



**Monday
September 19, 2016**

Dr. Vyacheslav (Slava) Lukin

National Science Foundation

Plasma Physics at the National Science Foundation

12:00 pm, Room 2166 Dow Building

The National Science Foundation is an independent federal agency created by Congress in 1950 "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense..." With an annual budget of \$7.5 billion, it is the funding source for approximately 24 percent of all federally supported basic research conducted by colleges and universities. The NSF mission is fulfilled by issuing grants to fund specific research proposals that have been judged the most promising via a rigorous merit-review process. In this talk I will provide an overview of the support provided by NSF to the broad field of plasma science and engineering, as well as highlight the importance of basic discovery-driven plasma physics research supported by the NSF Division of Physics.

Magnetic Reconnection in the Lower Solar Atmosphere*

3:00 pm, Room 2422 SRB (Joint CLaSP-MIPSE seminar)

This talk will describe aspects of the plasma physics of magnetic reconnection in the lower solar atmosphere. Magnetic reconnection is the prototypical example of a nonlinear magnetized plasma phenomenon that couples physical processes across decades of spatial and temporal scales. Today, the basic physics of magnetic reconnection is being explored in a variety of plasma parameter regimes from collisionless fully ionized plasmas, to relativistic radiation-dominated plasmas, to strongly-coupled high energy density plasmas. The lower solar atmosphere, in particular, provides a range of contexts and environments in which to study magnetic reconnection, with the dynamics of the process strongly impacting the evolution of solar magnetic fields, particle acceleration, and other observables. Here, numerical explorations of the dynamics of magnetic reconnection in the weakly ionized plasma of the solar chromosphere and a low-beta plasma of the solar corona will be presented.

* Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author and do not necessarily reflect the views of the National Science Foundation.

About the Speaker: Dr. Vyacheslav (Slava) Lukin received the BA in Physics and Mathematics from Swarthmore College and PhD in Astrophysical Sciences from Princeton Univ. His PhD studies, split between Princeton Univ. and Los Alamos Nat'l Lab, were supported by graduate fellowships administered by ORISE Fusion Energy Sciences program and the National Science Foundation. Dr. Lukin completed a DOE FES sponsored postdoctoral fellowship at the Univ. of Washington in 2009, when he joined the staff of the Naval Research Laboratory, Space Sciences Division. Dr. Lukin is the lead developer of the HiFi open source multi-fluid modeling framework with users around the world and published applications to laboratory, space, and solar plasmas. Since late 2014, Dr. Lukin is a Program Director in the NSF Division of Physics with responsibility for programs in Plasma Physics and Accelerator Sciences.

