ISRAEL C. RUSSELL AWARD

Presented to
Kevin M. Bohacs

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ExxonMobil Upstream Research Co.

Citation by
Elizabeth H. Gierlowski-Kordesch

I nominate Dr. Kevin M. Bohacs for the Israel C. Russell Award for excellence in limnogeology through research, teaching, and service. Kevin has worked for ExxonMobil since receiving his PhD, and he has been a great teacher, an amazing researcher, and a tireless volunteer in service to limnogeology and society at large. He is a gentleman scientist who has contributed so much to the understanding of lakes and their basins, in addition to other geologic topics, such as the deposition of shales and mudstones, or simply mudrocks, as well as models for coal depositional patterns and sandstone reservoir exploration. If you have ever been in the field with him, you know that the force is with him as he observes and interprets the rocks. His light saber must be somewhere in his well-stocked backpack, along with his shovel, compass, camera, acid bottle, rock hammer, measuring tape, etc. His opinion is well respected by academics and industry professionals alike because he has seen SO MUCH all over the world with his 30+ years of experience.

Kevin's service to GSA involves his work with the Limnogeology Division. He was there when it all started back in 2001 and was part of the executive committee until he stepped down as past chair. With his help, three core workshops were organized for the annual GSA meetings since he knows that good geologists need to see lots of rocks. His support of all of the Division's activities, including the funding of student research over the past decade, has been exemplary. But Kevin not only has volunteered his time to GSA, he has also dedicated his efforts to activities at AAPG, SEPM, and the IAL (International Association of Limnogeology). He has done it all – serving on various committees, encouraging students, publishing books and papers, and convening meetings or sessions. His service to the field of limnogeology, and geology in general, has been extensive. Not only does he aid the geologic community in these organizations, but Kevin also offers his services to society in general as a boy scout leader and a Red Cross volunteer. Maybe he is even a superhero in disguise – Bruce Wayne step aside! The give-away is the bow tie!

Kevin spends time teaching out in the field with his industry colleagues on their many field trips. But, more importantly, Kevin runs courses teaching academics and industry colleagues about safety in the field. He even has served as a distinguished lecturer for the Petroleum Exploration Society of Australia and spent time teaching short courses to university students. And, at AAPG meetings, he is always there to give an encouraging word to students at the ExxonMobil student breakfast event every year. Dr. Bohacs has certainly spread his wisdom on geologic concepts around the world and to Mars! Most recently he has been consulting at NASA on lake formation on Mars!

And, I must say, I have learned a lot from Kevin about how lakes work as well. With his many colleagues at ExxonMobil, including fellow limnogeologist Alan Carroll, a new lake basin model using sequence stratigraphy was formulated, recognizing three major types of lake basins: underfilled, balanced-filled, and overfilled. This is as big an event as the establishment of sequence stratigraphy itself. If you check the abstracts for the first International Limnogeology Congress held in Copenhagen Denmark back in 1995, Alan and Kevin had an abstract entitled "A stratigraphic classification of lake types and hydrocarbon source potential: balancing climatic and tectonic controls". This is when the lake revolution was evolving. It did take a while to catch on, but it has refined our ideas on how lakes work and has explained much about the pattern of lake deposits through time. This is the model that has helped to establish limnogeology as a science and probably helped Kevin and Alan find lots of oil as well. Even biodiversity and trace fossil patterns can be explained using this lake model. The contribution by Kevin as well as Alan to the science of limnogeology is quite significant. I always look at a lake deposit nowadays and think "what lake type would Kevin and Alan classify this lake and why?". Their model supports all old and new data so far, two decades and counting!

So, this nomination recognizes the great accomplishments and achievements of Dr. Kevin M. Bohacs in research, teaching, and service in limnogeology, geology in general, as well as in the community at large. He will certainly continue to do great stuff and I am honored to be able to give Kevin recognition for his life's work. He is most deserving of this award.

Response by Kevin M. Bohacs

Thank you for this great honor. First, I am proud of our Division - how it has grown and prospered, awarding student research grants and professional career recognition. Second, I am thankful to all the lake people who welcomed me into the greater community. The first live sedimentary rocks that I met in outcrop were lacustrine. (I grew up in southwestern Connecticut on sillimanite-grade rocks.) My first formal sedimentary introduction was at UConn, where Professor Randy Steinen had us describe practically every lacustrine outcrop in the Hartford basin and introduced me to the variety of lake deposits, how to look at both the coarse and fine-grained strata, and the importance of trace fossils—arguably, I started where paleo-ichnology started, on the trackways studied by Hitchcock in the 19th century.

After I joined Exxon Production Research Company, I worked with petroleum geochemists, investigating the sedimentology and stratigraphy of hydrocarbon source rocks. As part of that, I started studying the Green River Formation (GRF) with Ken Stanley and George Grabowski, Jr. During 30+ years of exploring its manifold mysteries, the GRF taught us much and launched us into lake studies around the world, through Africa, China, Azerbaijan, Germany, Madagascar, Libya, Brazil, and, of course, beautiful Rock Springs, Wyoming. Along the way, I met many great researchers and made numerous valued friends: Beth Gierlowski-Kordesch, Lisa Parks, Tim Demko, Dave Reynolds, Chris Scholz, Tom Johnson, Paul Buchheim, Kerry Kelts, Mike Talbot, Andy Cohen, Mike Smith, and Dave Finkelstein, among many others. When Alan Carroll joined Exxon and we compared our complementary worldwide experiences across the Phanerozoic, it became clear that there were some fundamental, repeated patterns which needed explaining,

but gave us predictive capabilities. Further investigations and conceptualizing resulted in our publications on the Lake-Basin-Type model which has proven quite useful for a range of applications, from source-rock prediction to vertebrate evolution—and even to evaluating landing sites for the Mars Science Lab rover.

Lake strata were a natural laboratory not only for advancing our understanding of hydrocarbon systems but also for developing a wide variety of insights into the sedimentary record. Several big themes came through this work: (i) it is important to appreciate and examine modern systems through the geological filter and determine which products of which processes are preserved in the rock record, and (ii) integration of a wide range of physical, biological, and chemical attributes is essential.

I thank Exxon's management who had the vision to support and encourage our work through many ups and downs, because we were able to translate our fundamental understanding into practical guidelines for effective, efficient, and environmentally safe exploration and extraction. Even more essential support came from my wife Susan, who enthusiastically encouraged me and tolerated my expeditionary absences.

Finally, I am greatly honored to receive this award for work that resulted from collaboration with many hardworking and smart people and that I was selected by a group of those smart people who really understand and appreciate our work.