

# Chapter 44

## Reflections on the Name of IAMG and of the Journal



Donald E. Myers

**Abstract** This note is to highlight the transformation of the names of *International Association for Mathematical Geologists* and its flagship journal *Mathematical Geology* respectively into *International Association for Mathematical Geoscientists* and *Mathematical Geosciences*.

When first approached about submitting something for the special volume I thought the idea was a good one but was not sure what I might have to say that would be relevant and of interest. Initially I planned to simply reflect on my year as Distinguished Lecturer (2008) but somehow it didn't seem sufficient. Instead I want to reflect on three words in the name of the organization and also on the current title of the journal, i.e. *International, Association Mathematical, Geologists* and *Geosciences*. As anyone familiar with IAMG knows it was born in Prague in 1968 in the midst of what turned out to be a momentous event but it also returned to Prague to celebrate its 25th anniversary in 1993. I wasn't one of that moderately small but very influential group but I subsequently knew or still know many of them. I didn't really start working in the field until the early 1970s.

Prior to the 1970s I was only a mathematician but accidentally came in contact with two other faculty at the University of Arizona, Y. C. Kim (Mining Engineering) and De Verle Harris (Mineral Economics) as well as Art Warrick (Soils, Water and Engineering). Hence I was beginning to "Associate". Through those I learned about G. Matheron's work, met Frits Agterberg, André Journel and Shlomo Neuman (Hydrology), developed some collaboration with USGS in Denver and made plans to spend a sabbatical at the Centre de Géostatistique (Fontainebleau) in the spring of 1981. Ghislain de Marsily spent the academic year 1979–1980 at the University of Arizona in the Department of Hydrology. Through Art Warrick I knew of the work of Richard Webster, I was fortunate to be invited to participate in the NATO ASI at Lake Tahoe in 1983 and met many of the others in the very important group in mathematical geosciences.

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D. E. Myers (✉)

Department of Mathematics, University of Arizona, Tucson, AZ 85721, USA  
e-mail: myers@math.arizona.edu

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At this point it is important to note the change(s) that have taken place in the name of the journal. Initially most of the membership would have been geologists or mining engineers but clearly hydrology and soil science are a part of the geosciences so that the interests and membership were expanding in scope. In fairly short order geosciences grew to encompass “environmental sciences”, “geography”, “ecology”, “image analysis”, “remote sensing”, “epidemiology”, “atmospheric sciences” because the stress was on “geo” and not on “ology”. Papers in the various soil science journals cited papers in the IAMG journal (and conversely), papers in the various American Geophysical Union cited papers in the IAMG journal (and conversely) and of course the petroleum industry was involved early with the collaboration between Fontainebleau and Shell Oil. It is likely that a list of referees for *Mathematical Geosciences* (and all the previous titles) would cross an ever increasing list of countries and institutions as well as areas of interest.

Except perhaps in France the work of G. Matheron was not really known in the mathematical/statistics community even though his signal paper appeared in the *J. of Applied Probability* in 1973. *Mathematical Reviews* still doesn't really have a category for mathematical geosciences other than geophysics. The statistics community likewise was slow to recognize mathematical geosciences. Most of the interest in Radial Basis functions either relates to solutions for partial differential equations or approximation theory.

The various editors (and publishers) of *Mathematical Geosciences* have been very interested in the impact ratings of the journal but it would be even more interesting to tabulate the number of different journals not closely related to mathematical geology that publish papers citing papers appearing in *Mathematical Geosciences* (including those that might have appeared twenty or thirty years ago). In many fields of science it is not uncommon for the significance or usefulness of a paper to appear many years later. This is especially true of pure mathematics.

As I have tried to point out that geosciences is a more encompassing term than geology (many university departments have changed their names to reflect this), the “mathematical” part of mathematical geosciences has also grown and expanded. In some ways statistics is an outgrowth of mathematics but it is also an outgrowth of agriculture (think of the work at Rothamstead Experimental Station and the many land grant universities in the US) but also the social sciences and economics/business. Statistics by its very nature is a very cross disciplinary applied area of interest. Another part of “mathematical” pertains to computing. The VAX computer and the software package BluePack were very much a part of the real growth of geostatistics, the desktop computer has created an even greater explosion. I first started teaching a class on geostatistics in 1982 and my students had to use a mainframe CDC 6400 with punch card input, it was terribly inconvenient but without that access the class would have had no practical value. The advances in computing and in access to computing have revolutionized the teaching of statistics in all its very forms.

Clearly IAMG was international from its original founding and that perspective has only grown with time. I can speak to that from a personal perspective both from my experience as the Distinguished Lecturer in 2008 but also as a referee/reviewer

for the journal and attendance at various international meetings. I would also note the level of interest evident in the Questions appearing on the ResearchGate.net forum. It is truly international.

Sometimes old ideas come back in a different form. The Design of Experiments originated in applications to agriculture and often emphasized various forms of “plot design” but now it may be important in the design of aircraft wings and may incorporate kriging and/or cokriging. Google tells me that my paper on cokriging (J. of the International Assn of Mathematical Geologists, 1982) is being cited for applications very far afield from the problem I thought I was addressing when I wrote the paper. I am sure other authors of papers that appeared in this journal may have had a similar experience. It is a tribute to the vision of the founders of IAMG back in 1968. “Mining Geostatistics” was a classic when it appeared (the English version) and I am sure that many readers had no interest in mining but there were ideas and concepts in it that were useful for other kinds of problems. The proceedings of the NATO ASI (*Advanced Geostatistics in the Mining Industry*) became “Geostatistics for Natural Resources Characterization” in 1984. Who knows what the future will bring but IAMG and *Mathematical Geosciences* have made a significant contribution. They have influenced the development of mathematics, statistics, computing as well as the various fields that might be grouped under the heading “GEO-sciences”.

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