



# European Association of Geochemistry



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## 2015 EAG MEDALLISTS

### Urey Award to Al Hofmann



**Albrecht Hofmann** (Max Planck Institut für Chemie, Germany) has been awarded the 2015 Urey Medal. His detailed chemical studies of mantle-derived volcanic rocks are distinguished by their creative approaches to understand the processes controlling trace-element variability in lavas. Al's work not only defined some of the chemical variations that exist in the mantle but also helped to explain why they exist and their relationship to Earth's dynamic interior. His decades-long direction of the Max Planck Institut für Chemie built the laboratory into a world-renowned centre for geochemistry and a training ground for many of today's top high-temperature geochemists. Through his own scientific achievements and his many leadership roles in the geochemistry community, Al Hofmann fundamentally contributed to the growth of geochemistry as a discipline.

### Werner Stumm Science Innovation Award to Philippe Van Cappellen



**Philippe Van Cappellen** (University of Waterloo, Canada) is one of the outstanding low-temperature geochemists of his generation: he possesses an outstanding flair for defining the key biogeochemical processes. He uses his special ability to quantitatively understand those processes, both theoretically and experimentally, and has developed an extraordinary variety of useful biogeochemical models. For much of his career, Philippe has been working at the interface between environmental geochemistry and microbiology and has recognised the crucial role that bacteria play in globally important elemental cycling. He also has an outstanding record as a mentor: 21 of his former PhD students and postdoctoral fellows now hold positions in academia and research institutes.

### Houtermans Award to Caroline Peacock



**Caroline Peacock** (University of Leeds, UK) obtained her undergraduate and PhD degrees from the University of Bristol (UK) where she helped pioneer the combined application of synchrotron spectroscopy, quantum mechanical modelling and experimental approaches to studying molecular interactions between metals, minerals and microbes. Caroline continued this work during a lectureship at the University of Southampton (UK), before moving to Leeds in 2009, where she is now an associate professor. Her many achievements include developing the first molecular thermodynamic models to predict trace-metal abundance and stable-isotope fractionation in seawater and marine sediments. Caroline is also among the first to show that molecular processes at the surfaces of Fe-Mn minerals are the primary control on the global abundance and distribution of many bioessential metals in seawater.

### Distinguished Service Award to Christa Göpel



This year, the EAG council wishes to recognise **Christa Göpel** (Institut de Physique du Globe de Paris, France), for her service as EAG treasurer from 2008 to 2014. Christa has been instrumental in placing the EAG on a solid financial footing, so allowing the society to fund many additional initiatives. An excellent treasurer, Christa has always demonstrated a good balance between optimism and pessimism when presenting financial forecasts! The EAG is honoured to recognize Christa for her outstanding contribution to the geochemical community, which greatly exceeded the expectations of normal service.

**EAG PHOTO CONTEST 2015:** submit your photo from mid-August **Winners receive a 5-year EAG membership!** More details on our website and newsletters (subscribe to newsletters for free at [www.eag.eu.com/subscribe](http://www.eag.eu.com/subscribe))

## THE LIVES OF GREAT GEOCHEMISTS: WERNER STUMM (1924–1999)



Werner Stumm is the inventor of "aquatic chemistry"—a unifying approach in low-temperature geochemistry and water technology. Together with James J. Morgan he co-authored an influential textbook with the same title. He significantly advanced the field of surface chemistry and had a broad vision for the discipline, one that anticipated many developments in environmental science.

Werner was born 1924 in Switzerland and earned his PhD in chemistry from the University of Zurich in 1952. His thesis focused on the use of ion-exchange resins in analytical chemistry, which led to an initial career as a solution chemist. With his enthusiasm to apply science to practical problems, he spent a post-doctoral year at Harvard University (USA) working on iron corrosion and was hired shortly thereafter as an assistant professor of sanitary chemistry. Between 1956 and 1970, he developed a highly visible research agenda focusing on the application of chemical

concepts to process engineering. His group at Harvard derived rate laws for oxidation processes, investigated the chemical aspects of coagulation, and advanced the understanding of corrosion processes. In his teaching, Werner was influenced by the Swedish chemist Lars Gunnar Sillén and by scientific exchanges with geochemists such as Heinrich Holland and Robert Garrels. While at Harvard, he wrote the classic textbook *Aquatic Chemistry* which appeared in 1970.

In the same year, Werner Stumm moved back to Switzerland to become the director of Eawag, now renamed as the Swiss Federal Institute of Aquatic Science and Technology. Together with Paul Schindler (University of Bern), Werner and his students embarked on a new research program to transfer the concepts of complexation chemistry to the mineral-water interface. They developed a simplified electrostatic model to derive equilibrium constants at charged aqueous surfaces and to describe the adsorption of cations and ligands in colloidal systems. Werner promoted the idea of an "inner-sphere surface complex" as a paradigmatic shift from electrochemistry towards coordination chemistry. This breakthrough was fruitful because it could build on decades

of previous research on aqueous solutions. The concepts of surface complexation helped advance our understanding of geochemical processes (such as mineral dissolution) and were later validated and refined by numerous spectroscopic studies.

While his achievements in aquatic chemistry are still well cited, Werner Stumm's vision for interdisciplinary research has left a much smaller footprint on the web of science. Nonetheless, as a director and professor he was tremendously influential in developing environmental science as an academic discipline. His 1980 interview in *Environmental Science & Technology* and his 1986 article in *Ambio* ("Water, An Endangered Ecosystem") read like blueprints for a biogeochemical research agenda. Together with a network of allies, he pushed for a system-oriented education, the formation of interdisciplinary teams and the courage to address global research questions.

Werner Stumm received many honours, including the Goldschmidt Medal, the Tyler Prize and the Stockholm Water Prize. He died in 1999 and will be remembered for his forceful enthusiasm to shape geochemical thinking.

Bernhard Wehrli ([wehrli@eawag.ch](mailto:wehrli@eawag.ch))



PRAGUE, CZ  
AUGUST 16 - 21  
2015

# GOLDSCHMIDT2015

## 25<sup>TH</sup> ANNIVERSARY



### AWARDS TO BE PRESENTED AT GOLDSCHMIDT 2015

#### EUROPEAN ASSOCIATION OF GEOCHEMISTRY



UREY MEDAL:  
**Albrecht W. Hofmann**  
(Max-Planck-Institut für Chemie, Germany)



SCIENCE INNOVATION AWARD (Werner Stumm Medal):  
**Philippe Van Cappellen** (University of Waterloo, Canada)\*



HOUTERMANS MEDAL: **Caroline Peacock** (University of Leeds, UK)



DISTINGUISHED SERVICE AWARD:  
**Christa Göpel**  
(Institut de Physique du Globe de Paris, France)

#### GEOCHEMICAL SOCIETY



GOLDSCHMIDT MEDAL: **Miriam Kastner** (Scripps Institution of Oceanography, USA)



PATTERSON MEDAL:  
**Karen H. Johannesson** (Tulane University, USA)\*



2014 PATTERSON MEDAL: **Christopher M. Reddy** (Woods Hole Oceanographic Institution, USA)\*



CLARKE MEDAL: **Anat Shahar** (Carnegie Institution of Washington, USA)



2014 ALFRED TREIBS MEDAL: **Steve Larter** (University of Calgary, Canada)\*

#### GS/EAG



GAST LECTURER:  
**Ann Pearson**  
(Harvard University, USA)



GEOCHEMICAL JOURNAL AWARD:  
**Haruna Sugahara**  
(Japan Agency for Marine-Earth Science and Technology)



SHEN-SU SUN FOUNDATION SHEN-SU SUN AWARD:  
**Liping Qin**  
(University of Science and Technology of China)

#### 2015 GS/EAG GEOCHEMICAL FELLOWS



**Ariel Anbar** (Arizona State University, USA)



**Hai Cheng** (Xi'an Jiatong University, China and University of Minnesota, USA)



**Timothy Elliott** (University of Bristol, UK)



**Kathryn L. Nagy** (University of Illinois, USA)



**Monica M. Grady** (Open University, UK)



**Erik Hauri** (Carnegie Institute of Washington, USA)



**Holly Stein** (Colorado State University, USA)

In honor of the 25<sup>th</sup> anniversary of the Goldschmidt conference, a series of 25 special anniversary talks linked to each theme will highlight the greatest achievements over the past quarter century and a vision of where the specific geochemical field may be going in the future.

The speakers will aim to give insightful overviews across the whole of their geochemical field, and motivate all of us to explore new research opportunities to advance geochemistry.

We look forward to seeing you there.

\* Medallists are also named Geochemical Fellows by virtue of their medal.