

# Discovery Park

*A Collaborative Transformation Project at  
Brookhaven National Laboratory*

*Presented to CAC  
September 12, 2013*

*Lanny D. Bates  
Assistant Laboratory Director  
Facilities & Operations*



U.S. DEPARTMENT OF  
**ENERGY**

Office of  
Science

# BNL History

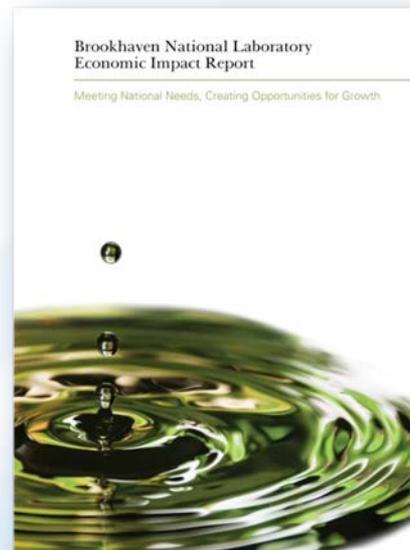
- Almost seven decades of outstanding scientific achievement
- Founded on March 21, 1947
  - Columbia, Cornell, Harvard, MIT, Johns Hopkins, Pennsylvania, Princeton, Rochester, Yale
- Funded by AEC for research into the peaceful uses of the atom to improve public well-being
  - Promote basic research in the physical, chemical, biological, and engineering aspects of the atomic sciences

- Establish a national laboratory in the Northeast to design, construct, and operate large scientific machines that individual institutions could not afford to develop on their own

- Seven Nobel Prizes



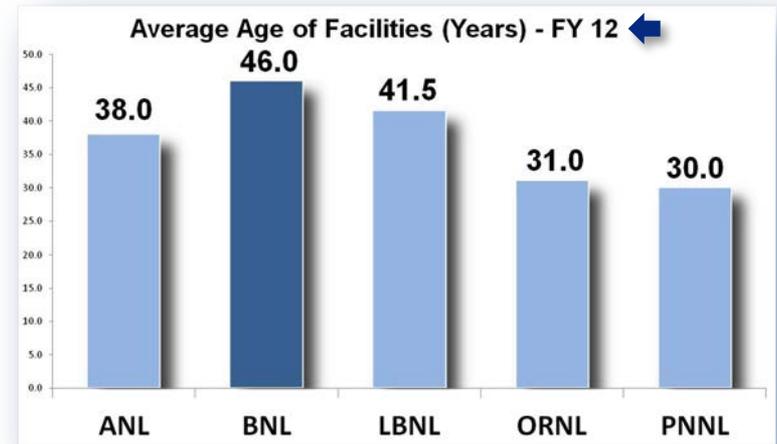
- Only multi-program National Laboratory in the Northeast
  - Physical Assets
    - 5,320 acres
    - 321 buildings; 4.88 million SF
  - Human Capital
    - 3,041 staff
    - 4,427 facility users
    - 400 undergrad/grad students
  - Support of over 1,100 NYS Researchers
    - 850 Academic
    - 185 Medicine
    - 45 Industry
    - 25 State & other
  - Strong Regional Partnership with Stony Brook University
- Total 2009 economic output
    - \$704 Million
    - 5,400 jobs
    - \$212 Million goods and services
    - \$74.7 Million in new construction and renovation
  - Annual economic output 2010-2014
    - \$950 Million / 7,100 jobs



# Current Situation

*Moving from 40-65 year old buildings to safe, mission-ready science facilities and infrastructure*

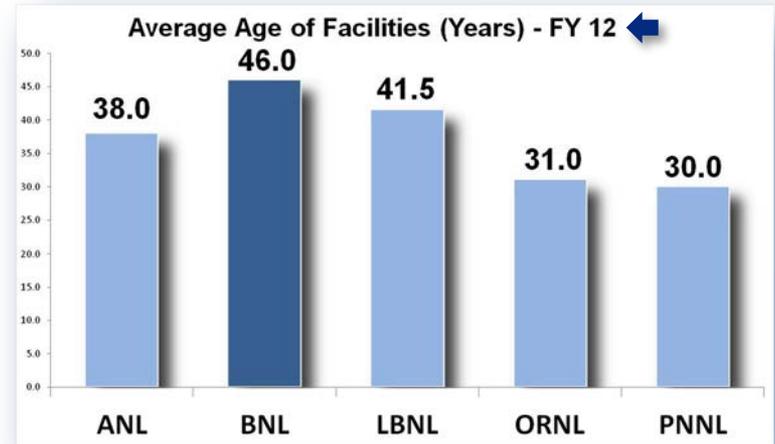
- BNL is one of the oldest of the DOE multi-program laboratories – weighted average building age
- 69 buildings (over 850K SF) date back to WW II
- 24% of offices are in legacy WW II buildings
- Mission Readiness requires demolition, new construction, renovation, and recapitalization
- Scientific strategies require and benefit from increasing external and particularly regional partnerships (Energy, Discovery to Deployment, Education, etc.)



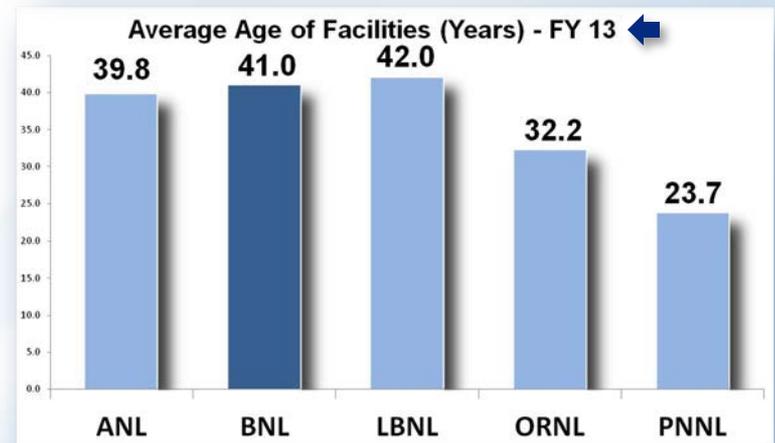
\* per FY 2012 DOE Budget Office Metrics

# Current Situation

*Moving from 40-65 year old buildings to safe, mission-ready science facilities and infrastructure*



\* per FY 2012 DOE Budget Office Metrics



\* per July 2013 FIMS data

# Mission Ready Facilities & Infrastructure

*Campus development zones which inform strategic infrastructure, facility, and BNL business growth decisions*



RHIC Tunnel | Accelerator Zone



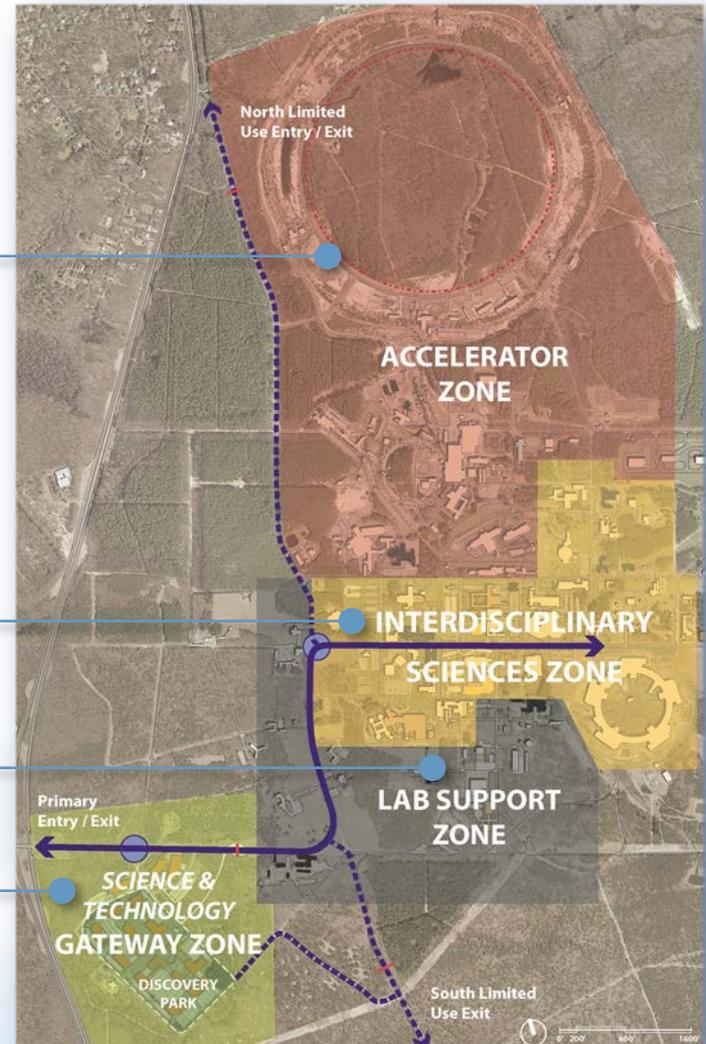
Nanofabrication Assembly | Interdisciplinary Research



Plant Control Room | Lab Support Zone



Long Island Solar Farm | Science & Technology Gateway



# Funding Strategy



## Federal Projects

*Unique Scientific Capabilities*



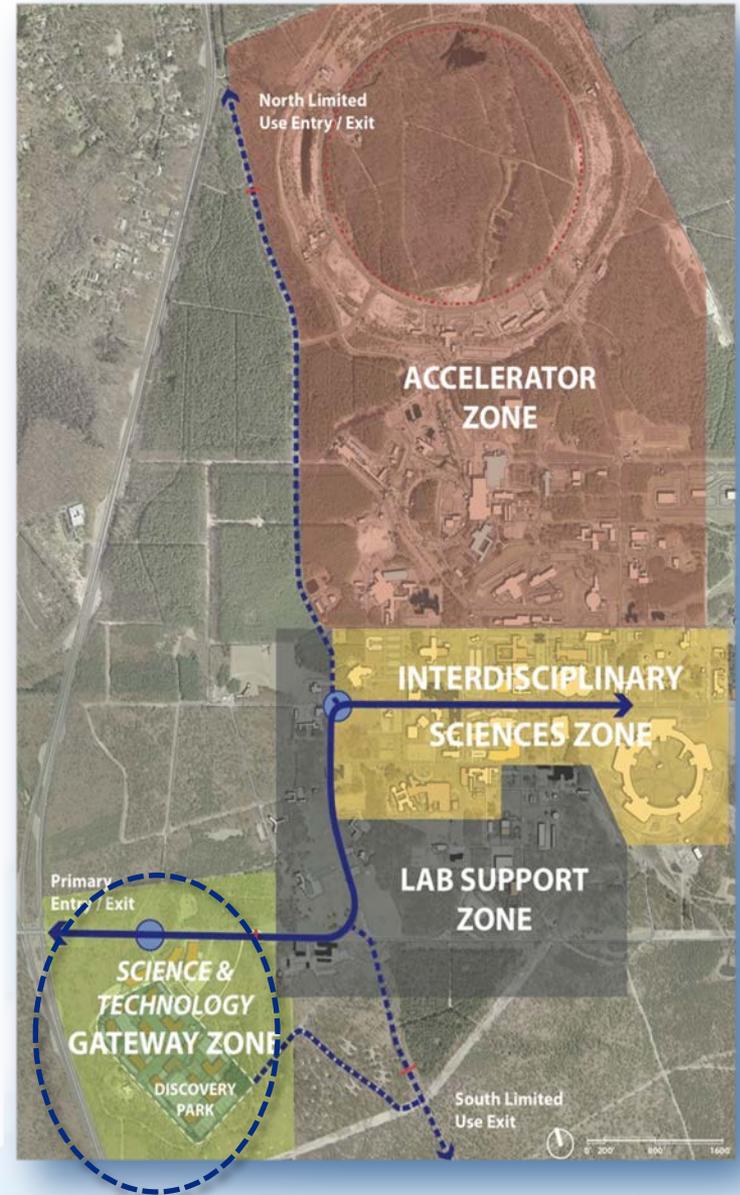
## Laboratory Generated

*Small Projects/Renovation  
Energy and Utilities - UESC*



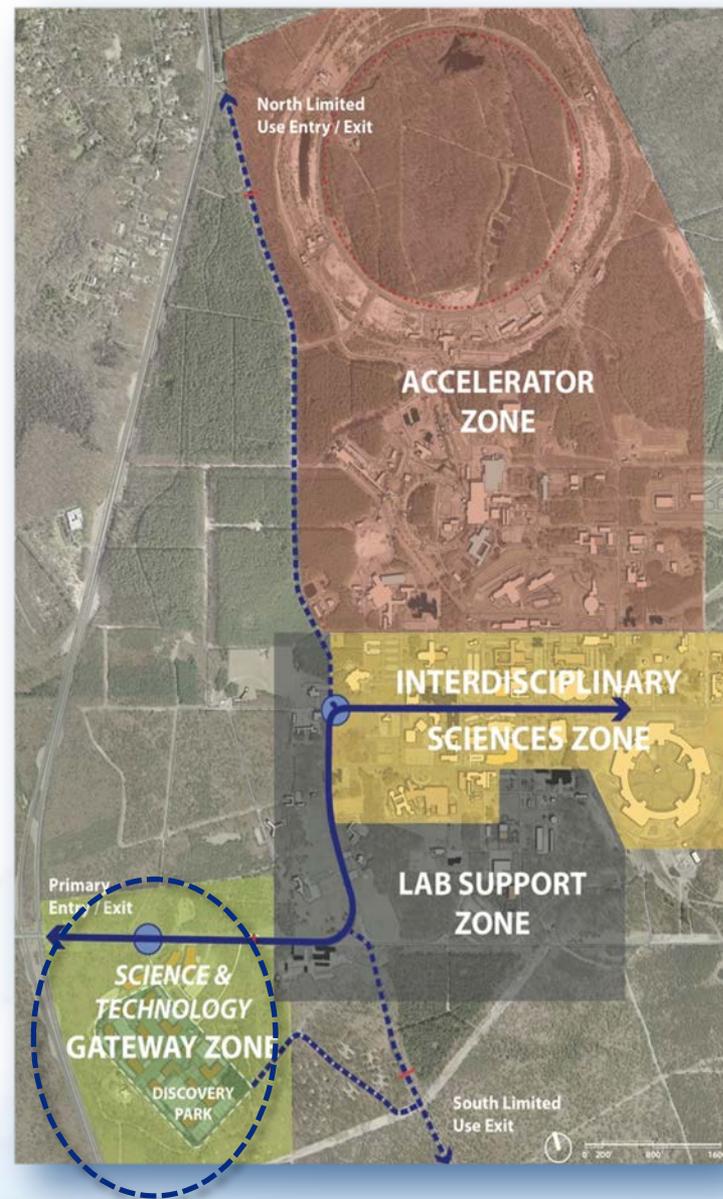
## Private Partnership Lease

*Discovery Park*



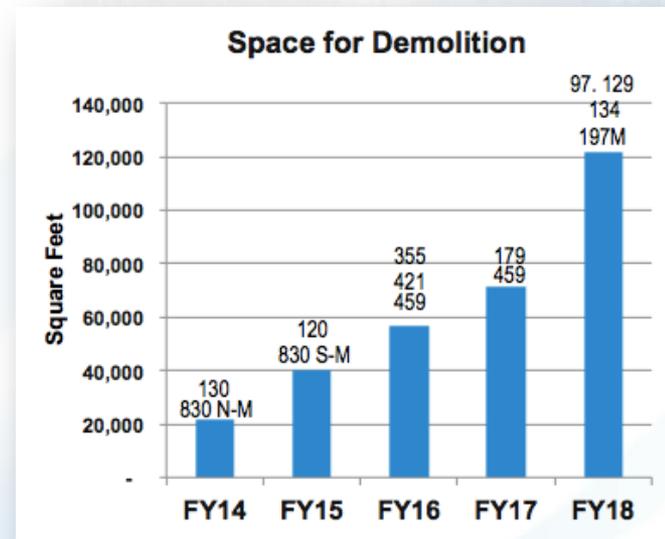
# Discovery Park – A Transformative Project

- Envisioned as a joint land use partnership with New York State and Long Island’s local and regional government, as well as private industry
- Discovery Park will enhance the DOE’s investment and assets at Brookhaven National Laboratory and position BNL as a valued and visible community partner
- Discovery Park will leverage assets and needs in several critical areas
  - Laboratory Revitalization
  - Guest and User Services
  - Energy Science and Technology
  - Next Generation Workforce Development
  - Discovery to Deployment Partnerships



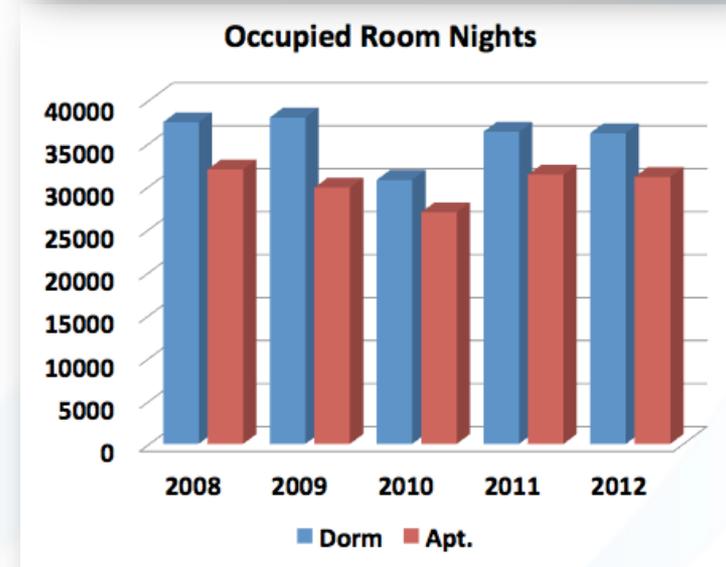
# Laboratory Revitalization

- One in four BNL office occupants reside in World War II-era facilities
- Discovery Park's Administrative Office Building can leverage private-sector shared resources
- Migrating to modern administrative offices will provide a more sustainable operation and an estimated 35 percent footprint reduction
- Elimination of legacy buildings will eliminate millions of dollars of growing functional, maintenance, health and safety, and fire protection legacy



# Guest and User Portal

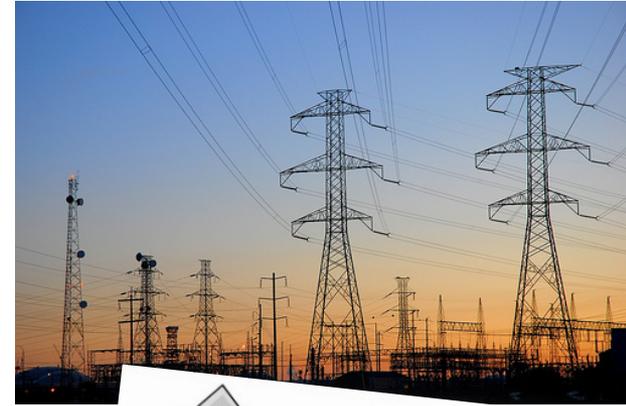
- The current and expanded major facilities (NSLS to NSLS-II and RHIC to eRHIC) attract over 4,000 machine users from across the world each year and user facility demand is projected to expand by 50 percent
- A critical demand exists for “dorm style” user facility accommodations that are conventionally co-located and integrated with BNL’s research operations and facilitate an unmatched scientific community



Averaging 68,000 room nights per year over last five years

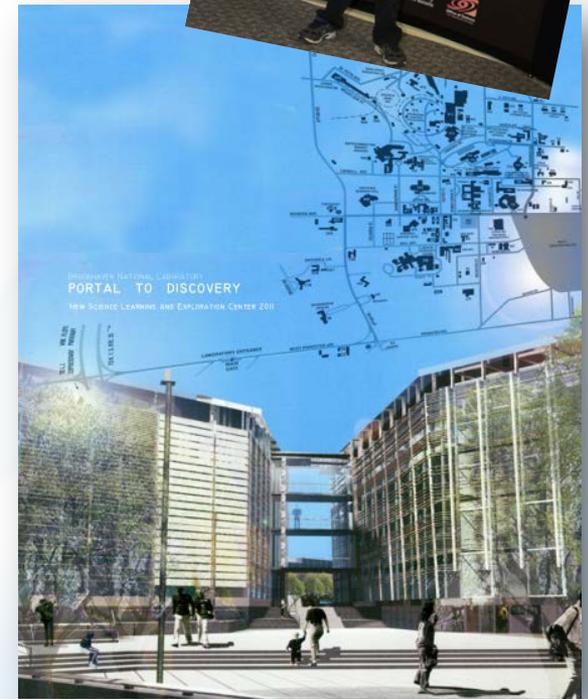
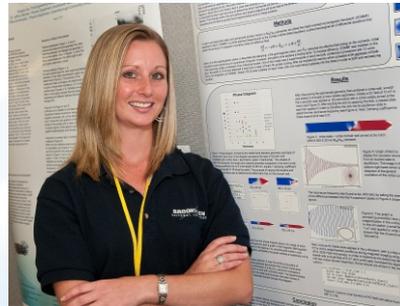
# Regional Energy Science & Technology Center

- BNL's role in solving regional and national energy problems brings a variety of capabilities, including the 32MW Long Island Solar Farm and BNL's Microgrid as an inherent 'Lab Plant' research tool for grid research
- Discovery Park will include the Advanced Electric Grid Innovation and Support (AEGIS) Center for electric network monitoring, analysis, and modeling creating a significant tool for the Northeast region
- Broad regional partnerships with DOE and BSA will provide support



# Next Generation Workforce Development

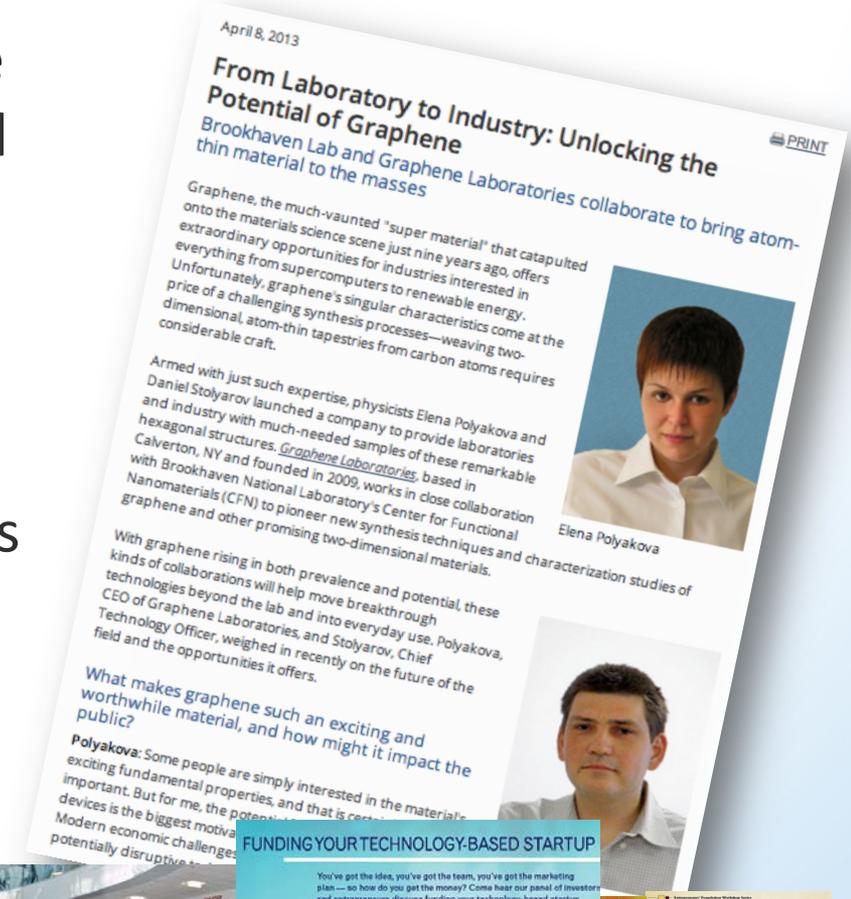
- As an anchor for Discovery Park, the **Portal to Discovery** provides a new hands-on science educational capability for substantially expanding the current 40,000+ students/year
- In addition to STEM education, the facility serves as an iconic entrance, visitor processing, outreach, scientific “Summer School,” and service facility, available for community use
- Funding for the Portal to Discovery will be leveraged by developing partnerships with local not-for-profit organizations and the DOE



[www.Portaltodiscovery.org](http://www.Portaltodiscovery.org)

# Discovery to Deployment Partnerships

- Discovery Park can provide space for new businesses and industrial partnerships in immediate proximity to the scientific engine and user facilities of BNL
- BNL has the track record and the expertise to connect technologies and entrepreneurs to sources of capital, service providers, manufacturing, and market channels



**ACCELERATE!!**  
a committee of the LIA



Long Island Energy and Life Sciences  
Technology Opportunity Showcase with  
Special Guest Speaker Senator Charles Schumer

**Intellectual Property**

**America's Next Top Energy Innovator Challenge:**  
Brookhaven Lab promotes licensing its technologies to start-ups



# Infrastructure Renewal, Revitalization, and Repurposing



Existing



Proposed

## Development Characteristics

- 40 acres
- 730,000 SF
- 1,000 - 1,500 occupants

## Features

- 1 Traffic circle / roundabout
- 2 Portal to Discovery
- 3 New security gate
- 4 200K GSF Lab/Admin. Buildings
- 5 Danish House (Conf./Retreat)
- 6 AEGIS Facility
- 7 Child Development Center
- 8 30K GSF Research Lab
- 9 Visitor/user/guest housing

## Existing Brownfield Site

- Current facilities are well beyond their expected life cycle and continue to deteriorate.
- Two facilities have already experienced structural failure and have been demolished.
- Housing units range from studios to multi-bedroom apartments, which are not best positioned to meet the laboratories housing strategy.
- BNL has a sustained business of 68,000 room nights per year on average.

## Proposed Improvements

- New, state-of-the-art offices, laboratories, and support facilities.
- Provide revitalized dormitory housing for BNL's unprecedented national and international community of researchers and scientists.
- Visitor and guest processing, amenities, and outreach.
- Revitalized scientific community and atmosphere.
- Integration of existing child development center.
- Expansion space for technology and industry partnerships.

# Infrastructure Renewal, Revitalization, and Repurposing

- Discovery Park will provide a new “Front Door” to the campus, reflecting the world-class scientific research being performed at BNL
- The revitalization of this brownfield site maximizes its potential while respecting the existing environmental characteristics of the campus
- Beyond simply renewing infrastructure, the improvements will refocus the existing site to serve as a modern, expanded gateway to the DOE science capabilities in an open environment
- The development provides the option for non-DOE investment in infrastructure and for increased partnerships and collaboration



View of Portal from Discovery Park



Aerial View of Discovery Park from Northwest



View of Portal from Entry Drive

# Additional Questions and Comments?



View of Portal from Discovery Park



Aerial View of Discovery Park from Northwest



View of Portal from Entry Drive