The Mathematical Association of Victoria
presents

Four Free Public Lectures

Juggling the Universe (presented by Dr Burkard Polster)

Date: **Thursday 25th July, 2002**
Time: **7.30pm**
Venue: **Activity Rooms (via main entrance), Melbourne Museum, Carlton Gardens, Carlton**

Sit back and enjoy a gravity defying juggling performance by the Great Burke, meet Burkard, a native speaker of SITE SWAP, the universal language of juggling patterns, and marvel as machines get taught to juggle as many balls as there are atoms in this universe.

Imaginary Numbers and the Magic They Do (presented by Dr Marty Ross)

Date: **Tuesday 6th August, 2002**
Time: **7.30pm**
Venue: **Activity Rooms (via main entrance), Melbourne Museum, Carlton Gardens, Carlton**

Journeying sufficiently far in mathematics, one encounters strange, improbable creatures such as $\sqrt{-1}$, so called *imaginary numbers*. The name suggests the precarious nature of their existence, and one may well doubt that $\sqrt{-1}$ makes any sense, much less that it can reasonably be called a number or could have any practical value.

In fact, $\sqrt{-1}$ is neither the first nor the last of such magical constructions - magical both in their apparent impossibility and in their astonishing usefulness. We'll discuss a number of such imaginary numbers, some surprisingly familiar, some much less so.

Shadows from the Fourth Dimension (presented by Dr Burkard Polster)

Date: **Tuesday 27th August, 2002**
Time: **7.30pm**
Venue: **Activity Rooms (via main entrance), Melbourne Museum, Carlton Gardens, Carlton**

Put on stereo goggles and tour a world of mathematical beauty. Learn about the theory of 3D vision and how to stretch it to its limits to break the dimension barrier. Be enchanted by 4-dimensional shadow play, and hold on to your seats as some serious collisions with higher dimensions rock the lecture theatre.

The Joy of Gambling? (presented by Dr Marty Ross)

Date: **Saturday 14th September, 2002**
Time: **2.00pm (this event will be followed at 4:00pm by the 2002 MAV AGM)**
Venue: **The Royal Society of Victoria, 8 La Trobe Street, Melbourne**

Well not "joy" exactly, but perhaps the *sense* of gambling. Gambling institutions of course aim to stack the odds against the punters. Nonetheless, if one is careful and patient, it is in fact possible to reliably win money at a casino.
Using simple notations about probability, we'll show what works, and what doesn't work, in a casino.

Marty Ross is a mathematical nomad. After studying at ANU and Stanford University, he travelled to Monash University, via Texas, Bendigo, Melbourne and Tasmania. His research is in geometric analysis (the use of geometry to study naturally occurring phenomena), but he spends a lot of his time thinking up jokes to slip into lectures!

Burkard Polster is a Logan Research Fellow, and Monash University's resident mathematical juggler, origami expert and bubble-master. When he is not doing fun mathematics he has fun investigating perfect mathematical universes.

Bookings essential!

To make a booking please contact the MAV office on
9380 2399 or email mavoffice@mav.vic.edu.au

The MAV would like to acknowledge the generous support of the Melbourne Museum.