

AWANOW 2023



ARGONNE NATIONAL LABORATORY AND HIGH ENERGY PHYSICS



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HEP DIVISION DIRECTOR
ARGONNE NATIONAL LAB



Argonne National Laboratory is a
U.S. Department of Energy laboratory
managed by UChicago Argonne, LLC.

A PROUD HISTORY

MAN ACHIEVED HERE
THE FIRST SELF-SUSTAINING CHAIN REACTION
AND THEREBY INITIATED THE
CONTROLLED RELEASE OF NUCLEAR ENERGY



Argonne was established in 1946 as a science and technology laboratory to develop peaceful uses for a revolutionary new source of energy: **nuclear power.**

DIVERSIFIED RESEARCH PORTFOLIO

\$1.1 Billion in FY2021

End to End

**From
discovery
to application**

User Facilities

**Integrated
with our
research**

Collaborations

**Within
and outside
of Argonne**

FOSTERING A DIVERSE, WORLD-CLASS COMMUNITY OF TALENT

FY2021



S&T
STAFF

1,770+

POSTDOCTORALS

325+

JOINT
FACULTY

473+

FACILITY
USERS

5,959+

FULL-TIME
EMPLOYEES

3,523+

STUDENTS

821

ARGONNE'S RESEARCHERS AND DISCOVERIES ARE WIDELY RECOGNIZED

~130

R&D 100 Awards

700+

National and international awards and honors

1,000s

Inventions recorded and patents issued

6
In 2020

Numerous DOE commendations, including Secretary's Awards

Nobel Laureates



1938
Enrico Fermi



1963
Maria Goeppert Mayer

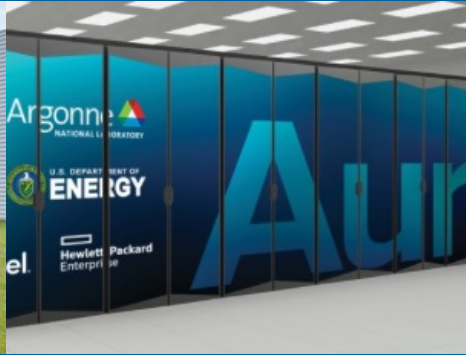


2003
Alexei Abrikosov

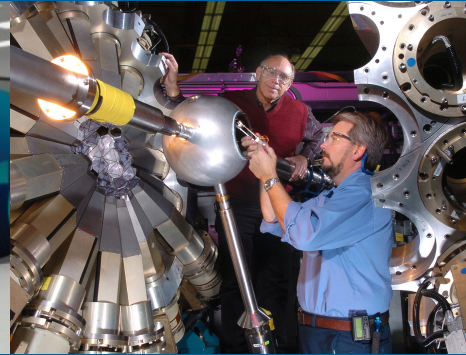
ARGONNE AND ARGONNE HEP



Materials, Nanoscience



Leadership Computing



Nuclear Physics



Photon Science

AN ENVIRONMENT WITH MANY OPPORTUNITIES FOR SYNERGIES

“ARGONNE High Energy Physics division (HEPD) will carry out cutting edge research in Energy, Intensity and Cosmic Frontiers while becoming a hub of innovation in the utilization of the new developments in computing, detectors and accelerator technologies for HEP science”. Argonne HEP Vision Document submitted to DOE-HEP March 2021

HEP Division
~100 members
~40 core staff

HEP DIVISION MAIN RESEARCH THRUSTS



Intensity Frontier

Muon Program

g-2, mu2e

Neutrino Program

DUNE, microBooNE



Energy Frontier

ATLAS at LHC



Detector R&D

Superconducting

Detectors



Cosmic Frontier

Cosmic Theory and

Computing

CMB and Dark Energy

SPT, DESI

CMB-S4, LSST-DESC

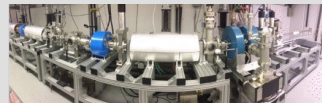


Particle Theory

Beyond the Standard

Model

Precision QCD



Advanced Accelerator

Development

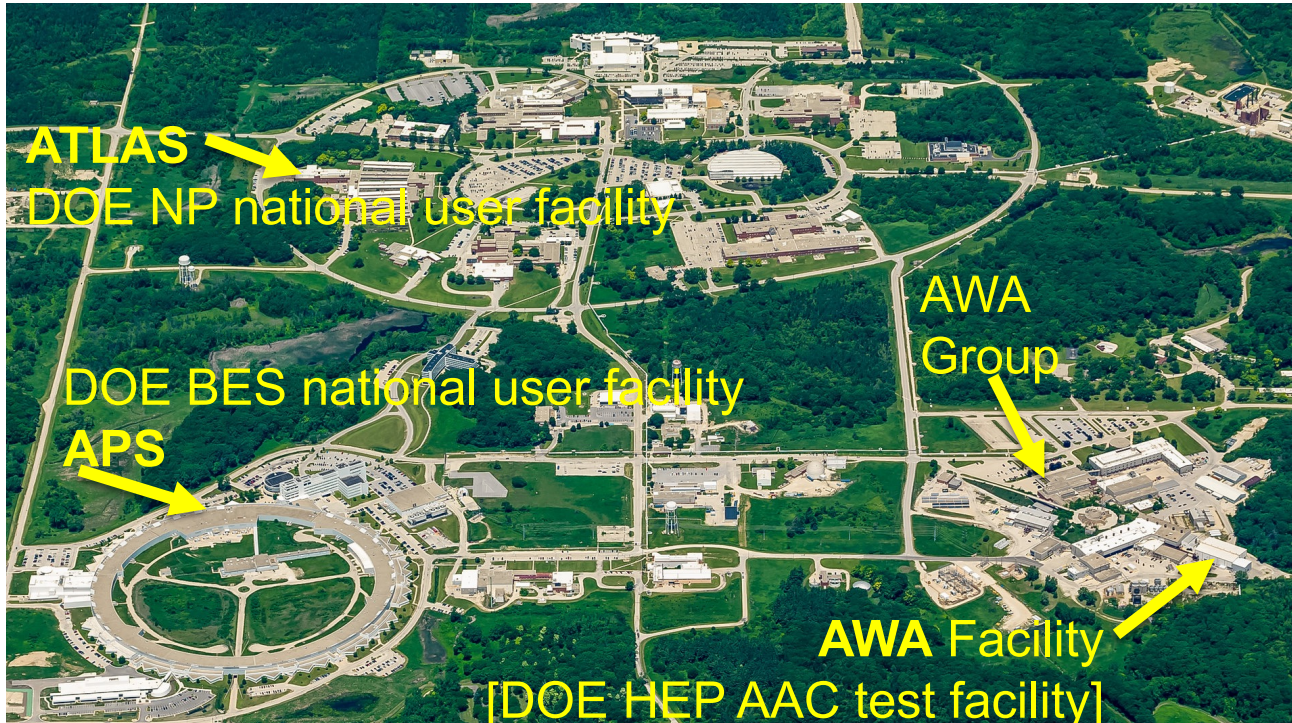
Argonne Wakefield

Accelerator (AWA)

Cross-cutting

- Computing
- AI/ML
- QIS

ARGONNE ACCELERATOR INSTITUTE (AAI)



- 3 main accelerators at Argonne
- BES user facility (light source)
- NP user facility (heavy ions)
- HEP test facility

Basis for many synergies



Argonne



NATIONAL LABORATORY