## Abstract Submitted for the MAR14 Meeting of The American Physical Society

Anomalous properties in a rare correlated ferromagnet  $Nd_2PdSi_3$  SHANTA SAHA, RENXIONG WANG, JOHNPIERRE PAGLIONE, Center for Nanophysics and Advanced Materials, Department of Physics, University of Maryland, College Park, MD 20742, JEFFREY LYNN, NIST Center for Neutron Research, Gaithersburg, MD 20899 — The compound  $Nd_2PdSi_3$  belongs to an AlB2-derived ternary family (hexagonal structure, space group P6/mmm) showing many exotic properties [1-3]. This compound is considered to order ferromagnetically (<16 K), unlike other members of this series ordering antiferromagnetically. The magnetic ordering temperature ( $T_0$ ) is significantly enhanced with respect to the de Gennes–scaled value [3]. Recently, based on polycrystalline study the effects of Nd (4f)hybridization on the magnetism is discussed, which is rare in an Nd-based intermetallic compound [3]. We have grown single crystals of  $Nd_2PdSi_3$  using Czochralski method in a tetra arc furnace. We would like to present neutron scattering, transport, magnetic, and thermal properties on  $Nd_2PdSi_3$  and discuss Nd (4f)hybridization.

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Shanta Saha Center for Nanophysics and Advanced Materials, Department of Physics, University of Maryland, College Park, MD 20742

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