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**FUTURE RESEARCH**

**SHORT TERM**

- Properties of special and general grain boundaries in iridium and comparison with other fcc metals to clarify the propensity for intergranular brittleness in polycrystalline iridium.
- Studies of stacking faults and dislocations in molybdenum silicides: MoSi₂ (tetragonal C11₅₀, hexagonal C40, orthorhombic C54) and Mo₅Si₃ (D8ₐ).

**LONG TERM**

- Transition bcc metals (Mo, W, Ta, Nb, V) establish general rules of the dependence of their plastic behavior on electronic structure, in particular filling of the d-band. Investigate effects of point defects, in particular interstitials produced by irradiation, impurities and alloying elements on dislocation glide and thus deformation and fracture of these materials.

- Ferromagnetic iron
  - Development and testing of BOP that includes ferromagnetism. Using this BOP to investigate dislocations, interstitials, grain boundaries, alloying elements and their interactions in bcc iron with emphasis on effects of ferromagnetism and comparison with non-magnetic bcc metals.