Günter M. Ziegler
(TU Berlin)
will speak on
The Combinatorics of the 3-Dimensional Sphere

Date: Monday, September 12, 2005
Time: 17:15
Place: Lecture Hall Research II, IUB

Abstract:
Triangulations and cell decompositions of the two-dimensional sphere can be understood in terms of three-dimensional polyhedra. The corresponding theory is classical, visually accessible, and quite complete — due to Tutte, Steinitz, and many others.

Triangulations and cell decompositions of the three-dimensional sphere pose much bigger problems to us. In this lecture we shall thus treat questions like “How many triangulations are there (with n vertices, say)?” “Do most of these correspond to convex polytopes?” “How can the vertex-/edge-/face-numbers be characterized?”

Our (partial) answers to such questions involve a nice interplay of combinatorial ideas, new geometric constructions, advanced visualization tools, as well as differential geometric and topological components.

Colloquium Tea at ca. 16:45 in the Tea Room of Research II, close to the lecture hall. Everybody is welcome!

M. Stoll