

INL News Release
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Spectrum-sharing and streamlining studied by Idaho State University and Idaho National Laboratory

Instant access to information and powerful technology in the palm of your hand is the new normal, but what happens when our information super highways come to a standstill or are untrustworthy? A recently awarded grant will help bring together researchers and technology leaders from academia, industry and government agencies from across the nation to better understand how to keep data streams flowing.

The National Science Foundation awarded a grant worth more than \$99,000 to Hossein Mousavinezhad from Idaho State University to work with Idaho National Laboratory to conduct a national wireless research symposium in Idaho Falls. The effort is inspired by INL's National and Homeland Security directorate and aims to discuss advanced research, experimentation and security-related to algorithms, protocols and innovative ways to support the more efficient use of the electromagnetic spectrum. The spectrum is used to transmit wireless signals to devices ranging from personal cellphones to secure military communication systems.

Idaho State University and Idaho National Laboratory will host the National Wireless Research Collaboration Symposium (NWRCS) in Idaho Falls on May 15 and 16. The symposium will give attendees the chance to discuss research in the field. During the two-day event, researchers will use the 890-square-mile National Wireless User Facility at the Idaho National Laboratory to collaborate and discuss their work.

The partners from Idaho National Laboratory are Rangam Subramanian and Hussein Moradi, nationally respected researchers in wireless technology strategy for National and Homeland Security. Subramanian has worked with federal lawmakers to help them better understand the impact of spectrum congestion on commerce and consumers. Moradi has developed an award-winning technology that offers secure, nearly undetectable control communication channels for use in public safety and national defense.

"The laboratory's full-scale outdoor wireless test bed provides industry, academia and government a unique testing environment to address growing spectrum challenges," said Dan Elmore, director of INL's Critical Infrastructure Protection division. "Addressing the concerns and needs across all of the spectrum user groups puts us much closer to reaching consensus about how to best solve this national challenge."

Aside from offering technical expertise, INL is able to apply unique facilities for testing and evaluations of wireless communications components and subsystems to further understanding of how spectrum may be more efficiently shared and secured.

"The collaboration bridges the gap between the spectrum required for the continued vibrancy of wireless communications and the established Federal Communications Commission regulations," Subramanian said. "Our ability to produce innovative solutions to improve spectrum use is imperative to supporting our national defense and economic vibrancy."

"This is really a seed grant for bringing together researchers in these rapidly growing fields and to organize a research symposium to be held in Idaho Falls in spring of 2014," Mousavinezhad said.

Brent Stacey, the associate laboratory director of INL's NHS directorate, emphasized the significance of this nationally-coordinated wireless research effort and symposium as a great initiative by the INL Wireless National User Facility (WNUF) and the Idaho universities for rapid wireless innovation in the nation.

INL is one of the DOE's 10 multiprogram national laboratories. The laboratory performs work in each of DOE's strategic goal areas: energy, national security, science and environment. INL is the nation's leading center for nuclear energy research and development. Day-to-day management and operation of the laboratory is the responsibility of Battelle Energy Alliance.

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More information about the symposium and the registration is available at: <https://secureweb.inl.gov/nwrcs2014/default.aspx>.

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