The **Mahler lectures** are a biennial activity organised by the Australian Mathematical Society with the assistance of the Australian Mathematical Sciences Institute. Initiated by a bequest from number theorist Kurt Mahler, it brings a renowned mathematician to Australia to give a lecture tour (including public lectures) of Australian universities.

This year's Mahler lecturer is **Peter Sarnak**, Eugene Higgins Professor of Mathematics at Princeton University and Professor at the the Institute for Advanced Study in Princeton. He is a legendary figure in modern number theory. Peter Sarnak will be in Australia from August 8 till August 27 and will give 13 lectures at 9 different universities in 6 different cities. His lecture on August 12 will be an AGR lecture and will therefore be accessible to the mathematical community right across Australia.

Thursday, Aug. 25, UNSW, Clancy Auditorium, 3.30pm, Public Lecture

Chaos, Quantum Mechanics and Number Theory

The correspondence principle in quantum mechanics is concerned with the relation between a mechanical system and its quantization. When the mechanical system is relatively orderly ("integrable"), then this relation is well understood. However when the system is chaotic much less is understood. The key features already appear and are well illustrated in the simplest systems which we will review. For chaotic systems defined number-theoretically, much more is understood and the basic problems are connected with central questions in number theory.

Friday, Aug. 26, Sydney University, 2.30pm, Room 175, Carslaw Building, Colloquium

Zeroes and Nodal Lines of Modular Forms

One of the consequences of the recent proof by Holowinski and Soundararajan of the holomorphic "Quantum Unique Ergodicity Conjecture" is that the zeros of a classical holomorphic hecke cusp forms become equidistributed as the weight of the form goes to infinity. We review this as well as some finer features (first discovered numerically) concerning the locations of the zeros as well as of the nodal lines of the analogous Maass forms. The latter behave like ovals of random real projective plane curves, a topic of independent interest.

Aust MS
Australian Mathematical Society Inc.

AMSI
Australian Mathematical Sciences Institute