



**Engineering Institute**  
LANL • UCSD



# SCIENCE OF SIGNATURES ADVANCED STUDIES INSTITUTE (ASI)

April 15 – May 3, 2019  
[asi.lanl.gov](http://asi.lanl.gov)



**Applications accepted beginning Oct. 1, 2018**

**Deadline: Jan. 8, 2019**

**Questions/inquiries email: [asi@lanl.gov](mailto:asi@lanl.gov)**

**Document Submission email: [asi@lanl.gov](mailto:asi@lanl.gov)**

Acceptance notifications sent Jan. 25, 2019

Contact: Sarah Balkey, [asi@lanl.gov](mailto:asi@lanl.gov) or 505-667-8777

**We are currently soliciting applicants for the Advanced Studies Institute.**

*The Advanced Studies Institute is a professional development opportunity for advanced Ph.D. students (ones who have completed all of their course work) and postdocs interested in learning skills needed for research program development at National Laboratories/Academia.*

## HOW TO APPLY

**Students should download the application and demographic forms from our website, [asi.lanl.gov](http://asi.lanl.gov).**

**Then, email the following documents to [asi@lanl.gov](mailto:asi@lanl.gov).**

1. Application form
2. Resume
3. 1-page cover letter describing your interest in this program as well as your near term (1-3 year) academic and professional goals
4. At least one letter of recommendation
5. OPTIONAL – Demographic self-identification forms

The Los Alamos National Laboratory's National Security Education Center invites a multi-disciplinary (e.g. computer science, engineering, biology, physics, earth sciences, mathematics/statistics) group of advanced, highly accomplished Ph.D. students and post-doctoral researchers from around the country to come to Los Alamos National Laboratory for an opportunity to work on multi-disciplinary teams to generate novel, creative solutions to pressing national security problems and build the skills needed for successful research program development at national laboratories and in academia. This program will focus on introducing Advanced Studies Scholars to the process of writing winning proposals and securing research funding.

LANL's evolving national security mission requires research focused on the forward deployment of advanced measurement technologies, which is part of LANL's Science of Signature Pillar ([www.lanl.gov/science-innovation/pillars/sos/index.php](http://www.lanl.gov/science-innovation/pillars/sos/index.php)). We have identified a set of multi-disciplinary, highly-challenging Science of Signatures-Forward Deployment research gaps related to pertinent national security challenges. Advanced Studies Scholars will work in multidisciplinary proposal teams of 3 to generate novel research solutions to these important challenges. Under the guidance of LANL mentors, the scholars will complete preliminary feasibility studies of their concepts and summarize their results in a formal proposal format. Their professional development will be enhanced not only by their technical presentations on SoS topics and technical interactions facilitated by this program, but also by experienced researchers providing them with advice and guidance on how to develop research programs, write proposals, and secure funding. The scholars will present their proposals to a group of LANL program managers for critique and feedback. They will also have the opportunity to interact with multi-disciplinary researchers from around the country to facilitate future career opportunities and collaborations.

## STUDENTS

This program is designed for 15 advanced Ph.D. students (those who have completed all of their course work) and/or postdocs (internal or external to Los Alamos National Laboratory). High quality participants from diverse academic and cultural backgrounds are sought after. Students and/or postdocs from all technical disciplines are invited to participate in this program. Expenses will be reimbursed for Non-LANL participants' travel, lodging, and subsistence for the duration of the program. Local participants do not receive reimbursement. ***This program is limited to U.S. Citizens or U.S. Permanent Residents.***

## PROGRAM FORMAT

The students work in 3-person multidisciplinary teams and are assigned a research topic to be studied during the course of the 3-week program. Research topics focusing on Science of Signature-Forward Deployment problems are defined by LANL technical staff for the participants. Prior to the beginning of ASI, the students are given a list of topics, and they will be asked to indicate their preference for a particular topic. Team assignments are based on those preferences and a balance of each student's respective technical skill set. Teams then work on their challenge topics, under the guidance of LANL mentors, with the expectation of creating a research proposal to sell their solution concept. The program culminates with team presentations on their solution concept to a committee of LANL staff and program managers for critical review.

During the program, students attend daily technical and professional development lectures as well as work on their team research topics. Professional development lectures are given by laboratory staff and managers and outside academics on topics including proposal writing, the tenure process, starting a research group at the lab, and commercializing technology developed at the laboratory. Students will also have the opportunity to interact with multi-disciplinary researchers from around the country to facilitate future career opportunities and collaborations, and they will have the opportunity to shape new fields.

***The program requires a 100% time commitment by all participants for the 3-week duration of the program.***



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