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Abstract for an Invited Paper
for the MAR06 Meeting of
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Spin Transport in Metals and Semiconductors¹

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I will discuss a number of recent issues connected with spin-dependent transport in metals, semiconductors, and molecules with an emphasis on circumstances in which sophisticated electronic structure calculations can help achieve qualitative understanding. The specific topics that I will mention are the anomalous Hall effect in ferromagnetic metals and semiconductors, the spin Hall effect, giant magnetoresistance and spin-torques in circuits containing antiferromagnetic metals, and current induced magnetization dynamics in transport through magnetic molecules.

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