

# Condensed Matter Seminar

**Dr. Olle Heinonen**  
**Seagate**

**"Physics of disk drives - spintronics, magnetism, and materials"**

Most people probably do not lie awake at night wondering what goes on in the disk drive of their iPod or TiVo when they record something. The fact is that disk drives, for a long time the work-horse non-volatile memory in computers, have now also made it into consumer electronics products, from iPods to TiVos to camcorders. In this talk, I will give a very brief overview of what is in a disk drive, and then focus on the physics and technology of the read head. In these, spintronics, magnetism, materials science, and lithography converge to make a sub-100 nm device that is guaranteed to run for at least five years, available for the price of a toaster at your local Best Buy. I will also give an outlook of possible future recording technologies.

**Thursday, February 21, 2008- 4:10 PM - Room 416 PHY/GEO**