**Eric Mendelsohn: Colleagues and Descendants I**
(Chair/Président: **Brett Stevens** (Carleton University)
Org: **Peter Danziger** (Ryerson University) and/et **Brett Stevens** (Carleton University))

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**JASON BROWN**, Dalhousie University
*Colourful problems in combinatorics*

Eric Mendelsohn's research includes a variety of colouring problems, a natural match to his colourful personality! In this talk I will speak about a variety of problems, both old and new, on colourings of graphs and hypergraphs.

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**NEVENA FRANCETIC**, Carleton University
*Relation between optimal group divisible packing and covering designs*

Group divisible designs are building blocks of numerous constructions in the design theory. Here we consider a natural generalization of GDDs to coverings and packings, which have the same structure as GDDs with the difference that any pair of points which is not a subset of a group is contained in at most (at least) one block.

In this talk, we discuss generalizations of the Schönheim and Johnson bounds on the size of group divisible packing designs. Then we construct an optimal family of group divisible packing designs with blocks of size three from a family of optimal coverings.

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**KAREN MEAGHER**, University of Regina
*Covering arrays on graphs*

I met Eric at the very first conference that I ever attended. At this conference I gave my preliminary work on new type of covering array. In the more than 10 years since attending this conference I have discovered that these designs are far more than a simple adaptation to improve applications covering arrays. There are strange and interesting connections between covering arrays on graphs to many other areas of mathematics such as algebraic graph theory, the theory of association schemes and representation theory. In this talk I will show how this simple design contains all sorts of excellent mathematics.

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**DOUGLAS STINSON**, University of Waterloo
*Combinatorial Aspects of Key Distribution for Sensor Networks*

In sensor networks, each sensor node is typically assigned a subset of keys chosen from a larger key pool. It helpful to model these key assignments as a set system. Desirable properties of the key distribution scheme include connectivity and resilience. These properties correspond in a natural way to combinatorial properties of the associated set system. In this talk, we review some useful ways of constructing these types of schemes from combinatorial designs. We also analyze the above-mentioned properties and give some new results.