Collaborations between BNL and Yale Wright Lab

Maintaining the strong, ongoing legacy of collaboration and substantial partnership between Brookhaven National Laboratory (BNL) and Yale in research and instrumentation initiatives aligns with the University's science priorities. Increasing connections with BNL was one of ten "Recommended Changes to the Organizational Structures that Support Science" in the 2018 Yale University Science Strategy Committee (USSC) report.

Historical Impact

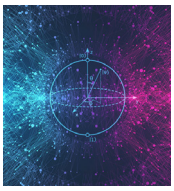
- Yale was part of the founding of BNL (1947). Yale and 8 other universities began the effort in 1946.
- The invention of Liquid Argon (LAr) calorimetry in the early 1970's was spearheaded by William Willis (Yale), Veljko Radeka (BNL), and Howard Gordon (BNL).
- Heavy ion experiments at the Alternating Gradient Synchrotron (AGS) in the 1980's and 1990's.
- Rare kaon decay experiments led at the AGS by Michael Zeller (Yale) and Laurie Littenberg (BNL).
- The Muon g-2 experiment was started at BNL by Vernon Hughes (Yale) to greatly improve the measurement of magnetic properties of the muon. Muon g-2 moved to Fermilab in 2013 and completed in 2023.
- MicroBooNE - LAr Time Projection Chamber experiment with cold electronics and wire cell technology developed by BNL/Yale collaboration contributing to first MicroBooNE neutrino event recorded in 2015.
- The ATLAS transition radiation tracker development was led by Keith Baker, who is now at Yale.
- Daya Bay antineutrino experiment detector development led by Karsten Heeger (Yale), Steve Kettell (BNL).

Ongoing Collaborations

ATLAS
Elementary Particles
K. Baker, S. Demers, P. Tipton

PROSPECT
Neutrinos & Fundamental Symmetries
K. Heeger

DUNE
Neutrinos & Fundamental Symmetries
K. Heeger



Quantum Science
Quantum Science & Sensing
K. Baker, S. Lamoreaux,
R. Maruyama, D. Moore,
J. Harris, L. Newburgh, C²QA

Electron Ion Collider
Relativistic Heavy Ions
H. Caines, J. W. Harris, L. Havener

sPHENIX
Relativistic Heavy Ions
H. Caines, J. W. Harris, L. Havener

nEXO
Neutrinos & Fundamental Symmetries
D. Moore

STAR
Relativistic Heavy Ions
H. Caines, J. W. Harris, L. Havener

21cm cosmology
Astrophysics & Cosmology
L. Newburgh

Brookhaven National Laboratory

Wright Laboratory

Yale