

NNPSS at the University of Tennessee, July 8-19, 2019

Overview

The University of TN was asked to host the 2019 NNPSS in March of 2019. After some quick investigations into local capabilities, we agreed. A local organizing committee was formed and consisted of:

Nadia Fomin (host - UT)
Christine Natrass (UT)
Miguel Madurga (UT)
Charles Rasco (ORNL)

Given the short amount of time to plan the school, recruiting speakers for some topics presented a challenge as many had already other summer commitments. However, most of the speakers were confirmed by the APS April meeting of 2019, so that the summer school could be advertised at the town hall meeting. Additionally, announcements were circulated to the user groups of the US nuclear physics facilities and large experimental collaborations

Attendees

62 applications were received. 54 letters of acceptance were issued, expecting some last minute cancellations. The final number of attendees was 50, including 7 postdocs. Given the timeline of the summer school (UTK was approached to host in mid-March of 2019), there was a high number of local participants. This includes students from various institutions that were stationed at ORNL for their research.

The largest contingent of participants were involved in low energy nuclear physics research.

First Name	Last Name	Institution	Year in Program	Current Supervisor
Yida	Zeng	Stony Brook University	1-3	Jiangyong Jia
Agnieszka	Wergieluk	LBNL / UCLA	Senior Student	Volker Koch (LBNL) / Huan Huang (UCLA)
Esmond Craig	Vyfers	University of the Western Cape	1-3	Smarajit Triambak
Sebastian	Urrutia-Quiro	University of Massachusetts	1-3	Michael

	ga	Amherst		Ramsey-Musolf
Shengquan	Tuo	Vanderbilt University	Postdoc	Julia Velkovska
Rebecca	Toomey	Rutgers University	1-3	Jolie Cizewski
Lucas	Souza	Universidade de São Paulo	Postdoc	Renato Higa
Hugo	Soler	Universidade Federal Fluminense	1-3	Jésus Lubián Ríos
Peng	Shuai	Oak Ridge National Laboratory / JINPA	Postdoc	Krzysztof Rykaczewski
Mamoon	Sharaf	Iowa State University	1-3	James Vary
Adrian Horacio	Santana-Valdés	Instituto de Ciencias Nucleares (UNAM)	Senior Student	Roelof Bijker
GONZALO	SANCHEZ GARCIA	CINVESTAV	1-3	OMAR MIRANDA
Joey	Rowley	Ohio University	1-3	Kenneth Hicks
Yu	Qian	University of Virginia, Department of Physics	1-3	Stefan Baessler
Carlotta	Porzio	Università degli Studi di Milano/TRIUMF	1-3	Dr Adam Garnsworthy
William	Phelps	The George Washington University	Postdoc	Bill Briscoe
Weizhuang	Peng	Vanderbilt University	Senior Student	Julia Velkovska
SOM	PANERU	Ohio University	Senior Student	Dr. Carl Brune
Son	Nguyen	Duke University	1-3	Roxanne Springer
Shree	Neupane	University of Tennessee, Knoxville	1-3	Robert Grzywacz
Ethan	Muldoon	University of Washington	Senior Student	Peter Kammel
David	Mathews	University of Kentucky	1-3	Christopher Crawford
Xiaobin	Lu	UTK/ORNL	1-3	Alfredo Galindo-Uribarri
Junjie	Liao	The George Washington University	Senior Student	Prof. Harald Griesshammer
Shaolei	Li	University of Illinois at Urbana-Champaign	Senior Student	Liang Yang
Jerome Mathew	Kovoor	University of Tennessee Knoxville	1-3	Dr. Kate Jones
Arthur	Kock	Stony Brook University	1-3	Ismail Zahed
shreeram	jawadekar	Iowa st university	1-3	Dr. James Vary

AJAHARUL	ISLAM	Kent State University	1-3	Dr. Michael Strickland
Donnie	Hoskins III	University of Tennessee Knoxville	1-3	Miguel Madurga Flores
Reed	Hodges	Duke University	1-3	Thomas Mehen
Joseph	Heideman	University of Tennessee Knoxville	Senior Student	Dr. Robert Grzywacz
Christopher	Hayes	North Carolina State University	Postdoc	Albert Young
COREY	HALVERSON	University of Tennessee, Knoxville	Senior Student	Miguel Madurga Flores
Brennan	Hackett	University of TN	Student	Alfredo Galindo-Uribarri
Gwenaelle	Gilardy	Rutgers University	Postdoc	Jolie Cizewski
Rajesh	Ghimire	The University of Tennessee	1-3	Kate Jones
Michelle	Gervais	University of Kentucky	1-3	Christopher Crawford
Lipei	Du	The Ohio State University	Senior Student	Ulrich Heinz
Travis	Dore	Rutgers University	1-3	Jacquelyn Noronha-Hostler
STEFANIA	DEDE	Texas A&M University - Cyclotron Institute	1-3	Greg Christian
Daniel	Darvish	Carnegie Mellon University	1-3	Colin Morningstar
Ian	Cox	UTK	1-3	Dr. Grzywacz
Alexandra	Bosh	Texas A&M University	1-3	Dr. Grigory Rogachev
Giacomo	Bonasera	Cyclotron Institute at Texas A&M University	Senior Student	Dr. Shalom Shlomo
Krishna	Aryal	Kent State University	1-3	Dr. Veronica Dexheimer
Deokrat	Almaalol	Kent State University	1-3	Prof. Michael Strickland
Mohammad	Al-mamun	University of Tennessee, Knoxville	1-3	Andrew Steiner
Ayman	Al-Bataineh	University of Kansas	Postdoc	Professor Michael Murray
Ibrahim	Abdurrahman	University of Washington	Senior Student	Aurel Bulgac

Program

The science program included a series of lectures, visit to ORNL, as well as a student poster session. 40% of the speakers were women.

The lectures were organized in order to give the students a complete picture of the priorities and efforts in the field now and in the near future. This way, the students become knowledgeable about how their work fits into “big picture” and what the natural synergies or complementary efforts are.

Lecture Topic	Speaker	Affiliation
Jefferson Lab in the 12 GeV era	Rolf Ent	Associate Director for Experimental Nuclear Physics Jefferson Lab
Neutrino Physics	Michelle Dolinski	Drexel University
Fundamental Neutron Physics	Geoff Greene	University of TN/ORNL
EIC - an experimentalist's perspective	Abhay Deshpande	Stony Brook University
Bayesian Analyses (and QGP)	Scott PRatt	NSCL/MSU
Low Energy Nuclear Theory	Kristina Launey	LSU
Low Energy Nuclear Experiment	Ben Kay	ANL
Nuclear Astrophysics	Jeff Blackmon	LSU
Quark Gluon Plasma (expt)	Anne Sickles	University of Illinois
Fundamental Symmetries (Weak Interaction through PV)	Juliette Mammei	University of Manitoba

The lecture room was in a brand new building with an active learning classroom. This means that it could be easily reconfigured for group discussions and felt less like a formal classroom.



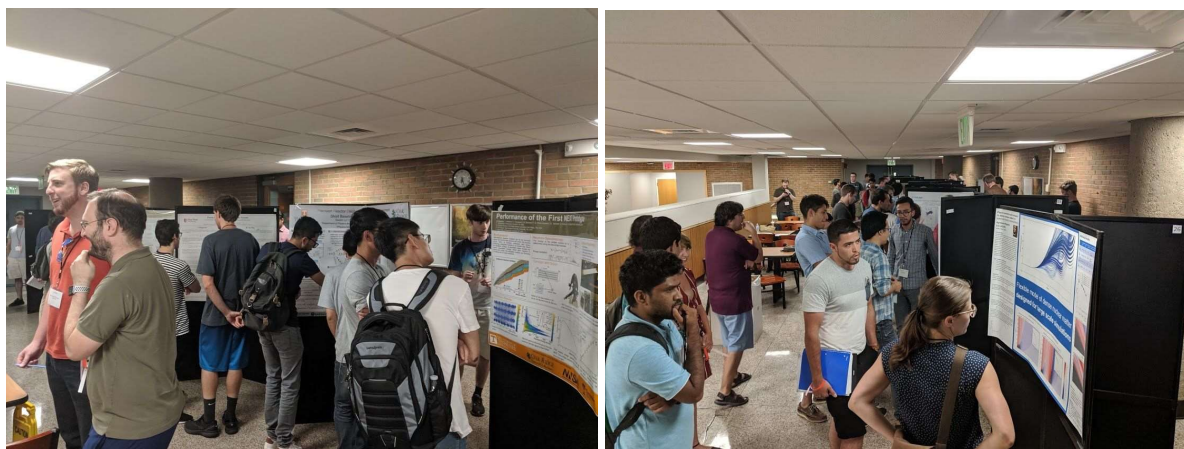
A public lecture entitled “Chernobyl: Fallout, Facts, & Fiction” was held on July 15th, with UTK’s Nuclear Engineering department’s Steve Skutnik offering an analysis of the popular HBO series. This was very well attended not just by the students, but also by the general public, and featured in the local media.



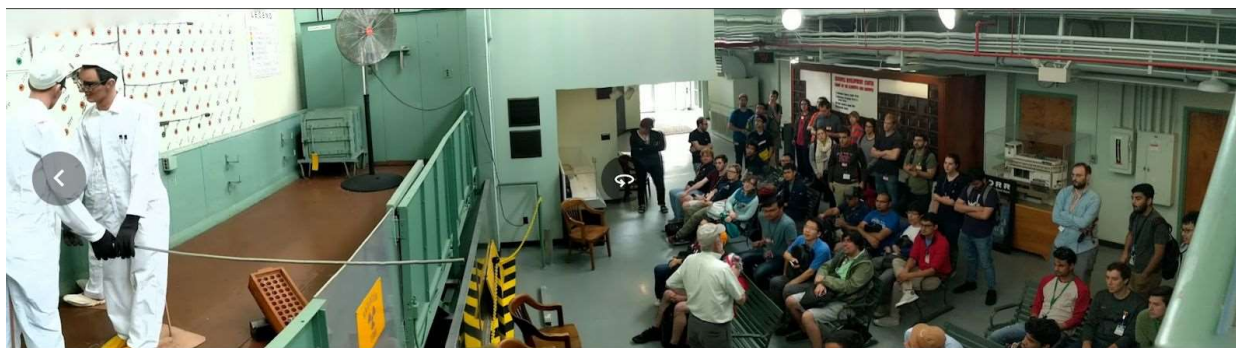
Poster competition was held during the first week of the summer school, in two sessions. 10 judges were recruited among local (UTK and ORNL) physicists as well as some of the speakers who were in Knoxville at the time. Scores were normalized across judges. The top 5 (1st, 2nd, 3rd place and 2 honorable mentions) are listed below. Those students got to present short talks on their work at the end of the summer school program.

Name	Affiliation	Title	Supervisor
Arthur Kock	Stony Brook University	Calculating the pion quasi-parton distribution function in a random instanton vacuum.	Ismail Zahed
Mohammad Al-mamun	University of Tennessee	Constraining EOS of neutron star using LIGO neutron star merger data	Andrew Steiner
Xiaobin Lu	University of Tennessee	PROSPECT experiment, reactor neutrino spectrum and anomaly related	Alfredo Galindo-Uribar

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Peng Shuai	Oak Ridge National Laboratory	MTAS	Krzysztof Rykaczewski
Joey Rowley	Ohio University	Lambda-Nucleon elastic scattering using the g12 data at Hall B of Jefferson Lab	Ken Hicks



The students were also taken on a tour of the historical graphite reactor at ORNL, as well as the Spallation Neutron Source. The ORNL campus is about 25 miles from Knoxville. The lectures for that day were also held at ORNL, to minimize lost time.



Social Activities

One social activity was organized by the summer school (paid for from non-NSF funding). It was a rafting trip in the Smoky Mountains. This was universally well received by the students and the lecturers who were able to join.