



**“New Frontiers in Magnesium Research:
Molecular Mechanisms and Clinical Implications”
XVIII International Magnesium Symposium
Research Institute of McGill University Health Centre
Mc Gill University, 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 **TRPM channels in pancreatic islets**

Thomas Gudermann

*Walther Straub Institute of Pharmacology and Toxicology, Faculty of Medicine, LMU Munich, **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 Mg²⁺ 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

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 **Ca²⁺, Zn²⁺, and Mg²⁺: 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*

Thomas Gudermann

*Walther Straub Institute of Pharmacology and Toxicology, Faculty of Medicine, LMU
Munich, **Germany***

Stefano Iotti

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

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**