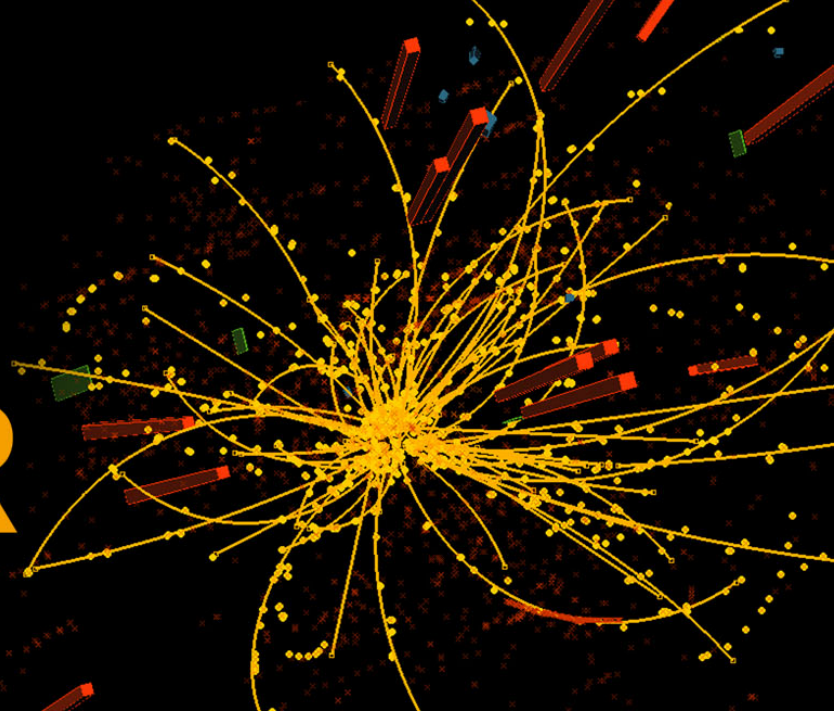
New Horizons

on the ENERGY FRONTIER



Welcome to the

44th SLAC SUMMER INSTITUTE !

Hopefully everything you need to know is on the SSI webpage.. but let's go through a few things……

SSI 2016
SLAC SUMMER INSTITUTE
SLAC NATIONAL ACCELERATOR LABORATORY

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Welcome to the 44th SLAC Summer Institute

New Horizons on the Energy Frontier

August 15-26, 2016
SLAC National Accelerator Laboratory
Menlo Park, California

SLAC Summer Institution Program

The SLAC Summer Institute (SSI) is an annual two-week-long Summer School tradition since 1973. Lectures are given Monday through Friday each morning. The afternoons contain a mixture of special lectures, topical conference talks, discussion sessions, student projects and tours. In the evenings, there are social activities and student poster sessions. The attendance is typically a mixture from graduate students to postdocs, as well as senior researchers.

The theme of the 2016 SSI will be "New Horizons on the Energy Frontier", focusing on the Run 2 LHC, its upgrades and possible future e^+e^- and hadron colliders. The LHC has just begun taking data at 13 TeV with growing anticipations on what it might discover during Run 2. Our community is also contemplating potential future facilities to follow up the upgraded LHC. This ambitious journey to unlock the secret of nature beyond the Standard Model involves extensive challenges to the accelerator, experimental and theoretical communities with variety of opportunities.

The schedule is available in 2 forms: as a spreadsheet & in full detail on Indico

- The morning lectures & the afternoon talks will all be here in the Kavli Auditorium
- The afternoon Q&A and (initial & final) project sessions will also be held here in the Kavli Auditorium
- The reception & dinners will be held on the patio of the SUSB cafeteria

Program Summary

SSI2016-New Horizons on the Energy Frontier

Time / Date	15 Aug Monday	16 Aug Tuesday	17 Aug Wednesday	18 Aug Thursday	19 Aug Friday	22 Aug Monday	23 Aug Tuesday	24 Aug Wednesday	25 Aug Thursday	26 Aug Friday
9:00–10:00	Energy Frontier Landscape N. Arkani-Hamed	QCD & EWK-TH K. Ellis	QCD & EWK-TH K. Ellis	Higgs-TH S. Thomas	Higgs-TH S. Thomas	New Physics Searches -TH N. Craig	New Physics searches -TH N. Craig	New Physics Searches -TH N. Craig	Flavor Physics-TH J. Zupan	Flavor Physics Experiments H. Jawahery
10:00–10:30	Morning Break									
10:30–11:30	LHC Accelerator and Upgrades M. Zerlauth	Tracking Detectors N. Wermes	Tracking Detectors N. Wermes	Trigger & DAQ W. Smith	Particle ID C. Weiser	Jets + MissingET A. Schwartzman	Experimenal Challenges of Collider Measurements G. Brooijmans	Experimental Challenges of Collider Measurements G. Brooijmans	Data Science M. Spiropulu	RoundTable Incandela, Peskin, Hinchliffe, Lankford, Leemans
11:45–12:45	QCD&EWK-TH K. Ellis	Calorimeters R. Wigmans	Calorimeters R. Wigmans	Very High Energy Hadron Colliders J. Wenninger	Physics at Very High Energy Hadron Colliders-TH LT. Wang	Cosmic Frontir Complemetarity P. Fox	Cosmic Frontier Complementarity P. Fox	Intensity Frontier Complementarity V. Cirigliano	Intensity Frontier Complentarity V. Cirigliano	The Road Ahead J. Incandela
12:45–13:30	Lunch			Lunch	Lunch		Lunch	Lunch		
13:30–14:00				Klystron Gallery Tour			Klystron Gallery Tour			
14:00–14:15					Future e+e- Linear Colliders P. Burrows				Project Presentations	
14:15–14:30										
14:30–14:45										
14:45–15:15	LHC Results - SM & Higgs E. Torassa	Q&A	FERMI results M. Wood	Q&A		Plasma Wake-Field Acceleration M. Hogan	Q&A	Accelerator & Reactor Neutrinos B. Eberly		
15:15–15:45	Break		Dark Matter Direct Detection G. Ignarra		Break			Heavy Photon Search T. Nelson		
15:45–16:05	LHC Results - BSM searches M. Dam	Afternoon Break			FCC-ee P. Janot	Muon Colliders M. Palmer	Afternoon Break			
16:05–16:35	ALICE M. Connors	Projects	Projects	Projects	CEPC J. Gao	Break	Projects	LHCb M. Sokoloff	Project Presentations	
16:35–17:05					Q&A	Projects		Projects		
17:05–18:00										
18:00	Reception	Dinner	Poster Social			Dinner	Poster Social	Soccer	Dinner	

44th SLAC Summer Institute

15 Aug 2016, 08:30 → 26 Aug 2016, 21:45 US/Pacific

Kavli Auditorium (SLAC)

Ariel Gustavo Schwartzman (SLAC National Accelerator Laboratory (US)) , Dong Su (SLAC National Accelerator Laboratory (US)) , Richard Partridge (SLAC National Accelerator Laboratory) , Thomas Rizzo (SLAC)

Description The SLAC Summer Institute (SSI) is an annual event held at the SLAC National Accelerator Laboratory in the summer. The Institute is a two-week-long Summer School. Lectures are given Monday through Friday each morning. The afternoons contain a mixture of special lectures, topical conference talks, discussion sessions, student projects and tours. In the evenings, there are social activities and student poster sessions. The attendance is typically a mixture from graduate students to postdocs, as well as senior researchers.

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All lectures and Topical Conference sessions will be held in the Kavli Auditorium. For other locations of events, please check the Indico Time Table room assignment.

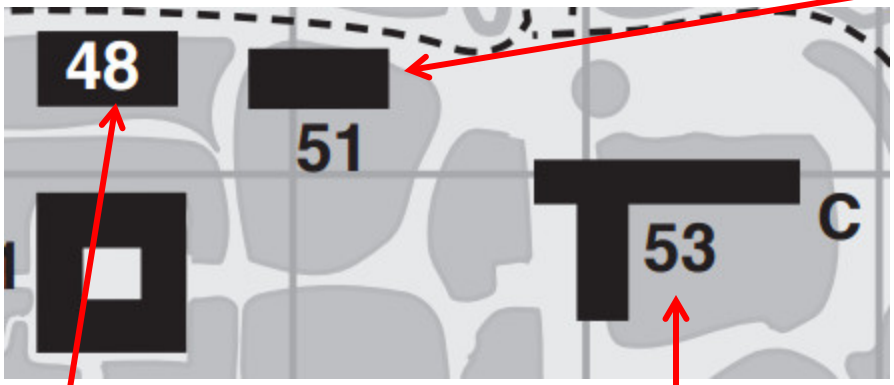
SSI-2016 Home Page

Support sudong@slac.stanford.edu

Monday, 15 August 2016

08:30 → 09:00 Registration and Light Refreshments

09:00 → 12:45 Lectures



- The poster session will be held in the SUSB (on 8/17 !)

The Contest Question: Every year we ask the students to answer a broad-based 'light' question depending on the SSI subject. This year the question is:

" What discovery made during the next 5 years would do the most to advance the field of high energy physics and why ?"

Place your answers in the big box (by 5PM 8/25) & a winner will be chosen during the last nights dinner (after wine).. the winner gets a bottle of fine CA bubbly signed by Nobel Prize winner Burton Richter on the last day.

To get the flavor: https://indico.cern.ch/event/200595/attachments/299542/418603/SSIContest2012.pdf

Q&A Sessions

- These are intended for extensive questions so those during the lectures & immediately afterward should be kept short & to the point.. of course, other questions can also be addressed to the speakers directly during breaks

- Note that questions can also be submitted (anonymously) with GoogleDocs via a link on the webpage & will be addressed in the Q&A sessions

Projects:

- Since 2013 we have incorporated projects conducted by teams of students into SSI
- We will provide a list of projects (to be posted later today or early tomorrow on the SSI website -- so keep your eyes open!) & you pick what looks interesting to you.. again, sign up using GoogleDocs on the SSI website
- Teams form around a given project & try to address the issues
- Teams present their results on the final TH afternoon (8/25) & the best team wins prizes
- More details tomorrow afternoon @ ~4PM

Odds & Ends

- Sign up for tours at the registration desk (see schedule for times)
- Be aware of next week's soccer game between the SSI students & the SLAC team…sign up to play or watch
- Check the SSI "SLAC campus" page for info wrt printing, ATMs, after hours access, etc.

Group photo after the first lecture ↓