

## **Geology Scientists Emeritus contributions, a 2010 update by Laurel Bybell and Judy Back**

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The Scientist Emeritus Program has been an important component of the USGS Geology Discipline since its inception in 1986. A report on the status of Scientist Emeritus contributions to USGS Geology research and recommendations for strengthening Scientist Emeritus participation was released in 2006,

<http://geology.usgs.gov/Emeritus/downloads/Scientist%20Emeritus%20Program%20Review%20Final%20Report.pdf> .

This is an update of Scientist Emeritus activities and accomplishments since the 2006 report was released. Data were collected in May 2010. Since 2006, the number of Geology Scientists Emeriti has remained relatively constant, about 190.

In response to recommendations in the 2006 report, Geology:

- reinstated the Bradley Scholar Fund to help fund legacy and new Scientist Emeritus work,
- implemented honorary awards to highlight major contributions of our Scientists Emeriti, and
- developed an external website, <http://geology.usgs.gov/Emeritus/>.

[Appendix 1](#) contains a complete list of recommendations that were in the 2006 report and Geology's responses to the recommendations.

[Bradley Scholar Program](#) (see <http://geology.usgs.gov/Emeritus/bradley/index.shtml> for a description of the Program and [Appendix 2](#) for a list of funded projects): Geology provided \$100,000 in 2007, \$100,000 in 2008, \$116,000 in 2009, and \$100,000 plus almost \$29,000 from our Working Capital Fund to support publications in 2010 for Bradley Scholars. Approximately 60 percent of the funding has gone towards legacy work and 40 percent towards new research. Each year, Bradley funds have been leveraged with funding from Science Centers, Programs, and other sources. The quality of proposals has consistently been of such a high caliber that the

vast majority of proposals have received funding; the amount of funding each proposal has received has been limited by the amount of funding available.

Honorary awards (see [Appendix 3](#) for a list of the recipients): In 2006, Geology initiated the “Dallas Peck Outstanding Scientist Emeritus” award (<http://geology.usgs.gov/Emeritus/awards/peck.shtml>, see photo of plaque in [Appendix 6](#)) and three Regional Best Publication Awards ([http://geology.usgs.gov/Emeritus/awards/best\\_pubs.shtml](http://geology.usgs.gov/Emeritus/awards/best_pubs.shtml)). Nominations are submitted by Science Center Directors. A panel of Science Center Directors, Scientists Emeriti, one Program Coordinator, and the Scientist Emeritus Coordinator review the nominations. Awards have been given out at Scientist Emeritus receptions in the regions in 2006, 2007, and 2008. All of the nominations have been very strong, but fewer nominations were received in the second and third years of the program. The decision was made to have the competition every 2-3 years instead of annually.

Products (<http://geology.usgs.gov/Emeritus/pubs.shtml> and [Appendix 4](#) for lists of publications and abstracts): Geology Scientists Emeriti remain very productive. The 2006 report compiled Geology Scientist Emeritus publications and abstracts for 2000-2005. During that period, Scientists Emeriti published 411 papers and 131 abstracts. As of May 2010, the number of published papers from 2000-early 2010 increased to 747, and the number of abstracts increased to 338.

Non-publication contributions (see [Appendix 5](#)): As in 2006, Geology Scientists Emeriti continue to participate in a very broad array of activities that support the USGS, the broader scientific community, and society. The extent and breadth of their contributions is impressive, and their dedication is unmatched, some even using their personal funds to support their field work.

Recognition: Geology Scientists Emeriti continue to be recognized in the broader scientific community for their many, substantial contributions. A few recent examples include:

In August 2006, a symposium entitled ‘The Paleontology, Geology, and Stratigraphy of the Western Interior Late Cretaceous Seaway; A tribute to the life of W. A. “Bill” Cobban’ was sponsored by the Association of Applied Paleontological Sciences, Black Hills Institute of Geological Research, Black Hills Museum of Natural History, American Museum of Natural History, Denver Museum of Nature and Science, the Western Interior Paleontological Society and the United States Geological Survey to honor Bill’s many accomplishments.

In 2007, the Association of Environmental and Engineering Geologists and the Canadian Geotechnical Society established the Schuster Medal (<http://www.aegweb.org/i4a/pages/index.cfm?pageid=5046>) to honor the contributions of USGS

Scientist Emeritus Robert Schuster and named Bob its first recipient. The Schuster Medal “recognizes excellence in geohazards research in North America.”

In 2007, Andrei Sarna-Wojcicki was a co-recipient of the 2007 Kirk Bryan Award of the Quaternary & Geomorphology Division of the Geological Society of America. In 2008, he was elected Fellow of the Geological Society of America and Quaternary International published a commemorative volume on Global tephra studies in honor of John Westgate’s and Andrei’s many contributions to the field (Quaternary International 178 (2008) 1–3).

In 2008, C. Blaine Cecil was elected Fellow of the Geological Society of America.

In 2009, Walt Dean was awarded the Lifetime Achievement Award by the International Paleolimnology Association, <http://www.paleolim.org/index.php/2010/03/31/lifetime-achievement-awards-announced/>. He was recognized as one of the world's most cited authors in the field of geochemistry of both lacustrine and marine sediments deposited from the Permian to modern times. From the citation: "Besides his scientific competence and diversity, Walt impresses by his openness for new collaborations, his humor, his willingness to share knowledge and experience, and his support of young scientists." In May 2010, Walt was notified that he will receive the Society for Sedimentary Geology’s 2011 Twenhofel Medal. “The Twenhofel Medal is the highest award given by the Society in recognition of "Outstanding Contributions to Sedimentary Geology” (<http://www.sepm.org/awards/awardcriteria.htm>).

The USGS continues to be very fortunate to have a continuing relationship with its retired senior scientists.

## Appendix 1: Status of Recommendations from the 2006 report

<p>(1) Implement “Yearly Checklists for Managers,” a tool for local managers to increase communication with their SE, keep up-to-date e-mail lists, clarify expectations, help determine appropriate funding levels, address identified problems, and obtain an Annual Progress Review.</p>	<p><a href="http://geology.usgs.gov/Emeritus/tcs/checklist.shtml">http://geology.usgs.gov/Emeritus/tcs/checklist.shtml</a></p>
<p>(2) Re-establish and expand the Bradley Scholar Program to support the investigation of science research frontiers that have potential importance to the Nation. Fund the Bradley Scholar Program through the Associate Director for Geology’s Office. Encourage Program Coordinators to provide additional Bradley Scholar Program funds that would be used to support priority Program goals. Expand the Bradley Scholar Program to include appropriate legacy work with its associated publication costs. Evaluate the Bradley Scholar Program after the first year and revise, if necessary. Encourage local management to establish small funds to address non-Bradley Scholar SE needs.</p>	<p><a href="http://geology.usgs.gov/Emeritus/bradley/index.shtml">http://geology.usgs.gov/Emeritus/bradley/index.shtml</a></p>
<p>(3) Have the regions play a larger role in the Scientist Emeritus Program. Charge Regional offices to work with their Regional Property Offices to set up a process for obtaining better quality surplus computers for SE. Where there is a need across Teams in a region, encourage the Regional offices to set up community laboratory space and, if appropriate, community office space.</p>	<p>We have worked with Regions on awards nominations and presentation and had representation on panels for Bradley proposals.</p>
<p>(4) In order to improve documentation of the SE program, renew the tracking of volunteer hours. Have Teams work with the Regional offices to collect these data quarterly. Take these data, along with other SE information, and compile an annual report for the Associate Director for Geology.</p>	<p>Tracking of hours continues to be a challenge. Results of honorary awards and Bradley proposals are posted on the Scientist Emeritus website, <a href="http://geology.usgs.gov/Emeritus/index.shtml">http://geology.usgs.gov/Emeritus/index.shtml</a></p>
<p>(5) Remove from the SE Policy Statement the charge for an Emeritus Program Advisory Panel. By giving the regions a larger role in the SE program, each region can design a communication mechanism that best fits the needs for their region.</p>	<p>accomplished. Policies are listed on the Scientist Emeritus website, <a href="http://geology.usgs.gov/Emeritus/about/policies/policy.shtml">http://geology.usgs.gov/Emeritus/about/policies/policy.shtml</a></p>
<p>(6) Many SE have generated volumes of data and research materials that need to be properly archived. Teams need to work with their SE to ensure that all appropriate materials are properly maintained until such</p>	<p>Although no funding has directly gone to the library to fund a student, approximately 60 percent of Bradley funds has gone to legacy work,</p>

<p>time as they are archived. The Denver Library currently has a very large volume of material that has been submitted by GD scientists for inventory and transferal to the National Archives. Given the current staffing, and with no additions of new research materials, it is estimated that it will take ten years to complete this archiving process. The committee recommends that financial assistance be provided to the library staff to hire student help.</p>	<p>including archiving work.</p>
<p>(7) Show appreciation and recognition of SE and their work. This can be accomplished through:</p> <ul style="list-style-type: none"> <li>• Creation of a new award for SE – “Outstanding Scientist Emeritus Award,”</li> <li>• A yearly reception of SE at each national center outlining contributions and highlights of the program,</li> <li>• A SE science session similar to a poster display,</li> <li>• Highlighting SE contributions on USGS Geology internet and intranet Web sites,</li> <li>• Generating a fact sheet describing the SE program and its benefits, or</li> <li>• Inclusion of a USGS official SE display at National level science meetings.</li> </ul>	<p>The Dallas Peck Outstanding Scientist Emeritus and Regional Best Publication Awards have been implemented. These awards are given at regional receptions to honor the contributions of Geology Scientists Emeriti. Some of these receptions have invited other Scientists Emeriti to display posters describing their science. A website was developed highlighting SE work and containing resources for SEs A fact sheet was generated describing the SE program and its benefits, <a href="http://pubs.usgs.gov/fs/2008/3013/">http://pubs.usgs.gov/fs/2008/3013/</a>.</p>
<p>(8) Inform Team members and the public about the SE program through the public and internal Web pages. The committee recommends that the USGS Geology public website should include a general description of the Program and SE contributions to the USGS mission. The USGS Geology intranet website should provide a “quick link” to the SE Program Web page. The SE program internal Web page needs to include key information about the program:</p> <ul style="list-style-type: none"> <li>• Updated Policy Statement</li> <li>• Ethics Requirements</li> <li>• All of the necessary SE forms, such as SE agreement form, Yearly Checklists for Managers, Time Log, Annual Progress Review form.</li> <li>• Karen Siderelis’ e-mail on “Tips for Ensuring Proper Records Management During Change”</li> <li>• Selected highlights such as photographs, quotes, and referenced new maps or publications.</li> </ul>	<p>Website was developed, <a href="http://geology.usgs.gov/Emeritus/index.shtml">http://geology.usgs.gov/Emeritus/index.shtml</a></p>
<p>(9) Update the Policy Statement. The committee has provided potential wording. The purpose of the SE Program is to utilize the</p>	<p>Policy statement was amended.</p>

<p>expertise, intellect, and creativity of individuals who have retired from the USGS to enhance the programmatic activities of the Bureau. Open the Program to all individuals who have demonstrated leadership and a high level of productivity during their employment at the USGS and who desire to continue working as a volunteer at the USGS. Individuals can apply irrespective of grade, series, or title provided the guidelines, as defined above, are met.</p>	
<p>(10) Implement a national database and an advocate position for the SE Program to ensure consistency across regions. Develop a Web-based SE agreement form that will populate part of the national database. Implement the Web-based version in the FY07 SE cycle for use by all new SE and for other SE that are willing. Over the next three years, phase in all SE agreement forms into the internet version. Staff the advocate position on a rotating basis with a senior SE. Have the advocate's duties include:</p> <ul style="list-style-type: none"> <li>• Official USGS liaison to the Director, Regional Management, and other parties, as needed.</li> <li>• Coordinate and oversee the Bradley Scholar Program.</li> <li>• Coordinate and oversee the SE awards.</li> <li>• Coordinate and oversee the official USGS displays, websites, etc.</li> </ul>	<p>Scientists Emeriti are part of the USGS Volunteer for Science Program and therefore use the on-line, multiagency Volunteer Services Agreement, OF-301A, that DOI and the USGS has adopted. Various attempts, all with limited success, have been made since the 2006 report to streamline the process for collecting data about the accomplishments of our SEs. A HQ Geology SE coordinator works with a Scientist Emeritus and the Science Centers to coordinate the SE processes.</p>

**Appendix 2: Bradley Scholar Program**

<http://geology.usgs.gov/Emeritus/bradley/index.shtml>

**Fiscal Year 2007**

<b>Scientist Emeritus</b>	<b>Team</b>	<b>Project</b>	<b>Legacy (L) / New research (N)</b>
John Antweiler	CR-MRT	Proposal is to finish work on gold-bearing strata in NW Wyoming and adjacent Idaho and Montana	L
Larry Beyer	WR-ESPT	Tectonic History of Los Angeles Basin	L and N
Maurice Chaffee	CR-MRT	Geochemistry of the Eureka Mining District and Vicinity in Nevada	L
Jack Epstein	ER-ESPT	Chicken Creek 7.5 minute quadrangle and Argyl 7.5 minute quadrangle, South Dakota	L
James Fassett	CR-ERT	Geochronology and Stratigraphy of the Rocks Adjacent to the Cretaceous-Tertiary Boundary in the San Juan Basin, NM and CO	L and N
Thomas Hamilton	WR-ASC	Noatak National Preserve and Arctic National Park maps/reports	L
Keith Ketner	CR-ERT	Stratigraphy, Structure, and Petrology of Arkosic Rocks in NW Nevada	L
Keith Ketner		Geologic Map of Gold Creek Gold District, NV	L
Marvin Lanphere	WR-VHT	Argon Geochronology of Vesuvius, Italy	N
Peter Lipman	WR-VHT	Supervolcanoes in a NA Andean-type Arc Setting: Mid-Tertiary Volcanism in the Southern Rocky Mountains	N
Ivo Lucchita	CR-ESPT	Maps of Grand Canyon National Park	L
Richard Madole	CR-ESPT	Origin and Age of a Complex Array of Surficial Deposits and Reconstruction of Recent Prehistory of the San Luis Valley	N
Fred Peterson	CR-ERT	Late Jurassic Dinosaurian Ecosystems	L
David Piper	WR-MRT	REE in Pelletal Phosphate Deposits from Phanerozoic	N
John Pojeta	ER-ESPT	Early molluscan phylogeny and evolution based fossil record	N

Barney Poole	CR-MRT	3 maps in Sonora, Mexico	L
Barney Poole	CR-MRT	2 maps in NV	L
John Reed	CR-ESPT	Roots of the Rocky Mountains	N
Charles Sandberg	CR-ERT	Alamo Impact Studies; Stratigraphic Studies for IUGS Subcommittee on Devonian Stratigraphy; and Contributions to Legacy Studies	L and N
Andrei Sarna-Wojcicki	WR-ESPT	Tephrochronology Database	L
Kevin Scott	WR-VHT	Anatomy of the Mazama Park Eruptive Period at Mt. Baker, N. Cascades	N
Daniel Shawe	CR-MRT	Slick Rock Uranium-Vanadium District in SW CO	L
Paul Sims	CR-MRT	Continental Scale Shear System	L
David Stewart	ER-ESPT	Ellsworth schist and Castine volcanic of the Ellsworth Mascarene Terrain, Coastal Maine: Geochemistry, Pb-U Zircon Geochronology, Epsilon Neodymium Determinations, and Implications for middle Cambrian Paleotectonic Setting	L
Roland von Huene	WR-EHT	Marine Investigation of Subduction Zones in Support of the USGS Tsunami Source Working Group in Menlo Park	L and N
Carl Wentworth	WR-ESPT	Quaternary Santa Clara Valley	N
Thomas Wright	WR-VHT	Kilauea Volcano	L

**Fiscal Year 2008 Bradley funded projects**

<b>Scientist Emeritus</b>	<b>Team</b>	<b>Project</b>	<b>Legacy (L) / New research (N)</b>
John Antweiler	CR-MRT	Gold-bearing Cretaceous and younger strata and associated Quaternary alluvial deposits in northwestern Wyoming and parts of adjacent states	L
Larry Beyer	WR-ESPT	(1) Understanding the Cenozoic tectonic history of the Los Angeles basin region, and (2) preservation of California well samples	L
Earl Brabb	WR-	Completion of Chevron fossil information for California	L

	ESPT		
Bill Cobban	CR-ESPT	Mesozoic Collections Project Proposal – Digital Data Recovery-The Inoceramids	L
Harry Cook	WR-ESPT	Carbonate platform and reef facies through time (Cambrian-Recent)	L
Walter Dean	CR-ESPT	Are sediments from the Black Sea, Cariaco Basin, and Peru margin analogues for metalliferous black shales?	L
James Fassett	CR-ERT	Geochronology and oil and gas potential of Cretaceous-Tertiary strata, San Juan Basin, New Mexico and Colorado	L and N
Thomas Hamilton	WR-ASC	Surficial geologic map & descriptive pamphlet of Noatak National Preserve	L
Keith Howard	WR-ESPT	Incremental pluton assembly over tens of millions of years in the Ruby Mountains, Nevada	L and N
Keith Ketner	CR-ERT	Coarse-grained arkosic strata in northwestern Nevada: petrology, origin, and correlatives	L
Ronald Kistler	WR-ESPT	Compilation & geologic interpretation of Sr, Pb, neodymium, & O isotopic data determined for Mesozoic & Precambrian plutons exposed in southern CA	L
Mel Kuntz	CR-ESPT	Geologic Map of the basalt lava fields of the eastern Snake River Plain, ID	L
Marvin Lanphere	WR-VHT	Argon Geochronology of Somma-Vesuvius, Italy	N
David Lindsey	CR-MRT	Piedmont alluvial deposits in the Santa Cruz River Valley	L
Peter Lipman	WR-VHT	Supervolcanoes in a NA Andean-type Arc Setting: Mid-Tertiary Volcanism in the Southern Rocky Mountains	N
Ivo Lucchita	CR-ESPT	Publication of 4 maps of Grand Canyon geology	L
Richard Madole	CR-ESPT	Geomorphic and stratigraphic records of late Quaternary climate change in the Great Sand Dunes area, Colorado	N
Douglas Morton	WR-ESPT	Petrogenesis of the northern Peninsular Ranges Batholith, southern California	L
Douglas Nichols	CR-ERT	Description and illustration of historically and scientifically important specimens of fossil pollen	L
Fred Peterson	CR-ERT	Late Jurassic Dinosaurian Ecosystems in the Western Interior	L
Kenneth Pierce	CR-ESPT	Quaternary geology of the Jackson Hole area, Wyoming	L and N
David Piper	WR-MRT	REE in Pelletal Phosphate Deposits from Phanerozoic	N
John Pojeta	ER-	Studies of early molluscan evolution and radiation using	L and N

	ESPT	Cambrian and Ordovician fossils	
Barney Poole	CR-MRT	Paleozoic stratigraphy and tectonics of Sonora and northern Sinaloa, Mexico	L and N
Douglas Rankin	ER-ESPT	(1) Bedrock geology of northern New England (2) Write paper on Appalachian geology (3) publish geologic maps in VT and NH	L
John Reed	CR-ESPT	The roots of the Colorado Mountains	N
Mitchell Reynolds	CR-ESPT	Geologic framework of the greater Belt Mountains area, Montana	L
Charles Sandberg	CR-ERT	(1) Proximal and distal areas of sedimentary deposits resulting from Late Devonian marine Alamo bolide Impact (2) Maintenance and conversion of ongoing active-research "D/C Conodont Database"	L and N
Andrei Sarna-Wojcicki	WR-ESPT	Tephrochronological database: conversion from analog to digital	L
Kevin Scott	WR-VHT	Analyzing the Mazama Park eruptive period at Mt. Baker Volcano Observatory, N. Cascades	L and N
Daniel Shawe	CR-MRT	Slick Rock Uranium-Vanadium District in SW CO	L
Betty Skip	CR-MRT	Geologic map of the Fish Creek Reservoir 7 ½' quadrangle, Blaine County, Idaho	L
David Stewart	ER-ESPT	Publish 'The Ellsworth Terrane, Coastal Maine: Geochronology, Geochemistry, and Neodymium-Lead Isotopic Composition of a Middle Cambrian "Gulf of California" Analogue	L
Roland Tabor	WR-ESPT	Compiling completed 1:24,000 scale geologic mapping in the Puget Sound region, Washington on recently obtained LIDAR topographic base.	N
Ted Theodore	WR-MRT	Search for syngenetic gold in Nevada and the Russian Far East	N
Charles Thorman	CR-MRT	The Elko Orogeny – Middle Jurassic Orogenesis in the Cordilleran Miogeocline	L and N
Thomas Wright	WR-VHT	200-year interpretative history of Kilauea Volcano	L

**Fiscal Year 2009 Bradley funded projects**

<b>Scientist Emeritus</b>	<b>Science Center</b>	<b>Project</b>	<b>Legacy (L) / New research (N)</b>
Jack Epstein	ER-ESP	(1) The 1959 Hegben Lake Earthquake; 50-year	L/N

		Anniversary Celebration; (2) Surficial Geology of the Saylorburg Quadrangle, Pennsylvania	
Douglas Rankin	ER-ESP	Bedrock Geology of northern New England	L
Isidore Zeitz	ER-MRT	Interpretation of the Basement Rocks and Structures of the U.S. from the Rocky Mountains to the Eastern Continental Shelf	N
Paul Barton and Philip Bethke	ER-MRT	Development of a GIS Database for the Creede Mining District, CO	L
Wylie Poag	ER-CMG-WH	Stratigraphic and paleoenvironmental effects of the Chesapeake Bay bolide impact	N
John Reed, Jr.	CR-ESP	Geologic underpinning of Colorado's mountain ecosystems	N
Richard Madole	CR-ESP	Geomorphic and stratigraphic records of Quaternary climate change in the Great Sand Dunes area, Colorado	N
Ivo Lucchitta	CR-ESP	Editing and publications costs for one Grand Canyon Quaternary geology, geomorphology, geochronology and soils map	L
Mel Kuntz	CR-ESP	Geologic map of the basalt lava fields of the eastern Snake River Plain, Idaho	L
Walter Dean	CR-ESP	Are sediments from the Black Sea, Cariaco Basin, and Peru margin analogs for metalliferous black shales?	L
Charles Sandberg	CR-ERT	Stratigraphy, paleotectonics, and Alamo impact effects along Devonian to Mississippian Antler orogenic migrating forebulge, Nevada and Utah	L/N
Keith Ketner	CR-ERT	Extent and nature of the Phosphoria Sea in Northern Nevada	L
James Fassett	CR-ERT	Geochronology and Oil and Gas Potential of Cretaceous-Tertiary strata, San Juan Basin, New Mexico and Colorado	L/N
Bruce Bohor and Jack Dyni	CR-ERT	Radiometric Dating of Eocene Green River Formation Rocks	N
Charles Thorman	CR-MRT	The Elko Orogeny – Middle Jurassic Orogenesis in the Cordilleran Miogeocline	L
Betty Skipp	CR-MRT	Geologic map of the Fish Creek Reservoir 7 1/2' quadrangle, Blaine CO, Idaho	L
Daniel Shawe	CR-MRT	Volcanic rocks of the southern Toquima Ranges, Nye County, Nevada	L

James Ratte	CR-MRT	Gila Hot Springs 7 ½ minute quadrangle, New Mexico	L
Forrest Poole	CR-MRT	Paleozoic stratigraphy and tectonics of northwest Mexico: Provenance of detrital zircons in quartzites/sandstones of Sonora and northern Sinaloa	L
Robert Moench	CR-MRT	Bedrock geologic maps and sections, northern Connecticut Valley to Chain Lakes massif, Vermont, New Hampshire, and Maine, USA, and Quebec, Canada	L
David Lindsey	CR-MRT	Geologic Story of the Sangre de Cristo Mountains	L
Marvin Lanphere	WR-VHT	Geochronology of Somma-Vesuvius Volcano, Italy	N
Peter Lipman	WR-VHT	“Super-eruptions” in a North American Andean-type arc setting: Mid-Tertiary volcanism in the Southern Rocky Mountains	N
Kevin Scott	WR-VHT	Anatomy of the Mazama Park eruptive period, Mount Baker, North Cascades	L/N
Robert Tilling	WR-VHT	Revised/updated publication of the USGS General-Interest Publication “Eruptions of Hawaiian Volcanoes: Past, Present, and Future”	L
Thomas Wright	WR-VHT	A 200-year study of Kilauea volcano, Hawaii	L/N
Ted Theodore	WR-MRT	Search for syngenetic gold in Nevada and the Russian Far East	N
Gordon Haxel	WR-MRT	Geologic, petrologic, and mineral resource studies, southern Arizona and southern California	L
Randy Koski	WR-MRT	Trace-element distribution patterns in metalliferous sediments from the Samail ophiolite, Oman: A potential tool for identifying concealed volcanogenic massive sulfide deposits	L/N
Larry Beyer	WR-ESP	(1) Understanding the Cenozoic tectonic history of the Los Angeles basin region and (2) preservation and curation of California well samples and files	L/N
Richard Pike	WR-ESP	Land Surface Quantification	N
Russ Campbell	WR-ESP	Geologic Mapping in the Santa Monica Mountains, southern California	L
Roland Tabor	WR-ESP	Remapping surficial geology of selected 1:24,000 quadrangles in Puget Sound Area, Washington on LIDAR bases	N
Warren	WR-	Preparation of a Layperson’s Book on the Geology,	L

Nokleberg	ESP	Resources, Hazards, and Tectonics of Alaska and the Canadian Cordillera, and Associated Laypersons' Roadside Geologic Guides	
Keith Howard	WR-ESP	Incremental pluton assembly over tens of millions of years in the Ruby Mountains, Nevada	L/N
Doug Morton	WR-ESP	Petrogenesis of the northern Peninsular Ranges Batholith, southern California	L/N
Andre Sarna-Wojcicki	WR-ESP	Tephrochronology Laboratory	L/N
Ronald Kistler	WR-ESP	Compilation of strontium, lead, neodymium, and oxygen isotope data determined for Mesozoic and Precambrian plutons exposed between 34 and 36N Latitude in southern California	L
Earl Brabb	WR-ESP	Completion of Chevron fossil information for California, Washington, and Oregon	L
Richard Hereford	WR-ESP	Late Holocene Alluvial History of the Central Mojave Desert: Regional Correlation and Relation to Climate Variability	L

**Fiscal Year 2010 Bradley funded projects**

<b>Scientist Emeritus</b>	<b>Science Center</b>	<b>Project</b>	<b>Legacy (L) / New research (N)</b>
Larry Beyer	WR-ESP	ELEMENT 1—Understanding the Cenozoic tectonic history of the Los Angeles basin region, and ELEMENT 2— Preservation and curation of California well samples and files.	L and N
Bruce Bohor	CR-ER	Radiometric dating of the Eocene Green River Formation and equivalent rocks	N
Neely Bostick	CR-ER	Geochemical and vitrinite analyses, Menefee Formation, New Mexico	L
Earl Brabb	WR-ESP	Prepare scanned images and database for paleologists from more than 3,000 oil wells in California	L
David Brew	WR-A	Southeast Alaska mapping studies	L
Russell Campbell	WR-ESP	Geologic mapping in the Santa Monica Mountains, southern California	L and N
C. Blaine Cecil	ER-ER	Paleoclimate and the origin of sedimentary chert	N

William Cobban	CR-ESP	Mesozoic collections project proposal – digital data recovery-the Scaphites	L
Walter Dean	CR-ESP	Late Quaternary and Holocene climate and environmental change in the northern Great Plains and western continental margin of North America	L
John Dyni	CR-ER	Radiometric dating of the Eocene Green River Formation and equivalent rocks	N
Jack Epstein	ER-ESP	(1) Surficial geology of the Saylorburg Quadrangle, Pennsylvania. (2) Field guide for New York State Geological Society.	L
James Fassett	CR-ER	Geochronology and oil and gas potential of Cretaceous-Tertiary strata, San Juan Basin, New Mexico and Colorado	L and N
Thomas Hamilton	WR-A	Publication of geologic maps and stratigraphic sections from northern and south-central Alaska	L
Gordon Haxel	WR-MR	Geologic, petrologic, and mineral resource studies, southern Arizona and southern California	L
B. Carter Hearn, Jr.	ER-MR	Missouri River breaks diatremes, Montana	L
Richard Hereford	WR-ESP	Late Holocene alluvial history of the central Mojave Desert: regional correlation and relation to climate variability	L
Keith Howard	WR-ESP	Framework of Mesozoic plutonic rocks in the eastern Mojave Desert	L and N
Randolph Koski	WR-MR	Trace-element distribution patterns in metalliferous sediments from the Samail ophiolite, Oman: A potential tool for identifying concealed volcanogenic massive sulfide deposits	L and N
Mel Kuntz	CR-ESP	Geologic map of the basalt lava fields of the eastern Snake River Plain, ID	L
David Lindsey	CR-MR	Publication of "The Geologic Story of Colorado's Sangre de Cristo Mountains"	L and N
Peter Lipman	WR-VH	Super-eruptions" in a North American Andean-type arc setting: mid-Tertiary volcanism in the southern Rocky Mountains	N
Richard Madole	CR-ESP	Exploiting the multiple climate-change archives in the San Luis Valley, Colorado	N
Douglas Morton	WR-ESP	Petrogenesis of the northern Peninsular Ranges Batholith, southern California	L and N
Warren Nokleberg	WR-ESP	Preparation of a laypersons' E-Book and E-Atlas on the Geology, Resources, Hazards, and Tectonics of the Northern Cordillera (Alaska and the Canadian	N

		Cordillera)and Associated Laypersons' Roadside Geologic Guides.	
George Plafker	WR-EH	Paleoseismicity and seismic cycle of the eastern Aleutian Arc at the Copper River Delta, Alaska	
Fred Peterson	CR-ER	Recognition criteria for regional unconformities In non-marine sequences and their application to improved energy resource assessments	L
Donald Plouff	WR-ESP	Development of global topographic database technology for geophysical applications	N
C. Wylie Poag	ER-CMG-WH	Stratigraphic and paleoenvironmental effects of the Chesapeake Bay bolide impact	N
John Pojeta	ER-ESP	Early phylogeny and evolution of Mollusca based on the fossil record	L
Forrest Poole	CR-MR	Compilation of Nevada and Sonora geologic maps and completion of Paleozoic regional stratigraphic and tectonic studies	L
David Prowell	ER-ESP	Litho- and biostratigraphic configuration of the Cape Fear River valley (North Carolina)	L
Douglas Rankin	ER-ESP	Bedrock geology of the Upper Connecticut Valley	L
James Ratte	CR-MR	Geologic map of the Gila Hot Springs quadrangle, Catron and Grant Counties, New Mexico	L
John Reed	CR-ESP	Geologic underpinning of Colorado's mountain ecosystems	N
Jennie Ridgley	CR-ER	Geochemical and vitrinite analyses, Menefee Formation, New Mexico	L
Jennie Ridgley	CR-ER	Water geochemistry of shallow microbial gas-producing formations, Montana and Canada	L
Charles Sandberg	CR-ER	Stratigraphy, paleotectonics, and Alamo impact effects along Devonian to Mississippian Antler orogenic migrating forebulge, Nevada and Utah	L and N
Robert Simpson	WR-ESP	Defining geologic contacts in 2- and 3-dimensions: Development of an analytic tool for automated rock boundary definition from geophysical data	L
Rowland Tabor	WR-ESP	Remapping surficial geology of selected 1:24,000 quadrangles in Puget Sound area, Washington on LIDAR bases	N
Robert Tilling	WR-VH	Publication—online and hardcopy—of the updated/revised USGS General-Interest booklet “Eruptions of Hawaiian Volcanoes: Past, Present, and Future”	L

Carl Wentworth	WR- ESP	Quaternary geology of the Santa Clara Valley (Silicon Valley), California	L and N
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## **Appendix 3: Honorary awards**

### **2006**

#### Dallas Peck Outstanding Scientist Emeritus Award

Although only one Dallas Peck Award is to be given out each year, the initial nominations were so strong that three were given out the first year:

- William Lee, a geophysicist in the Earthquake Hazards Team
- Peter Lipman, a volcanologist in the Volcano Hazards Team
- William Cobban, a paleontologist in the Central Region Earth Surface Processes Team

#### Best Publications

- David Stewart (Eastern Region) and Robert Tilling (Western Region) for the map, "This Dynamic Planet"
- John Reed (Central Region) for the map, "Geologic Map of North America"
- James Moore (Western Region) for his book, "King of the 40th Parallel – Discovery in the American West"

### **2007**

#### Dallas Peck Outstanding Scientist Emeritus Award

- Robert Schuster for his work on the interaction of dams and landslides

#### Best Publications

- Eastern Region Scientist Emeritus Best Publication Award: Richard Meyer for his paper, "Natural Bitumen and Extra-Heavy Oil"
- Central Region Scientist Emeritus Best Publication Award: Forrest Poole for his paper, "Tectonic synthesis of the Ouachita-Marathon-Sonora orogenic margin of southern Laurentia: Stratigraphic and structural implications for timing of deformational events and plate-tectonic model"
- Western Region Scientist Emeritus Best Publication Award: Peter Barnes for his book, "Benthic Habitats and the Effects of Fishing"

### **2008**

#### Dallas Peck Outstanding Scientist Emeritus Award

- James C. Savage for his cutting-edge research on the relationships among post-earthquake space geodetic measurements of surface deformation, aftershock production, and fault slip. His most recent work breaks new ground and clearly demonstrates that his outstanding contributions to USGS programs have continued unabated during his emeritus tenure.

#### Best Publications

- Eastern Region Best Publication Award: C. Blaine Cecil for his paper, "Late Devonian glacial deposits from the eastern United States signal an end of the mid-Paleozoic warm period"
- Central Region Best Publication Award: Paul K. Sims for his map, "Precambrian basement structure map of the continental United States – An interpretation of geologic and aeromagnetic data"

- Western Region Best Publication Award: Peter W. Lipman for his paper, “Eruptive and noneruptive calderas, northeastern San Juan Mountains, Colorado: Where did the ignimbrites come from?”

#### Appendix 4: [Publications](#) and [abstracts](#)

##### Scientist Emeritus Publications 2000-2010

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## **Appendix 5: Recent non-publication contributions**

### Headquarters

[Earthquake Hazards Program](#)

[Volcano Hazards Program](#)

### Eastern Region

[Energy Resources Science Center](#)

[Mineral and Environmental Resources Science Center](#)

[National Minerals Information Center](#)

[Geology and Paleoclimate Science Center](#)

[Woods Hole Coastal and Marine Science Center](#)

### Central Region

[Crustal Geophysics and Geochemistry Science Center](#)

[Energy Resources Science Center](#)

[Geology and Environmental Change Science Center](#)

[Geologic Hazards Science Center](#)

[Mineral and Environmental Resources Science Center](#)

### Western Region

[Earthquake Science Center](#)

[Geology and Geophysics Science Center](#)

[Mineral and Environmental Resources Science Center](#)

[Pacific Coastal and Marine Science Center](#)

### ***Headquarters***

#### Laurel Bybell

- Worked with Dr. Ning Zhang in the development of a prototype USGS National Paleontological Database.
- Worked with Judy Back on numerous Scientist Emeritus efforts.

### **Earthquake Hazards Program**

#### John Filson

- Worked with the staff of NEIC to develop a new concept of operations.
- Worked with the staff of NEIC to develop a quality assurance strategy to monitor the performance, to manage resources, and to improve products.
- Worked with the staff of the Earthquake Program Office to develop approach and arguments to describe the continuing earthquake hazard in the Central United States.
- Supported the staff of the Earthquake Program Office in developing plans to integrate seismic and geodetic monitoring and to engage close and expanded cooperation with the Air Force Technical Applications Center.

## **Volcano Hazards Program**

James Smith

- For digital compilation, found a way to move labels for geologic units, add a leader and add a halo behind each label that is the color not of the labeled unit, but the color of the geologic unit at label's new location. Wrote up illustrated notes and distributed them to other GIS users.

## ***Eastern Region***

### **Energy Resources Science Center**

C. Blaine Cecil

- Made significant contributions toward having the USGS lead the way in deep time paleoclimate interpretation of cyclic stratigraphy utilizing multilateral cooperative research with colleges from State surveys, and academic organizations.
- Elected Fellow of the Geological Society of America in 2008.
- Received 2008 USGS Eastern Region Best Scientist Emeritus Publication Award for his paper, "Late Devonian glacial deposits from the eastern United States signal an end of the mid-Paleozoic warm period"

M. Devereux Carter

- As a member of the State Coops project, adds and corrects stratigraphic data in the National Coal Resources Data System (NCRDS) USTRAT database; provides expert consultation on data issues, based on her 35 years of association with the NCRDS database; and tests a new software version of the client application for database users for reliability and accuracy prior to public distribution. She is highly productive and has been a major contributor to the project's success since her retirement in 2004.

Harold Gluskoter

- Completed review and analyses of CoalVal software and documentation following travel to Denver Federal Center to do on-site testing of CoalVal.

### **Mineral and Environmental Resources Science Center**

Philip Bethke

- Scanned 75% of 35 mm slides of Creede samples.
- With the help of the Rio Grande Silver and Hecla Mining Companies, most maps of the OH-Amethyst-P vein systems and the Bulldog Mtn. vein system have been scanned.
- Measurements of fluid inclusion homogenization and freezing temperatures (4672 samples), stable isotope values (1480 samples), clay mineral structures (366 samples) have been compiled in Excel format.

Larry Gough

- Continued as senior editor of a major 14-chapter, multi-authored USGS Scientific Investigations Report (SIR 2007-5289).

- Completed compilation and initial interpretation of the plant data for the trans-Alaska transect (Landscape Geochemistry project).

#### B. Carter Hearn Jr.

- Led field trip in Missouri Breaks MT, for diatreme experts from Canada, Germany, France, and New Zealand.
- Compiled Excel database of most of D.B. Stewart's mineral-rock collections of classic feldspars, alkalic rocks, lithium pegmatites, Maine igneous and metamorphic rocks, experimental run products; researched localities and pertinent publications; samples and documentation to be sent to Smithsonian Museum of Natural History, Rocks and Ores Collection.
- Met with BLM, Manager of Upper Missouri Breaks National Monument, Fort Benton, MT; gave BLM a set of the July 2009 field trip hand-out materials: ~10 diatreme maps, Google Earth images, copies of 1989 Internat. Geol. Congress field trip, 2003 8th Internat. Kimberlite Conference field trip, summary of structural geology and hazards of Missouri Breaks area.
- Consulted with Prof. Vickie Clouse, Montana State Univ. - Northern (Havre MT) on local igneous rocks for field teaching and laboratory instruction.

#### **National Minerals Information Center**

##### Valentin Tepordei

- Contributes to the science center by assisting the mineral commodity specialists for crushed stone and construction sand and gravel as liaison with the National Stone, Sand and Gravel Association, by sustaining good relations with industry personnel, and by assisting at national trade shows/conventions.
- Remains available to advise minerals information staff on questions and issues encountered with the annual data collection process and with analysis of events in the aggregate industry.

#### **Geology and Paleoclimate Science Center**

##### Jack Epstein

- DVD and Webcast produced and delivered for USGS Western Earthquake Hazards Seminar Series March 11, 2009: “The Night the Earth Shook! An eyewitness Account of the August 17, 1959 M 7.3 Hebgen Lake Earthquake and Madison Canyon landslide.
- Co-led Fieldtrip for the New York State Geological Association, Sept. 27, 2009,
- Co-led field trip at the Hebgen Lake Earthquake 50th Anniversary celebration, West Yellowstone, Mt.
- Invited Guest Speaker, “Eyewitness and Earwitness Account of the Hebgen Lake Earthquake by a budding geologist, August 17, 1959”, U.S. Forest Service 50th Anniversary of the Hebgen Lake Earthquake, Gallatin National Forest Earthquake Lake Visitor Center, Montana.

##### Gregory Gohn

- Performed substantial duties as an editor and chapter author for a major report on the results of the ICDP-USGS Deep Drilling Project in the Chesapeake Bay Impact Structure.

Rosalind Helz

- Assisted with monitoring eruptive activity and unrest at Okmok, Cleveland, Kasatochi, Redoubt, and other volcanoes in Alaska, as well as foreign volcanoes.

Odette James

- Collaborated with James Day, University of Maryland, in interpreting his siderophile-element data on igneous rocks from the early lunar crust. These data, in conjunction with Day's earlier data, demonstrate that the lunar crust and mantle have siderophile-element concentrations much lower than the Earth's crust and mantle.

David Prowell

- Ray Christopher (Clemson Univ.) and I have recently completed a palynological zonation of the Campanian part of the Late Cretaceous from data collected in the Carolinas over the last 35 years.

David Stewart

- Received the USGS 2006 Eastern Region Best Scientist Emeritus Publication Award for "This Dynamic Planet"

## **Woods Hole Coastal and Marine Science Center**

C. Wylie Poag

- Completed biostratigraphic calls for all benthic and planktonic foraminiferal species in samples from the synimpact-postimpact interval for all nine available cores in and near the Chesapeake Bay impact crater.

Richard Williams

- Worked with the Natural History Museum of London, U.K., to provide images for their Meteorite booklet.
- Presented lecture on the cryosphere to summer students at USGS/WHOI/MBL sponsored program.

## ***Central Region***

### **Crustal Geophysics and Geochemistry Science Center**

John Behrendt

- Continued interpretations of the aerogeophysical surveys over the West Antarctic Ice Sheet (WAIS).

## Energy Resources Science Center

### Bruce Bohor

- Provided SEM photos of shocked minerals to Dr. Glass for publication in his book.
- Generated evidence for the volcanic origin of the palygorskite bed in Yucatan.

### Neely Bostick

- Inventoried, with Maggee Bolger and Dave Walters, the USGS Denver Geologic / Topographic Museum collection and photographed the instruments on display in Bldg. 810.
- Inventoried, cleaned and described about 15 microscopes and other instruments in the Central Energy Team microscope room, Bldg. 25.
- Provided info on low temperature ashing instrumentation and its use to etch polished preparations of coal and other fossil organic matter to a professor at Instituto de Geosciences, Porto Alegre, Brazil.

### James Fassett

- Lead Chair for AAPG Rocky Mountain Section Meeting, Durango, CO, June 13-16, 2010.
- Session chair for the special session on the San Juan Basin and chair of the publications committee responsible for preparation of the Program with Abstracts for this meeting.
- Co-Chair for New Mexico Geological Society 2010 Fall Field Conference, September 23-25, 2010.
- Lead editor for the Field Conference Guidebook.

### Joseph Hatch

- Assisted the Michigan Geological Repository for Research and Education in the editing of two natural gas data sets containing chemical compositions for: A, ~900 gas samples and B, ~3600 gas samples.

### Arlie Huffman

- Completed compilation of wells with no API for Texas biostrat database.

### E. Allen Merewether

- Provided answers for monthly inquiries from the USGS Ask-A-Geologist Program.
- Arranged luncheons in October and May for Geologic Division Retirees.

### Fred Peterson

- Compiled data and illustrations for a "Taxa Form" paper for the National Park Service's interpretive programs.
- Worked on a road log in the Four Corners area as a trip leader for the 2010 New Mexico Geological Society field conference.

### Jennie Ridgley

- Visited the Montana Bureau of Natural Resources (at my expense) to collect produced water data from shallow microbial gas-producing reservoirs, including the Eagle

Sandstone, Bowdoin Sandstone, Phillips Sandstone, and Belle Fourche Formations. Over 2000 records were copied and of these about 400 have been entered into a database. Areas covered by the water analyses include major gas-producing areas in the Bears Paw Mountains, Bowdoin Dome, Cedar Creek Anticline and small fields in between.

- Went through archive samples of coal and carbonaceous shales of the Menefee Formation in the San Juan Basin. These were samples that companies had sent to the USGS over the years as part of a cooperative agreement between the USGS and the New Mexico Department of Natural Resources. The samples had never been catalogued or analyzed. There were 11 drill holes and over 140 samples. I compiled all of the pertinent location data into a database in anticipation of selecting samples for vitrinite and rock-eval analysis in FY 2010. Data will be used in future energy resource assessment in the San Juan Basin (the Menefee was lacking data of this type in the last assessment).
- Added about 400 water analyses to the water analysis database begun in FY 2008. These are data that I collected from the Montana Oil and Gas Commission office files. Data will be used as part of a broader regional groundwater study that addresses fluid flow and microbial gas generation and accumulation.

Robert Zielinski

- Gave talks at the U2009 Global Uranium Symposium (May) and the Clear Creek Watershed Association (Nov) on the results of my published study on the environmental impact of uranium mineralization and historic uranium mining in the Denver West 1:100,000 quadrangle.
- Compiled all the published reports produced by USGS scientists working on the Osage-Skiatook Petroleum Environmental Research (OSPER) Project during 2001-2007. This compilation was produced as a limited edition CD-ROM for distribution to the participating scientists, stakeholders at other cooperating agencies, and other interested parties. It was also made accessible from the Central Energy Team website.
- Provided support for the rapid deployment of sampling crews for the Department-mandated environmental assessment of U mining in the Grand Canyon area. I designed the field sampling form, wrote sampling protocols for soils, stream sediments, and mine waste piles, collected most of the necessary gear for two sampling teams, and helped process the samples as they were received from the field.
- Volunteered to be the gatekeeper for submittals to the U Group Webpage on the Central Energy Team website. I will also act as liaison with IT personnel to redesign and improve the layout of the webpage to make it more visually appealing and more representative of current activities and recent products of the U Group.
- Provided advice and scientific mentorship to the younger scientists within the U group.

## **Geology and Environmental Change Science Center**

Bruce Bryant

Performed major consultations requiring significant review of data to answer:

- John Singleton, PhD student, University of Texas, Austin, details of structure of Buckskin Mountains, Arizona.
- Ernie Duebendorfer, professor, Northern Arizona University, Geology of the McKracken Mountains, Arizona.

- Paul Anderson, writer, Geology of part of the Frying Pan River valley, Colorado.

#### Charles Bush

Created digital databases for 12 quadrangles of the Quaternary Geologic Atlas of the United States, I-1420.

#### William Cobban

Received the 2006 USGS Dallas Peck Outstanding Scientist Emeritus Award

#### John Reed

- Received the USGS 2006 Central Region Best Scientist Emeritus Publication Award for "The Geologic Map of North America"
- Acquired and inventoried more than 100 high quality oblique aerial photographs illustrating various geologic and ecologic features of major Colorado Mountain Ranges.
- Worked with Colorado Mountain Club Press to finalize outline of general interest book discussing relations between geology and ecology in the Colorado Mountains.
- Conducted book signings at REI Flagship store and Tattered Cover book store for recently published book "Rocks above the Clouds".
- Presented lectures on Colorado Mountain geology for Lookout Mountain Nature Center (part of Jefferson County Open Space Program).
- Led public field trip for nNature Center to examine Tertiary basalt flows on Table Mountain.
- Taught short course on geology of the eastern Front Range for University of Denver Adult Education Program.
- Lectured and conducted field exercises on use of map and compass for two sessions to the Colorado Mountain Club Wilderness Trekking School.

#### Van Williams

- Partnered with Tom Casadevall 11/08 to 6/09 to provide on-site USGS technical assistance to Government of Indonesia and US Department of State to deal with the ongoing geologic disaster caused by massive eruption of hot mud at Sidoarjo, West Java, Indonesia.

#### Walter Dean

- Walt was awarded the Lifetime Achievement Award by the International Paleolimnology Association at the 11th International Paleolimnology Symposium in Guadalajara, Mexico in December 2009. Walt was recognized as one of the world's most cited authors in the field of geochemistry of both lacustrine and marine sediments deposited from the Permian to modern times. From the citation: "Besides his scientific competence and diversity, Walt impresses by his openness for new collaborations, his humor, his willingness to share knowledge and experience, and his support of young scientists."
- In May 2010 Walt was notified that he will receive the Society for Sedimentary Geology's 2011 Twenhofel Medal. "The Twenhofel Medal is the highest award given by the Society in recognition of "Outstanding Contributions to Sedimentary Geology" (<http://www.sepm.org/awards/awardcriteria.htm>).

## **Geologic Hazards Science Center**

Edgar Leyendecker

- Participated as a member of the Building Seismic Safety Council's Provisions Update Committee that prepares the NEHRP Recommended Provisions for the Seismic Design of Buildings.
- Served as a member of the ASCE 7 Standard on Minimum Design Loads for Buildings and Other Structures for the 2005 and 2010 edition. I provided editing on the Dec 2009 review draft of the 2010 edition of this Standard.
- Elected to membership in the University of Texas Department Of Civil, Architectural, and Environmental Engineering's Academy of Distinguished Alumni for work done at the National Institute of Standards and Technology and the U.S. Geological Survey.

## **Mineral and Environmental Resources Science Center**

Harley King

- Worked with Maurice Chaffee in plotting and evaluating maps of the chemistry for about 30 elements for samples collected during the early 1980s and in 2007 from the Eureka, NV study area.
- Assisted Jim Kilburn in completing soil sampling on the Navajo Indian Reservation in northwest New Mexico and the Navajo and Hopi Indian Reservations in northeast Arizona, as part of the Geochemical Landscapes project.
- Assisted Jim Kilburn in soil sampling for the Geochemical Landscapes project by completing the sampling for Montana, an area of about 38,000 sq. mi. in southeast Montana.

James Ratte

- Completed seven Scenic By-Ways panels: Trail of the Mountain Spirits along 43 miles between the junction of NM-15 and NM-35 and the Gila Cliff Dwellings National Monument.
- Contributed road logs for New Mexico Geological Society Annual Fieldtrip 2008.

Betty Skipp

- Received an annual award given by the Tobacco Root Geological Society for excellence in geologic mapping in Montana.

Kenneth Watson

- Developed a new method to determine the atmospheric parameters needed to estimate the spectral emissivity of MASTER thermal data in order to compute mineral abundances.

## ***Western Region***

### **Earthquake Science Center**

William Bakun

- Plays a vital role in worldwide earthquake occurrence studies. The one change that he has made since retiring is that he is now able to collaborate more internationally, and so is bringing good methods from the EU to the US, and vice versa, all with the goal of a better understanding of the historical large earthquakes of the US. He also did considerable work with the UCERF2 project, showing that Tom Hanks's and his 2002 paper on magnitude log area relations still holds up, even when accounting for new large worldwide events.

#### William Lee

- Received the 2006 USGS Dallas Peck Outstanding Scientist Emeritus Award
- Served served on the 14-member Editorial Board, which included five Nobel Prize winners, and as a section editor for the " Encyclopedia of Complexity and Systems Science".
- Served as the lead guest editor for a Special Issue of the journal "Bulletin of the Seismological Society of America".
- Collaborated with Hiroo Kanamori of Caltech, and Luis Rivera of University of Strasbourg in the study of the January 4, 1907 Sumatra earthquake which generated an unusually large tsunamis.
- Initiated a USGS Tsunami Sources Working Group that organized a Tsunami Sources Workshop and prepared a report to assist NOAA in tsunami modeling.
- His efforts to organize a USGS rotational seismology workshop in February 2006 led to the formation of an International Working Group and a session on rotational seismology at the 2006 AGU Fall Meeting.
- First editor of the two-volume "International Handbook of Earthquake and Engineering Seismology" that Frank Press praised as: "Monumental in scope, authoritative in treatment, and historic in impact,...will be the most important source book for seismology and its applications for years to come."
- Has worked in developing online seismogram archives of significant earthquakes of the world, a project of the International Association of Seismology and Physics of the Earth's Interior (IASPEI) in collaboration with the Incorporated Research Institutions for Seismology (IRIS) Data Management Center. The project will make it possible for seismologists to extend quantitative seismology for nearly 100 more years.

#### James Savage

- Used the high-rate GPS data from the Parkfield earthquake to construct the time dependence of the postearthquake relaxation associated with that earthquake, and demonstrated that the time dependence is simply (though not linearly) related to the number of aftershocks that have occurred. The implication is that aftershocks are caused by the stress loading imposed by the postearthquake relaxation.
- Examined the post earthquake deformation measured by the USGS following the 1992 Landers and 1999 Hector Mine earthquakes. The temporal functions describing the relaxation following those earthquakes do not differ significantly, implying the relaxation mechanisms for the two nearby earthquakes are identical.
- Pointed out that along the creeping section of the San Andreas Fault, the interseismic accumulation of fault-normal compression is significantly less than that reported by Rolandone et al. and in fact does not differ from zero within measurement error.

Raymond Wilson

- Served as consultant (pro bono) and advisor to group of engineers at Amrita University in India and helped them plan the instrumentation for monitoring rainfall, soil moisture, pore pressures, and slope movement on an active landslide at Idukki, Kerala State.
- Participated in planning and site selection for a new monitoring site for rainfall, soil moisture, and pore pressures on a steep hillside in the East Bay.
- Participated in musical outreach activities related to USGS Open House 2009 (Duckweed and Cross Roads bands).

## **Geology and Geophysics Science Center**

Larry Beyer

- Continued curation and disposition of well samples and files.

Russell Campbell

- Acquired and formatted hourly rainfall data for 1997-1998 storm year in the Santa Paula area. Intend to test algorithm for probability of debris flow initiation with inventory data.

Keith Howard

- Served as president of the Peninsula Geological Society and presented Presidential address.

Douglas Morton

- Obtained samples from the Domenigoni Valley pluton for chemistry to understand the transformation of quartzite inclusions to mafic inclusions.
- Sampled pegmatites for chemistry; goal is to quantify late-stage metasomatism in complex pegmatites.
- Interacted with development of databases for debris flow susceptibility for up-coming Ark Storm.

Richard Pike

- Preliminary work shows that low-order polynomials relating mean slope curvature and skewness of slope curvature to DEM grid spacing may provide land-surface descriptors unrelated to other terrain measures.

Donald Plouff

- Except for future I/O options, completed FORTRAN programs, UNIX scripts, validation, and database establishment (plus maintenance) for my global 1- and 3-second elevation database for computing gravity terrain corrections.

Andrei Sarna-Wojcicki

- Elected Fellow of the Geological Society of America in 2008.

- John Westgate and Andrei Sarna-Wojcicki commemorative volume, *Quaternary International* 178 (2008) 1–3.  
Co-recipient of the 2007 Kirk Bryan Award of the Quaternary & Geomorphology Division of the Geological Society of America
- Assisted in the interpretation of analytical results and provided tephrochronological, stratigraphic and other contextual information and advice to the Tephra Lab staff, to others in the USGS, and to scientists outside the agency.
- Assisted and provided information and advice in the migration of old hard-copy and obsolete digital data to a new, comprehensive relational data base that we aim to make web-accessible.

#### Robert Simpson

- Building fault surfaces for construction of the 3D geologic map of the California South Coast region (PG&E crada) in collaboration with Jachens, Graymer, Wentworth, Langenheim, Watt.
- Assisting Ruth Harris and Michael Barall in constructing 3D finite element models to explore spontaneous dynamic models of potential large earthquakes on the Hayward fault.

#### William Stuart

- Improved a previous numerical model for the Hayward fault. At present, it is fairly successful in simulating observed creep rates. In particular, certain simulated creep rates increase during the final decade or so before the faulting instability (earthquake), somewhat in agreement with rate increases noted by J. Lienkaemper near Fremont.
- A related computer code was used to study fault interaction associated with the Alum Rock earthquake near the junction of the Hayward fault and the southern Calaveras fault.

### **Mineral and Environmental Resources Science Center**

#### Roger Ashley

- Preliminary results of investigation on the role of organic materials in mercury speciation and transport suggest that organics may not be as important in this environment, where mining sources of mercury predominate, as has recently been reported in other regions.
- Carried out sampling specifically designed to address the role of organics, and appropriate lab work is underway.

#### Gordon Haxel

- Served on the dissertation committee of James Girardi, Ph.D. candidate at the University of Arizona.
- Participated in a ten-day field trip to study and sample Jurassic granitoids in southern California and southwest Arizona with James, Bob Powell (USGS, ESP, Tucson), Prof. Mark Barton (University of Arizona), and another student.
- Presented talk to monthly dinner meeting of the Arizona Geological Society.  
Led two-day field trip, with approximately 25 participants, for the Arizona Geological Society.

#### Randolph Koski

- Received a DOI Meritorious Service Award.
- Contributed to a team effort to redefine and write a new volcanogenic massive sulfide model.
- Hosted a week-long writing workshop in Menlo Park attended by members of the modeling group.
- Developed an updated classification system for volcanogenic massive sulfide deposits based on lithostratigraphic associations and tectonic settings.
- Conducted five days of mineral (energy dispersive X-ray) and textural analyses of Oman metalliferous sediment samples using the scanning electron microscope in Menlo Park.
- Participated in a National Science Foundation review panel (Marine Geology and Geophysics proposals) in May, 2009.

#### **Pacific Coastal and Marine Science Center**

##### Alan Cooper

- Convened annual SDLS workshop to assemble Antarctic multichannel seismic reflection (MCS) data collectors from all countries that collect such data, to help facilitate and promote collaborative geoscience.

##### Monty Hampton

- Conducted an initial field study within a sand-wave field off San Juan Island where sandlance have been observed.
- Evaluated the capabilities of the sediment sampler and sea-floor camera with regard to our needs.

##### Keith Kvenvolden

- Appointed in 2008 to serve on a National Research Council, National Academy of Sciences Panel to evaluate the Department of Energy's Methane Hydrate program. He is a co-author of their report "Realizing the Energy Potential of Methane Hydrate for the United States." The report was approved by NAS and will be published in 2010.
- Asked by the Chairman of the 2010 Gordon Research Conference on Organic Geochemistry to prepare recommendations for recognizing the 40 year history of Gordon Research Conferences devoted specifically to organic geochemistry.

##### Homa Lee

- Collaborated with Holly Ryan and Peter Haeussler on studies of earthquake-induced tsunamigenic submarine slope failures during the 1964 Great Alaska Earthquake. Helped plan a research cruise.
- Served as advisor to Jingping Xu, Project Chief and task leaders of the CMG Project: California Urban Ocean Project

##### David Scholl

- Participated in and helped organize two workshops on the earthquake and tsunami geohazard setting of the Aleutian-Alaskan subduction zones.
- Participated in Extended Continental Shelf meeting of the LOS project.

## **Volcano Science Center**

### Melvin Beeson

- Gathered hand samples from various storage areas and assembled them in chronologic/numeric order.
- Prepared spreadsheet/database of the samples: latitude, longitude, field description, and pointers to computer files on thin sections, polished thin sections, selected sub samples, chemical analyses, and other derivative data.

### James Bischoff

- Developed new sediment climate proxies.
- Developed new U/Th dating techniques for Quaternary sediments using ISOPROBE technology at Lawrence Livermore National Laboratory. Developed elemental fingerprints in lake waters to study salt balances. Participated on advisory graduate panel at University of Cincinnati.
- Guest scholar at Tainan National University, Taiwan for one month where I gave lectures and collaborated on lake sediment studied with graduate students.

### David Brew

- Partnered with the Geologic Resources Division of the National Park Service for bedrock-geologic information about the Klondike Gold Rush, Sitka, and Glacier Bay National Parks. Preliminary information has been provided for all three park units, and detailed plans have been made for provision of further information.

### David Bukry

- Completed a latest Pleistocene paleoclimatology study of silicoflagellates in 183 samples from Alaska Cores EW0408-66JC, -11JC and -85JC.
- Began a Quaternary silicoflagellate census for Jim Kennett's Santa Barbara core MV0508-11JPC.
- Began a new paleoecologic census of Late Pleistocene silicoflagellates and coccoliths in a new set of samples from northern Gulf of California core Atlantis-II-125, 75JPC.
- Invited, with John Barron, to study onshore and offshore core samples from IODP 313 for correlation of NJ subsurface Miocene stratigraphy and paleoecology, in cooperation with the New Jersey Geological Survey (Peter Sugarman, NJGS).

### Terrence Gerlach

- Worked with USGS collaborators at the Hawaiian Volcano Observatory to model and document a new mechanism for magma degassing at the summit of Kilauea Volcano by static decompression.

### Robert Koyanagi

- Supported HVO seismic analysts in reevaluating historical seismograms collected in Hawaii, and discussed seismic events of interest.
- Assisted the University of Hawaii's CSAV staff in the volcano monitoring course for international volcanologists in July 2009.
- Communicated with volcanologists in Japan on volcano research projects.
- Communicated with volcanologists in Peru concerning seismic events associated with eruptive activity at Urbinas Volcano in Peru and Colima, Mexico regarding classification of seismic signals associated with volcanic activity at Colima as compared to those recorded in Kilauea Volcano in Hawaii.

#### Marvin Lanphere

- Three years of funding as a Bradley Fellow went toward mineral separation of sanidine from the older eruptive units of Somma-Vesuvius volcano in Italy.
- Data is being collected on the age of the Krummholz volcanic unit in Lassen Park, California and its correlative unit in Europe, the LaChamp event.

#### Peter Lipman

- Nine weeks of intensive field mapping in the northeastern San Juan Mountains - assisted by Andrea Sbisà, Univ. Trieste, Italy.
- Received 2008 Outstanding Publication Award (map category),” from the Association of Earth Science Editors.
- Received the 2006 USGS Dallas Peck Outstanding Scientist Emeritus Award and the 2008 USGS Western Region Best Scientist Emeritus Publication Award.
- Became chair of Investment Committee and member of Finance Committee, Geological Society of America

#### Kenneth McGee

- Provided advice and assistance to members of the Volcano Emissions Project staff on technical and scientific matters.
- Performed various calculations as requested and provided advice and assistance to VEP project staff on the revision of a manuscript on the contributions of gas emissions to the atmosphere from Augustine Volcano in Alaska during the 2006 eruption.
- Consulted with a researcher from Cornell University on the global distribution of phosphorus from volcanoes and a student from the University of Alaska on the sulfur dioxide emissions from Fourpeaked Volcano in Alaska and the comparison with satellite-based measurements.

#### Thomas Miller

- Continued long-standing liaison activities with Russia colleagues in Kamchatka associated with KVERT.
- Devoted most of my efforts to the unrest and eventual eruption of Redoubt volcano. I served as an advisor and consultant on the eruption in general with particular reference to the most recent previous eruption in 1989-90.
- Participated in many staff and program meetings regarding eruption response and scientific issues relation to the eruptions. Activities also included numerous overflights of

the volcano beginning in January and some helicopter-supported fieldwork on laharic deposits in April.

- On occasion, helped write updates and other immediate release documents.
- At the request of AVO supervisors, gave interviews on the volcanic activity to local print media, local TV, and local and national NPR programs.
- Expanded my Russian activities to include meetings with SVERT personnel.

James Moore

- Received the USGS 2006 Western Region Best Scientist Emeritus Publication Award for “King of the 40<sup>th</sup> Parallel – Discovery in the American West”
- Worked with graduate student (Univ. of Nevada, Reno) in Andy Calvert's lab in completing a series of Ar-Ar ages of young lava flows in the Lake Tahoe region

L. J. Patrick Muffler

- Assisted Prof. Rachel Teasdale (California State University at Chico) and Prof. Jennifer Wenner (University of Wisconsin at Oshkosh) in preparation of their NSF proposal for trace-element and isotopic studies of the Poison Lake Chain.
- Led three field trips to Lassen Volcanic National Park and Vicinity (1) Fourth Princeton GeoGrads Reunion, 20 September 2008, (2) National Association of Geoscience Teachers, Far Western Section, 2008 Fall Field Conference, 27 September 2008, (3) Geothermal Resources Council, 04–05 October, 2008.
- Successfully brokered an agreement (and financing) for Brian Hausback (California State University at Sacramento), Mike Clynne, and Peter Stauffer to prepare a USGS Fact Sheet on the Sutter Buttes.
- Field-checked and partly revised a consolidated field-trip guide to Lassen Volcanic National Park and vicinity (based on separate field-trip guides prepared in 2008 for the Princeton GeoGrads, the California Section of the National Association of Geology Teachers, and the Geothermal Resources Council).
- Explained fumarolic activity at Lassen Volcanic National Park at the 2008 Open House in Menlo Park.

Manuel Nathenson

- Worked with Clynne and Muffler to analyze the probability of an eruption for the Lassen volcano hazard assessment.
- Worked on a better date for the climactic eruption of Mount Mazama using new ice-core time scale GICC05 for the GRIP, NGRIP, and DYE-3 cores that has much lower uncertainty.
- Completed 2007 calendar year bibliography for the Volcano Hazards Program and kept files current for publications in 2009.

Kevin Scott

- Mentored students and junior collaborators from around the world.
- Performed pre-publication-submission reviews and editing for foreign collaborators, primarily in Mexico and China.

Robert Tilling

- Received the USGS 2006 Western Region Best Scientist Emeritus Publication Award for “This Dynamic Planet”
- Presented keynote address “Volcanism and associated hazards: The Andean perspective” at the 4th Alexander von Humboldt International Conference: The Andes: Challenge for Geosciences, Santiago, Chile, 24-28 November 2008.
- Presented keynote talk “Effective Communications: Imperative in Reducing Volcano Risk” at the Advanced Workshop on Evaluating, Monitoring, and Communicating Volcanic and Seismic Hazards in East Africa, Trieste, Italy, 17-28 August 2009.

Thomas Wright

- With the aid of Robert Lopaka, established a folder on the HVO private network, in which I deposited the completed seismic and tilt summary plots for the period 1967-2008.
- At HVO’s request, I also provided the original Whitney vault tilt record and my compiled record of changes in the level of Halemaumau lava lake between the founding of HVO in 1912 and the disappearance of the lava lake during the 1924 collapse.

## Appendix 6: Photos

### 2006 Menlo Park awards ceremony



2009 Eastern Mineral and Environmental Resources Science Center party

