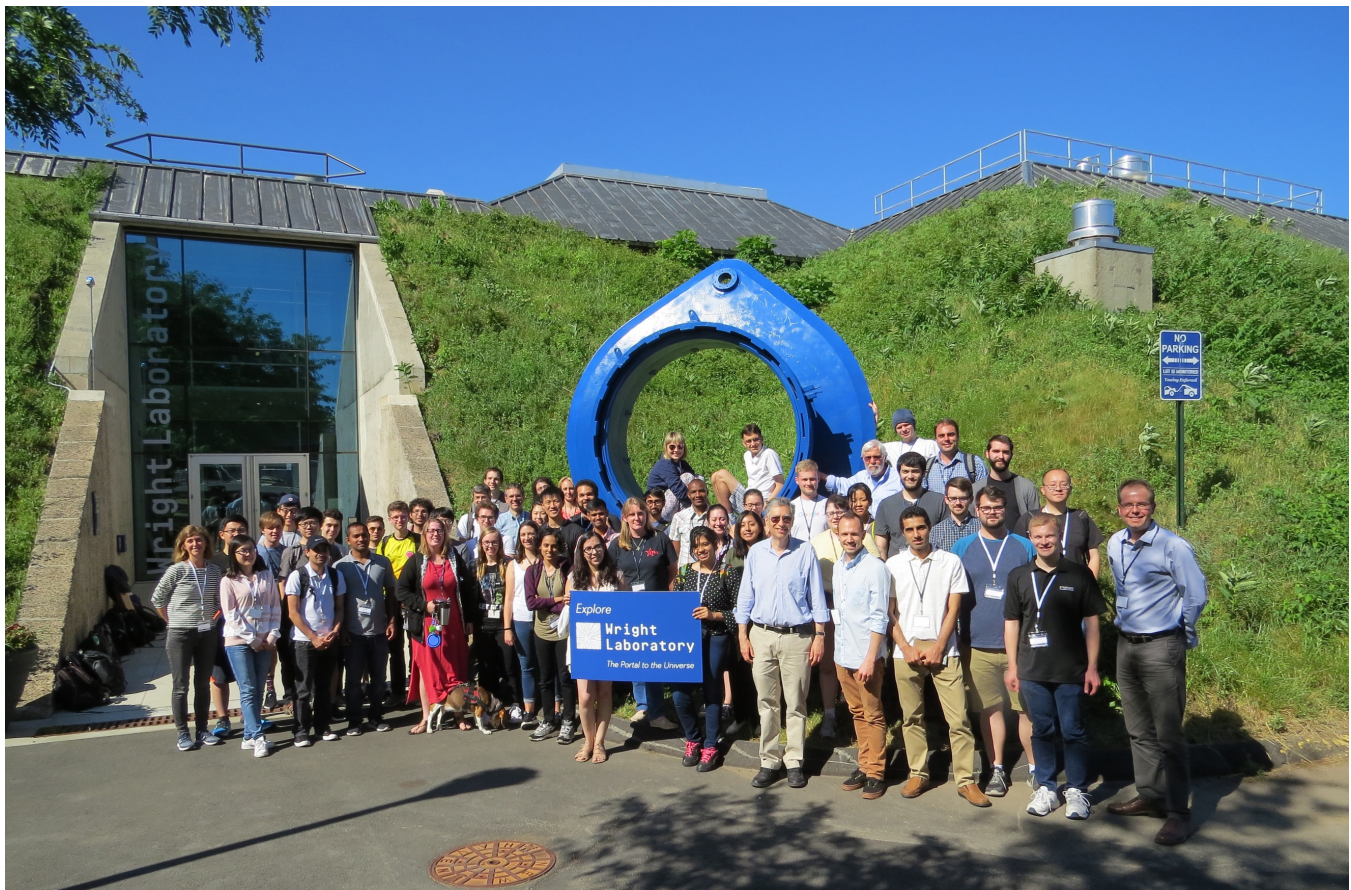


Report on the 2018 National Nuclear Physics Summer School
 June 17-30, 2018 at Wright Laboratory, Yale University, New Haven, CT
 v. 12.17.18

Local Organizing Committee: Yoram Alhassid, Helen Caines, John Harris, Karsten Heeger, Francesco Iachello, Reina Maruyama, David Moore



Contents

1. NNPSS 2018 overview
2. Program agenda
3. List of student participants
4. Costs: estimated vs. actual
5. Student feedback
6. Comments for future organizers
7. Appendix A: BNL tour agenda
8. Appendix B: Student feedback form
9. Appendix C: Selected photographs and link to online gallery

Overview

The 2018 National Nuclear Physics Summer school was hosted by Wright Laboratory at Yale University in New Haven, CT from June 17-30.

Applications and participation

- 112 people applied to the NNPSS 2018 summer school for 50 slots. Upon acceptance, only four people rejected the offer and an additional person did not respond.
- The 50 admitted participants included 17 females and 33 males. 5 students were accepted from international institutions. One participant dropped out at the last minute due to a family emergency, so the school had 49 attending participants.

Scientific program

The scientific program of the school included lectures from 13 speakers (5 female, 8 male) on 7 topics, with a balance between theory and experiment in each topic. Additionally, NNPSS 2018 hosted 6 topical seminars (4 female, 2 male speakers), including a discussion on sterile neutrinos; three tutorials (1 female, 2 male leaders); and a day-long field trip to Brookhaven National Laboratory. In general, students were very interactive, attendance was very high at all lectures and other program events and there was very little laptop use during lectures.

Lecturers and topics

- **EIC**
 - Thomas Ullrich, Yale University / Brookhaven National Laboratory
- **Hadron Structure Physics**
 - Alexei Prokudin, Jefferson Laboratory
 - Anselm Vossen, Duke University
- **Heavy Ion Physics**
 - Megan Connors, Georgia State University
 - Bjoern Schenke, Brookhaven National Laboratory
- **Neutrinos**
 - Diana Parno, Carnegie Mellon University
 - Michael Ramsey-Musolf, UMass Amherst
- **Neutrons and Fundamental Symmetries**
 - Susan Gardner, University of Kentucky
 - Chen-Yu Liu, Indiana University
- **Nuclear Astrophysics**
 - Gail McLaughlin, North Carolina State University
 - Chris Wrede, Michigan State University
- **Nuclear Structure**
 - Mark Caprio, University of Notre Dame
 - Alexandra Gade, Michigan State University

Seminars

- Art and Nuclear Science - Agnes Mocsy, Pratt Institute
- Frontiers of Instrumentation in Nuclear Science - Paul O'Connor, Brookhaven National Laboratory
- Nuclear Data - Elizabeth McCutchan, Brookhaven National Laboratory
- Nuclear Science and National Security - Anna Hayes, Los Alamos National Laboratory
- *Sterile neutrinos: Have we discovered a new particle?* - Michelle Dolinski, Drexel University
- X-ray and Gamma-ray Imaging in Medicine - Chi Liu, Yale University

Tutorials

- Introduction to HPC – Andy Sherman and the Yale Center for Research Computing
- Theoretical Computing – Penny Slocum, Yale University
- Using HPC to simulate experiments – Alexei Prokudin, Jefferson Laboratory

Field Trip

- Brookhaven National Laboratory

Programmed activities

In addition to lectures, seminars and tutorials, the school also hosted the following activities:

- Daily breakfast and lunch in the dining hall during the week (M-F). Speakers were invited to lunch.
- In addition to the morning coffee break, there was also a daily “Coffee with the speakers”, after the day’s lectures and seminars were over. Each speaker was in a separate room in Wright Lab for an hour and participants could choose who to sit with, or move between rooms, to discuss in a less structured setting. Many of the speakers mentioned that the conversations divided between physics and life/work balance.
- Opening reception at Wright Lab
- Tour of Wright Lab
- Pitch your research contest – This consisted of two preliminary rounds, where each participant presented a 2 minute “elevator pitch” about their research. The participants voted for the “best pitchers,” who competed in a final on the last day. Small prizes were awarded.
- Poster session and banquet dinner at Yale’s Greenberg Conference Center – each participant presented his or her own poster to fellow participants and school and Yale faculty. Small prizes were awarded to the best posters, as voted by the participants.
- Session on diversity and inclusion with pizza dinner – led by Agnes Mocsy (advocate for changing the gender and race representation in the sciences) and Michael Ramsey-Musolf (advocate for increasing the representation of LGBT scientists).
- Day-long tour of Brookhaven National Laboratory.

Other activities

- There were no official social activities organized by the school, but, using the smartphone application What’sApp, the students quickly formed a communication group among themselves and self-organized a number of evening and weekend activities.
- The students appreciated the common space with a pool / ping-pong table available in the dorm.
- One of the speakers initiated a discussion of family/work priorities at lunchtime that was extremely popular.

NNPSS 2018 program agenda

Week 1:	Monday June 18
8:10-8:45	Breakfast - Benjamin Franklin College
9:00-9:30	Welcome to NNPSS - Bass 305 Helen Caines, Paul Tipton, and Karsten Heeger
9:30-10:30	Nuclear Structure Theory I - Bass 305 Mark Caprio, Univ. of Notre Dame <i>Chair: Yoram Alhassid, Yale University</i>
10:30-11:00	Break - Bass 405
11:00-12:00	Nuclear Structure Theory II - Bass 305 Mark Caprio, Univ. of Notre Dame <i>Chair: Yoram Alhassid, Yale University</i>
12:50-1:55	Lunch - Benjamin Franklin College
2:00-3:00	Heavy Ion Theory I - Bass 305 Bjoern Schenke, Brookhaven National Laboratory <i>Chair: John Harris, Yale University</i>
3:00-4:00	Heavy Ion Theory II - Bass 305 Bjoern Schenke, Brookhaven National Laboratory <i>Chair: John Harris, Yale University</i>
4:00-4:30	Break - Bass 405
4:30-5:30	Nuclear science and national security - Bass 305 Anna Hayes, Los Alamos National Laboratory <i>Chair: Karsten Heeger, Yale University</i>
5:30-7:00	Opening Reception - Wright Lab Atrium and WL-216

	Tuesday June 19
8:10-8:45	Breakfast - Benjamin Franklin College
9:00-10:00	Nuclear Structure Theory III - Bass 305 Mark Caprio, Univ. of Notre Dame <i>Chair: Yoram Alhassid, Yale University</i>
10:00-11:00	Heavy Ion Theory III - Bass 305 Bjoern Schenke, Brookhaven National Lab <i>Chair: Eliane Epple, Yale University</i>
11:00-11:30	Break - Bass 405
11:30-12:30	Nuclear Astrophysics Experimental I - Bass 305 Chris Wrede, Michigan State University <i>Chair: Peter Parker, Yale University</i>
12:50-1:55	Lunch - Benjamin Franklin College
2:00-3:00	Nuclear Astrophysics Experimental II - Bass 305 Chris Wrede, Michigan State University <i>Chair: Peter Parker, Yale University</i>
3:00-4:30	Coffee with speakers Bjoern Schenke - WLC 245 Chris Wrede - WL-216
4:30-6:00	Tour of Wright Lab - WL 216 start Karsten Heeger, Wright Lab Director, <i>et al.</i>

Wednesday June 20	
8:10-8:45	Breakfast - Benjamin Franklin College
9:00-10:00	Nuclear Astrophysics Experimental III - Bass 305 Chris Wrede, Michigan State University <i>Chair: Peter Parker, Yale University</i>
10:00-11:00	Neutrons & Fundamental Symmetries Experimental I - Bass 305 Chen-Yu Liu, Indiana Univ. <i>Chair: Steve Lamoreaux, Yale University</i>
11:00-11:30	Break - Bass 405
11:30-12:30	Neutrons & Fundamental Symmetries Experimental II - Bass 305 Chen-Yu Liu, Indiana Univ. <i>Chair: Steve Lamoreaux, Yale University</i>
12:50-1:55	Lunch - Benjamin Franklin College
2:00-3:00	Neutrons & Fundamental Symmetries Experimental III - Bass 305 Chen-Yu Liu, Indiana Univ. <i>Chair: Steve Lamoreaux, Yale University</i>
3:00-4:00	Nuclear data - Bass 305 Elizabeth McCutchan, Brookhaven National Lab <i>Chair: Rick Casten, Yale / MSU-FRIB</i>
4:00-5:30	Coffee with speakers Mark Caprio - WLC-245 Chen-Yu Liu, - WL-216 Elizabeth McCutchan - WLW lunch room
5:30-6:30	Pitch your research round 1 - WL-216

Thursday June 21	
8:10-8:45	Breakfast - Benjamin Franklin College
9:00-10:00	Neutrons & Fundamental Symmetries Theory - Bass 305 Susan Gardner, Univ. of Kentucky <i>Chair: Yoram Alhassid, Yale University</i>
10:00-11:00	Neutrons & Fundamental Symmetries Theory II - Bass 305 Susan Gardner, Univ. of Kentucky <i>Chair: Yoram Alhassid, Yale University</i>
11:00-11:30	Break - Bass 405
11:30-12:30	Nuclear Structure Experimental I - Bass 305 Alexandra Gade, Michigan State University <i>Chair: Rick Casten, Yale University</i>
12:50-1:55	Lunch - Benjamin Franklin College
2:00-3:00	Nuclear Structure Experimental II - Bass 305 Alexandra Gade, Michigan State University <i>Chair: Rick Casten, Yale University</i>
3:00-4:30	Coffee with speakers Susan Gardner - WLC-245 Alexandra Gade - WL-216
4:30-5:30	Pitch your research round 2 - WL-216

Friday June 22	
8:10-8:45	Breakfast - Benjamin Franklin College
9:00-10:00	Heavy Ion Experimental I - Bass 305 Megan Connors, Georgia State Univ. <i>Chair: Helen Caines, Yale University</i>
10:00-11:00	Heavy Ion Experimental II - Bass 305 Megan Connors, Georgia State Univ. <i>Chair: Helen Caines, Yale University</i>
11:00-11:30	Break - Bass 405
11:30-12:30	Neutrinos Experimental I - Bass 305 Diana Parno, Carnegie Mellon University <i>Chair: Reina Maruyama, Yale University</i>
12:50-1:55	Lunch - Benjamin Franklin College
2:00-3:00	Neutrinos Experimental II - Bass 305 Diana Parno, Carnegie Mellon University <i>Chair: Reina Maruyama, Yale University</i>
3:00-4:00	Frontiers of instrumentation in nuclear science - Bass 305 Paul O'Connor, Brookhaven National Laboratory <i>Chair: Karsten Heeger, Yale University</i>
4:00-5:00	Coffee with speakers Megan Connors - WL-216 Diana Parno - WLC-245 Paul O'Connor - WLW lunch room
5:30-7:30	Poster session and dinner - Greenberg Conference Center

Week 2:	Monday June 25
8:10-8:45	Breakfast - Benjamin Franklin College
9:00-10:00	EIC Experimental and Theory I - Bass 305 Thomas Ullrich, Yale University <i>Chair: John Harris, Yale University</i>
10:00-11:00	Neutrinos Experimental III - Bass 305 Diana Parno, Carnegie Mellon University <i>Chair: David Moore, Yale University</i>
11:00-11:30	Break - Bass 405
11:30-12:30	Neutrino Theory I - Bass 305 Michael Ramsey-Musolf, UMass Amherst <i>Chair: David Moore, Yale University</i>
12:50-1:55	Lunch - Benjamin Franklin College
2:00-3:00	Neutrino Theory II - Bass 305 Michael Ramsey-Musolf, UMass Amherst <i>Chair: David Moore, Yale University</i>
3:00-4:30	Coffee with speakers Michael Ramsey-Musolf - WLC-245 Thomas Ullrich - WL-216
4:30-6:00	Introduction to HPC at YCRC Andy Sherman and Kaylea Nelson, Yale University
6:00-8:00	Dinner and session on diversity & inclusion Wright Lab Atrium and WL-216

Tuesday June 26	
8:10-8:45	Breakfast - Benjamin Franklin College
9:00-10:00	Neutrino Theory III - Bass 305 Michael Ramsey-Musolf, UMass Amherst <i>Chair: David Moore, Yale University</i>
10:00-11:00	EIC Experimental and Theory II - Bass 305 Thomas Ullrich, Yale University <i>Chair: Kirill Lapidus, Yale University</i>
11:00-11:30	Break - Bass 405
11:30-12:30	Hadron Structure Experimental I Anselm Vossen, Duke <i>Chair: Helen Caines, Yale University</i>
12:50-1:55	Lunch - Benjamin Franklin College
2:00-3:00	Hadron Structure Experimental II Anselm Vossen, Duke <i>Chair: Helen Caines, Yale University</i>
3:00-4:00	Art and nuclear science seminar - Bass 305 Agnes Mocsy, Pratt Institute <i>Chair: John Harris, Yale University</i>
4:00-5:30	Coffee with speakers Agnes Mocsy - WLC-245 Anselm Vossen - WL-216

Wednesday June 27	
7:15-8:15	Breakfast - Benjamin Franklin College
8:30a-8:00p	<p>Trip to Brookhaven National Laboratory</p>

Thursday June 28	
8:10-8:45	Breakfast - Benjamin Franklin College
9:00-10:00	Hadron Structure Theory I - Bass 305 Alexei Prokudin, JLab <i>Chair: Helen Caines, Yale University</i>
10:00-11:00	Hadron Structure Theory II - Bass 305 Alexei Prokudin, JLab <i>Chair: Helen Caines, Yale University</i>
11:00-11:30	Break - Bass 405
11:30-12:30	Nuclear Astrophysics Theory I - Bass 305 Gail McLaughlin, North Carolina State University <i>Chair: Peter Parker, Yale University</i>
12:50-1:55	Lunch - Benjamin Franklin College
2:00-3:00	Nuclear Astrophysics Theory II - Bass 305 Gail McLaughlin, North Carolina State University <i>Chair: Laura Newburgh, Yale University</i>
3:00-4:30	Coffee with speakers Alexei Prokudin - WLC-216 Gail McLaughlin - WLC-245
4:30-6:00	Computing for Nuclear Physics Tutorials Using HPC to simulate experiments (Slocum) - YCRC Theoretical computing (Prokudin) - WL-216

Friday June 29	
8:10-8:45	Breakfast - Benjamin Franklin College
9:00-10:00	Nuclear Astrophysics Theory III - Bass 305 Gail McLaughlin, North Carolina State University <i>Chair: David Moore, Yale University</i>
10:00-11:00	Hadron Structure Theory III - Bass 305 Alexei Prokudin, JLab <i>Chair: Thomas Ullrich, Yale University</i>
11:00-11:30	Break - Bass 2nd floor landing
11:30-12:30	X-ray and Gamma-ray Imaging in Medicine - Bass 305 Chi Liu, Yale University <i>Chair: Thomas Langford, Yale University</i>
12:50-1:55	Lunch - Benjamin Franklin College
2:00-3:00	Sterile Neutrinos - Have we discovered a new particle? - Bass 305 Michelle Dolinski, Drexel University <i>Chair: David Moore, Yale University</i>
3:00-4:00	Coffee with speakers Michelle Dolinski - WL-216
4:00-5:00	Pitch your research finals

NNPSS 2018 participant list

First	Last Name	Graduate Institution	Grad yr.
Jaber	Balalhabashi	University of Arizona	2019
Estella	Barbosa de Souza	Yale University	2020
Guillaume	Christiaens	University of Glasgow	2020
Jessica	Churchill	McGill University	2022
Cameron	Clarke	Stony Brook University	2022
Miguel	Correa	University of Notre Dame	2022
Tianyu	Dai	Duke University	2023
Mirta	Dumancic	Weizmann Institute of Science	2019
Cameron	Erickson	University of Illinois, Urbana-Champaign	2022
Wenkai	Fan	Duke University	2022
Zhenghao	Fu	Massachusetts Institute of Technology	2022
Enrique	Gamez	University of Michigan	2021
Prakash	Gautam	Drexel University	2022
Chandan	Ghosh	State University of New York at Stony Brook	2017
Diana	Gooding	Boston University	2023
Anthony	Grebe	Massachusetts Institute of Technology	2021
Steven	Harris	Washington University in St. Louis	2020
Anthony	Hodges	Georgia State University	2021
Roger	Huang	UC Berkeley	2021
Mykalin	Jones	Worcester Polytechnic Institute	2019
Dmitry	Kalinkin	Indiana University	2021
Gurtej	Kanwar	MIT	2021
Bishnu	Karki	Ohio University	2019
Jonas	Karthein	Heidelberg University (Germany)	2020
Han	Liu	Michigan State University	2019
Tong	Liu	Yale University	2023
Aaron	Magilligan	Michigan State University	2020
Ashabari	Majumdar	University of Notre Dame	2021
Rouzbeh	Modarresi-Yazdi	McGill	2020
Pierre	Nzabanimana	Michigan State University/ National Superconductive Cyclotron Laboratory	2021
Maneesha Sushama	Pradeep	University of Illinois at Chicago	2020
Raquel	Quishpe	University of Houston	2021
Farid	Salazar Wong	Stony Brook University	2021
Sabrina	Schäfer	Technische Universität Darmstadt	2021
Deran	Schweitzer	University of Connecticut	2021
Maria	Sergeeva	UCLA	2021
Tatiana	Siarafra	Aristotle University of Thessaloniki	2019
Daniel	Southall	University of Chicago	2022
Jamie	Stafford	University of Houston	2022
Sarah	Stern	University of Connecticut	2021

David	Stewart	Yale	2020
Louis	Varriano	University of Chicago	2022
Sohan	Vartak	Yale	
Neill	Warrington	University of Maryland	2019
Ryan	Weller	MIT	2022
Cheuk-Ping	Wong	Georgia State University	2019
Shilo	Xia	yale	2020
Yukari	Yamauchi	University of Maryland College Park	2022
Jun-sik	Yoo	Stony Brook University	2019

Student Feedback

The students were asked to fill out a short survey at the end of the program. 31 of the 49 students have responded as of the writing of this report. All responses are available upon request.

In general, the participant feedback was extremely positive, both from the survey, in person during the program, and in letters of thanks that the organizers have received from participants since the end of the program. When asked to rate NNPSS 2018 overall on a scale of 1-5 (5 best, 1 least), 22 of the respondents rated it a 5; the rest (9) rated it a 4.

The students particularly appreciated the pitch event, the diversity dinner, the tour of Wright Lab, the tour of Brookhaven National Laboratory and the poster session.

The biggest takeaway for improvement from the survey was that the students would have liked more hands-on activities, the poster session was too short to appreciate everyone's work, and that two weeks of that many lectures is a lot to take in, so the school did not allow for much in-depth study. (Some even suggested that they would have liked to have homework to better process the information they learned that day.) A few participants suggested that theory lectures should be put before experimental lectures, on the same day, and that the theory and experimental lectures in the same topic should be better coordinated.

100% of respondents said they felt they had enough free-form interaction time with the lecturers. One respondent commented, "The engagement of some of the speakers with the audience was a pleasant surprise. The attitude that conveying new information and having a conversation was better than just delivering all of the slides was a welcome change of pace."

All students responded that they agreed that NNPSS 2018 increased their interest in and knowledge of nuclear physics and that it would make them better prepared if they decide to pursue a career in nuclear physics. Most also agreed it was a useful supplement to their graduate education and that it made them more excited about pursuing a career in nuclear physics (a few respondents chose to be neutral on this point, none disagreed). Most of the students said the school was excellent, and one said it was "marvelous compared to the other" school that that person had attended.

Comments for future organizers

- There was definitely a desire for more than 50 slots and almost all of our applicants were qualified for the program so it was difficult to choose the participants, but the budget only allowed for 50. If more funding can be identified to increase the participation (but probably no more than 75), that might be desirable.
- It would have been useful for us to have given the applicants set choices for their research topic on the application form so we could better sort the participants into research areas for both acceptance and also for various activities during the school – they instead had a fillable form and not everyone gave a useful answer.
- The school website, which includes the program, all of the slides, the participant handbook we gave the students before they arrived, FAQs from the application process, and other information can be found here: <https://wlab.yale.edu/nnpss2018>
- The students appreciated the various activities that were different than the lectures but still part of the academic program. In particular, during the poster session, we needed to remind the participants to eat dinner because they were enjoying themselves so much.
- Regarding the poster session, it was difficult to find a place that could house 50 posters and their presenters comfortably. We divided the students up into two groups, but the session was too short for everyone to be able to both present and view the number of posters they wanted to view. We recommend having the posters up throughout some portion of the duration of the school for more opportunities for students to discuss their research with each other, NNPSS faculty and members of the host institution.
- As mentioned before, one of the NNPSS faculty members initiated a discussion on work/family balance at lunchtime which was highly attended. It may be good to incorporate such a discussion into future programs.
- Please see the "Student Feedback" section, above, for a few other suggestions from the participants.

**National Nuclear Physics Summer School (NNPSS)
Tour**

June 27, 2018

- 11:30 a.m. **Main Gate**
Arrival & Badging
Government-issued photo ID required for site access (e.g., driver's license or passport)
Travel to Berkner Hall and meet Tour Coordinator
- 11:45 – 12:45 p.m. **Bldg. 488 – Berkner Hall, Room B**
Welcome to Brookhaven National Laboratory (BNL)
- 11:45 – 12:00 p.m. **Break** – Restrooms, Lunch Buffet, Seating
- 12:00 – 12:25 p.m. **Lunch & Overview – BNL's Nuclear Particle Physics Directorate**
Berndt Mueller, Associate Laboratory Director, NPP
- 12:25 – 12:35 p.m. **Tour Administration & Housekeeping**
Tara Shiels, Stakeholder Relations Office
- 12:35 – 12:45 p.m. **Break** – Restrooms, Board Bus
- 12:45 p.m. **Depart in Bus**

Bus Notes	Group A1 (15 max.)	Group A2 (15 max.)	Group B1 (15 max.)	Group B2 (15 max.)
	Support Escort Steve Jarzabkowski	Support Escort Christine Meyer -TBD	Support Escort Peter Kohut	Support Escort Rick Backofen
Tour Block 1 Drop-off order: 901, 911, 1006 Park/Wait:901 Pick-up order: 901, 911, 1006	12:55 – 1:35 p.m. Tandem Van de Graaff Bldg. 901 Dannie Steski (ext.7851)	1:00 – 1:45 p.m. Main Control Rm. Bldg. 911 Vincent Schoefer (ext. 8453)	1:10 – 1:55 p.m. STAR Experiment Bldg. 1006 Jamie Dunlop (ext. 7781) Oleg Eyser (ext. 2174)	
Tour Block 2 Drop-off order: 1006, 911, 901 Park/Wait:1006 Pick-up order: 1006, 911, 901	2:00 – 2:45 p.m. STAR Experiment Bldg. 1006 Jamie Dunlop (ext. 7781) Sal Fazio (ext. 4920)		2:10 – 2:50 p.m. Main Control Rm. Bldg. 911 Angelika Drees (ext. 2348)	2:15 – 2:55 p.m. Tandem Van de Graaff Bldg. 901 Dannie Steski (ext.7851)

Bus Notes	Group A Support Escorts Phil Kuczewski Tara Shiels	Group B Support Escorts George Mahler Steve Trabocchi
Break	<p style="text-align: center;">3:00 – 3:15 p.m.</p> <p style="text-align: center;">Restrooms at Berkner Hall Bldg. 488</p>	
Tour Block 3 Park/Wait: Between 510 & 535 Guests walk to buildings	<p style="text-align: center;">3:30 – 4:10 p.m.</p> <p style="text-align: center;">Physics Bldg. 510</p> <p>Enter back door. Meet guides. Form 3 groups.</p> <p>Tour rotation (10 min. per stop):</p> <ul style="list-style-type: none"> • 1-224: Matthew Worcester • 1-216: Eric Raguzin, Arbin Timilsina • Highbay: Shanshan Gao, Junbin Zhang 	<p style="text-align: center;">3:30 – 4:10 p.m.</p> <p style="text-align: center;">Instrumentation Bldg. 535</p> <p>Enter lobby. Meet guides. Form 3 groups.</p> <ul style="list-style-type: none"> • SVT Talk – Paul O'Connor (few min., lobby) <p>Tour rotation (8-10 min. per stop)</p> <ul style="list-style-type: none"> • Semiconductor Fabrication Cleanroom – Gabriele Giacomini • Interconnects Lab – Neil Schaknowski • Neutron Detectors – Graham Smith
Tour Block 4 ContiPark/Wait: Between 510 & 535 After tour, guests will walk to parked bus	<p style="text-align: center;">4:20 – 5:00 p.m.</p> <p style="text-align: center;">Instrumentation Bldg. 535</p> <p>Enter lobby. Meet guides. Form 3 groups.</p> <ul style="list-style-type: none"> • SVT Talk – Paul O'Connor (few min., lobby) <p>Tour rotation (8-10 min. per stop)</p> <ul style="list-style-type: none"> • Semiconductor Fabrication Cleanroom – Gabriele Giacomini • Interconnects Lab – Neil Schaknowski • Neutron Detectors – Graham Smith 	<p style="text-align: center;">4:20 – 5:00 p.m.</p> <p style="text-align: center;">Physics Bldg. 510</p> <p>Enter back door. Meet guides. Form 3 groups.</p> <p>Tour rotation (10 min. per stop):</p> <ul style="list-style-type: none"> • 1-224: Matthew Worcester • 1-216: Eric Raguzin, Arbin Timilsina • Highbay: Shanshan Gao, Junbin Zhang
Restrooms	<p style="text-align: center;">5:10 – 5:20 p.m.</p> <p style="text-align: center;">Restrooms at Berkner Hall Bldg. 488</p>	
Departure	<p style="text-align: center;">5:20 p.m.</p>	

Appendix B

NNPSS 2018 survey

Please fill out the below short survey. Your responses will help us to improve NNPSS for the future. Thank you!

* Required

1. **Email address ***

2. **Name ***

3. **Institution ***

4. **Graduation Year (expected) ***

5. **What was your favorite part about NNPSS 2018?**

6. **What was your least favorite part about NNPSS 2018?**

7. **Was NNPSS 2018 different than what you expected? If so, how?**

8. Did you feel that anything was missing from the NNPSS 2018 program? If so, what?

9. Are there any structural changes to NNPSS 2018 we could recommend for the next school?

10. Did you feel that you had enough free-formed interaction time with the lecturers?

Mark only one oval.

- Yes
- No
- Other: _____

11. Please indicate how much you agree or disagree with each of the following statements about NNPSS 2018

Mark only one oval per row.

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
NNPSS 2018 increased my interest in nuclear physics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
NNPSS 2018 increased my knowledge of nuclear physics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
NNPSS 2018 was a useful supplement to my graduate education	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
NNPSS 2018 will make me better prepared if I decide to pursue a career in nuclear physics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
NNPSS 2018 made me more excited about pursuing a career in nuclear physics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. Please provide any additional comments on your above answers (optional)

13. Please rate each of the following aspects of NNPSS 2018 on a scale of 5-1 (5 best, 1 least).

Mark only one oval per row.

	5	4	3	2	1
Academic program (overall)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lectures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Seminars	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tutorials	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The pace of the academic program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Poster session	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pitch your research contest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wright Lab tour	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
BNL tour	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Diversity Discussion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Opening reception	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Coffee with the speakers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Program logistics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Program teaching staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dining hall food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Catered food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dormitory accomodations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, how satisfied were you with NNPSS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. Please provide any additional comments on your answers (optional).

15. Do you have any additional comments or feedback about NNPSS 2018?

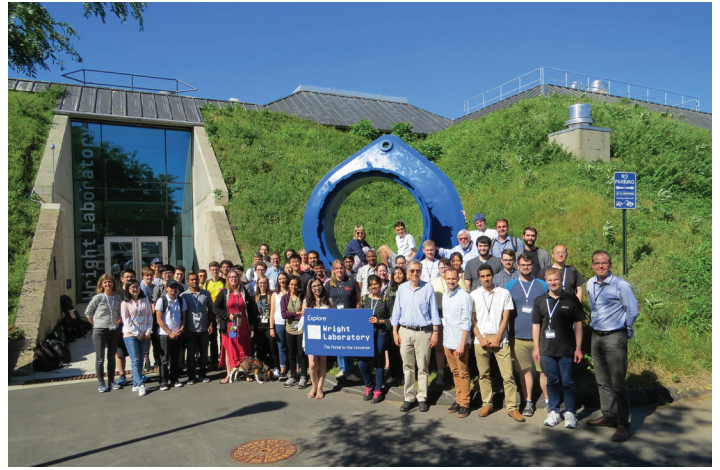
Send me a copy of my responses.

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 Google Forms

NNPSS 2018

Photographs

Additional photographs can be found at:
<https://www.flickr.com/photos/yalewlab/albums/72157701325750624/with/44779888712/>



POSTER SESSION



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TRIP TO BNL

