Time	Event	Room	Attending
7:00 AM to 5:00 PM	Registration Desk Open	Mezzanine Level Atrium	
7:00 AM to 8:00 AM	Sustaining Members Council Meeting & Breakfast	201 D	
8:00 AM to 9:00 AM	President's Address/General Session	Ballroom 104 D	
9:00 AM to 5:00 PM	Exhibit Hall Opens	Exhibit Hall 301 C	
9:00 AM to 5:00 PM	ASPRS Board of Trustees Meeting	101 C	
9:15 AM to 10:45 AM	GEO League Challenge Presentations	203 D	
9:15 AM to 10:45 AM	Technical Sessions — 32 to 40	varies, see description	
11:00 AM to 12:00 Noon	Technical Sessions — 41 to 47	varies, see description	
11:00 AM to 12:00 Noon	Commercial Sessions	varies, see description	
11:00 AM to 12:00 Noon	ASPRS Committee Meeting — Geographic Information Systems Division (GISD)	201 D	
11:00 AM to 12:00 Noon	ASPRS Committee Meeting — Remote Sensing Applications Division (RSAD)	203 A	
11:00 AM to 12:00 Noon	ASPRS Committee Meeting — Primary Data Acquisition Division (PDAD)	203 D	
12:00 Noon to 1:30 PM	Memorial Address	Ballroom 104 D	
1:30 PM to 3:00 PM	Technical Sessions — 48 to 57	varies, see description	
3:30 PM to 5:00 PM	Technical Sessions — 58 to 67	varies, see description	
6:00 PM to 9:30 PM	Social Event — Milwaukee Public Museum	Offsite	

Wednesday, May 4th

Wednesday, May 4th

Registration Desk Open
7:00 AM to 5:00 PM
Mezzanine Level Atrium, near the Hyatt Regency Hotel Skywalk

Sustaining Members Council Meeting & Breakfast
7:00 AM to 8:00 AM, Room: 201 D

President's Address/General Session
8:00 AM to 9:00 AM, Ballroom 104 D

President's Address

While a student at the University of Wisconsin, Green Bay, I took a photointerpretation class and was hooked on mapping ever since. I am especially honored to return to Wisconsin for the upcoming ASPRS Annual Meeting to accept the office of President of the Society. As part of my address, I intend to draw on my work experience as well as the ASPRS Strategic Plan to acknowledge and discuss the critical role imaging and geospatial information has in supporting the Society's vision to sustain and enhance the global quality of life. Further, I will discuss the overall value of membership in the Society and recap our current recruitment methodologies. I will challenge each of you to help recruit new members as they bring new ideas, helping our Society stay relevant today and for years to come.

Gary Florence's geospatial experience spans both the national and international sectors. He received a Bachelor of Science degree from the University of Wisconsin, Green Bay and a Master of Science degree from the International Institute for Geo-information Science and Earth Observation (ITC), the Netherlands. He began his working career after graduating from the ITC in 1979.

Sponsored by the European Development Bank, Florence worked on the Country-wide Animal and Range Assessment Project in Botswana where he applied various remote sensing techniques and extensive ground truth field verification to conduct a detailed rangeland inventory and carrying capacity of the Kalahari. Later, working as a Remote Sensing consultant for the Food and Agriculture Organization of the United Nations, Florence again combined various remote sensing techniques and field work to conduct a land cover inventory of Baluchistan, Pakistan. He then worked in the United States managing a variety of mapping projects for both the public and private sectors. This experience included serving as a Coastal Zone Analyst for Louisiana DNR and later as Director of the Resource Data Department for the Southwest Florida Water Management District.

His private sector experience includes serving as Project Manager on a wide variety of mapping projects for Mid States Engineering, Chicago Aerial Surveys, Geonex and Greenhorn & O'Mara, Inc., (G&O). During his tenure with G&O he served five years as the Project Manager for the National Wetlands Inventory (NWI) Program sponsored by the U.S. Fish and Wildlife Service. In 2004, Florence joined Photo Science to manage their office in St. Petersburg, Florida.

Gary Florence

Awards Presentations
Fellow Award
Francis H. Moffitt Memorial Scholarship
Paul R. Wolf Memorial Scholarship
BAE Systems Award
Conference Management Awards

Mark Shortis – ISPRS 2012 Congress

ASPRS Geospatial History: The Three Wise Men Panel

To better understand the Geospatial Revolution, we need to understand where our profession has been and where it is going. Our Past President, Dr. Carolyn Merry will moderate an ASPRS Who's Who list of esteemed experts who led the start of the revolution over 50 years ago - Dr. Charles Olson, Jr., University of Michigan; Ron Ondrejka, ITEK; Terry Keating, Aero-Metric. Each of these gentleman led academic, commercial, and defense related remote sensing systems research and development programs utilizing aerial and satellite sensor systems, thermal sensors, radar imaging systems and digital photogrammetric systems.

When one steps back a moment and reflects on how far we have come, these 'revolutionaries' created the remote sensing and mapping systems that gave our industry, government, and military the leading edge geospatial technologies and intelligence to grow our and protect our societies. This is a once-in-a-lifetime session you do not want to miss.

ASPRS Past President, Carolyn J. Merry is Professor and Chair of the Department of Civil and Environmental Engineering and Geodetic Science at The Ohio State University (OSU). She also serves as the Director of the Center for Mapping at OSU. She was a co-Principal Investigator for the National Consortium on Remote Sensing in Transportation – NCRST – that was funded by the U.S. Department of Transportation. She also is involved with the follow-on consortium CRESTA – Center for the Remote Sensing of Traffic Activities – with researchers from OSU, University of Arizona and Michigan Tech Research Institute. Other current and past projects include mapping temperatures and surface turbidity patterns from AVHRR, MODIS and Sea-WiFS satellite data; using satellite imagery to evaluate and map a tractor train traverse route from McMurdo Station to the South Pole, Antarctica; and, using Landsat-7 data for engineering applications as part of the OhioView Consortium. During a sabbatical to the NASA Goddard Space Flight Center in 1977-78, she worked on educational outreach for the Landsat-7 satellite. Previous to OSU, she was a Research Physical Scientist at the U.S. Army Cold Regions Research and Engineering Laboratory, in Hanover, New Hampshire, where she worked on various applications of remote sensing in hydrology.

Charles Olson, Jr., has been an ASP/ASPRS member for 54 years and has watched the organization evolve. He has had more than 30 years of military remote sensing experience, and 40 years teaching at the university level in his overlapping careers. He served as the ASPRS Reporter to Commission VII of the ISP from 1968 to 1976, chaired the Biology Panel of the National Academy of Sciences Commitee on Remote Sensing Programs in Earth Resource Surveys from 1972 to 1977, served as the ASPRS National Director from the Eastern Great Lakes Region from 2002-2008, is the instigator of the EGLR Oral History Project in which he has interviewed more than fifty ASPRS members, and has been elected a Fellow and an Honorary Member of ASPRS.

Ron Ondrejka's career has been at the leading edge of advanced aerospace mapping and remote sensing systems for about 50 years. His roles have included Itek Project Photogrammetrist for three classified space-imaging systems beginning with CORONA and Program Development Manager for three NASA cameras including Apollo, Skylab and Shuttle LFC.

After 25 years with Itek, Ron was a founding Director of the GEONEX Corp. and was appointed to special academic advisory committees at M.I.T. and the Boston University Center for Remote Sensing. During the 1990s, Ron was the airborne-sensing systems advisor for the ONDCP/USDA "War-on-Drugs" related to enforcement on Federal wilderness lands.

Terrence Keating serves as Aero-Metric's CTO and as a Senior Vice President at Aero-Metric's Sheboygan Office. He had previously managed Z/I Imaging and had owned Kork Systems developing digital cameras and photogrammetric software. Terry is a Registered Land Surveyor, Professional Engineer and Certified Photogrammetrist. He is a past National President of ASPRS.

Exhibit Hall Open
9:00 AM to 5:00 PM, Exhibit Hall 301 C

ASPRS Board of Trustees Meeting
9:00 AM to 5:00 PM, Room: 101 C

Technical Sessions
9:15 AM to 10:45 AM

GEO League Challenge Presentations
Sponsored by the ASPRS Student Advisory Council
Room: 203 D

This is the first year for the GeoLeague Challenge, sponsored by the ASPRS Student Advisory Council. The six student groups participating in this year's Challenge will give their presentations during this session. The presentations will be judged and prizes awarded at the Memorial Address.

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NGA Special Session IIIA - Sparsity and Compressive Sensing
Moderator: Dr. John Greer, *NGA*
Room: 202 C

Target Detection in Hyperspectral Imagery Using Joint Sparsity
Nasser M. Nasrabadi, *ARL*
Yi Chen and Trac D. Tran

Sparse Deterministic Representation of Hyperspectral Data
Wojciech Czaja, *University of Maryland*
John J. Benedetto

Compressive Lidar Conceptual Model and Simulation Results
Darryl Sale, *Georgia Tech*
Christopher Rozell, Justin Romberg, and Aaron Lanterman

Bayesian SAR Imaging
Duc Vu, *University of Florida*
Xing Tan, Ming Xue, and Jian Li

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PDAD Special Session 2 — Digital Imagery Quality Assurance
Moderator: Mike Benson, *U S. Geological Survey*
Room: 201 B

Aerial imaging is in a period of rapid growth and change with new technologies, new customers, and new missions requirements. Digital airborne sensors have matured over the last few years and have been gaining acceptance by the mapping community. This is evidenced by: 1) the enhancement of current remote sensing systems by the manufacturers; 2) the manufacturers introducing new sensors into the marketplace that address the needs of a particular sector of the user market not previously addressed; 3) and the amount of data being collected. In many cases, the collection system may have methods that are designed to help the data collectors and current owners of the data may be able to obtain enough information to use the data. However, the quality and long term usefulness of the acquired data in comparison to other data types may be an issue.

This session will have four panels with short presentations and discussions. All information will be made available on the PDAD web site.

Digital Imagery Quality Assurance and Quality Control
Greg Stensaas, *U S. Geological Survey*

Mapping Accuracy Standards
Robert Ryan, *I2R Corp.*

Quality Assessment Process and Tools
Chuck O'Hara, *SIS, Inc.*

System Calibration and Stability
Qassim Abdullah, *Fugro EarthData Inc.*

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Forestry Applications using Lidar
Moderator: Michael Hodgson, *University of South Carolina*
Room: 202 A

Mapping Urban Tree Cover: Object-oriented Image Analysis of QuickBird and Lidar Data
Donald Kilberg, *University of Minnesota*
Molly Martin and Marvin Bauer

Simulated Lidar Waveforms for the Analysis of Light Propagation through a Tree Canopy
Angela Kim, *Naval Postgraduate School*
Richard C. Olsen

Lidar-based Characterization of Small Gullies under Forest Canopy
Michael Hodgson, *University of South Carolina*Kirsten Hunt

Estimating Stand Density in Pine Plantations using Lidar-derived Data
Alicia Peduzzi, *Virginia Tech*
Randolph H. Wynne and Thomas R. Fox

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Remote Sensing Classification Algorithms and Approaches

Moderator: Eugene Levin, *Michigan Tech University*
Room: 202 D

Applying Nonlinear Data Transformation and SVM to Classify Remote Sensed Images: Experiments from Habitat Mapping Along the Detroit River
Anbing Zhang, *Eastern Michigan University*
Eugene Jaworski, Yichun Xie, William Welsh, and Zongyao Sha

Northwest Gap Analysis Project Land Cover Mapping: Methods and Results
Anne Davidson, *National Gap Analysis Program*
Jocelyn Aycrigg, Emilie Grossman, Jimmy Kagan, Steven Lennartz, Stacy McDonough, Tom Miewald, Janet Ohmann, Adam Radel, Todd Sajwaj, and Claudine Tobalske

Object-oriented Change Detection with Discriminate Function
Brian Kloer, *ERDAS, Inc.*

Blending Topography Normalization and Unmixing Analysis to Improve Forest Patch Discrimination in Atlantic Forest, in Brazil
Sergio Bernardes, *University of Georgia-Center for Remote Sensing and Mapping Science*
Andrea Presotto, Allison Howard Eury, Marguerite Madden, Dorothy M. Fragaszy, Thomas Jordan, Patricia Izar, and Yuri Tavares-Rocha

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Classification and Positional Errors and Accuracies

Moderator: Frank Taylor, *Continental Mapping Consultants, Inc*
Room: 203 B

Error Propagation Based Uncertainty Analyses of Shoreline Extraction
Ding Li, *The Ohio State University*
Jung-kuan Liu and Rongxing Li

Assessing the Strength of Temporal Dependence in Classification Errors in Time-series Imagery Under Varying Resolutions
Amy Burnicki, *University of Wisconsin – Madison*

On Chance-corrected Measures for Accuracy Assessment in Remote Sensing Image Classification
Shiguo Jiang, *The Ohio State University*
Desheng Liu

Mapping Urban Tree Canopy in Virginia Localities
Jennifer McKee, *Department of Forest Resources and Environmental Conservation*

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Special Session – Sensor Modeling & Metadata Development for UAS Platforms

Moderator: Robert D. Thomas, *Integrity Applications Inc.*
Sponsored by the ASPRS Defense and Intelligence Subcommittee
Room: 203 C

This is the first of three sessions that will focus on the development and integration of key photogrammetric-based technologies and their application in supporting improved geospatial capabilities. The sessions will provide interested parties with the insight and improved technical understanding that photogrammetry provides in support to today's UAS operations. Speakers will address advances in sensor technologies, up-stream and down-stream processing, as well as new and improved analytical processes that incorporates rigorous photogrammetry as a means to improving the underlying geospatial accuracy of the UAS imagery.

This session is focused on sensor modeling and metadata development for UAS platforms.

SENSRB – A New NITF TRE for EO Imagery
W. Mark Wonnacott, *U.S. Navy*

Advantages of Direct Geopositioning via Rigorous Sensor Modeling Techniques
Aaron Braun, *Integrity Applications Incorporated (IAI)*

Simplifying Photogrammetric Models for Efficient UAV Image Registration: OBC Case Study
David W. Kreighbaum, *National Geospatial-Intelligence Agency (NGA)*

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Special Session — Natural/Human Responses of Global Climate Change III

Moderator: Changshan Wu, *University of Wisconsin-Milwaukee*
Room: 202 B

Long-term Change Analysis of Urban Impervious Surface
Changshan Wu, *University of Wisconsin-Milwaukee*

Vegetation Phenology Response to Climate Change in Northern Hemisphere from 1982 to 2006
Zhongchang Sun, *Chinese Academy of Sciences*, China
Lingling Liu and Liangyun Liu

Land Use/Land Cover Change and its Hydrological Impact from 1984 to 2010 in the Little River Watershed, Tennessee
Chunhao Zhu, *University of Tennessee*
Yingkui Li and Zewen Liu

Effect of LULC Change on Runoff in Urbanization Area
Zhongchang Sun, *Chinese Academy of Sciences*, China
Huodong Guo, Xinwu Li, Qingni Huang, and Yixing Ding

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Special Session — AmericaView

Moderator: Sam Batzli, *University of Wisconsin-Madison*
Room: 201 A

The AmericaView Consortium is comprised of university-led, state-based consortia working together to build a nationwide network of state and local geospatial data users. Now in its 10th year, AmericaView has expanded to 37 states. The Consortium is actively working with USGS and universities across the country to expand participation in the AV Program to all 50 states and territories. This session showcases recent work by consortium members in the areas of education, technology, and StateView networking.

WyomingView Applied Remote Sensing Research Activities in the Era of No-cost Landsat Data
Ramesh Sivanpillai, *University of Wyoming/WyGISC*

AmericaView Imagery Access Initiatives and Cooperation
Sam Batzli, University of Wisconsin-Madison
Tom Heinrichs, Larry Biehl, Tyler Erickson, and PR Blackwell

AmericaView and Emergency Management
Peter Sforza, *Virginia Polytechnic Institute and State University*
Tom Heinrichs, Rick Lawrence, Kevin Dobbs, and Sam Batzli

AmericaView's Education Mission
Rick Landenberger, *West Virginia University*
Tom Mueller, John (Jay) Morgan, Kevin Czajkowski, and Rebecca Dodge

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Hazard Assessment

Moderator: Jim Lacy, *Wisconsin State Cartographer's Office*
Room:

Automatic Earthquake Damage Mapping using Multiple Very High Spatial Resolution Acquisitions
Chris Padwick, *DigitalGlobe*
G. Marchisio and F. Pacifici

Assessing the Effects of Geospatial Features on Bird Strike Occurrences at Selected Airports in the U.S.
Frederick Wilson, *Morgan State University*
Judy Jackson-Pringle

Multi-Year Cultural Change Analysis Serving FEMA Mapping Prioritzation Efficiences
Rick Sacbibit, *FEMA/FIA, Risk Analysis Division*

New Mapping Tool and Techniques for Visualizing Sea Level Rise and Coastal Flooding Impacts
John McCombs, *NOAA Coastal Services Center*
Doug Marcy, William Brooks, Kyle Draganov, Brian Hadley, Nate Herold, Matt Pendleton, Sean Ryan, Keil Schmid, Mike Sutherland, and Kirk Waters

Beverage Break
10:45 AM to 11:00 AM, Exhibit Hall 301 C
Sponsored by Aero-Metric, Inc.

aerometric Geospatial Solutions

Technical Session
11:00 AM to 12:00 Noon

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NGA Special Session IIIB — Compressive Sensing Session 2

Moderator: Dr. Chris Flake, *NGA*
Room: 202 C

A Fast Nonlinear Dimensionality Reduction Method for Hyperspectral Images
Lin Yan, *Ohio State*

Automatic Detection and Extraction of Geospatial Features from Lidar Data
Suya You, *University of Southern California*

Hierarchical Progressive Aerial Lidar Compression
Ye Duan, *University of Missouri*
Xiaoling Li, Wenjun Zeng, and Hongkai Zhao

Dictionary Learning and Compressive Sensing for Noisy and Incomplete Hyperspectral Images
Lawrence Carin, *Duke University*
Zhengming Xing, Mingyuan Zhou, Alexey Castrodad, and Guillermo Sapiro

MILWAUKEE

Milwaukee boasts a wide range of historical and architectural landmarks, including the magnificent Captain Frederick Pabst Mansion, home of one of the city's influential beer barons; the St. Joan of Arc Chapel, originally built during the 15th century in Lyon, France; the Charles Allis Art Museum, a stunning English Tudor mansion and former home of the first president of Allis-Chalmers Company; Villa Terrace, an Italian Renaissance-style villa with a sweeping view of Lake Michigan and breathtaking lakefront gardens; Milwaukee's City Hall, a landmark of Flemish Renaissance design built in 1895; and Basilica of St. Josaphat's, an architectural masterpiece and the first Polish basilica in North America.

Commercial Sessions

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New Photogrammetric Products
Moderator: Dor Yalon, *Icaros, Inc*.
Room: 202 A

Automatic Tie-point Extraction using Advanced Approaches
Ziv Shragai, *Icaros, Inc.*

The Need for a Flexible Sensor — Evaluation of the Icaros IDM600
Arik Nir, *Icaros, Inc.*

Photogrammetric Solutions of Non-standard Photogrammetric Blocks
Dor Yalon, *Icaros, Inc.*

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Vexcel UltraCam Investigations
Moderator: Alexander Wiechert, *Vexcel Imaging GmbH, a Microsoft company*
Room: 201 B

UltraCam: The New Super-large Format Digital Aerial Camera
Alexander Wiechert, *Vexcel Imaging GmbH, a Microsoft company*
Michael Gruber

Results from UltraCam Monolithic Stitching
Michael Gruber, *Microsoft Corp.*
Richard Ladstaedter

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Full-motion 3D Imaging
Moderator: Eric Coppock, *Ball Aerospace Technologies Corp*
Room: 201 A

Real-time, Creation and Dissemination of Digital Elevation Mapping Products using Total Sight™ Flash Lidar
Eric Coppock, *Ball Aerospace Technologies Corp*
Roy Nelson

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New at ERDAS
Moderator: Joe Mostowy, *ERDAS*
Room: 202 B

What's New in LPS 2011
Joe Mostowy, *ERDAS*

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ArcGIS Innovations
Moderator: Peter Becker, *ESRI*
Room: 202 D

ArcGIS as a System for Management, Dissemination, Visualization and Analysis of Geospatial Information
Peter Becker, *ESRI*

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Advances at LizardTech
Room: 202 E
Moderator: Jon Skiffington, *LizardTech*

Advances in the LizardTech MrSID Technology
Jon Skiffington, *LizardTech*

ASPRS Committee and Board of Directors Meetings

Geographic Information Systems Division (GISD)
11:00 AM to 12:00 Noon, Room: 201 D

Remote Sensing Applications Division (RSAD)
11:00 AM to 12:00 Noon, Room: 203 A

Primary Data Acquisition Division (PDAD)
11:00 AM to 12:00 Noon, Room: 203 D

Memorial Address
12:00 Noon to 1:30 PM, Ballroom 104 D

Honoree

Paul Richard Wolf was born in Mazomanie, Wisconsin in 1934. He graduated from Mazomanie High School and served in the U.S. Army in Japan. Later, he attended the University of Wisconsin-Platteville and UW-Madison, graduating with a degree in Civil Engineering in 1960. Wolf began his career as a highway engineer for the Wisconsin Department of Transportation, then joined UW-Madison as an instructor in 1963, and completed his MS and PhD degrees in the area of surveying and analytical photogrammetry. In 1967, he joined the Civil Engineering faculty at the University of California-Berkeley. In 1970, he returned to continue his teaching and research career at his *alma mater*. Wolf was known as an extremely gifted teacher and mentor, and enjoyed a wonderful relationship with his students. He helped to educate hundreds. Virtually all of his approximately 50 graduate students now hold distinguished positions in education, government, and business throughout the world. He had graduate students from at least eight different countries on four continents.

Wolf's global impact on education in the broad fields of surveying, mapping, and photogrammetry was also accomplished through his authorship of three well-known textbooks on these subjects:

> *Elements of Photogrammetry* – translated into several foreign languages, now co-authored with Bon Dewitt, one of Wolf's graduate students, now on the faculty at the University of Florida.

> *Elementary Surveying* – distributed in Australia and Southeast Asia, now co-authored with Charles Ghilani, another of Wolf's graduate students, now on the faculty at Penn State University.

> *Adjustment Computations* – also co-authored with Charles Ghilani.

From 1979 until his retirement in 1993, Professor Wolf led the Surveying, Photogrammetry, and Remote Sensing Program within Civil and Environmental Engineering at UW-Madison. Perhaps his greatest legacy is the stream of students coming out of this program who went on to become educators around the world. Graduates of the program have populated the faculties of at least 12 universities in the United States and at least eight other universities around the world. This accomplishment was recognized by his peers, when in 1993, Wolf was presented with a special award from the North American Surveying and Mapping Teachers' Conference, recognizing the excellence of the program at UW-Madison and its long line of graduates who had gone on to become educators themselves. There is now a second generation of Wolf's students, that is, students of his students who have, in turn, gone on to become educators.

Professor Wolf received numerous other awards from scientific and professional organizations. Among the most noteworthy are the Talbert Abrams National Award from ASP; the Earle J. Fennell Award from ACSM; an Honorary Award for Educational Contributions from the Wisconsin Society of Land Surveyors; the Surveying and Mapping Award from ASCE; and five Presidential Citations from ASPRS, spanning 17 years from 1972 through1988.

Wolf was a fellow member of ASPRS and ACSM and a life member of ASCE. In addition, he was an active member of the International Society for Photogrammetry and Remote Sensing (attending all ISPRS international Congresses from 1972 until 2000). He was Charter President of the Wisconsin Chapter of ASP and served as National Director from the Western Great Lakes Region for six years. He was the ASPRS representative to Commission VI of ISPRS from 1972 to 1980. He was Chair of ASP's Nomenclature Committee and author of Chapter 19 of the Fourth Edition of the *Manual of Photogrammetry*.

In retirement, Professor Wolf continued his writings, with new editions of all three of his textbooks. He also devoted time to consulting work and became known nationwide as an expert in forensic photogrammetry.

Soon after Wolf passed away in March, 2002 at the age of 67, ASPRS established the Paul R. Wolf Scholarship, granted annually to an outstanding student committed to educating others in photogrammetry and the mapping sciences.

Presenter

Alan P. Vonderohe is Professor Emeritus in the Department of Civil and Environmental Engineering at the University of Wisconsin – Madison. He is a native of Illinois, having received his undergraduate and graduate degrees, with specialty in photogrammetry and geodetic science, from the University of Illinois at Urbana – Champaign. Vonderohe worked as a surveyor beginning in 1965 and served as an officer in the NOAA Corps from 1970 to 1973. While completing his PhD thesis in 1978, he applied for an open faculty position in the Surveying, Photogrammetry, and Remote Sensing Program at the University of Wisconsin – Madison. Paul Wolf was Chair of the search committee and, thus, began a long professional and personal relationship between them. Vonderohe already knew Wolf as a scholar and educator, having learned from *Elements of Photogrammetry* as a student.

Under Wolf's mentorship at UW-Madison, Vonderohe expanded his horizons to include GIS, remote sensing, and the broader umbrella of geospatial information science and engineering. He became involved in adaption of GIS and other spatial technologies to transportation problems, leading to active work with the Transportation Research Board. In his 27+ years at UW-Madison, he taught more than 30 different courses and had 30 graduate students. Since his retirement in 2006, Vonderohe has been a consultant on projects ranging from automated machine guidance for highway construction to strategic planning for adoption of spatial technologies in large government organizations.

Vonderohe has been active with ASPRS, having served as President of the Western Great Lakes Region and having received a Presidential Citation for Meritorious Service. He has presented a number of workshops and papers at ASPRS annual meetings and is serving on the technical program committee for the 2011 annual meeting. He also received the Earle J. Fennell Award from ACSM for outstanding contributions to education.

Awards Presentations
  Presidential Citations
  Region Awards
    Region of the Year
    Region Newsletter of the Year
    Region Website of the Year
  GeoLeague Challenge Awards

Technical Sessions
1:30 PM to 3:00 PM

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NGA Special Session IIIC - Compressive Sensing
Moderator: Ed Bosch, *NGA*
Room: 202 C

Roundtable Discussions on Compressive Sensing Issues

Applications and Challenges of Compressive Sensing in Imaging and Spectroscopy
Kevin Kelly, *Rice University*

Compressing Lidar Waveform Data: Surface Classification and Peak Detection
Charles Toth, *Ohio State*
Dorota Grejner-Brzezinska, S. Laky, and P. Zaletnyik

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PDAD Special Session 3 - Lidar Quality Assurance and Interoperability
Moderators: Lewis Graham*, GeoCue,* and Karl Heidemann*, U. S. Geological Survey*
Room: 201 B

Seven panel members selected from Industry and government.

Lidar "calibration" refers to the process of boresight corrections, adjustment to surveyed control, and the removal of various system-specific systematic errors within the point cloud data and is performed by the data producer. This contrasts with lidar "instrument calibration" which is performed by the instrument manufacturer at the factory. Lidar calibration is accomplished through a wide range of techniques and varies widely across different data vendors. At present, there are no standard, consistent, industry-wide methods for assessing and reporting how successful the calibration process was on any given project. Moreover, the current standard practice of measuring and reporting the accuracy of a "lidar collection" is based on assessment of the derived output DEM, rather than on the source lidar point cloud data itself. While the hope of data users is that vendors would not process point data that is of questionable accuracy into DEMs, the industry has no standard means or practices to assure this is the case. The panel will address these issues.

Wednesday, May 4th

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Integrated Spatial Sensors and Technologies II

Moderator.Bill Tredinnick, *Wisconsin DOT*
Room: 202 B

Semantics for Complex Features from Images
Dalia Varanka, *U.S. Geological Survey*
E. Lynn Usery

Optimal Ranges to Evaluate Sub-pixel Classifications for Landscape Metrics
Amy Frazier, *University at Buffalo*
Le Wang

Analyzing the Impacts and Trends of Historical Copper Mining Stamp Sands in Michigan's Keweenaw Peninsula using the US Army Corps of Engineers' CHARTS Lidar and Multispectral Coastal Mapping System
Colin Brooks, *Michigan Tech Research Institute*
Robert Shuchman, Bruce Sabol, W. Charles Kerfoot, Sarah Green, Michael Sayers, Nathaniel Jessee, K. Arthur Endsley, and Jamey Anderson

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GIS Modeling for Resource Management

Moderator: Steven Steinberg, *Humboldt State University*
Room: 202 E

An Agent Based Modeling Approach for Representing Capuchin (Cebus spp.) Behavior in Brazil
Sergio Bernardes, *University of Georgia*
Allison Howard Eury, Andrea Presotto, Marguerite Madden, Dorothy M. Fragaszy, Thomas Jordan, Patricia Izar, and Yuri Tavares-Rocha

Modeling Riparian Zones Utilizing DEMs, Flood Height Data, Digital Soil Data and National Wetland Inventory Via GIS
Sinan Abood, *Michigan Technological University*
Ann Maclean and Lacy Mason

Comparison and Evaluation of Medium to Low Resolution Satellite Imagery for Regional Lake Water Quality Assessment
Leif Olmanson, *University of Minnesota*
Marvin Bauer and Patrick Brezonik

Inventory of Vegetation Spectral Properties in the South Bay Salt Ponds: A Database for Enhancing Decision Support and Restoration Mapping
Wei-Chen Hsu, *DEVELOP*
Ann Elkins, Rachael Marzion, Krysti Sukita, and Eve Minkin

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Using Multiple Data Sources

Moderator: Jarlath O'Neil-Dunne, *University of Vermont*
Room: 203 D

Acquisition of Airborne Lidar and Orthoimagery for National Parks, Forests and Parkways in the Southern Appalachian Mountains
Thomas Jordan, *Center for Remote Sensing and Mapping Science (CRMS)*
Marguerite Madden, J.B. Sharma, and Sudhanshu Panda

Incorporating Contextual Information into Object-based Image Analysis Workflows
Jarlath O'Neil-Dunne, *University of Vermont*
Sean MacFaden, Keith Pelletier, and Anna Royar

Building Shadow Extraction in High Resolution Satellite Stereo Imagery using Aerial Lidar Data as an Aid
Gang Qiao, *Tongji University*, China
Weian Wang, Xiaoli Fu, Bin Cao, and Jinglei Zhang

The Identification and Resolution of Spectral Confusion — A Case Study Based on Land Cover Mapping of Wrangell-St. Elias National Park and Preserve, AK
Kenneth Stumpf, *Geographic Resource Solutions*

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Advancements in Image Matching, Feature Extraction, and 3D Analysis

Moderator: Ji Sang Park, *Electronics & Telecommunications Research Institute*
Room: 203 B

Detecting Occlusions in Façade Interpretation from Vertical Aerial Images
Philipp Meixner, *Graz University of Technology*, Austria
Franz Leberl

Comparative Analysis of Human and Automated Correspondence for Photogrammetric and Non-photogrammetric Image Registration
Peter Doucette, *Integrity-Apps*
Edward Mikhail and Hank Theiss

Exploration on Multi-View Oblique Imagery for Robust Building Detection
Jing Xiao, *ITC*, Netherlands
Markus Gerke and George Vosselman

A Fast 3D Spatial Analysis Technique using Graphic Process Units
Ji Sang Park, *Electronics & Telecommunications Research Institut*e
Jong Min Lee, Seung Yeob Lee, and Sung Woong Shin

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Special Session — The History of the Future

Moderator: Mike Flynn, *MJ Harden*
Room: 203 C

The ASPRS Films Committee will highlight the activities that have been in progress for the past several years. They will discuss the connections with the Geospatial Revolution and Oral History project and how those programs are different yet overlapping, and they will use this session to exhibit the various committee activities including completed films, interviews, future films, archives, archive website and the virtual memorial.

Personal Observations of ASP and ISP through the Lens of the Oral History Project
Chuck Olson, *Michigan Tech Research Institute*

The History of the Geospatial Revolution and ASPRS Films Project
Karen Schuckman, *Penn State University*

The Video Production Process
Jim Campbell, *Virginia Tech*

ASPRS History Website and Archive — Demonstration of the Website with Thoughts on the Reasons for Collecting Data and uses of the Archive Material – Introduction of the ASPRS Memorial Wall and Future Film Projects
Alan Voss, *TVA* (retired)

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Special Session — Red Edge and WORLDVIEW-2 Remote Sensing

Moderator: Chris Padwick, *DigitalGlobe*
Sponsored by the ASPRS Remote Sensing Applications Division
Room: 202 D

This session will include a general discussion of the capabilities and applications of sensors with bands located in the so called red edge portion of the electromagnetic spectrum, including new sensors such as WORLDVIEW-2. The session will also include other aspects of WORLDVIEW-2 data analysis and application.

Red Edge Remote Sensing
Joseph Knight, *University of Minnesota*

Image Classification with Derived Angular Reflectance and Height Map Data from WORLDVIEW-2 Multiangle Acquisition Sequence
Nathan Longbotham, *DigitalGlobe*
Chris Padwick, C. Bleiler, C. Chaapel, and F. Pacifici

Coastal Applications of WORLDVIEW-2 High Resolution Multi-spectral Imagery
Giovanni Marchisio, *DigitalGlobe*
Chris Padwick and Fabio Pacifici

Evidence of Improved Vegetation Discrimination and Urban Mapping using WORLDVIEW-2 High Resolution Multi-spectral Imagery
Giovanni Marchisio, *DigitalGlobe*
Fabio Pacifici and Chris Padwick

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Special Session: Assessment of the Business Requirements and Benefits of Enhanced National Elevation Data

Moderators: Gregory I. Snyder, *U.S. Geological Survey* and David Maune, *Dewberry*
Room: 201 A

The U.S. Geological Survey and other members of the National Digital Elevation Program are sponsoring the first-ever national assessment to document Business Use requirements and benefits for enhanced elevation data at a national scale. Enhanced elevation data refers to precise three-dimensional measurements of the terrain, built-up features, vegetation structure and submerged near-shore topography. The goal of the assessment is to identify program implementation alternatives, including the costs and benefits of meeting priority Federal, State and other national needs. The assessment seeks to quantify answers to key questions: 1) is it more cost effective for the Government to manage these activities within the context of a national program, 2) are there additional national or agency benefits derived from such a strategy, and 3) what does the optimized program look like? The information will be used as a planning basis for evolving current elevation programs to better meet national needs.

This presentation by the co-authors will summarize the status to date of this assessment which is expected to be completed in a final report in late summer, 2011.

MILWAUKEE

Potawatomi Bingo Casino is Wisconsin's largest tourist destination offering the best bingo, slots and Las Vegas-style table games. You can also enjoy world-class dining and live national entertainment all under one very large roof. Minutes from downtown and a free shuttle from the Hyatt Regency Milwaukee makes this destination a great evening out.

Wednesday, May 4th

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Remote Sensing and GIS Research for Forestry Applications

Moderator: Jonathan Chipman, *Dartmouth College*
Room: 202 A

Discrimination of Pine and Fir Dominant Forest Types across Complex Terrain
Raechel Bianchetti, *Pennsylvania State University*
Karen Humes, Michael Jennings, and Christopher Williams

Analyzing Emerald Ash Borer Infestations using Hyperspectral Tools
Laura Calandra, *SUNY ESF*
Lindi Quackenbush, Jungho Im, and Steven Stehman

Improving Forest Growth Estimates using a Bayesian Network Approach
Yaseen Mustafa, *ITC*, Netherlands
A. Stein and V. Tolpekin

Estimating Tree Canopy Density using Landsat and Ancillary Spatial Data in Reclaimed Coal Mines of Southwestern Virginia
Susmita Sen, *Virginia Tech*
Randolph H. Wynne, Carl E. Zipper, and John W. Coulston

Beverage Break
3:00 PM to 3:30 PM, Exhibit Hall 301 C
Sponsored by Aero-Metric, Inc.

aerometric Geospatial Solutions

Technical Sessions
3:30 PM to 5:00 PM

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NGA Special Session IV — Tradecraft for Remote Sensing and Data Exploitation

Moderator: Jim Kindig, *NGA*
Room: 202 C

Teaching Activity-Based GEOINT – Tradecraft
Todd S. Bacastow, *Penn State*
Dennis Bellafiore and Peter Forster

Advancing GEOINT Through Tradecraft
Gregg Clark, *NGA*

Panel Discussion with Representatives of Industry, Academia, and NGA on Evolving Tradecraft, Identifying Competencies of the Future Geospatial Workforce, and Certification.

Moderator: Mr. Gregg Clark, *NGA*

Panelists:
Max Baber, *USGIF*
UCGIS
ASPRS
NGA

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Software and Algorithms

Moderator: Evan Brooks, *Virginia Polytechnic Institute*
Room: 203 D

Fitting the Multitemporal Curve: A Fourier Series Approach to the Missing Data Problem in Remote Sensing Analysis
Evan Brooks, *Virginia Polytechnic Institute*
Valerie A. Thomas and Randolph H. Wynne

libLAS: Open Source LAS Programming
Howard Butler, *Hobu, Inc.*

Multiple-sensor Data Fusion Combining Visible and Thermal Spectrums
Dor Yolan, *Icaros, Inc.*

Automatic Change Detection Baes on Spatial Chaotic Model
Hossein Aghababaee, *University of Tehran*, Iran
J. Amini and Yu-Chang Tzeng

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Integrated Spatial Technologies

Moderator: Thomas Tiner, *Michael Baker Jr.*
Room: 202 B

Transportation Data Collection and Distribution
Thomas Tiner, *Michael Baker Jr.*

Field Ground Truthing Data Collector: A Mobile Toolkit for Image Analysis and Processing
Xiaoliang Meng, *Eastern Michigan University*
Yichun Xie and Andy Henry

INTEROP Network to Support Geospatial Data Semantic Interoperability
Nancy Wiegand, *University of Wisconsin - Madison*

Economic and Societal Impacts of Geographic Information in the Geoeconomy
Bob Ryerson, *Kim Geomatics Corporation*
S. Aronoffa

MILWAUKEE

We can not talk about Milwaukee without taking about the Brewpubs! Beer halls and taverns are abundant in the city to this day. The historic Milwaukee Brewery, located in "Miller Valley", is the oldest still-functioning major brewery in the United States. The Miller Brewing Factory tour is a fun and free way to celebrate a large part of Milwaukee's history.

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Advanced Mapping Applications

Moderator: Pete Jenkins, *Minnesota Department of Transportation*
Room: 202 D

Case Study of Beam Deformation Monitoring Using Conventional Close Range Photogrammetry
Ivan Detchev, *University of Calgary*, Canada
Ayman Habib and Mamdouh El-Badry

Photogrammetry Point Clouds Applied to Electrical Transmission Lines Vegetation Detection
Tony St-Pierre, *Xeos Imaging*
Zhijun Wang and Aurelien Boulben

Review of Recent Advances in Tide-coordinated Shoreline Study and Generation
Anuchit Sukcharoenpong, *The Ohio State University*
Rongxing Li, Christopher E. Parrish, and Jung-Kuan Liu

Lobster Buoy Counting using Photogrammetry
Claire Kiedrowski, *KAPPA Mapping, Inc.*

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Special Session — Geopositioning from UAS Platforms

Moderator: Pat Woodruff, *Airborne Data Sensors*
Sponsored by the ASPRS Defense and Intelligence Subcommittee
Room: 201 B

This is the second of three sessions that will focus on the development and integration of key photogrammetric-based technologies and their application in supporting improved geospatial capabilities. This session is focused specifically on geopositioning from UAS platforms.

Geopositioning from Next-Gen Lidar Systems
Richard Cannata, *Harris Corporation*

Image Registration Issues for Airborne Sensors
Edward Mikhail, *Purdue University*

A Snapshot of Today's Technical Challenges with Automated Registration of UAS Imagery to Reference Sources
John Marshall, *Integrity Applications Incorporated*

Exploitation of UAV and Lidar Data
Joseph Spann, *BAE*

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Special Session: Large-scale Mapping: Alaska Statewide Mapping Refresh – Overview and Current Status

Moderator: Thomas Heinrichs, *University of Alaska Fairbanks*
Room: 203 C

Alaska currently has the oldest and least accurate maps of any state in the United States. There is no statewide digital orthoimage layer for the state other than Landsat data. The current National Elevation Database (NED) for Alaska is at coarse resolution (2-arcsecond postings) and has significant accuracy limitations. The Alaska Statewide Digital Mapping Initiative, a multi-agency partnership, is addressing these shortcomings through two projects: the creation of a new statewide orthomosaic imagery base layer and the collection of data for an improved accuracy DEM. This session will highlight the structure and status of this extremely challenging mapping project.

Historic and Current Status of Alaska Orthoimagery and Elevation Mapping and Statewide Mapping Overview
Thomas Heinrichs, *University of Alaska Fairbanks*

Statewide Orthoimagery Collection Overview
Tony Follet, *Aero-Metric*

Source Imagery from SPOT 5 satellite
Drew Hopwood, *Spot Image*

Orthoimagery Processing
John Knowleton, *Fugro Earthdata*

Statewide DEM Collection Overview
Dave Maune, *Dewberry*

Fugro GeoSAR Airborne Dual-Band IfSAR
Bert Kampes, *Fugro Earthdata*

STAR IfSAR Collection
Lorraine Tighe, *Intermap*

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Special Session: Academic Publishing

Moderators: Sinan Abood, *Michigan Technological University*
   and Anna Patterson
Sponsored by the ASPRS Student Advisory Council
Room: 201 A

This session will provide graduate students and young professionals an introduction to the peer review publication process. Details will be presented on the proper organization, preparation and submission of a manuscript. This session will also provide insight on how to choose an appropriate journal, draft a letter to the editor, and address reviewer comments. Students will learn what to expect during all steps of the publication process.

Panelists:
Russell G. Congalton, Editor-in-Chief, *PE&RS*
Jie Shan, Assistant Editor, *PE&RS*
Ann MacLean, Professor, *Michigan Technical University*

Wednesday, May 4th

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Advancements in Visualization and Simulation Technologies

Moderator: Tim Kennedy, *Wisconsin State Cartographer's Office*
Room: 203 E

Spatiotemporal Visualization for the Spread of Influenza A(H1N1) Pandemic
Rifaat Abdalla, *Defense Research and Development Canada*, Canada

Creation and Testing of Synthetic Aerial Framing Camera Imagery via Computer Graphics
Paul Pope, *Los Alamos National Laboratory*

The Multidimensional Viewshed: A Visualization Technique for Landscape Planning
Brent Chamberlain, *University of British Columbia*, Canada
Mike Meitner

Evaluating Error Sensitivity in Photogrammetry with 3D Optical Simulation Software
Yue Dong, *University of North Carolina at Charlotte*
Thomas Hutchens, Angela Davies, Brigid Mullany, and Edward Morse

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Lidar Research and Applications

Moderator: Dave Hart, *Continental Mapping Consultants*
Room: 202 A

Accuracy and Error Assessment of Terrestrial, Mobile and Airborne Lidar
James Van Rens, *Riegl USA*
Ananda Fowler, Josh France, and Vladimir Kadatskiy

Quality Assurance and Potential Applications of a High Density Lidar Data Set for the City of New York
Sean Ahearn, *Hunter College - The City University of New York*

Application of Ground-based Lidar for Gully Investigation in Agricultural Landscapes
Henrique Momm, *U.S. Department of Agriculture*
Ronald Bingner and Robert Wells

Building Type Classification using Spatial Attributes Derived from Lidar Remote Sensing Data
Zhenyu Lu, *SUNY ESF*
Jungho Im and Michael Hodgson

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Land Cover Assessment I

Moderator: Laura Calandra, *SUNY ESF*
Room: 203 B

Monitoring Seasonal Snow Cover Variability on Historical Timescales using Landsat Remote Sensing
Christopher Crawford, *University of Minnesota*
Steve Manson and Marvin Bauer

Hurricane Induced Land/Water Change Detection for Chandeleur Islands using Landsat 5 TM
Vandana Varshini Raghunathan, *Louisiana State University*
Nan Walker

Land Cover Variability Across Spatial and Temporal Scales: Implications for Wild Ungulate Populations in Tanzania
Jonathan Chipman, *Dartmouth College*
Tom Morrison and Doug Bolger

Lidar-based Mapping of Serpentine Soils, Lassen and Plumas National Forests
Eric Miller, *Humboldt State University*
Mahesh Rao

Social Event — Milwaukee Public Museum
6:00 PM to 9:30 PM

Student & Young Professionals
Courtesy of the ASPRS Student Advisory Committee (SAC)

The plan is to go to the ASPRS-organized Social Event and take the opportunity to visit the Milwaukee Public Museum. After the visit to the museum what better way to end our final night out at the conference in the "beer capital of the world" than visiting one of the local microbreweries? **Water Street Brewery** offers a variety of good food and great beer choices for everyone. If we decide on a change of scenery, we can walk over to **Bar Louie** across the street or the **Harp Irish Pub**, less then a minute away.

Join Us!

6:00 pm to 9:30 pm on Wednesday, May 4th
Milwaukee Public Museum

The Milwaukee Public Museum is a short three block walk from the Hyatt Regency Milwaukee Hotel and one block from the Frontier Airlines Center. Walking maps can be found at the Conference Registration Desk in the Frontier Airlines Center. Bus transportation will be provided as an alternative. Buses will load at the Hyatt Regency Milwaukee Hotel, Third Street Entrance, at 5:45 PM off the Hotel lobby and will run on a continuous basis throughout the evening. Attendee tickets will be required at the entrance to the Milwaukee Public Museum. Tickets may not be purchased at the Milwaukee Public Museum.

Come join your friends and colleagues for an evening of networking, laughter, and fascinating exhibits around every corner. Take a trip around the world in one evening and enjoy food and refreshments throughout the experience.

The evening at the Milwaukee Public Museum is included in the registration for those paying the Full, Presenter/ Moderator and Spouse/ Guest Registration fee. All others, including children, wishing to attend this event MUST purchase tickets in advanced at the ASPRS Registration Desk in the Frontier Airlines Center no later than 10 am on Tuesday, May 3rd. Tickets will not be sold onsite at the Milwaukee Public Museum. Adult tickets for this event are $85 and tickets for children 13 years of age and under are $35. Children over 13 years of age must have an adult ticket.

Join us for exclusive access to one of the largest museums in the United States for human and natural history. Visit the Streets of Old Milwaukee and European Villages to ancient Mediterranean civilizations and dinosaur replicas - even a Live Butterfly Garden. The Milwaukee Public Museum provides a dynamic and stimulating environment for all who visit.