

Concordia Department of Physics Cordially Invites You to

## **The Inaugural Barry Frank Memorial Lecture.**

**Wednesday, September 6<sup>th</sup>, 2023, 15:00**

**HB-130, Loyola Campus of Concordia University**

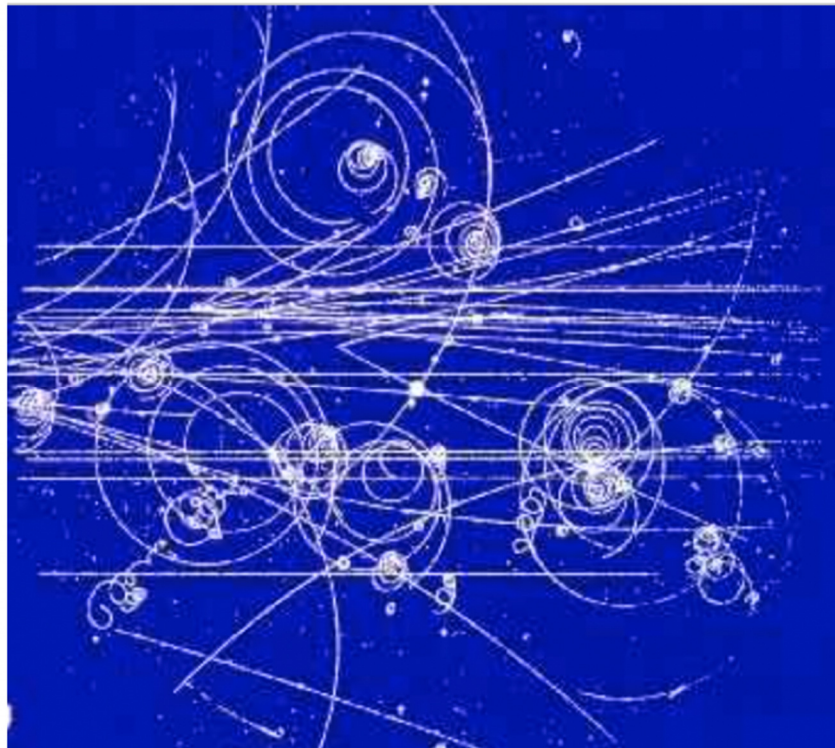
**7141 Sherbrooke Street West, H4B1R6**

**Dr. Assa Auerbach, Technion, Israel.**

### **What carries the current in metals and superconductors?**

The Hall coefficient has long been used to characterize the charge carriers as Fermi surface quasiparticles. However, unexpected Hall coefficient sign reversals and divergences (a.k.a. “Hall anomalies”) are commonly observed in strongly correlated metals and flux flowing superconductors. The validity of band theory and Boltzmann equation is called into question.

Dr. Auerbach will describe recent advances in quantum transport theory which allows us to calculate the Hall coefficients from models of strong interactions, and to identify the “moving parts” which give rise to these Hall anomalies.





Dr. Assa Auerbach, Professor of Physics at Technion - Israel Institute of Technology, Sydney and Elizabeth Corob Chair in Sciences.

<https://phsites.technion.ac.il/assa/>

Dr. Auerbach obtained his B.Sc. in Math/Physics in 1979 from Hebrew University, Israel; his M.Sc. in Physics from Weizmann Institute, Israel and his PhD in 1985 from the State University of New York at Stony Brook, N.Y., USA.

Dr. Auerbach is the author of more than 90 research papers on Condensed Matter Physics, Superconductivity, and Strongly Interacting Electron Systems. His textbook “Interacting Electrons and Quantum Magnetism”, is widely used in graduate level Condensed Matter courses. Professor Auerbach has also been involved in public outreach, explaining thermodynamics and

superconductivity to middle school and high school students. The full story of his latest Graphic Novel “Max The Demon vs Entropy of Doom” can be found at <http://www.maxthedemon.com/>

Barry Frank joined the Physics department of Sir George Williams University (one of the predecessors of Concordia) in 1965. He received his MSc and PhD degrees in physics from McGill University and the University of British Columbia, respectively. His field of research was condensed matter physics, in particular critical phenomena. He also had a deep insight in mathematics. Barry had his own unique style of teaching that was admired by the students. Apart from physics, he enjoyed literature and learning languages. Barry had a special love for Israel, which he visited quite frequently. He also learned the Hebrew language rather well. Thus, Barry Frank Memorial Lecture has been established to commemorate Barry, celebrate his connection with Israel as well as to invite distinguished Israeli physicists and expose students and colleagues alike to their work.

