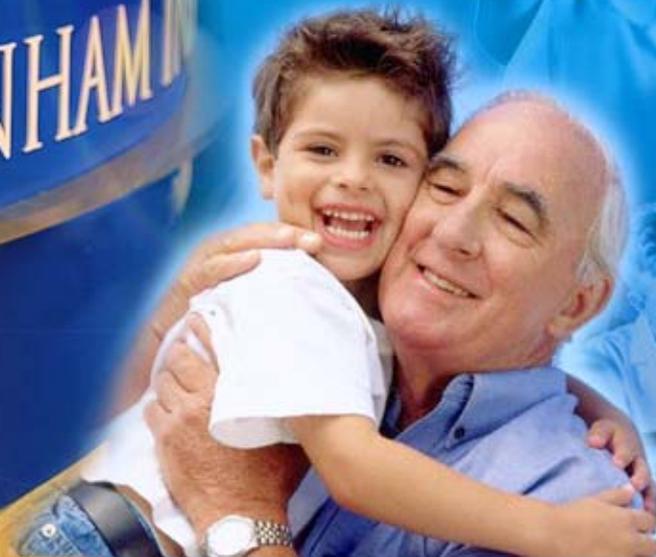


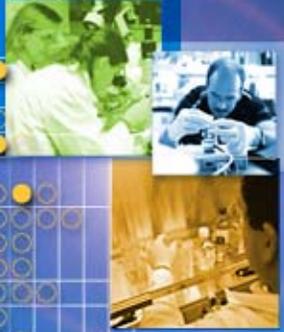
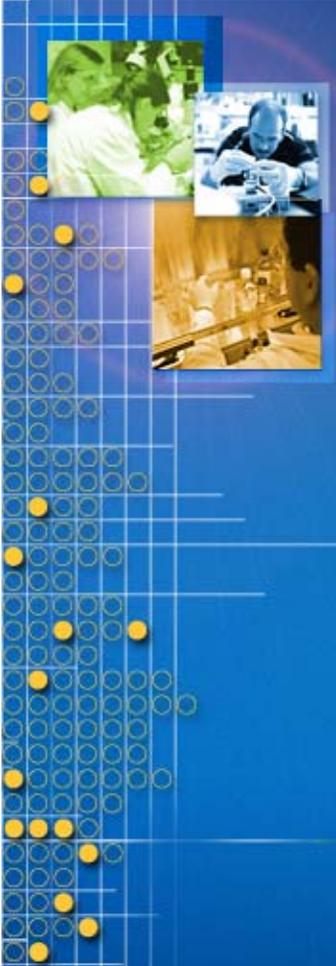


**BURNHAM INSTITUTE
for MEDICAL RESEARCH**

From Research, the Power to Cure

BURNHAM





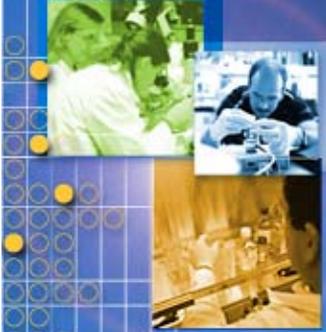
Downtown Orlando Partnership

April 3, 2007

Orlando, FL

Karin Eastham
Executive Vice President and
Chief Operating Officer
Burnham Institute for Medical Research

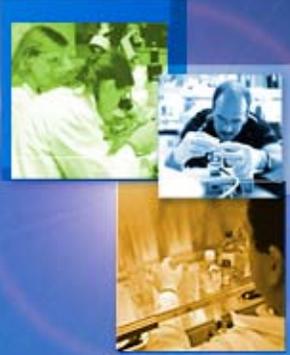
Global Biotechnology at a Glance in 2005



- 30 years old – Genentech founded in 1976
- \$60 billion in annual revenues
- \$20 billion spent on R&D
- Industry is approaching breakeven
- 4,200 companies worldwide (670 public)
- 1,415 U.S. companies (330 public)
- Nearly 300,000 people employed

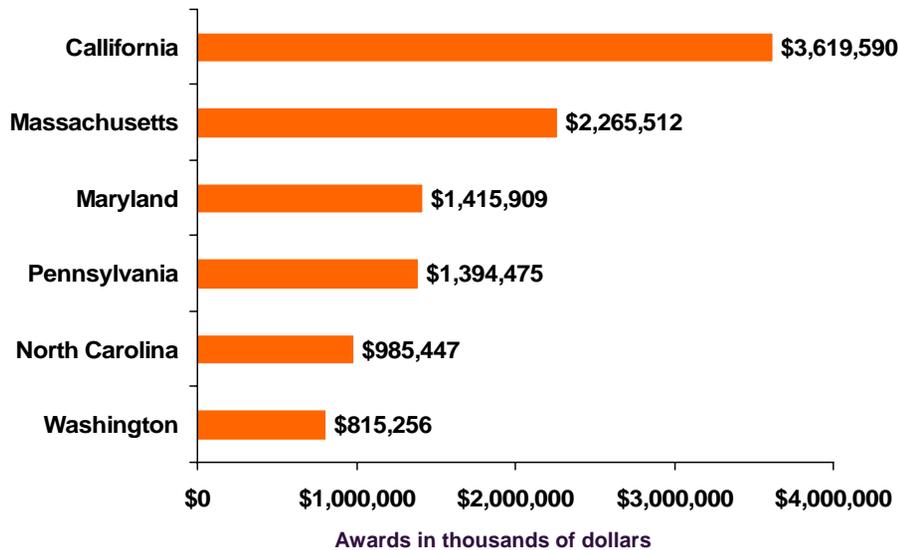


Source: Ernst & Young
and New Economy Strategies



Top Ten

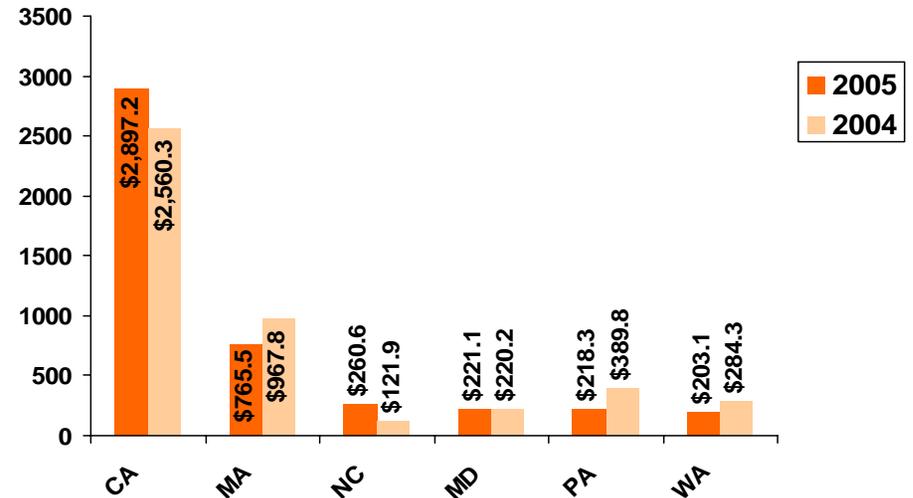
Top NIH grantee states FY2004



Source: NIH award data at <http://www.silk.nih.gov/public.cbz2zoz@www.states.fy9604>

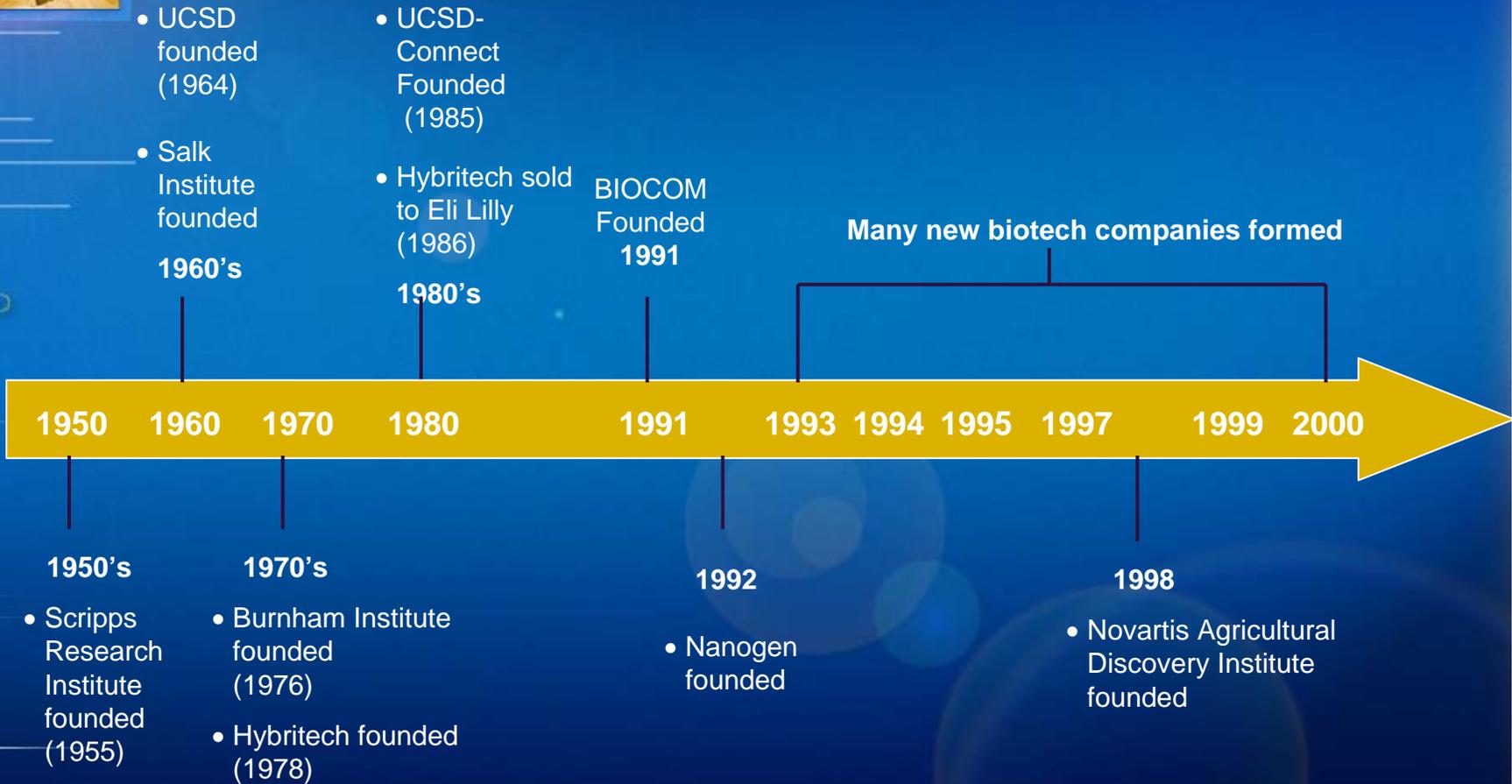
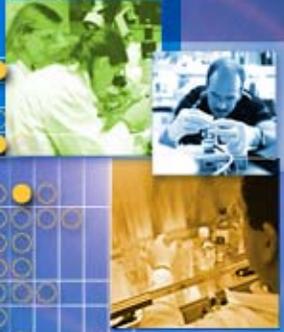
Life sciences investment by state Q1 2004 to Q4 2005

(dollars in millions)

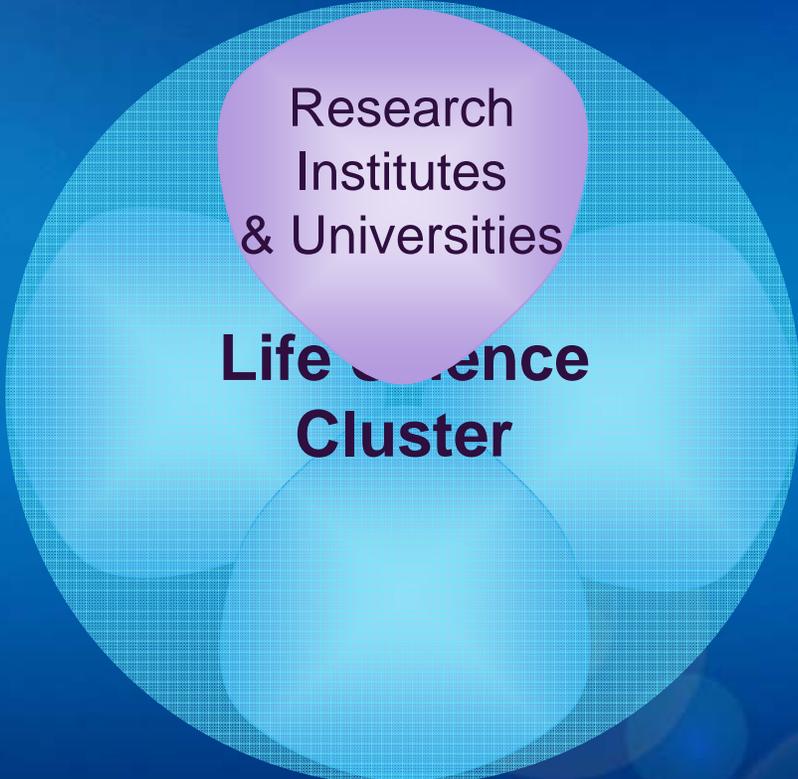


Source: PricewaterhouseCoopers/National Venture Capital Association MoneyTree Report, Data: Thompson Financial

San Diego Cluster Timeline



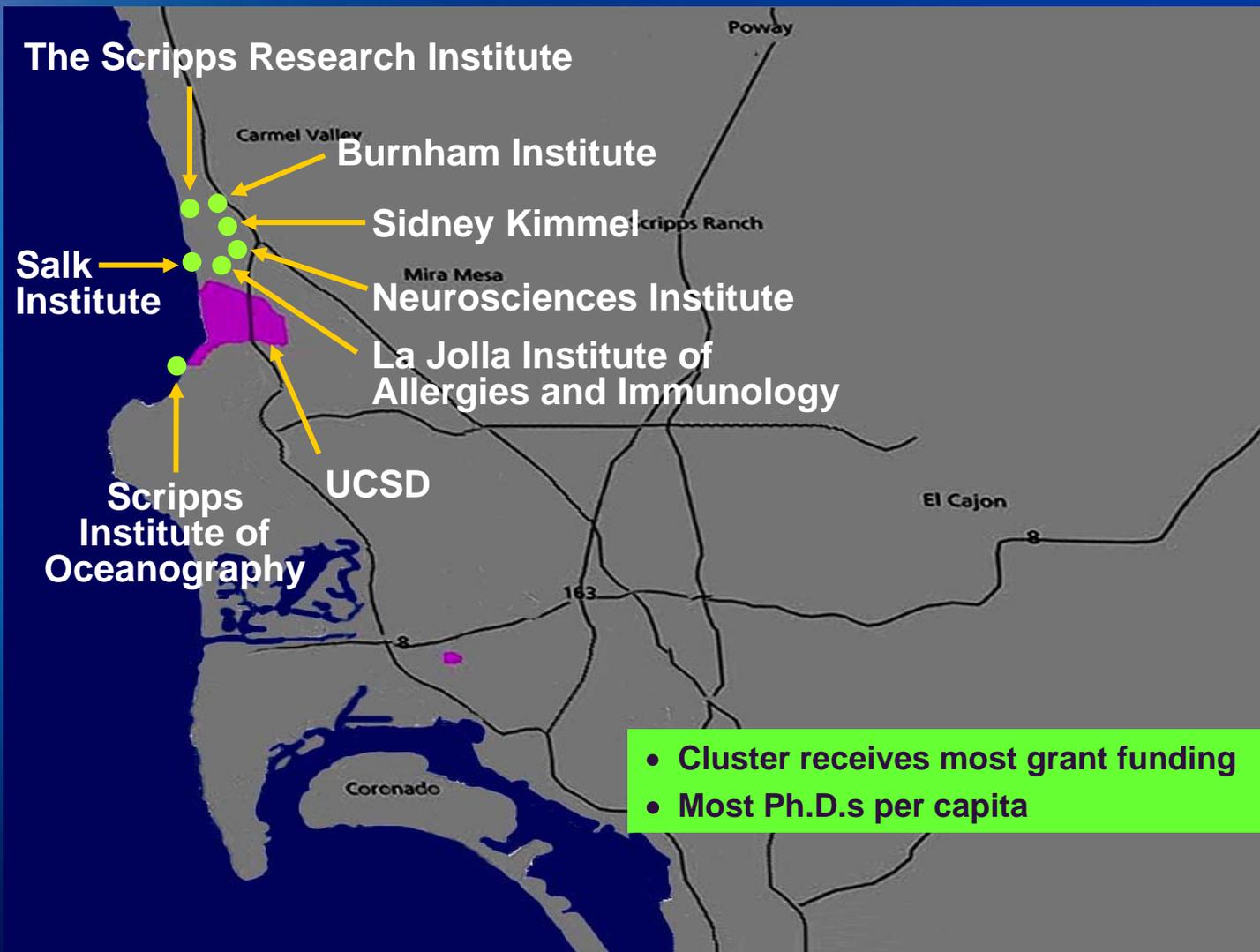
Life Science Cluster Basics



Research
Institutes
& Universities

**Life Science
Cluster**

San Diego BioResearch Centers



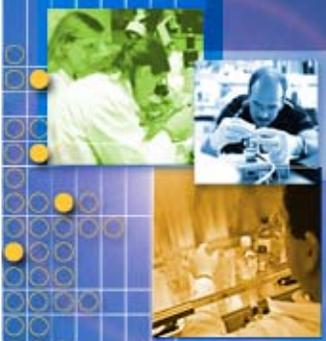
Life Science Cluster Basics

Research
Institutes
& Universities

Life Science
Cluster

Management
Talent

A Personal Perspective: Clusters



Indianapolis, IN 1973 - 1992	San Diego, CA 1992 - 2006	
	Companies	Boards
 	   	        

Life Science Cluster Basics

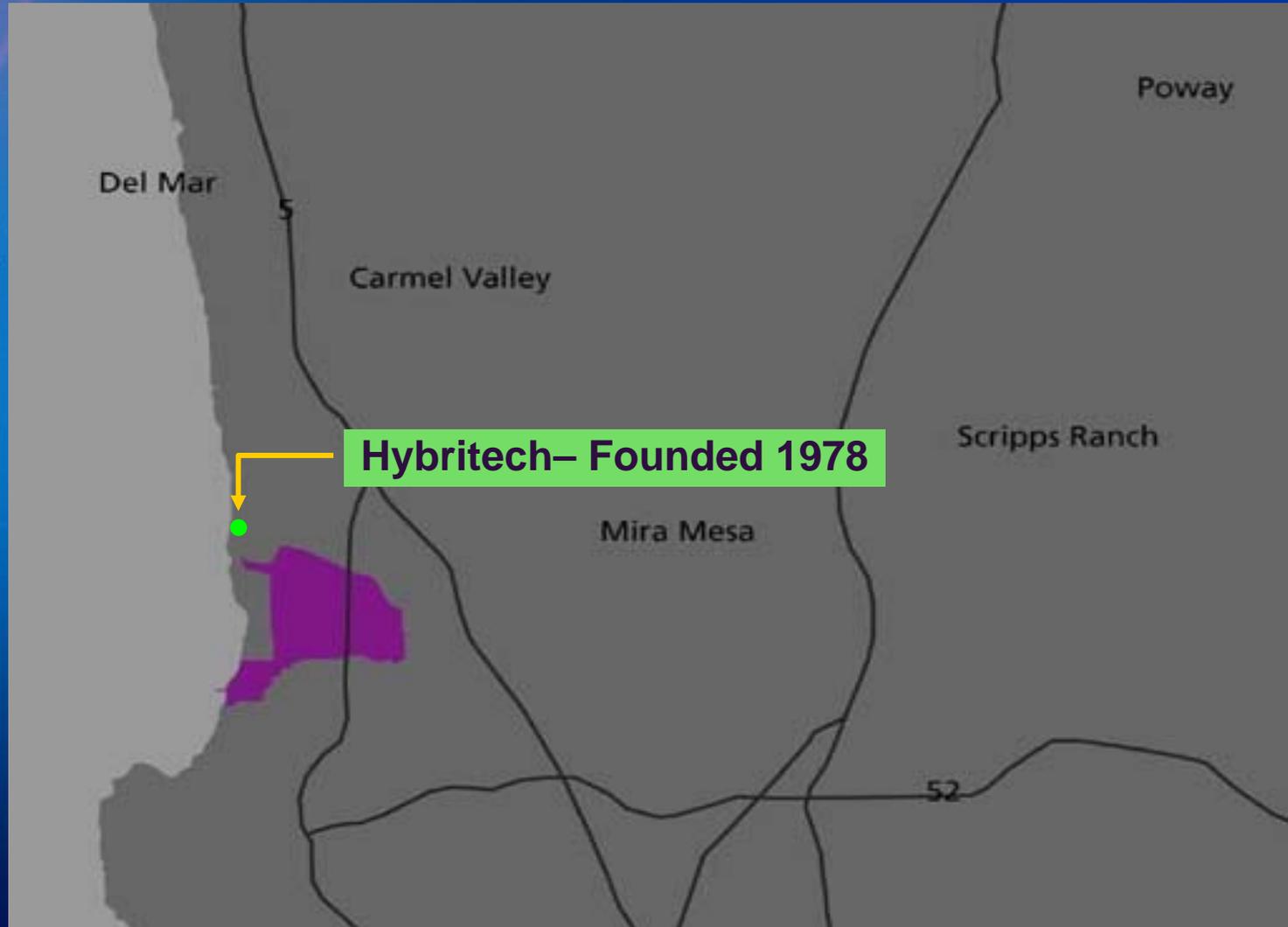
Research
Institutes
& Universities

Life Science
Cluster

Management
Talent

Biotech /
Pharma
Companies

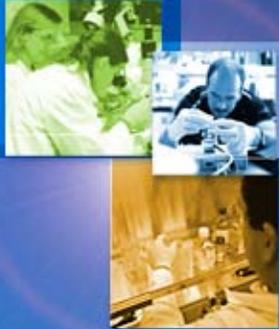
First Biotech Company in San Diego



Building a Life Science Cluster

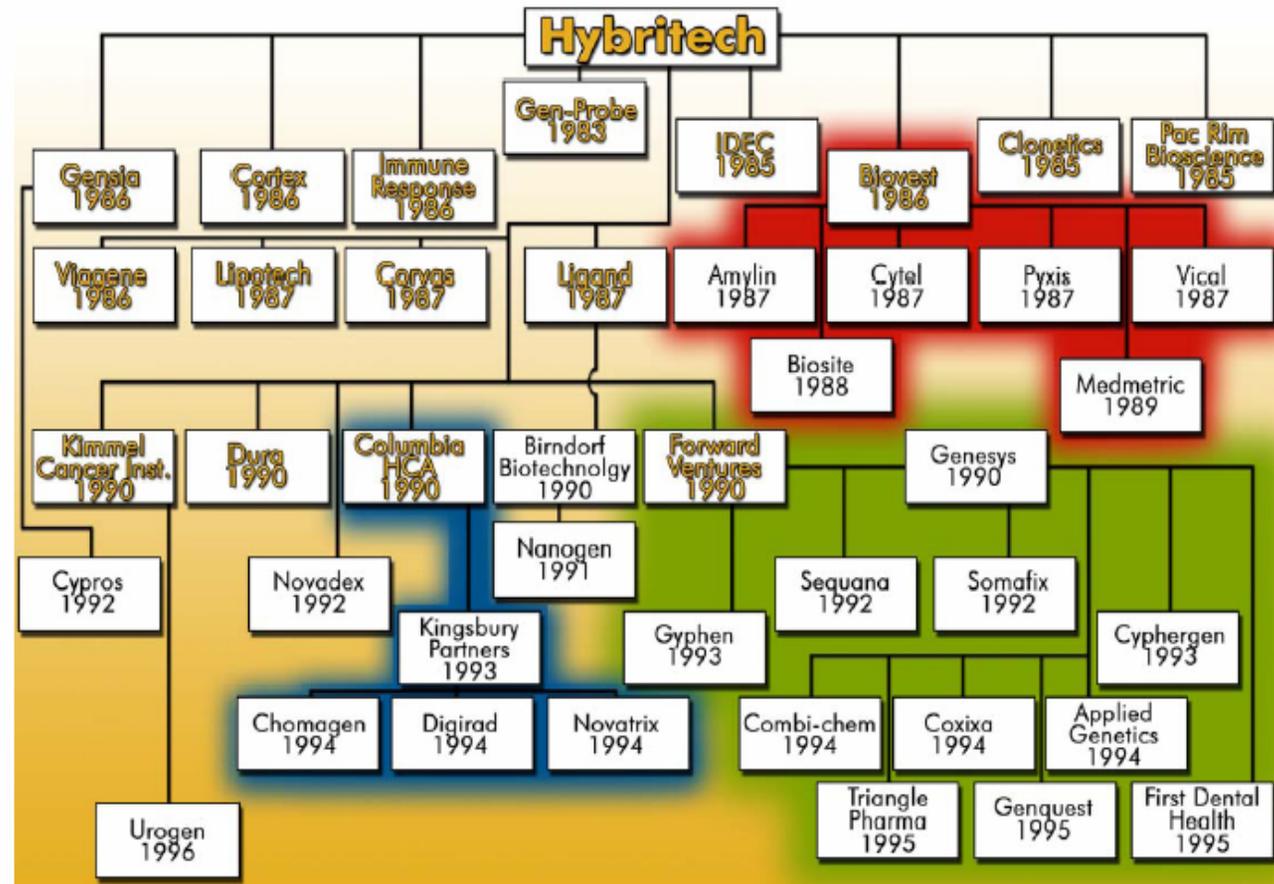


- Founded in 1978
- Monoclonal antibody-based diagnostics
 - Rapid visual pregnancy test
 - Prostate-specific antigen (PSA) test
- Acquired by Eli Lilly in 1986 for \$350 million
- Catalyst of growth of a life science cluster in San Diego

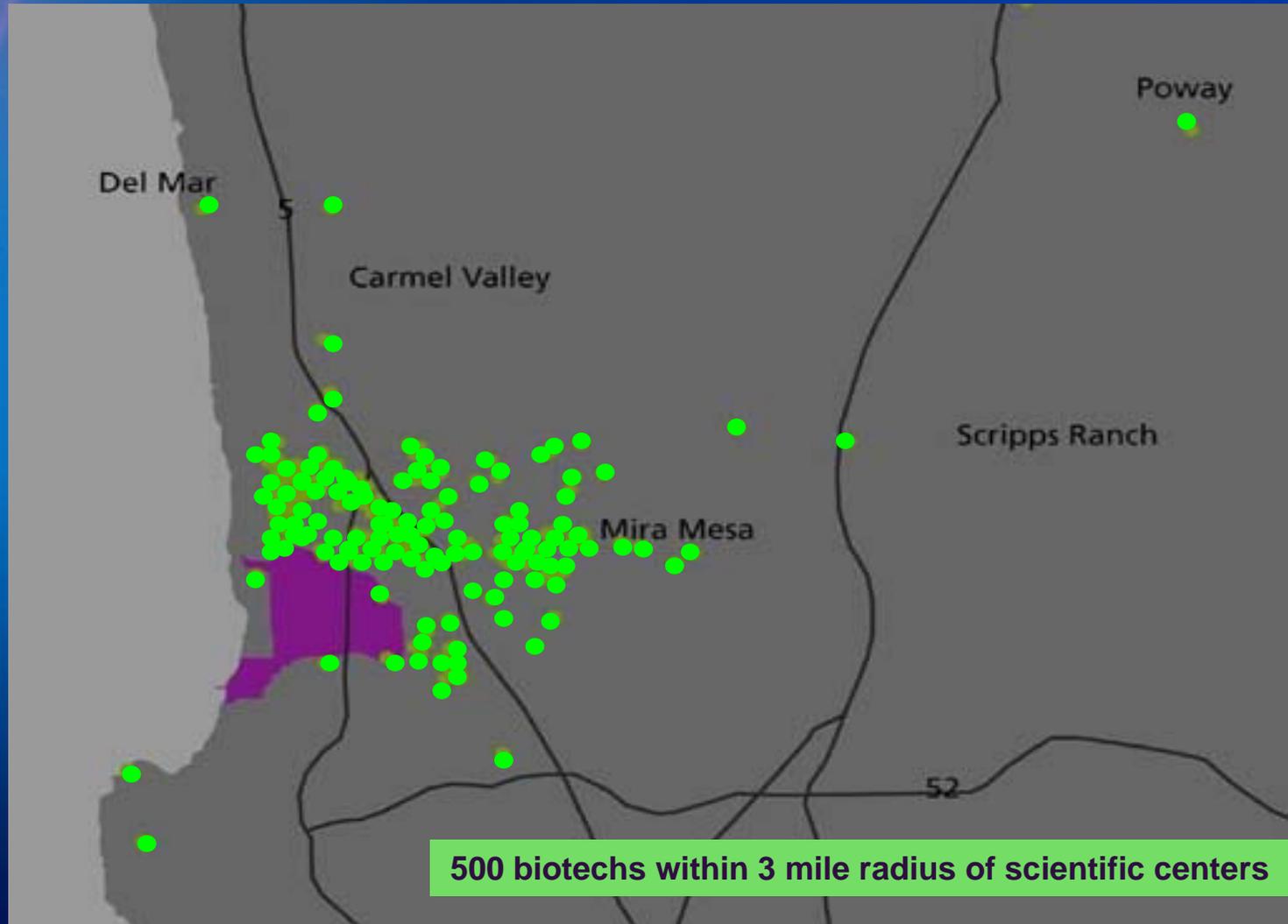
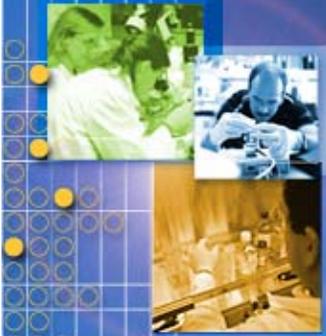


Building a Life Science Cluster

Cluster Development: Anchor Companies and Spin-Offs in San Diego

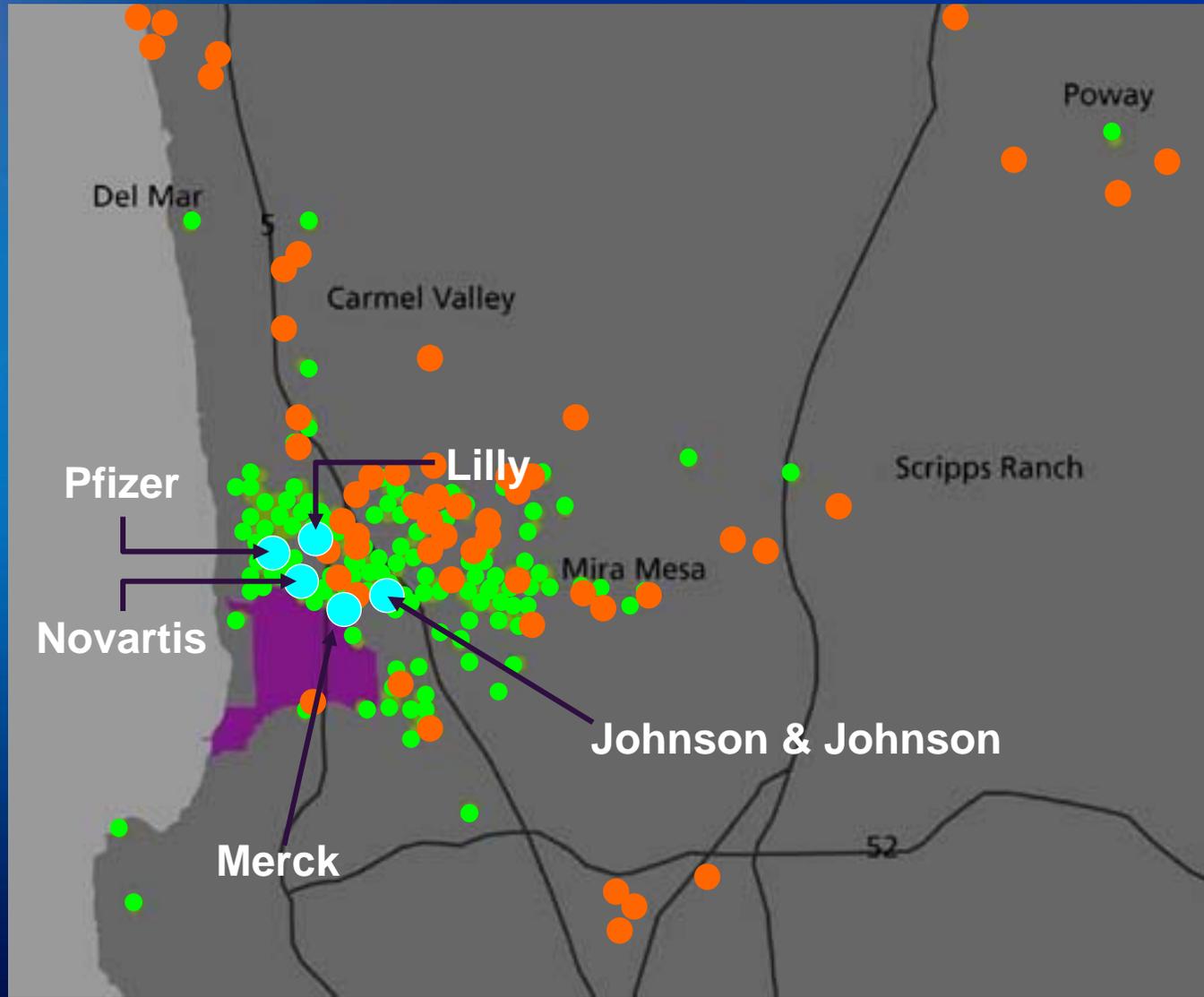
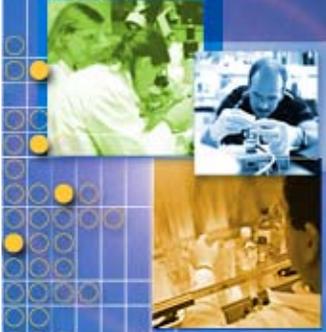


San Diego BioPharma Companies Today

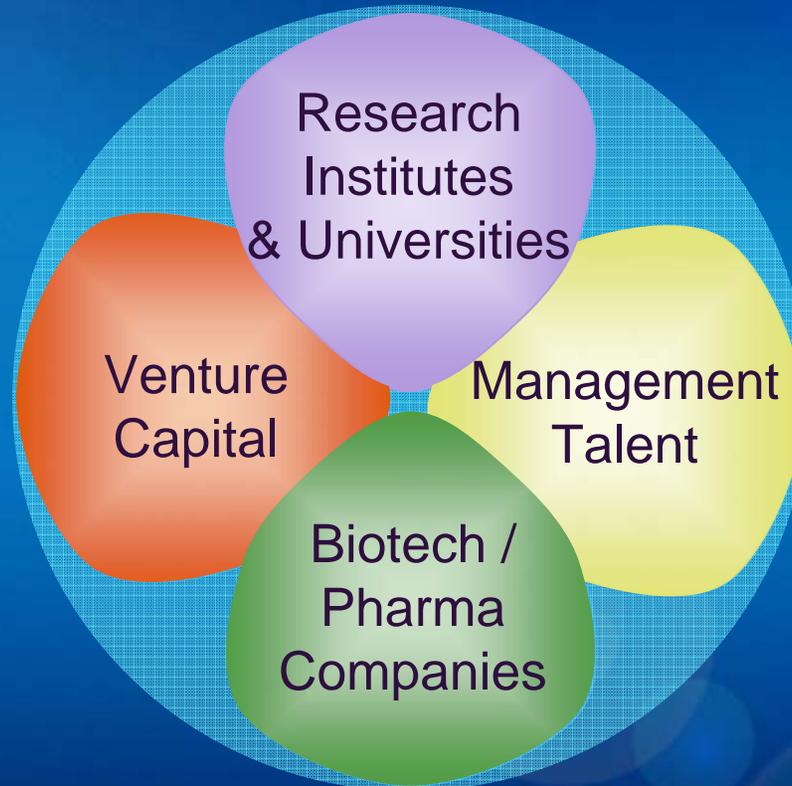


500 biotechs within 3 mile radius of scientific centers

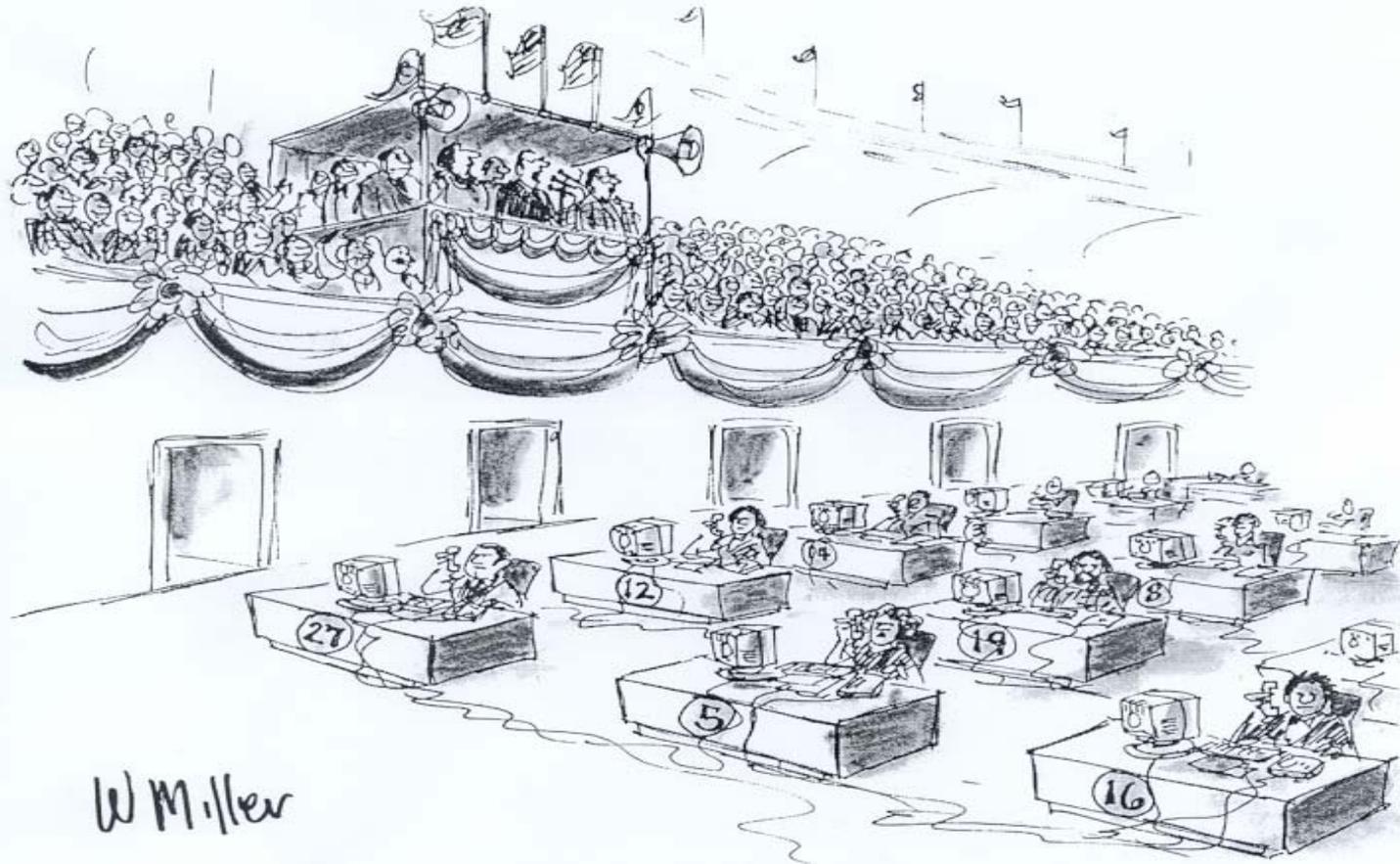
Big Pharma Has Come to San Diego



Life Science Cluster Basics



Ladies & Gentlemen, Start Your Companies!



W Miller

"Ladies and gentlemen, start your companies!"

Burnham Institute for Medical Research



UCSD

SALK

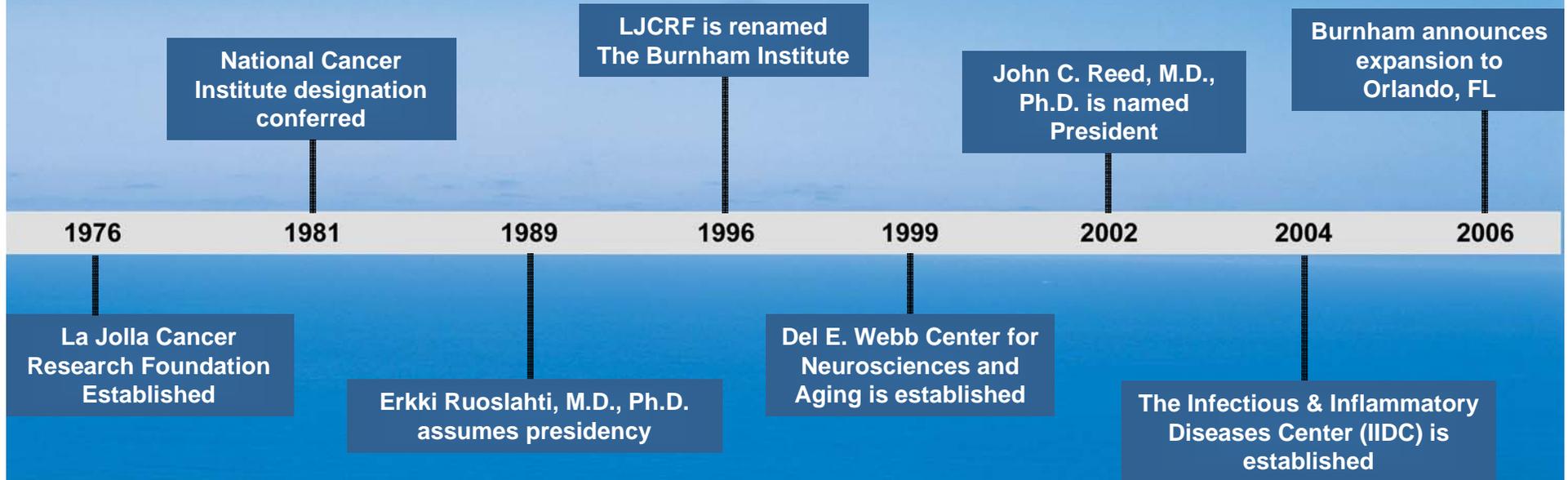
SCRIPPS OCEANOGRAPHY

SCRIPPS

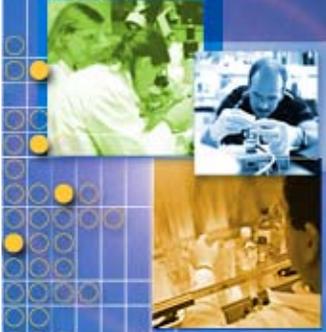
BURNHAM INSTITUTE *for* MEDICAL RESEARCH



History of the Burnham Institute for Medical Research



Research Centers

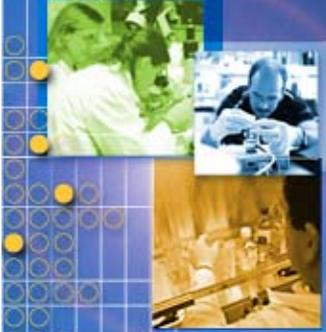


**Infectious &
Inflammatory
Disease Center
2004**

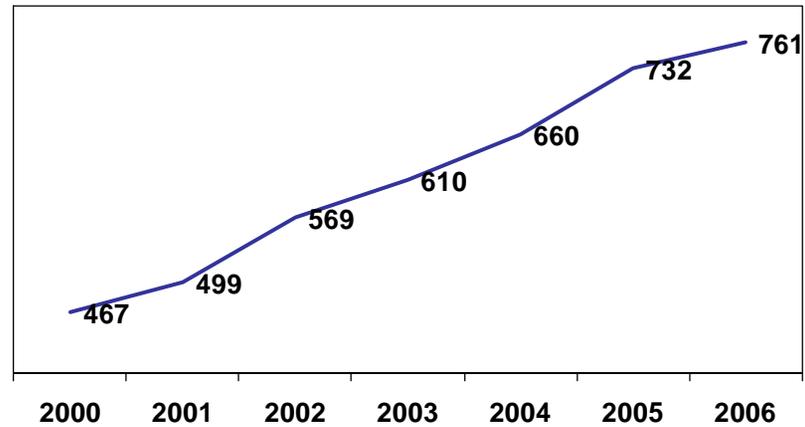
**Cancer Center
1981**

**Neurosciences
& Aging Center
1999**

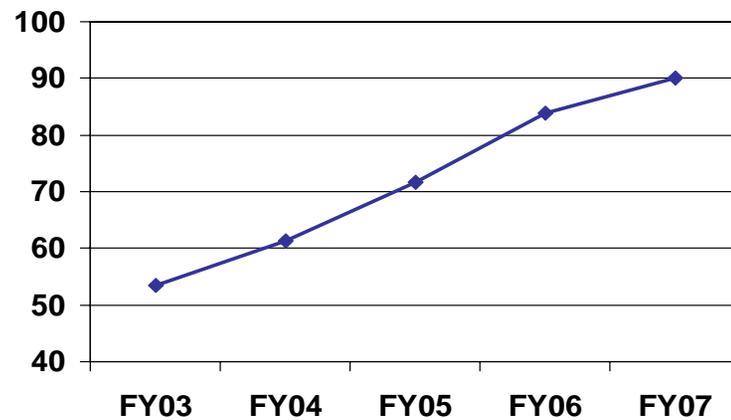
A Story of Growth



Total Headcount Growth



Revenue Growth (in millions)



Burnham ranks among top 5

Rank	Organization	Number of Awards	Total NIH Award Dollars
1	The Scripps Research Institute	452	\$213,208,830
2	Fred Hutchinson Cancer Research Center	269	\$208,765,060
3	Sloan-Kettering Institute for Cancer Research	199	\$92,011,838
4	Westat, Inc.	10	\$65,954,262
5	Burnham Institute for Medical Research	127	\$64,679,665
6	Salk Institute for Biological Studies	109	\$52,654,703
7	Jackson Laboratory	101	\$50,042,917
8	Research Triangle Institute	59	\$48,170,288
9	National Childhood Cancer Foundation	7	\$43,788,423
10	Northern California Institute for Research & Education	59	\$39,871,626

2005 Data

Burnham Institute for Medical Research Today

- Faculty > 70
- Scientific Staff > 595
- Total Employees > 745
- Annual Operating Budget @ \$ 90 MM
- Square Footage > 300,000
- Patents Issued > 225
- Peer-Reviewed Scientific Publications > 350/Year
- Consistently ranks in top 20 for impact of publications*

*according to Institute for Scientific Information

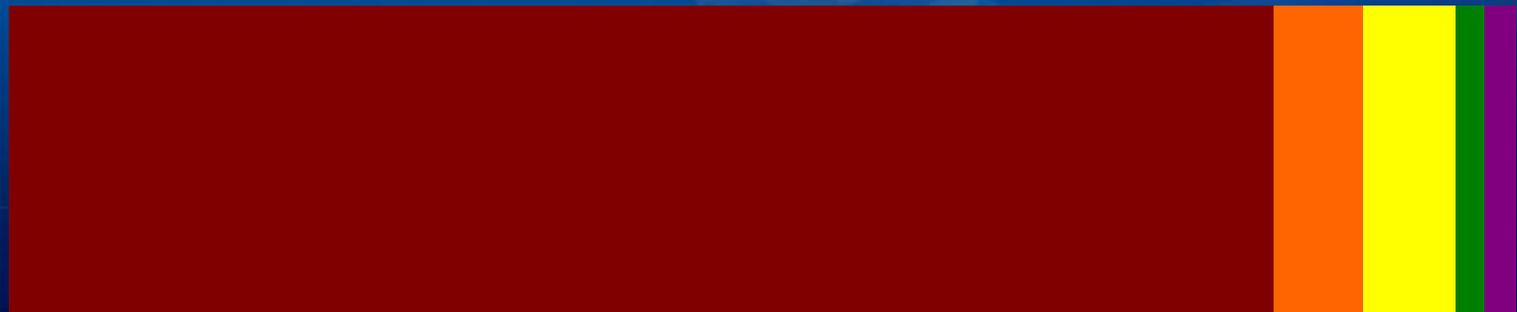
National Designations

- NIH Molecular Library Screening Center Network
- NCI-designated Basic Science Cancer Center
- National proteomics center
- National bio-nanotechnology Program of Excellence for vascular disease
- National stem cell research center
- National program for bioterrorism countermeasures

Revenue Sources

- 84% Federal Grant Funding
- 6% Private & Other Grant Funding
- 6% Philanthropic Gifts
- 2% Technology Transfer & Corporate Sponsored Research
- 2% Other

\$90 million

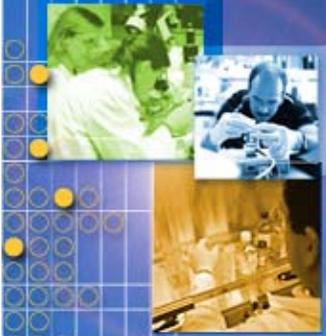


Major Collaborative Grants (>\$10 MM)



Grant	Funding Source	Years Funded	Funds
Center on Proteolytic Pathways	NIH / NIRR	2004-2009	\$ 18.6 MM
26 th year as NCI Designated Non-comprehensive Cancer Center	NCI	2004-2009	\$ 18.0 MM
Virulence Factors and Cell Death	NIAID	2004-2009	\$ 16.0 MM
Nanotherapy for Vulnerable Plaque	NHLBI	2005-2010	\$ 13.2 MM
La Jolla Interdisciplinary Neuroscience Center Cores	NINDS	2006-2011	\$ 12.7 MM
San Diego Chemical Library Screening Center	NHGRI	2005-2008	\$ 11.9 MM
Signaling Interactions in Cell Survival and Invasion	NCI	2004-2009	\$ 11.6 MM

Award-Winning Faculty

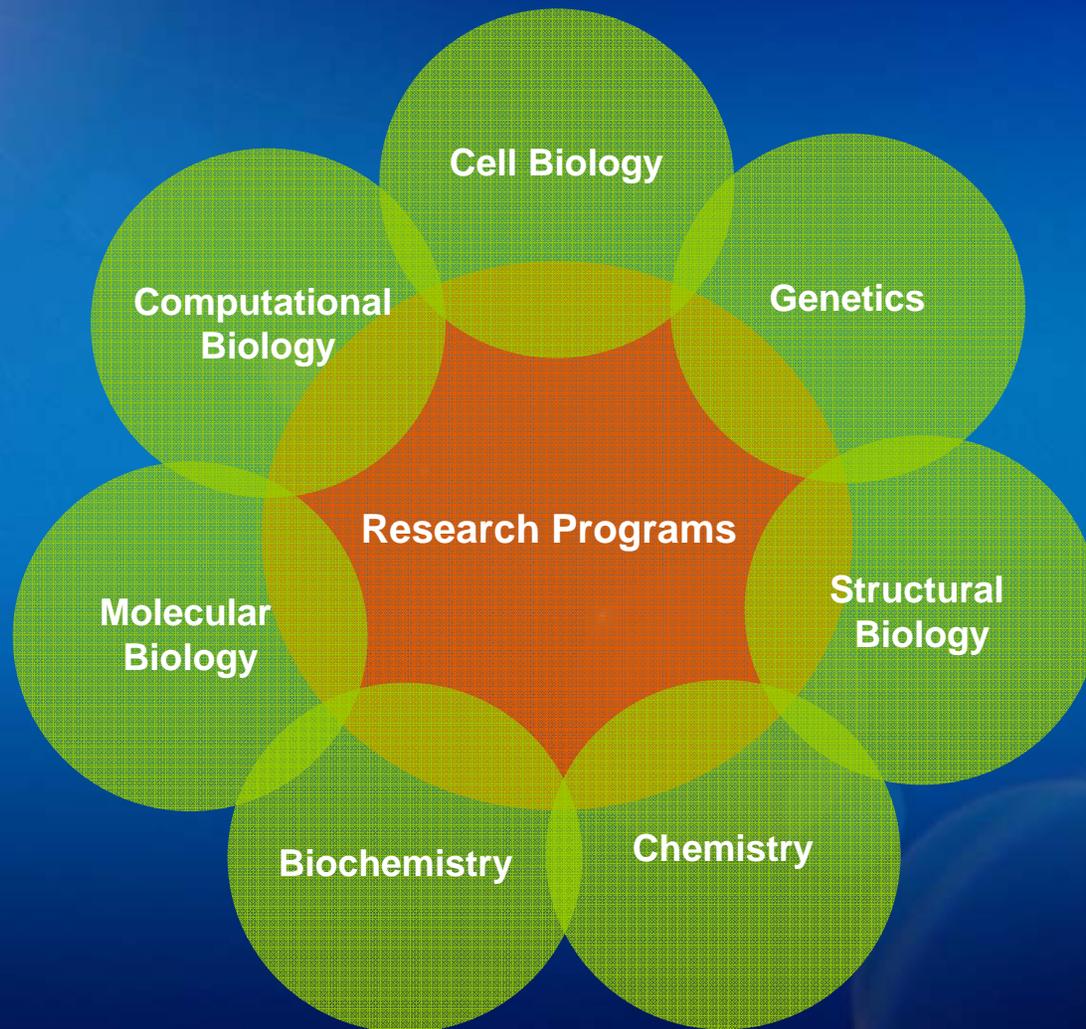


- 2006 • Doctor of the Decade designation by Science Watch – John C. Reed, M.D., Ph.D.
- 2005 • Japan Prize in Cell Biology - Erkki Ruoslahti, M.D., Ph.D.
- 2004 • Jung Prize for Medicine - Stuart Lipton, M.D., Ph.D.
- 2003 • Bristol-Myers Squibb Unrestricted Cancer Grant - John C. Reed, M.D., Ph.D.
- 2003 • AACR-National Foundation for Cancer Research Professorship in Basic Cancer Research - Manuel Perucho, Ph.D.
- 2001 • National Institute of Medicine - Erkki Ruoslahti, M.D., Ph.D.
- 1999 • National Academy of Sciences - Erkki Ruoslahti, M.D., Ph.D.

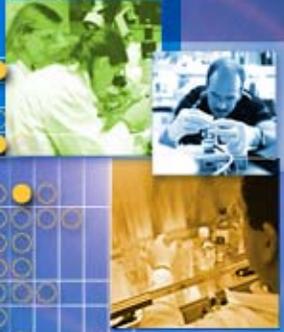
From Research, The Power to Cure

Drug	Application	Phase I	Phase II	Phase III	FDA Approved
Integrilin	Heart Attack				Yes
Aggrastat	Heart Attack				Yes
Targretin	Cancer				Yes
Memantine	Alzheimer's				Yes
Genasense	Cancer			Yes	No
Neuragen	Nerve Regeneration	Yes			No
Trabio	Fibrosis	Yes			No
Vitaxin	Cancer	Yes			No
ANG207	Chronic Heart Failure	Yes			No
TRIMAX	Tissue Regeneration	Yes			No

A Collaborative Approach



Burnham Institute for Medical Research



**Infectious &
Inflammatory
Disease Center**

Cancer Center

**Neurosciences &
Aging Center**

- **Infectious Disease**
- **Inflammatory Diseases**
- **Bioinformatics**

- **Cell Adhesion &
Extracellular Matrix
Biology**
- **Glycobiology**
- **Oncodevelopmental
Biology**
- **Cancer Genetics
& Epigenetics**
- **Apoptosis & Cell
Death Research**
- **Signal Transduction**

- **Developmental
Neurobiology**
- **Degenerative
Disease Research**
- **Stem Cells
& Regeneration**

Technology Infrastructure



Animal Resources

Genetics
In Vivo Analysis

Cell Imaging & Histology

Microscopy
Electron Microscopy

Gene Analysis

DNA Sequencing
Quantitative-PCR
Microarray

Medicinal Chemistry

Chemical Synthesis

Structural Biology

Protein Expression
Crystallography
Nuclear Magnetic Resonance

Bioinformatics & Data Management

SHARED
RESOURCES

Proteomics

Mass Spectrometry

San Diego Center for Chemical Genomics

Libraries and Robotics

HTP Cell Analysis

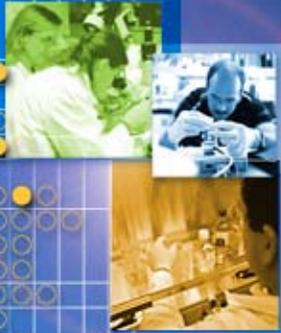
Flow Cytometry
High Throughput Microscopy

Functional Genomics

siRNA Libraries
RNAi and Lentivirus Technology



Natural Products Chemistry



Study suggest how teas fight cancer

Work at Burnham called 'very exciting'

By Bruce Lieberman
STAFF WRITER

People who consume tea for good health may now have another reason to drink up.

is programmed into cells so the body can eradicate defective cells and maintain a balance in cell numbers.

Failure of apoptosis is one of the hallmarks of cancer, and it explains much of the difficulty in eliminating cancer cells using drugs or radiation therapy. Bcl-2 and Bcl-xL proteins, in fact, are believed to be at least one reason why tumors resist chemotherapy and radiation.

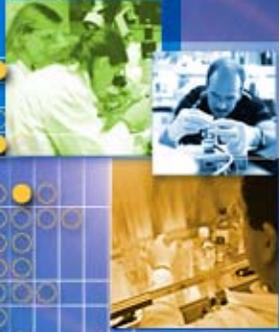
DNA-based Bcl-2 in can It takes 1 Bcl-2 and E and Pellecc "Certain tracts could consumptio "Certain g tracts could consumptio

San Diego Union-Tribune, December 3, 2003



Maurizio Pellecchia, Ph.D.





Del E. Webb Center for Neurosciences & Aging

Protect the cells we have and replace the cells we have lost

Neurosciences

- Synaptic signaling pathways
- Excitatory synaptic transmitters

Aging

- Alzheimer's
- Parkinson's
- ALS

Stem Cells

- Cardiovascular
- Diabetes
- Neuronal



THE NATION'S NEWSPAPER

USA TODAY

NO. 1 IN THE USA THURSDAY, APRIL 3, 2008

Drug offers hope for late-stage Alzheimer's

Caregivers also could find burden eased

By Kathleen Fackelmann USA TODAY

An experimental drug may slow down the insurmountable progress of late-stage Alzheimer's disease, two studies suggest this week.

The results hold out the hope that the drug, memantine, will prove effective in treating severe Alzheimer's, a brain disease that afflicts 4 million people in the U.S.

Currently, doctors can offer drugs to ease symptoms of early-stage Alzheimer's but have nothing to help push back the late form of the mind-robbing affliction.

Alzheimer's disease, which initially causes mild forgetfulness, ultimately strips the mind of rational thought and leaves patients unable to care for themselves or recognize close friends or family members.

Barry Reisberg, a researcher at the New York University School of Medicine, and his colleagues studied 252 people with late-stage Alzheimer's. All had trouble with daily activities.

The experimental drug memantine works by blocking a brain chemical called glutamate, people with Alzheimer's disease have abnormal levels of glutamate, which can lead to brain cell damage and symptoms of dementia.

During the 28-week study, half the patients got a 10-milligram pill of memantine and half got an inactive placebo pill twice a day. The researchers gave patients a battery of tests at the start and at the end of the study.

In today's *New England Journal of Medicine*, the researchers report that patients taking memantine did better on tests that measure memory and thinking ability than those in the control group. They

also showed a marked improvement in their ability to perform routine tasks such as getting dressed or bathing. Drug manufacturer Merz Pharmaceuticals of Germany helped pay for the study.

Bill Thies of the Alzheimer's Association in Chicago says memantine might help ease the burden on caregivers. About 75% of people with Alzheimer's are cared for at home, a task that can become increasingly difficult, he says.

Memantine works by blocking a brain chemical called glutamate. People with Alzheimer's have abnormally high levels of glutamate, which can damage cells.

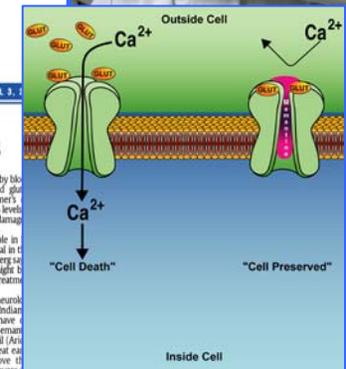
The drug is available in the U.S. and could get approval in the U.S. within the year, Reisberg says. Memantine also might be used to augment existing treatments for Alzheimer's.

Martin Farlow, a neurologist at Indiana University-Indianapolis and his colleagues have a study that suggests memantine together with donepezil (AriZina), a drug now used to treat early-stage Alzheimer's, can improve the skills in people with severe Alzheimer's.

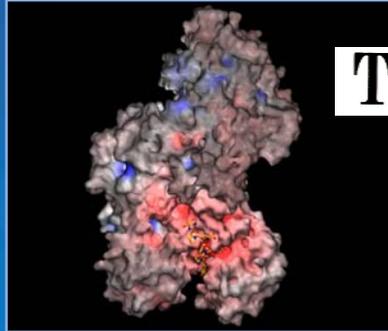
Forest Laboratories, a New York City company, paid for the study.

Farlow, who will present his findings today at the American Academy of Neurology meeting in Honolulu, says drugs such as donepezil may falter when used for advanced disease, but adding memantine to the drug arsenal might change that dire outlook.

"Patients don't deteriorate as rapidly, and some actually improve," he says.



Inhibitors of Anthrax Toxin

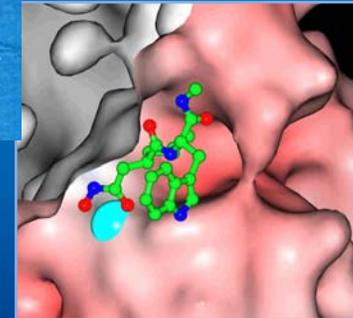


THE WALL STREET JOURNAL

“Big Strides Seen In Understanding How Anthrax Works”

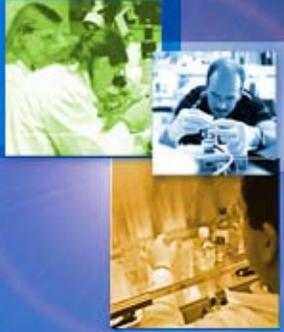
“Potential Anthrax Therapy in Works”

USA TODAY



The New York Times

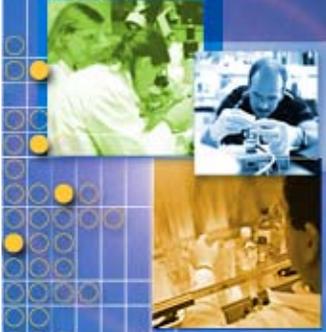
“Scientists Report Gains In Knowledge of Bacterium”



Burnham Florida Expansion



Burnham-Florida Research Areas



**Infectious &
Inflammatory
Disease Center**

**Cancer
Center**

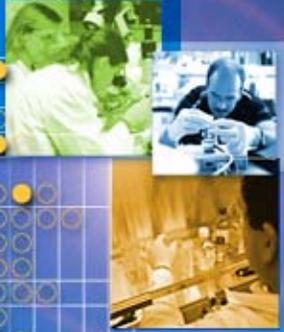
**Diabetes
& Obesity**

**Neuroscience
& Aging Center**

**Translational
Medicine**



Burnham-Florida Program Scope



Diabetes & Obesity

Possible programs

- Metabolic disorders
- Metabolism
- Type 1 and 2 diabetes

Infectious Inflammatory Diseases

- Infectious Disease
- Inflammatory Diseases
- Bioinformatics
- One additional

Cancer

- Cell Adhesion
- Glycobiology
- Oncodevelopmental Biology
- Cancer Genetics & Epigenetics
- Apoptosis
- Signal Transduction
- One additional

Neuroscience & Aging

- Developmental Neurobiology
- Degenerative Diseases
- Stem Cells & Regeneration
- One additional

Technology Centers

- Screening
- Stem Cell
- Proteomics
- Histology & Toxicology
- Functional Genomics
- Medicinal Chemistry
- NMR-Drug Discovery
- In vitro ADME / PK



Why Obesity & Diabetes?

- Obesity is Nation's #1 health concern
- Obesity affects 33% of Americans (additional 25% are overweight)
- Obesity causes 300,000 excess deaths per year in USA
- Obesity is directly or indirectly responsible for \$100 billion health care dollars annually
- Diabetes is caused by obesity (Type II)
- Diabetes accounts for 10% of healthcare costs nationally (1 of every 10 healthcare dollar)
- 10% of Americans are diabetic by age of 70

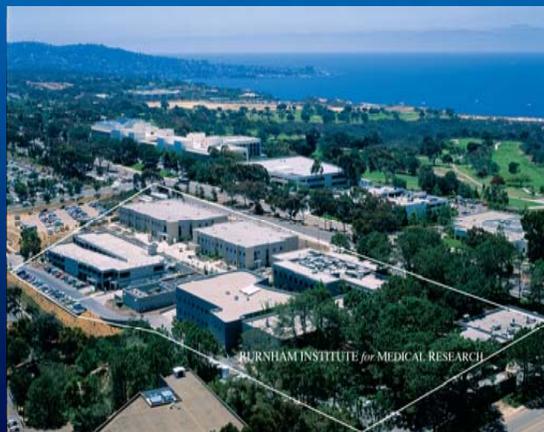
It is estimated that today's children will be the first generation in history to have a shorter life expectancy than their parents, because of obesity.

Burnham Institute – Our vision for 2016



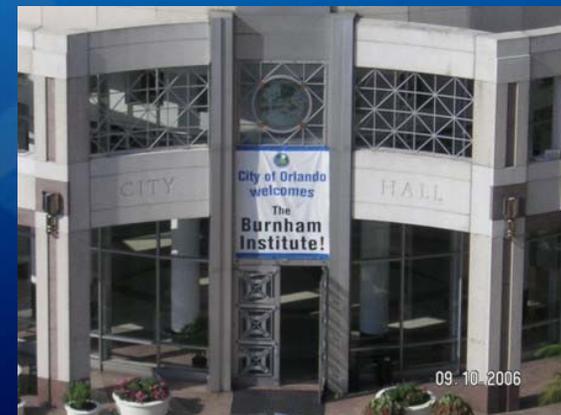
La Jolla, CA

- Faculty ~94
- Scientific Staff ~798
- Total Employees ~1000
- Annual Operating Budget @ \$120 MM
- Infrastructure > 400,000 sq.ft.



Orlando, FL

- Faculty ~31
- Scientific Staff ~221
- Total Employees ~303
- Annual Operating Budget @ \$60 MM
- Infrastructure > 175,000sq.ft.

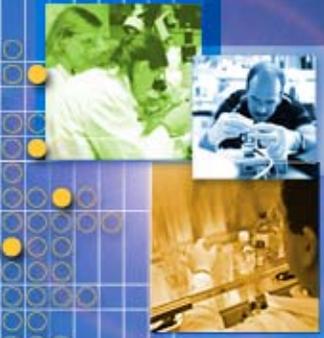


Temporary Facility

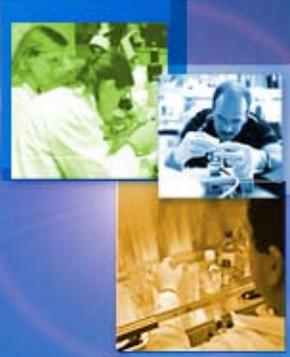
Located on the 4th floor Florida Blood Center Building



Temporary Facility - Status



- 14,000 s.f. of space at Blood Center
- Budget estimate: \$2MM to construct laboratories
- Occupancy expected July 2007



Temporary Facility - Schedule

Working with Contractor to Improve Schedule into June 2007

Programming

11/3

Design & Construction Documents

2/28/07

Permit Process

3/30/07

Construction Begins
March 21

Interior Construction

Occupancy
July 2007

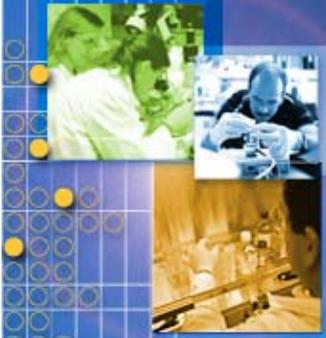


Future Lab
Modifications

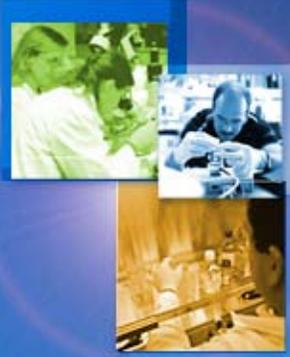


BURNHAM INSTITUTE
for MEDICAL RESEARCH

Permanent Facility - Status



- Preliminary budget completed
- Detailed design in process – floor plans, equipment lists, room designs
- Value engineering in process
- Preliminary design scheduled for April 20 completion



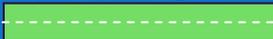
Permanent Facility - Schedule

Programming



11/3

Site Design



2/5/07

Building Concepts



2/5/07

Detailed Design



10/5/07

Ground-breaking
October 3/ 4, 2007



Core & Shell Construction

Occupancy Phase 1

Early 2009

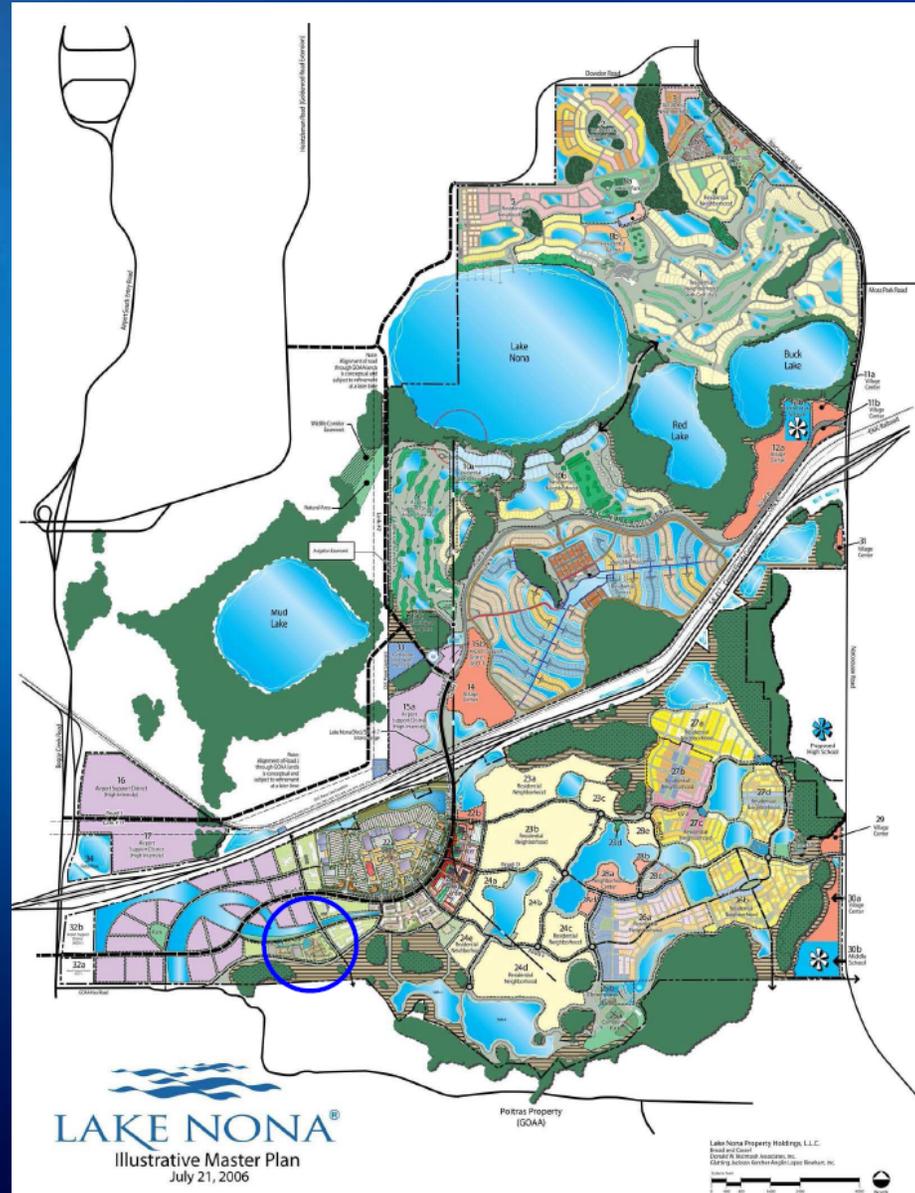
Future Lab
Construction/
Customizing

Interior Construction

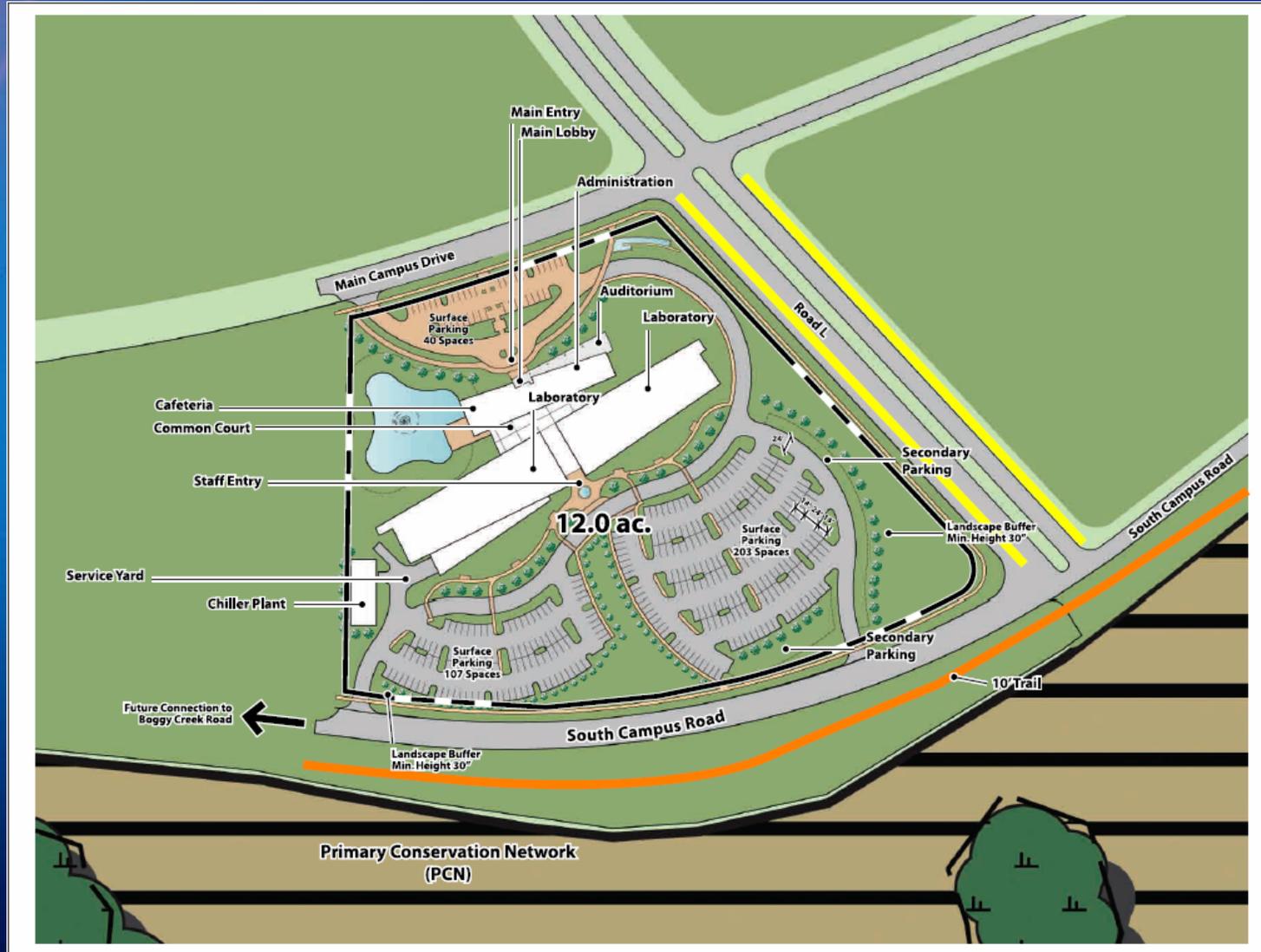


BURNHAM INSTITUTE
for MEDICAL RESEARCH

Master Site Plan



Preliminary Site Plan





Site Plan



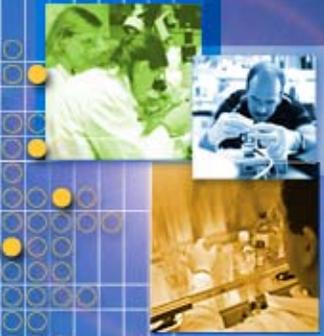
Site Plan – Phase II



Burnham Obligations

- Build & occupy a permanent facility within 3 years
- Head Count: 303 by Year 10 (on schedule):
 - 70 end Year 2
 - 165 end Year 4
 - 247 end Year 6
 - 296 end Year 8
- Average wage: 130% of average private sector wage in Orange County, Florida
- Capital equipment purchases (on schedule)
- Annual reporting on progress (publications, patents, etc.)

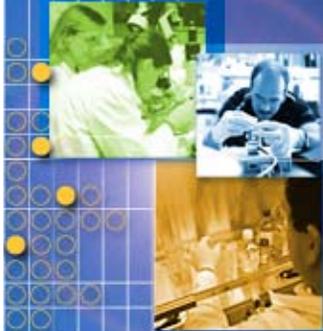
Florida building life science clusters



- Mix of public and private capital stands ready to invest
- Excellent biomedical research base already in place
- Public understands need to invest in healthcare technology
- Build-up of infrastructure is well underway
 - Scripps Research Institute → Palm Beach County
 - Burnham Institute → Orlando
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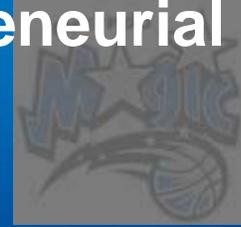
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