

2008



# GSA Medals & Awards

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# 2008 MEDALS & AWARDS

## PENROSE MEDAL

Presented to George A. Thompson



George A. Thompson  
Stanford University

### Citation by Mary Lou Zoback

Applying keen geologic insight to interpret diverse geophysical datasets, George Thompson has illuminated a broad range of crustal processes, profoundly enhancing our understanding of crustal evolution. Much like the man, his geophysical models are ingenious and elegant and always well-grounded in basic principles. Thompson contributions have stimulated research in four distinct thrusts:

- **Role of lithosphere buoyancy in surface elevation.** In 1964, Thompson and Manik Talwani used seismic and gravity data to demonstrate thin crust underlying the western U.S. Long before plate tectonics, they recognized that low-density upper mantle was required to explain the regional high elevation. Later, Thompson was among the first to establish the importance of lithospheric thickness in controlling continental elevation; with Tom Crough, using surface waves, he showed that a thinned mantle lid could explain the Sierra Nevada uplift.
- **Nature of the lower crust in extended terranes.** Interpreting gravity and seismic data, Thompson demonstrated that extension of upper crust in the Basin and Range must be balanced by influx of mass into the lower crust. This fundamental gravity constraint stimulated widespread research into the lower continental crust composition in extensional regions. In the 1980s, Thompson and students studied exposed sections of deep crust

and uppermost mantle, demonstrating that interlayered mafic + ultramafic rocks (as in the Ivrea Zone) could explain the laminated, laterally discontinuous reflection character of the Moho on deep seismic-reflection profiles.

- **Brittle upper crust deformation.** Thompson pioneered quantification of orientation and rates of extension by measuring normal fault throw and subsurface configurations of faults. Parsons and Thompson showed that in volcanic terrains, brittle upper crust can extend by intrusion, without faulting—explaining relatively aseismic, low-relief terranes like the Snake River Plain. Offshore, Lachenbruch and Thompson demonstrated that the right-angle configuration of mid-oceanic ridges and transform faults represents a minimum energy configuration.
- **Plume tectonics.** Thompson's recent research has illuminated the unifying role of deep-seated mantle plumes in explaining continental extension/breakup, crustal creation/modification, and topography and isostasy.

### Response by George A. Thompson

Thank you, Mary Lou, for your generous comments! I was stunned speechless when I heard about the Penrose. . . . But after brief consideration I decided to accept. I humbly accept as the representative of all those in the Geoscience community whose creative insights continue to make Geology inspiring. They include many students, colleagues, mentors, my lifelong partner Anita, and our family. I cannot begin to name them all or even their institutions, but my appreciation is expressed by a quotation of unknown origin:

"I have warmed by fires I did not build  
I have drunk from wells I did not dig"

Not that I haven't dug a lot of holes for myself—some really hard to climb out of!!

I was lucky in my first field experience to be assigned by the USGS to an often overlooked part of the Basin and Range province, a mining district in the Big Bend area of Trans-Pecos Texas. In this arid and mountainous terrain (Yes, Texas!), faults and intrusions are beautifully exposed in three dimensions and further explored in mines. But the processes that excited my curiosity are still with me; we have much to learn about the active crust and mantle

machinery driving fragmentation of the Basin and Range province of western North America and similar regions around the world. I focus on the interplay of magmatic and tectonic processes on crust and mantle scales, and I am fascinated by the vigor and pace of current research. In the Nevada Basin and Range, for example, in addition to the long-running influences of subduction, arc magmatism, back-arc spreading, and San Andreas shearing, this actively spreading region received an enormous pulse of energy 16 million years ago with the eruption of hundreds of thousands of cubic kilometers of Columbia River flood basalts, emplacement of massive dikes from Washington State to southern Nevada, and the emergence of the Yellowstone Hotspot. Conceptually modeled as the breakout of a hot rising mantle plume (not without controversy!), the plume head also spread irregularly beneath the lithosphere for hundreds of kilometers. Combined gravity and seismic evidence are consistent with the widespread plume head. Now, growing evidence in the Nevada Basin and Range, based on thermochronology, demonstrates rapid pulses of mountain uplift and normal-fault extension at this same time, 16 million years. Clearly the Columbia River Basalt events had a major influence on Basin-Range structure. Hopefully, the processes operating here will supply a more general understanding of similar tectonic settings, such as the Dead Sea-Gulf of Aquaba, or perhaps the Triassic-Jurassic rifting and giant magmatic events of eastern North America.

Another example of coupled volcanic-tectonic products that cries for explanation is the astonishingly regular geometric pattern of ridges and transforms that decorate the ocean floors. Excellent observational and interpretive progress is growing rapidly, and competing explanations are numerous. An essential key to the self-organizing pattern, explored with colleague Tom Parsons, may be the active role of dikes, injecting and fracturing perpendicular to the least stress, like artificial hydrofractures but unlike normal faults, which are shear failures. The dikes inflate perpendicular to the least stress and in so doing change the stress. Field examples exhibit 90-degree changes in least stress direction. Rifting continental margins are marked by oblique and irregular normal faults, but dikes take control where magmatism dominates the new ocean floor, and dikes are probably the principal key to the self-organization of the near-orthogonal pattern.

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Aside from the joys of Geoscience, I spend most weekends in hands-on management of a tract of California Coast Redwood forest. This is quite a learning experience! It is a productive working forest, managed to curtail development (by far the greatest threat to productive forests), managed to sequester carbon at maximum rates, and managed to reduce vulnerability to fire. Selection harvest leaves the land covered by forest at all times with trees of all ages, from seedlings to old giants. I strongly recommend that we re-think the preservationist model

of treating U.S. forests (but that is a long story for another day). The redwoods tell a geologic story as well. Their pollen abundance in sediments records dramatic cycles in climate in the Holocene and especially in the Pleistocene.

In a final note, Geology shares with Astronomy a unique perspective of the vastness of time and space in relation to our tiny human niche—a spiritual dimension if you will. Unlike astronomy, geology is applicable to managing the Earth, its oceans and atmosphere. Perhaps we will even modify

tectonic and volcanic events in the future. The general public is receptive, even hungry for more geologic information. I applaud the many excellent documentaries that help illuminate geology to the general public. But I think we have an opportunity beyond that, well illustrated by the astronomical spots (“Star Date”) aired on commercial radio news broadcasts. They are very well done, current, and give the listener things to look for. The dynamic Earth offers great possibilities to build on this model!

Thank you warmly!

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### ARTHUR L. DAY MEDAL

Presented to **Kenneth A. Farley**



Kenneth A. Farley  
California Institute of Technology

#### *Citation by Peter W. Reiners*

The impact of Ken Farley's scientific work and personal mentoring can be felt over a wide swath of the earth and planetary sciences. The clarity and integrity of his work serves as a model for those who have had the privilege of working with him; his leadership and insight in geochemistry make him highly deserving of the Day Award for application of physics and chemistry to geologic problems. As one of Ken's former postdocs, I am honored to have the opportunity to highlight some of his many contributions.

Ken seems to have an almost supernaturally lucid vision of natural processes, as if he has seen the answers in the back of the book to the problems most of us struggle with awkwardly. This may come from working with some of the most demanding giants of geochemistry, including Karl Turekian and Harmon Craig, as well as the rigorous scientific atmosphere at Caltech.

Ken's most influential work is in noble gas geochemistry—some of his earlier work demonstrated clear coupling of isotopic systems of noble gases and other elements in ocean-island basalts and systematic genetic variations among their mantle sources. He was a pioneer in the use of cosmogenic noble gases for examining surface processes, and he discovered the utility of extraterrestrial  $^3\text{He}$  as a powerful proxy for deep-sea sedimentation rates and for variations in the flux of extraterrestrial material to Earth—approaches whose potential has just begun to be tapped.

Ken's work in diffusion and the development of modern (U-Th)/He thermochronology elegantly solved several long-standing technical and interpretational problems, unleashing a technique with enormous impact on geomorphology and tectonics. While leading the way in these fields, Ken has also mentored an exceptional array of graduate students and postdocs.

Ken will no doubt make many more discoveries in the future with the concise critical analysis that characterizes the Farleyian approach. He illuminates scientific landscapes in a clear, fresh light and shows us how to see them with the same clarity.

On behalf of the community and those Ken has mentored, thanks and congratulations for this well-deserved award.

#### *Response by Kenneth A. Farley*

I want to thank Pete Reiners for his kind citation and the GSA for recognizing my work with the Day Medal. It's a great honor to receive an award with sixty years of history and to be included among such remarkable figures in the history of geochemistry and geophysics - figures that include my thesis adviser and many of my mentors.

Pete mentioned a range of topics I have worked on, but their relationship may be puzzling—oddly enough, it's through helium. At a recent cocktail party I was explaining my work to some Caltech trustees when I announced my sudden realization that every paper I have written discusses this element. You can imagine their blank stares—I can assure you that beyond balloons and squeaky voices helium is a pretty weak conversation-starter. But it truly is a fascinating element—its two isotopes have completely different origins in many materials, it is not gravitationally bound to earth, and it has no chemistry. And the million-fold (!) variation in  $^3\text{He}/^4\text{He}$  ratio in common Earth surface materials gives us a huge range to investigate!

For the last decade I have worked to develop (U-Th)/He dating. This came about in a curious way—in 1994 I met a Caltech graduate student counting fission tracks for his thesis. Having come from a background in chemistry, I had never heard of such a thing! But by chance I happened to have just calculated the enormous ratio of alpha to fission production by  $^{238}\text{U}$ . If you can count fission tracks by eye, by golly it should be easy to measure the alphas; of course someone else—Rutherford—had already thought of that, in 1905. It's probably just as well I was unaware of the many

earlier attempts at helium dating—almost all unsatisfying. I managed to recruit that track-counting grad student to have a look at helium, but when I mentioned to my noble gas colleagues my idea, I often got an incredulous “Why are you working on that?”. A review of my first NSF proposal to do the work captured that skepticism: “Farley is dumpster-diving”. I would love to say I knew better, but you can be sure there was great relief when our very first data set showed a correlation between age and elevation—the unmistakable sign of a sensible result.

The best part of this award is the opportunity it gives me to contemplate how my work has come about.

I would not be in geoscience at all if it were not for Karl Turekian, who inspired me as a Yale undergraduate to abandon chemistry, and engineered my path into geochemistry. Although I had a challenging relationship with my thesis adviser Harmon Craig at Scripps, I credit him with having taught me the key lesson that discovery requires measurements - often of things you have never analyzed before and things others think are a waste of time. And equally importantly, that the results—even if unexpected and strange—must record something. The trick is then to identify that something and determine if it is important or mundane (or just bad data!). This isn't the standard scientific method, but it's what motivates me - the thrill of developing a measurement technique, obtaining new data, and trying to figure out how it came to be and what it might be good for.

I need to thank my many collaborators over the years. This includes my four graduate students and more than a dozen post-docs who shared the fun of discovery and moved me in scientific directions I would never have explored otherwise. It also includes my faculty colleagues at Caltech, who not only tolerated my incessant and often ignorant questions, but embraced the methods we developed by finding fascinating applications for them - applications that then pushed my research in new directions.

I'm also pleased to acknowledge my research technician, Lindsey Hedges, who is in attendance at this ceremony. Lindsey has remarkable attributes that I simply do not—most notably incredible patience. (U-Th)/He dating requires meticulous attention to calibrations and to preparation of tiny mineral grains. I find such work unbearably difficult and frustrating, but Lindsey makes it look easy—she once tweezered a pile of zircons to spell out my name! Anyone who runs a lab

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can appreciate the incredible value of having a technician who “does it right”, every time.

I have also been fortunate to be well-supported financially. Keeping a laboratory functioning requires non-stop feeding, and I must acknowledge years of support from the National Science Foundation. We often complain about how risk averse NSF is, but decisions relating to my proposals have always seemed fair and open. While not

everything got funded, I can't complain; the review panel even liked my dumpster diving! I have also benefitted from grants from the G.B. Moore Foundation and a Packard Foundation fellowship - money with minimal strings that let me think big.

I have worked at Caltech for my entire professorial career—I could not ask for a more stimulating and supportive environment in which to be a scientist.

My wife Kristen and my sons Scott and Ryan should share this award with me. Their acceptance of my long work hours was too often repaid by vacations collecting samples that were always “right on the way”. It's hard for me to imagine putting in the effort that science requires without having such a great family to return to each evening.

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### YOUNG SCIENTIST AWARD (DONATH MEDAL)

Presented to Paul A. Kapp



Paul A. Kapp  
University of Arizona

#### *Citation by George E. Gehrels*

It is a great honor to introduce Paul Kapp as the recipient of the Donath Medal (Young Scientist Award) for 2008. Paul's contributions are primarily in the field of tectonics, with specific emphasis on the geologic, geophysical, and geochemical processes involved in continental collision.

Paul received his B.S. in geology/geophysics from the University of Arizona, where he was an active participant in several different research projects and a leader in the undergraduate geology club. Paul then went to work with An Yin at UCLA and conducted his dissertation research on the tectonic evolution of central Tibet. This was the perfect project for Paul, as he was one of the first geologists to bring modern concepts and analytical tools into a region the size of California. Through ~12 months of field mapping and related geochemical and petrologic work, Paul demonstrated that one of the previously mapped sutures in central Tibet is instead an extensional structure (probably the largest core complex on Earth) that exhumes Tibetan lower crust.

Paul finished his Ph.D. in 2001 and immediately took a faculty position at the University of Arizona. Although Tibet remains Paul's primary research focus, he has recently initiated projects on compressional and extensional structures in the western USA, the forearc region of the central Andes,

and gneiss domes of eastern Egypt. An additional research theme concerns the role of wind abrasion in shaping orogenic belts and the use of yardangs to constrain paleoclimate and paleowind patterns.

In addition to this stellar research, Kapp is an outstanding teacher of structural geology and tectonics courses and an effective and inspirational advisor of undergraduate and graduate students.

We accordingly congratulate Dr. Kapp on his impressive accomplishments to date and look forward to his continued leadership in tectonics research and education.

#### *Response by Paul A. Kapp*

Setting many feelings of humility aside—it is a great honor to be awarded the Donath Medal this evening in front of so many colleagues and friends. I thank the Geological Society of America and the Donath family for endowing this award.

It is a special pleasure to be introduced by George Gehrels, who took me under his wing 15 years ago when I was an undergraduate at Arizona. My geology career started with mopping floors in George's lab. This evolved into assisting George on projects addressing terrane accretion in Alaska and the evolution of the Himalayan thrust belt in Nepal. During my undergraduate years, I aped George to the point that I became known in the department as "Little George." Today—well, I still try to be like George!

Also inspirational early on at Arizona were Bob Butler, George Davis, Bill Dickinson, and Peter Coney. Coney taught me that "straight lines are drawn by simple minds" and to not "get lost in the noise." I also learned an enormous amount from Brian Currie, who was my TA for structural geology and sed/strat. And then there was his advisor, Peter DeCelles. My first interaction with Pete was in the jungles of southwestern Nepal. Pete did not want an undergraduate along and told me sternly, "You won't slow us down. If you get sick, you are going alone on a double-decker bus straight back to Kathmandu". On the same trip was Jay Quade—a real-life Indiana Jones in sandals. I am as honored now as I was then to have had the opportunity to work with and learn from these outstanding scientists.

My passion for geology was sparked at Arizona, but it was at UCLA that I started to grow as a scientist. I had a fantastic mix of advisors—An Yin, Mark Harrison, and Craig Manning. An was my primary advisor and is well known for his sayings: "You are

good, but not great"; "Sharpen your tool, sharpen your tool, and one day you will kill the monkey"; "One tired warrior can defeat ten well-rested warriors." I think that is when my insomnia started. I had an outstanding group of peers at UCLA: Mike Murphy, Eric Cowgill, Liz Catlos, Mike Taylor, Jessica D'Andrea, and Alex Robinson. Murphy was the ringleader of the group referred to as the squirrels by ourselves and the Asian mafia by others. I owe Murphy special thanks for mentoring me during my first field season in Tibet and showing me how to live life to the fullest. Also participating that first season was Ding Lin, with whom I have since worked in Tibet on a broad array of projects funded by the National Science Foundation tectonics program, the American Chemical Society Petroleum Research Fund, and the National Geographic Society. I thank Ding Lin immensely for an enjoyable and stimulating collaboration.

I also spent two long field seasons in Tibet with Jessica D'Andrea, soon after which she changed her name to Jessica Kapp. Maybe there is something to the idea that body odor is an aphrodisiac. I thank Jess for always reminding me how precious every day is and accepting me for who I am despite all of my quirks, one of which includes being a geo-aholic. I can only hope that our two boys, Drew and Kai, will grow up to be as understanding—or at least good field assistants.

For the past seven years since graduate school, I again owe great thanks to many of my colleagues at the University of Arizona. I have also benefited from a dynamic group of graduate and undergraduate students who keep me realizing that I first and foremost remain a student. Keeping me on a very steep learning curve is the geology itself. I devote a lot of time to doing field geology and making and studying maps. This practice, instilled in me largely by An Yin, is the driver behind my science and has taken me on a thrilling ride from Precambrian to active tectonics, from blueschists to basin fill—and most recently to wind erosion and dust. I am currently known in the department as "Yandang Man," thanks to Pete Reiners.

In closing, Greg Davis, my academic grandfather, and his former graduate student, Brian Darby, who has been a buddy of mine since high school, would often say that there is nothing better than great friends and great geology. I have been blessed with both. I am also grateful and honored to be a part of a supportive and truly outstanding community of earth scientists. I thank you all!

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### GSA PUBLIC SERVICE AWARD

Presented to **Richard B. Alley**



Richard B. Alley  
Pennsylvania State University

#### *Citation by David M. Diodato*

It is fitting that on the day I called Richard Alley at Penn State to congratulate him for receiving the GSA Public Service Award, he was up on Capitol Hill engaging with decision makers discussing global climate change. It was for his work on global climate change that Alley and the other members of the Intergovernmental Panel on Climate Change shared the Nobel Peace Prize with Al Gore in 2007. Alley demonstrates by his actions the profound insight that science by itself is necessary but not sufficient to inform public policy decision making. Also required is clear, credible, and effective communication. Over more than two decades of expanding the frontiers of knowledge about global climate change through leading-edge science, Alley, as a citizen-scientist, has recognized the imperative to communicate his scientific understanding in language that is clear and understandable to the public and to those empowered by the public to make decisions for society.

In his book, *The Two-Mile Time Machine: Ice Cores, Abrupt Climate Change, and Our Future*, Alley clearly communicates the significance of global climate change preserved in ice cores collected in Greenland. For that publication, Alley was awarded the 2001 Phi Beta Kappa Book Award in Science. Since then, Alley has maintained a vigorous schedule of public communications. His contributions to the open courseware initiative further demonstrate his strong commitment

to public service through education; beyond the 1,000 students who enroll each semester, his informative and accessible online course is available throughout the world, regardless of ability to pay. If you haven't seen it, I strongly recommend Richard's musical turn as Johnny Cash explaining seismology—singing, "So you're not dyin', we watch the line" ([http://streaming.ems.psu.edu/geosc10/watchtheline\\_medST.mov](http://streaming.ems.psu.edu/geosc10/watchtheline_medST.mov)).

Global climate change may be the greatest challenge ever faced by humanity. In awarding the Public Service Award to Alley, GSA recognizes not only the significant scientific contributions of an individual member, but also the significance to humankind of the global climate change research that Alley has embraced as his life's work.

#### *Response by Richard B. Alley*

Thank you, Dave, and GSA, for this honor. I am humbled.

Almost all of us learned long ago that scientific certainty, like economic certainty or political certainty, is an oxymoron. We can be certain only if we're allowed to make up all of the rules, and I know of no mortals who have been granted that power over the real world.

And yet, somehow, life goes on. Laws are passed, budgets enacted, judgments handed down, houses built, marriages pledged and births celebrated. When faced with the great unknown, almost all of us get out of bed, just to see. Besides, even though we know nothing with complete certainty, we still know a whole lot with really high confidence. The sun will rise, the wind will blow, the taxes will be collected, and at least most of our friends will be there when we need them, perhaps with a few friends we didn't even know we had.

As geoscientists, we know a lot of more-specialized things with high confidence, too. Poisons dumped on the ground will get into someone's water, volcanoes and floods and earthquakes and tsunamis will occur, Earth resources recovered at existing prices with existing technology will run out, changing the concentration of radiatively active gases in the atmosphere will change the climate, and water pollution, natural disasters, resource depletion, and climate change will influence us.

And yet, something odd sometimes happens when our uncertain-but-confident knowledge meets public discussion—participants may demand certainty. When and

where exactly will the volcano erupt, so we don't need to evacuate a minute too early. Prove that the water pollution caused the cancer. And don't address the climate and the composition of the atmosphere until you're absolutely sure that we're causing it.

A few of you may have already heard my next story, but I hope it bears repeating. During grad school, I was in Antarctica, being questioned by a rather imposing military airlift commander about the probability of encountering a crevasse at the summit of the Greenland Ice Sheet. After I explained the several reasons why a crevasse was highly unlikely there, he emphasized his concern, suggesting that if his plane fell in a crevasse after my advice, he would return, lock my private parts in a vise, set the table on fire, and give me a butcher knife. I then suggested a bit of insurance (which he surely already knew)—reconnaissance, followed by a "ski drag" (flying while dragging the skis to break any snow bridges over crevasses), then surveying the snow condition again before landing in the dragged region. No crevasses were encountered, as expected, but to the best of my knowledge the ski drag was conducted before landing.

As public servants, we face a steep and challenging task—to explore with policymakers and the general public the reality that we scientists are neither godlike nor stupid or conniving, that insurance is often cheap but rarely free, and that further research can narrow the uncertainties notably and bring the cost of insurance closely into line with the risks but cannot entirely eliminate—the probabilistic nature of the situation. And we must do so knowing that our measured discussion will be interrupted by people from many sides with agendas and sound bites that often appear more compelling than we do.

I believe that few of us entered science with any idea of facing this task—I know I didn't! And I believe that most of us enter the public discussion hesitantly—the endless frontier of science is more fun than the seemingly endless fighting around some issues where science meets politics. Furthermore, the great remaining uncertainties, the great prospects from further research, require that we as a community continue to pursue the endless frontier of science. But the widening circle of light from research illuminates a longer and longer perimeter of people who seek help in understanding what they can suddenly see. These are the people who pay for us, so we must respond. We must assess science,

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not just do it, and we must communicate the results of those assessments clearly, honestly, and respectfully.

I have been privileged to play a small role in this effort, with the National

Academy of Sciences, the United Nations Intergovernmental Panel on Climate Change, the US Climate Change Science Program, and in other ways including teaching a lot of bright students at Penn State, and today you

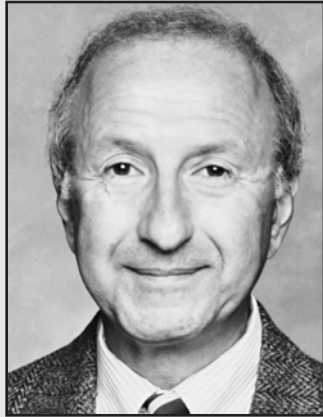
are honoring our joint efforts. I thank many, many colleagues, mentors and students, and especially my family—you know who you are, because I spend so much time leaning on you.



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## GSA PRESIDENT'S MEDAL

Presented to Roy J. Shlemon



Roy J. Shlemon  
*Roy J. Shlemon & Associates Inc.*

### *Citation by Robert L. Fuchs*

When you are young and know just about everything, or think you do, associating with a mentor can be a significant, life-altering experience. Maybe you are on the verge of losing direction, maybe you have unanswered career questions, maybe you need re-stimulation, maybe you've come to a crossroad, and the path to your future world is unclear. Be of good cheer—a mentor can guide you. I had an industry mentor for ten years, from university graduation through graduate school and out onto the job. It was a gratifying and job-enhancing experience, to say the least.

In 1994, Roy Shlemon created an endowment with the GSA Foundation to support applied geology. The initial activity was student mentoring, and the first expenditure of Shlemon Fund endowment income was in 1996 for three Shlemon Mentor workshops at GSA Section meetings. The program has since grown exponentially—through 2008, 3,000 students have had opportunities to interface with 500 mentors. Roy's program was the bell cow that led to other GSA mentor activities, now an important service for young geoscientists. By mid-2008, 7,000 students had met with 1,700 professionals working in applied geology.

Roy's career has included teaching and research positions at eight institutions and over 30 years as a full-time, multidisciplinary, consulting engineering geologist in southern California. Comfortable in both applied

geology and academia/research, Roy fully appreciates the importance of cooperation and coordination between these two fundamental sectors of the science. For geology students, mentoring presents an early career opportunity to begin this process.

This is the International Year of Planet Earth, one purpose of which is "to encourage more young people to study the earth sciences at universities." The Shlemon Mentor Program in Applied Geology accomplishes this purpose; Roy's role as the Program's founder and enabler accomplishes the purpose of the Presidential Medal.

### *Response by Roy J. Shlemon*

I thank you Bob for your kind words and your wise counsel. It was perhaps 20 years ago when we first met at a GSA Foundation booth during some annual meeting. As President of the Foundation, you made less-than-subtle suggestions about the virtues of starting a program of personal philanthropy. What excellent guidance, and I was eventually able to fund the GSA "Mentor Program in Applied Geology."

The intent of the program was, and still is, two-fold: First, it provides students with access to "real world" geologists, those mentors who could explain what jobs might be available, and what technical and communications skills are necessary for career success. Second, it brings the applied geologist back to the GSA. Too often, unfortunately, industry geologists dropped out of the GSA and its inherent "academic emphasis" in favor of professional groups more akin to their specific field of interest; for example, oil and gas exploration, mining, environmental assessment and engineering geology. Now, however, many applied geologists have returned and gladly share their experience, encouragement and guidance as GSA mentors. And, believe it or not, they do this voluntarily, for they receive no financial recompense for their time and expense! Thus all Mentor Program funds go to GSA administration and direct support of students.

As Bob noted in his citation, the Mentor Program was first implemented in 1996, and since that time over 7,000 students received their "free lunch," answers to their questions and suggestions for career development at each of the seven GSA Section meetings. Based on written responses, the students apparently find that the Mentor Program is well worthwhile, for at least they don't complain about the price of the lunch!

I humbly accept this honor on behalf of many: The GSA Foundation, where I had the honor of serving as a Trustee for eight years; the GSA Program Officers for the Mentor program, who have and continue to devote their time and energy to expand the program (and I here specifically recognize and express deep appreciation to Karlton Blythe and Jennifer Nocerino); and the 1,700 Mentors, the real heroes whose enthusiasm and volunteerism makes the program so successful that it is now emulated by many other geoscience organizations.

As a sage geologist one related to me when we discussed what university courses are most important for career success in applied geology and ultimately for the nebulous "happiness of life:"

- Five years out of school one wishes for more technical skills.
- Ten to fifteen years out, as an administrator, one recognizes that technological change is almost exponential, and thus truly important are well honed communication and "people" skills.
- Forty + years out, as a retired CEO or a well established Independent Consultant, one recognizes that the best university courses for a successful career and a well rounded life are probably literature, music, art and philosophy. Based on their place in the "ladder of life," the Mentors know this and share it with the students, to the benefit of the GSA and to our chosen profession.

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### 2008 BROMERY AWARD FOR THE MINORITIES

Presented to **Lisa D. White**



Lisa D. White  
San Francisco State University

#### *Citation by Laura F. Serpa*

The Bromery Award recognizes the outstanding education and service contributions and commitment to the advancement of minorities that characterized Bill Bromery's career. No person is more appropriate to receive the first Bromery Award than Dr. Lisa White, who has demonstrated the same commitment and drive to help minorities achieve success while maintaining a strong record of research and service to the geologic community.

Lisa received her B.A. in geology from San Francisco State University and her Ph.D. in earth sciences from the University of California at Santa Cruz. She comes from a family of high achievers who have gained recognition for both their career achievements and their contribution to the community. Not only does Lisa have the distinction of being a second-generation SF State alumnus, but she is also the second member of her family to serve as faculty and administrator at SF State. She credits her parents and an internship in the USGS–Minority Participation in the Earth Sciences program in the 1980s with planting the public service gene that sprouted a lifelong dedication to mentoring youth in geoscience. A member of the SF State faculty since 1990, she is now Associate Dean of the College of Science and Engineering and director of the SF-ROCKS (Reaching out to Communities and Kids with Science in San Francisco)

program. She was elected Fellow of the California Academy of Sciences in 2000 and was a visiting geology department professor at the University of New Orleans in 2005, where she mentored students and helped to promote opportunities for African Americans to attend college as geoscience majors. She continues to take an active role in recruiting minority students to geoscience and, through her leadership as administrator, teacher, mentor, and researcher, she is a role model who will inspire generations to come.

#### *Response by Lisa D. White*

I am extremely grateful to Laura Serpa for nominating me and citing me for this award. The Bromery Award is a very special honor and I am humbled to be the first recipient of an award reflecting the legacy of a man whose leadership and accomplishments have an impact far beyond our profession. I would like to thank the Bromery family for establishing such a generous award, and thank the Geological Society of America Committee on Women and Minorities in the Geosciences for selecting me. I am delighted to share this wonderful honor with my parents, Myrtle Escort White and Dr. Joseph White, who are here with me tonight, as is my sister, Dr. Lori White.

The Bromery Award recognizes those who have been instrumental in opening the geoscience field to minorities, and I was fortunate to have the field opened to me at the same public urban institution where I am now a professor and administrator, San Francisco State University.

I am often asked how an urban dweller like myself could become a geologist. I find myself asking the same question of my students each year as I try to make geoscientists out of the diverse urban, digital-generation students whom I actively recruit to the geosciences. I answer: there are multiple pathways to the geosciences and mine happened to start in San Francisco, in a city that is not typical, at a state university that is not ordinary, and in a family rooted in community and social activism.

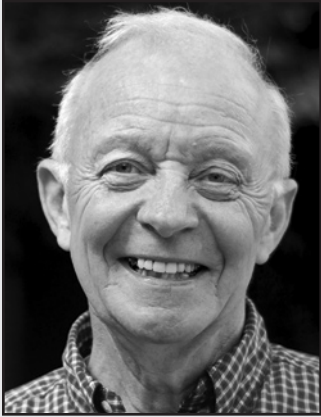
It was my good fortune to be an undergraduate at a teaching-centered university in close proximity to the USGS in Menlo Park providing an opportunity to work side-by-side with professional geologists. Whether it was doing field work in the S.F. Bay Area or around the Pacific Rim, there was a sense of being part of a research team and of something even bigger. In graduate school at UC Santa Cruz, my advisor, Bob Garrison, created a broader sense of inclusiveness and community among his graduate students and research colleagues from all over the world. That spirit of community led me back to my community where I felt I could make the most difference in the lives of others.

There is no one pathway to the geosciences but there are experiences that seem to be staples for undergraduate students who aspire to become geoscientists today: mentors and advisors who provide a sense of encouragement; research, field, and internship experiences with professional scientists; and a culture of support from friends and family who are equally as passionate and invested in student success. For an African American young person, these kinds of experiences in science continue to be more unusual and much needs to be done to increase the pipeline of underrepresented minorities to the geosciences.

A special thank you to all my faculty colleagues in the Geosciences Department at San Francisco State, to my good friends in the geoscience education community, and to the National Association of Black Geologists and Geophysicists for their commitment to changing the face of geosciences. I hope to continue to embody the spirit of the award and the legacy of Bill Bromery as we work together to create a more inclusive geoscience community. Thank you.

# 2008 MEDALS & AWARDS

## GSA DISTINGUISHED SERVICE AWARD



Marion E. (Pat) Bickford  
Syracuse University



Hugh C. Jenkyns  
University of Oxford



James M. Robertson  
Wisconsin Geological & Natural History Survey

### **Citation by W. Randall Van Schmus and James M. McLelland**

Marion E. (Pat) Bickford earned his spurs at Carleton College (B.S.) and U. Illinois (M.S., Ph.D.). During his first job at San Fernando Valley State in 1960, Pat felt the need to develop additional research skills, so from 1961 to 1964, when not teaching, he learned geochronology with George Wetherill at UCLA. In 1964, Pat joined U. Kansas to develop a geochronology program; working with colleagues and students, Pat developed this program into one of the best in the country. As well, Pat's work on the Precambrian of Colorado, SE Missouri, and with Randy Van Schmus on the Midcontinent basement represents multiple milestones in understanding the Proterozoic growth of North America.

Pat began his long service association with GSA in 1973; in 1987 he became editor of *GEOLOGY*, a task performed with style, excellence, and wit. The humorous front cover teasers began with Pat and his love for puns.

Pat left KU in 1990 to accept the Jesse Page Heroy Chair in Geology at Syracuse U. and to become department chair. He set a course that rapidly increased excellence in faculty, staff, and facilities to today's very high level. Simultaneously, while his research in Colorado and Canada continued, he initiated new, collaborative Adirondack research with Jim McLelland. These projects have largely involved SHRIMP geochronology and have served to clarify significant, otherwise intractable, problems.

In addition to his research and academic responsibilities, he continued his long, supportive association with GSA, most

### **Citation by Tina M. Niemi**

It is with great pleasure that I nominate Hugh Jenkyns, a distinguished stratigrapher at Oxford University who investigates chemical records of paleoenvironmental change during the Mesozoic, for GSA's Distinguished Service Award. For his outstanding service as *GEOLOGY* editor for five years, from 2003–2007, and insightful contribution to GSA's Publications Committee, Hugh is highly deserving of this honor.

Hugh scored a number of firsts at *GEOLOGY*. He was the first editor from Europe. He helped elevate the international stature and impact factor of *GEOLOGY*, which was one of the most heavily cited geoscience journals between 1996–2006. Hugh was the first to start his term as *GEOLOGY* editor completely using the new, all-electronic submission format. He was the much-needed relief editor—the third editor—the one to reduce the individual editorial workload from 500 to only about 350 to 400 manuscripts per year! Hugh ran a highly efficient editorial office. Efficiency is a laudatory trait when manuscripts arrive at an average rate of 3 a day, or as high as 10 a day during semester breaks. Part of his outstanding success was an excellent choice of an editorial assistant, Evelyn Polgreen. Together, the team at Oxford University led *GEOLOGY* and instituted several changes, including increasing the number of solicited reviewers. This is a significant change from the early days when *GEOLOGY* asked authors to provide a review of their own paper with their submission!

Hugh brought his unique set of insightful direction, skills, perception, and humor to

### **Citation by Marilyn J. Suiter**

Mentor: It is a word we use frequently, perhaps too often without the consideration that exemplary mentors deserve. Only a truly exceptional mentor would so generously share their time and energy as Robertson has to guide hundreds of young, bright geoscientists, eager to know where and how they can best serve their profession and their communities. In addition, Robertson encourages his fellow professionals to share their experiences, broadening the mentoring guidance even farther—that's the kind of breadth, depth, and commitment to leadership and to mentoring demonstrated by Dr. James M. Robertson, whose tireless service is celebrated by the Geological Society of America as a recipient of one of GSA's highest awards: the Distinguished Service Award.

Among his many gifts of service, Jamie has been the guide and primary spokesperson for GSA's Geology in Government Mentor program, which connects geoscience mentors employed by the government to GSA's student members in an informal Q&A luncheon setting supported by the GSA Foundation. Here, nearly 300 students at each GSA Annual Meeting experience the role of the geosciences at all levels of government service through the presence and words of selected mentors. Jamie recruits and coordinates the mentors, works closely with GSA staff, and acts as moderator and as a mentor, leading the activity with wit and candor and a bit of a steel whip. In the eight years Jamie has worked on this effort, more than 2,100 geoscience students have received employment guidance through this program. "His hard work, dedication, and

## 2008 MEDALS & AWARDS

### Bickford citation (*continued*)

recently as books editor, guiding authors in both style and content. Pat “retired” in 1997, but still conducts research, writes, publishes, edits, and, occasionally, teaches. His contributions to GSA and the profession are legion and illustrious, and he is most deserving of the GSA’s Distinguished Service Award.

### *Response by Marion E. (Pat) Bickford*

My sincere thanks to my old friends Randy and Jim for their gracious citation. When I think of some of the things they could have said, I am the more thankful! Now, about receiving the Distinguished Service Award from GSA: I am deeply grateful and honored that my colleagues nominated me for this award and that the GSA Council approved it. However, I must ask “Why me?” It does not seem to me that I have done anything more, professionally, than most of you in this room. I have loved geology and for almost 50 years I have had the opportunity to teach it and to carry out numerous research projects. I have been privileged to have fine colleagues with whom to work and I have had the support of NSF and two good universities. Geology has been very good to me!

I have regarded my service to GSA not as a burdensome task, but rather as providing wonderful opportunities to learn more about our science. When I was Editor of *GEOLOGY*, I felt that—although not practicing all aspects of the science—I knew just about everything that was new and exciting. I certainly did have fun with making puns for the “teasers” on the cover, although Executive Director Mike Wahl told me that someone had written to him that I was “degrading” the journal! Currently I am enjoying my work as Science Editor for Books, for the work has me in touch with scientists all over the world and has kept me abreast of many of the large projects that have been organized.

Finally, I would be quite remiss not to give credit to Betsy, my wife of 53 years. Some selective quotes from Proverbs are in order: “A worthy woman who can find? For her price is far above rubies. The heart of her husband trusteth in her and he shall have no lack of gain”. “Strength and dignity are her clothing and she laugheth at the time to come. She openeth her mouth with wisdom and the law of kindness is on her tongue”. “Her husband is known in the gates when he sitteth among the elders of the land”. “Give her of the fruit of her hands; And let her works praise her in the gates”.

Again, many thanks!

### Jenkyns citation (*continued*)

the editorial tasks. Above all, his great wit was highlighted monthly with the one-line teasers on the cover of *GEOLOGY* that made us all smile. Hugh Jenkyns is without doubt a superior candidate for the GSA Distinguished Service Award.

### *Response by Hugh C. Jenkyns*

I deem it a privilege to have been the first *GEOLOGY* editor from outside North America. My belief in non-commercial scientific publication is total and, as sub-disciplines of the earth sciences evolve from the fashionable to the passé, a generalist journal will always have a place. For good-humoured introduction to the Geology Control and Command Centre, and instructions on taking the flak, I am indebted to David Fastovsky and Ben van der Pluijm. Thanks go also to my former co-editor and citationist, Tina Niemi, and Andy Barth, who ably shared the editorial burden.

As editor of one of the most highly ranked journals in our subject, it often falls to one to reject papers penned by friends and colleagues, many very distinguished, such that I am surprised that so many people are still speaking to me. One learns a lot about people, not only in handling their papers but also in how they respond to requests for reviews, particularly in how they respond to such requests immediately following rejection of one of their own manuscripts. The majority of my correspondents have always been very gracious, although I was once described, in a mis-directed e-mail, as ‘that arrogant new editor who is truly evil’, which did seem a trifle extreme! I would also like to pay tribute to those scientists—and here I name Gerard Bond and Roger Larson—who contributed reviews in their very last months. Contrast this altruistic behaviour with that of those delinquent reviewers who still owe me a review, the non-receipt of which the on-line system faithfully records, as the weeks turn into months and the months into years.

My grateful thanks go to GSA for the gift of this Distinguished Service Award.

### Robertson citation (*continued*)

lively personality have made this mentoring program the most popular student event at the GSA Annual Meeting.”

### *Response by James M. Robertson*

The only other citation I’ve ever received had to do with a parking violation. As far as I know, this one doesn’t involve a fine....

Seriously, I am honored to have been chosen to receive a GSA Distinguished Service Award. I’ll own up to the “service”, but the “distinguished” part is, in my opinion, a bit of a stretch. Talking about work I enjoy doing at a state geological survey and answering questions from interested students are hardly chores. And I’ve had the good fortune over the years to be allowed to recruit my fellow panelists from a wonderful collection of enthusiastic, dedicated colleagues and new acquaintances who represent the opportunities, challenges, and satisfactions of using geology to “make a difference” and to “give back” in a variety of local, state, and federal government contexts.

I would like to acknowledge the GSA Foundation’s generous financial support for Geology in Government Mentor Luncheons over these past eight years. I’d like to think all the valuable wisdom the panelists so freely dispense is a sufficient attraction, but I suspect a free lunch plays some small role in “getting them in the door.” I offer special thanks to two GSA Education Program Officers—Karlton Blythe and Jennifer Nocerino—who have done the lion’s share of the real work each year behind-the-scenes, and who have allowed me to serve as the “front man”. Just another pretty face.

I believe our profession has no more important responsibility than to tend its own food chain—not just by formal training in a university, but also by exposing students to the incredible wealth of opportunities to do geology in a variety of common and not-so-common employment settings that are societally relevant as well as personally rewarding.

Mentoring programs, such as the Geology in Government Mentor Luncheon, are a fundamental way of introducing students to these opportunities. The Geological Society of America is to be commended for recognizing and supporting this broader educational endeavor. And I am privileged to have been allowed to participate.

# 2008 MEDALS & AWARDS

## SUBARU OUTSTANDING WOMAN IN SCIENCE AWARD

Presented to **Lorraine E. Lisiecki**



Lorraine E. Lisiecki  
*University of California, Santa Barbara*

### *Citation by Maureen E. Raymo*

It is my pleasure to present the citation for the 2008 Subaru Outstanding Woman in Science Award to my colleague, Professor Lorraine Lisiecki of UC-Santa Barbara. Quite simply, Lorraine produced a groundbreaking doctoral thesis that had, and continues to have, a wide-ranging impact on the climate sciences. An outstanding scientist with a unique

combination of geological and mathematical skills, Lorraine first developed the tools, a set of software packages, that allowed her (and now the scientific community) to analyze and understand the meaning and limitations of paleoclimate data. Using these tools, she was then able to make significant scientific contributions to the understanding of Plio-Pleistocene climate evolution through the construction of the “LR04 stack,” a record of the behavior of global ice volume and temperature over the last 5.3 million years. The LR04 stack and timescale have, in an astoundingly short time, become the “gold standard” for global isotope stratigraphy, not just within the paleoceanographic community, but the international ice core community and terrestrial paleoclimate community as well. This data set is now also the standard representation of the climate history of the last five million years as reproduced in many media, education, and science resource outlets.

With her phenomenal database, Lorraine has been able to examine competing hypotheses proposed to explain the influence of orbital variations on climate and, with a companion set of carbon isotope records, has been able to map the geographic-time evolution of nutrient gradients in the deep ocean over the Pleistocene, again allowing us to test hypotheses about how deep ocean circulation responds to climate change. In summary, Lorraine’s unique combination of scientific skills, combined with her drive and single-minded dedication to her long-term scientific goals, has resulted in one of the best, most interesting, and most influential doctoral theses I have ever seen.

### *Response by Lorraine E. Lisiecki*

I am deeply honored to receive the Subaru Outstanding Woman in Science Award in memory of Doris Curtis. I sincerely thank the GSA, Subaru, my friends and family, and especially my mentors and advisors, Timothy Herbert at Brown University and Maureen Raymo at Boston University.

On my first day of graduate school at Brown, I announced that I wanted to switch from planetary science to paleoclimate. The department could not have been more supportive. With the help of my advisor Tim Herbert and, ironically, a conversation with my husband Philip Lisiecki over Valentine’s dinner, I soon found my niche. Tim showed great faith in me by allowing me to pursue my own research direction, provided shrewd guidance, and even decided to forego co-authorship on some of my papers to ensure that I received appropriate recognition for my work.

I am also extremely fortunate to have had the opportunity to work with Maureen Raymo, a truly great scientist and an invaluable mentor. When I sent her drafts of my work, her responses were always incredibly insightful and remarkably prompt. She has offered great advice, shared with me some of the unwritten rules of science, and helped me get invitations to speak around the world.

My success would not have been possible without great mentors like Tim and Mo and opportunities to discover and research scientific questions about which I am truly passionate. I am proud to be recognized by an organization dedicated to providing these opportunities to all. Thank you again.

**This award sponsored by  
Subaru of America, Inc.**



# 2008 MEDALS & AWARDS

## AGI MEDAL IN MEMORY OF IAN CAMPBELL

Presented to **Larry D. Woodfork**



Larry D. Woodfork  
*Independent Consultant*

### *Citation by Ernest A. Mancini*

On behalf of the American Geological Institute and its Member Societies, it is an honor and privilege to be the citationist for Larry D. Woodfork, the 2008 Ian Campbell Medalist. Larry was born on 30 May 1939 in Vincennes, Indiana and was educated in the public schools in Vincennes. He received an associate degree in engineering sciences from Vincennes University, undergraduate and graduate degrees in geology from the Indiana University at Bloomington, and completed additional postgraduate studies in statistics and petroleum engineering at West Virginia University.

Larry's diverse and very productive professional career in the geosciences has spanned more than four decades and includes education, research, service, administrative, management, and leadership positions and experiences in government, industry, academia, and professional geoscience organizations. He began his career as a summer field geologist studying Devonian strata in Montana for the California Company (Chevron) in 1962. After graduation from Indiana University, he accepted a position at Humble Oil and Refining Company in its South Texas Division (Exxon) as a petroleum exploration geologist. In 1968, he joined the West Virginia Geologic and Economic Survey (WVGES) as a staff geologist in its Oil and Gas Section, and in 1989 he was

appointed State Geologist and Director of the agency. During his tenure at the Survey, he concurrently held appointments as Adjunct Professor in the Department of Geology & Geography and the College of Engineering and Mineral Resources at West Virginia University. In that capacity, he served on graduate student research committees, mentored students, and provided advice to University leadership on the mineral rights holdings of the institution. He has authored or edited scores of publications on energy resources and the application of geology in addressing societal needs. For his contributions to academia, Larry was awarded a Distinguished Service Award by the Department of Geology & Geography at West Virginia University and the Richard Owen Memorial Award as the most distinguished alumnus of the Department of Geological Sciences at the University of Indiana.

Larry served the State of West Virginia and the WVEGS with distinction for 34 years. He provided the insight and vision required to build and maintain the geological research and public outreach service programs of the Survey in a cost-effective manner. Through his efforts, the WVEGS is an effective and scientifically respected state geological survey. During his tenure as State Geologist, Larry served on a host of state, regional, and national committees, boards, councils and commissions. His outstanding and timely service contributions were recognized by the Governors of West Virginia, Kentucky and Indiana by each awarding him the highest honor bestowed on citizens: the Distinguished West Virginian Award, Commission as a Kentucky Colonel, and Appointment as a Sagamore of the Wabash.

Larry's dedication and commitment to geoscience professional organizations are legendary. He has served as President of the American Geological Institute (AGI), the American Institute of Professional Geologists (AIPG), and the Association of American State Geologists (AASG). He was Chair of the House of Delegates of the American Association of Petroleum Geologists (AAPG) and is a Senior Fellow of the Geological Society of America. For his distinguished service, accomplishments, and leadership to these national societies, he has received the following high honors and prestigious awards: AIPG Ben H. Parker Medal, AIPG Martin Van Couvering Memorial Medal, AIPG Honorary Membership, AAPG Honorary Membership, AASG Honorary Membership, and Eastern Section of AAPG John T. Galey Memorial Medal.

In 2000, Larry assumed leadership positions in the international geoscience community. He has served as an official United States voting delegate for the 31st and 32nd International Geological Congresses. He is a champion of the effort to establish the International Year of Planet Earth (IYPE), which is an initiative of UNESCO and the International Union of Geological Sciences. Larry is serving as Chairman of the Board of Directors and Officers of the Corporation of IYPE.

The Medal in Memory of Ian Campbell is awarded in recognition of an individual's performance and contributions to the geoscience profession. Clearly, Larry D. Woodfork's many and significant contributions and long record of distinguished service to the geoscience community and profession, and his exceptional achievements and visionary leadership unequivocally qualify him as an excellent selection for the 2008 Ian Campbell Medal.

### *Response by Larry D. Woodfork*

Thank you, Ernie, for serving as my citationist and for your gracious and generous commentary this evening. But, Ernie, I am even far more grateful for your friendship and support over the years. I also want to express my appreciation to all of the others involved in my selection for the 2008 Campbell Medal. The selection process is long, involving a number of organizations, individuals and sequential steps.

Over the course of my professional career, now approaching five decades, I have been extremely fortunate. I had many fine teachers during my undergraduate and graduate university education. Throughout my subsequent professional career in industry, government, and academia I was similarly fortunate to have many exceptional, remarkable, accomplished and influential individuals who generously mentored me. Throughout my career I've also had many talented supportive colleagues, collaborators, associates and friends. The list is far too long to recite this evening, but a number of you are in the audience. You know who you are and you can be assured that I haven't forgotten your contributions to whatever accomplishments, achievements, and good works that have been attributed to me. Thank you all.

I've also been privileged and honored to serve and hold office in numerous influential national and international professional, scientific and other organizations.

## 2008 MEDALS & AWARDS

I've received many honors, awards, commendations, and other recognitions from those same professional and scientific organizations, governmental bodies, academic institutions, industry and environmental groups, and the like.

Today I have the great honor, privilege, and pleasure to receive AGI's most prestigious award, the Ian Campbell Memorial Medal. That award has very special meaning to me and that merits a bit of explanatory background information.

Although my professional life has encompassed stints of varying (although sometimes overlapping) lengths in industry, government, and academia, my 34-year career with the West Virginia Geological and Economic Survey was the phase in which I matured most professionally and expanded my understanding and appreciation of the many diverse, although often interrelated, facets of geoscience enterprise. It was as a result of my experiences during that period that I came to more fully appreciate the importance and great potential of the geosciences to serve all of humanity and contribute in an very important major way to making our planet and society safer, healthier and more prosperous.

Although I never had the privilege nor pleasure of personally knowing Ian Campbell (1899–1978) well, it was during my years with the West Virginia Geological and Economic Survey, and my involvement in the Association of American State Geologists, that I became acquainted with the man's career, accomplishments, achievements, and character and thus came to greatly admire him. He was truly a giant of his generation in the geological profession and was most certainly a role model for the subsequent

generation(s) of American State Geologists. Today Ian Campbell remains a highly respected, revered, even iconic figure among the current generation of State Geologists.

Ian Campbell was a most uncommon man of remarkable accomplishment and widespread influence. In his long and exceptionally productive career as a geologist, educator, administrator, and public servant, he was noted for his candor and integrity. In memory of and in tribute to him the Association of American State Geologists, the Geological Society of America, and the Mineralogical Society of America commissioned the Ian Campbell Medal to be bestowed under the aegis and imprimatur of the American Geological Institute (Campbell was a past president of all four organizations. That in itself is noteworthy and most remarkable)!

The Campbell Medal is bestowed in recognition of singular performance in and contributions to the geological profession. Candidates for the award are measured against the distinguished career of Ian Campbell, whose service to the profession touched virtually every facet of the geosciences. The first Ian Campbell Medal was awarded in 1981.

The 26 recipients of the Campbell Medal since then comprise a most impressive and distinguished group within the US geoscience community. I've had the privilege and pleasure of knowing, both professionally and personally, at least two-thirds of the previous Campbell Medalists, all whom I greatly admire and respect, and most of whom I have worked closely with in various geoscience organizations and endeavors. To now be selected to join their lofty ranks is

indeed a high honor and a great privilege. It is at the same time quite a humbling, and a bit daunting, experience because I personally consider the Campbell Medal to be not only a recognition of past achievement and accomplishment, but beyond that, it also conveys a challenge to continue to strive to live up to the legacy it represents.

Before my closing comment, it would be unpardonable of me if I did not humbly and most gratefully acknowledge my greatest good fortune of all in life—my family, my late wife Myra (1940–1991) and our two now grown and accomplished daughters, Karen and Jessica. Without their love, devotion, inspiration, encouragement, understanding and unflinching support, both my professional career and personal life would have been far less joyous, meaningful, productive, and gratifying.

In closing, please indulge me for just one recommendation. If you have never read (or memory of it is dim), please read (or re-read) Ian Campbell's GSA presidential address (*GSA Bulletin*, 1969, pp. 553–560). It has one of, if not the most, intriguing and cryptic titles in geoscience literature: *Mene, Mene, Tekel, Upharsin*. In my view, particularly the second half of the paper is very insightful, perhaps even prescient when written and delivered, and remains today still timely, instructive, and inspiring. I am confident that if you read it you will understand more fully why I admire Ian Campbell and why I feel so honored to have been found worthy of “fitting the Campbell mold” and privileged to follow his lead and forwarding his legacy.

Thank you, ladies and gentlemen. Have a good evening and enjoy the rest of this great joint GSA/GCAGS conference.