



BERKELEY LAB / SECOND CAMPUS

Community Presentation

PAUL ALIVISATOS

Lab Director, LBNL
& Professor of Chemistry, UCB

JIM KRUPNICK

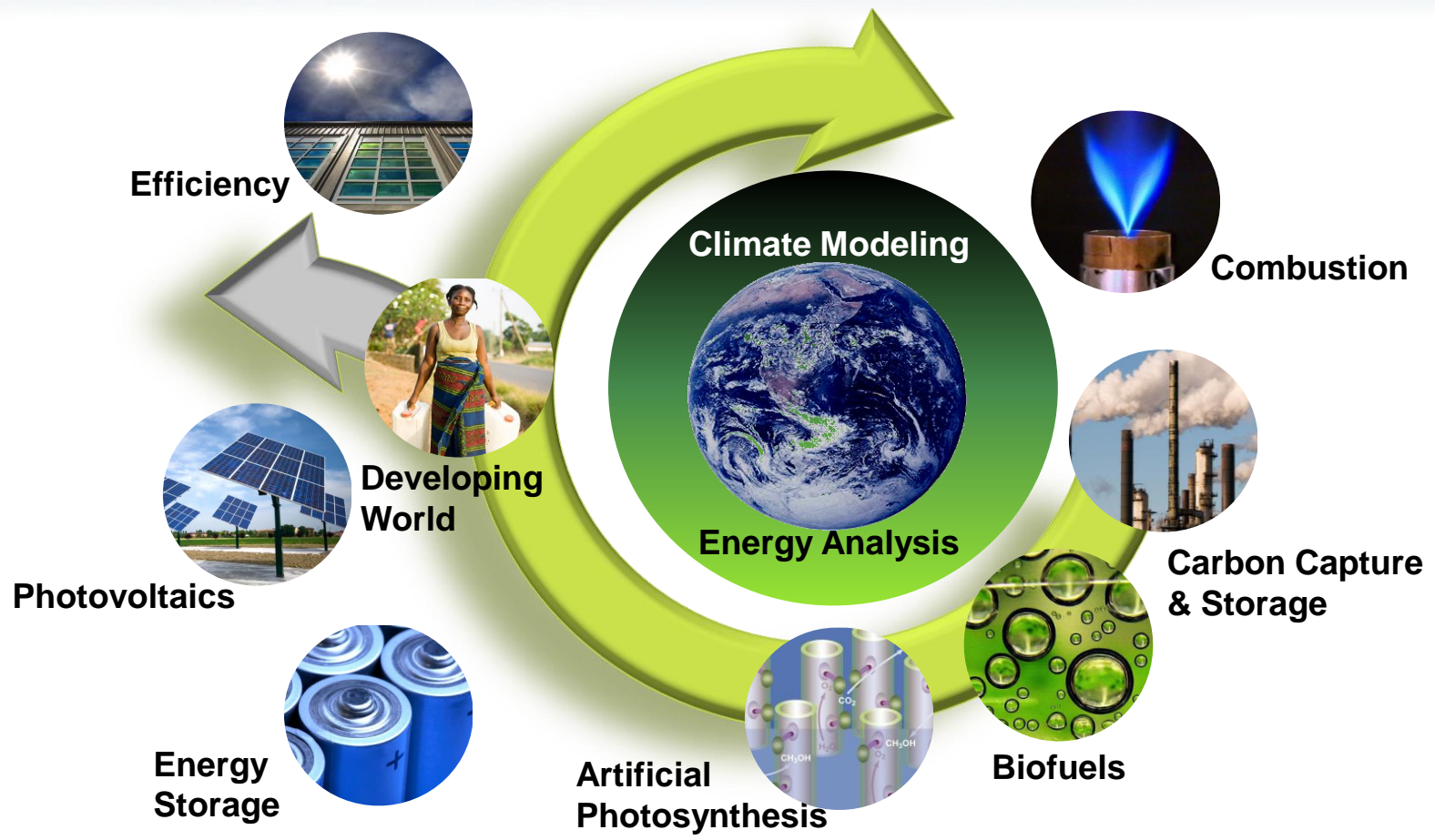
Associate Lab Director, Operations
& Chief Operating Officer

Who Are We?

A National Laboratory that is:

- Inventing the future of energy
- Seeking to deliver solutions to help restore balance to the world's climate and promote energy security
- Developing new energy-efficient technologies
- Exploring the secrets of the universe
- Uncovering the causes of human disease

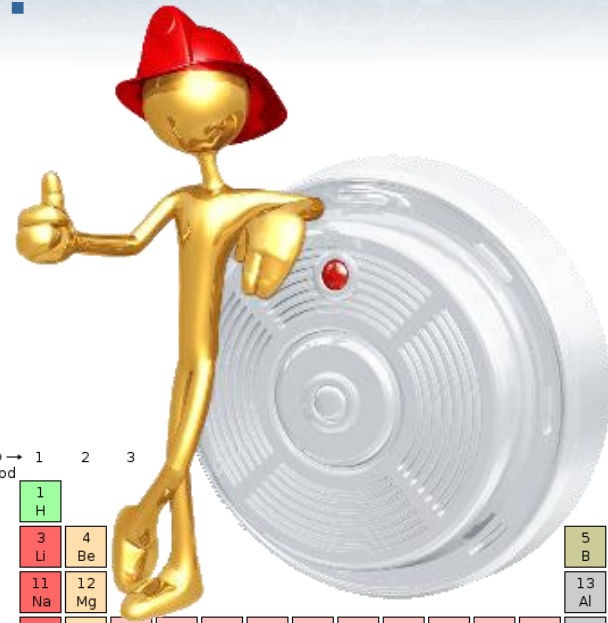
Carbon Cycle 2.0 Initiative



At Berkeley Lab We've:

Discovered sixteen elements

The periodic table would be smaller without Berkeley Lab. Among the Lab's handiwork is an instrumental role in the discovery of technetium-99, which has revolutionized the field of **medical imaging**. There's also americium, which is widely used in **smoke detectors**.



Group →	1	2	3										14	15	16	17	18	
↓ Period	1	2	3															2
1	1 H																	2 He
2	3 Li	4 Be											5 B	6 C	7 N	8 O	9 F	10 Ne
3	11 Na	12 Mg											13 Al	14 Si	15 P	16 S	17 Cl	18 Ar
4	19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr
5	37 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe
6	55 Cs	56 Ba		72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn
7	87 Fr	88 Ra		104 Rf	105 Db	106 Sg	107 Bh	108 Hs	109 Mt	110 Ds	111 Rg	112 Cn	113 Uut	114 Uuq	115 Uup	116 Uuh	117 Uus	118 Uuo
	Lanthanides			57 La	58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu
	Actinides			89 Ac	90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No	103 Lr

At Berkeley Lab We've:

Pioneered in energy efficiency, saving Americans over \$7 billion this year, growing to \$18 billion per year by 2030

Thanks in part to a series of efficiency standards researched by Berkeley Lab, average energy consumption of U.S. refrigerators dropped 74% between 1974 and 2001.



At Berkeley Lab We've:

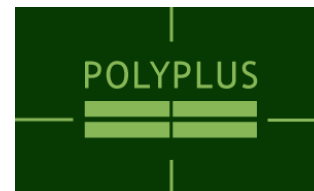
Pioneered medical imaging

In the 1950s, Berkeley Lab's Hal Anger developed a scintillation camera that enabled physicians to detect tumors by imaging gamma rays emitted by radioactive isotopes. The camera that bears his name evolved into modern imaging systems, such as PET, which enable doctors to detect many diseases early enough to save patients' lives.



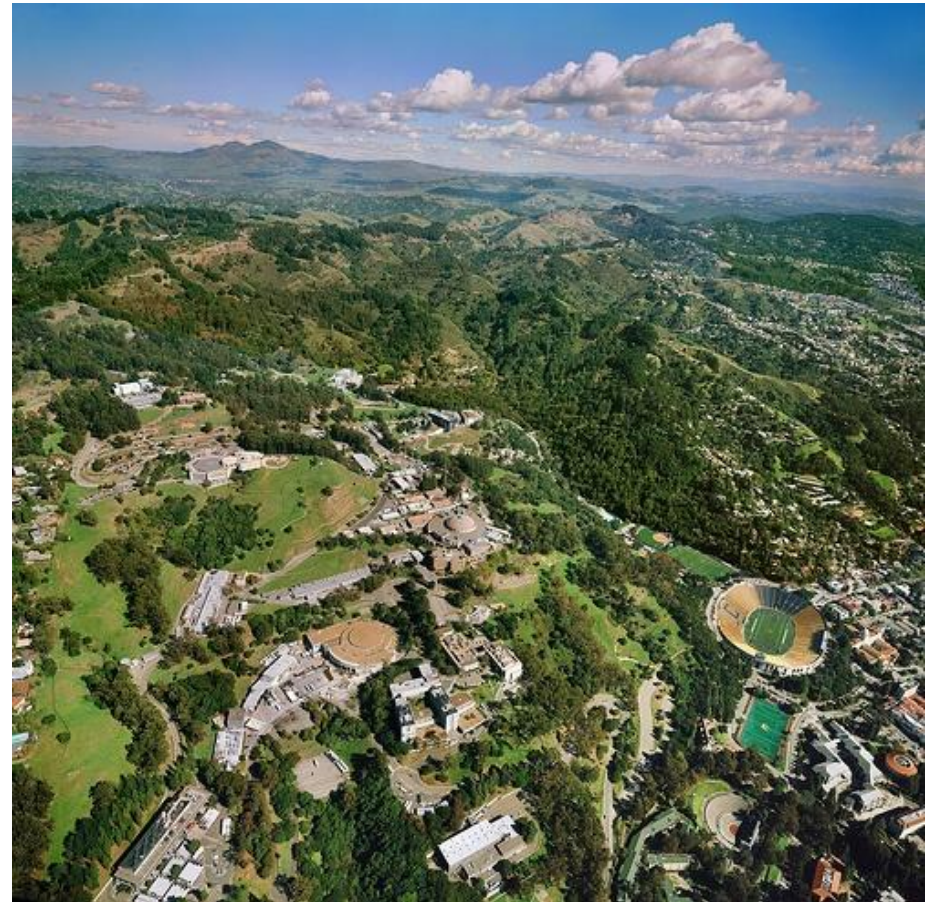
How Do We Help Grow the Economy?

- \$690 million annual contribution to the Bay Area economy
- Over 30 companies created based on Lab technology



Lawrence Berkeley National Laboratory

- 12** Nobel Prizes
- 55** Nobel Laureates either trained here or had significant collaborations with our Laboratory
- 13** National Medal of Science winners
- 4200** Employees
- 800** University students trained each year



Berkeley Lab Science Focus Areas



BIOSCIENCES



ENERGY & ENVIRONMENTAL SCIENCES



PHOTON SCIENCES



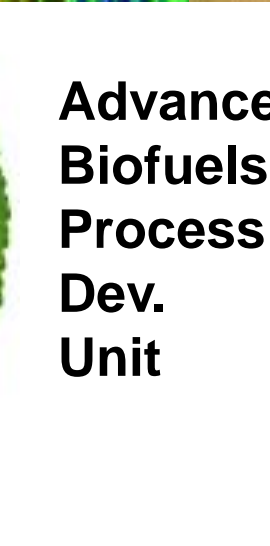
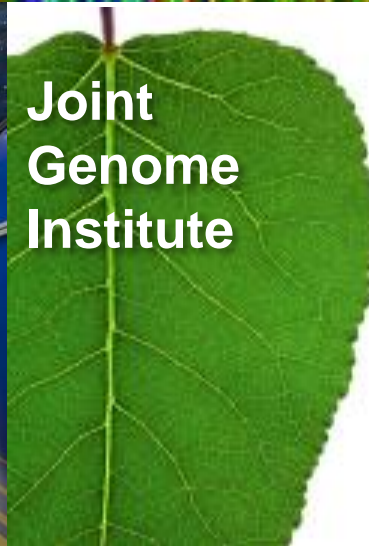
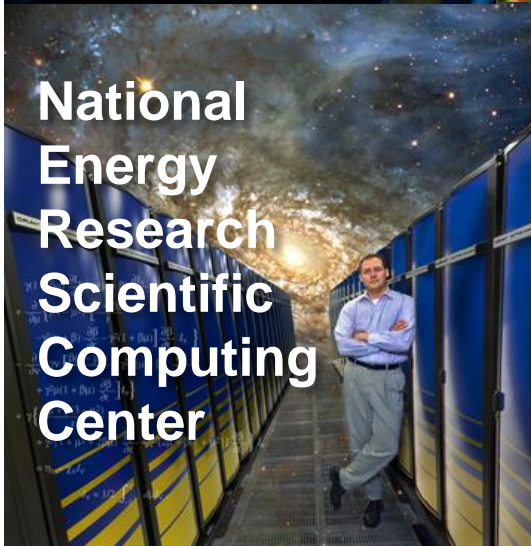
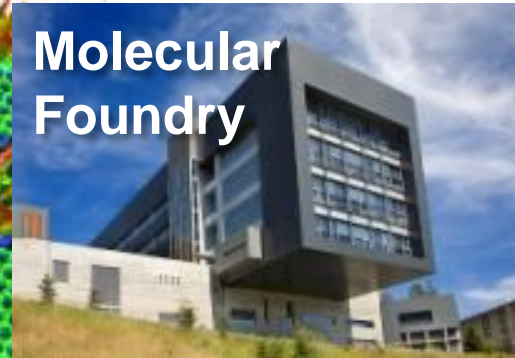
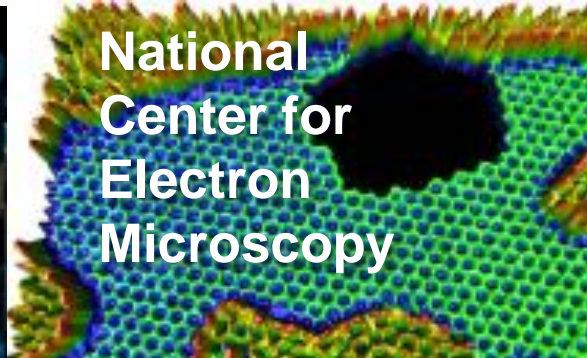
COSMOLOGY & PHYSICS



COMPUTING SCIENCES

Berkeley Lab National User Facilities

Serving over 6,000 users each year



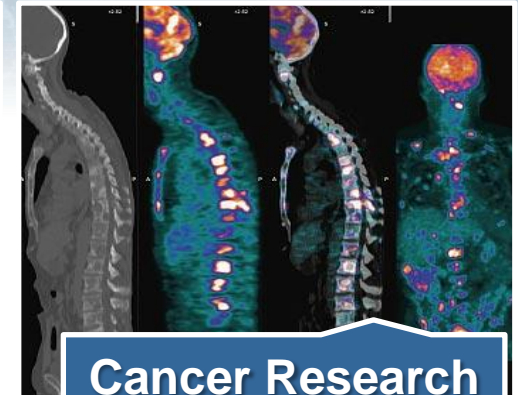
Imagining Future Scientific Facilities

As stewards for Berkeley Lab, UC scientists are imagining future facilities for research, in areas such as:

- Photon science
- High energy physics
- Medical research
- Scientific computation



Photon Science Facility



Cancer Research Facility



High Energy Physics Facility

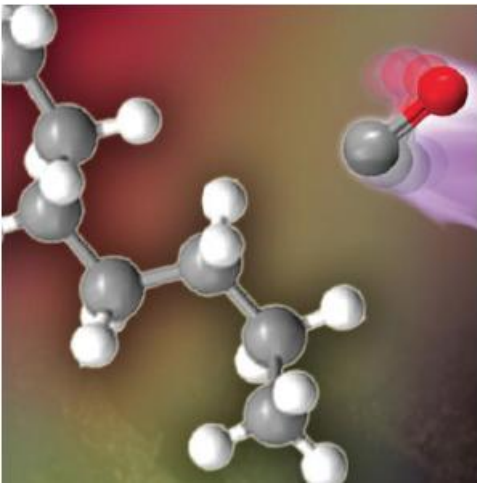


Supercomputing Center

Imagining a Future Photon Science Facility

A new kind of “microscope” could allow us to see things that are extremely small and extremely fast, permitting us to explore new ways to make:

- Clean fuel from the sun
- Better and cleaner ways to store and transport energy
- Biological systems to improve healthcare



Impact on the Developing World



Investment in Science Education

- Nano High
- Science workshops and Lab visits for grade schoolers
- Research internships for East Bay high school students, community college students, and science teachers
- Scientist visits to East Bay classrooms and provided science curricula for local schools



Community Advisory Group



- Meets every two months
 - Topics have included:
 - Transportation
 - LBNL Geology
 - 2nd Campus
 - Lab Sustainability
- Next meeting September 22
<http://www.lbnl-cag.org/>

Second Campus



Oakland

Alameda

Emeryville

Berkeley

Albany

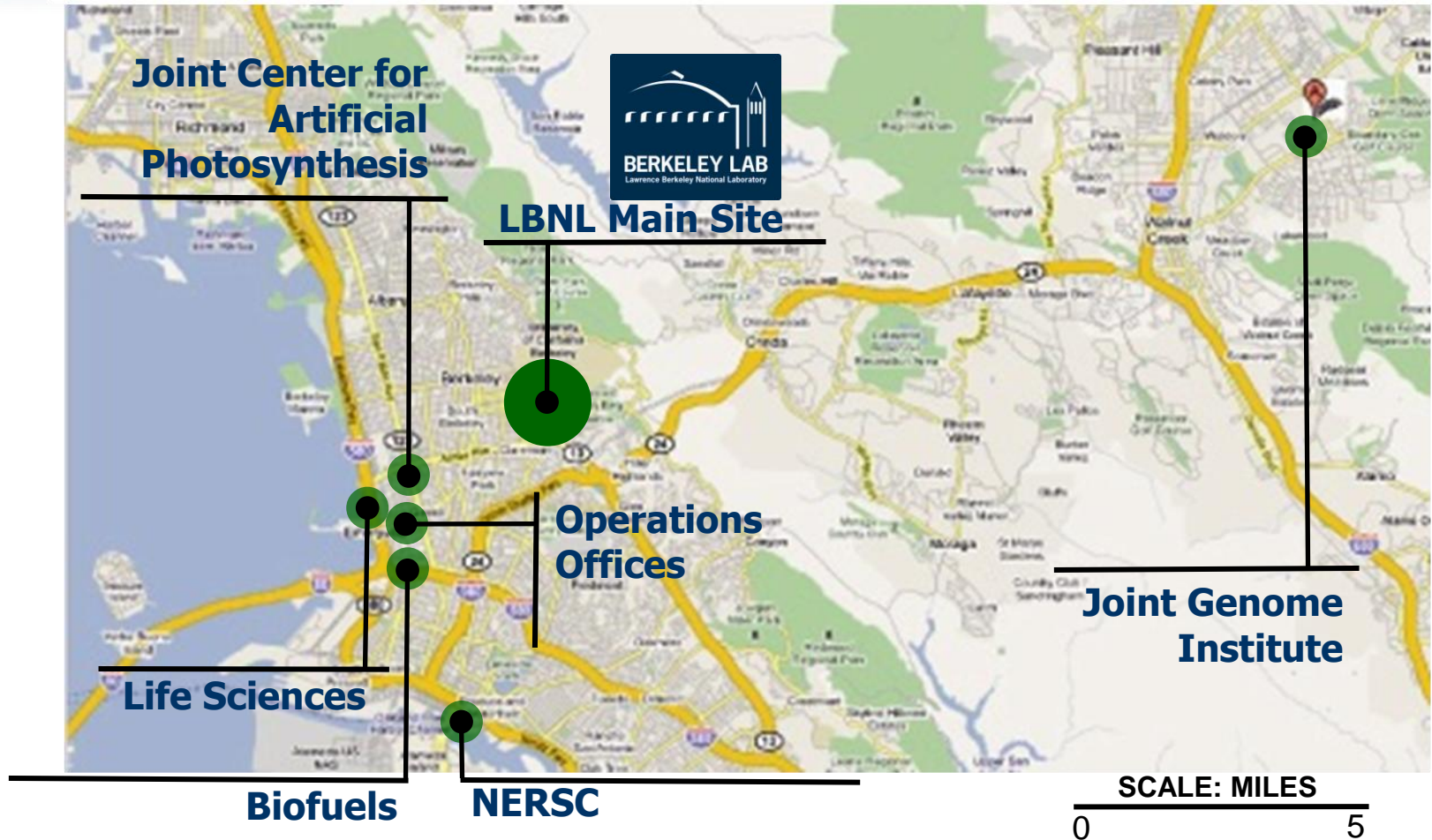
Richmond



Topics

- Strategic Need for Second Campus
- Site Characteristics
- Sites Under Evaluation
- Path Forward

Approximately 25% of Lab Facilities are Offsite



Strategic Need:

Consolidate programs from leased facilities and provide space for future growth at a site in the East Bay

Enabling LBNL to:

- Reduce barriers to scientific collaboration
- Provide more science at lower cost
- Host future scientific programs



Starting point for Second Campus: Consolidation of existing biosciences programs



BIOFUELS
Emeryville
(~115,000 GSF)



LIFE SCIENCES
West Berkeley
(~230,000 GSF)

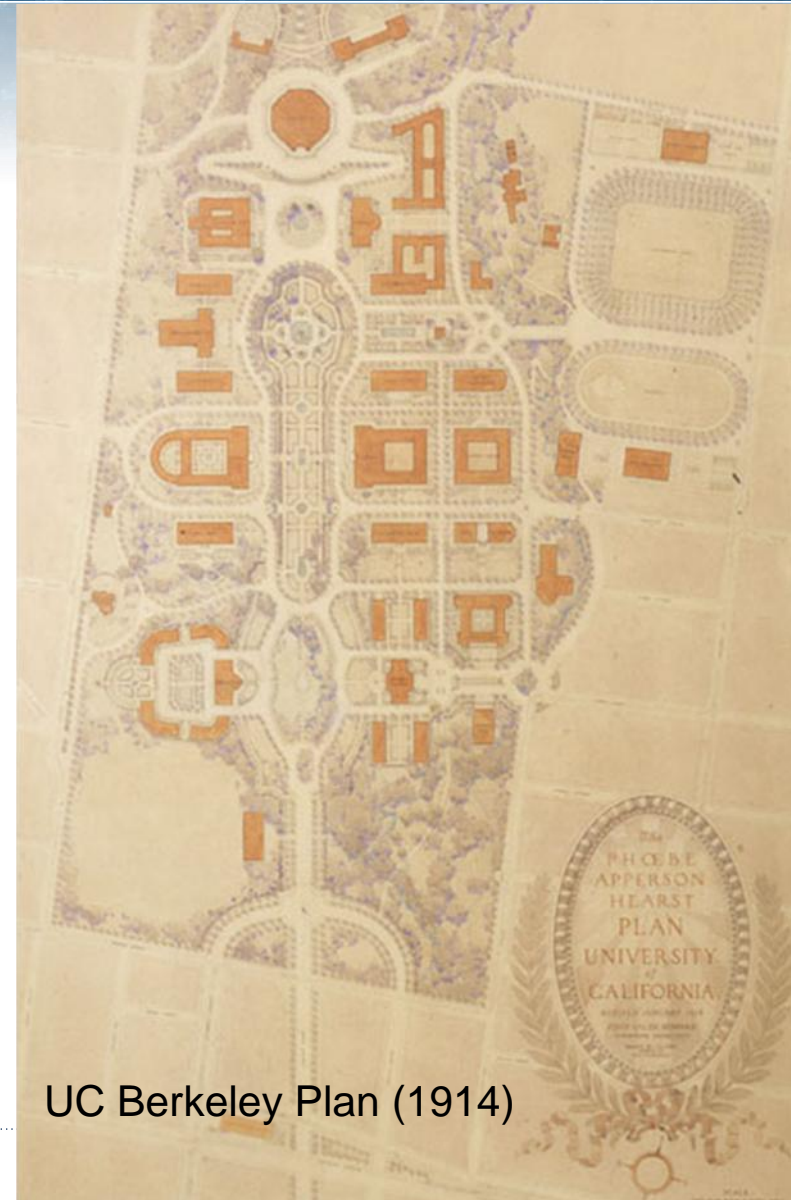


JOINT GENOME INST.
Walnut Creek
(~130,000 GSF)

Total Gross Square Feet about 475,000

Site Characteristics

- World-class research environment
- Proximity to LBNL main site
- Sustainable development
- Compatible with surrounding neighborhoods and amenities
- 2M square feet of total capacity
- Welcoming community
- Minimal environmental remediation needed
- Low-vibration environment
- Public transit availability
- Low development costs
- Lower cost utilities
- Open site with a campus atmosphere



UC Berkeley Plan (1914)

Second Campus Sites Under Evaluation

Richmond Field Station

Albany/Berkeley
Golden Gate Fields

Berkeley Aquatic Park West

Berkeley Aquatic Park
Emeryville EmeryStation

Oakland Brooklyn Basin

Alameda Point



Public Meetings Schedule

Date	Site	Location	
Jul 13	Alameda Point	Auctions by the Bay Theater	7:00pm
Jul 14	LBNL Community Advisory Group	North Berkeley Senior Center	6:00pm
Jul 21	Richmond Field Station	Richmond Memorial Aud.	7:00pm
Jul 27	Brooklyn Basin	Jack London Aquatic Center	7:00pm
Aug 3	Golden Gate Fields	Albany High School Gymnasium	7:30pm
Aug 4	Aquatic Park West	Frances Albrier Comm. Center	7:00pm
Aug 8	Emeryville/EmeryStation/Berkeley	Hilton Garden Inn, Emeryville	7:00pm
Sep 22	LBNL Community Advisory Group	North Berkeley Senior Center	6:00pm

Summary Schedule

- Community outreach
- Due diligence on short-listed sites
- Announce preferred site – November 2011
- Environmental review – 2012 through 2013
- Construction – 2014 through 2016
- Occupancy – 2016

80 Years of World-Leading Science at Lawrence Berkeley National Laboratory





With a second campus in the East Bay, a new century of exciting science is on the horizon at Berkeley Lab.



**Lawrence Berkeley
National Laboratory**



Thank You