Over the past few years there have been remarkable discoveries in spin-based phenomena that rely on spin-orbit coupling that could spur the development of advanced magnetic memory devices. These include the formation of chiral spin textures in the form of Néel domain walls and topological spin textures, skyrmions, that are stabilized by a Dzyaloshinskii-Moriya exchange interaction. The Dzyaloshinskii-Moriya exchange interaction is derived from broken symmetries and spin-orbit interactions at interfaces or within the bulk of materials. Another important consequence of spin-orbit effects are the unexpectedly high conversion efficiencies of charge current to chiral spin current from topological spin textures and in conventional metals, via the spin Hall effect\textsuperscript{1,2}. Such spin currents lead to giant spin-orbit torques that can be used to switch the magnetization in three terminal magnetic tunnel junction memory elements or can be used to move domain walls in Racetrack Memory memory-storage devices. Indeed record-breaking current-induced domain wall speeds exceeding 1,000 m/sec have recently been reported in atomically engineered synthetic antiferromagnetic racetracks in which the domain walls are “invisible” with no net magnetization\textsuperscript{3,4}. More complex non-collinear spin textures include the recent discovery of antiskyrmions\textsuperscript{5} in a Heusler compound.