

# IAMG

No. 94 June 2017

# Newsletter

Official Newsletter of the International Association for Mathematical Geosciences

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All good things must come to an end — sometime. One of the giants of mathematical geology is gone: Dan Merriam, well known and beloved by many, had a long and productive career and mentored and influenced many of us.

Dan Merriam died in April at the ripe old age of 90 years. He was a giant both in the physical sense and in the scientific community and was one of the main driving forces in bringing numerical geology to the forefront, both in terms of disseminating information as well as establishing personal relationships and working behind the scenes.



It is with sadness that I see one of my good friends and early influences in mathematical geology pass away -

it is the end of an era and the end of a career. Merriam came to my attention in the 1960s when he founded the computer geology group at the Kansas Geological Survey and started publishing the Kansas Computer Contributions which were a wonderful help for the rest of us who were trying to establish the use of computer applications in geology at our institutions. He also organized and was involved in various workshops, several of which I was able to attend, to learn about the application and use of computers in geology. Over the years I kept meeting him at conferences, and in 2000 I was invited to spend a year as visiting research scientist in Lawrence after retiring from my last full position.

His outgoing personality enabled Dan to make contact and engage with just about everybody he met, and he had the ability to get people together to work on all kinds of interesting geological projects. He was not just a theoretical computer geologist, he was also a geologist on the ground who into his old age was spending some time every week mapping geological quadrangles in Kansas. Sometimes he would take me along on some of his trips where we looked at rocks and discussed how they fit together and what they meant. He will be greatly missed.

And some good things will continue in a new way. My career as editor of the IAMG Newsletter is coming to an end after 22 years and 45 issues. But the Newsletter is not finished. I am excited to have a capable new editor to take over and renew the making of the Newsletter. Katie Silversides from the University of Sydney is my successor. She has already been involved in this Newsletter and will take over the full responsibility for the next one, the December issue. She will also manage the IAMG website and will renew our efforts to be present and active in social media. So, the IAMG communications will be in good hands, and I wish her all the best.

After so many years I would like to acknowledge the IAMG and thank the many IAMG leaders I have worked with for their support and for giving me the freedom to develop the Newsletter. It has been a pleasure to get to know and to become friends with so many wonderful colleagues.

Harald S. Poelchau



Harald 1995



Harald 2017



Katie

## It's time to nominate candidates for the 2018 IAMG Awards !

The Association invites all members to submit nominations for the **John Cedric Griffiths Teaching Award**

and the **William Christian Krumbein Medal**

**Please note the earlier Deadline: October 31, 2017**

For details about prerequisites for nominations please see the IAMG web site <http://www.iamg.org/> and click on **Awards**

There is also a list of past recipients and their laudations on the web site. Please have a look at it before sending your nominations!

The (informal) documents which should accompany a proposal are:

- a short statement summarizing the relevant qualifications of the nominee
- a curriculum vitae of the nominee

*Nobody gets an award without a nomination, so please support your colleague when you believe he/she deserves an award by submitting a nomination.*

Nominations can be submitted by a single person or by a group. The Laudations written over the last few years and published in Mathematical Geosciences are a good source of inspiration on how to write a nomination. Nominations can be submitted via e-mail

<[j.mckinley@qub.ac.uk](mailto:j.mckinley@qub.ac.uk)> or sent to:

**Jennifer McKinley - Acting Chair, IAMG Awards Committee**  
School of Natural and Built Environment, Queen's University,  
Belfast BT7 1NN, UK

*Nominations for other Awards may also be submitted at any time.*

*International Association for Mathematical Geosciences*

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## PRESIDENT'S FORUM

In my first Forum, as I took on the role of IAMG President, I was inspired by the legacy of the mathematical geoscience pioneers. As I write this Forum, we are saddened by the loss of our friend and colleague, Dr Daniel F. Merriam, on 26 April 2017 at the age of 90. A Past-President and Honorary Member of the IAMG, Dan was one of the early pioneers of computational geoscience and was instrumental in laying a foundation for the present day IAMG as founding editor of two of our journals *Computers & Geosciences* and *Mathematical Geology* and as editor of *Natural Resources Research* for ten years following founding editor Richard McCammon.

Many IAMG members have shared their fond memories of Dan and acknowledge his immense contribution to the development of computational and mathematical geosciences. Dan's role as historian for the IAMG has also enabled those of us who hope to follow in his path to continue his legacy in bringing together geology and mathematical science. On behalf of the IAMG, I would like to express our personal sorrow for Dan's passing and extend our condolences and deepest sympathy to Dan's wife Annie and to all of the family.

The best forward facing approach for Dan's legacy is to continue as a diverse and inclusive scientific community that promotes the advancement of mathematics, statistics and informatics in the geosciences to address the global challenges of our dynamic earth. A key way to achieve this, is to support our current student chapters and provide the opportunity for more IAMG student chapters to develop. One initiative that the Executive Committee and the Council will soon explore is possible funding to facilitate networking between student chapters, nurturing our community of early career mathematical geoscientists.

Our international conference activity is crucial to increase our global reach and relevance. The 18th Annual Conference, IAMG2017, will take place from 2 to 9 September 2017 in Fremantle, Western Australia. The early bird registration deadline is 1 June 2017. The IAMG and the Organizing Committee, chaired by Oktay Erten, look forward to welcoming you to Fremantle. An eminent line up of speakers is confirmed, including 2017 Distinguished Lecturer, Professor Clayton Deutsch, IAMG Matheron Lecturer, Professor Noel Cressie, Vistelius Award winner, Pejman Tahmasebi, recipient of the Felix Chayes Prize, Cliff Stanley and keynote speakers Vera Pawlowsky-Glahn and Paul Hodkiewicz (see page 10).

Preparations are well underway for IAMG2018, to be held in Olomouc (Czech Republic), 2-8 September 2018. Members of the core organizing team, Karel Hron, Ondřej Bábek and Eva Fišerová, are doing an excellent job and will be perfect hosts of IAMG2018. Two field trips are being prepared to exciting places not too far from Olomouc. In addition, there will be an organized trip to Praha (Prague) to commemorate the 50th anniversary of IAMG's founding. Many of the details are already available at the web site <http://www.iamg2018.org/>, with more to come. The 50th anniversary celebrations will be the perfect time to launch the Golden Anniversary book: "Fifty Years of IAMG" edited by Professor B. S. Daya Sagar and co-edited by Qiuming Cheng and Frits Agterberg. The book will be published by Springer.

The IAMG is committed to collaborating with academia, industry and governmental agencies worldwide to advance the role of mathematics, statistics and informatics in the earth sciences. Securing new sponsorship partners to support our international conference activity is an essential part of this collaboration. This will require more efforts by me, the Executive Committee, the Council and all engaged IAMG members.

The IAMG recently announced its support for the March for Science on Earth Day, 22 April 2017. While being clearly USA-centric (see page 5), the March was a global event, counteracting

the estrangement of scientists from society; stating the need for evidence based policy making and promoting robustly funded research. In the 21st century we have observed trends extending globally that endanger all three of these objectives.

Prior to engaging the IAMG in an activity with such strong political implications, especially in the United States, the Executive Committee carefully reviewed the principles and objectives outlined on the March for Science website from the international perspective of the IAMG. In deciding whether or not to support the March for Science, we concluded that we shared the concerns and endorsed the approach of the March

organizers. At the same time, to the extent that the March focused on climate science, we recognized that despite near unanimity among scientists and IAMG members that human activity has made a major contribution to climate change, there remains room for scientific and political disagreement on the most socially responsible policies for dealing with climate change. To those members who may express concerns, I would like to assure you that IAMG remains an international, non-political, scientific organization, and that your views are also valued and accounted for by this Council.

It would be remiss of me not to mention that this will be Harald's last newsletter as IAMG Newsletter and website editor. My colleagues in the Executive Committee, the Council and the broader IAMG community, want to acknowledge the immense and important contribution that Harald has selflessly undertaken to ensure the semiannual production of the IAMG newsletter. Thank you, Harald, and welcome to Katherine (Katie) Silversides who has shared the task of editor for this Newsletter and who will now take on this important role.

It continues to be a privilege to serve the IAMG community to ensure that, through you, developments in mathematical geosciences remain an integral part of global scientific advances.

Thank you for all your support and continued contributions to the IAMG.

*Jennifer McKinley*



## Request for Nominations for

### IAMG Special Lectures:

The **2019 Distinguished Lecturer** and the **2018 George Matheron Lecturer**.

The Distinguished Lecturer prepares a series of lectures, preferably on a variety of subjects in the mathematical geosciences, to be presented in places where IAMG Annual Meetings are not normally held.

The Georges Matheron Lecturer should be a scientist with proven research ability in the field of spatial statistics or mathematical morphology. This lecture is presented at the Annual Meeting of the IAMG.

Letters of nomination for both these roles should include a curriculum vitae of the nominee and a short statement summarizing the ways in which he or she fulfills the nomination criteria.

For more information see

<https://iamg.org/special-lectures.html>

Letters should be directed by e-mail no later than

**31<sup>st</sup> October 2017**

to the Chair of the Lectures Committee, Christien Thiant:

[christien.thiant@uct.ac.za](mailto:christien.thiant@uct.ac.za)

**Daniel Francis Merriam****February 2, 1927 - April 26, 2017****A reminiscence**

In preparing to write an obituary for Dan Merriam, I find that this is not an easy task — Dan has meant so much to so many different people and given so much to many different professional organizations that any picture one can possibly present can only be incomplete.

So I would like to ask others to contribute to this, but in the interest of a timely note for the IAMG Newsletter, I am submitting what is more of a personal reminiscence. There will be an opportunity for commemorative and scientific contributions in one or more of our journals.

I have known Dan mainly through the International Association for Mathematical

Geosciences (IAMG). Dan was an extraordinary geologist in many respects. His PhD dissertation on the Geology of Kansas (published as State Geological Survey of Kansas Bulletin 162 in 1963) is to this day considered the definitive work on this topic. Dan was one of the first geologists to realize that geology could benefit from using computers. Together with Stanford Professor John Harbaugh, Canadian Geological Survey Geomathematician Frits Agterberg, Geologist Richard Reymont of the Swedish Natural Science Research Council and later University of Uppsala, University of Leningrad Professor Andrew Vistelius and others, Dan founded the International Association for Mathematical Geology in Prague in 1968, during the turbulent days of the Prague Spring, which made for an ill-fated International Geological Congress and an exciting start of the association by mere coincidence.

My first meeting with Dan during a geological conference in Germany was typical Dan: During lunch with a group of people, Dan realizes that I am a mathematics graduate student who has come to this conference to see how one could apply math in geology - then in 1984 an unusual occurrence. He pulls out a literal napkin or envelope, sketches some maps and says: "So you can help me answer the following question: Assume there are several experts in oil exploration and each of them makes a map, which is telling us where to find oil, leaving the exploration geologist with many different maps: a geophysical map, a geological map, a map of existing wells, several stratigraphic maps. The geologist puts them next to each other, looking from one to the other, which works for 2-3 maps. But as there are more and more maps, they do not even fit on his desk any more and fall on the floor. How can a mathematician help a geologist look at all those maps at once and find oil?" I think a bit, pull out another sheet and sketch some math as an answer for Dan. Dan would consider every lunch a working lunch and get everyone interested in doing science, reviewing papers for one of the many journals he edited, draft introductions and motivate colleagues to contribute to a joint paper. With Dan, all these things were fun.

Dan founded the Journal of Mathematical Geology (now: Mathematical Geosciences) - and has been said to write every single paper in his first three issues, an exaggeration but not a huge one. Dan's publication record includes over 300 papers and many books. Dan was also founding editor of the second main journal of the IAMG, Computers & Geosciences, and later editor of the third IAMG journal, Natural Resources Research (formerly Non-Renewable Resources). Beyond IAMG, Dan served as editor of The Compass: Earth Science Journal of Sigma Gamma Epsilon, an earth science honorary society. Areas covered in Dan Merriam's publications range from geological mapping to geomathematics and include basin analysis and geothermal studies, structural studies, and petroleum geology. Dan soon invited me to help as Assistant and then Associate Editor of Computers & Geosciences, a contribution to our association I enjoyed for over 20 years (1985-2007), working with two editors-in-chief, Dan and later Graeme Bonham-Carter.

As many emails from his colleagues in these days of sorrow reflect, Dan is remembered as welcoming to every new member of the IAMG. Dan enjoyed my map comparison method and invited me to the next meeting of the Mathematical Geologists of the United States in 1984, where I had the opportunity to meet many of the first IAMG members. In later years, Beth Fuhr, a Masters student of Dan's at Wichita State University, co-advised by myself, who had used the MAPCOMP method for her thesis and made ends meet working as exploration geologist on the side, found oil. According to Kansas rules, the exploration geologist gets 5% of the yield of the well. Needless to say, Beth did not need to go for a PhD anymore! (Dan and I got a paper out of this, with Beth of course).

The close collaboration and lifelong friendship of Dan Merriam and John Harbaugh spurred the development of a vibrant center for mathematical geology, or geomathematics (the term that Dan preferred), in Kansas, which has included John Davis, Jo Anne DeGraffenreid, John Doveton, David Collins, Gina Ross, Ricardo Olea and others at the survey, and the group of Dan Merriam and his students and affiliates in Wichita, during the years that Dan was a leading faculty at Wichita State University.

Dan was always a geologist, and no trip to Wichita State University or Kansas University would be complete without a day in the field. And he loved Kansas: driving from outcrop to outcrop, Dan would say "And isn't it beautiful here?" and suddenly, as we crossed over bridge to the other side of a ditch: "Now it is not so nice any more" - we had come into Oklahoma. Driving across the state to, say, a seminar, he would ask one of his passengers to write logs of mileage and geology, to make better use of one's time and record anything that was noteworthy.

Dan held many distinguished professional positions: After graduating in Geology, he accepted a position as geologist in the Rocky Mountain Division of Union Oil Company. Dan graduated with a Masters from the University of Kansas in 1953 and with a PhD in 1961, working as full-time employee at the Kansas Geological Survey in parallel with his PhD research. From 1963-1971, he was Chief of Geological Research. During this time, he spent a year at Leicester University in the United Kingdom where he obtained a second M.Sc. in 1969 and a D.Sc. in 1975. While at Leicester, his host was Peter C. Sylvester-Bradley, who Dan describes as "a giant among men - he consistently demanded the best and got it from everyone". In 1967, Dan was director of the AGI International Field Institute to Japan. He was a Visiting Scientist at the École de Mines de Paris Centre de Géostatistique (in 1980), at Dartmouth College, the University of Sydney, Australia and at Geo-Forschungszentrum Potsdam, Germany.

From 1971-81, Dan Merriam was the Jessie Page Heroy Professor of Geology at Syracuse University, where he served as head of the Department of Geology 1971-80. In 1981, Dan accepted a position as Endowment Association Distinguished Professor of the Natural Sciences at Wichita State University, which he held until 1991, and, as Emeritus after that. He was Chairman of the Department of Geology, 1981-87. Dan was affiliated with the Kansas Geological Survey at the University of Kansas in Lawrence as Senior Research Scientist from 1991 until 1997, when he became an Emeritus.

Despite all his accomplishments, Dan was always humble and friendly, in equal ways to everyone around him. He would never expect special respect as a distinguished professor or president of an international association. On his field trips, he would talk to the barista in the coffee shop, and during a conference, he'd say "Aren't we all students?"

In February 1946, Dan married Annie Laura Young, his loving wife of 71 years, who has become a friend to many of us in the IAMG. Annie shares an interest in history with Dan - for her it is the history of people and family heritage, for Dan it was the history of geology. Dan and Annie raised five children: Beth Ann, who works for an import/export company in Kansas City, John Francis, who is at Carrier Air Conditioning in Syracuse, NY, Anita Pauline, who is a Biological Research Scientist at Case Western Reserve University in Cleveland, and twins, James Daniel, who is at Boeing in Wichita, and Judith, who is at Nation Wide Insurance in Syracuse.

Speaking of family and life as a scientist - and being one of those who'd always put science first - I was more than surprised to one day receive a Pooh Bear in the mail from Dan, with a note "To the future geomathematician". IAMG is more than a science community to many of us. And Dan's Pooh Bear still sits up on a shelf in one of the kid's rooms. Dan loved Pooh and his philosophy.

Dan Merriam was a truly international scientist and received countless honors and awards. His outstanding services to the science community at large include a wide range of professional associations, especially the IAMG, the American Association of Petroleum Geologists (AAPG), the Society for Sedimentary Geology (SEPM), the Geological Society of America (GSA) and the Kansas Geological Society. He was President of the IAMG, an Honorary member of AAPG, SEPM and of the Leicester Geological Society, a Senior Fellow of GSA and President of Sigma Gamma Epsilon (1990-1995), honor society from his student days. Dan served AAPG in several capacities, including as an AAPG Delegate to the House of Delegates and received the AAPG Distinguished Service Award. Dan was appointed to the U.S National Commission for the UNESCO by the Secretary of State in 1979. He established the Geochautauquas at Syracuse, which gave computer-oriented geologists an opportunity to exchange information in a semi-formal environment. Dan organized meetings and special sessions and attended countless conferences all over the world. Or, as Annie counted, his days on travel would outnumber days at home each year for many years. Dan received the Krumbein Medal of the International Association for Mathematical Geology, the William Smith Medal of the Geological Society of London, the Erasmus Haworth Distinguished Alumni Honors in Geology from Kansas University, and the Gold Medal from Hornická Příbram, Czechoslovakia.

Dan would not have been Dan, had he ever stopped working. He was meeting with his long-time colleague John Doveton and others at the KGS every day, and until recently at least every week!

His memory lives on through his wife of 71 years, Annie Merriam, their children Beth Ann, John Francis, Anita Pauline James Daniel, and Judith Diane, and their families, his many students and his colleagues.

*Ute Herzfeld*

*University of Colorado at Boulder, 12 May 2017*

Acknowledgments. My thanks are due to Dan's son James Merriam and Dan's long-time friend and colleague John Doveton for sending me a couple of documents with information that has been included here. Last but not least, I thank Annie for her many Christmas-time Family-and-Friend Letters.

# Association Business

## John Aitchison 1926 - 2016

John Aitchison, Krumbein Medalist (1997) and Vice-president (1989–1993) of the International Association for Mathematical Geosciences (IAMG), Honorary President of the recently founded Association for Compositional Data (CoDa-Association), died in Glasgow on December 23, 2016, after a short illness.



John Aitchison was born in East Linton, East Lothian, Scotland (UK) on July 22, 1926. He studied Mathematics at the University of Edinburgh (1943–1947) and Mathematical Statistics at the University of Cambridge (1949–1951). He married

Muriel Shackleton in 1952, and they had three children from whom there are now five grandchildren.

The same year, 1952, John started his rich and fruitful academic life. He started as a statistician in the Department of Applied Economics at the University of Cambridge (1952–1956), then moved to the University of Glasgow, where he was a Lecturer in Statistics in the Department of Mathematics (1956–1962). From there he went to the University of Liverpool as a Senior Lecturer and Reader (1962–1974), as well as Head of the Sub-Department of Mathematical Statistics. He returned to the University of Glasgow as Titular Professor of Statistics and Mitchell Lecturer in Statistics (1974–1976). He started the second half-century of his life as Professor of Statistics at the University of Hong Kong (1976–1989). After retirement, he went to the United States, to the University of Virginia, where he was Professor of Statistics and Chairman of the Division of Statistics until 1994. That year he closed the circle and returned to Glasgow. The list of societies he is or has been a fellow or member is long: the Royal Statistical Society (since 1960); the Royal Society of Edinburgh (since 1968); the International Statistical Institute (1974–1994); the Hong Kong Statistical Society (since 1978, First President and now Honorary Member); the Bernoulli Society for Mathematical Statistics and Probability (1979–1994); the International Association for Mathematical Geology (since 1980, Vice-President 1989–1993); the Institute of Mathematical Statistics and the Association for Compositional Data (CoDa-Association, Honorary President 2015–2016). He has been joint Editor of the Royal Statistical Society, Series B (1963–1965) and Associate Editor of *Biometrika* (1966–1969).

John's scientific activity was centered in statistical inference, with special emphasis on practical Bayesian techniques; in multivariate analysis, particularly in compositional data analysis; and in statistical prediction analysis and in medical statistics. This research activity has seen the light in many publications, specially books, and research papers. His first book, *The Lognormal Distribution* (Cambridge University Press, 1957) co-authored with J. A. C. Brown, is still one of the standard references in statistical libraries. His last book, *The Statistical Analysis of Compositional Data* (Chapman and Hall, 1986), has been seminal to all recent developments in Compositional Data Analysis and the inspiration of the next generation of researchers in this field.

Out of his many research papers two have been particularly important: *The Statistical Analysis of Compositional Data* (with Discussion) (*Journal of the Royal Statistical Society, Series B*, 1982), for which he received the Guy Medal in Silver from the same society, and "A New Approach to Null Correlations of Proportions," published in *Mathematical Geology* in 1981, for which he received the Best Paper Award from the journal. These papers, among many others related to the subject of compositional data analysis, have meant a real breakthrough in a field that has been stagnant in its theoretical evolution since Karl Pearson identified the problem as the spurious correlation problem in 1987.

In his last years of activity he said goodbye with the gift of a series of "last talks" and performances both as a singer and as a magician during the CoDaWork social dinners. Thanks John for your legacy. The scientific community deeply regrets your loss. Our thoughts are with your family and friends at this sad time.

Vera Pawlowsky-Glahn  
December 2016

## Schuenemeyer steps down from Awards Committee Chair



John H. (Jack) Schuenemeyer has been chairing IAMG's Awards Committee from 2013–2017. He and his committee have managed to find excellent candidates for the four honors that IAMG bestows in alternating two year cycles: the William Christian Krumbein Medal, the John Cedric Griffiths Teaching Award, the Andrei Borisovich Vistelius Research Award, and the Felix Chayes Prize for Excellence in Research in Mathematical Petrology. Jack has had long and productive history of engagement with IAMG and MGUS (Mathematical Geologists of the U.S) in various positions, was awarded the Griffiths Award in 2004 and was the 2012 Distinguished Lecturer. After four years he is handing over the awards committee to **Jenny McKinley** as temporary Chair.

## March for Science - 22 April 2017

On April 22, 2017, in more than 600 cities around the world, we marched as an unprecedented coalition of organizations and individuals. We marched because science is critical to our health, economies, food security, and safety. We marched to defend the role of science in policy and society.



See more at [www.marchforscience.com](http://www.marchforscience.com)



IAMG decided to be one of more than 300 partners supporting the March for Science (see President's Forum p.3).

The march in Dallas, TX, in connection with Earth Day, attracted a large crowd with all kinds of clever posters, walking from City Hall to Fair Park. The people were friendly and enthusiastic, chanting various slogans in support of science. (My favorite poster was "No science = no beer!")

Harald S. Poelchau

## Member News

In the past few months I have been working with CODATA on efforts to coordinating data standards among scientific unions. IUGS is very active on that. Also we heard that ICSU and ISSC may agree to merge later this year. And we can see more opportunities on cross-disciplinary science, esp. between natural and social sciences.

Xiaogang (Marshall) Ma

## Yongfang Zhao 1939-2017



Professor Yongfang Zhao was born in Tianjin City on 4 October, 1939. She graduated from Department of Petroleum Geology, Beijing Geological Institute, Former China University of Geosciences, in 1964. She devoted herself to educational management works for more than thirty years. We loved professor Yongfang Zhao, and she loved us also like our mother. She will live forever in our hearts.

Yongqing Chen

## Student Chapter News

### IAMG - SCC Wuhan (China)

On April 18th, 2017, part of the IAMG-SCC student membership, consisting of undergraduate, postgraduate and doctoral students, participated in the 16th Annual Conference on Mineralogy, Petrology and Geochemistry. The conference mainly focused on the mineralogy, natural resources and environment, and big data analysis. Participants introduced IAMG-SCC by poster.



On April 23th, 2017, the student membership of IAMG-SCC attended the academic report held at China University of Geosciences (Wuhan), given by Professor **Yongliang Chen** from Jilin University China, with respect to the methods on mineral prospectivity mapping and geochemical anomaly identification. Participants discussed following issues:



1) the application of machine learning on mineral prospectivity mapping;  
2) geochemical anomaly identification methods;  
3) the evaluation methods on mineral

prospectivity mapping. The report lasted about 3 hours, which not only gave a good chance for the student members of IAMG-SCC to communicate with specialists, but also broaden their horizon in the field of geoinformatics.

*Gao Yuan*

### IAMG - ENSG-Nancy (France)

The ENSG-Nancy Student Chapter is happy to report that it has organized thirty seminars for the academic year 2016-2017, mainly given by the students of the chapter but also by visitors. Moreover, we are very pleased to announce that the Chapter will be greatly represented at the 79th EAGE Conference & Exhibition 2017 in Paris in June (12-16) with five presentations and an E-Poster. After this major event, the members of the Student Chapter and their supervisors will discover admirable karsts and geological outcrops during a four-day Field Trip in the Swiss Jura (8-11 July). Finally, we hope to see you during our next team meeting in Nancy in September (19-22).

*Margaux Ragueneil*

### IAMG - University of Wyoming

Professor **Clayton Deutsch** from the University of Alberta visited the University of Wyoming IAMG chapter on April 17 2017. He spent the day with our students, and gave a seminar titled 'Engineering applications of geological models'.

The URL for the student chapter has changed to <https://uwyoiamg.wixsite.com/studentchapter>



*Dario Grana*

## Distinguished Lecturer Reports

### Clayton Deutsch 2017 Distinguished Lecturer

So far Prof. Deutsch has presented:

- (1) a seminar for the Geostatistical Association of Southern Africa in Johannesburg,
- (2) a keynote talk at Third EAGE Integrated Reservoir Modelling Conference in Kuala Lumpur, and
- (3) a seminar at the University of Wyoming in Laramie.

For more information on the DL program see [iamg.org/special-lectures/current-distinguished-lecturer.html](http://iamg.org/special-lectures/current-distinguished-lecturer.html) or contact Clayton Deutsch for possibilities at your locale: [cdeutsch@ualberta.ca](mailto:cdeutsch@ualberta.ca)



### Sean McKenna 2016 Distinguished Lecturer

A few pictures from the last month of my 2016 DL:

With my host **Alex Brenning** on Dec. 7th in Jena, Germany at the Max Planck Inst. for Biogeochemistry - Alex is professor at Friedrich Schiller Univ., also in Jena. Title: Mapping the significance of El Nino/La Nina impacts on vegetation patterns in the Amazon Basin



Also on Dec. 7th with my host **Helmut Schaeben** at the Department of Geophysics and Geoinformatics, Technische Universität Bergakademie, Freiberg, Germany. The presentation title: Modeling Ground Water Flow and Transport in Strongly Heterogeneous Formations



My last presentation was on Dec. 19th in Aachen, Germany. The picture is with my host **Florian Wellmann** at Aachen Institute for Advanced Study in Computational Engineering Science (AI CES), RWTH Aachen University. The same presentation as at Freiberg.

*Sean McKenna*

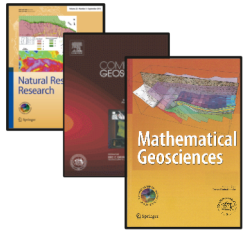


## IAMG is now on Twitter!

Join the conversation using @IAMG\_Math\_Geo for news, journal and conference updates.



# IAMG Journal Report



## Computers & Geosciences

Due to the significant increase in the number of submissions received by the journal, a number of new Associate Editors have been added to the Editorial Board. They are:

Antonio Abellan (Cambridge University, UK)  
 Richard Barnes (UC Berkeley, USA)  
 Yangkang Chen (Oakridge National Laboratory, USA)  
 Pauline Collon (Université de Lorraine, France)  
 Alessandro Comunian (University of Milan, Italy)  
 Gordon Cooper (University of the Witwatersrand, South Africa)  
 Tom Coulthard (University of Hull, UK)  
 Arta Dilo (Affiliation TBA)  
 Sebnem Duzgun (Middle East Technical University, Turkey)  
 Carlos Granell Canut (Universitat Jaume I, Spain)  
 Eric Laloy (Belgian Nuclear Research Centre, Mol, Belgium)  
 Denis Marcotte (École Polytechnique de Montreal, Canada)  
 Michael Pyrcz (Chevron, Houston, TX, USA)  
 Qunming Wang (University of Lancaster, UK)

*Grégoire Mariéthoz*

## Mathematical Geosciences Announcement of a Special Commemorative Issue for Dan Merriam

A special commemorative issue for **Dan Merriam** will be put together in Mathematical Geosciences. We envision this to be a place for a collection of personal memories, a full obituary as well as scientific papers dedicated to Dan's Memory.

Please stay tuned for a call for contributions!

Ute Herzfeld  
 Geomathematics and Remote Sensing  
 Department of Electrical, Computer and Energy  
 Engineering, and Cooperative Institute for Research in  
 Environmental Sciences  
 University of Colorado Boulder  
 Boulder, Colorado, USA  
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Roussos Dimitrakopoulos,  
 Editor-in-Chief Mathematical Geosciences,  
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## Natural Resources Research

In February 2017, the Clarivate Analytics (CA), formerly the Institute for Scientific Information (ISI), has recognized our Natural Resources Research (NRR) journal. Starting with the 2015 volume, NRR will be listed in the Science Citation Index Expanded™ (also known as SciSearch®), Journal Citation Reports® (JCR) Science Edition, and Current Contents®/Physical Chemical and Earth Sciences.

This means that our first impact factors will be evaluated based on citations to papers published in 2015 and 2016, will be received in this year's JCR, and will be released sometime in mid 2018. In order to be recognized by the CA, a journal must be evaluated against a number of objective criteria and standards. Therefore, the CA recognition is a significant acknowledgment of the high standard of our journal. It characterizes the culmination of the development of our journal since it was founded in 1992 by Richard McCammon.

*John Carranza*

## IAMG Journal Contents

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 A Practical Approach to Mine Equipment Sizing in Relation to Dig-Limit Optimization in Complex Orebodies: Multi-Rock Type, Multi-Process, and Multi-Metal Case — Julian Ramirez Ruisecco, Mustafa Kumral  
 Applicability of Kinetic Models for In Situ Combustion Processes with Different Oil Types — Na Jia, David H.-S. Law, Paul Naccache, Marie Ann Giddins  
 Specification of a Coupled Geological and Wellbore Fluid Dynamics Model for Uncertainty Analysis and Risk-Based Design on a Subsea Oil Project — Christopher J. Jablonowski, Arash Haghshenas, Edward E. Shumilak, Kenneth F. Tyler  
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 Dissolved Organic Carbon in Multilayered Aquifers of Pondicherry Region (India): Spatial and Temporal Variability and Relationships to Major Ion Chemistry — R. Thilagavathi, S. Chidambaram, C. Thivya, M. V. Prasanna, K. Tirumalesh, S. Pethaperumal  
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 A New Model for the Lifetime of Fossil Fuel Resources — Efstathios E. Michaelides  
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 A Chart for Judging Optimal Sample Spacing for Ore Grade Estimation — Vanessa Cerqueira Koppe, Ricardo Hundelshausen Rubio, João Felipe Coimbra Leite Costa  
 Creation of Histograms for Data in Various Mineral Resource and Engineering Problems: A Review of Existing Methods and a Proposed New Method to Define Bin Number — Louis St-Pierre, Yuksel Asli Sari, Mustafa Kumral

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## Journal Statistics

### Mathematical Geosciences:

ISI-impact factor for 2015: 1.777 (SJR= 1.562)  
 5-Year Impact Factor: 1.918 (SJR 4y=2.111)  
 Rejection rate: 59.4%  
 Turnaround time: 39.6 days (average; submission to first decision)

### Computers & Geosciences:

2015 Impact Factor: 2.474 (SJR=1.268)  
 5-Year Impact Factor: 2.540 (SNIP=1.590)  
 Ave. review time (2015): 13 weeks

### Natural Resources Research:

2015 SJR = 0.457; ISI IF = 1.227  
 5 year SNIP: 0.720 (2014); SJR 4y=0.942  
 Rejection rate: 56%  
 Ave. turnaround time: 97 days (submission to final decision)

*NRR continued from p. 7*

Multiple Random Walk Simulation: A Fast Method to Map Grade Uncertainty with Large Datasets — Rafael Moniz Caixeta, Diniz Tamantini Ribeiro, João Felipe Coimbra Leite Costa, Péricles Lopes Machado  
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A Simulation-Based Geostatistical Approach to Real-Time Reconciliation of the Grade Control Model — T. Wambeke, J. Benndorf

Joint High-Order Simulation of Spatially Correlated Variables Using High-Order Spatial Statistics — Ilnur Minniakhmetov, Roussos Dimitrakopoulos

Creaming and the Likelihood of Discovering Additional Giant Petroleum Fields — Jostein Lillestøl, Richard Sinding-Larsen

Investigation on Principal Component Analysis Parameterizations for History Matching Channelized Facies Models with Ensemble-Based Data Assimilation — Alexandre A. Emerick

Multivariate Modelling of Geometallurgical Variables by Projection Pursuit — E. Sepulveda, P. A. Dowd, C. Xu, E. Addo

### MG - Volume 49, Issue 2, February 2017

A Segmentation Approach for Stochastic Geological Modeling Using Hidden Markov Random Fields — Hui Wang, J. Florian Wellmann, Zhao Li, Xiangrong Wang, Robert Y. Liang

Relative Abundances of Mineral Species: A Statistical Measure to Characterize Earth-like Planets Based on Earth's Mineralogy — Grethe Hystad, Robert T. Downs, Robert M. Hazen, Joshua J. Golden

Structure- and Texture-Based Fullbore Image Reconstruction — Tuanfeng Zhang, Andriy Gelman, Robert Laronga

Analytical Method for Calculating the Volume of Rock Blocks Using Available Mapping Data Field — Paulo Lopes, Milene Lana

An Affine Equivariant Multivariate Normal Score Transform for Compositional Data — K. Gerald van den Boogaart, Ute Mueller, Raimon Tolosana-Delgado

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Recent Developments in Closed-Loop Approaches for Real-Time Mining and Petroleum Extraction — Jörg Benndorf & Jan Dirk Jansen

Multilevel Field Development Optimization Under Uncertainty Using a Sequence of Upscaled Models — Elnur Aliyev & Louis J. Durlofsky

Simultaneous Stochastic Optimization of Mining Complexes and Mineral Value Chains — Ryan Goodfellow & Roussos Dimitrakopoulos

Robust Gradient-Based Multiobjective Optimization for the Generation of Well Controls to Maximize the Net-Present-Value of Production Under Geological Uncertainty — Xin Liu & Albert C. Reynolds

Mine Planning and Oil Field Development: A Survey and Research Potentials — Amina Lamghari

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Simulation-Regression Approximations for Value of Information Analysis of Geophysical Data — Jo Eidsvik, Geetartha Dutta, Tapan Mukerji, Debarun Bhattacharjya

Bayesian Gaussian Mixture Linear Inversion for Geophysical Inverse Problems — Dario Grana, Torstein Fjeldstad, Henning Omre

A Functional Data Analysis Approach to Surrogate Modeling in Reservoir and Geomechanics Uncertainty Quantification — Francesca Bottazzi, Ernesto Della Rossa

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A modified symplectic PRK scheme for seismic wave modeling — Shaolin Liu, Dinghui Yang, Jian Ma

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An auxiliary adaptive Gaussian mixture filter applied to flowrate allocation using real data from a multiphase producer — Rolf J. Lorentzen, Andreas S. Stordal, Neal Hewitt

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WSJointInv2D-MT-DCR: An efficient joint two-dimensional magnetotelluric and direct current resistivity inversion — Puwis Amatyakul, Chatchai Vachirathienchai, Weerachai Siripunvaraporn

Effects of acid dissolution capacity on the propagation of an acid-dissolution front in carbonate rocks — Chongbin Zhao, B.E. Hobbs, A. Ord

PCTO-SIM: Multiple-point geostatistical modeling using parallel conditional texture optimization — Mohammadreza Pourfard, Mohammad J. Abdollahifard, Karim Faez, Sayed Ahmad Motamedi, Tahmineh Hosseini

A scalable approach for tree segmentation within small-footprint airborne LiDAR data — Hamid Hamraz, Marco A. Contreras, Jun Zhang

TsuPy: Computational robustness in Tsunami hazard modelling — Andreas M. Schäfer, Friedemann Wenzel

Ontology-based classification of remote sensing images using spectral rules — Samuel Andrés, Damien Arvor, Isabelle Mougenot, Thérèse Libourel, Laurent Durieux

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Modification of the random forest algorithm to avoid statistical dependence problems when classifying remote sensing imagery — Fulgencio Cánovas-García, Francisco Alonso-Sarria, Francisco Gomariz-Castillo, Fernando Oñate-Valdivieso

Mechanical properties and energy conversion of 3D close-packed lattice model for brittle rocks — Chun Liu, Qiang Xu, Bin Shi, Shang Deng, Honghu Zhu

An integrated workflow for stress and flow modelling using outcrop-derived discrete fracture networks — K. Bisdom, H.M. Nick, G. Bertotti

Statistical modeling of geopressured geothermal reservoirs — Esmail Ansari, Richard Hughes, Christopher D. White

Optimal ordering of realizations for visualization and presentation — George de Barros, Clayton V. Deutsch

Fractal parameters and well-logs investigation using automated well-to-well correlation — Seyyed Mohammad Amin Partovi, Saeid Sadeghnejad

Development of a GIS-based integrated framework for coastal seiches monitoring and forecasting: A North Jiangsu shoal case study — Rufu Qin, Liangzhao Lin

EdgeDetectPFI: An algorithm for automatic edge detection in potential field anomaly images – application to dike-like magnetic structures — Saulo P. Oliveira, Francisco J.F. Ferreira, Jeferson de Souza

Numerical simulation of electro-osmotic consolidation coupling non-linear variation of soil parameters — Hui Wu, Liming Hu, Qingbo Wen

Development of a data-driven forecasting tool for hydraulically fractured, horizontal wells in tight-gas sands — B. Kulga, E. Artun, T. Ertekin

A transfer learning method for automatic identification of sandstone microscopic images — Na Li, Huizhen Hao, Qing Gu, Danru Wang, Xiumian Hu

Rule-based topology system for spatial databases to validate complex geographic datasets — J. Martinez-Llario, E. Coll, M. Núñez-Andrés, C. Femenia-Ribera

The application of artificial intelligence for the identification of the maceral groups and mineral components of coal — Mariusz Mlynarczuk, Marta Skiba

Quasi-equal area subdivision algorithm for uniform points on a sphere with application to any geographical data distribution — Sanghyun Lee, Daniele Mortari

Augmenting comprehension of geological relationships by integrating 3D laser scanned hand samples within a GIS environment — A.S. Harvey, G. Fotopoulos, B. Hall, K. Amolins

Towards semi-automatic rock mass discontinuity orientation and set analysis from 3D point clouds — Jiateng Guo, Shanjun Liu, Peina Zhang, Lixin Wu, Wenhui Zhou, Yanan Yu

A machine learning approach to the potential-field method for implicit modeling of geological structures — Ítalo Gomes Gonçalves, Sissa Kumaira, Felipe Guadagnin

Connotations of pixel-based scale effect in remote sensing and the modified fractal-based analysis method — Guixiang Feng, Dongping Ming, Min Wang, Jianyu Yang

Fast parametric relationships for the large-scale reservoir simulation of mixed CH<sub>4</sub>-CO<sub>2</sub> gas hydrate systems — Matthew T. Reagan, George J. Moridis, Katie S. Seim

A 3-D wellbore simulator (WELLTHER-SIM) to determine the thermal diffusivity of rock-formations — J.A. Wong-Loya, E. Santoyo, J. Andaverde

## Conference Reports

### CoDaCourse in La Habana, Cuba April 2017

Every two years, scientists and engineers in the geosciences gather in the Geociencias meeting in La Habana. This year there were about one thousand participants, mainly Cuban, from Academia and Industry.

Some pre-meeting courses were offered. Among them, an introductory course on Compositional Data Analysis by **Juan José Egozcue**, **Vera Pawlowsky-Glahn** and **Maribel Ortego**. Although there were more people interested in attending, finally only 25 could come. The audience were PhD and Master Students and professors living in La Habana. It was a nice experience teaching them. Although it was an introductory course, most of them wanted to know more about compositional methods in order to apply these techniques to their academic works immediately.

The meeting itself was also very fruitful. It was an interesting mixture of academic and industry presentations. Although the motivation for the research and application of new methods is not always the same, there was an interesting interchange of ideas and opinions. From the academic point of view, it was a great opportunity to have nice discussions and to make scientific contacts. From the personal point of view, it was a great opportunity to find charming people, that make you feel at home.

*Dr. M. I. Ortego*  
Associate Professor.

*Applied Mathematics and Statistics Section of the Department of Civil and Environmental Engineering,*  
*Universitat Politècnica de Catalunya- BarcelonaTECH (Spain)*



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### Look who is coming to IAMG2017!

IAMG 2017 Distinguished Lecturer -  
Professor **Clayton Deutsch**



Dr. Deutsch is a Professor in the Department of Civil & Environmental Engineering at the University of Alberta. He teaches and conducts research into better ways to model heterogeneity and uncertainty in petroleum reservoirs and mineral deposits. Dr. Deutsch completed his B.Sc. in Mining Engineering at the University of Alberta, his M.Sc. and Ph.D. in Geostatistics at Stanford University.

IAMG 2017 Matheron Lecturer -  
Professor **Noel Cressie**

Noel Cressie is Director of the Centre for Environmental Informatics in the National Institute for Applied Statistics Research Australia (NIASRA) at the University of Wollongong, Australia. He is also Adjunct Professor at the University of Missouri. Noel received his BSc(Hons) from the University of Western Australia and an MA and PhD from Princeton University, USA.



IAMG2017 Keynote Speaker -  
Professor **Vera Pawlowsky-Glahn**

Pawlowsky-Glahn is professor at the University of Girona, Department of Computer Science, Applied Mathematics and Statistics. Before Girona, she was professor at the Technical University of Catalonia (UPC), Barcelona. Since 1982 her main research topic has been the statistical analysis of compositional data.

In 2006 she received the William Christian Krumbein Medal of IAMG and in 2008 the Griffiths Teaching Award. She was Distinguished Lecturer of IAMG in 2007. From 2008 to 2012 she was President of IAMG. Currently she is the President of the Association for Compositional Data.

IAMG2017 Keynote Speaker -  
Dr **Paul Hodkiewicz**

Paul has over 28 years of international experience in the mining industry, with expertise and interest in resource evaluation, exploration targeting, geoscience innovation and technology, structural geology, open pit and underground mine geology and advanced 3D geological modelling. He is Head of Specialist and Integrated Geosciences at Anglo American, University of Western Australia, in Perth



More information - [www.iamg2017.com/speakers/](http://www.iamg2017.com/speakers/)



2017 Andrei Borisovich Vistelius  
Research Award: **Pejman Tahmasebi**

Pejman Tahmasebi holds B.Sc. and M.Sc. degrees from Tehran Polytechnic. He completed his PhD at the University of Southern California (USC) on modeling of oil reservoirs and porous media. He then joined the Stanford Center for Reservoir Forecasting as a research fellow and worked on rapid reservoir modeling and updating. Tahmasebi is currently an Assistant Professor at the Department of Petroleum Engineering at the University of Wyoming. His research interests include multiple-point geostatistics, porous media reconstruction and data integration. He has published 38 peer-reviewed journal papers and two book chapters on topics related to modeling of porous media, both at laboratory and field scales, data mining, and reconstruction of various types of disordered media and materials.

2017 Felix Chayes Prize for Excellence  
in Research in Mathematical Petrology:  
**Cliff Stanley**

Cliff Stanley holds M.Sc. (1984) and Ph.D. (1988) degrees in Geological Sciences from the University of British Columbia. After a post-doctoral fellowship in 1989 in numerical petrology at the University of Calgary, Cliff became a research associate in applied geochemistry at Queen's University (1990-1991), before joining the Mineral Deposit Research Unit (UBC) as an adjunct professor (1992-1998). There he managed major porphyry Cu-Au and litho-geochemical exploration research projects. Cliff is presently a full professor in their Department of Earth and Environmental Science at Acadia University, Nova Scotia. Cliff's research interests have largely involved numerical applications in geochemistry and petrology, and he has authored several publications illustrating the application of molar element ratio analysis to studies of rock geochemistry.



More information - <http://iamg2017.com/awards/>



# Upcoming Meetings

WSC 2017 International Statistical Institute, 61st ISI World Statistics Congress, Includes meetings of the Bernoulli Society, etc., Marrakesh, Morocco, **16 - 21 July 2017**. Information: ISI Permanent Office, P.O. Box 24070, 2490 AB The Hague, The Netherlands. Phone: +31-70-3375737, [www.isi2017.org](http://www.isi2017.org)

2017 Joint Statistical Meetings, Baltimore, MD, USA, **29 July - 3 August 2017**. <http://www.amstat.org/meetings/jsm.cfm> or phone toll-free (888) 231-3473

APCOM 2017, Colorado School of Mines in Golden, Colorado USA, **9-11 August 2017**. <http://csmospace.com/events/apcom2017/>

Int. Conference on Dense Z-Pinch. Stateline, NV, USA, **13 - 17 Aug. 2017**. <http://www.dzp2017.com/>

IAMG2017 Annual Meeting, Perth, Australia, **2 - 9 September 2017**. <http://www.iamg2017.com>

SIAM Conference Mathematical and Computational Issues in the Geosciences (GS17) Erlangen, Germany, **11-14 Sept. 2017**. <http://www.siam-gs17.de> - *IAMG Exec.VP Tolosana-Delgado will organize a special session.*

Geomodel 2017: 19th Science and Applied Research Conference on Oil and Gas Geological Exploration and Development, Gelendzhik, Russia, **11 - 14 September 2017**. <http://events.eage.org/2017/Geomodel%202017>

Third ISPRS Geospatial Week 2017, Wuhan, China, **18 - 22 September 2017**. <http://gsw2017.3snews.net>

International Conference on Geothics, Prague & Pribram, Czech Republic, **13 - 15 October 2017**. Némec Václav <[nemec.geo@seznam.cz](mailto:nemec.geo@seznam.cz)>

AAPG/SEG International Conference, London, **15-18 Oct. 2017**. <http://london2017.iceevent.org>

GSA 2017 - Seattle, Washington, USA, **22-25 Oct. 2017**. <http://community.geosociety.org/gsa2017>

AGU Fall Meeting, New Orleans, Louisiana, **11 - 15 December 2017**. <http://fallmeeting.agu.org/2017/>

## 2018

NKCRI: 2018 Sinkhole Conference, Shepherdstown, WV, **2-6 Apr 2018**. [www.sinkholeconference.com/](http://www.sinkholeconference.com/)

AAPG 2018 Annual Convention & Exhibition. Salt Lake City, Utah, USA. **20 - 23 May 2018**. <http://www.aapg.org/>

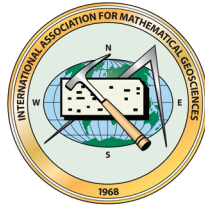
RFG 2018 Resources for Future Generations by International Union of Geological Sciences (IUGS), Vancouver, Canada, **16-21 June 2018**. Info at <http://RFG2018.org>. *IAMG is one of a dozen Partners supporting this conference.*

GeoENV2018, Belfast, U.K., **3-7 July 2018**. <http://geoenvia.org/2016/08/geoenv-2018-in-belfast>

Joint Statistical Meeting, Vancouver, BC, Canada, **28 July - 2 August 2018**. <http://www.amstat.org/meetings/jsm.cfm>

IAMG2018 50th Anniversary Meeting, Olomouc and Prague, Czech Republic, **2 - 8 Sept. 2018**

62nd ISI World Statistics Congress, International Statistical Institute, Kuala Lumpur, Malaysia, **18-23 August 2019**. ISI Permanent Office, P.O. Box 24070, 2490 AB The Hague, The Netherlands. Phone: +31-70-3375737, Fax: +31-70-3860025



18<sup>TH</sup> ANNUAL CONFERENCE  
**IAMG2017**  
2-9 SEPTEMBER • PERTH, AUSTRALIA

Join like-minded professionals from around the world to collaborate, exchange knowledge and promote the advancement of mathematics, statistics and informatics in the geosciences.

### Registration

Registration is now open to all persons interested in attending the International Association for Mathematical Geosciences 2017 in Fremantle, Western Australia. More information [www.iamg2017.com/registration/](http://www.iamg2017.com/registration/)

### Short Courses

The IAMG Organising Committee invite you to participate in one the many Short Courses on offer at The International Association for Mathematical Geosciences Conference. These Short Courses provide intensive training to help advance your career, update your skills and knowledge, or meet specific legislative requirements. More information [www.iamg2017.com/courses/](http://www.iamg2017.com/courses/)

### Host City - Fremantle

This beautiful coastal port city bounded by the Indian Ocean and the Swan River is just 20 km from Perth. The City of Fremantle was established in 1829 as a port for the Swan River Colony and was the major city in Western Australia for much of its early history.

More information [www.iamg2017.com/visit-fremantle-and-beyond/](http://www.iamg2017.com/visit-fremantle-and-beyond/)



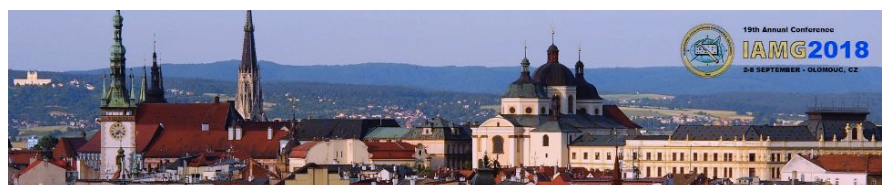
## Website of IAMG2018 is launched!

It is our pleasure to announce that the website of IAMG2018 is published at <http://www.iamg2018.org>

You are invited to visit the website for more information about the 19th ANNUAL CONFERENCE OF IAMG that will take place in OLOMOUC, CZECH REPUBLIC IN SEPTEMBER 2-8, 2018. For further details please contact us at [iamg2018@iamgmembers.org](mailto:iamg2018@iamgmembers.org).

Furthermore, we invite you submit proposals of thematic sessions including their conveners. Such sessions would materialize if the committee receives sufficiently many abstracts matching the suggested topic. The major topic of the conference is "TOOLS FOR DATA ANALYSIS IN GEOSCIENCES" - so think big! In line with that we invite you to propose short courses related to the topic of the Conference. Please submit proposals directly to [hronk@seznam.cz](mailto:hronk@seznam.cz). Deadline is **July 31, 2017**.

*Karel Hron, Ondřej Bábek*  
IAMG2018 Chairs



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