Magnetic tape storage is the technology of choice for backup and archive applications and, with the explosion of the volume of digital data created each year, the need for such cost-effective archival solution will continue to persist. The sustainability of the tape recording systems over the years is the result of continuous improvements of all the components of the tape drive and of the magnetic tape medium in particular. During my talk, I will primarily discuss recent developments in magnetic tape media. I will review the different magnetic media technologies used in tape products and demonstrations, with an emphasis on particulate barium ferrite media. Nonoriented barium ferrite media has just been introduced in commercial tape drives providing a recording capacity of 4 to 5 TB per tape cartridge. Using finer barium ferrite particles and orienting the particles out-of-plane have allowed recording demonstrations of up to 29.5 Gb/in$^2$, a 10x increase in areal density compared to the commercial products. To understand the performance limits of this particulate media technology, it is essential to understand and quantify how the different particle and media parameters affect the signal-to-noise ratio. To that purpose, we have conducted micromagnetic modeling studies. First, it was necessary to develop a packing algorithm that reproduces the structure of nonoriented and oriented particulate media. Then, recording simulations were performed on a Blue Gene/L supercomputer using a modified version of the micromagnetic solver Magpar, and the results were compared with analytical recording models. I will present the outcome of this study, which compares very well with experimental findings and provides us with means to design future particulate media.