

10th International Copper Research Meeting (Copper 2016 Sorrento)

Organizers: Stephen G. Kaler, Scot C. Leary, and Roman S. Polishchuk.

Post-Conference Report

The 10th International Copper Research Meeting (Copper 2016) was held at the picturesque seaside town of Sorrento in Italy, running from 25-30th Sept. The meeting is held every two years, usually in a similar southern Italian coastal city and attracts researchers interested in copper across broad fields of science. This year was no exception with a strong attendance of 127 delegates with a strong representation of clinical researchers in addition to many scientists in fundamental areas including microbial, plant, human health and medicine, neuroscience, cell biology, cancer and protein structure. The location was at the Grand Hotel Vesuvio, perched up in the hills with great views overlooking Sorrento and across to Mount Vesuvius. The location was ideal and provided excellent support for the meeting.

Attendance: Attendees represented many nations including Argentina, Australia, Brazil, Canada, Italy and many European Union countries, Japan, United Kingdom, and USA. The conference also received strong support from the Royal Society of Chemistry journal, *Metallomics* with a dedicated special issue on copper research linked to the meeting (*Mammalian Copper Transport and Related Disorders*) and support of the best poster awards. In addition to an exciting line-up of plenary and symposia sessions, there was a strong showing of support for posters with ~50 posters and a session dedicated to oral presentations from selected poster presenters. Two poster sessions were well-attended with active scientific discussions continuing from the sessions into dinner. Importantly, there was good attendance from new delegates, and plenty of young researchers, demonstrating the continued strength and strong future for the copper research community.

Awards: The meeting also saw several important awards given including the David M. Danks Award to James Camakaris (Australia) for lifetime contribution to copper research, and young investigator awards including the Arturo Leone Award to Helena Öhrvik (Sweden) and the Ivano Bertini Award to Alejandro Vila (Argentina). In addition, four poster awards were given to Brandon Logemen, Ekaterina Ilicheva (Russia), Brandon Logeman (USA), Ashwinie Ukuwela (Australia), and co-presenters Simona Allocca and Michela Ciano (Italy) for their exciting contributions as young investigators in copper research.

Program: Plenary speakers included Svetlana Lutsenko (USA) who discussed copper transport and maintenance of cellular redox state. Amy Rosenzweig (USA) presented new insights into the broad significance of copper transport in methanotrophic bacteria, and Hans Zischka (Germany) demonstrated compelling support for mitochondrial rescue as a potential approach to treat liver failure in Wilson disease. Dennis Thiele (USA) presented new research on infectious niche-specific copper homeostasis of the pathogenic fungus, *Cryptococcus neoforms*, and

finally Elena Polishschuk (Italy) gave us some great insights into autophagic processes in Wilson disease.

Following these great plenary talks, the subsequent symposia covered an exciting range of copper research with many highlights including (but not limited to) the use of in-cell NMR for tracking copper at a molecular level (Lucia Banci, Italy), the role of copper as a nutrient for pathogenic fungi (Valeria Culotta, USA), the role of copper in inter-organ signaling (Kim Jett, Saskatchewan, Canada), synergy between copper and other transition metals (Crystal Blaby-Haas, USA), the rapidly growing field of copper and transition metal signaling (Chris Chang, USA), copper and MAPK signaling in cancer (Donita Brady, USA), a comprehensive update on potential therapeutics for Menkes disease including viral gene therapy (Stephen Kaler, USA), and the role of transient domain interactions in ATP7b regulation by copper (Oleg Dmitriev, Canada).

International Society for Neurochemistry (ISN) sponsored symposium on: The Roles of Copper in Neuroscience and Common Neurodegenerative Diseases.

This symposium was held on Monday 26th Sept, 1:30 – 4:45pm with six talks including four by senior researchers and two by junior investigators selected from submitted abstracts. The focus of the session directly covered the role of copper in neurodegeneration as well as more fundamental neuroscience research related to copper at the molecular and cellular level. Presentations by Anthony White (Australia) and Rosanna Squitti (Italy) provided key support for important roles of copper in Alzheimer's disease and other forms of neurodegeneration, such as motor neuron disease as well as potential copper-targeted therapeutics. This was followed by Simon Drew (Australia) who presented exciting new insights into the presence of a high affinity copper-binding amyloid peptide in Alzheimer's disease with implications for chelator-based therapies. The latter talk was added to the Symposium line up, selected from among eight Neuroscience abstracts submitted. In the fundamental neuroscience session, after a coffee break, Betty Eipper (USA) presented new insights into the key role for copper-containing peptidylglycine alpha-amidating monooxygenase (PAM) in ciliogenesis and oxygen-sensing. This was followed by Carla Marchetti (Italy) who described specific interactions of copper with neurotransmitter receptor channels, and finally Lucia Banci (Italy) provided wonderful insight into the powerful approach of in-cell NMR to follow copper movement and function in neurons. The symposium was extremely well-received and well-attended and demonstrated the strong interest in copper as a fundamental factor in neuroscience, in general, and neurodegeneration in particular.

Conference Evaluation: Attendees have been asked to complete a short evaluation form to rate a range of aspects including scientific content, interaction and networking opportunities, logistics, and highlights/issues. The results will be analyzed by the Meeting co-chairs and made available by November 1, 2016. Overall, the meeting received enthusiastic feedback expressed by many attendees at the final night gala dinner with many already looking forward to the next meeting.

Acknowledgements: We gratefully thank the ISN for sponsoring a highly successful session within the prestigious 10th International Copper Research Meeting. ISN funds were used in part to defray the travel costs for invited speakers, and speakers selected from the abstracts. All students and postdoctoral fellows presenting abstracts were offered funds to defray lodging expenses. Sponsorship by the ISN was acknowledged on the conference website, in the conference program distributed to all attendees, and verbally by the Conference Co-Chair (Scot Leary), Session Co-Chair (Betty Eipper) and session speakers at the start of the conference and session.

ISN funding allocation:

Name	Affiliation	Travel allocation from ISN funds (US\$)	Accommodation from ISN funds (US\$)	Total Allocation from ISN funds (US\$)
Anthony White	QIMR Berghofer Institute and University of Melbourne, Australia	1800	300	\$2100
Rosanna Squitti	IRCCS Istituto Centro San Giovanni di Fatebenefrateli, Italy	220	300	\$520
Simon Drew	Florey Institute of Neuroscience and Mental Health, Australia	0	640	\$640
Betty Eipper	UConn Health, USA	1200	500	\$1700
Carla Marchetti	Istituto di Biofisica, Italy	0	520	\$520
Lucia Banci	CERM, University of Florence, Italy	220	300	\$520

Total Allocation ISN Contribution to Copper 2016 = US\$6,000