



IEEE London Section



The London Section of the Institute of Electrical and Electronics Engineers

In partnership with the UWO IEEE Student Branch present:

Space Technologies and **Climate Change**

Wednesday October 24th , 2007

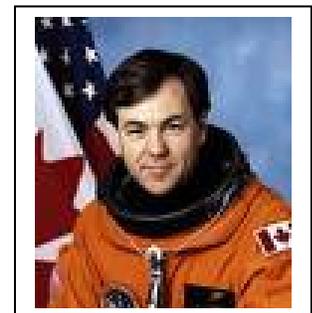
7:00 pm. - Room SEB 3109

Cost: FREE (Open to Everyone)

Speaker: Bjarni Tryggvason

Astronaut, Canadian Space Agency
Visiting Professor, University of Western Ontario

Payload Specialist on the US space shuttle in August 1997, spending 12 days in space working on the Microgravity Vibration Isolation Mount (MIM) and several experiments in fluid science; Principal investigator for the MIM-1 that flew on the Russian Mir space station (1996-1998), for the MIM-2 on his flight on the space shuttle and initiated the development of the Microgravity Vibration Isolation Subsystem (MVIS) incorporated into the European Space Agency (ESA) Fluid Science Laboratory (FSL), ` laboratory module in 2007. He has been a lecturer at several universities in dynamics, aerodynamics and applied mathematics. He is an Airline Transport rated pilot with 4500 hours of flight time including 1800 hours as an instructor. He has flown the Tutor jet with the RCAF and the NASA T-38 as well as another 30 types of airplanes. He completed mission specialist training at the Johnson Space Center in Houston for both the space shuttle and the ISS from 1998 to 2000. He has authored or co-authored more than 40 research papers, and holds several patents. He is currently on Professional Development from the Canadian Space Agency as a Visiting Professor at the University of Western Ontario in the Department of Mechanical and Materials Engineering.



Abstract:

In recent years concern has grown about environmental impact of human activity and of its impact on climate change. While many still try to deny the effects, the scientific evidence is clear. However, we are still not at a level of understanding of the Earth and its systems that would allow scientists to unequivocally predict the climate variations over time scales of decades or longer. Part of the challenge is that existing models and enhancement of these models requires a tremendous amount of data at spatial scales from tens of meters to thousands of kilometers, and time resolution of hours to years. There is no reasonable means for satisfying these data requirements based only on ground based observations and monitoring.

Space based systems are far more capable of providing the detail of observation and monitoring and is the only reasonable means for acquiring the data necessary to clearly establish human effects and to monitor the progression of mitigating strategies. Yet the use of space based sensors in the field of environmental studies and climate change studies is still quite limited.

The topic and the role of space based monitoring will be presented and should be the basis for a good discussion.

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