The Clay Minerals Society

www.clays.org

THE PRESIDENT'S CORNER

Dear CMS Community,

Greetings! By the time you read this column, I will have just completed my tenure as the President of the Clay Minerals Society. I feel honored and privileged to have served as president of the CMS for the past year. Overall, the CMS had a good year, and it would not have been possible without the support from you—loyal members and dedicated volunteers who have served on the executive board, council, editorial office/board (including associate editors), various standing (as well as ad hoc) committees, and the CMS office.

As with many scientific and professional organizations, the CMS is at a crossroads facing a range of challenges, such as membership counts, journal production, distribution, marketing, quality of manuscripts, and how to best provide value to our professional and student members. Also, the reduction or elimination of clay science programs from many universities and declining funding for research and education in clay science and technology from governments, industries, and other organizations has had an indirect and direct impact on the CMS. I am a true believer of "with every challenge comes an opportunity," and with our concerted efforts, we can convert the many challenges of today to the opportunities of tomorrow.

Despite being in the midst of these challenges, I believe the CMS is thriving as an organization and forging ahead with our core mission: encouraging and stimulating research in the field of clay science and technology, as well as disseminating research findings, exchanging innovative ideas, and facilitating network-building activities. We have many platforms to accomplish these goals: (1) annual meetings and field trips; (2) our journal, *Clays and Clay Minerals*; (3) workshop volumes; (4) e-newsletters; (5) the CMS website; (6) source clays; (7) student research scholarships and travel grants; (8) professional awards; (9) the Reynolds Cup; (10) affiliation and collaboration with many other scientific and technical societies. We made great strides in the past year to make positive changes on many of these fronts. I am confident that the new team, with all your help, will seek creative and innovative ways to bring about continual improvements on the matters important for the society.

Finally, I am leaving the CMS in the good hands of Dr. Jan Środoń (Institute of Geological Sciences, Kracow, Poland) as president, effective June 2016. Jan is well known in the clay science community worldwide, especially through his pioneering research work on weathering, sedimentation, and diagenesis. I wish Jan and his team all the best in continuing the mission and moving forward with the important tasks that lie ahead for the Clay Minerals Society.

With best regards,

Prakash B. Malla, CMS President, 2015–2016
Research & Development
Thiele Kaolin Company, Sandersville, Georgia, USA

CMS MEMBERSHIP RENEWAL

Don't forget to renew your membership for 2016!

STUDENT RESEARCH SPOTLIGHT

Congratulations to **Chun-Chun Hsu** (Texas A&M University, USA), **Austin Boles** (University of Michigan, USA), and **Jonathan Knapp** (West Virginia University, USA), and **Valerie Alstadt** (Pennsylvania State University, USA) for winning a CMS Student Research Grant!

Chun-Chun Hsu is **looking for efficient and selective binders for the four major mycotoxins**: fumonisin, ochratoxin A, deoxynivalenol, and zearalenone. Finding and developing high-selectivity, high-capacity, and low-cost binders for the agriculturally important mycotoxins are the goals of many research groups and industry. While some success has been achieved for aflatoxins, practical, highly selective, and efficient binders for the other mycotoxins have not been discovered or reported in the literature. To detoxify mycotoxins, Chun-Chun is modifying natural clay minerals and synthetic nanoparticles to match the adsorbing domains in the interlayer of the layer minerals/crystals with the size and polarity of the mycotoxin molecules.

Austin Boles studies **deformation processes of the brittle crust**, specifically the interplay between brittle structure evolution and fluid flow/diagenesis. He employs the multidisciplinary approach developed in Prof. Ben van der Pluijm's University of Michigan (USA) research group, which includes a combination of clay mineralogy, electron microscopy, quantitative X-ray diffractometry, $^{40}Ar/^{39}Ar$ geochronology, H, and O isotopic analysis of illite, and classical structural methods. Austin Boles researches large-scale fault systems and sedimentary basins in Turkey, New Zealand, Papua New Guinea, the Japan Trench, and the Northern Appalachian Basin.

Jonathan Knapp's work focuses on **the red beds and chemical sedimentary rocks from the Permian–Triassic of Wyoming**. The Permian and Triassic periods were a time of extreme change on Earth. Jonathan is resolving climate and environments using the tools of detailed sedimentology and paleopedology. The CMS grant was critical for him to understand the fossil soils that are a key component of the system. The grant allowed him to perform field work and identify clays with X-ray diffractometry. Jonathan thanks the society for this support and the members who have been assisting him in learning the methodology. He believes that this work will help us to understand the natural history of our dynamic and exciting planet.

Valerie Alstadt studies **the surface composition of mineral dust particles** using diffuse reflectance infrared Fourier transformed spectroscopy to characterize mineral surfaces before and after pollution exposure. The aim of this work is to understand how atmospheric pollutants interact with the environment. Additionally, Valerie uses an ice nucleation chamber to characterize the immersion freezing behavior of various compounds in order to understand cloud formation.