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2016 EAG MEDALLISTS

Urey Award to Klaus Mezger



Klaus Mezger (University of Bern, Switzerland) is an outstanding academic who has mastered the mysteries of metamorphism, diffusion and isotopic analysis. Many of Klaus' papers on U–Pb and Sm–Nd dating provide the basis for understanding the duration of tectonic processes. In the early 2000s, Klaus and a team of researchers at the University of Münster (Germany) produced a slew of influential papers dealing primarily with

the isotopic composition of tungsten in chondrites and the early history of the Solar System. This body of work revolutionized our understanding of how planets form and became differentiated. The work of Klaus' group on the ^{176}Lu decay constant also paved the way for solving the conundrum of the first continents. Klaus is known as a very modest man, but by awarding him the 2016 Urey Medal, the EAG recognizes that he has nothing to be modest about.

Ted Ringwood Science Innovation Award to Jon Blundy



Jon Blundy (University of Bristol, UK) specializes in combining field and petrographic observations with geochemical analysis and petrological experiments, a skill that has made him into one of the most multi-faceted and influential igneous petrologists of his generation. He is widely known for his seminal work with Bernard Wood (University of Oxford, UK) on clarifying the nature of trace element partitioning. A related long-term love has

been igneous thermo-barometers, which he has put to full effect in unravelling the murky processes beneath subduction zone volcanoes. However, he has more comprehensively unpicked the complex interplay between water, melting, crystallisation and eruption in arc systems, placing novel constraints on controls on magma compositions, their evolution and the hazards they pose. Most recently, his interests have become shallower, using his trusted twin pronged approach of experiment and observation to understand the formation of copper porphyry deposits, a lucrative, but enigmatic, product of igneous activity. In fitting recognition of his ground-breaking application of (experimental) petrology to address major problems in both academic and economic research, and notably for subduction zone magmatism, Jon has been awarded the Ringwood Medal.

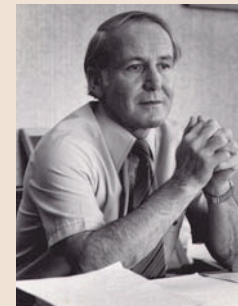
Houtermans Award to Kate Hendry



Kate Hendry (University of Bristol, UK) received her MSci degree in Natural Sciences from Queens' College, University of Cambridge (UK), in 2004, before carrying out her DPhil in Antarctic Biogeochemistry at Oxford University. Kate has been developing the use of silicon isotopes in biogenic opal since 2008, initially at Oxford but continuing at the Department of Marine Chemistry and Geochemistry at Woods Hole

Oceanographic Institution (USA) as part of a Doherty postdoctoral scholarship in 2009. Since returning to the UK, initially as a Research Lecturer at Cardiff University (UK), then as a Royal Society University Research Fellow at the University of Bristol, she has been awarded research grants from the Leverhulme Trust, the Natural Environment Research Council, the Royal Society and the European Research Council to continue her work on silicon isotopes and extend this to trace metals and their isotopes.

THE LIVES OF GREAT GEOCHEMISTS: TED RINGWOOD



This year, the EAG Science Innovation Award honors Ted Ringwood (1930–1993) for his work in petrology and mineral physics. Alfred Edward 'Ted' Ringwood was a prolific geochemist whose ideas shaped modern views of magma genesis, the formation and differentiation of the Earth and the chemistry and structure of the Earth's interior. Ringwood received his PhD from the University of Melbourne (Australia) in 1956. After working with Francis Birch at Harvard University (USA) he joined the Australian National University (ANU) in 1959, where he remained throughout his career. He played the lead role in the formation of the Research School of Earth Sciences at ANU in 1972 and served as its director from 1978 to 1983. As a Professor of Geochemistry, Ringwood combined experimentation with the principles of crystal chemistry to develop theories on the formation and evolution of the Earth and Moon. His ideas were grounded by an observational perspective developed through many years of investigating meteorites and basaltic rocks. Having studied during the period when the main concepts of plate tectonics were forming, Ringwood searched for the mechanisms connecting the dynamics of the Earth's interior with its surface expression. Using high-pressure and high-temperature experiments, Ringwood and his colleagues investigated the mineralogy of the Earth's mantle, developed the link between pressure-induced mineral phase transformations and increments in the velocity of seismic waves within the Earth and also framed the main concepts concerning the dynamics and fate of subducting lithosphere. Ringwood also applied his experimental and mineralogical expertise to industrial and environmental problems. In 1979, he proposed the synthetic rock (SYNROC) concept for the safe encapsulation of nuclear waste products in resistant, highly stable, mineral assemblages.

Ringwood produced a remarkable collection of original research preserved in over 300 scientific papers and two textbooks. His far-reaching influence can still be experienced, and his infectious fascination with the Earth and the Solar System pervades his written works. The mineral 'ringwoodite' was named after him.

SPELEOTHEMS CONNECTING EAST AND WEST

Miryam Bar-Matthews (Geological Survey of Israel)
2015 EAG Distinguished Lecturer

It was a great honour and challenge to be asked to present the 2015 EAG Distinguished Lecture Tour in four institutes in Ukraine, Hungary, Slovenia and Croatia. My selection of lectures to present included: 1) Speleothems as paleoclimate indicators; 2) Novel techniques in speleothem research for paleohydrological studies; 3) Water availability in the Middle East and North Africa and the connection to human dispersal: insights from speleothems research.

My journey started in Kiev (Ukraine), one of the oldest cities in Eastern Europe and an important scientific, educational and cultural center. My hosts were the M.P. Semenenko Institute for Geochemistry, Mineralogy and Ore Formation at the National Academy of Science of Ukraine, and the Institute of Geology at the Taras Shevchenko National University of Kiev, where the talks were held. Before and after the talks I met Prof. Volodymyr Mykhailov, Dean of the Institute of Geology, and Prof. Alexander Ponomarenko, Director of the M.P. Semenenko Institute.



1990s mass spectrometer still in good running condition

My visit included a tour of the Geology Museum in Taras Shevchenko National University, a very impressive museum with rich collections of minerals, fossils and rocks. I also enjoyed discussions with groups of scientists from both institutes and a tour of the laboratories of the M.P. Semenenko Institute where 1990s mass spectrometers were still in good running condition.

In my Kiev talk I tried to present a complete overview of the speleothem paleoclimate research field, which is not yet part of the Kiev institutes' research topics. It was very impressive to meet so many knowledgeable and enthusiastic scientists from a part of the world that has had little chance for international collaboration. The Kiev visit ended with a walk around the beautiful Old Kiev City, guided by our excellent host, MSc student Tatiana Ilchenko.

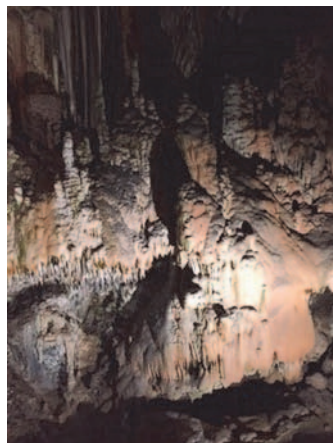
From Kiev I travelled to Budapest (Hungary), where I was hosted by Prof. Attila Demeny and stayed at the guest house of the Hungarian Academy of Sciences in the castle precinct on the west (Buda) side of the Danube River. The lectures took place at the beautiful Hungarian Academy of Sciences building located close to the famous chain bridge across the River Danube.



The view across the Danube from the castle precinct in Buda

Prof. Demeny then took me to visit the modern isotope laboratories at the Institute for Geological and Geochemical Research. A fascinating field trip was also arranged to the impressive Baradia cave system in Aggteleki National Park on the southern edge of the Slovakian Karst, and my hosts, Prof. Demeny and Dr. Gyorgy Szuppon, introduced me to their cave research and monitoring programs.

The next stop on my tour was the famous Karst Research Institute in Postojna (Slovenia), where I gave talks, and in the Geological Research Institute of the Slovenian Academy of Science, located at the beautiful center of Ljubljana. The visit to the institute included a guided tour of the famous Postojna cave given by our hosts Dr. Bojan Otonicar and Dr. Franci Gabrovsek: I was thinking how lucky they were to have such a magnificent cave system on their doorstep, so to speak. On the way to Ljubljana, we diverted slightly to visit the exquisite mining and metalwork village of Kropa, located in the foothills of the Julian Alps.



Impressive Postojna cave



The audience in the second at the lecture at Zadar University

We then drove from Slovenia to Croatia along the beautiful (but rain swept) Adriatic coast line, to the magnificent city of Zadar, located on the Adriatic shore, with its spectacular Roman ruins. I presented my lectures in the Department of Geography at Zadar University, and my hosts included Prof. Masa Suric, Dr. Nina Loncar and Dr. Robert Loncaric, with whom I discussed future collaborative work on karst. Following my second talk, I was interviewed on Radio Zadar. The visit to Zadar included a field trip to the island of Dugi Otok, which is ~20 km offshore. In the company of a park supervisor, we visited the archeological and marine nature reserve of Nature Paek Telascica, and the Strasna Pec cave that lies in the west cliffs where the major tectonic line of the Dinaric karst fault system can be seen. A second trip was to the Paklenica National Park (Starigrad) in the Dinaric Karst mountain belt. After a very steep climb through beautiful mountainous karst landscape we had the privilege of eating a traditional meal prepared by the local villager who lives on top of the mountain. Descending in the evening



The Adriatic coastline showing major Dinaric karst fault system

to the coast of the Adriatic Sea, we visited the underwater springs that emanate from the long karstic caves that emerge under the sea. At night, and with full caving gear on, we visited the speleothems of Modric Cave (Rovanjska).



Crawling through the Modric Cave (Rovanjska)

I would like to thank all of my hosts for making me most welcome, taking the time to show me their laboratories, introducing me to their colleagues and young students with whom I could discuss science and possibly collaborate, and taking me on fascinating field excursions to karstic terrains and caves. My thanks also go to Marie-Aude Hulshoff (EAG) for making the smooth arrangements of this fascinating journey, and to the EAG for giving me this special opportunity of visiting the most fascinating institutes in Ukraine, Hungary, Slovenia and Croatia.

Note: videos of the lectures are available at www.eag.eu.com/outreach/dlp/