National Nuclear Physics Summer School 2014 Technical Report

College of William & Mary, Virginia

Wouter Deconinck, for the local organizing committee

Overview

From Monday June 9 through Friday June 20, 2014, the National Nuclear Physics Summer School 2014 was held at the College of William & Mary in historic Williamsburg, Virginia. The summer school was open to graduate students and postdocs within a few years of their PhD (on either side) with a strong interest in experimental and theoretical nuclear physics. All applicants could be accepted, and a total of 29 non-W&M national and international participants attended the summer school, along with an additional 6 W&M graduate students.

Scientific Programme

The schedule of the summer school consisted of 7 tracks of traditional lectures (each consisting of 4 lectures of 1.5 hours), 4 additional individual seminars (of each typically 1.5 hours), 10 participant presentations (of each 30 minutes), and a participant poster session (of 1.5 hours).

- Brian Tiburzi (City College of New York) - **Effective Field Theories** (4 lectures)
- Witold Nazarewicz (University of Tennessee, Knoxville) - **Nuclear Structure** (4 lectures)
- Kate Scholberg (Duke University) - **Neutrino Physics** (4 lectures)
- Andrea Shindler (Forschungzentrum Jülich) - **Lattice QCD** (4 lectures)
- Krishna Rajagopal (Massachusetts Institute of Technology) - **QCD in Extreme Conditions** (4 lectures)
- Tim Chupp (University of Michigan) - **Precision Measurements with Neutrons** (4 lectures)
- Krishna Kumar (University of Massachusetts) - **Precision Measurements and Fundamental Symmetries** (4 lectures)
- Christian Weiss (Jefferson Lab) - **Strong Interaction Physics with an Electron Ion Collider** (2 lectures)
- Josh Erlich (College of William & Mary) - **Dualities and QCD** (2 lectures)
- Mark Dalton (Jefferson Lab) - **Meson Spectroscopy with GlueX** (1 lecture)

- Cynthia Keppel (Jefferson Lab) - **Applications of Nuclear Physics** (1 lecture)
- Participant presentations (10 participants, 25 minutes with 5 minutes for questions)
- Poster session (14 participants)

All lecturers welcomed questions from the audience during the presentation, and this back-and-forth was the primary means of formal interaction between the lecturers and the participants. Half hour coffee breaks between the lectures allowed for plenty of time to discuss technical points or finer details, and for more informal interactions. Lecturers joined in breakfast, lunch, and dinner along with the participants, and discussion often continued there as well.

In addition to the lectures, there was a half-day scientific excursion to the Thomas Jefferson National Accelerator Facility. Because some participants are involved in research at Jefferson Lab and had had the opportunity to tour Jefferson Lab before, they elected not to participate in the tour. Ultimately, we had just under 25 participants on this excursion.

A poster session in the second week allowed the participants to present their research projects without the added pressure of an oral presentation. The poster session was held, along with refreshments, in the public atrium of the main campus student building, and attracted faculty members from the W&M physics department as well as passers-by.

Social Programme

In addition to the scientific programme, the school included several activities to encourage networking and social interactions between the participants and the lecturers.

- Welcome reception on the arrival day
- Ropes course adventure parcours on first lecture day
- Excursion to historic Jamestown Island, the site of the first English settlement
- Guided evening ghost tour in historic Colonial Williamsburg, Virginia’s colonial capital
- Open air movie screening in the downtown Williamsburg area
- Evening canoeing on Lake Matoaka on the W&M campus
- Goodbye dinner on the final lecture day

In addition to these organized activities, participants also had access to the campus recreation center, several participants undertook a trip to the Atlantic Ocean in Virginia Beach, and they discussed the day’s lectures over drinks in the local bars.

Participants

A total of 29 non-local graduate students and postdocs registered and participated in the full summer school. Of these 29 participants 19 were male and 10 were female. A total of 4 participants were participating from a non-US home institution. An additional 6 W&M graduate students attended a majority of the lectures, and 4 more attended only select lectures.

Last Name	First Name	Email Address	Institution
Allison	Stacey	salli008@odu.edu	Old Dominion University
Arzhanov	Alexander	aarz@kth.se	Technische Universität Darmstadt
Barker	Stacy	sbark007@odu.edu	Old Dominion University
baroni	alessandro	abaro008@odu.edu	Old Dominion University
Bencomo	Miguel	mbencomo@comp.tamu.edu	Texas A&M University
Blyth	David	dblyth@asu.edu	Arizona State University
Carmignotto	Marco	marcoapc@jlab.org	The Catholic University of America
Chiu	(Kelly) Yu-Ju	yujuchiu@stanford.edu	Stanford University
Dlamini	Mongi	mongi@jlab.org	Ohio University
Ferraioli	Charles	ferraioc@umd.edu	University of Maryland
Gray	Valerie	vmgray@email.wm.edu	College of William and Mary
Gu	Chao	cg2ja@virginia.edu	University of Virginia
Hlophe	Linda	dnldhlphe@gmail.com	Ohio University
Jackson	Benjamin	ben@physast.uga.edu	The University of Georgia
Kutz	Tyler	tkutz@physics.umass.edu	University of Massachusetts Amherst
Lee	Siwon	dochdochdoch@naver.com	Kyungpook National University
Leredde	Arnaud	aleredde@anl.gov	Argonne National Laboratory
Muccioli	Brian	bm956810@ohio.edu	Ohio University
Nguyen	Huong	htn3r@virginia.edu	University of Virginia
Potter	Hugh	hdpotter@iastate.edu	Iowa State University
Raha	Nandita	nandita.raha@uky.edu	University of Kentucky
Ramirez	Maura	meramirez@correo.fisica.uson.mx	Universidad de Sonora
razavi	shahab	srazavi@physast.uga.edu	University of Georgia
Salvat	Daniel	salvat@lanl.gov	Indiana University / Los Alamos National Laboratory
Santiesteban	Sandra	sandra.nathaly.santiesteban@cern.ch	University Of Puerto Rico
Szumila-Vance	Holly	hvanc001@odu.edu	Old Dominion University
Thapaliya	Arbin	at311509@ohio.edu	Ohio University
Vaghani	Akshay	av298@msstate.edu	Mississippi State University
Zhang	Xinxin	xinxin17169@hotmail.com	Institute of Physics, University of Sao Paulo

Observations and Suggestions

In the organization of the summer school we have benefited greatly from the assistance and cooperation of the Institute for Nuclear Theory staff. Our thanks goes in particular to Linda Villett.

Since the organization of this school a summary of host site requirements was added to the INT NNPSS web page. This contains various information that was not available in such a summary document in advance of or during the organization of this summer school. We feel that this information will be very valuable to the organizers of future summer schools.

We observe that the budget as outlined in our submitted proposal included aspects that were not acceptable to the steering committee, for example an expected contribution from the participants' home institution at 25% of the total cost of room/board. This was only pointed out when the preliminary budget was submitted, and after financial planning had advanced significantly. We suggest that upon selection the steering committee provides the successful proposal to the INT staff to verify that all expected expenses are indeed appropriate.

The recently added host site requirements summary on the INT NNPSS web page does still contain the line "It is expected that the remaining room/board for students, and all the transportation costs for students, will be covered by their home institutions." This still can be interpreted as expecting a contribution of 25% of total cost of room/board to be paid by the host institution, in variance with guidance from the steering committee.