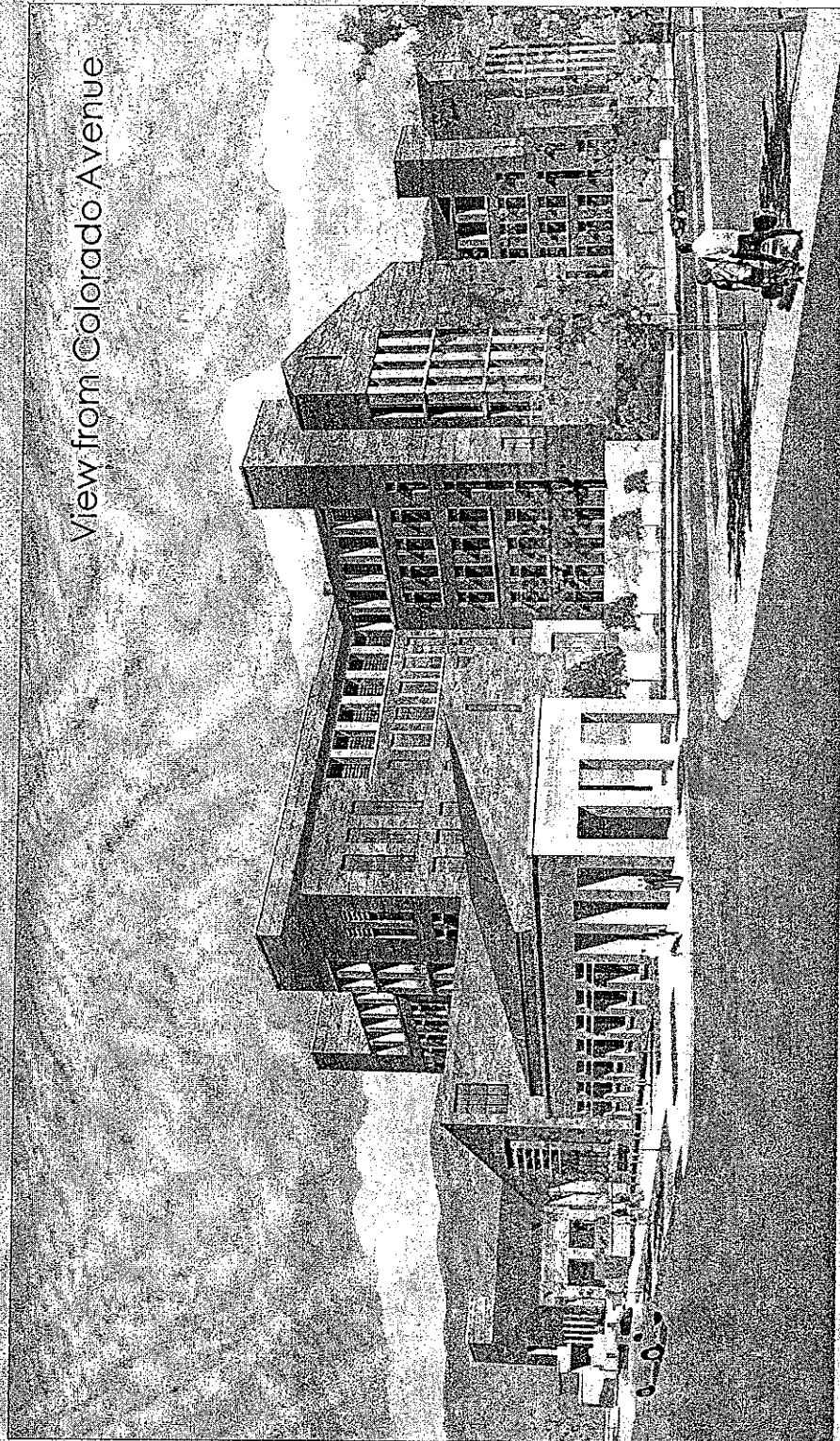
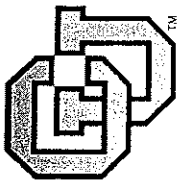


# Systems Biotechnology Second Amendment to program plan

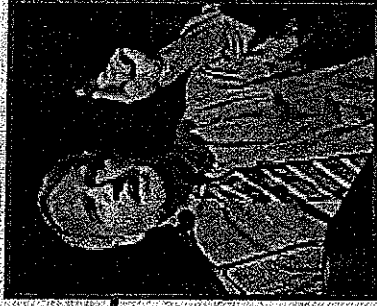


View from Colorado Avenue

**Biochemistry Division – Department of Chemistry & Biochemistry**  
**Department of Chemical & Biological Engineering**  
**Colorado Initiative in Molecular Biotechnology**

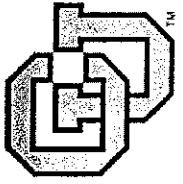


## Biotechnology is Key for Colorado's Economic Development



- From Governor Ritter's  
November 2, 2008 budget proposal:

*"The national & international economies are struggling under unprecedented uncertainties and challenges. Fortunately, Colorado is weathering this storm better than many other states thanks to our New Energy Economy and other 21st century, **knowledge-based industries of the future, such as aerospace, bioscience and technology.**"*

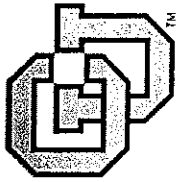


# CU's Role in Technology Transfer and Commercialization

- ❑ Advances in molecular biology are driving a new economy
- ❑ Colorado is now home of **360 biotechnology firms**
- ❑ **57 of these companies** are located in **Boulder**
- ❑ **UCB technology transfer has created 23 new companies**, 111 license agreements and \$45M in royalty income
- ❑ One such company, **OPX Biotechnologies, Inc.** spun off from university research in 2007
  - ❑ Technology created by Professor Ryan Gill, Department of Chemical and Biological Engineering
  - ❑ OPX just granted exclusive license by the university technology transfer office for technology to produce new bio-refining fuels and related chemical products.

**OPX** BIOTECHNOLOGIES





# Systems Biotechnology New Faculty Recruitment

*Recruiting the best and the brightest, coast to coast*

**Bruce Eaton, Ph.D. University of California, Berkeley, Research: Chemical Genomics**

- Dr. Eaton has synthesized RNA and DNA libraries. He holds 28 U.S. patents, has 73 pending, and has helped create six biotechnology companies, including three in Colorado.

**Rob Knight, Ph.D. Princeton University, Research: Genomics and Bioinformatics**

Dr. Knight's is providing insight into how pathogens evolve to infect humans.

**Melissa Mahoney, Ph.D. Cornell University, Research: Biomaterials for Tissue Regeneration**

- Dr. Mahoney's is promoting central nervous system tissue regeneration which may be helpful in the treatment of Alzheimer's disease, Parkinson's disease, and spinal cord injuries.

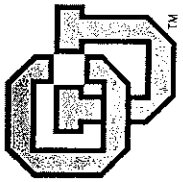
**Amy Palmer, Ph.D. Stanford University, Research: Biosensors for Single Cell Imaging**

- Dr. Palmer work involves "genetically encoded" biosensors, which also may be helpful in the treatment of Alzheimer's and other neurological diseases.

**Hang (Hubert) Yin, Ph.D. Yale University, Research: Protein engineering for targeting membrane receptors**

- Dr. Yin is work is controlling blood clotting.





# Systems Biotechnology Distinguished faculty

- **Kristi Anseth** - Distinguished Professor and Howard Hughes Medical Institute Investigator-Department of Chemical & Biological Engineering NSF's Coveted Waterman Award, Popular Science's Brilliant 10 Award



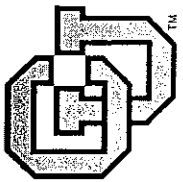
- **Natalie Ahn** - Merck Fellow, 1988-1991 Searle Scholar, 1993-1996 Associate Professor, Department of Chemistry and Biochemistry, Investigator, Howard Hughes Medical Institute.



- **Leslie Leinwand** - National Heart, Lung, and Blood Institute Merit Award; American Heart Association Established Investigator Award. Howard Medical Institute Fellow; Chair of Molecular Cellular and Developmental Biology





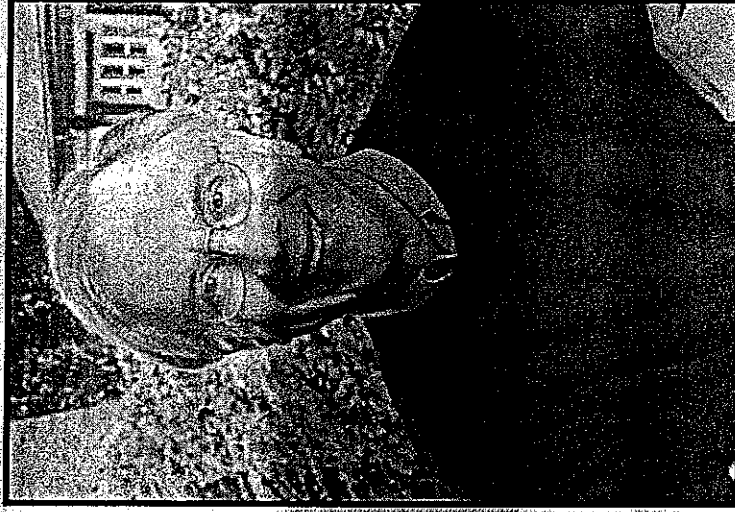


# Systems Biotechnology

## Two separate construction projects

### INITIAL BUILDING – 3 WINGS + AUDITORIUM = 261,800 GSF

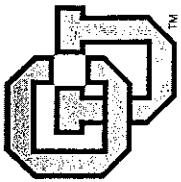
Funding Source	FY09-10 spending authority	FY10-11	Cost
State	-	-	-
Federal	-	\$15,000,000	\$15,000,000
Cash	\$12,888,973	\$120,121,152	\$133,010,125
Total	\$12,888,973	\$135,121,152	\$148,010,125



1989 Nobel Prize  
winner  
Tom Cech

### Fourth Wing = 50,240 gsf

Funding Source	2010-11	2011-12	Cost
State	\$26,951,380	\$4,822,502	\$31,773,882
Cash	-	-	-
Total	\$26,951,380	4,822,502	\$31,773,882

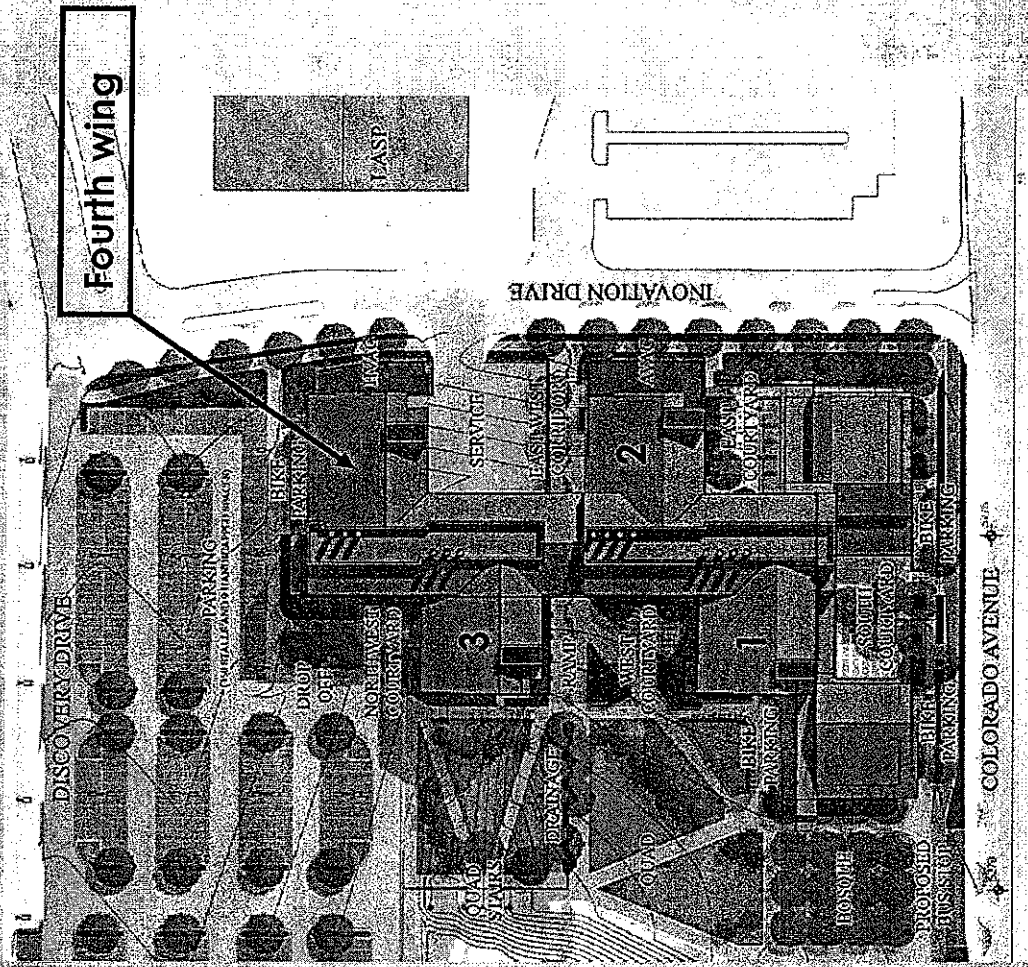


# Systems Biotechnology

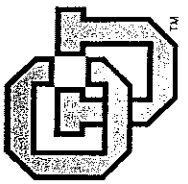
## Two separate construction projects

### Initial Building - \$148M

- ❑ 261,800 gsf
- ❑ Auditorium wing
  - ❑ 200 seat auditorium
- ❑ 3 of 4 lab wings
  - ❑ 5.5 Neighborhoods (Base)
  - ❑ 4.5 Neighborhoods (NIH)
- ❑ Cash-funded
  - ❑ Spending authority per HB 08-1205 process needed for September construction start
- ❑ Allows for \$15M NIH grant funding





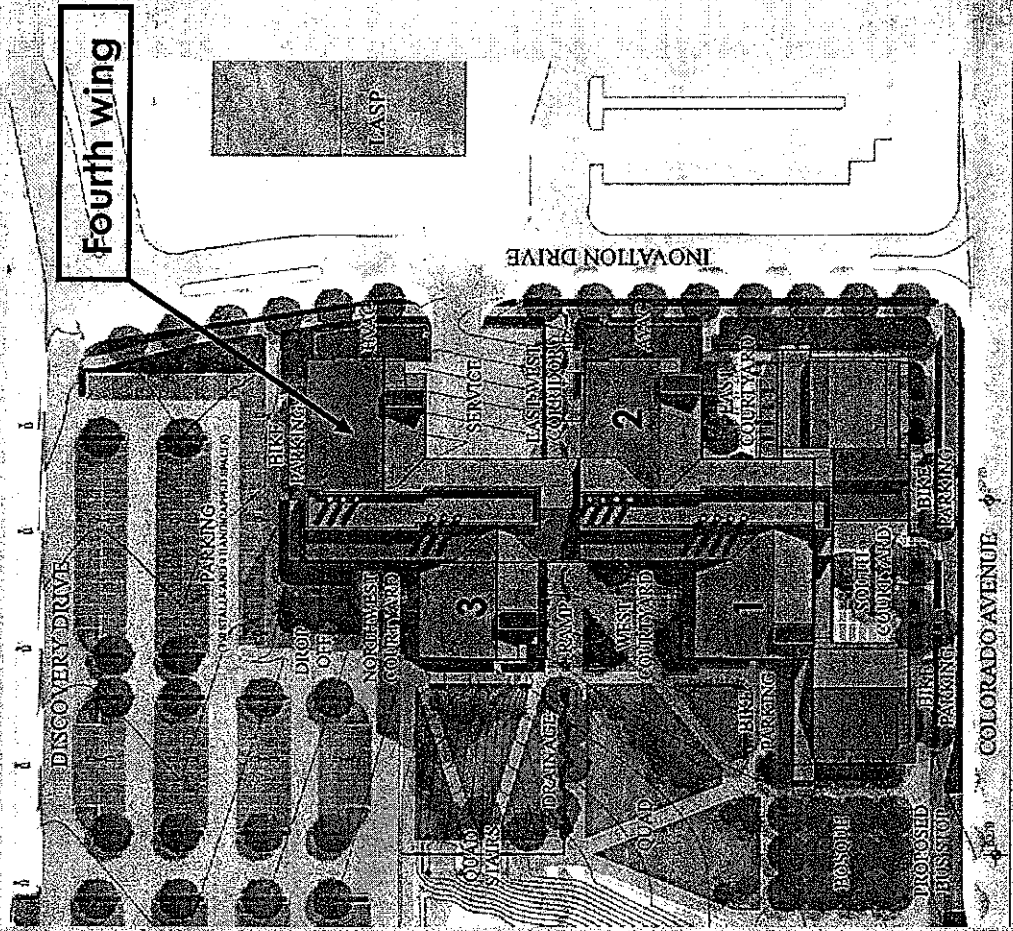


# Systems Biotechnology

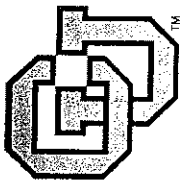
## Two separate construction projects

### Fourth wing - \$31.8M

- 50,240 gsf
- Complete previously shelled space
  - 1 Teaching Lab
  - 60 Seat Classroom
  - 110 Seat Auditorium
- Fourth wing
  - 5.5 Neighborhoods
  - State-funded

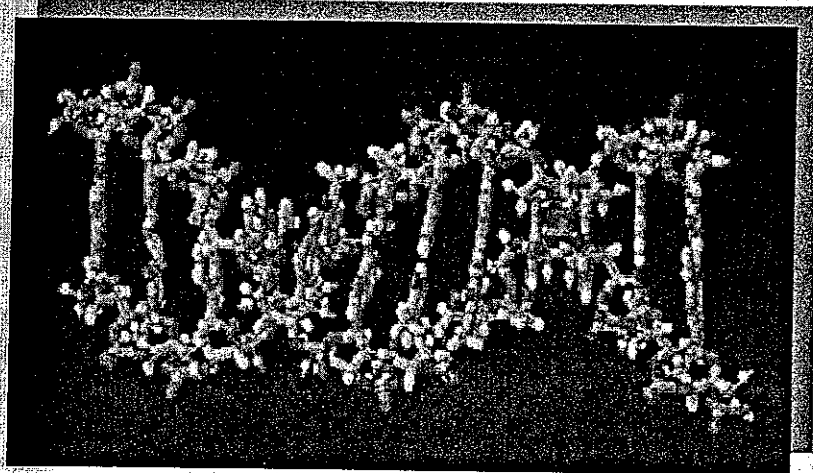






# Systems Biotechnology

## Sources of funds for total project, both phases



I. ICR Income and Campus Contributions	\$66.5 M
Private gifts	\$66.5 M
Federal funding	\$15.0 M
II. State Capital Construction Fund	\$31.8 M
<b>Total</b>	<b>\$179.8 M</b>