

Celebration of 125 Years of USGS Topographic Mapping

On December 3, 2009, more than 300 people gathered at the U.S. Geological Survey (USGS) headquarters in Reston, Virginia, to celebrate the 125th anniversary of USGS topographic mapping. Presentations featured discussions of the benefits of topographic maps, the history of USGS topographic mapping, the announcement of a new USGS digital topographic map and a new method for viewing and accessing topographic information via the Internet, and advice on future directions. The USGS made the first Henry Gannett Award for distinguished contributions to topographic mapping and the Topographic Employee Recognition Award to honor the past, present, and future contributions of USGS employees, without whom there would be no wealth of topographic map information to meet the challenges facing the Nation.

Celebration of 125 Years of USGS Topographic Mapping

One hundred and twenty-five years ago, in testimony to Congress on December 5, 1884, John Wesley Powell, the second director of the USGS, testified to Congress that “[a] Government cannot do any scientific work of more value to the people at large, than by causing the construction of proper topographic maps of the country.” Since that time, the USGS has mapped all corners of the United States and its commonwealths and territories. The Nation’s investment in the primary series of more than 55,000 topographic maps alone represents more than 35 million hours of effort.



Figure 1. John Wesley Powell.

While the techniques to create and disseminate topographic map information change – from the pack mules and transits of long ago to remote sensing and computers of today to crowd-sourcing and scientific applications of tomorrow – USGS continues to provide current, accurate, and complete topographic information to address the needs of the Nation.

Presentations

On December 3, 2009, the USGS hosted a celebration of the 125th anniversary of topographic mapping. Following welcoming remarks from USGS Director Marcia McNutt and Deputy Director Robert Doyle, and a powerful musical program by the Duke Ellington School for the Arts Concert Chorale, the celebration featured presentations by Assistant Secretary Anne Castle, Mark DeMulder, Kari Craun, and Dr. David Cowen.

Anne Castle, Assistant Secretary for Water and Science in the Department of the Interior, on the benefits the Nation receives from USGS topographic maps. Castle noted “But maps aren’t just important for their own sake. Geographic information and maps are tools that enable us to do other tasks: to build highways, carry out a census, search for minerals, protect lands with cultural or environmental significance, or simply hike to a hidden fishing lake ...”

Mark DeMulder, Director of the USGS National Geospatial Program, on the legacy of USGS topographic mapping. The USGS recently published the *History of the Topographic Division (Branch)* which reviews mapping activities from the 19th century to the mid-1950’s (see <http://pubs.usgs.gov/circ/1341/>). DeMulder described *The National Map* as the topographic map for the 21st century. “*The National Map* is seamless, continuously maintained, nationally consistent base geographic data that provides a foundation for science, land and resource management, recreation, policy making, and homeland security.”

Kari Craun, Director of the USGS National Geospatial Technical Operations Center, on two new USGS topographic mapping products and services available through <http://nationalmap.gov>:

- The US Topo, the next generation of digital topographic maps. US Topo combines the look and feel of the traditional USGS topographic maps with modern technical advantages that support faster public distribution and enable basic, on-screen geographic analysis by all users. Craun stated that “the US Topo, available on the web, is next generation of topographic maps. We plan to revise them every three years.”
- A new viewer for *The National Map*, through which users can view and download USGS topographic map data and link web services containing topographic map information to other popular viewers such as the Google Earth™ mapping system and Bing Maps. Craun reported that the viewer provides “one-stop to download data and view services available from *The National Map*.”

Dr. David Cowen, Distinguished Professor Emeritus, University of South Carolina, reviewed his career-long use of USGS topographic maps and digital information. He recommended some key messages from the book *What Would Google Do?* by Jeff Jarvis as useful to the USGS, including “your best customer is your partner” and “do what you do best and link to the rest.” USGS customers identified key future directions in a recent survey (see <http://pubs.usgs.gov/of/2009/1222/>). Dr. Cowen noted that USGS is headed in these directions but much more work is needed. He closed by noting the importance of parcel data to the Nation.

Awards

The event concluded with the presentation of two awards:

Henry Gannett Award

The first annual Henry Gannett Award for especially distinguished contributions to topographic mapping of the Nation. The award is presented in honor of Mr. Gannett who, as USGS Chief Geographer, took charge of topographic mapping in 1882.



Figure 2. Henry Gannett.

Roberta “Robin” Carroll, Director of the Geospatial Service and Technology Center of the U.S. Forest Service, received the award. Under Ms. Carroll’s leadership, the Forest Service has created detailed topographic map information for National Forests and Grasslands that meet the needs of the Nation as well as those of the U.S. Forest Service.

Topographic Employee Recognition Award

The Topographic Employee Recognition Award to recognize past, current, and future employees without whom the Nation would not have the wealth of topographic maps currently available.

Exhibits

The exhibits chronicled 125 years of equipment and techniques used in USGS topographic mapping. 🇺🇸



Three people represented all employees:

- Roy Mullen on behalf of former employees. Roy was an Assistant Division Chief who oversaw the topographic mapping program and is a respected member of the Nation’s mapping community.
- Randy MacCash and Richard Shields of the National Geospatial Technical Operations Center on behalf of current and future employees. They were selected to participate by their co-workers. Mr. MacCash is based in Rolla, Missouri, and Mr. Shields in Lakewood Colorado.

Master of Ceremonies

Dr. Charles Ogrosky, a USGS retiree and member of the team that defined the vision for *The National Map* in 2001, was the master of ceremonies.

Thanks for Joining Us!

More than 300 persons, including officials from Federal agencies, State Geologists and GIS professionals, executives from professional societies and the private sector, and academia, attended the event. The ceremony was transmitted live to the National Geospatial Technical Operations Center locations in Denver, Colorado and Rolla, Missouri. Audio from the event was transmitted to USGS geospatial liaisons in field locations. The USGS thanks all who made the event a memorable occasion. 🇺🇸

Anne Castle, Assistant Secretary for Water and Science: *National Mapping—National Benefits*



Figure 3. "As the Nation's lead mapping organization, a fundamental duty for the U.S. Geological Survey has been, and continues to be, ensuring the availability of complete, consistent, and current base geographic information."



Figure 4. "But maps aren't just important for their own sake. Geographic information and maps are tools that enable us to do other tasks: to build highways, carry out a census, search for minerals, protect lands with cultural or environmental significance, or simply hike to a hidden fishing lake ..."

Mark DeMulder, Director, USGS National Geospatial Program: *Mapping at the USGS—A Brief Look at Our History*



Figure 5. "The National Map is seamless, continuously maintained, nationally consistent base geographic data that provides a foundation for science, land and resource management, recreation, policy making, and homeland security."

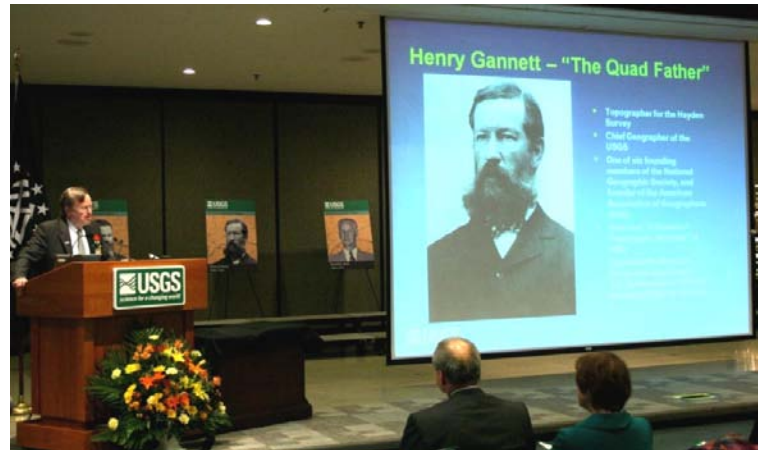


Figure 6. DeMulder introduces Henry Gannett, an early Chief Geographer at the USGS. Gannett is widely considered to be the father of American topographic mapping. One practice was to organize maps as quadrangles, and so Gannett is known familiarly to some as the "Quad Father."

Kari Craun, Director, National Geospatial Technical Operations Center: *Building on 125 Years of Topographic Map Information—New Products and Services*



Figure 7. “We will continue the characteristics important to our customers: complete and consistent topographic map information that is readily-accessible, field-ready, and available without restrictions on use.”



Figure 8. “The new viewer for *The National Map*, available through <http://nationalmap.gov>, provides one-stop access to download topographic map data, view web services, and access US Topo maps.”

Dr. David Cowen, Distinguished Professor Emeritus, University of South Carolina: *USGS Topographic Maps and Data—A Personal Journey and Look Ahead*




Figure 9. “Do what you do best and link to the rest.”



Figure 10. Presentation to Dr. Cowen of a satellite image map of South Carolina in appreciation for his remarks at the celebration and his long-standing support to USGS. Pictured from left-to-right are Mark DeMulder, USGS National Geospatial Program Director, Dr. Cowen, Deena Myles (USGS), and USGS Deputy Director Robert Doyle.

Introducing the US Topo

US Topo is the next generation of USGS topographic maps. Available on the web through <http://nationalmap.gov> and arranged in the traditional 7½-minute quadrangle format, digital US Topo maps are designed to look and feel like the traditional topographic maps. They add modern technical advantages that support wider and faster public distribution

and enable basic, on-screen geographic analysis by all users. The files are used with software that reads Portable Document Format (pdf) files. Most computer users have such software, which is available for free on the Internet. US Topo Maps are perfect for uses in the field when the Internet is not available; the files contain all needed information. 

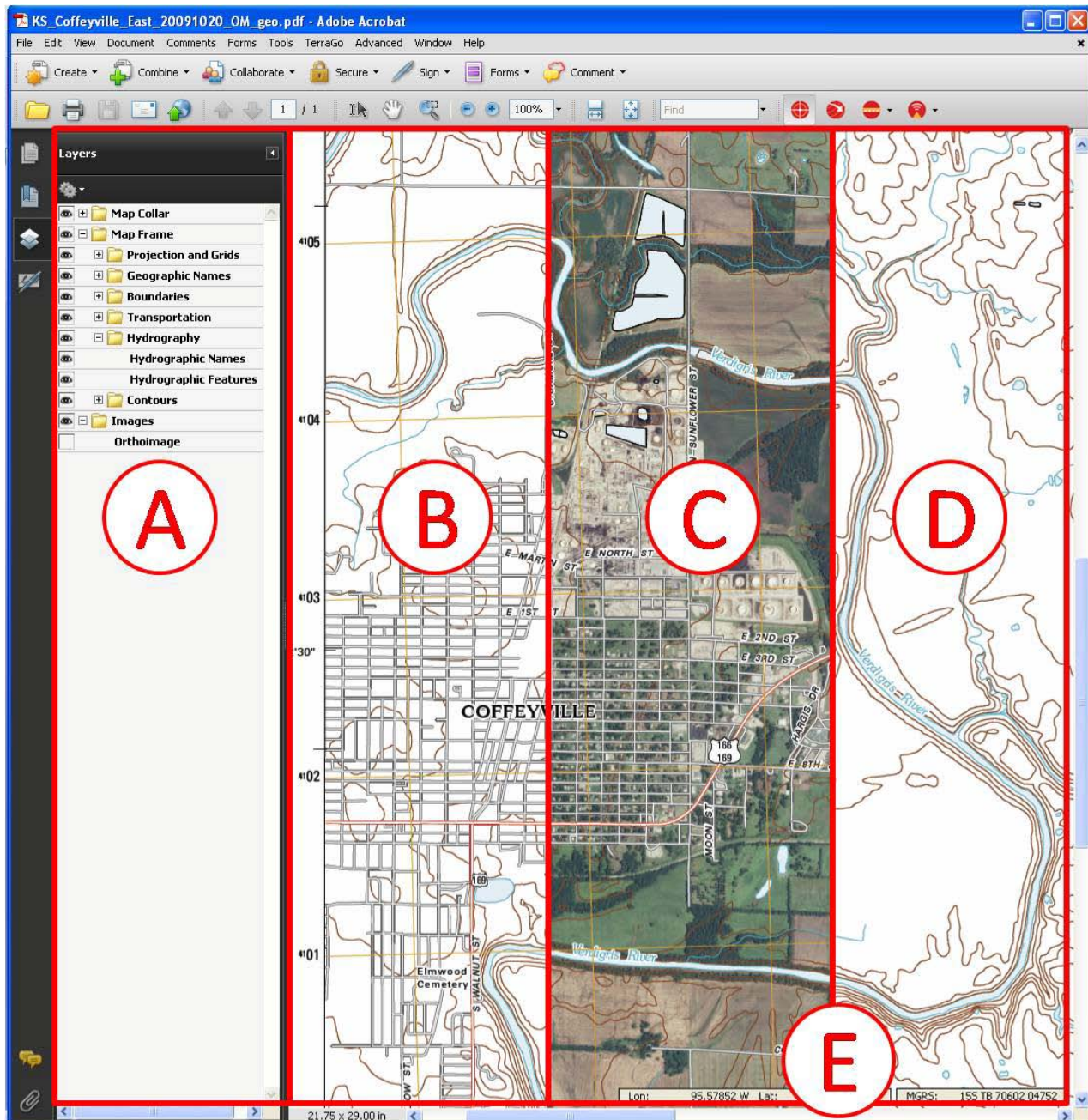



Figure 11. Portion of the US Topo map for Coffeyville, Kansas. New features allow the user to mix-and-match the information (using options in area A) to create a topographic map (B), a topographic map with an image (C), selections of topographic map information such as only elevation and surface water (D), or other chosen combinations. Additional software provides a coordinate readout (E) that reports the location of the cursor in longitude and latitude and other coordinate systems. Other software tools are available that allow users to measure distances and areas, and use the map with GPS.

Introducing the New Viewer for *The National Map*

The new viewer for *The National Map*, available as a beta release at <http://nationalmap.gov>, provides one-stop preview and download of topographic data, and access to web map services and US Topo maps over the Internet. Features include (1) maps images developed by USGS; (2) the ability to use data in other map viewers and GIS software

such as the Google Maps™ mapping system, Bing Maps, and ESRI® ArcMAP™; (3) simple methods to “mash-up” (combine) *The National Map* with other services, and (4) tools to obtain more information for features portrayed on the maps, change coordinate systems, measure lengths and areas, and make and share annotations. 

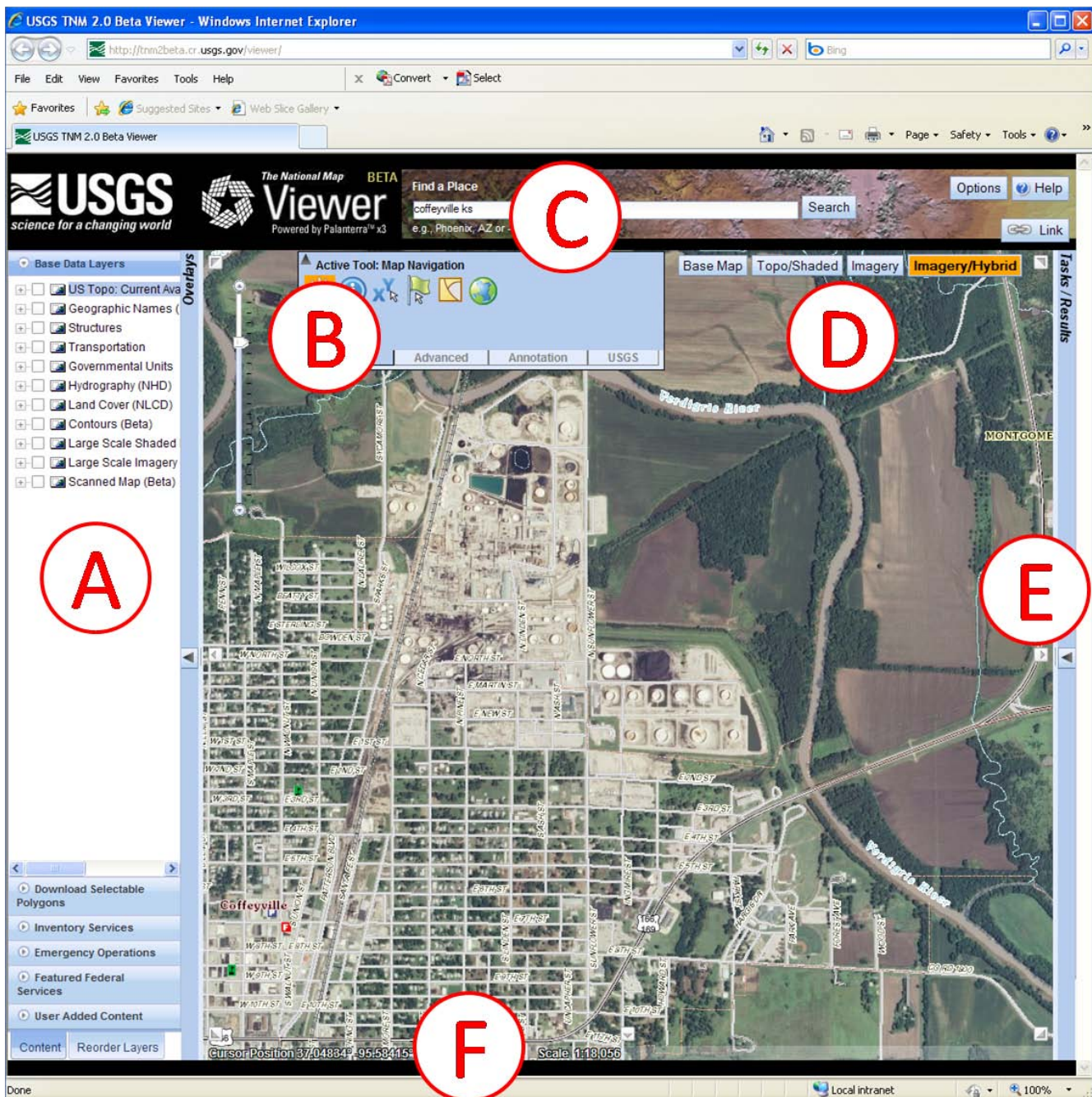


Figure 12. The viewer for *The National Map* showing imagery and topographic map data for Coffeyville, Kansas. Features of the viewer include (A) the ability to choose data overlays for display and download, (B) tools to get more information or measure distances and areas, (C) zoom to a place, (D) change map displays with one click, (E) open the display to show the results of tasks, and (F) readouts of coordinates and map scale.

Awards

The Henry Gannett Award

The USGS presents the Henry Gannett Award to recognize especially distinguished contributions to the topographic mapping of the Nation.

The USGS is pleased to make the first annual award to Roberta Carroll. Known as “Robin” in the mapping community, she is the Director of the U.S. Forest Service’s Geospatial Service and Technology Center, a position she has held since 1992. Through her leadership, the U.S. Forest Service contributes to the topographic mapping of the Nation by providing topographic maps, imagery, and geospatial data for National Forests and Grasslands. These products help to complete the detailed topographic map coverage of the Nation as well as meet the needs of the U.S. Forest Service. 🇺🇸



Figure 13. Roberta Carroll of the U.S. Forest Service, center, is the first recipient of the Henry Gannett Award for especially distinguished contributions to topographic mapping for the Nation. Also in the picture are Mark DeMulder (left), Director of the USGS National Geospatial Program, and Robert Doyle (right), USGS Deputy Director.

Topographic Employee Recognition Award

The USGS took the opportunity of the 125th anniversary to recognize past, current, and future employees – without whom the Nation would have not have the wealth of topographic maps and information available today. In testimony on December 4, 1884, John Wesley Powell reminded the Congress that to carry out the USGS mission “[t]he topography goes first.” Three people received the award on behalf of the workforce:

- Roy Mullen, on behalf of former USGS employees. Mr. Mullen was an Assistant Division Chief who oversaw the topographic mapping program and is a respected member of the Nation’s mapping community.
- Randy MacCash and Richard Shields, on behalf of current and future employees. They were selected to participate by their co-workers in National Geospatial Technical Operations Center locations in Rolla, Missouri and Denver, Colorado. 🇺🇸



Figure 14. (Photo on the left) Randy MacCash and Richard Shields, from the National Geospatial Technical Operations Center Locations in Rolla and Denver (respectively), and Roy Mullen display the Topographic Employee Recognition Award. (Photo on the right) Mr. Mullen reminds attendees about the proud tradition of USGS topographic mapping.

Special Guests

USGS was honored to host many distinguished guests, including officials from several Federal agencies, State Geologists and GIS professionals, executives from industry and professional societies, and academia. They included:

- Anne Castle, the Assistant Secretary for Water and Science in the Department of the Interior.
- Bryant Cramer, the Associate Director for Geography at USGS, under whom USGS topographic mapping activities occur.
- Dr. Santiago Borrero, the Secretary General of the Pan American Institute of Geography and History.
- Juliana Blackwell, the Director of the National Geodetic Survey.
- John Hebert, the Chief of the Geography and Maps Division of the Library of Congress.
- Allen Carroll, the Chief Cartographer of the National Geographic Society.
- Jack Dangermond, the President of ERSI.
- Lowell and Peggy Starr, both retirees from USGS. Under Mr. Starr's leadership as Mapping Division Chief came much of the USGS's early progress on the creation of geospatial data.
- William Radlinski and his wife Terry. Known as "Rad" among his friends in USGS, Mr. Radlinski first served the Nation by mapping in Europe during the Second World War. Following his wartime service and college, he joined the USGS in 1949. During his 30 years of service at USGS, he held several leadership posts,



Figure 15. Bryant Cramer, the USGS Associate Director for Geography



Figure 16. Terry and William Radlinski.

including those for program planning and research activities in the Topographic Division, Associate Chief Topographic Engineer, USGS Associate Director for ten years, and acting USGS Director. He also held several leadership posts in professional societies. 🇺🇸



Figure 17. Senior staff of the USGS Geography Discipline. From left to right are Bryant Cramer, the Associate Director for Geography; lone Taylor, the Chief Scientist; Mark Naftzger, the Chief for Operations; and Larry Sugarbaker, the Senior Advisor for *The National Map*. In the foreground is Karen Siderelis, the Geospatial Information Officer for the Department of the Interior.



Figure 18. Dr. Charles Ogrosky, master of ceremonies.



Figure 19. From left-to-right: Allen Carroll (Chief Cartographer, National Geographic Society), Jack Dangermond (President, ESRI), Doug Bellomo (Director, Risk Analysis Division, FEMA), Dr. David Cowen (Distinguished Professor Emeritus, University of South Carolina), Larry Sugarbaker (Senior Advisor for *The National Map*, Geography Discipline, USGS), Dr. Jerome Dobson (President, American Geographical Society), and Dr. Stephen Guptill (USGS retiree).

Duke Ellington School of the Arts Concert Chorale

Under the direction of Samuel L. Bonds, the chorale performed *The Battle Hymn of the Republic*, *Ride on King Jesus*, and *It Ain't Necessarily So*. The audience responded with a standing ovation. 🇺🇸



Figure 20. The Duke Ellington School of the Arts Concert Chorale.

Thanks for joining us!



