluating AVHRR NDVI Response to Precipitation
Lei Ji, Cooperative Institute for Research in the Atmosphere, Colorado State University
Albert Peters
Tuesday, October 25, 2005

Retrieval of Vegetation Biophysical Characteristics from Remotely Sensed Data
Anatoly Gitelson, University of Nebraska-Lincoln
Andres Vina and Donald Rundquist

Remote Sensing Derived Leaf Area Index and Applications in Plant Yield Estimation
Anne Smith, Agriculture and Agri-Food Canada
C. Nadeau, J. Freemantle, J. Miller, H. When, P. Teillet, I. Keiler, and N. Daub

Retrieval of Leaf Biochemical Concentrations from Leaf Reflectance Data by Genetic Algorithm-Partial Least Square Regression
Lin Li, Indiana University-Purdue University
Susan Ustin

Integrated Resources Analysis
Chair: Brian Huberty, U.S. Fish and Wildlife Service

Jimmy Adegoke, University of Missouri-Kansas City
Justin Ahanhanzo

Land Management Applications of the EROS Digital Photo Archive
Randy McKinley, SAIC, Under Contract to the USGS National Center for EROS
Kenneth Boettcher and Tim Smith

Creating detailed Land Management Units based on High-Resolution Remote Sensing Data and DEM - derived Terrain Attributes using Spatially Weighted Multivariate Classification
Georgina Warren, Curtin University of Technology, Australia
Graciela Metternicht and Jane Speijers

The Canadian Moderate Resolution Mapping System
Rasim Latifovic, Canada Centre for Remote Sensing
Richard Fernandez, Alex Trischchenko, and Bill Park

Panel Discussion: Future of the Nation’s Land Remote Sensing Archive
Sponsored by the ASPRS Data Preservation and Archive Committee and the Department of the Interior’s Archive Advisory Committee

This will be an interactive session wherein the session participants will be asked to provide input to the U.S. Geological Survey on the future user requirements for the Nation’s long-term land remote sensing archive (i.e., what should be included as part of the long-term remote sensing record for the earth’s land surfaces? The session will include a brief summary on the current land remote sensing archive and a rationale on the need for defining the future data requirements of the land remote sensing archive (i.e., the acquisition, preservation, and distribution needs).

Moderator: Thomas Holm, USGS National Center for EROS

Speakers:
Amy Budge, Earth Data Analysis Center, University of New Mexico
Jay Feuquay, USGS

Sensors II – Advanced Land Imager
Chair: Karen Zanter, USGS National Center for EROS

Improved Leaky Detector Correction for EO-1 ALI Imagery
Ron Morfitt, SAIC, Under Contract to the USGS National Center for EROS
Gyanesh Chander, Brian Markham, Dennis Helder, and James Storey

Advanced Land Imager (ALI) Relative Gain Characterization and Correction
Amit Angal, South Dakota State University
Dennis Helder

Radiometric Characterization and Performance Assessment of the Advanced Land Imager Using Bulk Trended Data
Timothy Ruggles, South Dakota State University
Dennis Helder, Doug Hollaren, Ron Morfitt, and Jim Nelson

Radiometric Processing and Calibration of EO-1 Advanced Land Imager Data
Brian Markham, NASA Goddard Space Flight Center
Lawrence Ong, Jeff Mendenhall, Gyanesh Chander, Ron Morfitt, and Doug Hollaren

5:30 pm - 7:00 pm
Exhibitors’ Reception
Poster Session
Presenters will be with their displays for discussion.