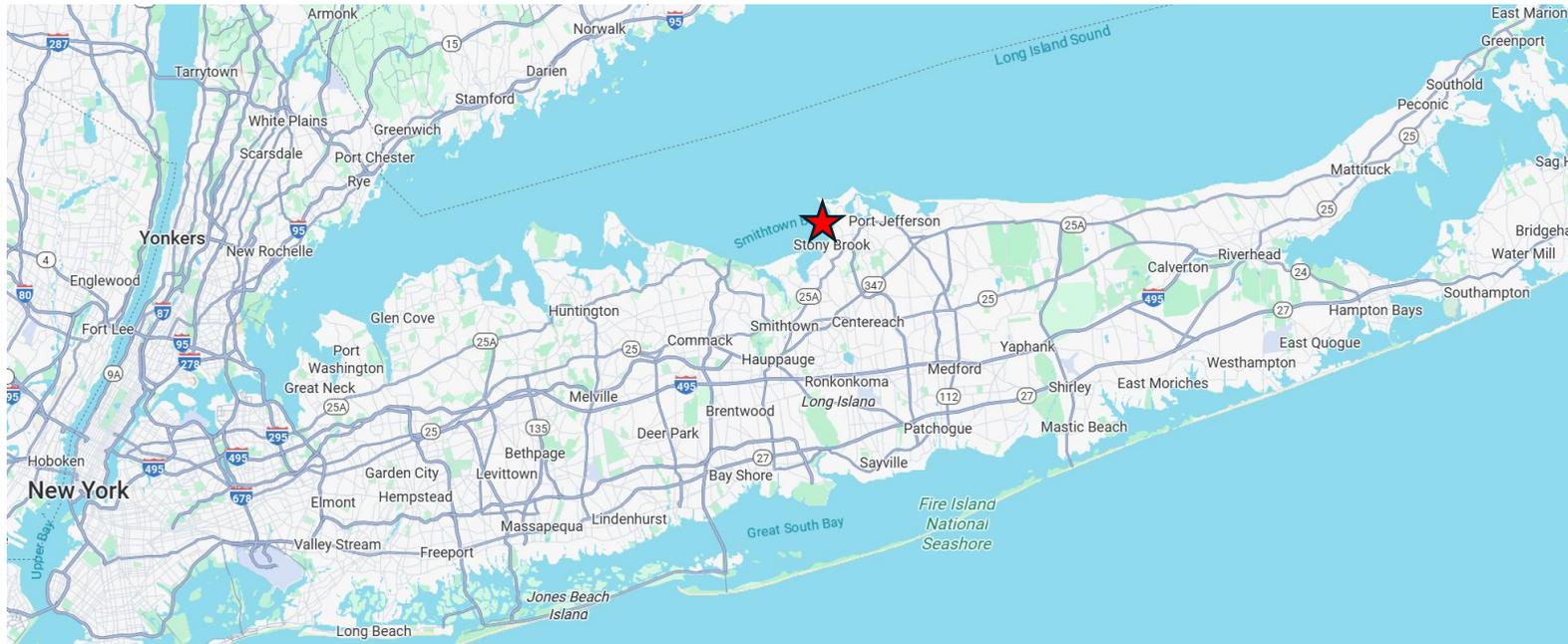


*Welcome to COOL25!*

*Welcome to Long Island!*

*Welcome to Stony Brook!*



15th International Workshop on

**COOL25**

Beam Cooling and  
Related Topics

**October 27–31, 2025**

Stony Brook University  
Stony Brook, NY 11794-4040 USA

Charles B. Wang Center

<https://www.bnl.gov/cool25/>

**International Advisory Committee**

Vladimir Litvinenko (SBU, USA) – Conference Chair  
Alexei Fedotov (BNL, USA) – Program Committee Chair  
Todd Satogata, (JLAB, USA) – JACoW Editor  
Gerard Tranquille (CERN, Switzerland)  
Sergei Nagaitsev (EIC/BNL, USA)  
Markus Steck (GSI, Germany)  
Xiaodong Yang (IMP Lanzhou, China)  
Juergen Dietrich (Dortmund University, Germany)  
Katsuya Yonehara (FNAL, USA)  
Danyal Winters (GSI, Germany)  
Andrei Seryi (JLAB, USA)  
Hiromi Okamoto (Hiroshima University, Japan)

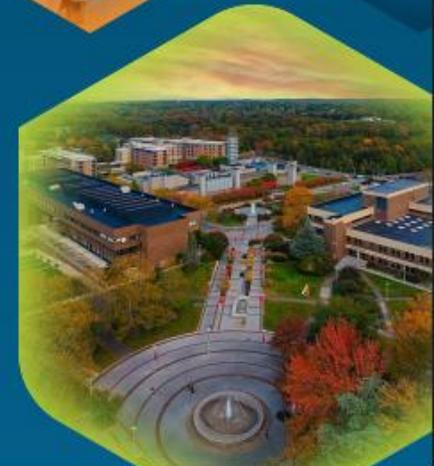
**Local Organizing Committee**

Avril Coakley (SBU) – Co-Chair  
Anna Petway (BNL) – Co-Chair  
Christina Blas (BNL)  
Bryan Callaghan (BNL)

**Workshop Coordinators**

Anna Petway (BNL) (631) 344-4776 petway@bnl.gov	Avril Coakley (SBU) (516) 937-4362 avril.coakley@stonybrook.edu
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Hosted by Stony Brook University and  
Brookhaven National Laboratory





15th International Workshop on

# Beam Cooling and Related Topics (COOL'25)

Hosted by Stony Brook University and Brookhaven National Laboratory  
October 27–31, 2025

- This is 15<sup>th</sup> Beam Cooling workshop, bi-annual meetings with the first one held in Montreux in 1993.
- This is 3<sup>rd</sup> workshop held in the USA:  
COOL05 (Galina, IL), COOL15 (JLAB, VA), COOL25 (Stony Brook, NY)
- Making COOL25 scientific program was challenging due to ongoing geo-political situation with several cancelations, including some last-minute.
- We have 43 oral talks this year with good representation on various beam cooling topics (electron, stochastic, muon, laser cooling and development of advanced beam cooling techniques) from various countries:  
USA, Switzerland, France, Germany, China and Japan

8:45 AM

9:00 AM

9:00 AM

10:30 AM

10:30 AM

10:45 AM

10:45 AM

12:15 PM

12:15 PM

12:30 PM

12:30 PM

1:30 PM

**Welcome - Vladimir Litvinenko, Alexei Fedotov**  
Break

**Facilities and Programs Session I**  
Session | Location: Wang Center, Stony Brook University campus, Stony Brook, New York

9:00 – 9:30 AM **Design overview of the Electron Ion Collider**  
Speaker  
Sergei Nagaitsev (Brookhaven National Laboratory)

9:30 – 10:00 AM **The CERN Antimatter Factory: Performance and Perspectives**  
Speaker  
Laurette Ponce (European Organization for Nuclear Research)

10:00 – 10:30 AM **Review of Ionization Cooling**  
Speaker  
Katsuya Yonehara (Fermi National Accelerator Laboratory)

**Coffee Break**  
Break | Location: Wang Center, Stony Brook University campus, Stony Brook, New York

**Facilities and Programs Session II**  
Session | Location: Wang Center, Stony Brook University campus, Stony Brook, New York

10:45 – 11:15 AM  
**Generation of a cooled muon beam for the J-PARC muon g-2/EDM experiment**  
Speaker  
Kazuhiro Suzuki (Nagoya University)

11:15 – 11:45 AM **Cooling Demonstrator Program for the Muon Collider**  
Speaker  
Diktys Stratakis (Fermi National Accelerator Laboratory)

11:45 AM – 12:15 PM **Development of an electron cooler for HIAF facility in China**  
Speaker  
Lijun Mao (Institute of Modern Physics)

**Group Photo**  
Break | Location: Wang Center, Stony Brook University campus, Stony Brook, New York

**Lunch Break (Provided by Workshop)**  
Break | Location: Wang Center, Stony Brook University campus, Stony Brook, New York

1:30 PM

3:00 PM

3:00 PM

3:30 PM

3:30 PM

5:00 PM

**Laser Cooling Facilities Session**  
Session | Location: Wang Center, Stony Brook University campus, Stony Brook, New York

1:30 – 2:00 PM **Laser cooling of antihydrogen atoms in the ALPHA trap**  
Speaker  
Chris Rasmussen (Brookhaven National Laboratory)

2:00 – 2:30 PM **The SIS100 laser cooling facility at FAIR**  
Speaker  
Danyal Winters (GSI Helmholtz Centre for Heavy Ion Research)

2:30 – 3:00 PM  
**High power optical cavities for ion beam cooling at the SPS Gamma Factory Proof of principle experiment**  
Speaker  
Aurélien Martens (Université Paris-Saclay, CNRS/IN2P3, IJCLab)

**Coffee Break**  
Break | Location: Wang Center, Stony Brook University campus, Stony Brook, New York

**Advanced Cooling R&D Session**  
Session | Location: Wang Center, Stony Brook University campus, Stony Brook, New York

3:30 – 4:00 PM **The Optical Stochastic Cooling program at Fermilab**  
Speaker  
Jonathan Jarvis (Fermi National Accelerator Laboratory)

4:00 – 4:30 PM  
**Research and Development of an Ultrahigh Precision Single Ion Implanter**  
Speaker  
Yosuke Yuri (National Institutes for Quantum Science and Technology)

4:30 – 5:00 PM **Results of the Coherent electron Cooling experiment at RHIC**  
Speaker  
Vladimir Litvinenko (Stony Brook University)

## Tue, October 28

9:00 AM	<b>High-Energy Cooling Applications I</b> <b>Session</b>   Location: Wang Center, Stony Brook University campus, Stony Brook, New York
	<b>9:00 – 9:30 AM</b> <b>Hadron Beam Cooling Concept and Cooler Design Status for the EIC</b> <b>Speaker</b> Alexei Fedotov (Brookhaven National Laboratory)
	<b>9:30 – 10:00 AM</b> <b>Electron Ion Collider Strong Hadron Cooling Design Summary</b> <b>Speaker</b> Erdong Wang (Brookhaven National Laboratory)
	<b>10:00 – 10:30 AM</b> <b>EIC Luminosity Models for Various Hadron Cooling Scenarios</b> <b>Speaker</b> William Bergan (Brookhaven National Laboratory)
10:30 AM	
10:30 AM	<b>Coffee Break</b> <b>Break</b>   Location: Wang Center, Stony Brook University campus, Stony Brook, New York
10:45 AM	
10:45 AM	<b>High-Energy Cooling Applications II</b> <b>Session</b>   Location: Wang Center, Stony Brook University campus, Stony Brook, New York
	<b>10:45 – 11:15 AM</b> <b>Development of Storage Ring Electron Cooler for High Energy Applications</b> <b>Speaker</b> Sergei Seletskiy (Brookhaven National Laboratory)
	<b>11:15 – 11:45 AM</b> <b>Electron Cooler for High-Energy Hadrons Based on Energy Recovery Linac</b> <b>Speaker</b> Dmitry Kayran (Brookhaven National Laboratory)
	<b>11:45 AM – 12:15 PM</b> <b>Stochastic Cooling for the EIC</b> <b>Speaker</b> Michael Blaskiewicz (Brookhaven National Laboratory)
12:15 PM	
12:15 PM	<b>Lunch Break (Provided by Workshop)</b> <b>Break</b>   Location: Wang Center, Stony Brook University campus, Stony Brook, New York
1:30 PM	
1:30 PM	<b>Laser Cooling Session</b> <b>Session</b>   Location: Wang Center, Stony Brook University campus, Stony Brook, New York
	<b>1:30 – 2:00 PM</b> <b>Laser Cooling of Relativistic Ion Beams</b> <b>Speaker</b> Michael Bussmann (Helmholtz-Zentrum Dresden-Rossendorf)

Tue, October 28

	<b>2:00 – 2:30 PM</b> <b>UV Laser System(s) for Laser Cooling of Relativistic Bunched Ion Beams at the SIS100</b> <b>Speaker</b> Tamina Grunwitz (Technical University of Darmstadt)
	<b>2:30 – 3:00 PM</b> <b>Challenges of Laser Cooling at SIS100: UV Systems and Overlap in 5D</b> <b>Speaker</b> Denise Schwarz (Technical University of Darmstadt)
3:00 PM	
3:00 PM	<b>Coffee Break</b> <b>Break</b>   Location: Wang Center, Stony Brook University campus, Stony Brook, New York
3:30 PM	
3:30 PM	<b>Cooling Studies and Reports</b> <b>Session</b>   Location: Wang Center, Stony Brook University campus, Stony Brook, New York
	<b>3:30 – 4:00 PM</b> <b>Understanding Schottky spectra of stored laser-cooled bunched ion beams - simulations &amp; recent experimental results from the CSR</b> <b>Speaker</b> HANBING WANG (Institute of Modern Physics)
	<b>4:00 – 4:30 PM</b> <b>Electron and Laser Cooling of Stored Ion Beams at CERN: XSuite Simulations and Measurements</b> <b>Speaker</b> Davide Gamba (European Organization for Nuclear Research)
	<b>4:30 – 5:00 PM</b> <b>Simulation of Longitudinal Electron Cooling of 20 GeV Proton Beam at EicC</b> <b>Speaker</b> Xiaodong Yang (Institute of Modern Physics, Chinese Academy of Sciences)
5:00 PM	

# Wed, October 29

9:00 AM

## Cooling Technology

Session | Location: Wang Center, Stony Brook University campus, Stony Brook, New York

9:00 - 9:30 AM

### Versatile Platform for Relativistic Electron Cooling and Other Experiments

**Speaker**

Kurt Aulenbacher (Helmholtz Institute Mainz)

9:30 - 10:00 AM

### Gun and Collector Development on the Electron Cooler Test Stand (ECTS)

**Speaker**

Ghanshyambhai Khatri (European Organization for Nuclear Research)

10:00 - 10:30 AM

### Progress Towards a Field Emission Electron Gun for the ELENA Electron Cooler

**Speaker**

Gerard Alain Tranquille (European Organization for Nuclear Research)

10:30 AM

10:30 AM

## Coffee Break

Break | Location: Wang Center, Stony Brook University campus, Stony Brook, New York

10:45 AM

10:45 AM

## Advanced Cooling Applications

Session | Location: Wang Center, Stony Brook University campus, Stony Brook, New York

10:45 - 11:15 AM

### Stochastic Cooling Enhanced Steady-State Microbunching

**Speaker**

Xiujie Deng (Tsinghua University)

11:15 - 11:45 AM

### Ion machine-gun experiment at Hiroshima University

**Speaker**

Kento Muroo (Hiroshima University)

11:45 AM - 12:15 PM

### Proposed Ultralow-Emittance Beam Source for High-Luminosity Hadron Colliders

**Speaker**

Stephen Brooks (Brookhaven National Laboratory)

12:15 PM

12:15 PM

## Lunch Break (Provided by Workshop)

Break | Location: Wang Center, Stony Brook University campus, Stony Brook, New York

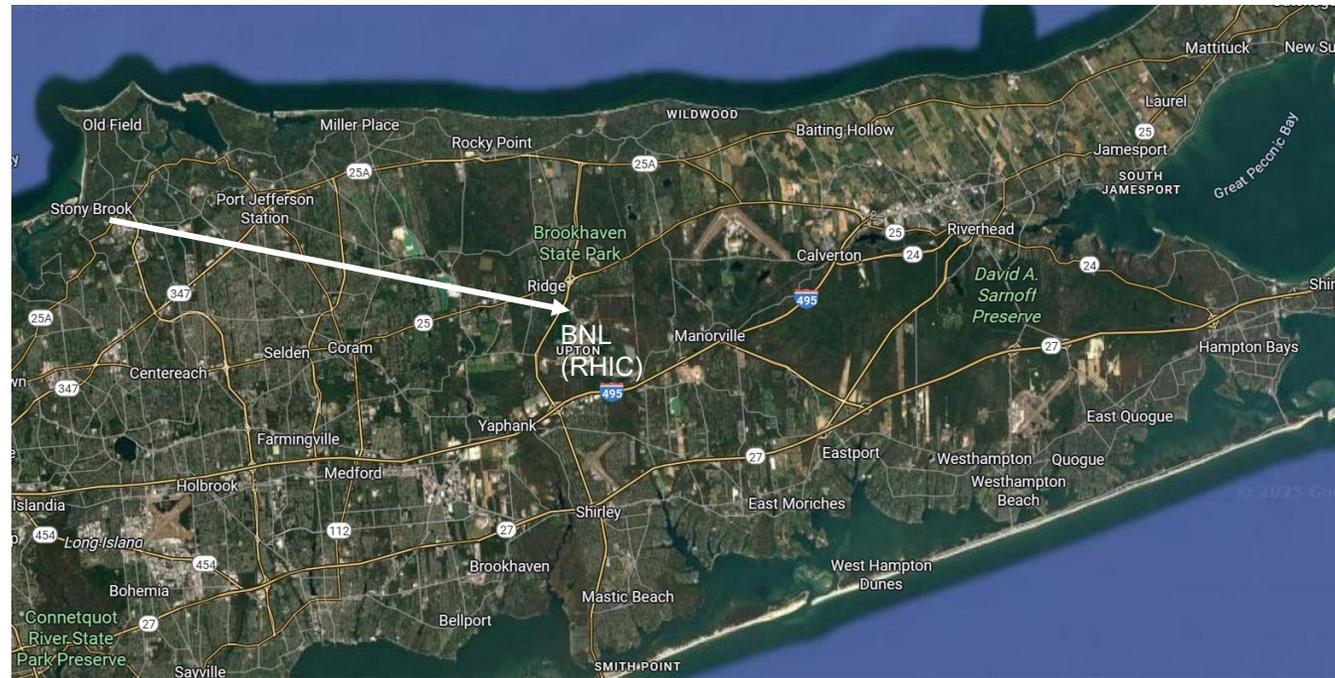
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## Tour to BNL

Break

5:00 PM



## Brookhaven Lab Tour

Registered participants will have the ability to tour Brookhaven Lab on Wednesday, October 29, 2025.

### Tour Agenda:

- 13:30 – Bus leaves Stony Brook Wang Center
- 14:00- Arrival to GUV center for badges processing
- 14:30-travel to CAD, Bldg. 911
- 14:40-15:10 – CAD and MCR tour, Bldg 911
- 15:10-15:20 -travel to RHIC IR2
- 15:20-16:20- visit RHIC IR2 tunnel to show CeC and LEReC accelerators
- 16:20 – leave back to Stony Brook

8:45 AM

**Cooler Designs and Applications I**  
 Session | Location: Wang Center, Stony Brook University campus, Stony Brook, New York

8:45 – 9:15 AM **Electron Beam Dynamics Simulation in Coherent Electron Cooling**  
 Speaker  
 Yichao Jing (Brookhaven National Laboratory)

9:15 – 9:45 AM **Multiple-Slice Simulations of Coherent Electron Cooling Performance with Low Beam Current**  
 Speaker  
 Jun Ma (Brookhaven National Laboratory)

9:45 – 10:15 AM **Simulation of the Ion Bunch in the Presence of the CeC for the New Energy Scheme**  
 Speaker  
 Gang Wang (Brookhaven National Laboratory)

10:15 AM

10:15 AM **Coffee Break**  
 Break | Location: Wang Center, Stony Brook University campus, Stony Brook, New York

10:30 AM

10:30 AM **Cooler Designs and Applications II**  
 Session | Location: Wang Center, Stony Brook University campus, Stony Brook, New York

10:30 – 11:00 AM **Design of a Microbunched Electron Cooler Energy Recovery Linac**  
 Speaker  
 Kirsten Deitrick (Thomas Jefferson National Accelerator Facility)

11:00 – 11:30 AM **Optics Design for a Storage Ring Based Electron Cooler for Cooling at High Energies**  
 Speaker  
 Jorg Kewisch (Brookhaven National Laboratory)

11:30 AM – 12:00 PM **Beam Dynamics Studies for Low-energy Electron Cooler for Electron Ion Collider**  
 Speaker  
 Dmitry Kayran (Brookhaven National Laboratory)

12:00 PM

12:00 PM **Lunch Break (Provided by Workshop)**  
 Break | Location: Wang Center, Stony Brook University campus, Stony Brook, New York

1:00 PM

1:00 PM **Cooling Technology**  
 Session | Location: Wang Center, Stony Brook University campus, Stony Brook, New York

1:00 – 1:30 PM **A Neutral Hydrogen Monitor for Electron Cooling Studies of H- Ions in ELENA**  
 Speaker  
 Gerard Alain Tranquille (European Organization for Nuclear Research)

1:30 – 2:00 PM **BBU Thresholds and Digital Feedback Suppression for Frequency-Scaled BNL Cavities in the EIC Energy-Recovery Linac**  
 Speaker  
 Sadiq Setiniyaz (Thomas Jefferson National Accelerator Facility)

2:00 – 2:30 PM **Beam Position Monitoring for Low Energy Cooling Section**  
 Speaker  
 Igor Pinayev (Brookhaven National Laboratory)

2:30 PM

2:30 PM **Coffee Break**  
 Break | Location: Wang Center, Stony Brook University campus, Stony Brook, New York

2:45 PM

2:45 PM **Memorial Session (Markus Steck, Fritz Nolden, Fritz Caspers)**  
 Break | Location: Wang Center, Stony Brook University campus, Stony Brook, New York

3:15 PM

3:15 PM **Dieter Mohl Awards**  
 Break | Location: Wang Center, Stony Brook University campus, Stony Brook, New York

4:15 PM

5:00 PM **Banquet at Old Field Club, Stony Brook (Provided by Workshop)**  
 Break | Location: Wang Center, Stony Brook University campus, Stony Brook, New York

8:00 PM

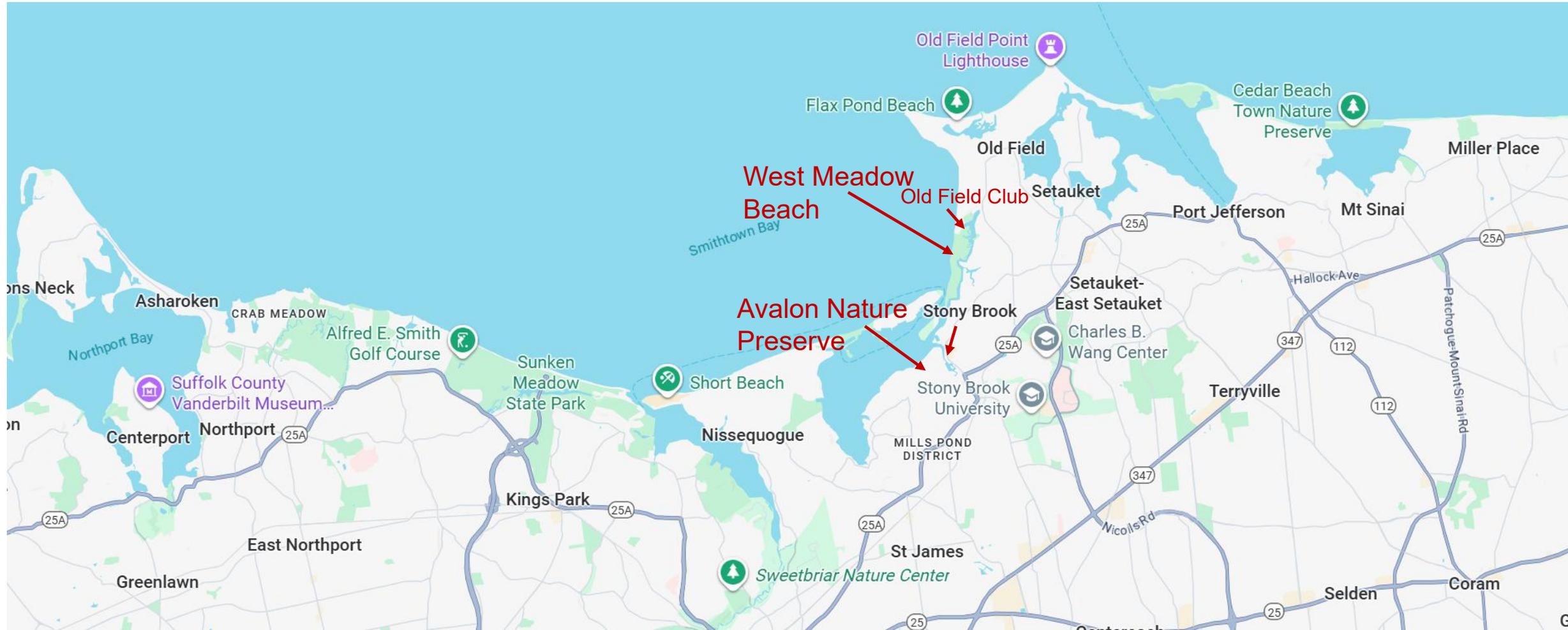


## Fri, October 31



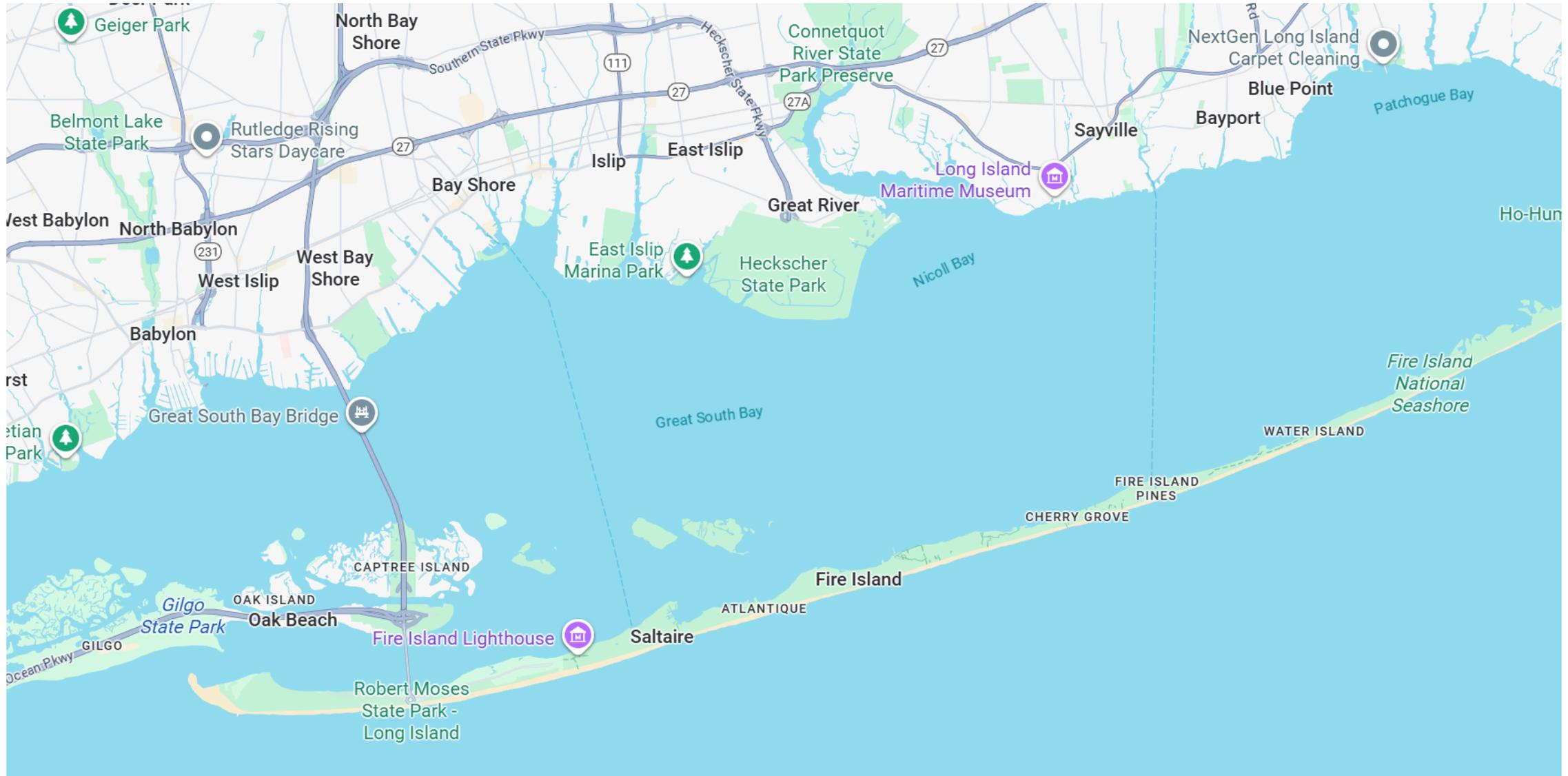
# Long Island North Shore

Places to visit nearby: Port Jefferson, Avalon Park, Long Island Museum, West Meadow beach, Vanderbilt museum...



# Long Island South Shore

Robert Moses State Park: Fire Island Lighthouse, Smith Point, Cupsogue Beach Park in Westhampton...



# Food nearby

More restaurants across campus on the other side of Rail Road Station

