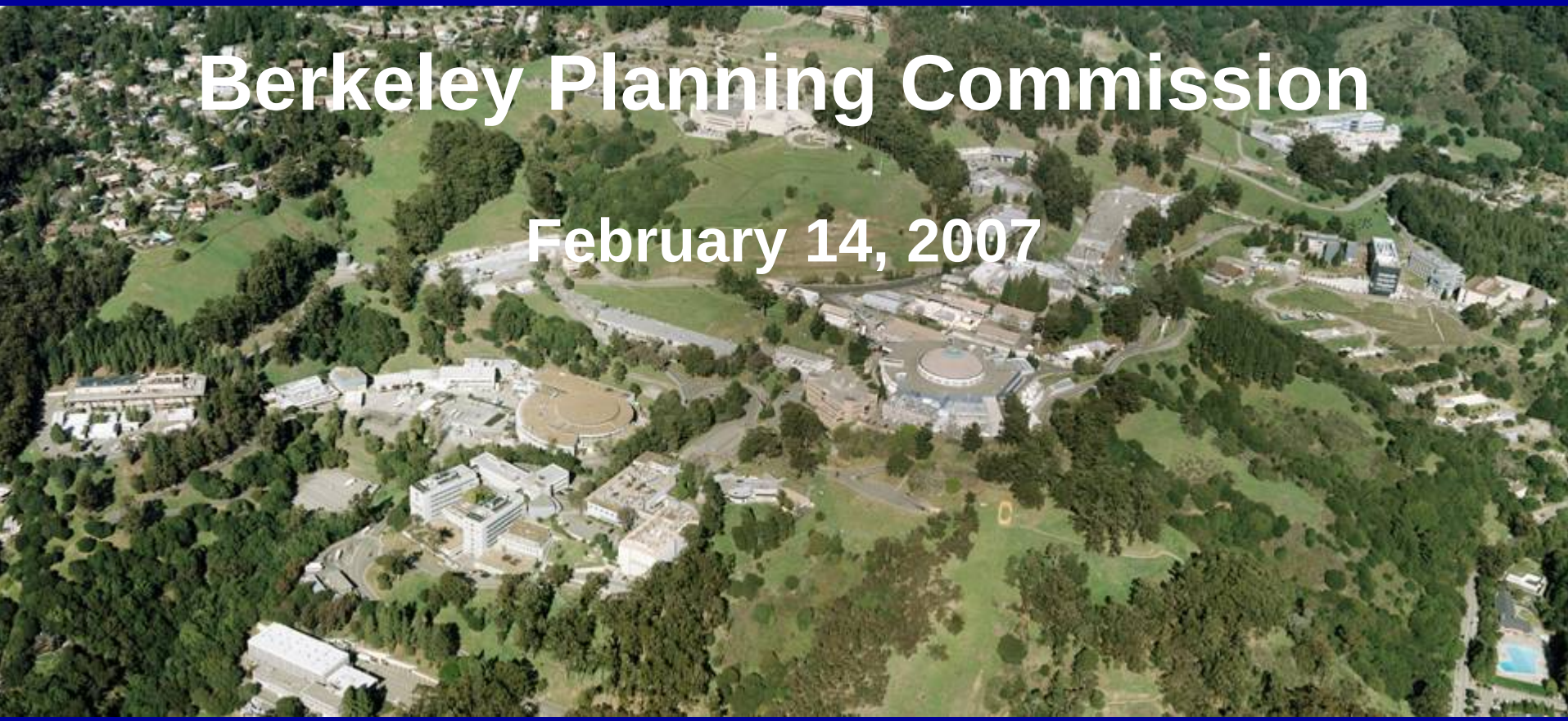
Lawrence Berkeley National Laboratory
Planned Growth



Berkeley Planning Commission

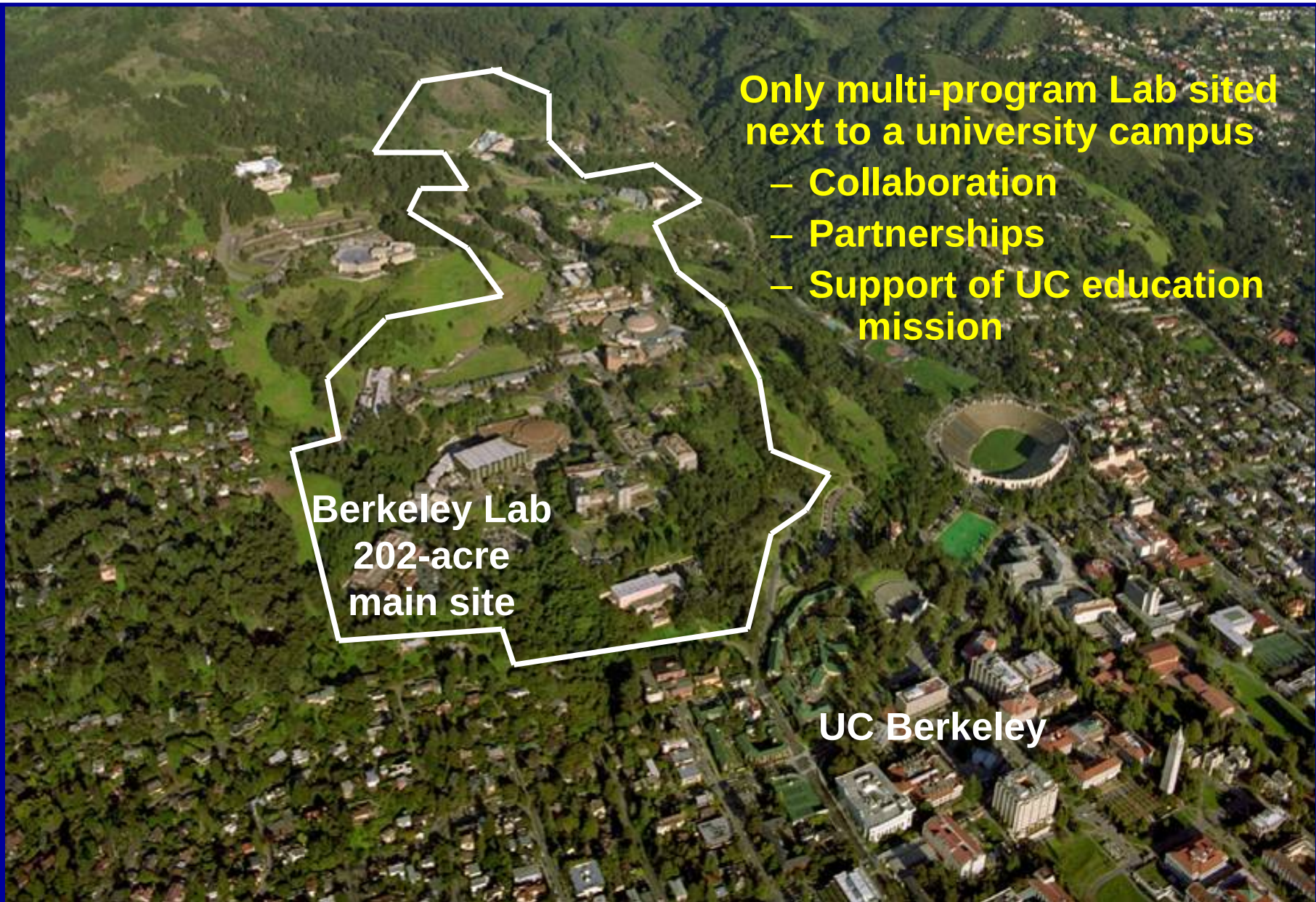
February 14, 2007

Jim Krupnick
Laboratory Project Management Officer

Topics

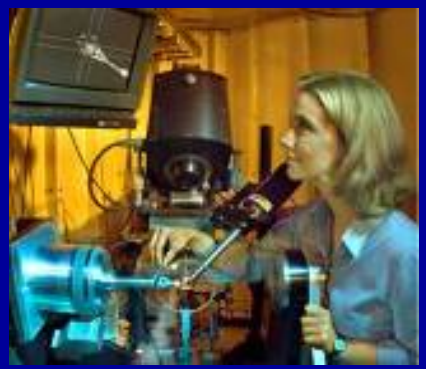
- Background
- Motivation
- LRDP Summary
- Impacts

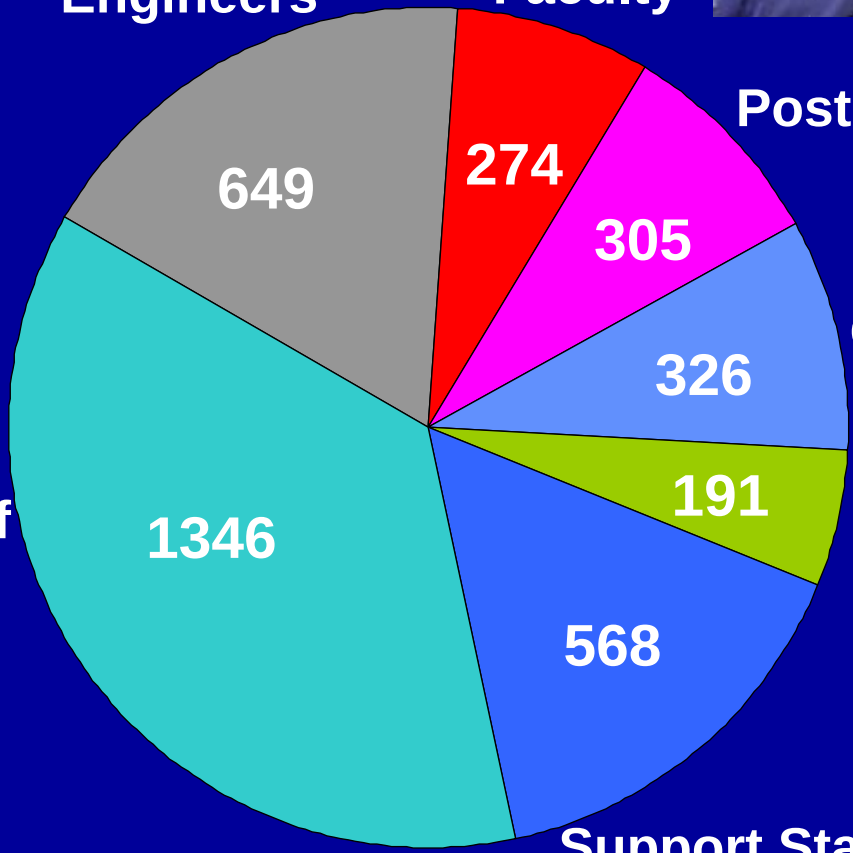
Lawrence Berkeley National Laboratory



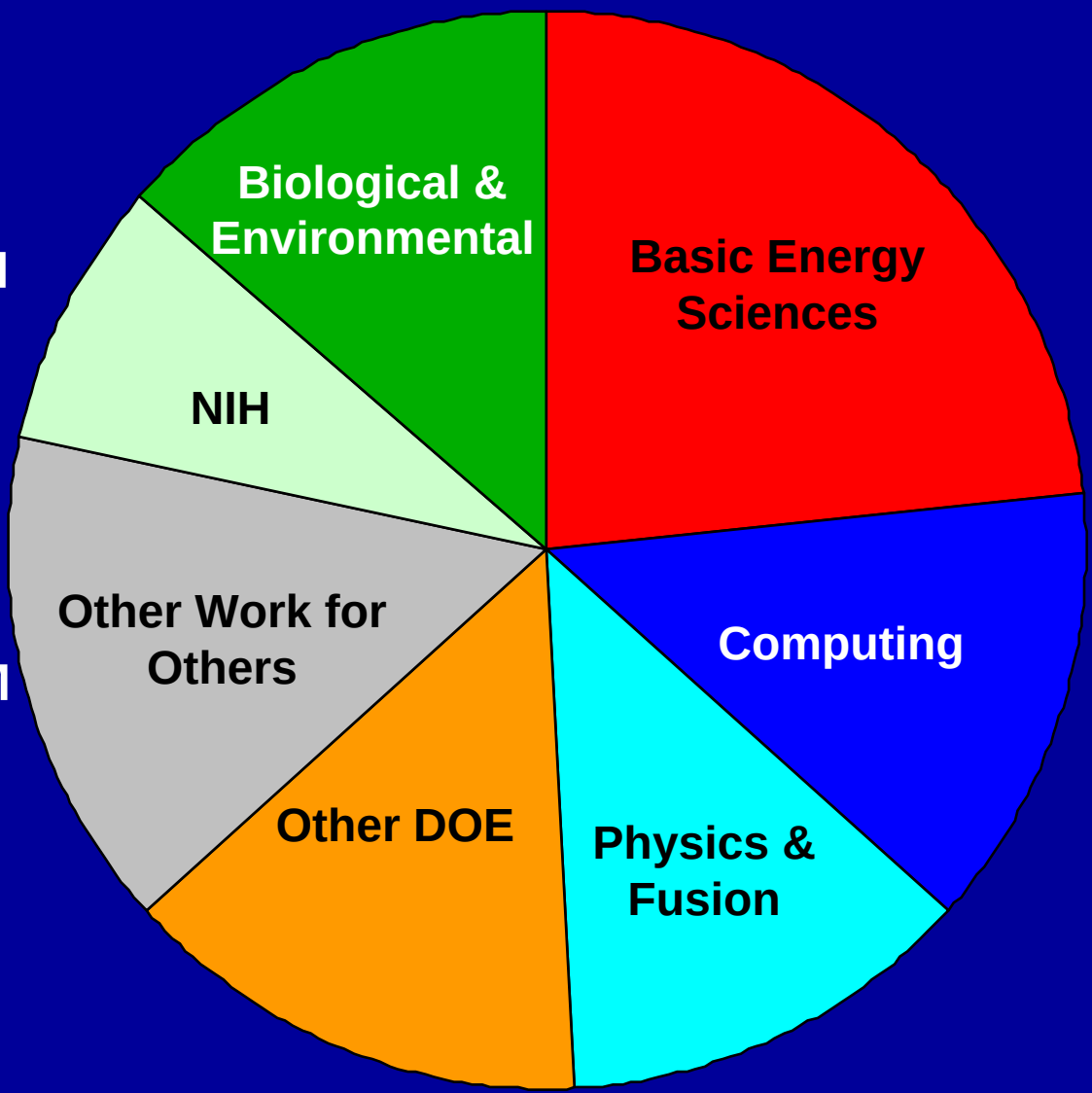
Berkeley Lab Staff (2006)

3,359 staff plus visiting researchers = 4,515 adjusted daily population





FY 2006 Funding: $517M
(approximately 80% Department of Energy)



NIH: $42M

DOE: $397M

Others: $78M

What drives our development? Aging Infrastructure

- **100 buildings and 47 trailers**
  - **36% require modernization or retrofit**
  - **18% not suitable for future use**
- **Life Safety and seismic deficiencies**
- **Unsuitable for modern science**

Trailers

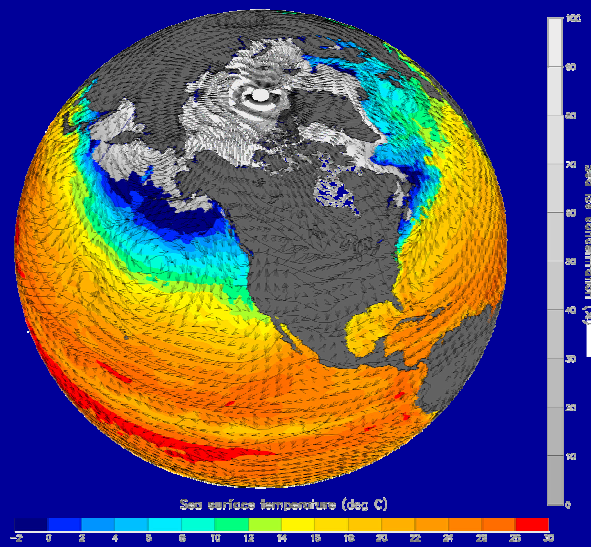
Old Town

Seismic Safety and Functionality

What drives our growth? Science

Helios
Berkeley Lab's attack on the energy problem

Advanced Light Source
National User Facility



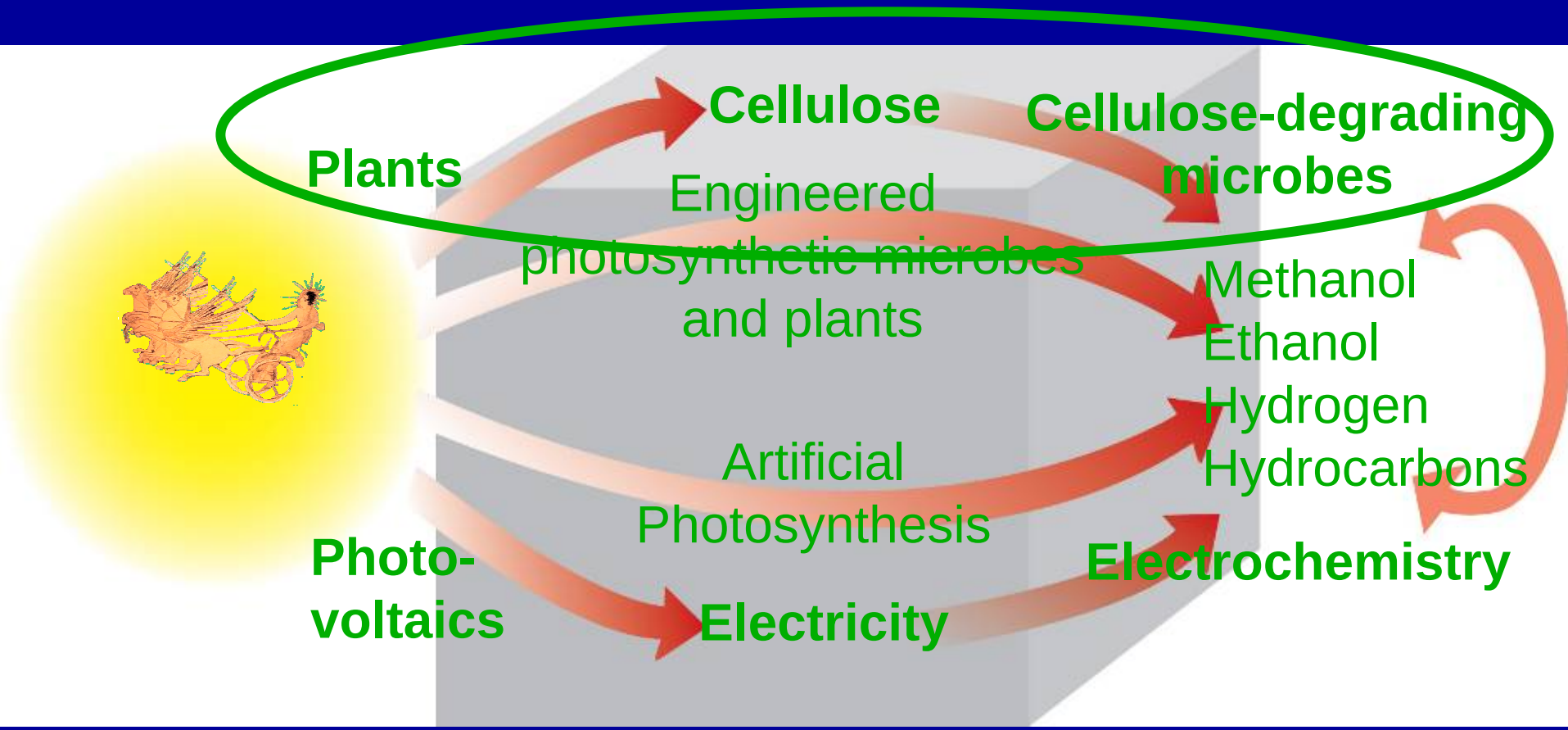
CRT
Computational Research and Theory

Advanced Light Source
(materials and environmental sciences, biology)

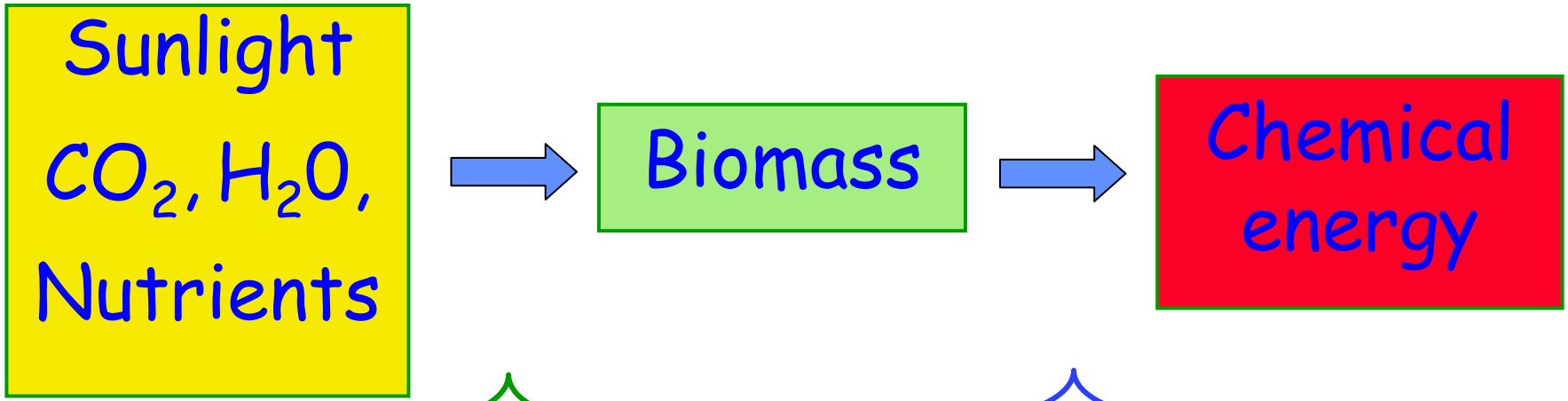
Roger Kornberg, 2006 Chemistry Nobel Prize work was done at the ALS;
Rod MacKinnon, 2003 Nobel Prize, also takes his data here

Buildings to Support Science at the Advanced Light Source

Helios
Berkeley Lab's Attack on the Energy Problem



Sunlight to energy via Bio-mass



More efficient use of water, sunlight, nutrients.

Drought and pest resistant

Improved conversion of cellulose into fuel.

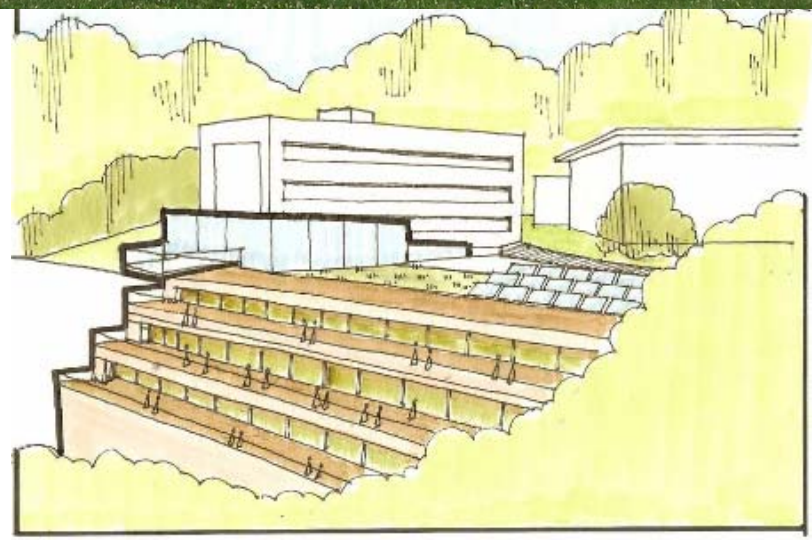
New organisms for biomass conversion.

Feedstock Development

Maximize photosynthesis and productivity

Problem: Feedstock grasses (*Miscanthus* and Switchgrass) are largely unimproved crops

Helios Concept



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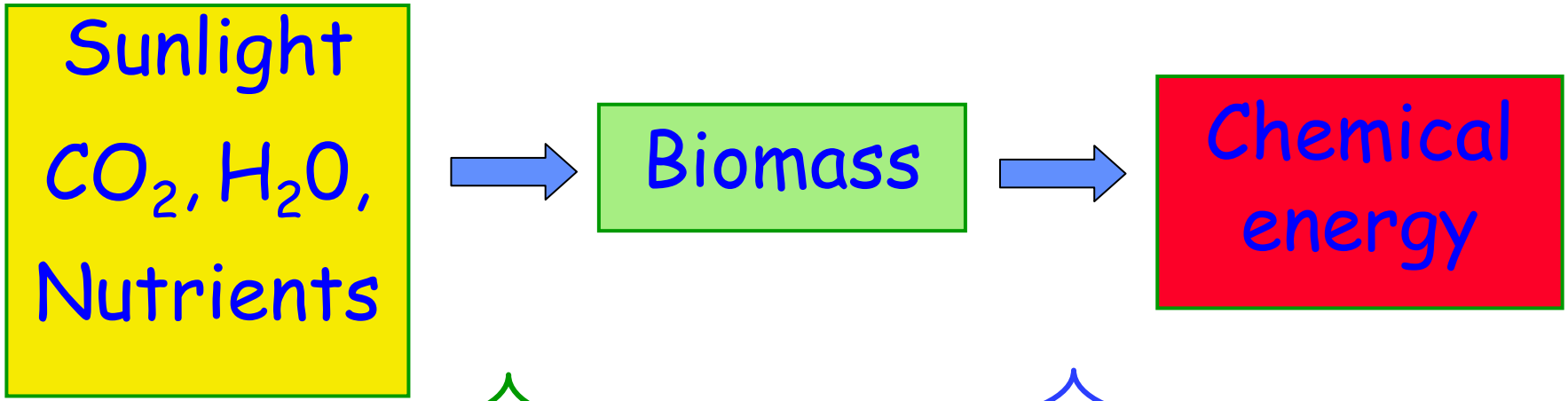


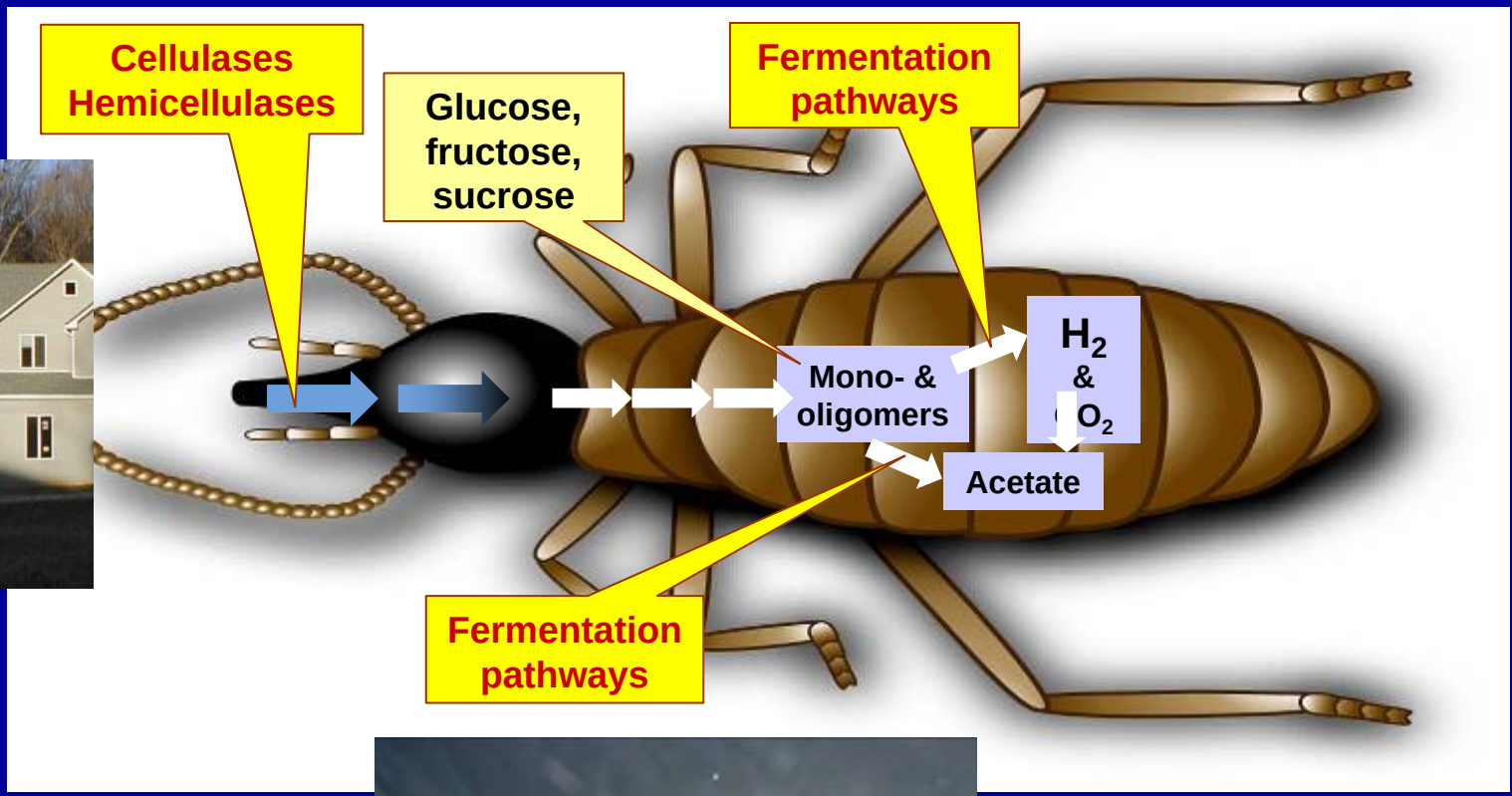
More efficient use of water, sunlight, nutrients.

Drought and pest resistant

Improved conversion of cellulose into fuel.

New organisms for biomass conversion.

Termites have Many Specialized Enzymes for Efficiently Digesting Lignocellulosic Material



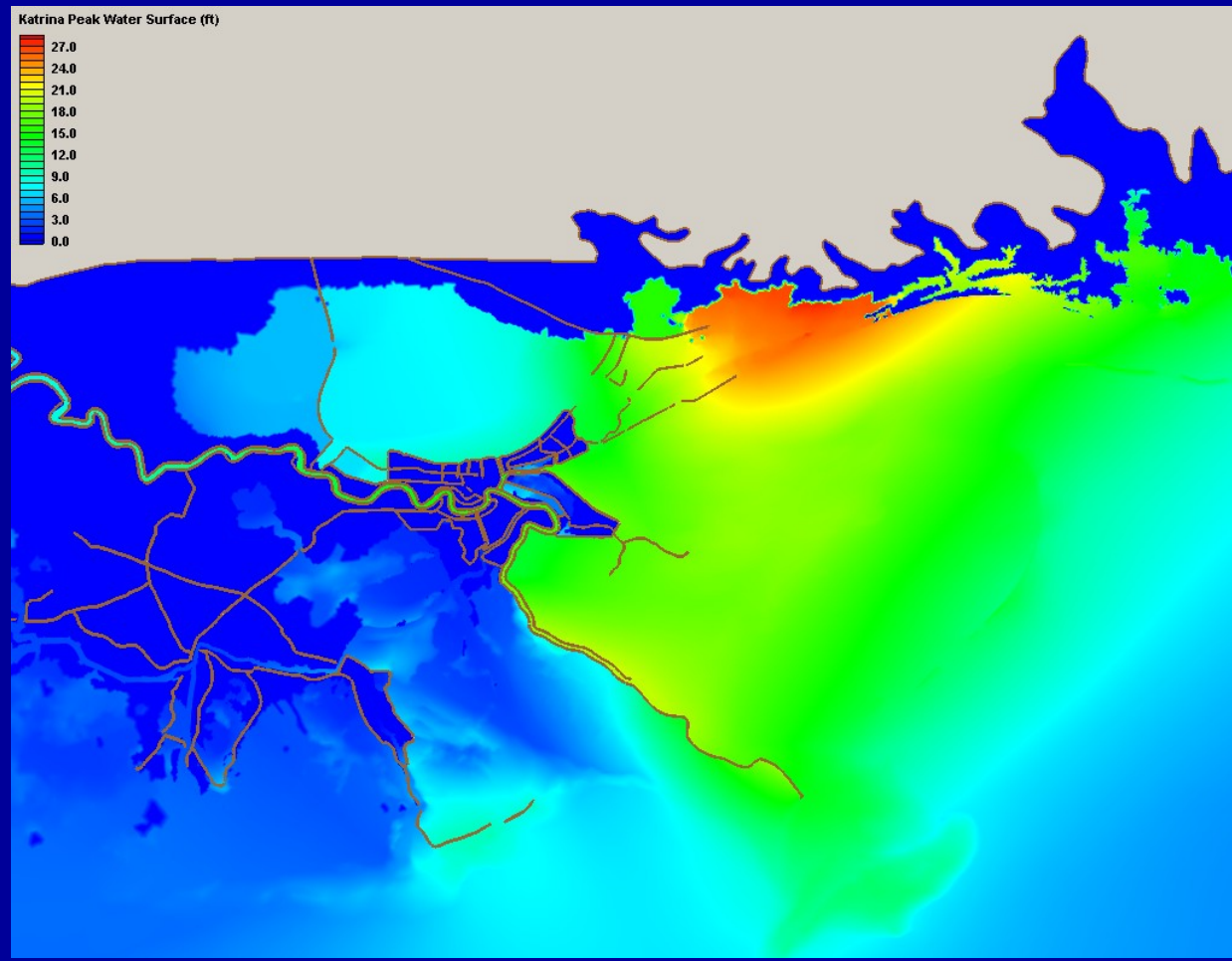
Proposed Computational Research & Theory

The CRT program

- Strengthen the partnership with UCB computational and engineering programs
- Move the NERSC program back to the main site
- 143,000 square feet of computer floor and office space

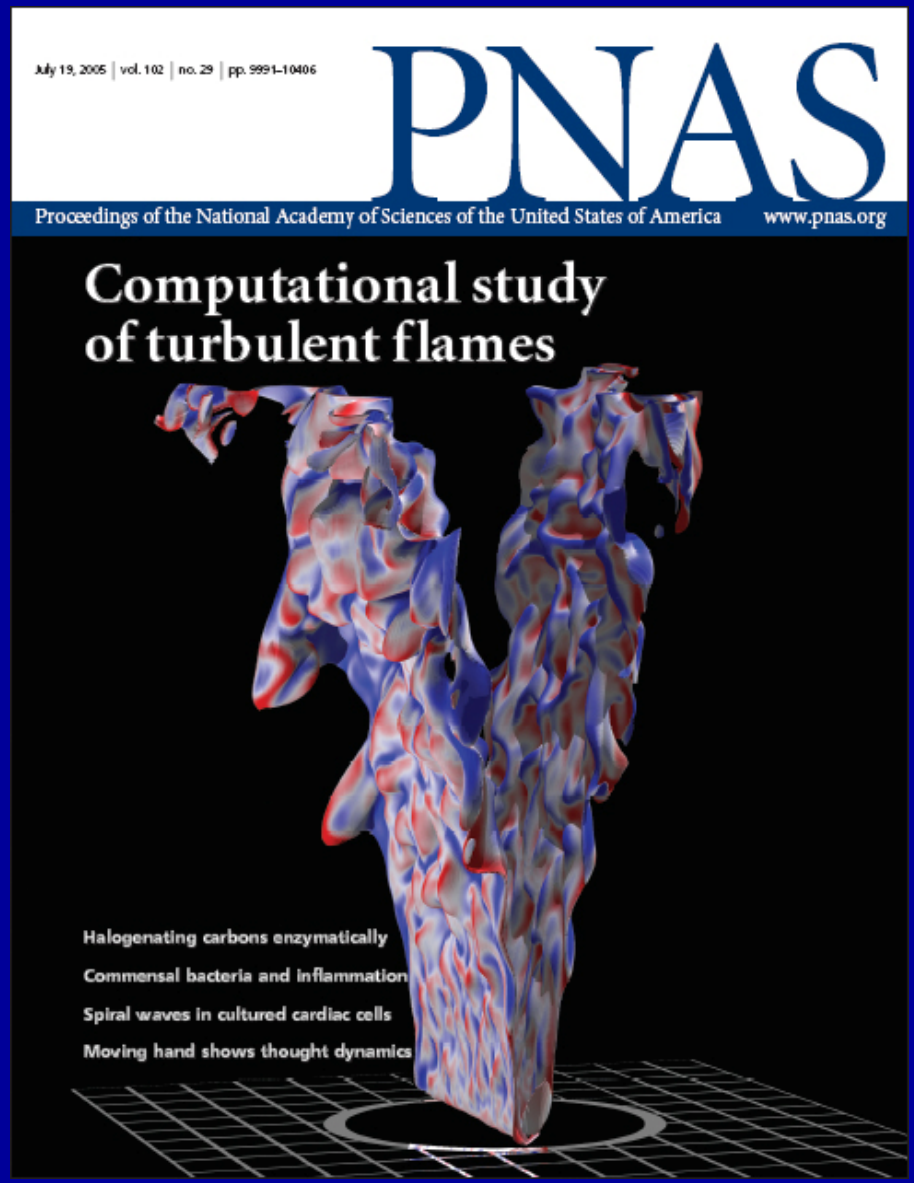
Protecting the Gulf Coast

After Hurricane Katrina, the Army Corps of Engineers used NERSC's supercomputers to study how to rebuild Gulf Coast levees to better protect cities against surging waves driven by hurricanes



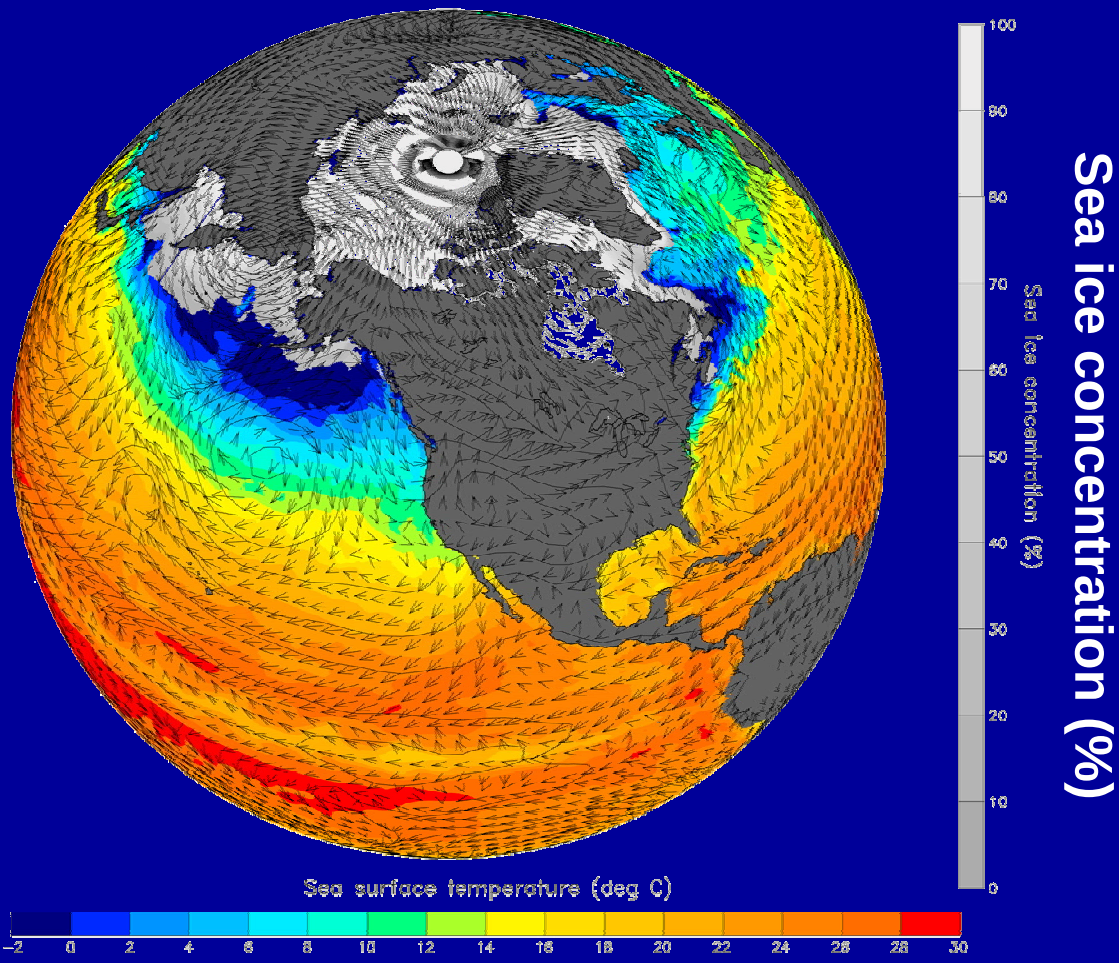
Cleaner, More Efficient Combustion

Berkeley Lab scientists are using supercomputers to create full-scale simulations of lean-burning flames to study how internal combustion devices can be designed to burn less fuel and create fewer pollutants



Assessing Global Warming

NERSC's massive data archive is used to store – and make accessible – one of the world's largest repositories of data used for predicting global climate change



2006 Long Range Development Plan (LRDP)

- Comprehensive physical planning guide for the next 20 years (2006 to 2025)
- Science-driven facilities, modest growth, sustainable development
- Commitment to listen and respond to local concerns
  - Reduced growth in space, population, and parking
  - Transportation demand management (TDM) and follow-up traffic study

Reduced Growth Projections

Original Plan	Occupied space (gsf)	Population	Parking
2003 baseline	1,760,000	4,375	2,300
New construction	1,240,000		
Demolition	(440,000)		
Net increase	800,000	1,150	600
Original Projection	2,560,000	5,525	2,900

Current Plan			
2003 baseline	1,760,000	4,375	2,300
New construction	980,000		
Demolition	(320,000)		
Net increase	660,000	1,000	500
Total	2,420,000	5,375	2,800

Traffic and Transportation Issues

Berkeley Lab will dedicate resources to focus on transportation demand management

Developing new transportation demand management (TDM) plan in coordination with City of Berkeley Transportation Department

- Commitment to minimize peak hour trips:
  - Commuters
  - Trucks (Deliveries/Construction)
- Improved bus use
- Annual monitoring and focused studies of transportation improvements

40% rate of mass transit/carpool use - one of the highest in the Bay Area

Follow-up Comprehensive Traffic Study

Re-evaluate traffic impacts

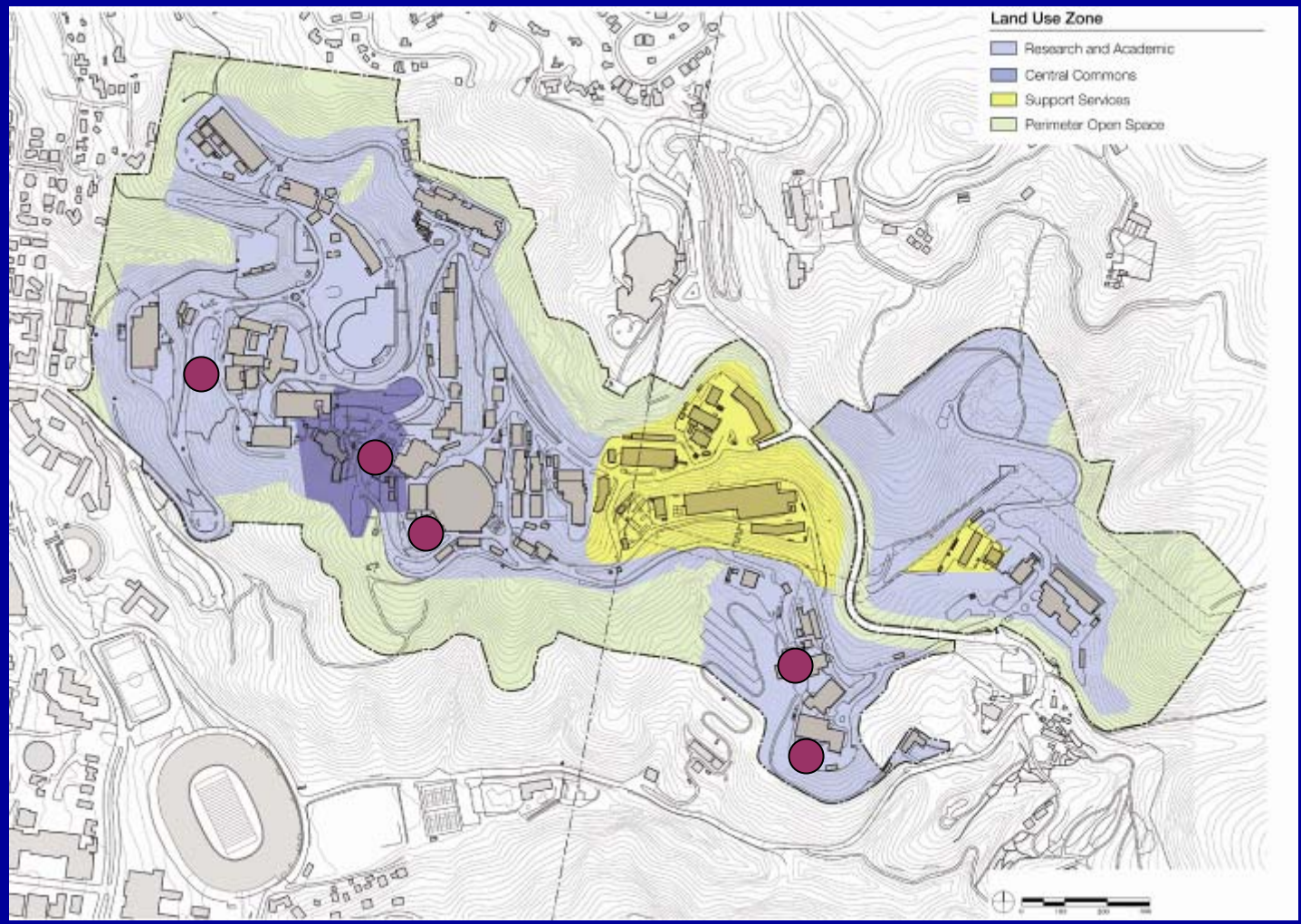
At the earlier of:

- –10 years
- –Cumulative increase of 375 parking spaces above the baseline in 2003

Land Use Plan

Protects natural and visual resources, provides flexibility for siting facilities, minimizes visibility of development

- 28% Perimeter Open Space
- 60% Research and Academic
- 12% Central Commons & Support Services



Planned Growth in an Environmentally Sensitive Way

Rustic hillside landscape - native & non-native vegetation

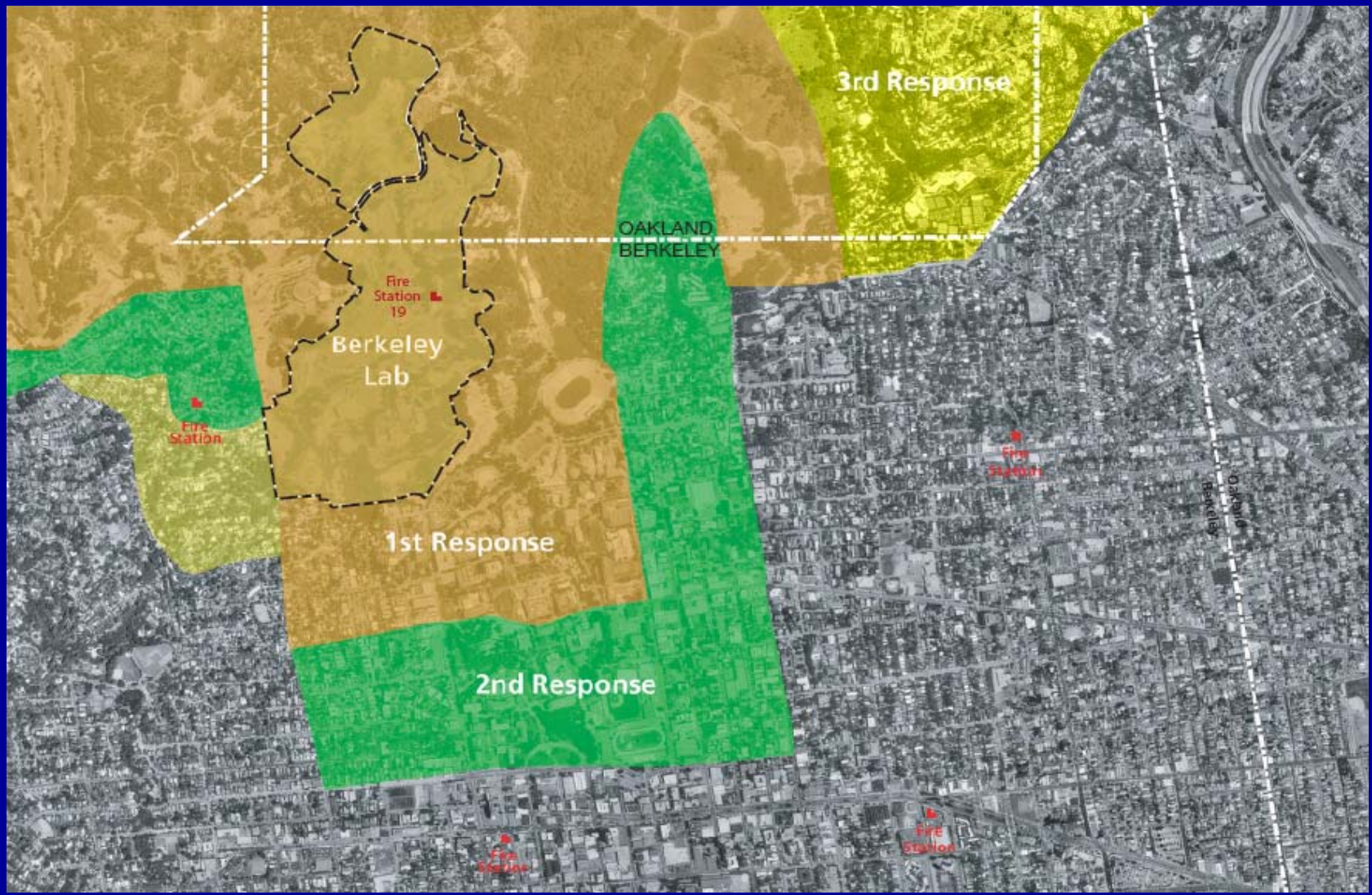
Riparian habitat protected

Filter views with screening trees

Ornamental landscape areas

Goal of reducing vegetation fire load

Coverage Area for Fire Station 19 at Berkeley Lab Automatic Aid District



1st Response Area

Impacts Identified in Draft Environmental Impact Report

Significant and unavoidable environmental impacts

- Aesthetics / visual
- Air quality
- Cultural resources
- Construction noise
- Transportation

2006 LRDP Timeline

- Revised Notice of Preparation issued Nov 2003

- 2006 Draft LRDP & Draft EIR issued Jan 22, 2007
- Review & Comment Period: Jan 22 – Mar 23
- Berkeley Planning Commission Feb 14
- Draft EIR Public Hearing Feb 26

- Seek UC Regents approval July or Sept 2007

Science-Driven Planned Growth

2006 Long Range Development Plan (LRDP)

Questions ?