



United States Department of the Interior

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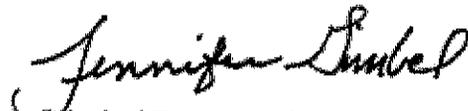
CITATION

FOR MERITORIOUS SERVICE

ROBERT A. AYUSO

In recognition of his exceptional leadership and scientific contributions to the U.S. Geological Survey (USGS).

Dr. Robert Ayuso's career has been dedicated to using radiogenic isotopes and geochemical analyses to address fundamental questions of ore genesis, regional metallogeny, and environmental geochemistry. To delineate the source of metals and the timing of mineralization, he has developed a number of isotopic and geochemical techniques, and applied these methods to gold deposits in the Carolina Slate Belt, massive sulfide deposits in Maine, as well as Alaska's base and precious metal deposits. His research on world-class mineral deposits in Alaska has been used to distinguish potentially economic mineral deposits from other mineral occurrences, leading to a more comprehensive understanding of the mineral resources in environmentally sensitive parts of the State. On a regional scale, Dr. Ayuso has combined geochemistry and geochronology to examine the relationship between the development of geologic provinces and the timing and introduction of ore mineralization in New England, Missouri, and Alaska. By analyzing a broad suite of granites across New England and Maritime Canada, Dr. Ayuso has been able to unravel the complex geological evolution of the eastern margin of North America and provide a new geologic framework for ore mineralization in the region. These results have aided exploration and assessment of mineral resources throughout the northern Appalachian Mountains. Recently, Dr. Ayuso has applied radiogenic isotopic analysis to environmental problems. He has developed new techniques to determine the relative contributions of anthropogenic and natural sources of arsenic and lead to soils, groundwater, and wildlife. His approach has been embraced by the U.S. Environmental Protection Agency to distinguish the sources of toxic metals in the surficial environment at Superfund sites, leading to more economical remediation strategies. For his outstanding leadership and highly-valued contributions to the USGS, Dr. Robert Ayuso is granted the Meritorious Service Award of the Department of the Interior.


Principal Deputy Assistant Secretary
for Water and Science



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TAMARA L. DICKINSON

In recognition of her outstanding leadership and exceptional contributions to the U.S. Geological Survey (USGS) in the pursuit of unbiased science to benefit our Nation.

Dr. Tamara Dickinson's career with the USGS has been marked by her scientific leadership and resourcefulness ensuring the advancement of unbiased science which informs decision making to benefit our Nation. As a member of the Interagency Working Group on Scientific Collections, Dr. Dickinson was instrumental in the development of recommendations for the preservation and appropriate stewardship of Federal scientific and historical collections. With her guidance, the USGS developed the Geological Collections Management System to ensure invaluable USGS scientific working collections, many of which are irreplaceable, are accessible to the public for continued scientific research and economic investigations. Dr. Dickinson's dedication to unbiased science has continued while serving at the highest level of the Federal Government as the first Assistant Director for Disaster Resilience and Space Science and the Principal Assistant Director for Environment and Energy at the White House Office of Science and Technology Policy (OSTP). Dr. Dickinson has demonstrated her scientific leadership in the Executive Office by spearheading the development of the President's National Space Weather Strategy, bringing together multiple Federal agencies to address and prepare for hazardous space weather which could incite potentially catastrophic consequences for critical infrastructure, including navigation, power transmission, and communication. She has served as a trusted advisor to the OSTP Director and other White House officials during natural hazard events, providing situational awareness and marshaling subject matter expertise from the USGS, the National Oceanic and Atmospheric Administration, and other Federal science agencies, as well as academia and the private sector. Recognizing the critical role that science and technology could play in developing innovative strategies to rebuild communities devastated by Hurricane Sandy, Dr. Dickinson led the effort to coordinate Federal science and technology capabilities, aligning them with response and recovery needs identified by the Hurricane Sandy Rebuilding Task Force. For her excellence and outstanding scientific leadership, Dr. Tamara L. Dickinson is granted the Meritorious Service Award of the Department of the Interior.

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PAUL E. EXTER

In recognition of his outstanding leadership and exceptional contributions to the Information Technology (IT) in the U.S. Geological Survey (USGS) and the Department of the Interior (DOI).

Mr. Paul Exter is an exemplary leader highly regarded by his USGS and DOI colleagues throughout the Nation. His understanding of the USGS mission and his ability to convey that understanding to others has been vital to the success of recent major USGS IT transformation efforts. Mr. Exter is relentless in his pursuit of new and better IT solutions in support of USGS science. He led the development and drove the implementation of highly creative solutions to replace the bureau's distributed IT infrastructure with a more efficient and effective integrated Directory Service. His leadership was instrumental to the successful completion of projects that moved the USGS from an organization with hundreds of distributed and diverse computing environments to one with an integrated IT infrastructure, consistent technical architecture, and common software tools. Mr. Exter has also established himself as a senior advisor within the DOI IT community by working diligently with Departmental officials to implement integrated directory services, consolidated security operations, cloud-based email and collaboration environments, and a telecommunications network that best supports the mission of the USGS. Mr. Exter's outstanding reputation has led to his being selected to lead the DOI Telecommunications Tiger Team, to serve as a member of the DOI Cyber Security Advisory Group, and to serve as a senior advisor to the DOI Chief Information Officer. For his many contributions in furtherance of the USGS and DOI missions, Paul E. Exter is granted the Meritorious Service Award of the Department of the Interior.

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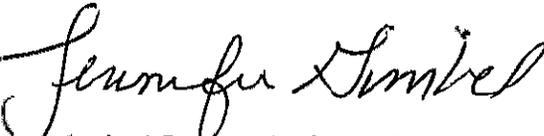
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MARTHA N. GARCIA

In recognition of her outstanding contributions to building interdisciplinary collaboration across the U.S. Geological Survey (USGS).

Martha Garcia is recognized for her leadership of science activities across many facets of the U.S. Geological Survey. Throughout her 36-year career, she has worked tirelessly to bring together disparate scientific cultures and to make the whole of USGS greater than the sum of its parts. For the first half of her career, Ms. Garcia focused on marine, environmental, and engineering studies for the Coastal and Marine Geology Program and the Special Projects, Engineering Geology, and Central Regional Geology Branches of the Geologic Division. For the last 20 years, she has been in managerial positions with roles in program coordination for the Geologic Discipline, as Chief of Staff for the Biologic Resources Discipline, as Senior Science Advisor for the Ecosystems Mission Area, and as Chief of Biogeographic Characterization in the Core Science Systems Mission Areas. In 2012, Ms. Garcia joined the Natural Hazards Mission Area first as Chief of Staff and currently as Deputy Associate Director for Natural Hazards. In all these many roles, each more indispensable than the last, she has been the embodiment of a can-do spirit and personification of commitment to public service. She has shown a deep commitment to staff development and mentorship and to effectively translating strategic vision into practical guidance for implementation. Because of her broad experience and deep knowledge of the USGS, Ms. Garcia was asked to serve as the Bureau representative to the U.S. Global Change Research Program and as liaison to the Assistant Secretary for Water and Science at the Department of the Interior. During the 2010 Deepwater Horizon oil spill response, she served as a member of the Interagency Solutions Group of the National Incident Command at the U.S. Coast Guard, facilitating the application of science from the USGS and other federal partners to address this crisis. That experience served her well as she helped direct emergency management for the Bureau. For her outstanding contributions to the USGS and the Nation, Ms. Martha Garcia is granted the Meritorious Service Award of the Department of the Interior.


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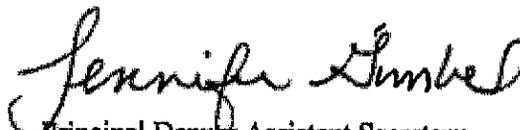
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JANE M. HAMMARSTROM

In recognition of her leadership and scientific contributions to the U.S. Geological Survey (USGS).

Jane Hammarstrom has provided outstanding scientific and organizational leadership to the Global Mineral Resource Assessment project and its successor activities. This global assessment effort, the first of its kind, has provided a major step forward in understanding the distribution and quantity of undiscovered copper resources worldwide. As co-leader of this project, Ms. Hammarstrom oversaw and coordinated the work of 25 USGS scientists along with 59 international scientists. Under her leadership, this team of specialists completed the first global assessment of the undiscovered resources associated with porphyry and sediment-hosted copper deposits. For each assessed area, USGS scientists worked with foreign cooperators to identify prospective terranes, assemble data, conduct workshops, and prepare reports for publication. The results are described in 14 regional reports published over six years, part of a total of 26 reports published by the USGS. Not only are the project's results groundbreaking, but the massive amount of global data that was assembled to complete this work is now a significant resource for other studies. As lead scientist, Ms. Hammarstrom synthesized the assessment studies, presented the results at scientific meetings, and conducted briefings for Federal and international stakeholders at the Department of the Interior, the Office of Science Technology Policy, the International Copper Association, the International Copper Study Group (ICSG), the American Copper Policy Council, and the World Bank. Her ongoing collaboration with the World Bank and international copper industry groups has resulted in numerous invitations to present these USGS results at international meetings. The ICSG, an intergovernmental organization that serves to increase copper market transparency and promote international cooperation on copper-related issues, invited Ms. Hammarstrom to present the global copper assessment results. This is the first time that this group of distinguished copper commodity specialists has considered resources as part of their decision making. For her outstanding dedication and highly valued contributions to the USGS, Jane M. Hammarstrom is granted the Meritorious Service Award of the Department of the Interior.


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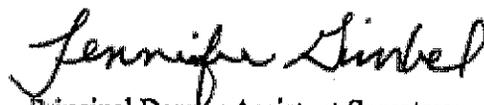
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LARRY D. HOTHEN

For his outstanding contributions to the mission of the U.S. Geological Survey (USGS).

In January 1969, a supply ship dropped off American scientist Larry Hothem, several foreign colleagues, and a year's worth of supplies at an Australian research base on the coast of Antarctica. Mr. Hothem wintered over with his colleagues, all the while making precise geodetic measurements, constantly adjusting or repairing instruments, and assisting with other highly technical projects. No other people or supplies arrived at the base for an entire year. The extraordinary dedication and productivity Mr. Hothem demonstrated throughout that year were sustained throughout decades of subsequent, high-quality scientific work, first at the National Geodetic Survey and later at the USGS. Over the years, Mr. Hothem took on additional assignments in harsh polar environments, often performing his work in partnership with colleagues from Australia, New Zealand, Chile, Italy, Canada, and other countries. The USGS has a long and illustrious history in Antarctica that dates to the International Geophysical Year of 1956-1957 and has been responsible for early surveys, geodetic networks and datums, and maps of Antarctica. Through Mr. Hothem's efforts, the USGS continues to support a variety of scientific activities in Antarctica by way of grants from the National Science Foundation and other entities. Much of the successful USGS work in absolute gravity measurements, space-based position, navigation and timing systems, global navigation satellite systems, crustal movement detection, tide gauge calibrations, and other valuable scientific endeavors traces back to Mr. Hothem's scientific contributions. For example, during Antarctic expeditions as recently as 2009 and 2015, in support of the Polar Earth Observing Network and its predecessor (the TransAntarctic Mountain Deformation network), Mr. Hothem, the sole USGS participant in making absolute gravity measurements, made numerous flights to remote sites via small aircraft and under harsh polar conditions. Mr. Hothem's unflagging dedication to precise, accurate measurements across the landscape remains invaluable. For his outstanding contribution to the USGS, Mr. Larry Hothem is granted the Meritorious Service Award of the Department of the Interior.


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CHRISTOPHER G. INGERSOLL

In recognition of your outstanding contributions to the U.S. Geological Survey (USGS) in the field of contaminants and other environmental stressors on aquatic organisms.

Dr. Chris Ingersoll is a renowned expert in the field of Environmental Toxicology and throughout his career has provided valuable information to resource managers of the Department of the Interior (DOI). Dr. Ingersoll's service includes fundamentally advancing the predictive ability of sediment quality guidelines, discovering water quality standards necessary for recovery of imperiled freshwater mussels, and designing research to understand ecological risk and natural resource injury and damages. New hypotheses, concepts, and techniques established by the research program guided by Dr. Ingersoll created numerous research standards and major modifications of current theory. Using a multidisciplinary approach to develop, validate, and apply methods for understanding the effects of contaminants and other environmental stressors on aquatic organisms, Dr. Ingersoll's research produced valuable understanding of the bioaccumulation or toxicity of contaminants from water, sediment, and food; the physical, chemical, and biological factors affecting these processes; and relationships between laboratory responses and characteristics of contaminated aquatic ecosystems. His establishment of innovative approaches for defining the fate and effects of contaminants on aquatic organisms while also conducting research to define the contaminant sensitivity of species of concern to the DOI has had an immeasurable impact on national and international programs in environmental regulation, management, policy, and enforcement. Dr. Ingersoll's research has also laid the foundation for new principles and practices, of both national and international standard methods. Using an interdisciplinary research approach, his work has quantified and ultimately predicts population-level responses to stressors. His research program also used a combination of laboratory and field studies of exceptional difficulty and complexity to establish novel toxicity testing methods for agricultural and industrial chemicals. For his outstanding dedication and highly-valued contributions to the USGS, Dr. Christopher Ingersoll is granted the Meritorious Service Award of the Department of the Interior.

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ANNE E. KINSINGER

In recognition of her outstanding contributions to the U.S. Geological Survey (USGS) in providing science leadership for greater sage-grouse and the Sage-steppe landscape.

Under Ms. Kinsinger's leadership, the USGS was able to provide the science needed by the Department of the Interior (DOI) for two of its most high-profile 2015 decisions: the Endangered Species Act listing decision for greater sage-grouse and the Bureau of Land Management (BLM) Amended Resource Management Plans for 11 western States. Through her close collaborations with DOI, BLM, and U.S. Fish and Wildlife Service (FWS) leaders, she helped the USGS become an equal partner in bringing science to bear on management decisions and ultimately strengthened the relationships among the Bureaus. This year alone, the USGS published 25 papers that were used by the FWS and the BLM in their listing and land management decisions. Ms. Kinsinger helped the Bureaus understand the implications of these new science products. Some of the higher profile efforts include developing a Conservation Efforts Database that cataloged and analyzed management actions to understand the benefits to sage-grouse, developing a common framework of buffers that formed the basis for the BLM's land management plan revisions, increasing understanding of how to successfully restore sagebrush, and developing predictive models for fire and climate change to understand impacts to sage-grouse. Ms. Kinsinger also served as a leader in developing the Rangeland Fire Secretarial Order 3336 that is designed to improve coordinated fire response, reduce the fire threat, restore sage-steppe ecosystems, and expand research and development. Her efforts are regularly recognized by the Secretary, DOI leaders, the FWS and BLM Directors, and State agencies. Ms. Kinsinger's strong leadership, combined with her ability to understand the issues and build collaboration have been key elements in ensuring that the USGS was part of what is heralded as the largest and most successful collaborative effort that brought together Federal and State agencies, non-governmental organizations, and private partners to support conservation of greater sage-grouse. Through her efforts, Ms. Kinsinger has ensured that science provided a solid framework for this collaboration and subsequent resource management decisions. For her scientific leadership for the DOI and the USGS, Anne E. Kinsinger is granted the Meritorious Service Award of the Department of the Interior.

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KEITH G. KIRK

In recognition of his outstanding scientific contributions to the U.S. Geological Survey (USGS) in leading the effort for developing the USGS Public Access Plan.

Dr. Keith Kirk, a hydrologist and Bureau Approving Official with the Office of Science Quality and Integrity, has played a pivotal role in ensuring that the USGS response to the February 2013, Office of Science and Technology Policy memorandum, *Increasing Access to the Results of Federally Funded Scientific Research*, will enhance the Bureau's mission of serving the Nation by providing reliable, accessible scientific information. The USGS response, entitled "Public Access to Results of Federally Funded Research at the U.S. Geological Survey: Scholarly Publications and Digital Data" (Public Access Plan), was approved and published in early 2016. Dr. Kirk took a leadership role in drafting, negotiating, and revising the Public Access Plan. He has worked tirelessly to develop USGS workforce awareness of its contents and their critical importance to the future of USGS science, and to facilitate the measures needed to fully implement the Plan. Dr. Kirk's efforts have built the essential trust needed for a change of the magnitude called for in the Plan by diligently responding to the perspectives and concerns of USGS researchers. He is recognized as an effective and knowledgeable authority on the essence of USGS scientific policy, as well as the diversity of USGS science activities, and is respected throughout the Bureau for his commitment and dedication to the quality and integrity of USGS information. Dr. Kirk's recorded presentation, "The New Normal: Public Access to Publications and Data" has been widely viewed in and outside the Bureau and has helped launch a massive communication campaign. The accessibility of USGS data, and thus the new science that will result from its reuse, is forever modernized due to the contributions of Dr. Kirk. For his outstanding leadership and highly-valued contributions to the USGS, Dr. Keith Kirk is granted the Meritorious Service Award of the Department of the Interior.

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ELIZABETH A. LEMERSAL

In recognition of her exceptional leadership and contributions to the Earthquake Hazards Program (EHP) and the Natural Hazards Mission Area of the U.S. Geological Survey (USGS).

The EHP research grants are a critical and essential part of the four-agency National Earthquake Hazard Reduction Program (NEHRP). These external grants, aimed to reduce life and property loss from earthquakes, are highly respected within the NEHRP stakeholder community and highly sought-after by potential recipients. As the EHP External Grants Manager, Elizabeth Lemersal has developed and implemented revised criteria for the grants review process resulting in high quality and very competitive research proposals. Ms. Lemersal's leadership was critical in the awarding of \$30 million in assistance under the American Recovery and Reinvestment Act, a time-sensitive effort that resulted in significant progress towards the implementation of an earthquake early warning system and upgrades to the Global Seismographic Network. She was also responsible for major improvements to the USGS grant-award process by building policy-and-procedures documents supporting an additional \$4 million in 2015 awards for earthquake early warning implementation. Her expertise and extensive knowledge of the external grants and cooperative agreement process is sought out by others in the USGS and other Federal agencies to address questions and issues on the grants process. Her efforts have laid a foundation for the Bureau to expand its external grant partnerships to other USGS Programs. Ms. Lemersal's dedicated leadership led to her serving as the Bureau representative on important national groups that coordinate activities and give communities tools and information needed to make informed decisions to minimize risk to natural hazard events. These groups include the planning committee for the National Academies' Disasters Roundtable, the advisory committee for the Natural Hazards Center at the University of Colorado at Boulder (funded by a consortium of eight Federal agencies), and the Department of the Interior's interagency Mitigation Framework Leadership Group on National Preparedness which contributes to the development of new Federal flood mitigation and earthquake building safety standards. For her outstanding contributions to the USGS, Elizabeth Lemersal is granted the Meritorious Service Award of the Department of the Interior.

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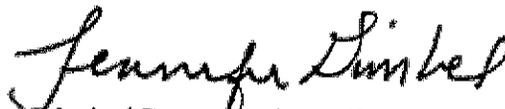
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HARRY E. LERCH

In recognition of his exceptional leadership and scientific contributions to the U.S. Geological Survey (USGS).

Harry Lerch is an exemplary leader and is highly respected by his USGS colleagues throughout the Nation. His dedication to the USGS mission, both as a scientist and a leader, has been evident throughout his career. He is recognized for his contributions as a research chemist, manager of a highly productive organic geochemistry laboratory, and for designing and supervising projects that provided large amounts of new data to support coal resource studies and human health-related investigations. These data were the foundation for numerous significant publications on resource and health issues. Since 2008, Mr. Lerch has served as Associate Center Director for the Eastern Energy Resources Science Center. His extensive knowledge of, and hands-on experience with, organic geochemistry and biogeochemistry has enabled the Science Center to address a broad range of important issues such as human health, ecosystem restoration, contaminants, and climate change. Mr. Lerch's role as scientific advisor for major projects such as the geologic CO₂ sequestration, the Gulf Coast, and the Produced Waters projects contributed to published results that have been extremely useful to other Federal and State agencies and have led to high visibility for the USGS. Mr. Lerch has led by example, staunchly supporting the integrity of USGS science and, as a mentor for younger scientists, has been a major influence instilling adherence to principles of sound scientific research. With a keen sense of fairness, he has ensured that the myriad of decisions that keep a Science Center functioning effectively on a day-to-day basis were made on time and with a strong commitment to the scientific traditions of the Bureau. He has served with distinction on committees that deal with the difficult problems of laboratory and office space including the National Center Space Team. For his exceptional dedication and outstanding contributions to USGS science and leadership, Harry Lerch is awarded the Meritorious Service Award of the Department of the Interior.


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MICHAEL LISOWSKI

In recognition of his outstanding contributions to the U.S. Geological Survey (USGS) in the fields of earthquake and volcano hazards.

Michael Lisowski is a highly recognized and respected pioneer of geodetic methods for measuring and analyzing ground deformation caused by active geologic processes. His expertise spans the fields of tectonic and volcanic deformation, as exemplified by his past contributions as chief of the Earthquake Team's crustal strain project and the Hawaiian Volcano Observatory's deformation project, and currently as chief of the Cascades Volcano Observatory's geodesy project. Mr. Lisowski has initiated, sustained, and brought to fruition a large number of studies related to earthquake and volcanic activity across the western United States, including Alaska and Hawaii, which directly influenced understanding of associated hazards. His expertise in instrumentation has resulted in a quantum leap in the monitoring and hazards assessment capabilities of the Volcano and Earthquake Science Centers. Over the past decade, Mr. Lisowski has led several efforts that influenced the evaluation of volcano hazards in the United States. At Long Valley caldera, he guided the development of a telemetered real-time Global Positioning System (GPS); a first-of-its-kind capability in the United States that enables GPS data to be used in tracking magma movement in real-time. His leadership led the National Science Foundation Plate Boundary Observatory to include focused installations on several volcanoes that not only demonstrably improved the USGS' analysis and forecasts during the Mount St. Helens and Augustine eruptions, but also led to numerous research projects. Mr. Lisowski also initiated comprehensive modeling of subtle and complex surface displacements at Mount St. Helens, concluding that magma recharge was occurring and the volcano was likely in the early stages of building to another eruption. This discovery prompted the USGS in 2014 to alert the public that the volcano could erupt again within the next several years and into the future. For his outstanding service to the USGS in the fields of tectonic and volcanic hazards, Michael Lisowski is granted the Meritorious Service Award of the Department of the Interior.

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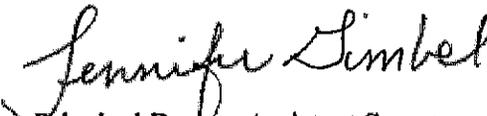
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BRIAN L. LOVING

In recognition of his outstanding contributions to the U.S. Geological Survey (USGS) in the field of surface-water hydrology and continuous processing of streamflow records.

Mr. Brian Loving has been a national leader by innovating and improving the efficiency and quality of the collection, approval, and dissemination of USGS surface-water data. For decades, the primary metric for determining the timeliness of hydrologic data was the date that a Water Science Center (WSC) completed its annual data report (ADR). Today, the metric is the percentage of time-series data finalized within 150 days of collection. During Mr. Loving's tenure as Data Chief for the Kansas WSC, the WSC earned the respect of management and colleagues across the USGS as always being the first to complete its ADR. The WSC continues to consistently be the WSC with the first or second highest percentage of data finalized within 150 days. Mr. Loving developed the national approach for tracking continuous records, co-implementing the process in the USGS Records Management System. Mr. Loving also developed "go2," which is a tool used by all WSCs to help determine when field visits are needed at gaging stations. He later developed the Daily Q check program that compares recent discharge measurements to the continuous record and alerts hydrographers and managers when a needed adjustment has not been applied. After the Daily Q check program began, the percent of discharge gages displaying data without a needed correction was reduced by 90 percent, and the average number of days to correct continuous discharge data after a measurement was reduced from 36 to 12. The leadership, mentoring, and tools provided by Mr. Loving improved data quality and timeliness at the Kansas WSC and throughout the USGS. He developed a premier surface-water data collection network in Kansas; increased the number of gages; decreased annual gage costs; and increased sites operated by a field person from about 11 to 17 sites. These gains in efficiency were possible because of Mr. Loving's thoughtful leadership, innovation, and mentoring of the next generation of streamgagers in Kansas. For his many outstanding contributions to the USGS, Brian L. Loving is granted the Meritorious Service Award of the Department of the Interior.


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CITATION FOR MERITORIOUS SERVICE BRUCE F. MOLNIA

For his outstanding contributions to the mission of the U.S. Geological Survey.

Dr. Bruce Molnia has demonstrated the rare ability to grasp the potential, broad applications of his work and to apply his methods effectively to areas of science that were less studied or completely unexplored. He developed advanced skills in the use of remote sensing early in his career, and he had the vision to expand the use of remote sensing to study geologic processes in areas that were inaccessible to traditional field techniques. His research on changes in glaciers of Alaska and other remote areas revealed valuable, previously unknown scientific information. In 2002, Dr. Molnia was asked to serve as Executive Director of the Civil Applications Committee, an intergovernmental group that provides the Federal civil community access to classified assets for addressing environmental and natural hazards concerns. His scientific leadership quickly transformed that group from a quiet review function to a dynamic team that successfully applied classified information to solve pressing environmental and hazard problems. Dr. Molnia accomplished this transformation by persuading top scientists and engineers in related fields to share their work with the Committee and by personally demonstrating, through his own research, creative new ways to apply these tools, "showing the way" for others to do the same. With the use of these techniques, he demonstrated the basis for the previously unrecognized hazard of massive snow-melt-induced rock falls from numerous mountain peaks in the northern latitudes. He also conclusively showed that this hazard will increase as global warming continues to heat that region of the Earth. Additionally, he generated a creative and very effective team by bringing into the Committee six young students with the latest remote sensing training to collaborate with the more senior scientists. This effort has resulted in a highly productive workforce for supporting the Committee's missions. Dr. Molnia's innovative use of these assets and tools, along with his ability to inspire others, has placed him on the leading edge of remote sensing science. For his creative research, his useful visions for the future, and his scientific leadership, Dr. Bruce Molnia is granted the Meritorious Service Award of the Department of the Interior.

Jennifer Linde
Principal Deputy Assistant Secretary
for Water and Science



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DELIA A. POOLE

In recognition of her outstanding contributions to the U.S. Geological Survey (USGS) through your support of international outreach that has fundamentally furthered greater scientific understanding.

Ms. Delia "Dee Dee" Poole is an exemplary employee who has made major contributions to the automation and organization of USGS' international science outreach and coordination efforts. Her pioneering efforts in organizing and cataloging the entire scope of USGS international agreements cannot be underestimated. She has demonstrated outstanding professionalism while serving as the coordinator for all international Memorandums of Understanding and Letters of Agreement, requiring review and approval at both the Department of the Interior and the Department of State. Her expertise has ensured that negotiations for international legal instruments proceed in a timely manner. Ms. Poole handles on average between 75 to 100 such agreements each year. Her efforts to bring the USGS' information technology into the 21st century by way of creating and utilizing an "international agreements" database in SharePoint has made USGS international commitments more lucid and accurate to all interested parties. Ms. Poole's comprehensive file system enables her to address questions without fail. Her ability to remember the current state of numerous agreements on a moments notice is without equal and she is very detailed in her approach, keeping pertinent files and notes on every document. Ms. Poole's dedicated efforts in managing the overall international travel and agreements program have been invaluable to USGS management, and, in particular, the Office of International Programs. Her work effort is unwavering and a model for others to emulate. For her outstanding dedication and highly valued contributions to the USGS, Delia "Dee Dee" Poole is granted the Meritorious Service Award of the Department of the Interior.


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KLAUS J. SCHULZ

In recognition of his exceptional leadership and scientific contributions to the U.S. Geological Survey (USGS).

Dr. Klaus Schulz has provided outstanding scientific leadership on studies of the geology, geochemistry, and mineral resources of the Lake Superior region. More specifically, he helped define new research directions for geochronological studies, aeromagnetic and gravity surveys in the region, and structural and stratigraphic investigations across the Upper Midwest. A major contribution was his leadership of a diverse group of academic and government researchers who used new age and geological data to significantly reinterpret the Proterozoic tectonic and crustal evolution of this region. Dr. Schulz's research led directly to the development of a new framework for the spatial and temporal relations of world-class deposits of iron-formation and volcanogenic massive sulfide (copper-zinc-gold) in the Lake Superior region. An extensive ejecta sheet across Michigan's Upper Peninsula, related to the 1,850 million year old Sudbury meteor impact crater in Ontario, was recognized and defined by Dr. Schulz and co-workers. This very precise timeline and Dr. Schulz's encyclopedic knowledge of regional Precambrian geology in North America allowed him to correlate several well-described stratigraphic sequences of geographically separated deposits of iron-formation. Prior to this innovative study, the inter-relationship of these iron-formation deposits had been controversial for decades. Dr. Schulz recently led multi-disciplinary studies to characterize and evaluate the mineral resource potential of the 1,100 million year old Midcontinent Rift System, including the description and resource assessment of a new nickel-copper-platinum-group-element deposit type. These assessments significantly improve our understanding of the metallic resource base of the United States. In addition, Dr. Schulz also has provided important scientific leadership during an early phase of the Global Mineral Resource Assessment, and recently edited a comprehensive volume describing the geology and use of nearly two dozen minerals critical to modern industrial societies. For his outstanding dedication and highly-valued contributions to the USGS, Dr. Klaus Schulz is granted the Meritorious Service Award of the Department of the Interior.

Principal Deputy Assistant Secretary
for Water and Science



United States Department of the Interior

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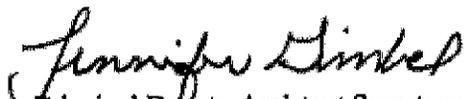
CITATION

FOR MERITORIOUS SERVICE

ROBERT R. SEAL, II

In recognition of his exceptional leadership and scientific contributions to the U.S. Geological Survey (USGS).

Dr. Robert Seal's career has been dedicated to understanding how the mining and weathering of mineral deposits affect the environment. His research has addressed both the consequences of past mining and the prediction of potential mineral-environmental impacts of future mining. To better understand potential remediation strategies, Dr. Seal conducted studies to characterize low-temperature alteration phases, such as copper-bearing sulfate minerals, that are important in mine-drainage settings. This work led to geochemical studies of mine wastes and their interactions with surface waters and groundwaters. Several government agencies have sought Dr. Seal's expertise, including the Environmental Protection Agency (EPA), where he has consulted as a technical advisor on six mining-related Superfund sites and his advice has been highly beneficial to mining companies seeking to efficiently remediate these sites. The EPA also invited Dr. Seal to participate in their pre-mining assessment of the Alaska Bristol Bay watershed which hosts the high-profile Pebble deposit, a world-class gold-copper-molybdenum deposit. He characterized the quality of aquatic resources located in this watershed, and, for this work, was awarded the EPA Office of Water's "Partners-of-OW" Award. This award is given to those who have gone above and beyond normal responsibilities to achieve EPA's strategic goals and objectives. Dr. Seal's expertise in environmental assessments of watersheds that host abandoned mines has been sought in the international arena as well. Recently, he was named a Fulbright Specialist and helped the Peruvian government develop sampling plans to assess watersheds hosting numerous abandoned mines in the Andes. He also has conducted workshops on environmental aspects of mining practices and provided advice on future directions for the newly established Environmental Geology Directorate of the Afghan Geological Survey. Throughout his career, Dr. Seal has been committed to educating stakeholders and mining companies about the environmental aspects of mineral deposit development and mining. For his dedication, scientific leadership, and originality of research, Dr. Robert Seal is awarded the Meritorious Service Award of the Department of the Interior.


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KATHLEEN R. SIMMONS

For her outstanding contributions in support of the U.S. Geological Survey (USGS) Climate and Land Use Change Research and Development Program.

Kathleen Simmons is an integral part of the "Geologic records of high sea levels" project in the Geosciences and Environmental Change Science Center. One of the most pressing problems facing the world today is a rapidly rising sea level. Much of our knowledge of what rates of sea level rise might be expected and what areas might be most affected is based on an understanding of higher-than-present sea levels that occurred in the recent geologic past. That requires accurate and precise geochronology of geologically young marine fossils. Ms. Simmons excels at producing this kind of information. In the past five years, her research has generated hundreds of ages of corals from marine deposits that have enabled a detailed reconstruction of sea level history. These ages have resulted in eight major publications, all co-authored by Ms. Simmons, in highly regarded geoscience journals. One of these eight publications received the prestigious Kirk Bryan Award from the Geological Society of America. Her studies encompass Hawaii, California, Florida, Mexico, the Caribbean islands, and Spain. Ms. Simmons' work on marine deposits has enabled an assessment of how long interglacial periods last (crucial for understanding how long the present interglacial might last), rates of uplift on the tectonically active California coast, and the timing of climate-induced migrations of marine invertebrate communities. Her achievements in geochronology are remarkable because she faces major challenges in the instrumentation required for this work. In addition, Ms. Simmons generated state-of-the-art, high quality data despite the challenges faced using dated instrumentation. For her high degree of specialized knowledge and high-impact results, Kathleen Simmons is granted the Meritorious Service Award of the Department of the Interior.

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TAEKO JANE TAKAHASHI

In recognition of her outstanding contributions to the mission of the U.S. Geological Survey (USGS) through her work as the Librarian and Archivist at the Hawaiian Volcano Observatory (HVO).

For more than three decades, Ms. Taeko Jane Takahashi has carefully built the HVO library into perhaps the best existing source of information about Kilauea and Mauna Loa volcanoes and includes the archival of virtually all published scientific papers, unpublished HVO reports, and multimedia materials. She co-produced and regularly updates an ever-expanding, internationally available digital database of references about Hawaiian volcanoes. This database provides earth-science researchers throughout the world with an invaluable tool to discover the history and research of Hawaiian volcanos and what has been written about them. Her early career as an English teacher provided Ms. Takahashi the editorial expertise which she has used to help improve the presentations of HVO scientists in both research papers and in material written for use by the general public. Her editorial skills have been an invaluable asset to scores of internal HVO progress reports, over 1,000 weekly *Volcano Watch* newspaper columns, various interpretive texts for Hawai'i Volcanoes National Park, and USGS Professional Papers. *Volcano Watch* received the USGS Customer Excellence Service Award which, in large part, is a reflection of the precise, thoughtful editing that Ms. Takahashi consistently provides. In addition, she has authored three USGS Digital Data Series image collections dealing with eruptions and earthquakes on the Island of Hawai'i, documenting the effects of both volcanic and earthquake hazards for both research and public interest. For her exemplary curating of scientific papers and reports related to volcanic activity on Hawaiian volcanoes, editing of USGS Professional Papers, and maintaining a science library for future generations, Taeko Jane Takahashi is granted the Meritorious Service Award of the Department of the Interior.


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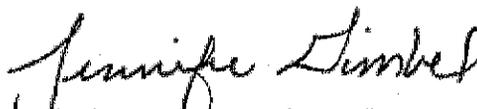
CITATION

FOR MERITORIOUS SERVICE

DAVID J. WALD

In recognition of his exceptional contributions and dedication to the U.S. Geological Survey's (USGS) Earthquake Hazard Program.

As the leader for the development of real-time earthquake products for the USGS Earthquake Hazards Program, Dr. David Wald has been the creative mind behind a series of award-winning technologies that have transformed the release of earthquake information to emergency responders, facility managers, government officials, and seismologists. Until a decade ago, rapid information about damaging earthquakes was limited to earthquake magnitude and location – parameters that on their own provided little indication of an earthquake's impact. Now as a result of Dr. Wald's efforts and those of his colleagues, the USGS is able to predict the distribution of ground shaking as well as provide an estimate of the probable fatalities and economic loss from damaging earthquakes. His ShakeMap, ShakeCast, "Did You Feel It?" and PAGER tools fill an informational void that can extend for hours to days, impeding emergency response and humanitarian relief efforts. These tools have thus become the gold standard for earthquake response and are regularly featured on a myriad of high-profile news outlets such as the New York Times, the Wall Street Journal, and the Washington Post. In addition to these contributions, Dr. Wald is highly respected for his seismological research, which has spanned the disciplines of ground motion modeling, fault source inversions, and analysis of earthquake rupture processes. His contributions to these areas underlie the real-time earthquake products described above. Specifically, Dr. Wald's research into ground motion modeling, site characterization (through use of a topographic proxy), and fault rupture (finite fault analyses to assess fault rupture dimensions and slip distributions) are critical components of ShakeMap's ability to accurately predict ground motions and feed directly into PAGER loss estimates. For these overall contributions, Dr. Wald has been recognized as a USGS senior scientist and has been awarded the Frank Press Public Service Award by the Seismological Society of America. For his outstanding leadership to the USGS, Dr. David Wald is granted the Meritorious Service Award of the Department of the Interior.


Principal Deputy Assistant Secretary
for Water and Science