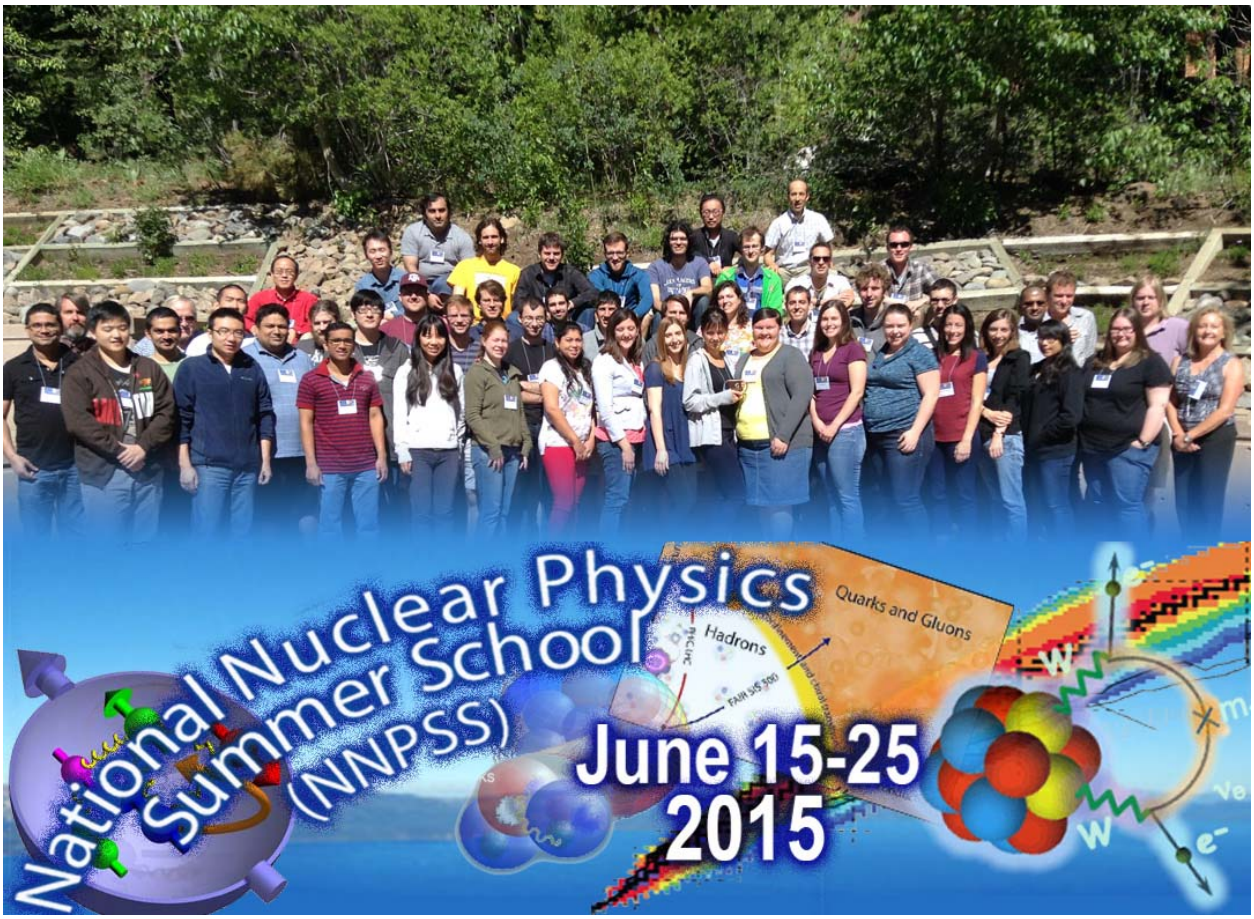
2015 National Nuclear Physics Summer School

Final Report



Prepared by Ron Soltz on September 14, 2015, on behalf of the NNPSS 2015 Organizers:

Dan Cebra (UCD/NSSC)
Cynthia Green (LLNL)
Erich Ormand (LLNL)
Ron Soltz (LLNL, chair)
Mark Stoyer (LLNL)
Bob Svoboda (UCD/NSSC)
Mani Tripathi (UCD/NSSC, co-chair)

Table of Contents

1 NNPSS 2015 Overview 3

2 Comments for Future Organizers 3

3 Scientific Program 4

4 List of Student Participants 4

Figure 1 Women of the NNPSS2015.

1 NNPSS 2015 Overview

The 2015 National Nuclear Physics Summer School was held at the Granlibakken Resort in the Lake Tahoe area, from June 15-25. Overall, the 2015 summer school was quite successful, as demonstrated by the following

- Attendance of 49 students, including 15 women physicists
- Participation by 10 lecturers, covering the major topics in nuclear structure, reactions, astrophysics, hadronic structure, and heavy ion physics; evenly divided between theory and experiment and equally delivered by male and female lecturers
- Participation by 9 special topic areas, covering medical physics, detectors, dark matter, super heavy elements, computational nuclear physics, nuclear security, FRIB, NIF and a double lecture on lattice QCD
- A full schedule of 7.5 lecture hours per day, with high attendance, and with all lecturers ending in communal area breaks and meals
- Two social events hosted at an on-site fire pit, with near full attendance by students, lecturers, and organizers
- A social media Facebook group – NNPSS2015 – with over 30 subscribers, used by students to coordinate weekend social activities

2 Comments for Future Organizers

The instructions provided on the INT web site are essential reading for any organizers, but they are not complete, and many organizers end up relearning the same lessons. In this section we document some of these lessons, some of which were told to us by the organizers of the 2012—2014 organizers whom we called for advice.

- Location, location, location. While university campuses can provide affordable dormitory style housing, prospective students and lecturers will be more attracted to an off-season conference location. Such locations are often able to provide full service housing, meals, and a sense of community to the participants, usually well below government per-diem rates.
- Secure sponsors early. INT funding does not arrive until April, whereas conference sites will usually require a small deposit ($3k in our case) up to a year in advance to hold the reservation.
- The current NSF contract does not allow overhead charges of any type. Thus, national labs must find a university with whom to partner, and the universities may need to negotiate special arrangements to handle the funding without incurring additional charges.
- Select lectures primarily for their pedagogic skills. This was a major concern for the 2015 organizers, and comments from the students were overwhelmingly positive on this point.

- Spend time with your students, and encourage your lecturers to do the same. The NNPSS is a unique opportunity for the students to learn about the larger field of nuclear physics, but they are also equally interested in learning about future career opportunities.

3 Scientific Program

Scientific Program

Time	15-Jun	16-Jun	17-Jun	18-Jun	19-Jun
08:30-09:45	**Hadr. Str. Th. 1** F. Yuan	**Hadr. Str. Th. 3** F. Yuan	**Nucl Ast. Th. 2** G. McLaughlin	**Structure/Reactions 1** M. Horth-Jensen	**Structure/Reactions 3** M. Horth-Jensen
10:15-11:30	**Hadr. Str. Th. 2** F. Yuan	**Hadr. Str. Exp. 3** N. Makins	**Nucl Ast. Th. 3** G. McLaughlin	**Structure/Reactions 2** M. Horth-Jensen	**Low Energy Exp. 3** H. Crawford
1:00-2:15	**Hadr. Str. Exp. 1** N. Makins	**Nucl Ast. Th. 1** G. McLaughlin	**Nucl Asto. Exp. 2** J. Blackmon	**Low Energy Exp. 1** H. Crawford	**Gamma-Ray Tracking** A. Macchiavelli
2:45-4:00	**Hadr. Str. Exp. 2** N. Makins	**Nucl Asto. Exp. 1** J. Blackmon	**Nucl Asto. Exp. 3** J. Blackmon	**Low Energy Exp. 2** H. Crawford	**Dark Matter** B. Sadoulet
4:30-5:45	**Medical Physics** G. Mitchell	**Super Heavy Elem.** W. Loveland	**NIF** C. Brune	**FRIB** M. Thoennessen	

Time	22-Jun	23-Jun	24-Jun	25-Jun
08:30-9:45	**Fun. Sym. Th. 1** B. Balantekin	**Fun. Sym. Th. 3** B. Balantekin	**Heavy Ion Th. 1** S. Pratt	**Heavy Ion Th. 3** S. Pratt
10:15-11:30	**Fun. Sym. Th. 2** B. Balantekin	**Fun. Sym. Exp. 3** D. Dwyer	**Heavy Ion Th. 2** S. Pratt	**Heavy Ion Exp. 3** B. Jacak
1:00-2:15	**Fun. Sym. Exp. 1** D. Dwyer	**Lattice QCD 1** M. Savage	**Heavy Ion Exp. 1** B. Jacak	
2:45-4:00	**Fun. Sym. Exp. 2** D. Dwyer	**Lattice QCD 2** M. Savage	**Heavy Ion Exp. 2** B. Jacak	
4:30-5:45	**Nuclear Security** R. Soltz	**Computation** D. Dean	**Banquet**	

4 List of Student Participants

LAST	FIRST	E-MAIL
Akhtar	Shamim	sa264309@ohio.edu
Alfonso	Krystal	kalfonso@ucla.edu
An	Murat	man@ncsu.edu
Bartlett	Kurtis	kdbartlett@email.wm.edu
Bartram	Chelsea	chelsea.bartram@gmail.com

Brandenburg	James	jdb12@rice.edu
Burcher	Sean	sburcher@vols.utk.edu
Burkey	Mary	mtburkey@uchicago.edu
Castro	Andrew	andrew.john.castro@cern.ch
Chen	Zhenyu	nickydian@gmail.com
Dhakal	Sushil	sd384309@ohio.edu
Feintzeig	Jacob	jfeintzeig@lbl.gov
Flores	Chistopher	chrflores@ucdavis.edu
Friesen	Forrest	fqf@tunl.duke.edu
Gilliss	Tom	gilliss@live.unc.edu
Giri	Rekam	rg870412@ohio.edu
Guragain	Hari	guragainhari@gmail.com
Hansen	Erin	ehansen@physics.ucla.edu
Harker	Jessica	harkjess@umd.edu
Heilborn	Lauren	lheilborn@comp.tamu.edu
Jia	Shaoyang	sjia@email.wm.edu
King	Jonthan	kingj3@onid.edu
Kootte	Brian	bkootte@triumg.ca
Koshchii	Oleksandr	koshchii@gwu.edu
Kuchera	Michelle	kucheram@nscl.msu.edu
Lyons	Stephanie	slyons2@nd.edu
Mace	Mark	mark.mace@stonybrook.edu
Macon	Kevin	kmacon1@lsu.edu
Mazeliauskas	Aleksas	aleksas.mazeliauskas@stonybrook.edu
Mazer	Joel	jmazer@vols.utk.edu
Meehan	Kathryn	kcmeehan@ucdavis.edu
More	Sushant	more.13@osu.edu
Orjuela Koop	Javier	jaor9079@colorado.edu
Parker	Cody	cp260509@ohio.edu
Peng	Chao	cp121@phy.duke.edu
Peng	Peng	pp9e@virginia.edu
Pershing	Teal	tjpershing@ucdavis.edu
Rajabi	Aliasghar	arajabi@physics.umass.edu
Richard	Andrea	ar286106@ohio.edu
Schmoll	Brandon	bschmoll@utk.edu
Shivashankara	Shanmuka	sshivash@go.olemiss.edu
Silano	Jack	silano@live.unc.edu
Solyanik	Maria	msolyanik@gwu.edu
Tu	Zhoudunming	tuzhoudunming@gmail.com
Vassh	Nicole	nvassh@gamil.com
Wang	Yang	ywang08@email.wm.edu
Xu	Chen	chenxu@nmsu.edu
Yang	Yue	yyang30@ncsu.edu
Zarrella	Andrew	andrew.zarrella@chem.tamu.edu

5 Student Comments and Photographs

We close this report with a sample of photographs and comments from the students.

I just wanted to say that I had a great time at the NNPSS 2015. It was my first real exposure to topics (and people!) in nuclear physics beyond my research area. I feel that the knowledge I gained at the school will hold me in good stead and help my overall development as a physicist. I'd like to thank the lecturers for the efforts they put in and for being so accessible. I realize that running a school with more than 50 participants smoothly is easier said than done. I truly appreciate Ron and Cindy (and others I may not know) for making this possible!

-- Sushant Moore, 4th year PhD student, Ohio State University

Thanks for all your effort organizing the NNPSS. It truly was a phenomenal experience....We had interesting lectures, great people, an amazing location, excellent food, and everything ran smoothly, but the value of the experience was far beyond the sum of its parts!

-- Chris Flores, 3rd year PhD student, UC Davis

I just wanted to send you a little note to say how much I appreciate all of the hard-work you put forth to make the NNPSS as awesome as it was. I had a really great time, loved the structure of the lectures, and learned so much! It was really great to review things about my research and to see connections between other topics that I have heard snippets about.

-- Andrea Richard, 4th year PhD student, Ohio University

Figure 2 Students working on an in class problem from Gail McLaughlin.

Figure 3 Baha Blantekin lectures on fundamental symmetries.

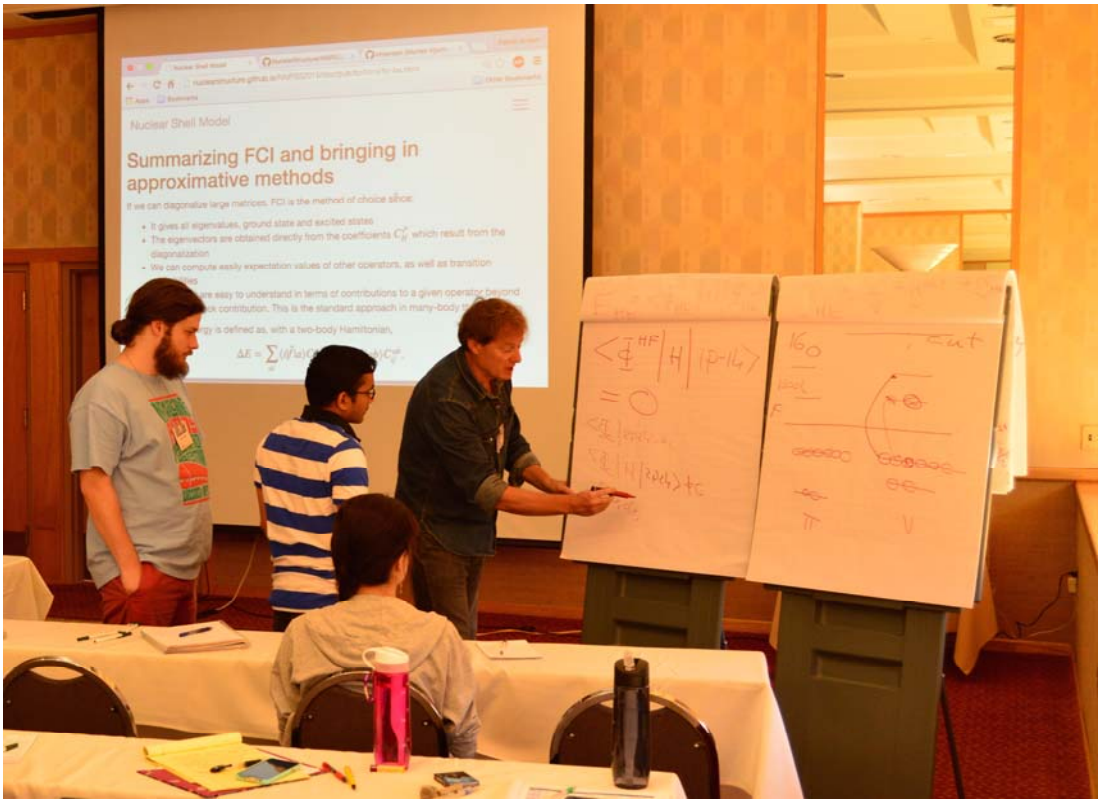


Figure 4 Morten Hjorth-Jensen answers a question from students.

Figure 5 Scott Pratt dispenses wisdom during one a break.