
The 2026 CFNS Summer School
on the Physics of the
Electron–Ion Collider

SCHOOL ORGANIZERS

Abhay Deshpande (SBU/BNL)

Ross Corliss(SBU)

Fred Olness (SMU)

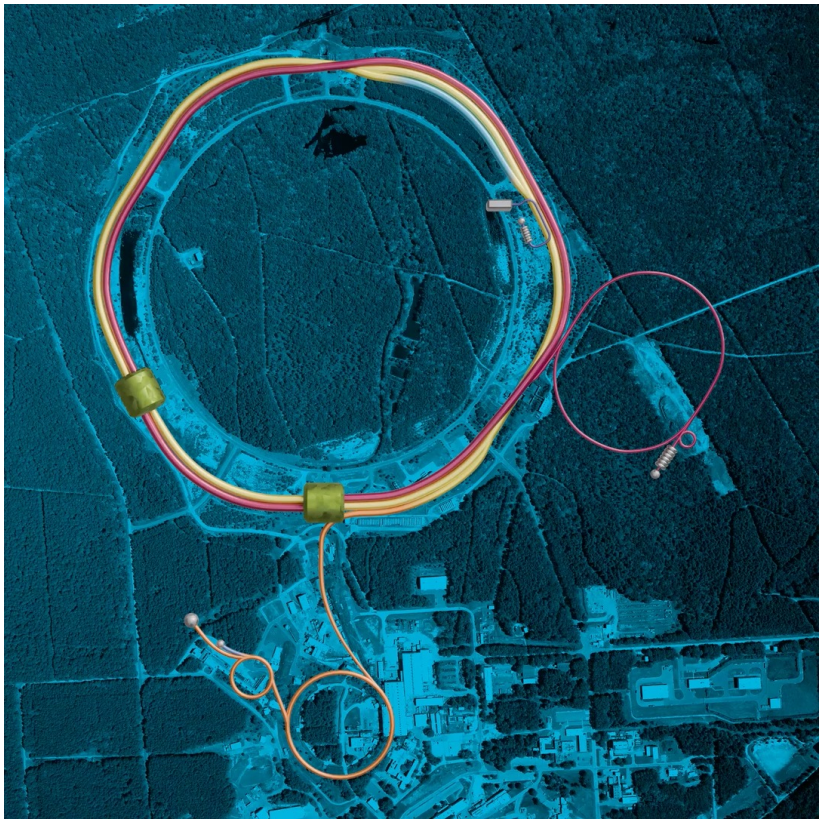
Alexei Prokudin (PSU Berks)

Center for Frontiers in Nuclear Science

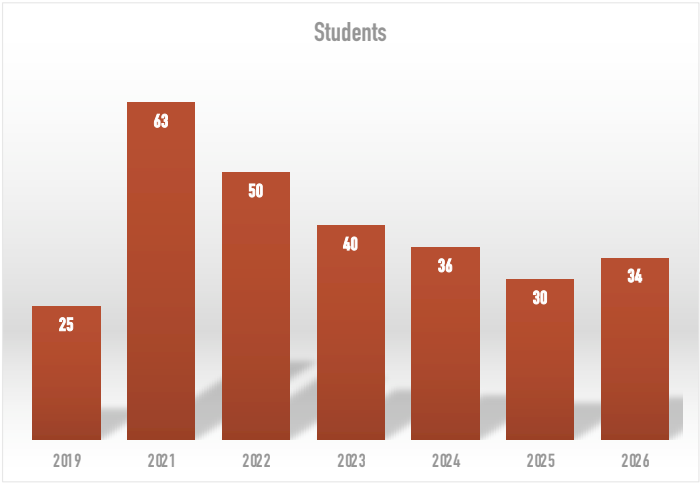
Socorro Delquaglio (SBU)
Melissa Laguerre (SBU)

WELCOME TO THE 2026 CFNS SUMMER SCHOOL DEDICATED TO THE PHYSICS OF THE EIC

The Electron-Ion Collider is at a very mature stage and your participation in the project is crucial for its success!

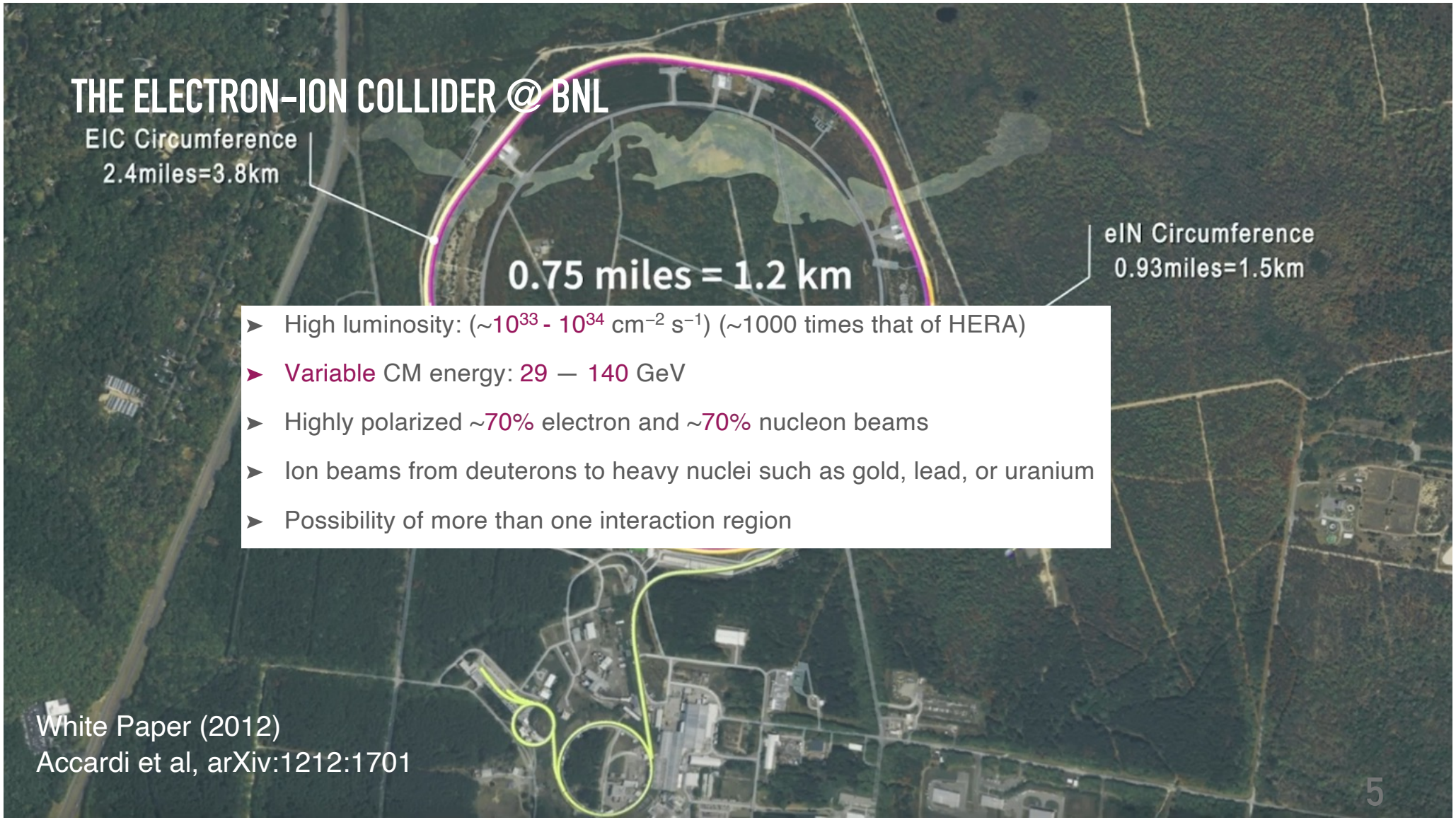


It is our seventh school! We have had more than 250 students from North and South Americas, Europe, Australia, and Asia



This year we have 34 students and we are looking forward to a very productive school

GEOGRAPHY OF THE SCHOOL 2019–2025



- High luminosity: (~10^{33} - 10^{34} cm^{-2} s^{-1}) (~1000 times that of HERA)
- Variable CM energy: 29 — 140 GeV
- Highly polarized ~70% electron and ~70% nucleon beams
- Ion beams from deuterons to heavy nuclei such as gold, lead, or uranium
- Possibility of more than one interaction region

White Paper (2012)
Accardi et al, arXiv:1212:1701

THE ELECTRON-ION COLLIDER: SCIENTIFIC QUESTIONS

White Paper (2012)
Accardi et al, arXiv:1212:1701

- How do the nucleonic properties such as mass and spin emerge from partons and their underlying interactions?
- How are partons inside the nucleon distributed in both momentum and position space?
- How do color-charged quarks and gluons, and jets, interact with a nuclear medium? How do the confined hadronic states emerge from these quarks and gluons? How do the quark-gluon interactions create nuclear binding?
- How does a dense nuclear environment affect the dynamics of quarks and gluons, their correlations, and their interactions? What happens to the gluon density in nuclei? Does it saturate at high energy, giving rise to gluonic matter or a gluonic phase with universal properties in all nuclei and even in nucleons?

THE SCHOOL LECTURERS: FIRST WEEK

Fred Olness (SMU)

QCD Intro, xFitter tutorial

Kong Tu (BNL)

EIC Intro

Bernd Surrow (Temple)

EIC physics and detector

Philip Ilten

(U. Cincinnati)

MC tutorial

Christoph Montag (BNL)

Accelerator technology

Pavel Nadolsky (MSU)

Collinear physics

Abhay Deshpande (SBU/BNL)

EIC perspective

Andreas Metz (Temple)

3D structure

Bill Li (Mississippi State University)

Forward physics

THE SCHOOL LECTURERS: SECOND WEEK

Ross Corliss (SBU)

Calorimetry/polarimetry

Bjoern Schenke (BNL)

Small-x

Sergey Syritsyn (SBU)

Lattice QCD

George Sterman (SBU)

Jets

Felix Ringer (SBU)

Jets at the EIC

Ramona Vogt (Llnl)

Heavy quarks

Holly Szumila Vance (FIU)

EIC software tutorial

Wolfram Fischer (BNL)

Intro to EIC Accelerator Collaboration

Thomas Hemmick(SBU)

Tracking and Particle ID

Hooman Davoudiasl (BNL)

BSM searches at the EIC

THE SCHOOL SCHEDULE

- The school runs in person 8:00 am - 3:30 pm ET US.
- In the evening, we have discussion at 7:30 pm
  (snacks & drinks are provided)
- The program is posted on Indico:
  https://indico.cfnssbu.physics.sunysb.edu/event/604/timetable/
- Students' presentations (optional) will be on Fridays, please, send us your titles.

WARNINGS:

Beware

Ticks transmit lime disease. Seek for medical help if you are bitten.

Poison ivy causes a painful rash.

MEALS

Breakfast is provided every weekday

8:00 am

Lunch Suggestion:

Since we have only 90mins for lunch, we suggest the on-campus SAC option.

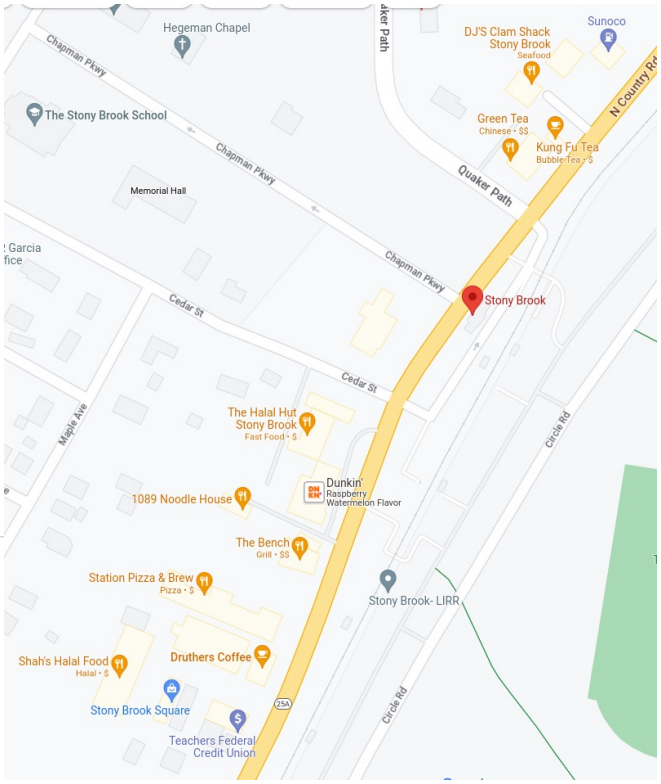
June 1 - June 30

MONDAY THROUGH FRIDAY*

- **East Side Dining (Cocina Fresca)**: 11:30am to 6:30pm
- **Student Activities Center (Dunkin')**: 8:30am to 2:30pm
- **Dental Cafe**: 7:30am to 2:30pm

School dinner is at Port Jeff

June 3d at 18:00



School BBQ

June 5th

Dinner Suggestion:

Since we have a bit more time for dinner,

you might want to try some of the off-campus options near the LIRR.

We then return at 7:30 pm for snacks and a relaxing discussion session