



**“New Frontiers in Magnesium Research:  
Molecular Mechanisms and Clinical Implications”  
XVIII International Magnesium Symposium  
Research Institute of McGill University Health Centre  
Montreal (Canada)**

**August, 20-21, 2026**

**SCIENTIFIC PROGRAM**

(EST TIME)

**Thursday, August 20, 2026**

08:00 – 08:30 **Registration**

08:30 - 08:45 **Welcome Remarks**

**Rhian M Touyz**

*McGill University Health Centre Montréal, Québec, **Canada***

**Federica Wolf**

*Università Cattolica del Sacro Cuore, Rome, **Italy***

08:45 - 09:10 **OPENING LECTURE** *organized by **Rhian M Touyz***

*McGill University Health Centre Montréal, Québec, **Canada***

**SESSION I**

**Magnesium Homeostasis – Wasting & Treatment**

09:10 - 09:35 **SGLT2 inhibition and renal magnesium handling: Mechanisms and clinical implications**

**Adriana Girardi**

*Departamento de Cardiopneumologia, Faculdade de Medicina da Universidade de Sao Paulo (FMUSP), Sao Paulo, **Brazil***

09:35 - 10:00 **SGLT2 inhibitors for Hypomagnesemia: Case Series, Observational Studies, and a Clinical Trial**

**Chintan V. Shah**

*Division of Nephrology, Hypertension & Renal Transplantation  
University of Florida – College of Medicine, FL, **USA***

10:00 - 10:25 **Magnesium reabsorption from the Proximal tubule and the TAL**

**R. Todd Alexander**

*Departments of Pediatrics, University of Alberta, Canada*

10:25 - 10:35 **Coffee Break around Poster Session**

## **SESSION II**

### **Magnesium Homeostasis – TRP-channels**

10:35 - 11:00 **New Insights into the Physiological Roles of TRPM6 and TRPM7**

**Vladimir Chubanov**

*Department of Pharmacology and Toxicology, Walther-Straub Institute, LMU Munich, Germany*

11:00 - 11:25 **The magnesium channel TRPM6 is stimulated synergistically by the urinary proteins Mucin-1 and Uromodulin**

**Matthias Wolf**

*Department of Pediatrics, Pediatric Nephrology, University of Michigan, Ann Arbor, MI, USA*

11:25 - 11:50 **The Role of Magnesium and TRPM Channels in Pancreatic Islets**

**Noushafarin Khajavi**

*Rudolf-Boehm-Institute for Pharmacology and Toxicology, Leipzig University, Leipzig, Germany*

11:50 - 12:15 **Structural Mechanisms of TRPM7 Activation and Inhibition**

**Alexander Sobolevsky**

*Columbia University, New York, USA*

12:15 - 12:40 **Uncovering the Function of TRPM7 and TRPM6 Kinase Domains**

**Alexey Ryazanov**

*Department of Pharmacology Rutgers, Robert Wood Johnson Medical School Piscataway, NJ, USA*

12:40 - 13:05 **Modeling Calcium and Magnesium balance: Regulation by Hormones**

**Anita T Layton**

*Department of Applied Mathematics, University of Waterloo, Waterloo, ON, Canada*

13:05 - 14:00 **Lunch around Poster Session**

14:00 - 14:25 **Keynote Lecture – Sponsored by Magtein**

**"From Molecule to Mind: A 20-Year Journey in Magnesium Translational Research"**

**Guosong Liu, PhD**

*Founder & CEO, Neurocentria, California, USA*

*Former professor at MIT and Tsinghua University*

### **SESSION III**

#### **Magnesium Homeostasis – Evolution & Development**

**14:25 - 14:50** **Evolutionary involvement of PTP4A-like enzyme from TRANSLON to infectious agents**

**Michel L Tremblay**

*Department of Biochemistry and Goodman Cancer Institute. McGill University, Montreal, Canada*

**14:50 - 15:15** **Magnesium control of bacterial physiology**

**Eduardo A Groisman**

*Yale School of Medicine, Department of Microbial Pathogenesis, New Haven, CT, USA*

**15:15 - 15:40** **How Cells Set Magnesium Levels During Development**

**Loren Runnels**

*Department of Pharmacology Rutgers, Robert Wood Johnson Medical School  
Piscataway, NJ, USA*

**15:40 - 16:10** **Coffee Break around Poster Session**

### **SESSION IV**

#### **Magnesium Homeostasis– CNNM-transporters**

**16:10 - 16:35** **Regulation of magnesium transport by the PRL/CNNM pathway**

**Kalle Gehring**

*Department of Biochemistry, McGill University, Montreal, Canada*

**16:35 - 17:00** **Rewriting Liver Biology Through Magnesium Homeostasis**

**María Luz Martínez-Chantar**

*CIC bioGUNE. Liver Diseases Lab, Vizcaya, Spain*

**17:00 - 17:25** **CNNM2 in Magnesium Handling and Balance**

**Onur Cil - Sponsored by the Jain Foundation**

*Department of Pediatrics, UCSF, San Francisco, California, USA*

**17:25 - 17:50** **Open resources to understand and target membrane transporters in rare neurological diseases**

**David Sauer - Sponsored by the Jain Foundation**

*University of Oxford, Centre for Medicines Discovery, UK*

**Friday, August 21, 2026**

## **Welcome sponsor session**

**08:00 - 08:10**     **The Jain Foundation**

**08:10 - 08:20**     TBD

**08:20 - 08:30**     TBD

**08:30 - 08:55**     **Mechanisms of renal magnesium handling and links to hypokalemia**

**James McCormick**

*Division of Nephrology & Hypertension, Department of Medicine, Oregon Health & Science University (OHSU), Portland, OR, USA*

**08:55 - 09:20**     **The Mechanism whereby Mg treats Atrial Fibrillation and Heart Failure with Preserved Ejection Fraction**

**Samuel C Dudley**

*Lillelei Heart Institute, Minneapolis, MN, USA*

**09:20 - 09:45**

**Francisco Rios**

*School of Medicine, Pharmacy and Biomedical Sciences  
University of Portsmouth, Portsmouth, UK*

**09:45 - 10:10**

**Novel insights in renal Mg<sup>2+</sup> transport**

**Jeroen de Baaij**

*Department of Medical BioSciences, Radboud University Medical Center, Nijmegen, the Netherlands*

**10:10 - 10:35**

**Lixia Yue**

*Department of Cell Biology, Pat and Jim Calhoun Cardiology Center, University of Connecticut Health Center Farmington, CT, USA*

**10:35 - 11:00**

**Coffee Break around Poster Session**

**11:00 - 11:25**

**Renal Magnesium Conservation During Lactation**

**Evan Ray**

*Renal-Electrolyte Div., University of Pittsburgh, PA, USA*

**11:25 - 11:50**

**Altered Magnesium Metabolism in Primary Aldosteronism: Clinical Manifestations and Cardiovascular Effects**

**Marta Müller**

*Nephrology Department, University Hospital of Duesseldorf, Heinrich Heine University, Germany*

**11:50 - 12:20**

**Oral Presentations**

**12:20 - 13:30**

**Lunch around Poster Session**

## **SESSION V**

**Unveiling the Immunomodulatory Power of Magnesium: From Cellular Mechanisms to Clinical Impact**

**13:30 - 13:55**

**TRPM7 and magnesium in B cell biology**

**Bebhinn Treanor**

*Department of Biological Sciences, University of Toronto Scarborough*

**13:55 - 14:20**     **Hypomagnesemia in lymphoma patients receiving CAR T Therapy correlates with Immune dysfunction and decreased survival**  
**Thomas Witzig**  
*Mayo Clinic, Department of Hematology, Hematology-Oncology, Rochester, MN, USA*

**14:20 - 14:50**     **Oral Presentations**

## **SESSION VI**

Magnesium across the lifespan: from conception to old age

**14:50 - 15:15**     **Ca<sup>2+</sup>, Zn<sup>2+</sup>, and Mg<sup>2+</sup>: Ionic Control of Fertilization and Early Development**  
**Rafael Fissore**  
*Department of Veterinary and Animal Sciences, University of Massachusetts, Amherst, NJ, USA*

**15:15 - 15:40**     **From Petri Dish to Patient: Unraveling the Role of Magnesium in the Biology of Aging**  
**Jeanette A Maier**  
*Department of Biomedical and Clinical Sciences, University of Milan, Italy*

**15:40 - 16:05**     **Magnesium involvement in biomineralization: a glimpse on the aging bone**  
**Stefano Iotti**  
*Department of Pharmacy and Biotechnology, University of Bologna, Italy*

**16:05 - 17:35**     **Oral Presentations**

**17:35 - 18:00**     **Coffee Break around Poster Session**

**18:00 - 18:30**     **SESSION VII**

Challenges in Magnesium Research:

still more questions than answers

where we are & where we are going

*A Round Table discussion on issues that are still debated or unexplored and suggestions for the future of Mg research*

**Stefano Iotti**

*Department of Pharmacy and Biotechnology, University of Bologna, Italy*

**Noushafarin Khajavi**

*Department of Pharmacology, University of Leipzig, Germany*

**Jeanette A Maier**

*Dept Biomedical and Clinical Sciences, University of Milan, Italy*

**André Mazur**

*Clermont-Ferrand, France*

**Rhian M Touyz**

*McGill University Health Centre Montréal, Québec, Canada*

**Federica Wolf**

*Università Cattolica del Sacro Cuore, Rome, Italy*

**18:30 - 19:00**     **Awards Nomination and Closing Ceremony**