

University of St Andrews  
School of Computer Science

## Distinguished Lecture Series 1999/00

# Computer Storage Systems

by

**John Wilkes**

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John Wilkes is the director of the Storage Systems Program at Hewlett-Packard Labs. His main research interest is in the design and management of fast, highly available, distributed-storage systems; he has also dabbled in network architectures (the Hamlyn sender-based message model), OS design (most recently in the Brevix project), and in learning about early Renaissance art and architecture. He earned a BA and MA in physics and a Diploma and PhD in computer science from the University of Cambridge. He has been at Hewlett-Packard Labs since 1982, where he is now a Laboratory Scientist.

*Wednesday 1<sup>st</sup> March 2000  
Lecture Theatre B, Mathematical Sciences,  
North Haugh St Andrews*

## Programme

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|---------------|--|
| 10.00 – 11.15 | Introduction to online storage devices<br>An overview of current storage devices, with an emphasis on disk drives and their technology trends. Introduction to performance issues, including workload analysis - how file systems and databases use storage. Case study: request scheduling for disk-drives. |
| 11.15 – 11.45 | Coffee   |
| 11.45 – 13.00 | Disk arrays<br>High reliability systems for data storage: the design, properties, and some of the pitfalls of redundant storage in a box. Case study: one or two novel disk array designs.   |
| 14.00 – 15.00 | Storage area networks<br>Block, storage-object, and file level interfaces. Storage Area Networks versus Network Attached Storage (and other false dichotomies). Case study: CMU NASD.  |
| 15.00 – 15.30 | Coffee   |
| 15.30 – 16.45 | Storage management<br>The design and configuration of large storage systems. Quality of service guarantees. Goal-directed, self-managing, attribute-based storage systems. Case study: HP's Minerva system.  |