

**UCR  
GRADUATE  
STUDIES  
IN  
CHEMISTRY:**



**BEYOND  
THE  
B.S.**

1977

Or,  
**Got Hoods?**

UCR Chemical Sciences  
Grand Opening, 12/3/2005\*

M. Rettig, 12/3/05

\*Note: original name of building  
was Physical Sciences 1

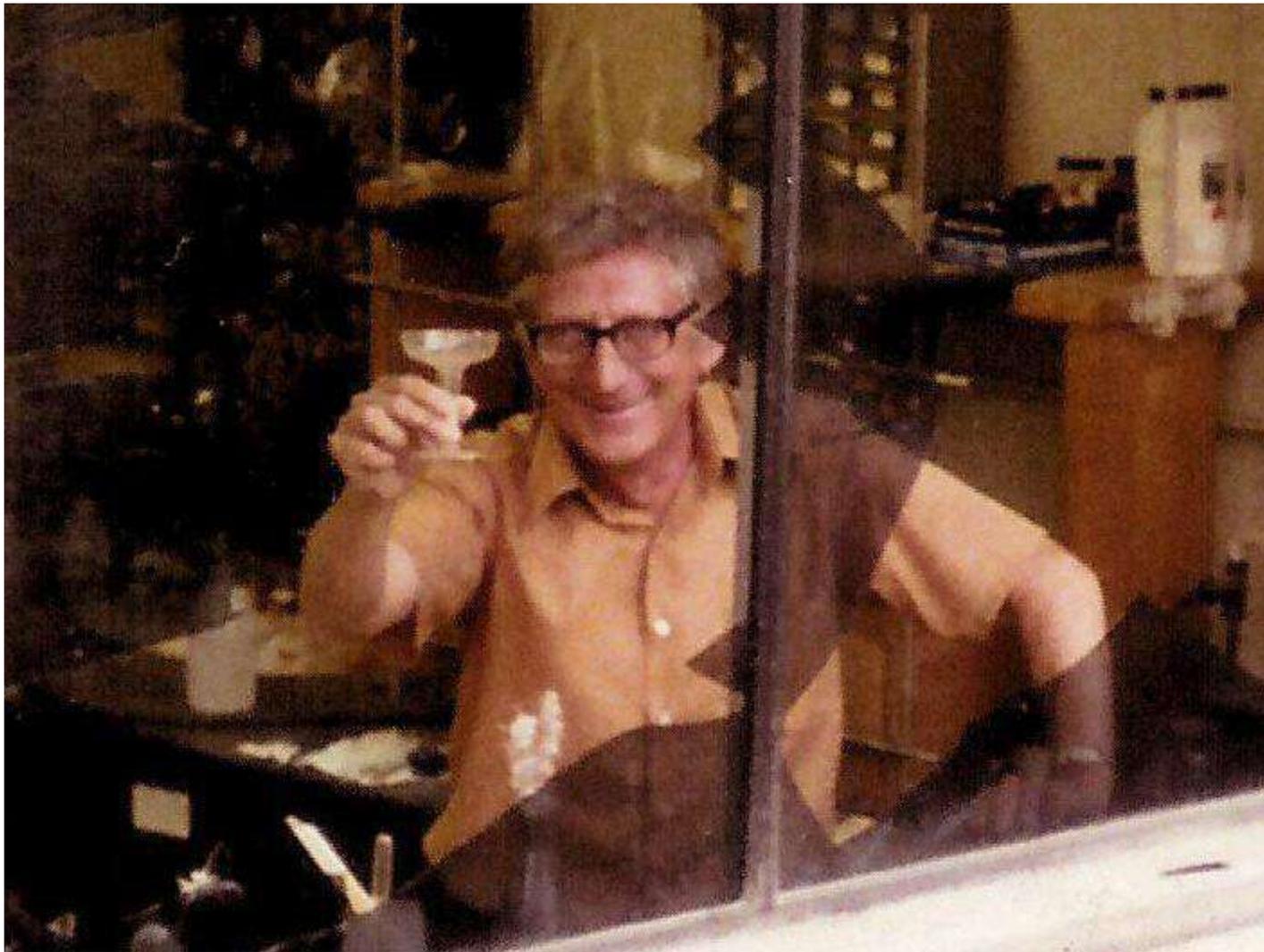
## Chemistry Department, 1970-present

- Look back at Pierce Hall, surroundings, events
- Faculty Accomplishments/Foibles
- New Buildings
  - Chemical Sciences
  - Laboratory Sciences
  - Physical Sciences 1 (renamed Chemical Sciences)
- Growth
- Glimpse of the Future
- Three Lab Accidents, starting with..

THF Still Explodes, Blows Windows Out – Pierce 1326



George Helmkamp toasting his explosion, fall 1977



This is definitely French Champagne, in anticipation of the reassignment of this lab to Guy Bertrand 25 years later

## Pierce Hall in November, 2005



Add-ons: front brick conference room, roof utilities ca. \$2M

## Physical Chemistry Lab: Pierce Hall Third Floor



Vacated Summer, 2005

# Pierce Hall Organic Research Lab



Room 3326 vacated Spring, 2005

## Hood Detail: Pierce Hall



# Organic Chemistry Teaching Lab



Pierce Hall Third Floor, this lab vacated 2003

From “The Man in the White Suit”, 1951



Compare this lab to Pierce Lab in 2003 next slide!

# Organic Chemistry Teaching Lab



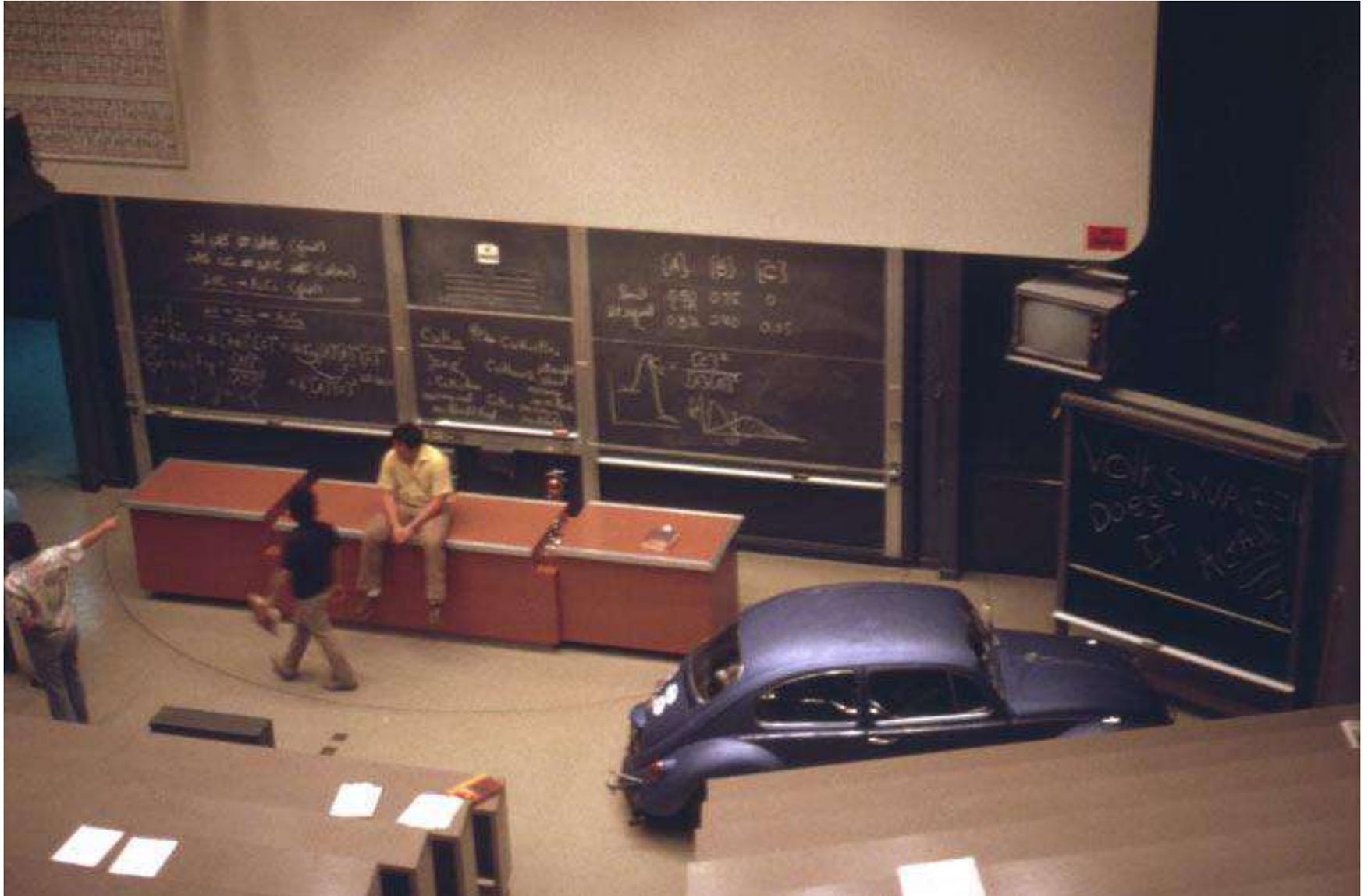
Pierce Hall Third Floor. This lab vacated 2003  
Major driving force for new Chemical Sciences  
Building: desperate need of more and modern hoods

# Freshman Chemistry Lab: Pierce Hall First Floor



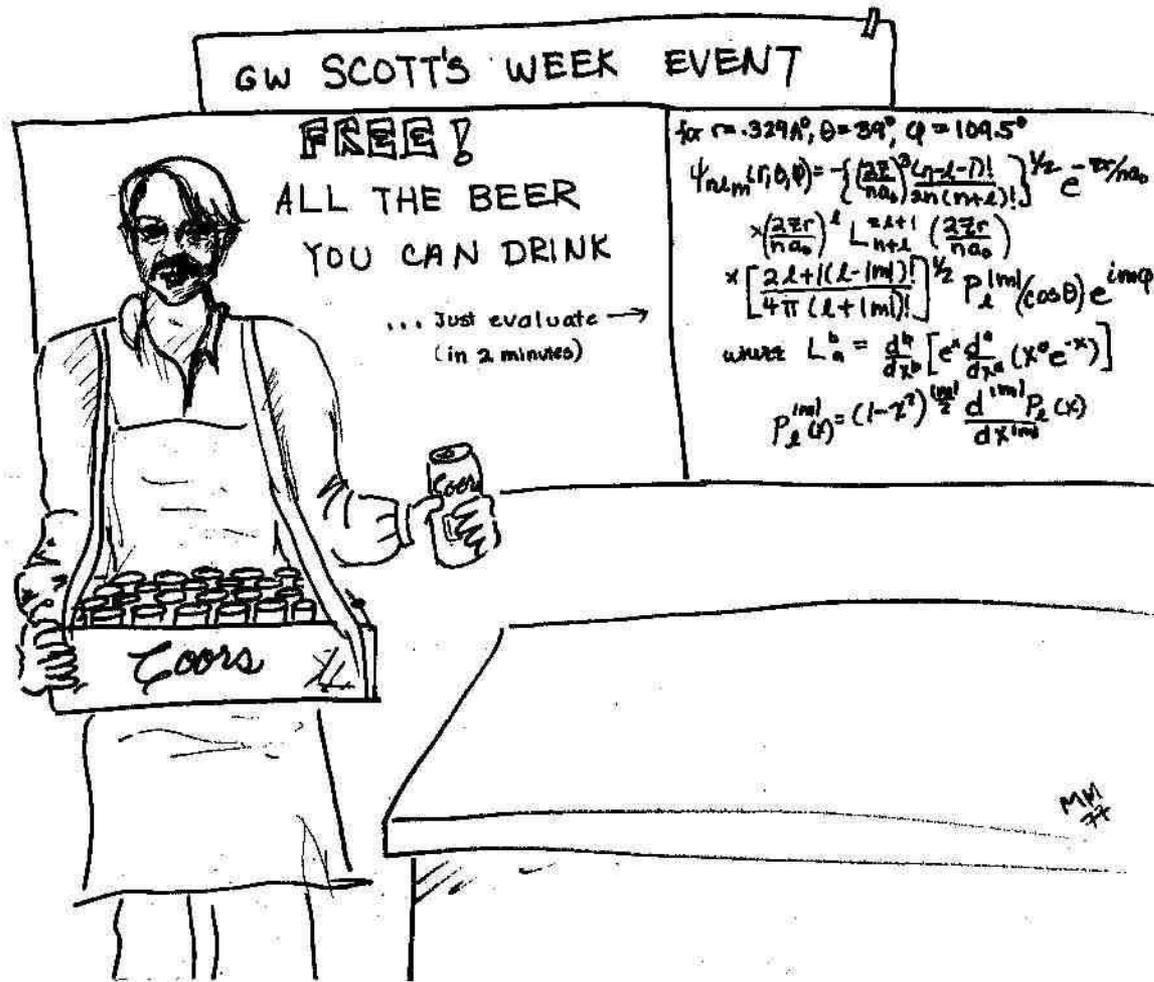
“Original” – still in use 2005. Now (2013) this and all Pierce Hall “freshman” labs completely remodeled and in full use.

## Scot's Week – UCR Spring Revelry



Physics 2000 mid 70's ( a completely lost tradition of student/faculty/staff revelry/general misbehavior all around)

# Scot's Week Host: Professor Gary Scott





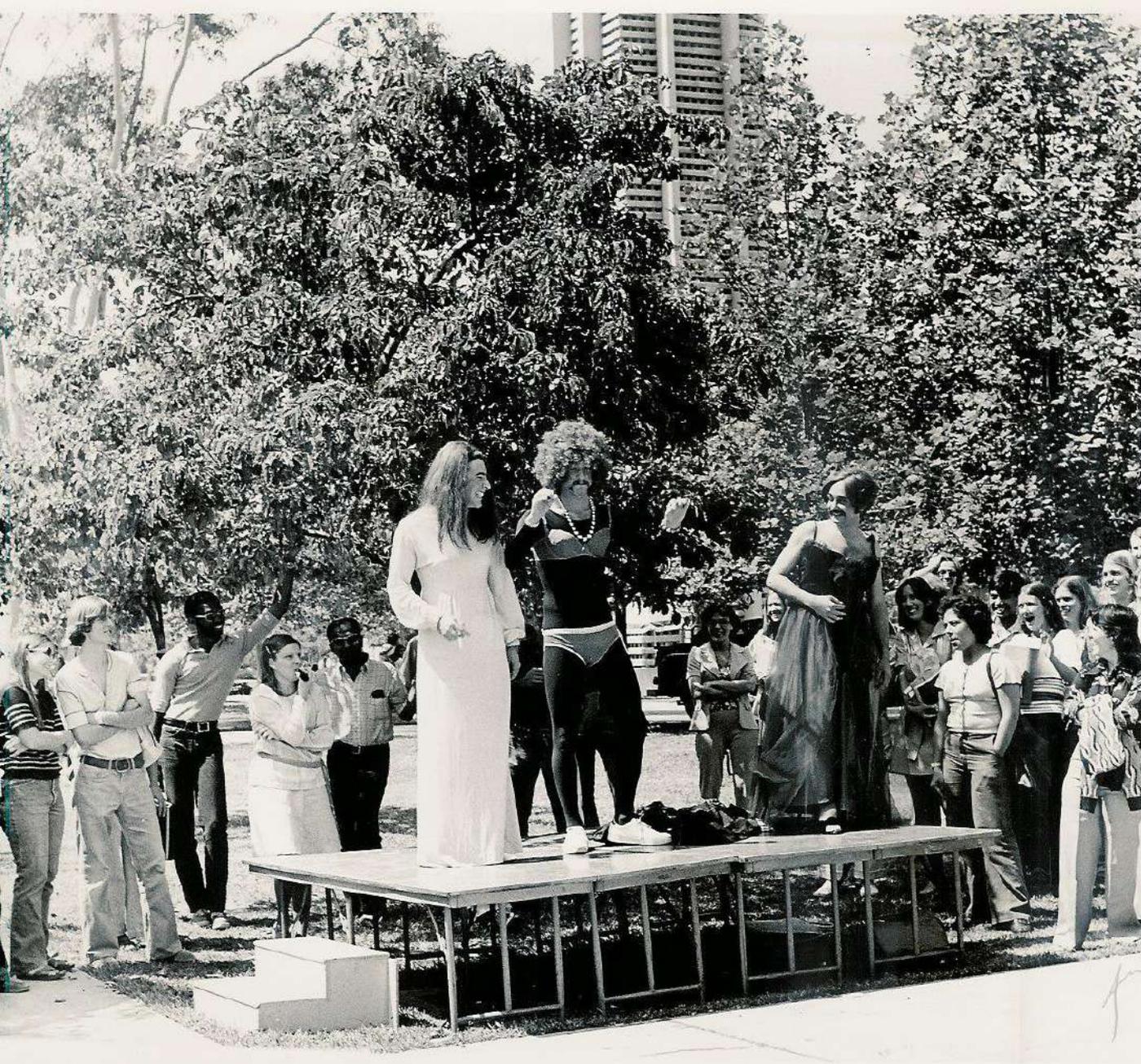
Professor George Helmkamp defends "Pierce Bombers" Team Title in Scot's Week tricycle race.

Commons Area

ca. early '70s

Chemistry  
graduate students  
compete in Scot's  
Week Drag Queen  
contest.

Commons Area



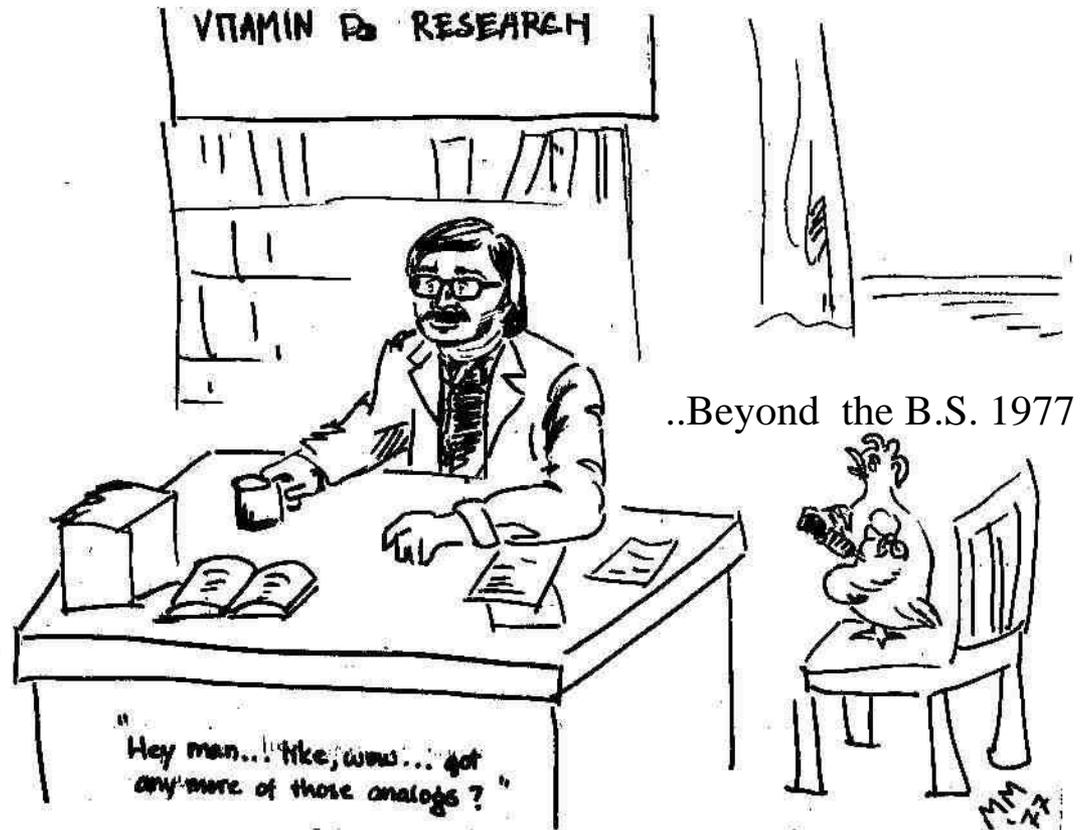
ca. early 70's

## Retrospective: Professor William Okamura

Maybe NIH would go for something in the bird flu area..

We have some really Serious grad students right now.

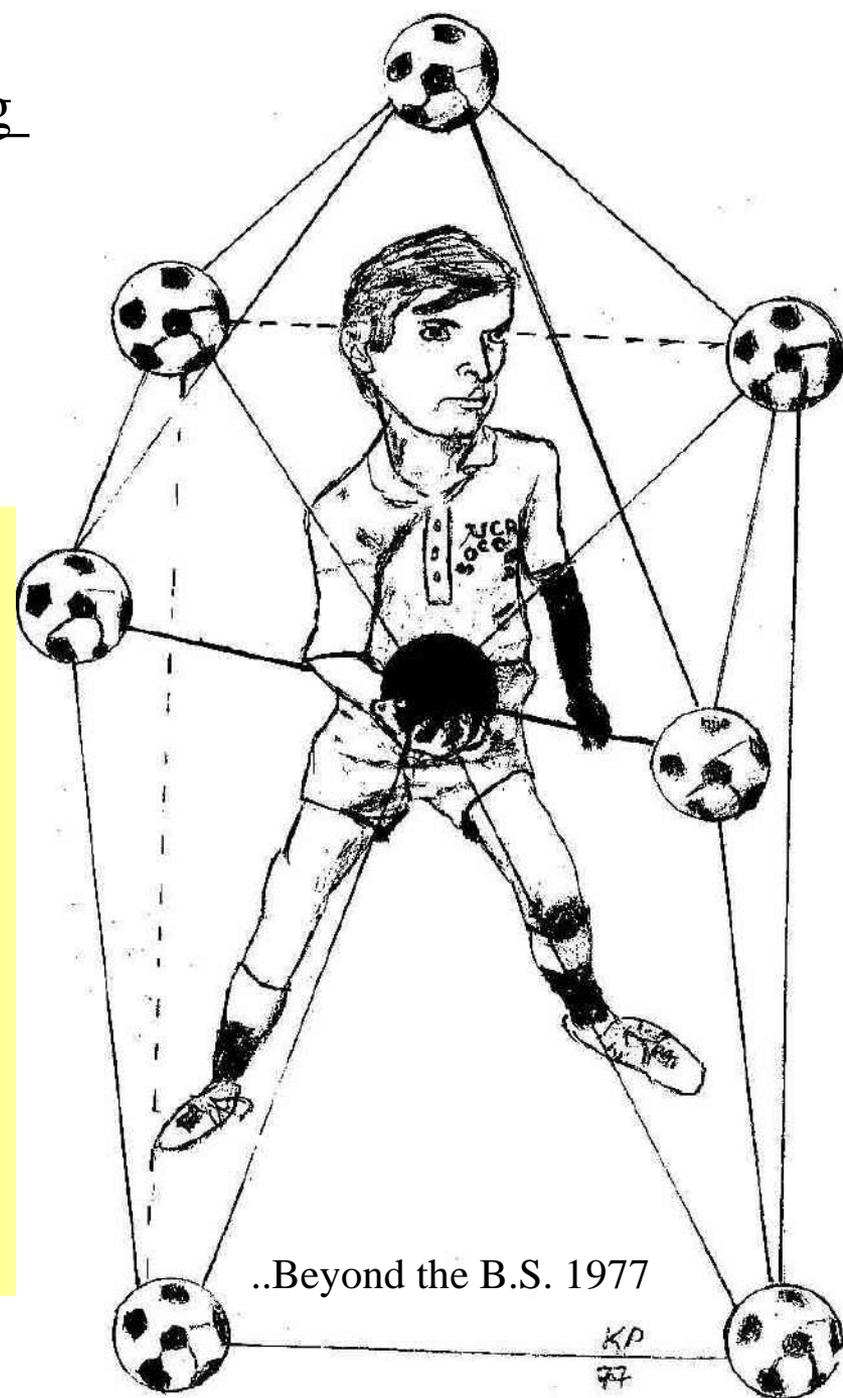
Hey, I could get another Grant!



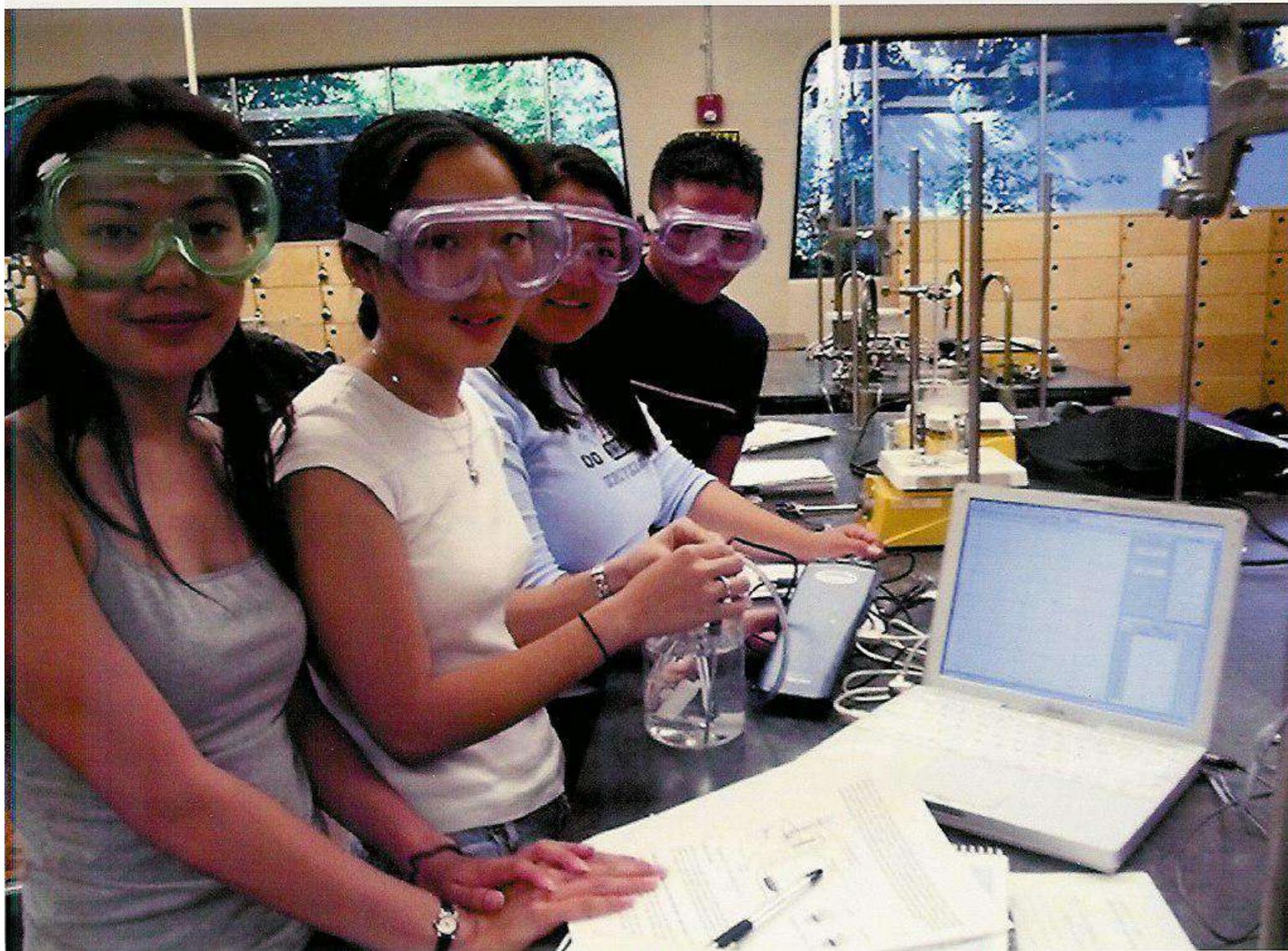
## Retrospective: Professor Richard Wing

And.. At about the same time:

Would there be any interesting extension of the carborane cage idea to all-carbon cages?...how big would they be?... what would the symmetry be?... how could you make them?... could you put anything inside them? Would it go anywhere? Would anyone care?



# First Chemistry 1 Lab with Computers !, Summer 2001



Pierce Hall General Chemistry Laboratory;  
Apple computer use pioneered by Dr. Kevin Simpson

## Curriculum Developments ~1970 -

1. Chemistry 4ABC (accelerated general) is no longer taught
2. Chemistry 8ABC (lower division organic) is no longer taught
3. Start Winter sequences of both Chemistry 1 (general) and Chemistry 112ABC (organic).
4. Start a full sequence of organic chemistry in the summer
5. Start Chemistry 1ABC in the summer
6. Start/end Chemistry 5 (quantitative analysis) in the summer
7. Add an upper division Environmental Chemistry lab course
8. Reduce Physical Chemistry lab to one quarter from two
9. Introduce Chemistry 1W to 300+ students per year who are not “ready” to start Chemistry 1A.
10. Pilot “Discussion Sections” in Chemistry 1 (general) and in Chemistry 112 (organic).
11. Introduce computer aided experiments in Chemistry 1

# Distinguished Teaching Awards -Chemistry

George Helmkamp 1973-1974

Steve Angle 1990-1991

Robert Neuman 1997-1998

Awarded annually by the Academic Senate, UCR

## Faculty Research Lecturer Awardees-Chemistry

Conway Pierce	1959
James Pitts	1966
David Kearns	1975
Donald Sawyer	1979
William Okamura	1990
Charles Wilkins	1994
Dallas Rabenstein	2001

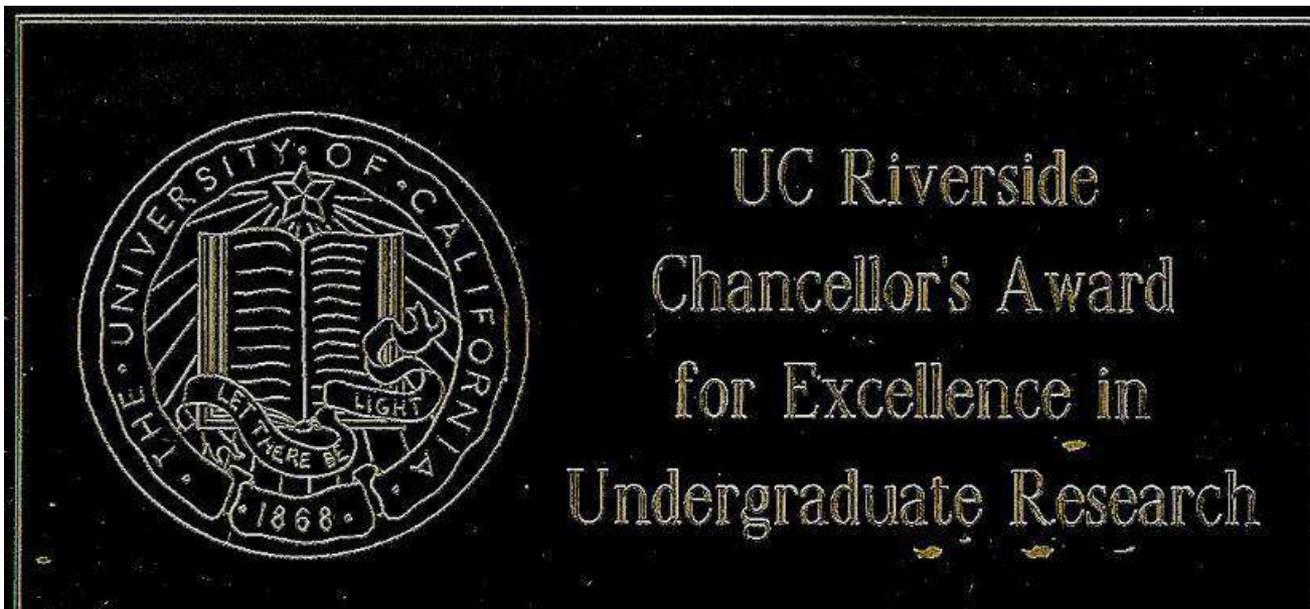
Awarded annually by the UCR Academic Senate

Tolman Award Winners,  
UCR Chemistry Faculty

Conway Pierce	1963
Donald Sawyer	1982
Jim Pitts	1983
Fred Hawthorne*	1986
Charlie Wilkins	1993
Chris Reed	2004

**Awarded annually by the Southern California Section of the ACS to recognize outstanding contributions to chemistry. Nominees must be Southern California residents when most of the contributions are made.**

\*UCR 1962-1970,  
UCLA 1971-



Chemistry Faculty Recipients:

Mark Midland	1994
Eric Chronister	1997
Bill Okamura	1998
Michael Marsella	2004

Awarded annually by the UCR Academic Senate

Pierce Hall Annex\* (attached to Pierce Hall on left)



\*Occupied in 2000

Lab Sciences 1 (Organic Chemistry teaching labs)  
to the right; (where Geology 1100 used to be!)

Pierce Hall below

Pierce Hall Annex below

Laboratory Sciences 1 below



## Research Lab: Pierce Hall Annex



Lots of hood space in the synthetic labs, students in separated area

# Laboratory Sciences 1 Building



Upper two floors  
are Dept. of  
Environmental  
Sciences research  
laboratories

Geology 1100 wing was  
Demolished for this. Rest of Geology  
Building still there to the left, and  
completely remodeled.

First Floor: 5 organic chemistry teaching labs,  
two conference rooms, stockroom

# Laboratory Sciences 1 Main Entrance South



## Laboratory Sciences 1 First Floor



Organic Chemistry Teaching Laboratory (five of these)

# Laboratory Sciences 1 First Floor



Organic Chemistry Teaching Laboratory

# Laboratory Sciences 1 First Floor



Organic Chemistry Teaching Laboratory

Laboratory Sciences 1  
Explosion Aftermath:

Lab Sciences 1 organic  
stockroom,  
May 11, 2005.

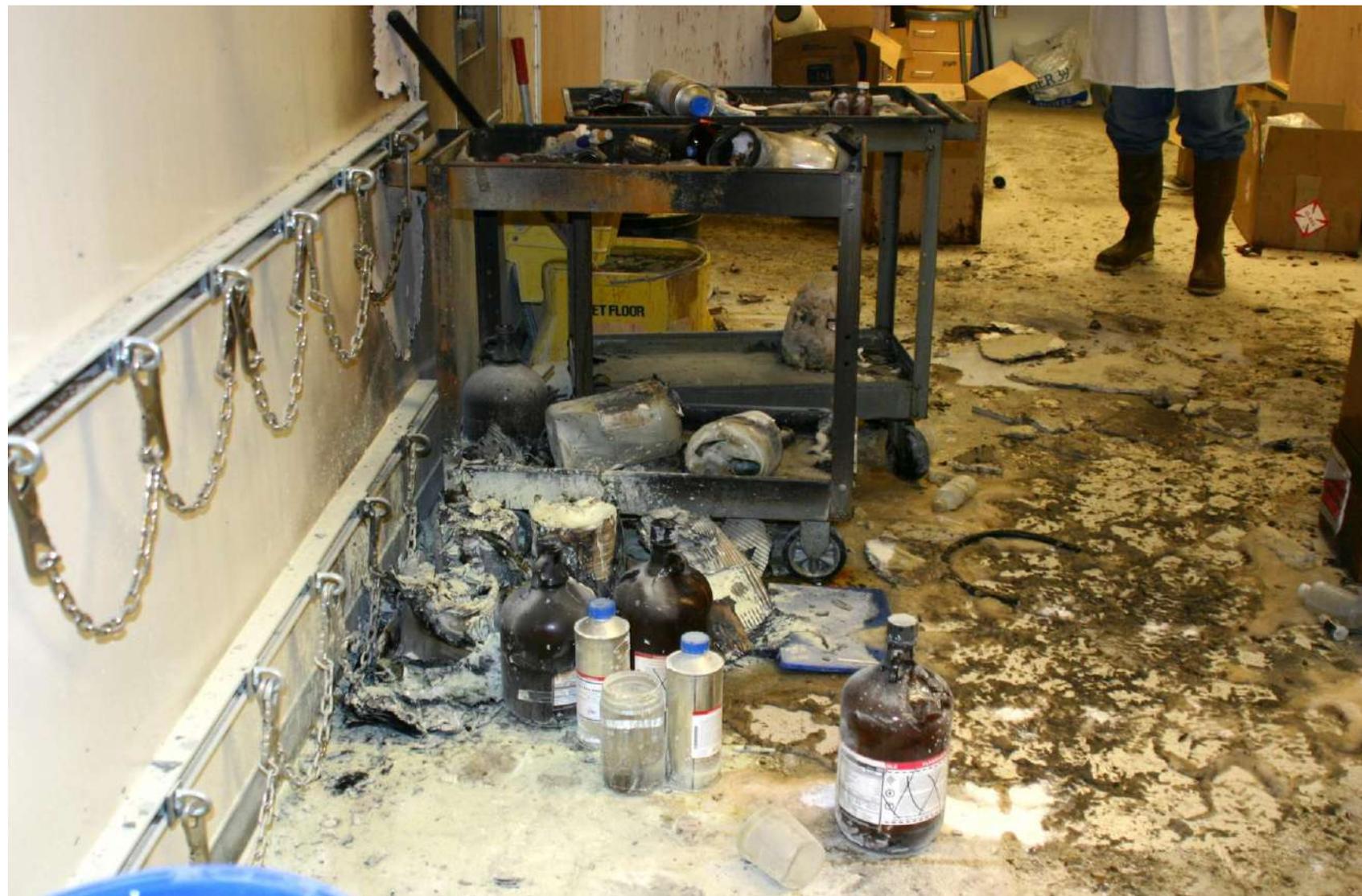
Suspected  $\text{AgN}_3$  formation in  
Tollen's reagent waste.

“Spontaneous” violent explosion  
during class hours.

(no serious injuries!)



# Explosion Aftermath Detail



# Three Buildings Looking East



Pierce Hall

Chemical Sciences Laboratory Sciences

## Chemical Sciences (CS) Building



View is toward north. Occupied 2005

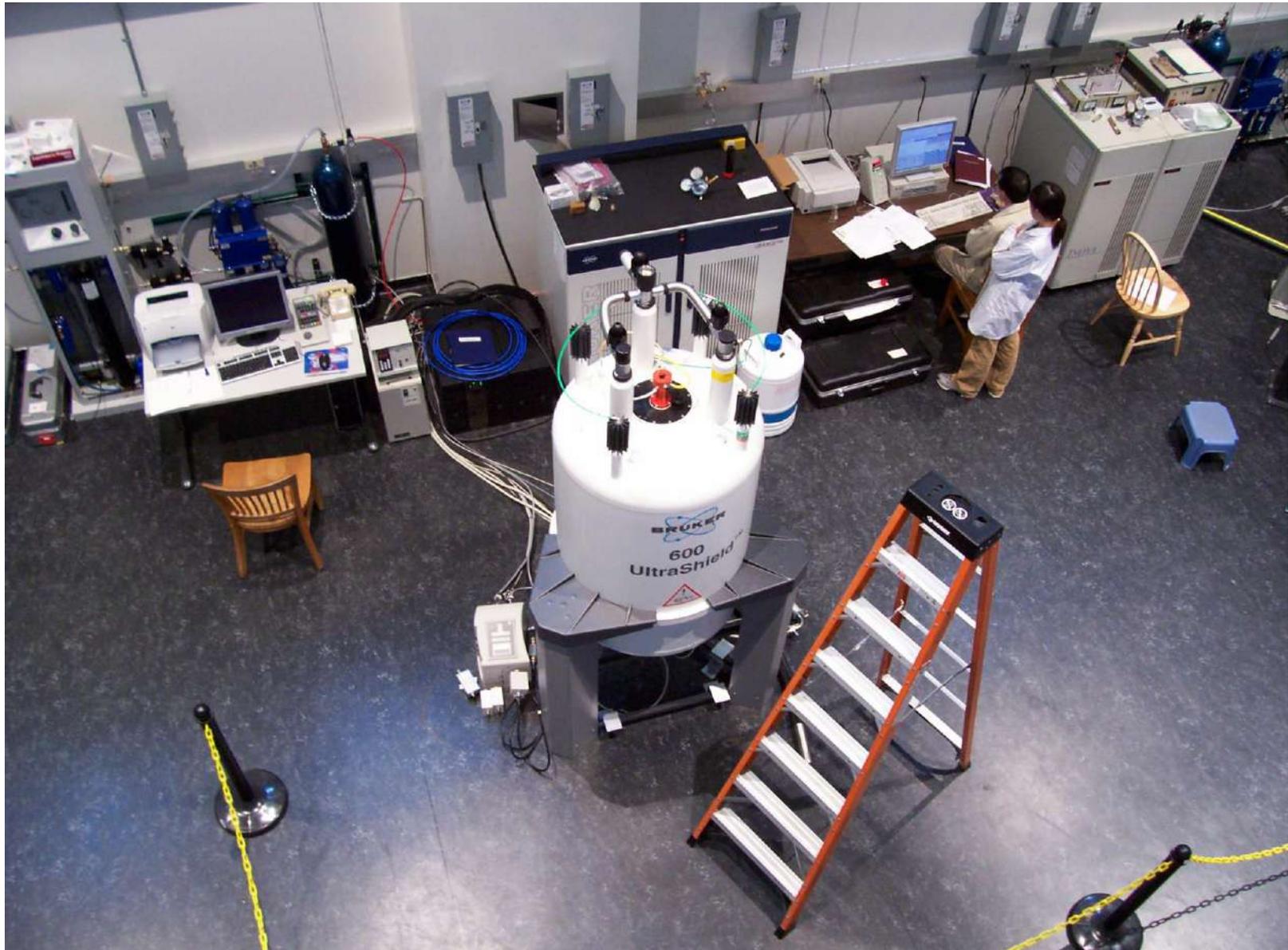
# Mass Spectrometry Laboratory



Dr. Richard Kondrat “at the helm”

CS

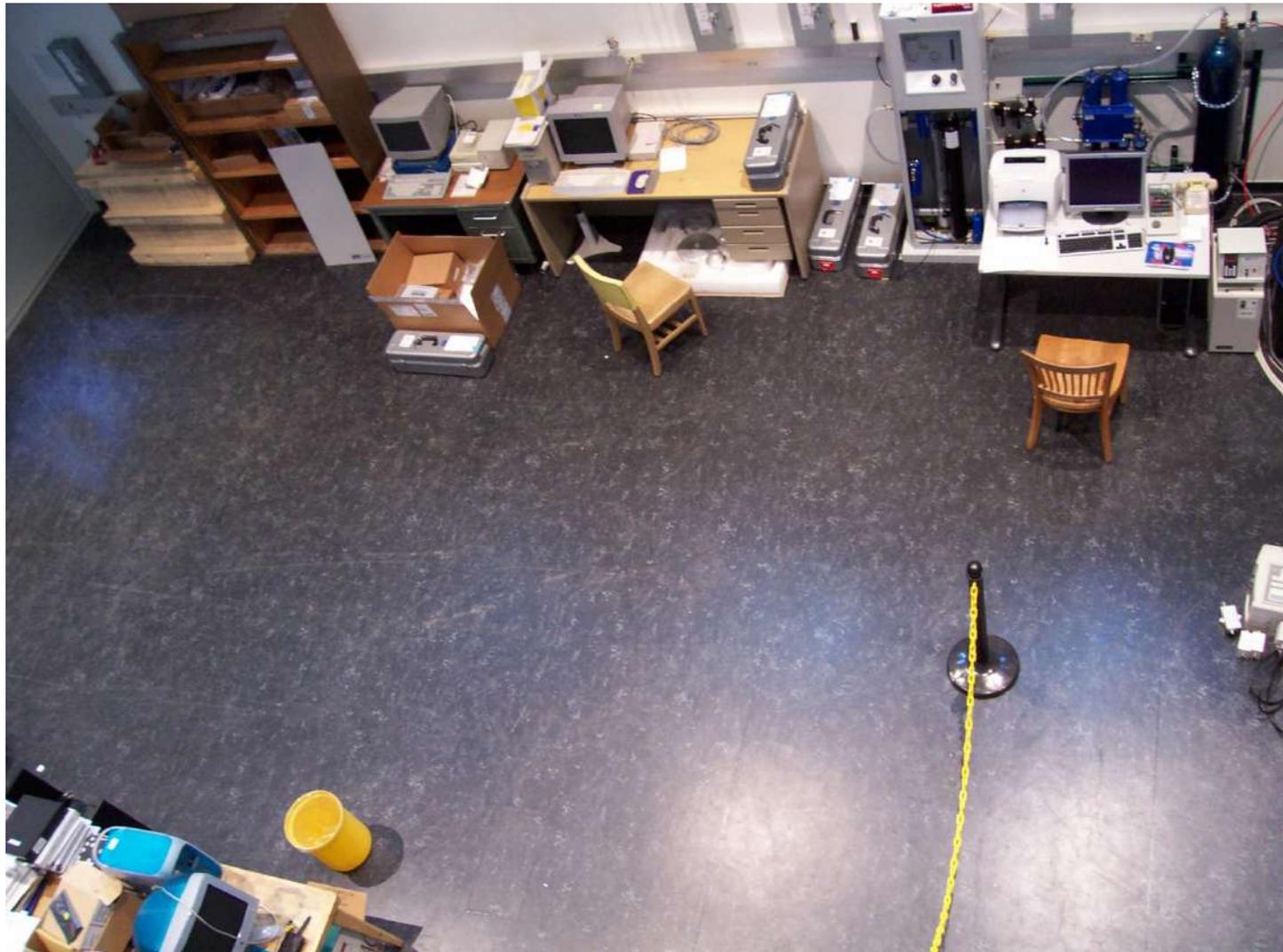
# Nuclear Magnetic Resonance Laboratory



# Nuclear Magnetic Resonance Laboratory



# Nuclear Magnetic Resonance Laboratory

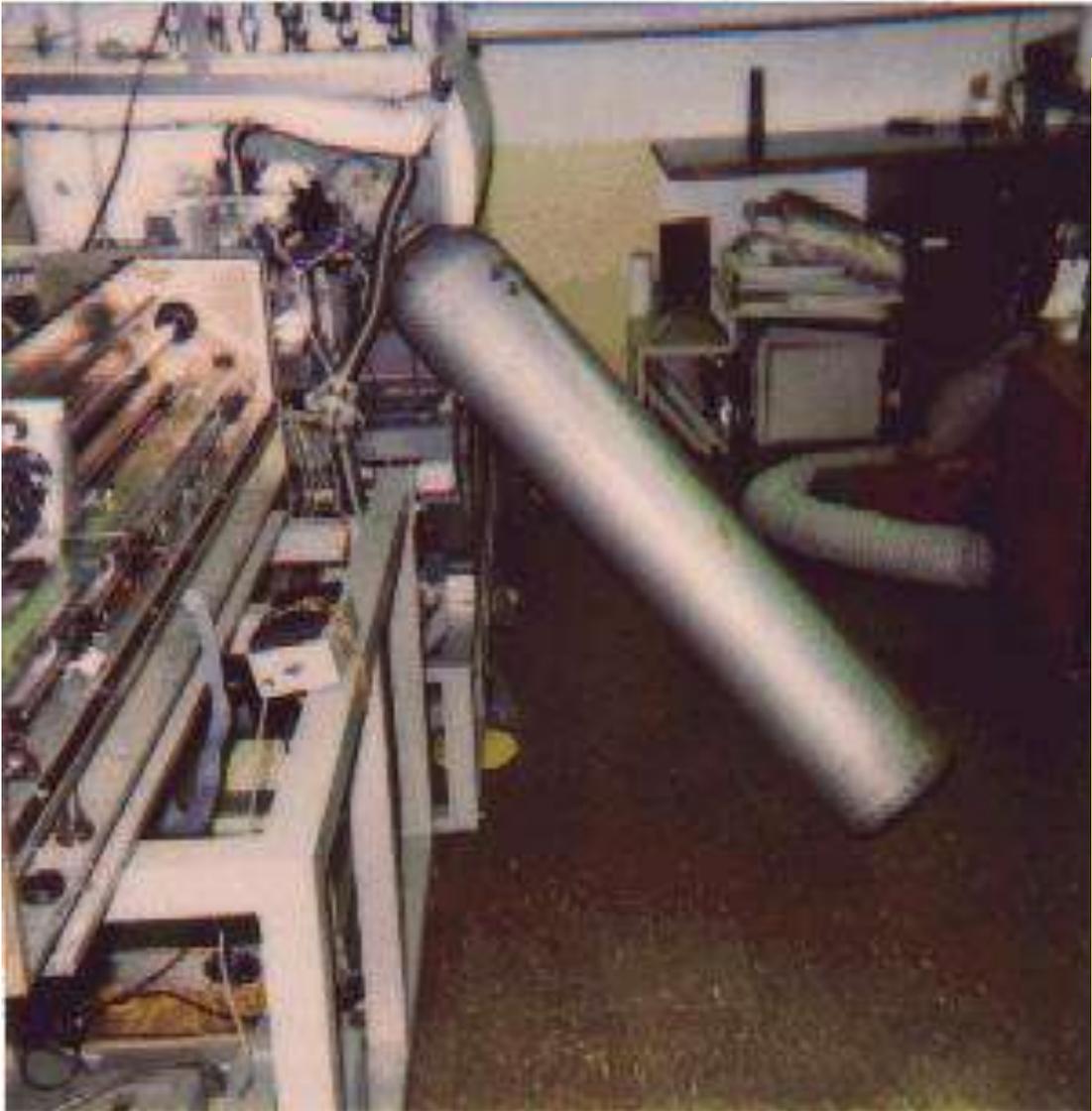


And, speaking  
Of  
Supercons....

Virtual Machine Under Development

CS

## Accident: Marriage of Gas Cylinder and Supercon



Physical Plant employee delivers compressed gas, loses control.

Not shown: prior to photo, a hand was “rolled out from under” the tip of tank to free the employee.

Not shown: a few days after this, the magnet self-quenched and was not recovered.

Pierce Hall Wilkins Lab

Approx. 1996

Second View: tank suspended above floor



# Quantitative Analysis Lab: Chemical Sciences



Shows a tiny fraction of the new hoods that were sorely needed!

# Chemical Sciences: Research Laboratory



# Chemical Sciences: Research Laboratory



Student carrel by window

CS

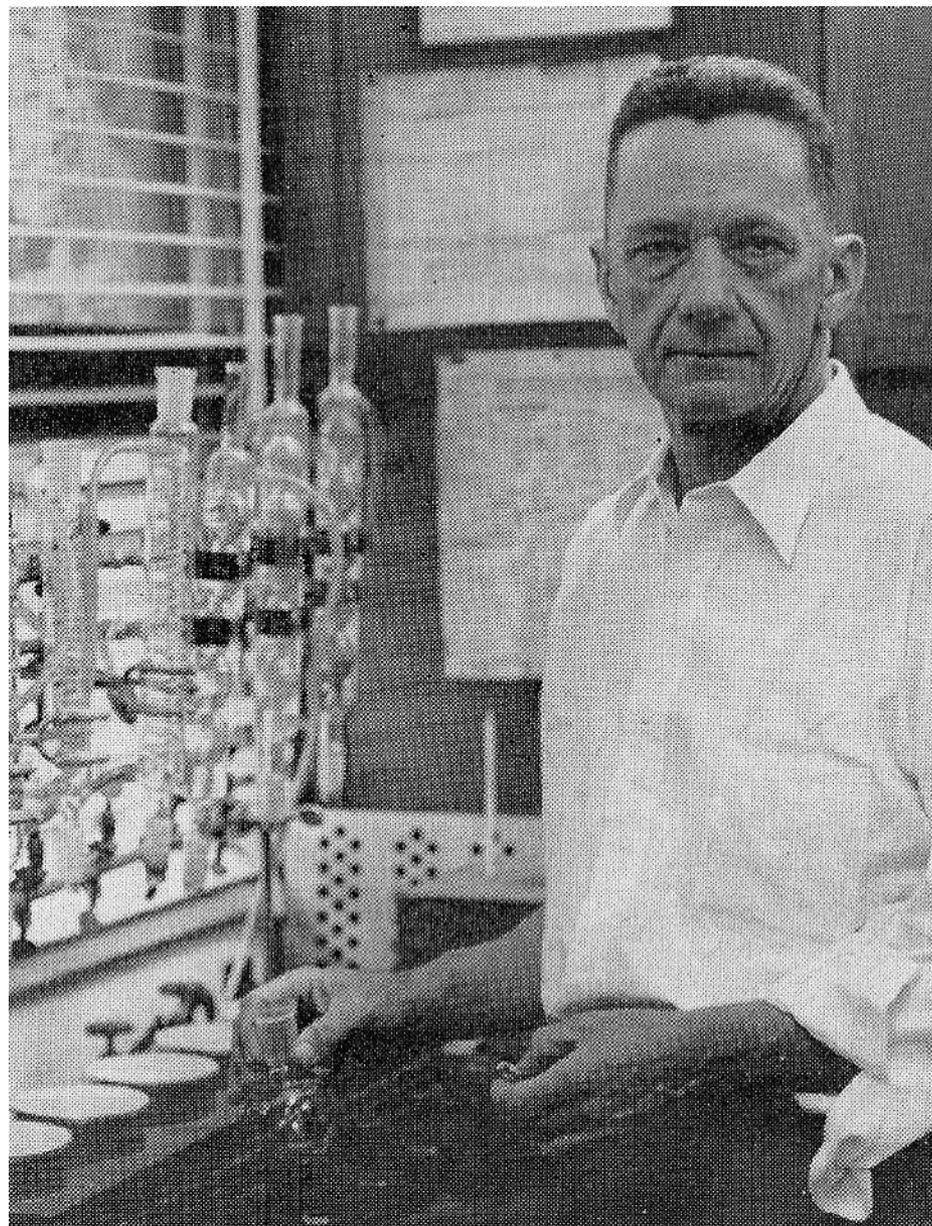
# Dr. Joanna Grundy – Mathey Laboratory



November, 2005

CS

“Founding” Chemistry faculty  
Chair Conway Pierce in  
Lab, (Physical Sciences Unit 1,  
now known as Geology Building )



ca. 1954

Year	# UGrads campus	# Grads campus	# Chem Grads	# Chem Faculty	# Chem Service*
1960	1500	44	17	7	?
1965	2600	831	68	14	?
1970	4400	1289	60	18	1500
1975	3600	1266	39	20	1600
1980	3000	1351	49	16	1700
1985	3500	1303	58	16	1950
1990	7000	1463	65	22	3400
1995	7000	1377	55	20	4600
2000	11000	1533	69	21	5200
2005	16000	2000	106	24	7000

**Campus  
and  
Chemistry  
Growth**

In this  
period,  
Chemistry  
Majors  
increased  
from  
55 to 150

\*sum of enrollment all pre-chem 1 (1W), 1ABC, organic 8/112 ABC,  
for entire calendar year.

## Chemistry Faculty Research Areas

“Then” (1970):	Analytical	1
	Inorganic	4
	Organic	6
	Physical	7
Now* (2005):	Analytical	7
	Biological	10
	Environmental	4
	Inorganic	5
	Organic	12
	Physical	9
	Materials	9

\*Multiple Listing Service: 18 faculty in 1970, 24 faculty in 2005

## Chemistry Department Distinguished Professors

Guy Bertrand

David Bocian

Robert Haddon (joint appointment Engineering)

Francois Mathey

Dallas Rabenstein

Chris Reed

## University of California Presidential Chair

Michael Pirrung

## Department Chairs -Chemistry

Conway Pierce	'53-'60	Charlie Wilkins	'82-'89
Jim Pitts	'60-'63	Dallas Rabenstein	'89-'92
Harry Johnson	'63-'66	Bill Okamura	'92-'94
Don Sawyer	'66-'69	Mike Rettig	'94-'98
Bob Neuman	early '70	Dallas Rabenstein	'98-'00
George Helmkamp	'70-'74	Mike Rettig	'00-'02
Hart Schmidt	'74-'78	Dallas Rabenstein	'02-'03
Bob Neuman	'79-'80	Chris Switzer	'03-
Mike Rettig	'80-'82		

# Campus Administrative Service by Chemistry Faculty

Executive Vice Chancellor: Everly Fleischer

College Dean: Don Sawyer, Physical Sciences

Steve Angle, Natural and Agricultural Sciences

Associate Dean: George Helmkamp, Physical Sciences

(College)

Charlie Wilkins, Physical Sciences

Associate Dean, Student Affairs: Gary Scott

(College)

Graduate Dean: Harry Johnson

Dallas Rabenstein

THE PRESS-ENTERPRISE

# LOCAL

SECTION



FRIDAY

NOVEMBER 11, 2005

R

# UCR to pursue med school

**DOCTORS:** The project faces such hurdles as funding, UC rivals and cooperating hospitals.

BY MARISA AGHA  
AND DOUGLAS E. BEEMAN  
THE PRESS-ENTERPRISE

UC Riverside Chancellor France Cordova asked Inland-area civic and business leaders for their help Thursday as she formally unveiled the university's bid for a medical school — a proposal that she said could boost both the region's health care and economy.

"UCR's thinly veiled secret is no longer secret," Cordova told about 200 people at the Mission Inn in Riverside.

"We are actively seeking a new medical school that would serve the Inland Empire's health needs while, at the same time, taking the campus to a new level."

UCR's medical school plans still face hurdles. Among them

**ON THE WEB**

■ UCR video describing medical school proposal. [pe.com](http://pe.com)



is obtaining the hundreds of millions of dollars needed to build and run the school, finding a hospital to train the new doctors and competition from other UC campuses, particularly UC Merced.

Despite the potential roadblocks, some Inland physicians welcomed the news, saying it



France Cordova

medical education, and help supply the fast-growing Inland region with doctors.

"It won't solve the problem (of doctor shortages) but it will

would make the region more attractive for newer physicians, provide existing physicians more opportunities for expert consultations and continuing

make it easier to recruit physicians," said Dr. Steven Larson, chairman of the Riverside Medical Clinic.

Larson, who teaches first- and second-year medical students at UCR's biomedical program, said building a medical school almost from scratch will allow UC Riverside to design its training to conform to how medicine is practiced now.

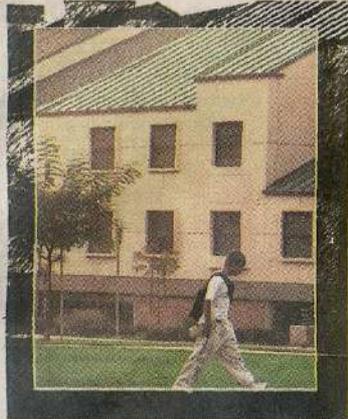
More primary-care physicians are needed and more of  
See UCR/B7

Implications for Chemistry?

\*The future is here: the UCR Medical School is accredited and will enroll its first class in August 2013.

9-16-05  
PRESS

# UC RIVERSIDE: PLAN FOR MAJOR EXPANSION CLEARS HURDLE



## STUDENT HOUSING

NEW ON-CAMPUS HOUSING WOULD BE DEVELOPED — ENOUGH TO ACCOMMODATE 12,500 NEW STUDENTS.



## RESEARCH

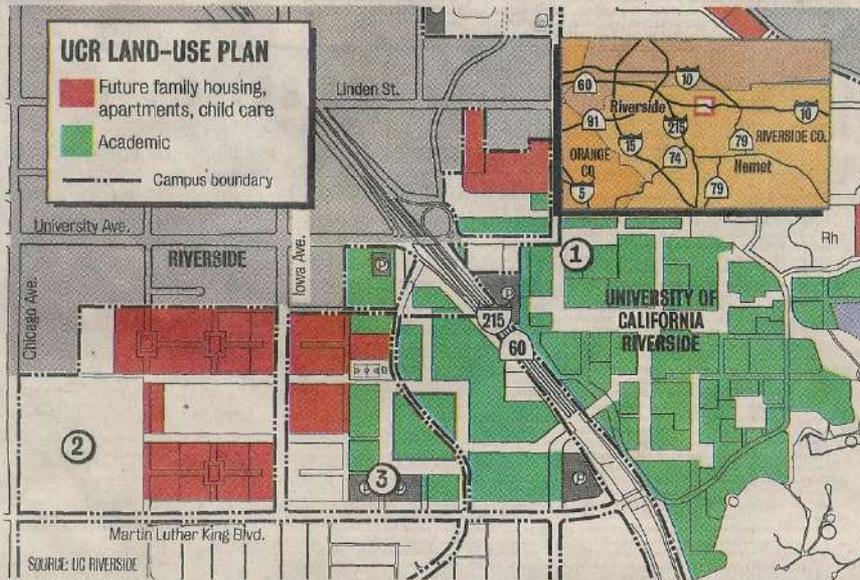
NEW RESEARCH FACILITIES — SOME WOULD HELP PROVIDE A FRAMEWORK FOR A POTENTIAL MEDICAL SCHOOL.



## PARKING

15,868 NEW STRUCTURED AND SURFACE-LEVEL PARKING SPACES WOULD BE ADDED AT VARIOUS LOCATIONS.

September 16, 2005  
Press-Enterprise



- 1 A performing-arts center on the East Campus.
- 2 A campus reserve on 40 acres at the north-eastern corner of Martin Luther King Boulevard and Chicago Avenue.
- 3 The expansion plan calls for increased parking.

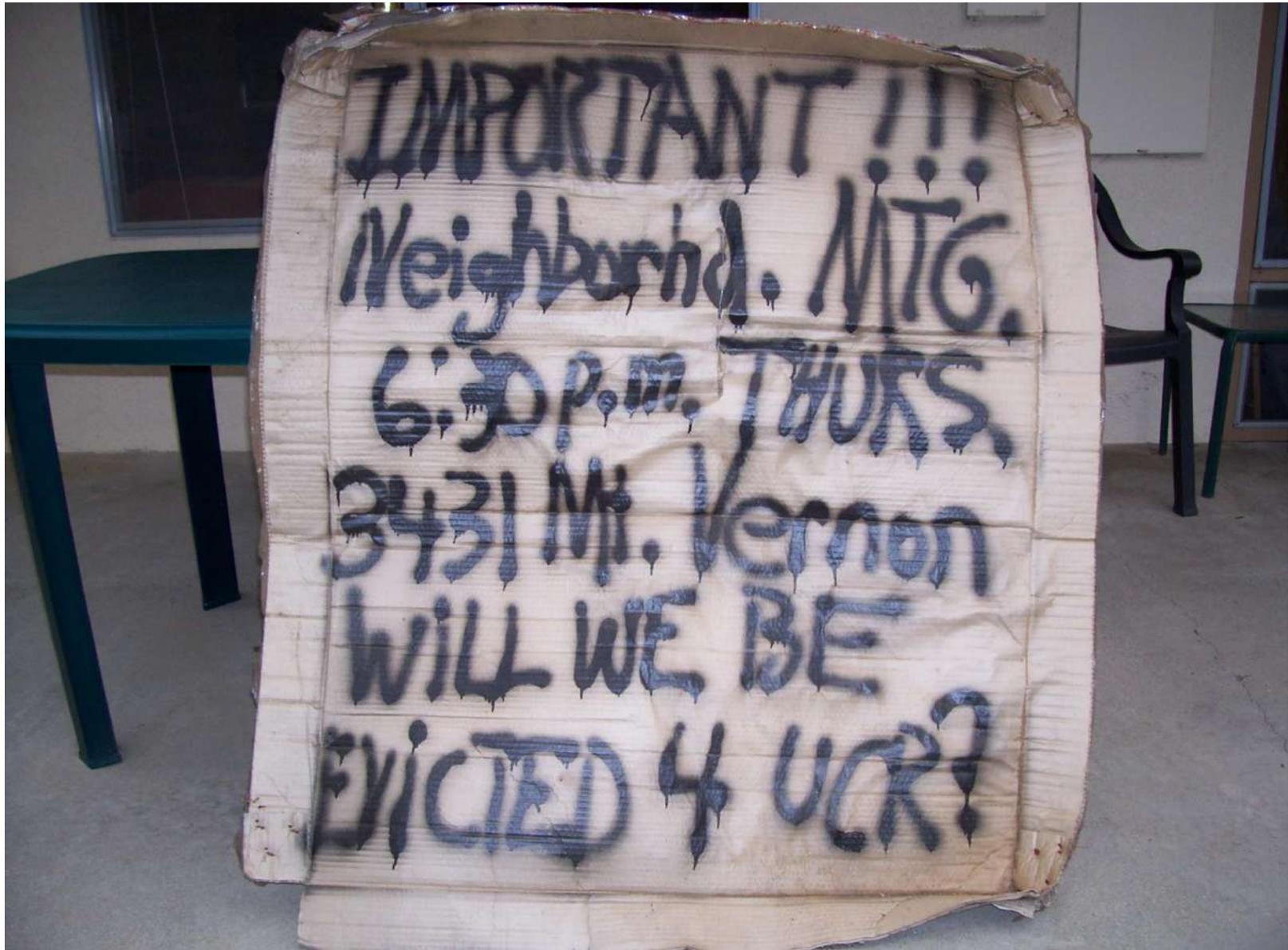
### OTHER KEY ELEMENTS:

- A. \$50-million genomics building on East Campus.
- B. Pedestrian and bicycle pathway linking campus centers.
- C. New academic buildings to accommodate rise in enrollment.

# Campus eager for big-time leap

SOURCE: UC RIVERSIDE

October, 2005: Neighborhood Meeting Notice – Expansion Worries



This is the Watkins/Mount Vernon/Big Springs area east of campus

Acknowledgements from the Department to:

**Pioneer Chemistry Faculty:** Pierce, Helmkamp, Johnson, Schmidt, Pitts, and Sawyer

**Chancellors:** Watkins, Spieth, Hinderaker, Rivera, Aldrich, Hullar, Schraer, Orbach and Córdoba

**College Deans:** Dugger, Sherman, VanGundy, Rabenstein, Clegg and Angle

**Graduate Deans:** Shannon, Johnson, Mileur, and Rabenstein

**Agencies:** NSF, NIH, DOE, PRF, DARPA, ARB, Research Corp., State of California, Bond Issues, and many others

**Staff:** every one of our superb staff members since 1954

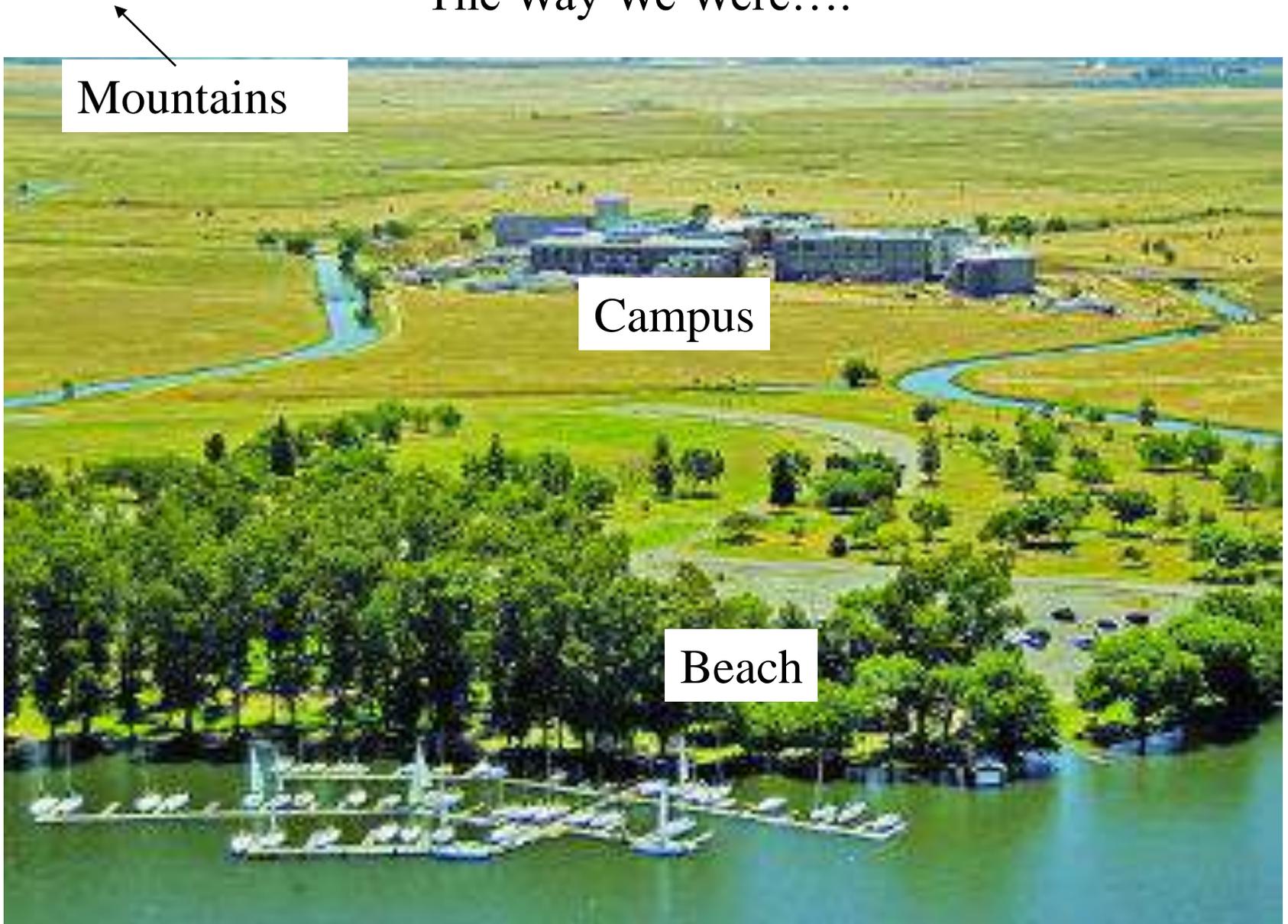
**Students:** all of our undergraduate and graduate students

**Academic Coordinators:** Simpson, Borchardt, Kondrat and Jenks

**Postdoctorals:** probably more than a thousand of you!

*When all of these elements work together, really great things happen!*

# The Way We Were....

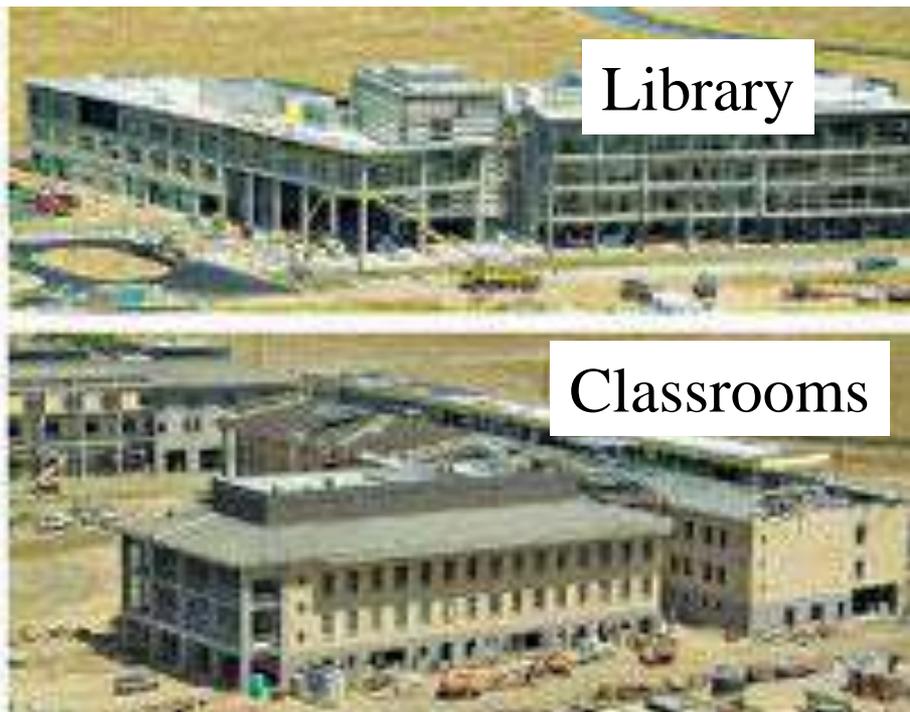


This is UC Merced (2005). Remember that UCR is only an hour away from the mountains and the beach?

# UC Merced 2005



water



Library



Classrooms

This and previous slide are UC Merced “beginnings” – like UCR. Anne Myers Kelley and spouse David Kelley (right) are “founding” Chemistry faculty members at UC Merced. Professor Anne Myers Kelley was a chemistry major at UCR, Class of 1980!

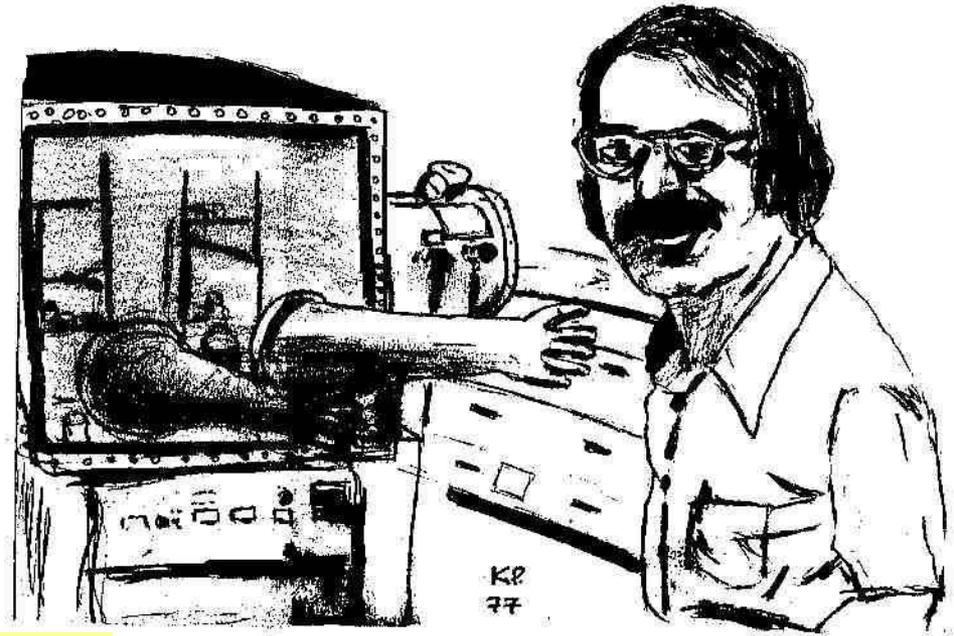
C&E News Sept. 5, 2005



Kelleys

# Retrospective: Professor Rettig

..Beyond the B.S. 1977



What is this thing  
Trying to tell me?

*I should get into outreach?*