

Unveiling Galactic PeVatrons with frontier multi-messenger observations and theoretical models



*Welcome to the CDHY PeVatron Workshop
at Columbia University's Nevis Labs!*

October 8-10, 2025

Welcome to Nevis Labs!



Nevis Science Center



Ardsley-on-Hudson

We are here!
(Science Center)

Carriage House

Hamilton House

Nevis Labs
Columbia
University

100 ft

Brief History of the Nevis Science Facility

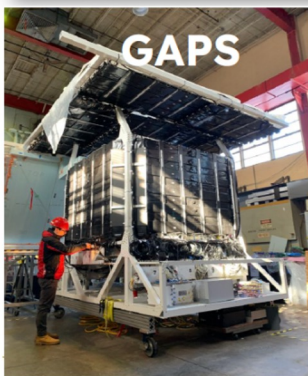
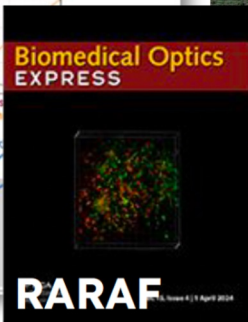
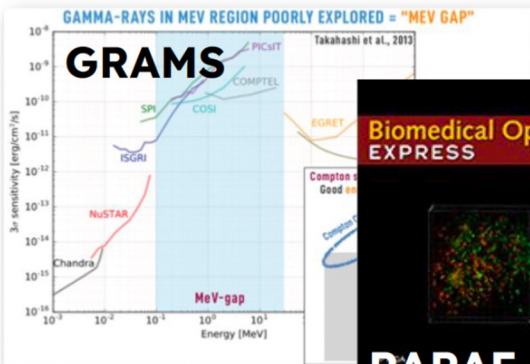
- The facility uses the 74 acre site from the 1836 estate of James Hamilton (son of Alexander Hamilton) that was donated to Columbia University in the 1930's
 - Named after the island of Nevis, Alexander Hamilton's birthplace
 - Over 200 types of trees on the property
- The current Nevis science facility is a legacy from the 400 MeV Nevis cyclotron project initiated in 1947 and retired in 1978.
- After the cyclotron era, the role of Nevis Labs transitioned to an R&D, construction, and physics analysis center.



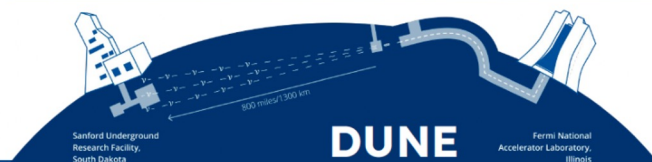
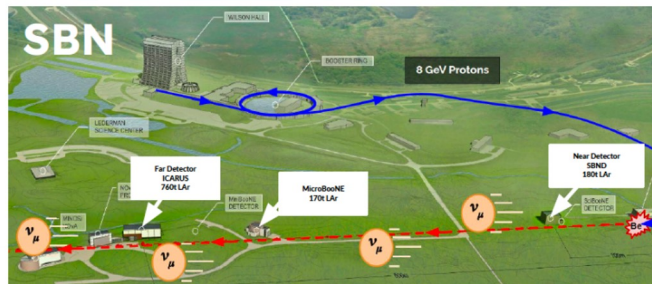
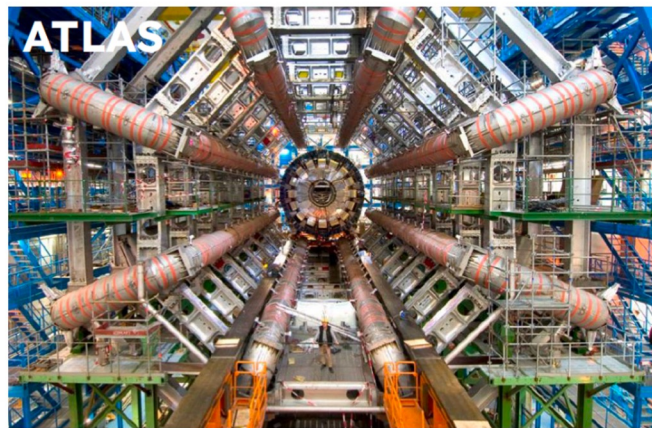
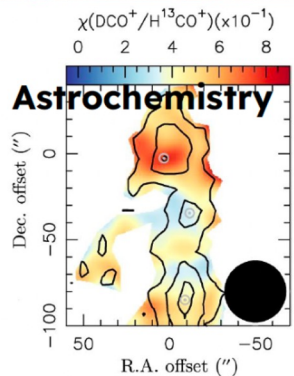
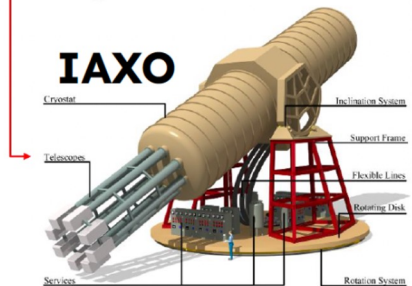
Dedication of the Nevis Cyclotron, May 2, 1950. Left to right: Columbia's President Dwight D. Eisenhower, Prof. I. I. Rabi, Visiting Prof. Hideki Yukawa, and Prof. John R. Dunning.

Nevis Labs Today

Provides support for experiments in particle physics, nuclear physics, astrophysics, and medical physics.



8 X-ray optics focus signal onto low-background detectors



CDHY PeVatron Workshop

Oct 8 – 10, 2025
Nevis Labs, Columbia University
America/New_York timezone



Overview

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Unveiling Galactic PeVatrons with frontier multi-messenger observations and theoretical models



The 3rd CDHY workshop “Unveiling Galactic PeVatrons with frontier multi-messenger observations and theoretical models,” will be held in-person at Columbia University Nevis Labs, near New York City, on **Oct 8-10, 2025**. The recent discoveries of over 50 ultra-high-energy (UHE; > 100 TeV) gamma-ray sources and neutrino emissions in the Galactic Plane have marked a paradigm shift in the century-long history of cosmic-ray astrophysics. While the UHE telescopes (LHAASO, HAWC, and Tibet AS gamma) operate as PeVatron search engines, IACTs (H.E.S.S., VERITAS, and MAGIC) and X-ray observations are crucial for identifying the most energetic particle acceleration sites. Taking advantage of the wealth of observational data from current multi-messenger instruments, we would like to address the questions of what are the Galactic PeVatrons, and how do they accelerate particles to PeV energies.

A huge thanks to

Scientific Organizing Committee

Felix Aharonian

Paolo Coppi

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Yuri Levin

Kaya Mori

Reshmi Mukherjee

Brian Reville

Local Organizing Committee @ Columbia

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Administrative & Technical Support at Nevis

Amy Garwood

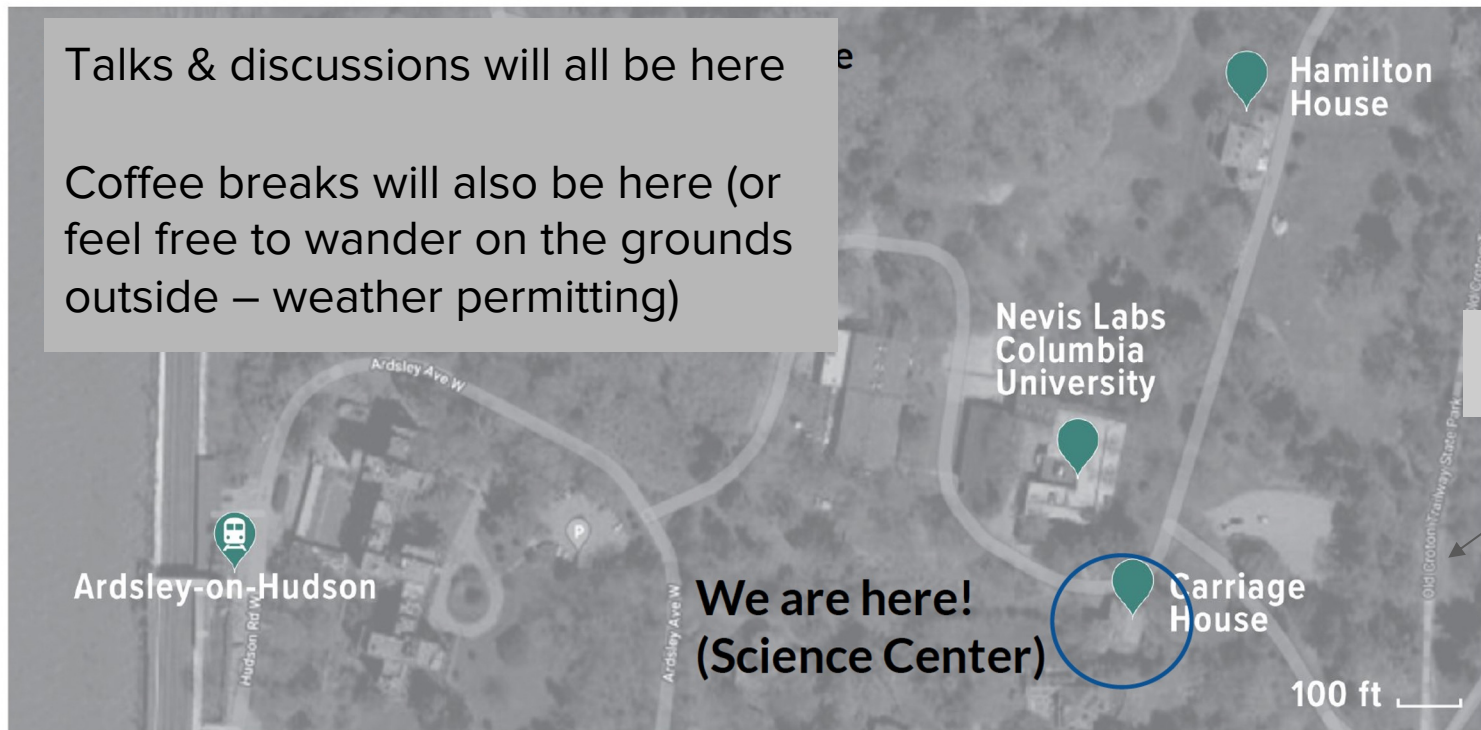
Asia Latt

Bill Seligman

Logistics

Talks & discussions will all be here

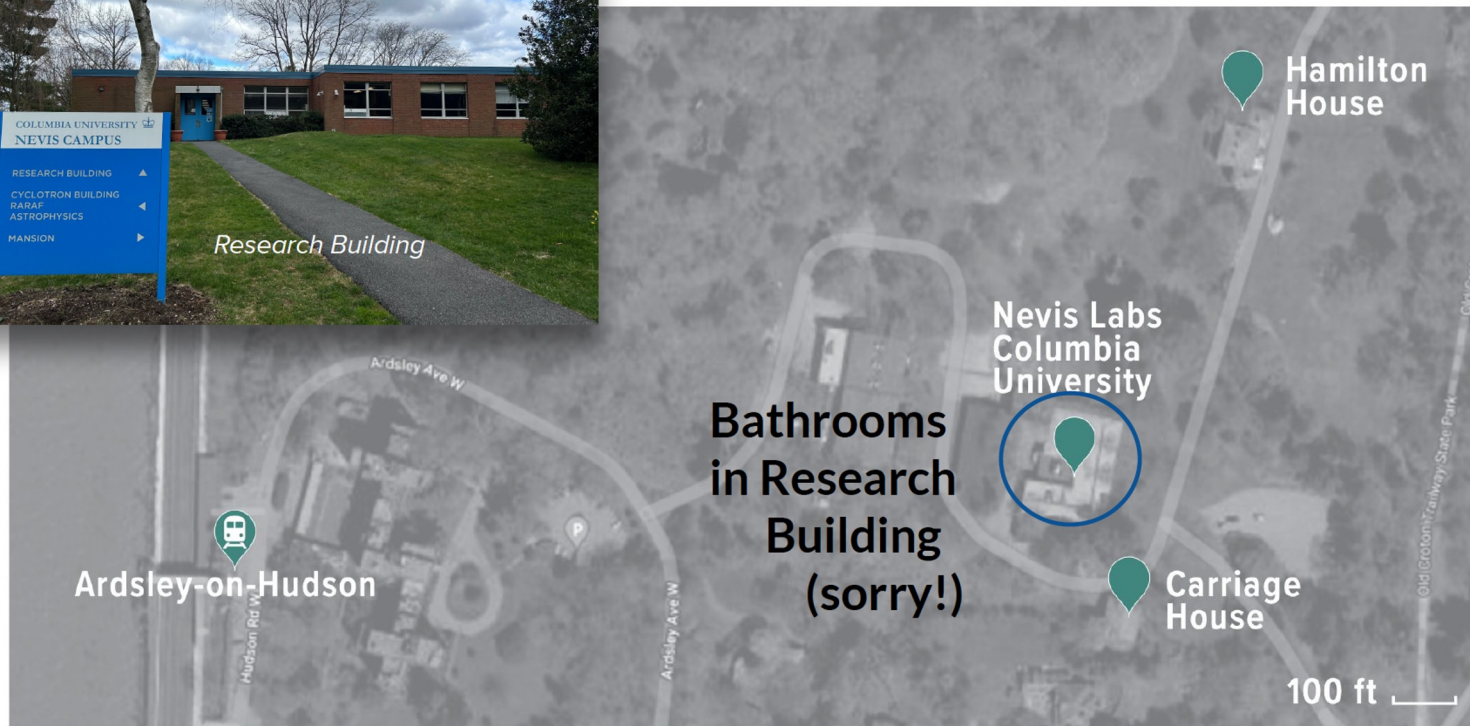
Coffee breaks will also be here (or feel free to wander on the grounds outside – weather permitting)



**We are here!
(Science Center)**

Old Croton
aqueduct Trailway

Logistics



Logistics

Please reach out to Amy Garwood if there's any way we can make your stay more comfortable.

Payment can be made via secure link (or see Amy Garwood before Friday).



Logistics

All lunches will be at the Hamilton House

Please feel free to eat **indoors**, on the **covered porch** (back of the house), or **picnic area** (weather permitting)

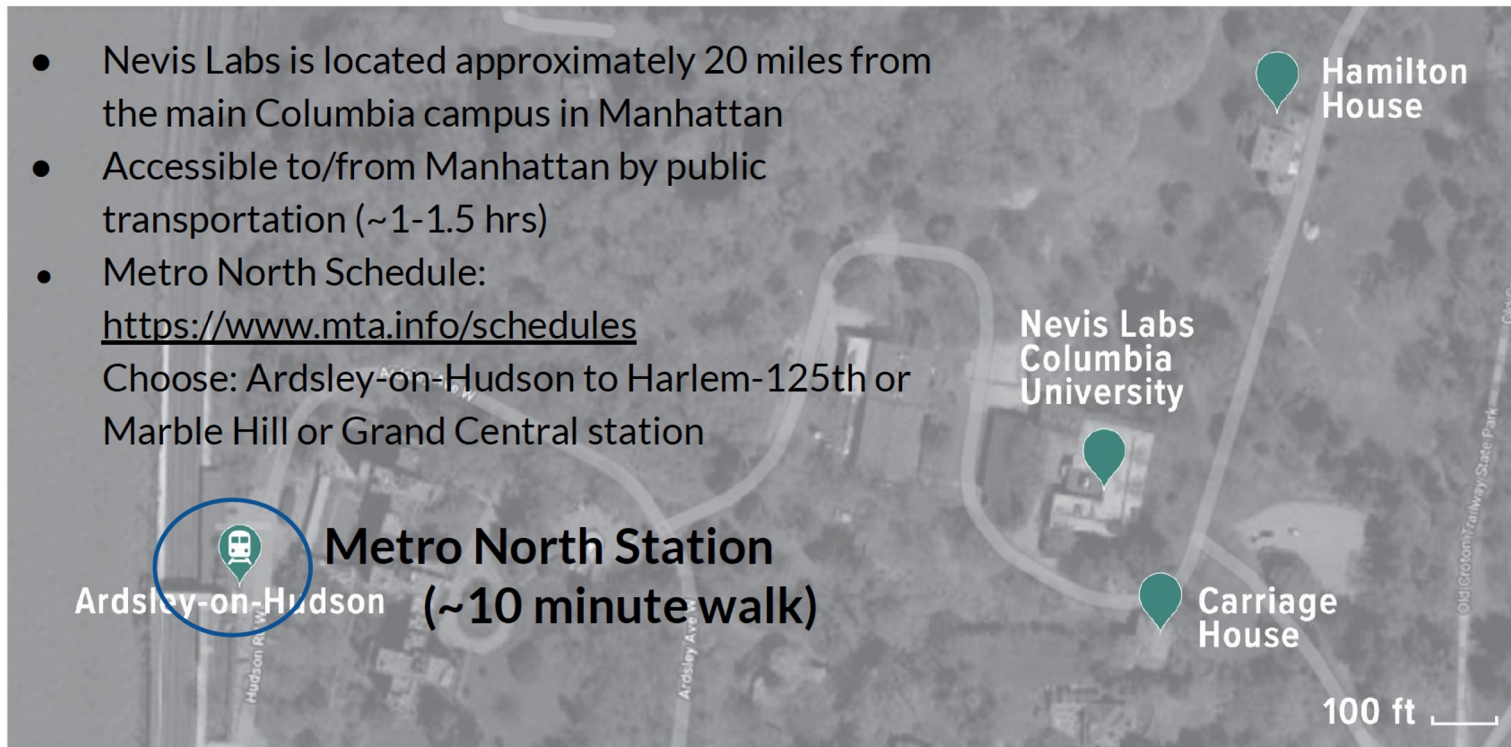


Transportation to/from Manhattan

- Nevis Labs is located approximately 20 miles from the main Columbia campus in Manhattan
- Accessible to/from Manhattan by public transportation (~1-1.5 hrs)
- Metro North Schedule:

<https://www.mta.info/schedules>

Choose: Ardsley-on-Hudson to Harlem-125th or Marble Hill or Grand Central station

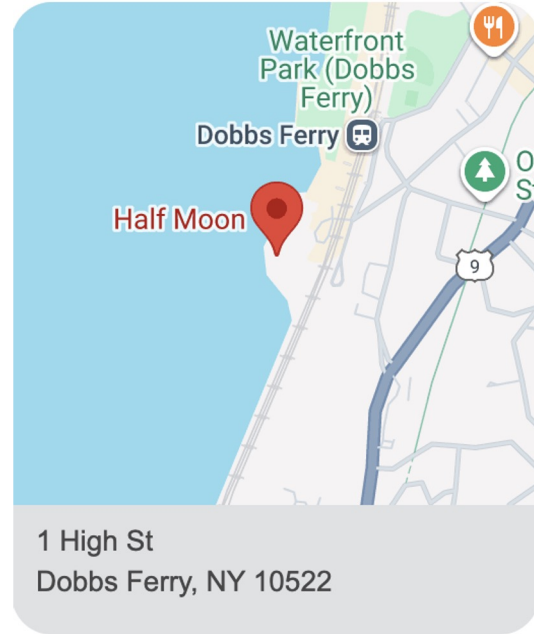


Conference Dinner - Thursday Oct 8

Half Moon Restaurant,
1 High St, Dobbs Ferry

Start at 6PM**

We will organize rides



** Complementary wine & beer for
the first hour

Lab Tours on Friday

- Radiological studies of living cells using Nevis 5.5 MeV “Singletron” accelerator
- Astrochemistry and Planetary Science

Please sign up if you are interested

Group photo at 12 PM on Thursday Oct 9

Outside Science Center

Let's have a great workshop!