

UCR



50th anniversary

Chemistry Graduate Program
1960-2010

Celebration & Symposium
June 18, 2010

UNIVERSITY OF CALIFORNIA, RIVERSIDE

The 50th Anniversary Year of the Chemistry Graduate Program (1st Graduate program at UCR!)

1953-1966: Physical Sciences, 2nd floor (Geology)

1966-2005: Pierce Hall

2000-present: Pierce Hall Annex (research labs)

2001-present: Science Laboratories I (teaching)

2005-present: Chemical Sciences

(renamed in 2008 - was Physical Sciences I)

In The Beginning

- 1948 - Strayer Report: 1500 Students
- 1949 - L&S College Authorized
 - Delay Due to Korean War
- 1954 - College Opened, (February, 1954)
 - 120 students and ~30 faculty
- 1954 - Division of Physical Sciences
 - chemistry, geology, mathematics, physics
 - W. Conway Pierce, Chairman
- 1960 - Graduate Program in Chemistry
- 1961 - Department of Chemistry
 - James N. Pitts, Chairman



July 30, 1952. Ground-breaking for the \$6.5 million construction project. State Senator Dilworth, Assemblymen Boyd and Babbage (sponsored legislation). Construction begins on five buildings: Webber Hall, Physical Sciences (Geology), Physical Education, Watkins Hall and Life Sciences.



Provost Gordon Watkins goes on faculty recruiting trips, gathering young(?) professors from Yale, Princeton, Pomona, Stanford, Colgate, Dartmouth, Amherst, Reed, Columbia, Oxford and other UC campuses.

Division of Physical Sciences "Charter" Faculty ~1954-56

chemistry, geology, math, physics



Hart Schmidt

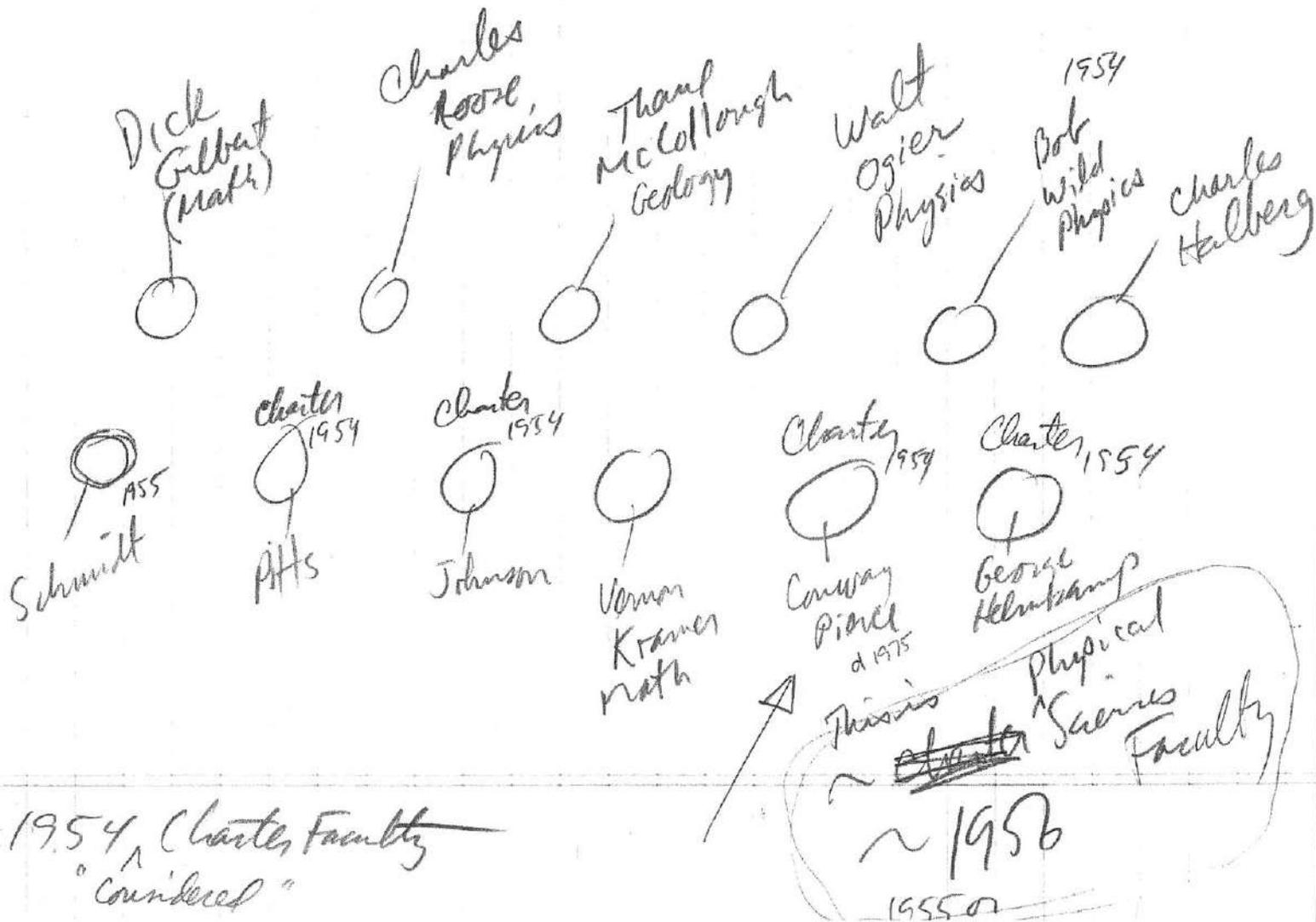
Jim Pitts

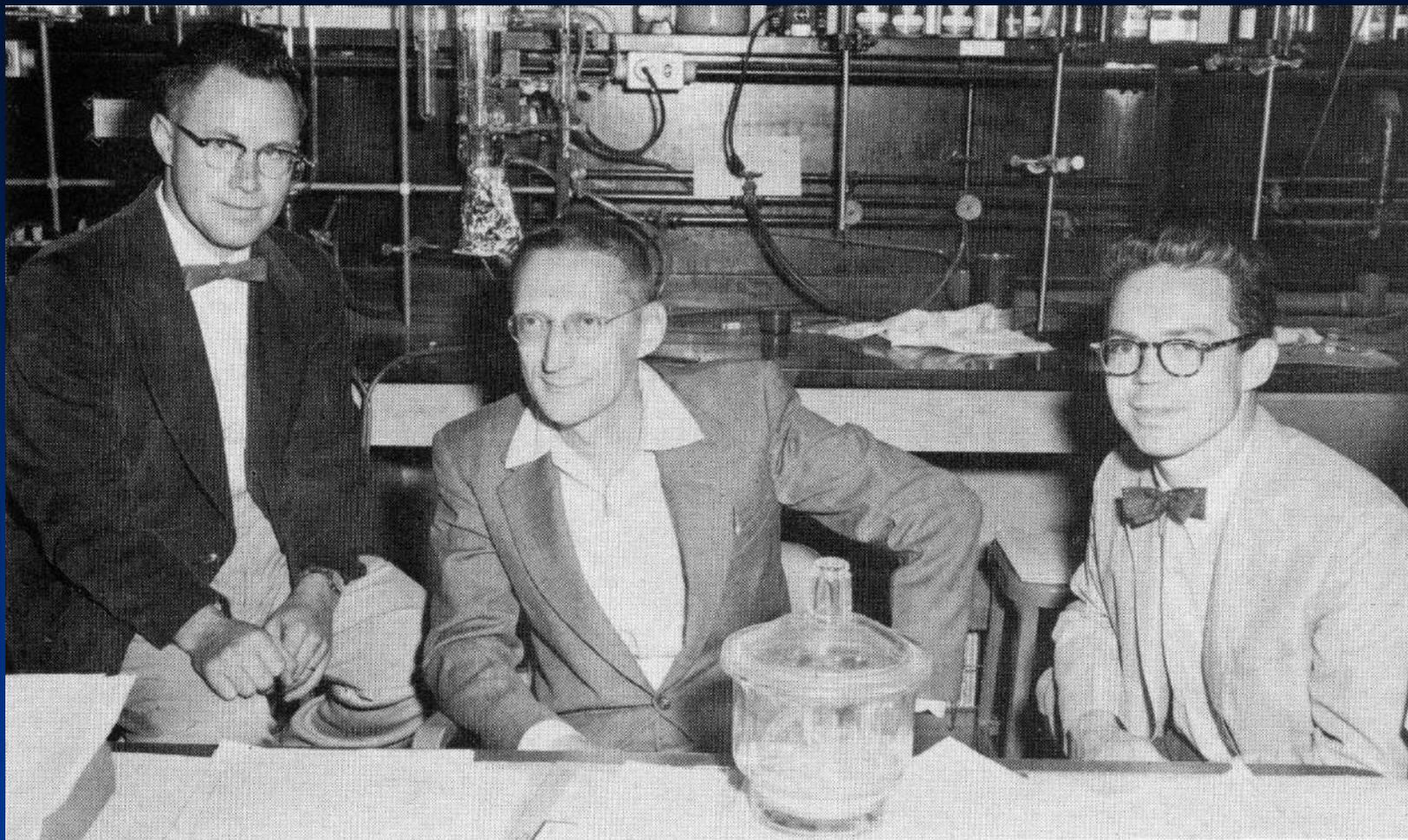
Harry
Johnson
1927-2007

Conway
Pierce
1895-1974

George
Helmkamp

From H. Schmidt
10-22-99



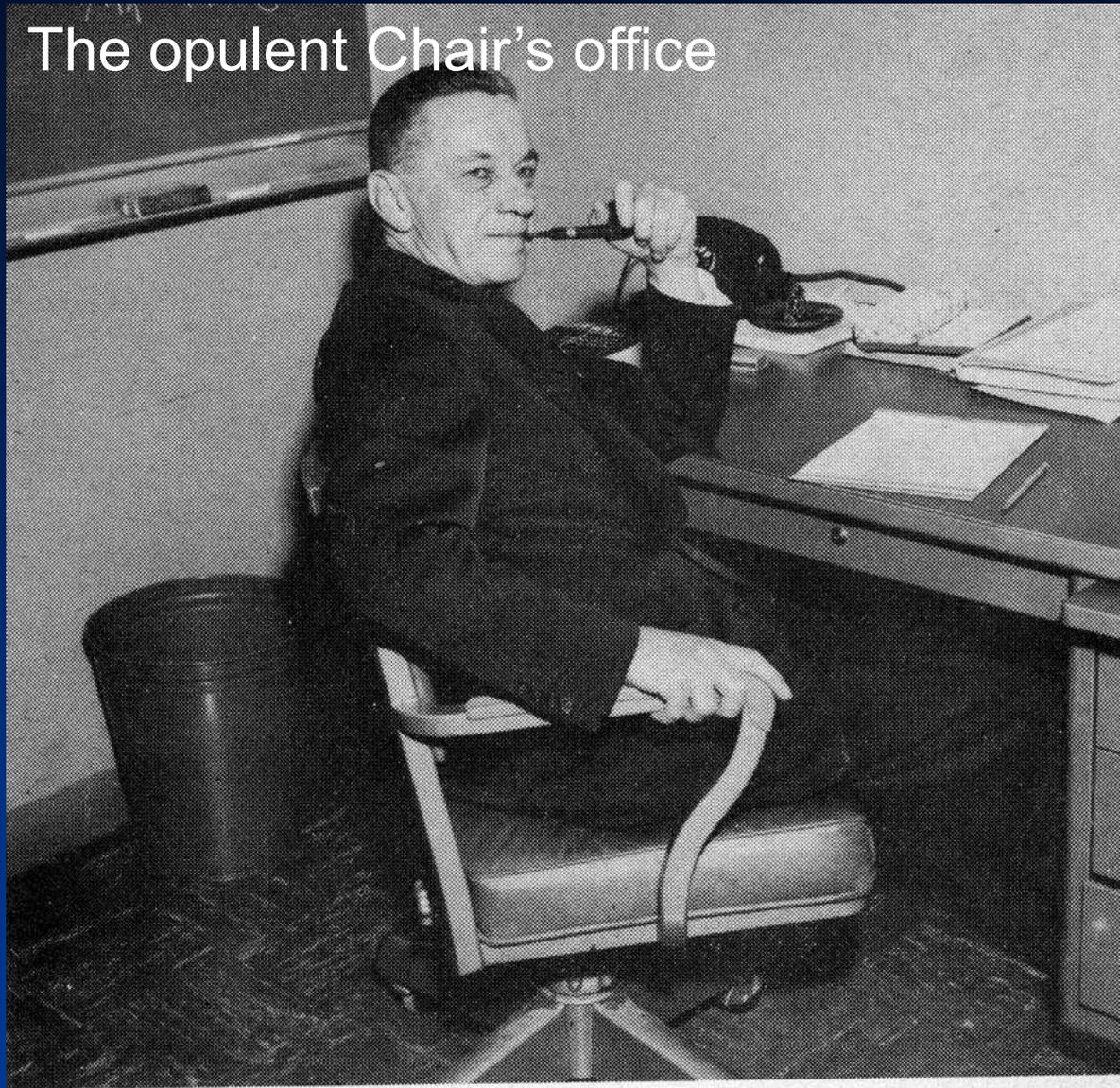


Chemistry Department: Donald T. Sawyer; George K. Helmkamp; James F. Hornig; absent when picture was taken, James N. Pitts; Harry W. Johnson; Hartland H. Schmidt; Thane H. McCulloh, Geology; Frank W. Dickson, Geology; Michael A. Murphy, Geology.



UCR Oral History - George Helmkamp - UCR Ceremonial Mace

The opulent Chair's office



W. Conway Pierce, Chairman of the Division of Physical Sciences.

Early Chemistry Faculty

- 1953: **W. Conway Pierce (74)**, George Helmkamp
- 1954: James N. Pitts (Chairman, 1960-63),
Harry W. Johnson (07) (Chairman, 1963-66)
- 1955: Hartland Schmidt (Chairman, 1974-78)
- 1956: Donald T. Sawyer (Chairman, 1966-70)
- 1958: John Garst, James Hornig
- 1959: Ron Archer, Manfred Reinecke; 1959
- 1960-1: Ted Kuwana, Roy Fukuto, Sunney Chan
- 1962: M. F. Hawthorne, David Kearns, Jerry Bell
- 1963: **Robert C. Neuman**, Philip Radlick
- 1964-7 **Gus Maki (09)**, William Orttung, **Richard M. Wing**,
Mort Gibian, Seth Boorstein, Ted McKinney,
William Okamura, **Michael Rettig**
- 1968-9: Walter Deal, Paul Ellgen, L. Robin Martin,
James Sudmeier

Early Chemistry PhDs 1964-67

PhD Graduate	Faculty Mentor	PhD Date
Sharp, James .	Pitts, James	01/29/1964
Tackett, James	Sawyer, Donald	01/29/1964
Barr, James K.	Sawyer, Donald	06/10/1964
Clark, Ronald D.	Helmkamp, George	06/10/1964
Davis, Bruce W.	Pierce, W. Conway	06/10/1964
Kula, Richard J.	Sawyer, Donald	06/10/1964
Pettitt, David J.	Helmkamp, George	06/10/1964
Seo, Eddie T.	Sawyer, Donald	06/10/1964

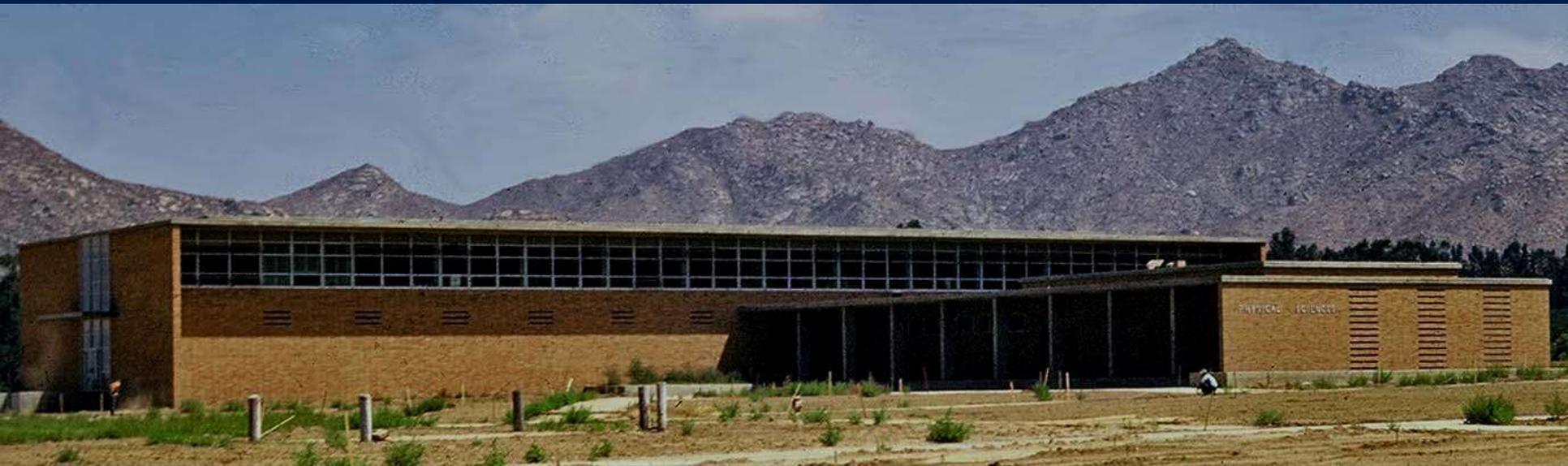
Stephens, Robert D.	Helmkamp, George	01/27/1965
Castro, George	Hornig, James F.	06/10/1965
Kray, Louis R.	Reinecke, Manfred G.	06/10/1965
Sebastian, John F.	Johnson, Harry W.	06/10/1965

Haynes, Louis V.	Sawyer, Donald	06/13/1967
Kondo, Norman S.	Helmkamp, George	06/13/1967
Rosen, William M.	Radlick, Phillip	06/13/1967
Schultz, Franklin A.	Sawyer, Donald	06/13/1967
Hargrove, Garrard L.	Sawyer, Donald	08/19/1967
Kawaoka, Kenji	Kearns, David	12/16/1967

PhD Graduate	Faculty Mentor	PhD Date
Baum, Edward Joseph	Pitts, James	01/26/1966
Hess, LaVerne Derryl	Pitts, James	01/26/1966
Kray, William C.	Helmkamp, George	01/26/1966
Lowell, James R.	Helmkamp, George	01/26/1966
Opdycke, Jack D.	Schmidt, Hartland	01/26/1966
Reintjes, Marten	Hawthorne, M. Fred	01/26/1966
Borkman, Raymond F.	Kearns, David	06/08/1966
Foote, John K.	Pitts, James	06/08/1966
Berry, Thomas E.	Hawthorne, M. Fred	07/29/1966
Epstein, Barry D.	Kuwana, Theodore	07/29/1966
Walmsley, Donald E.	Hawthorne, M. Fred	07/29/1966
Young, Donald C.	Hawthorne, M. Fred	07/29/1966
Burleigh, Malcolm B.	Johnson, Harry W.	12/17/1966
Chaiken, Robert F.	Kearns, David	12/17/1966
Clark, Ronald K.	Schmidt, Hartland	12/17/1966
Marchetti, Alfred P.	Kearns, David	12/17/1966
Wegner, Patrick A.	Hawthorne, M. Fred	12/17/1966

Norman Yeong-Jgi Chen*	Orttung, William H.	06/1970
* First international Chemistry PhD		

†Thomas Wolfram (Physics)	Calloway, Joseph	01/1963
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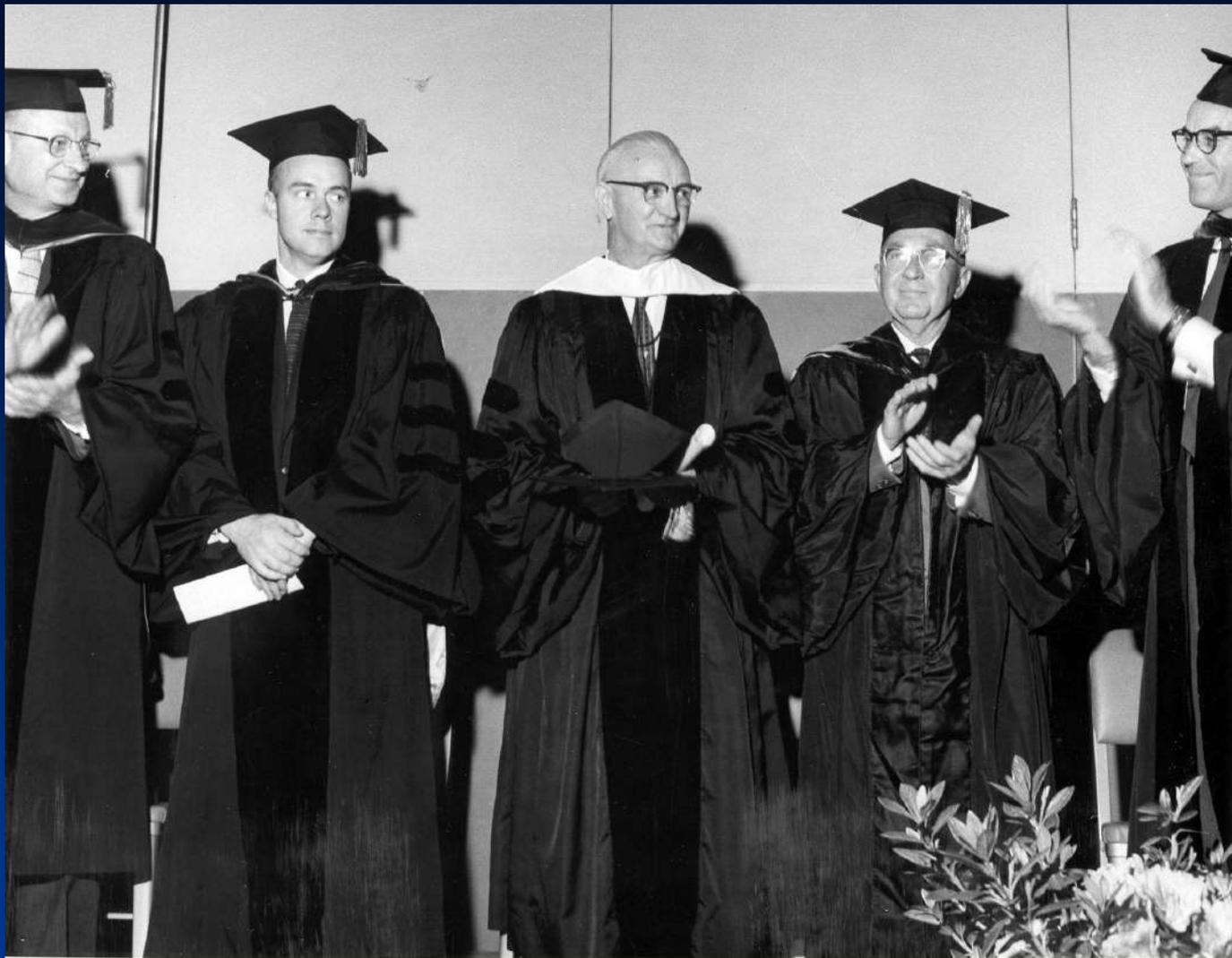
Physical Sciences Building: 1954



Physical Sciences Addition: 1957-58

Chemistry Facilities

- 2nd floor, south wing of Geology bldg; 1954-66
 - Plus 2nd floor addition; 1959-66
 - Pierce Hall; 1966-2005
- Early Instruments and support
 - Beckman DU spectrophotometer; battery powered
 - 1 1/2 secretaries for Division of Physical Sciences
 - Frances Lewis; storekeeper, purchasing, soln prep
 - 1 telephone in stockroom (+ 1 in Chair's office)
 - Modern instruments added via Ag Exp Station support
 - Glassblower hired, 1959; served campus
 - Electronics technician hired, 1960; served campus



Oct. 19, 1954: UCR is officially dedicated, with Governor Goodwin Knight officially handing the campus to the UC Board of Regents and UC President Robert Sproul.



Aug. 1955. The big "C" on Box Springs Mountain is made in with cement and equipment donated by the E.L. Yeager Construction Co. Surveying work is done by students. At 132 feet long, it is the largest concrete block letter on record. That year's freshman class gave it its first golden coat of paint, a tradition followed in later years.

What ever happened to Paradise Lake?

Vol. 1

Riverside, California, April 9, 1954

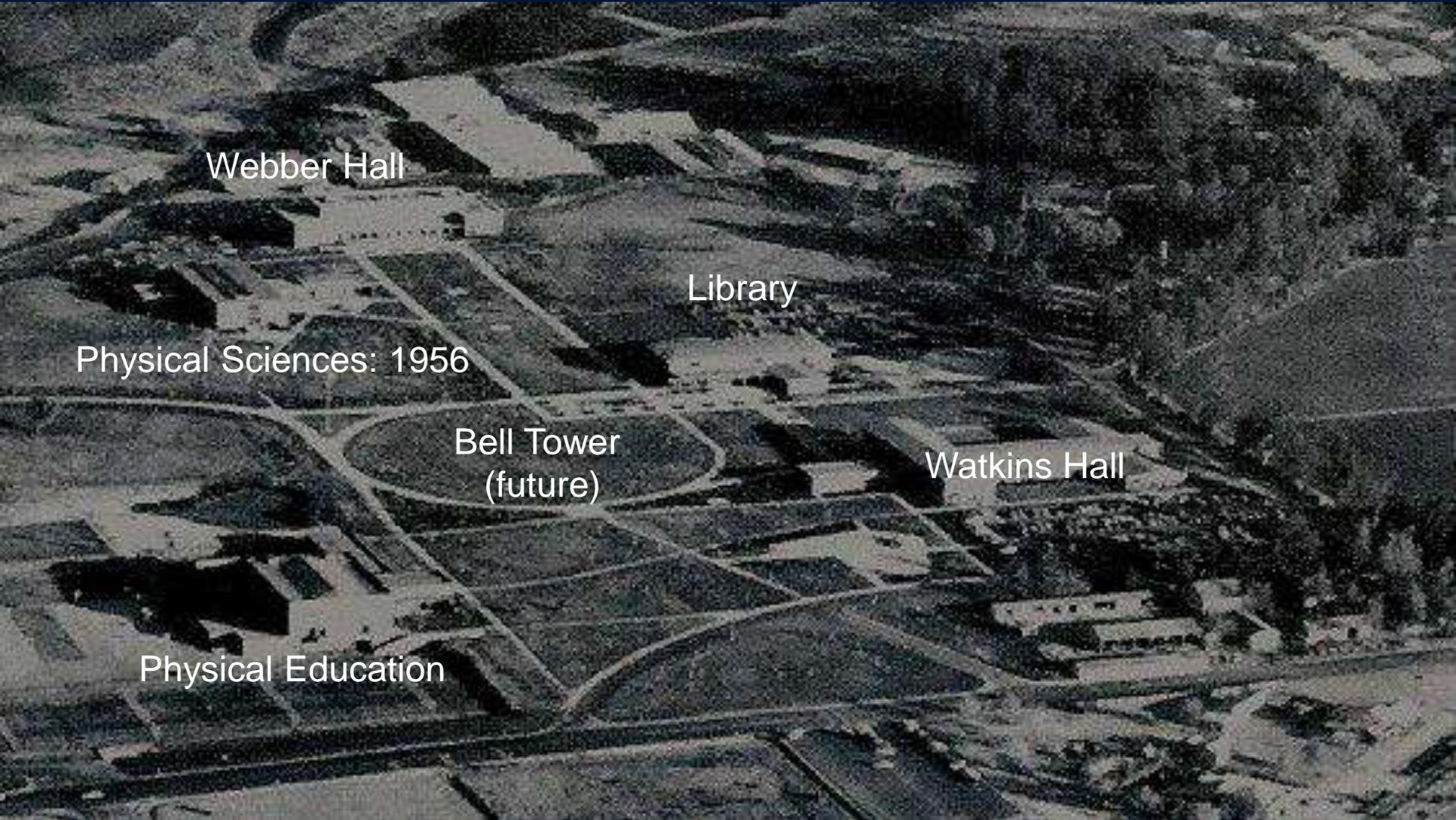
No. 8



Miss Pat Tighe poses prettily on a sailboat anchored in Paradise Lake, the new fishing and boating recreational area which is less than one mile from the campus. Will it become the new campus hangout?

Campus Newspaper **The UCR Cub**
not yet named 'The Highlander'.

Physical Sciences: 1956



Webber Hall

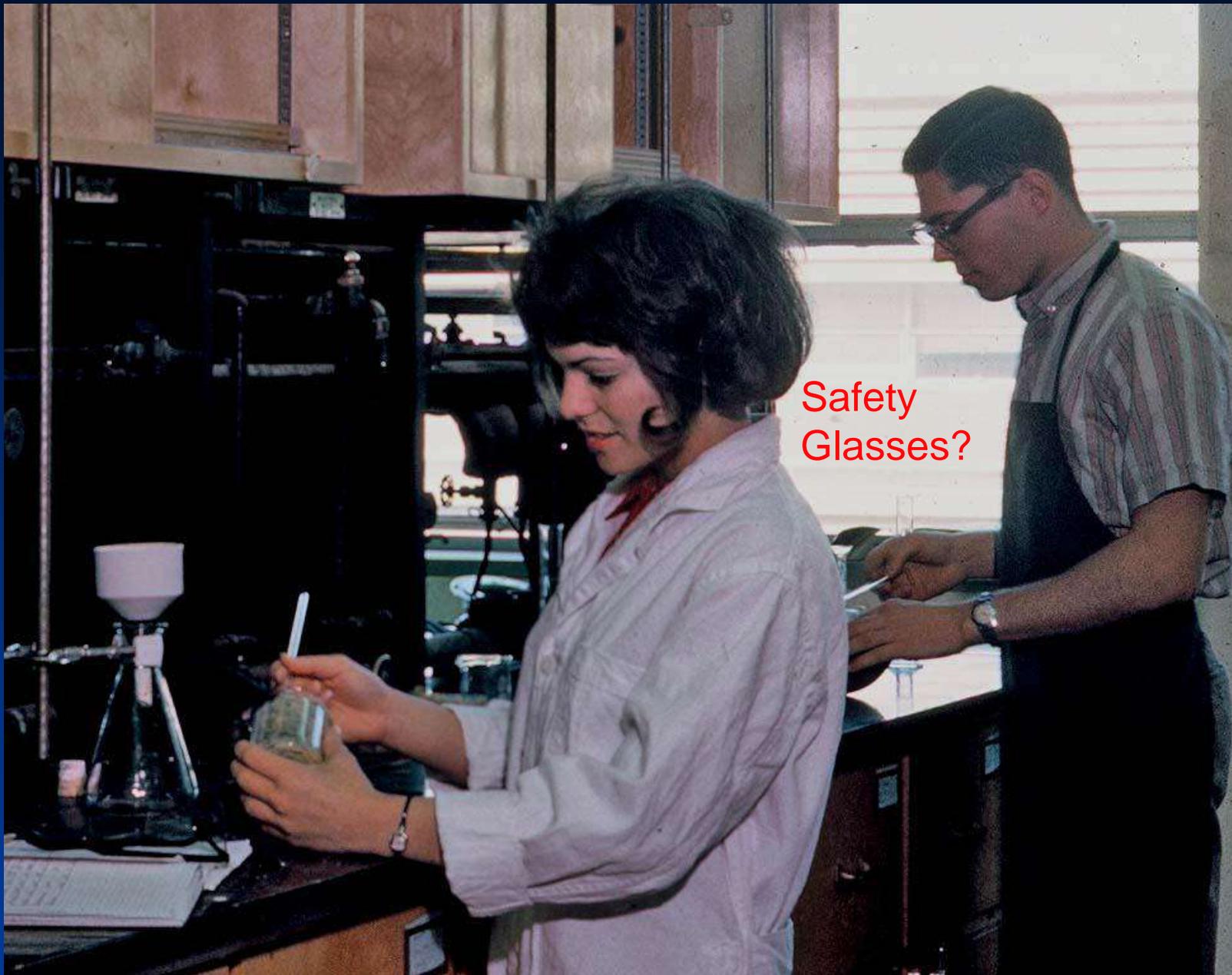
Library

Physical Sciences: 1956

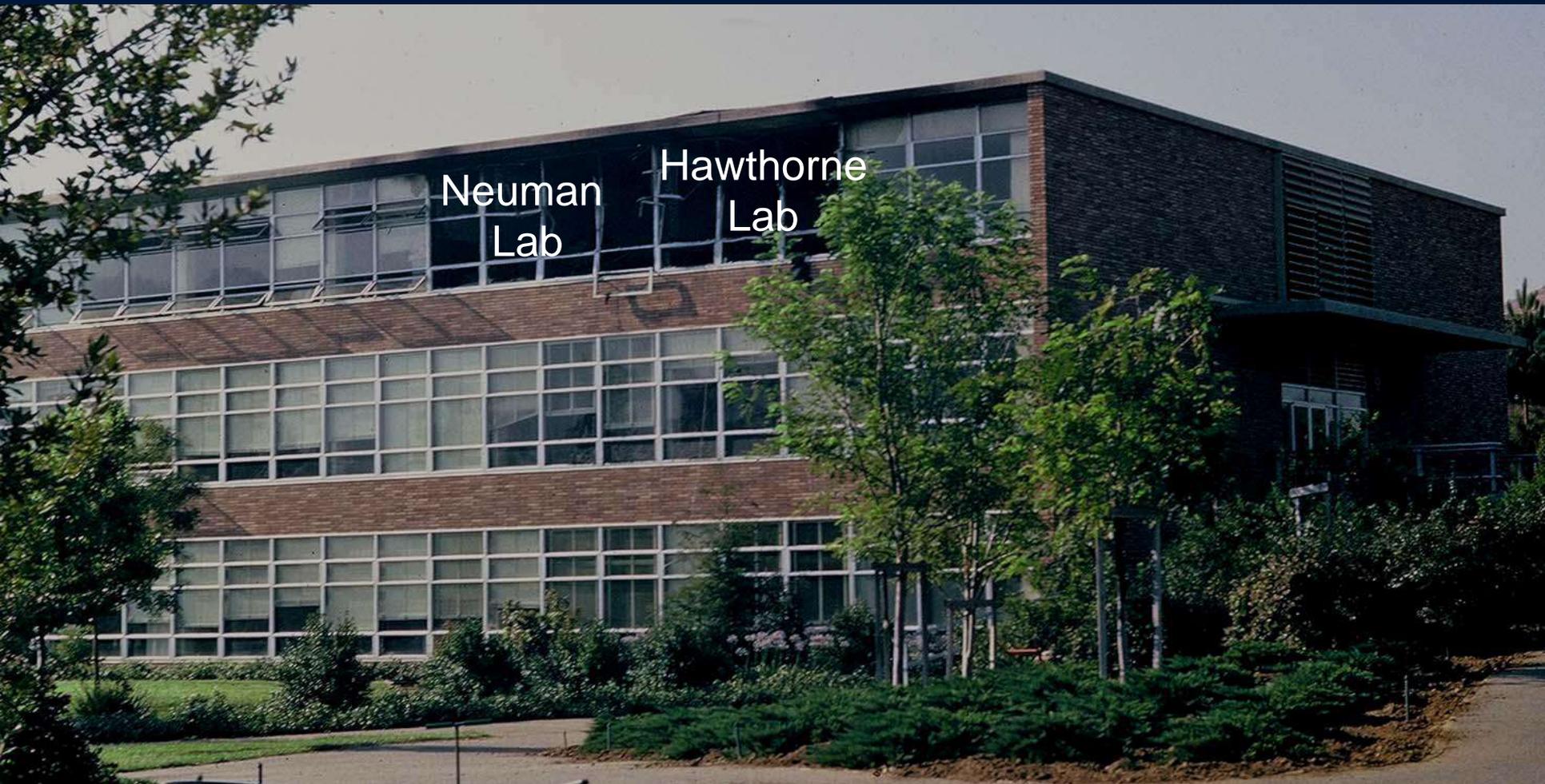
Bell Tower
(future)

Watkins Hall

Physical Education



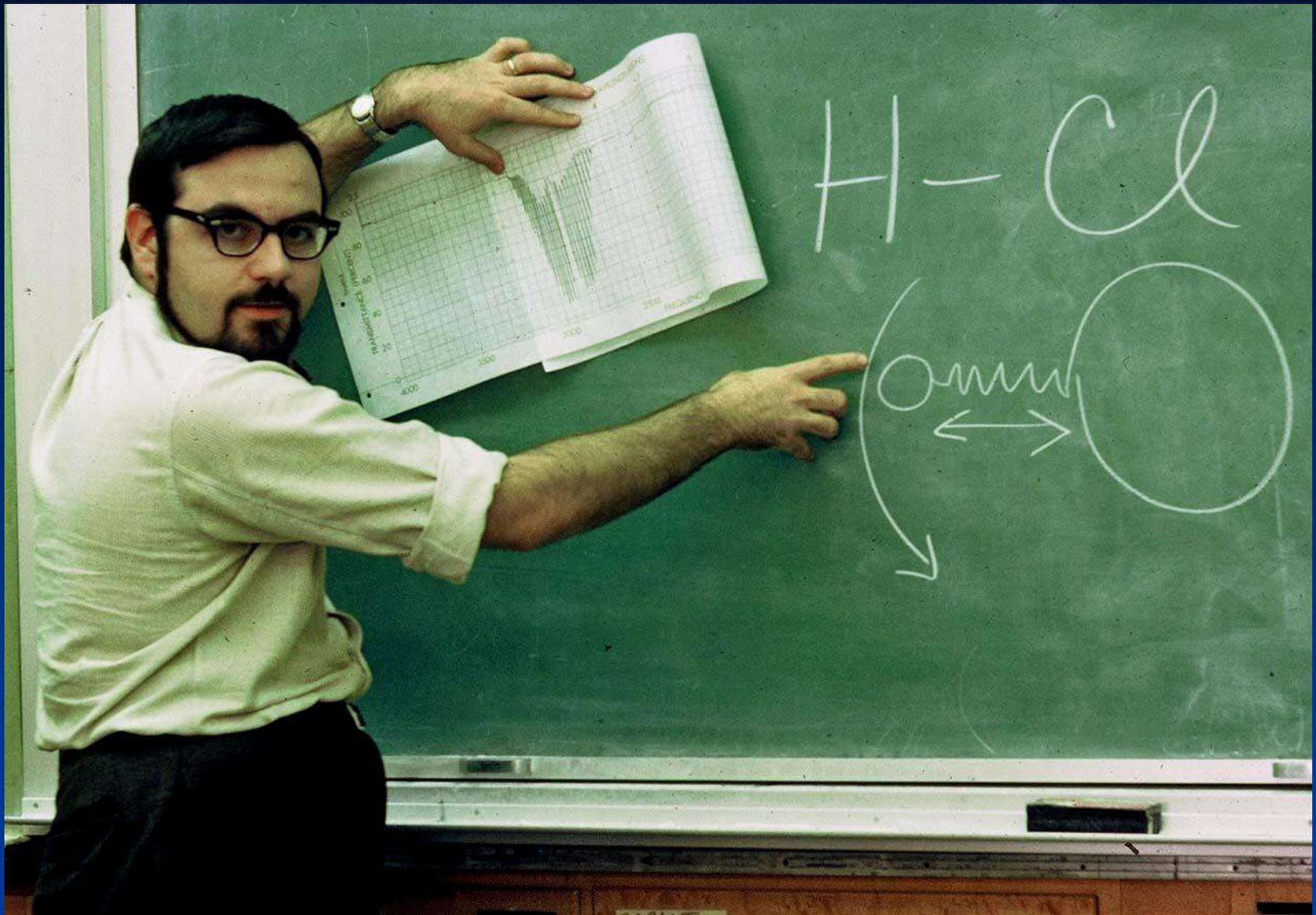
Undergraduates: 2nd floor, Physical Sciences addition



Neuman
Lab

Hawthorne
Lab

Hawthorne Lab fire: 7/1964



Jerry A. Bell



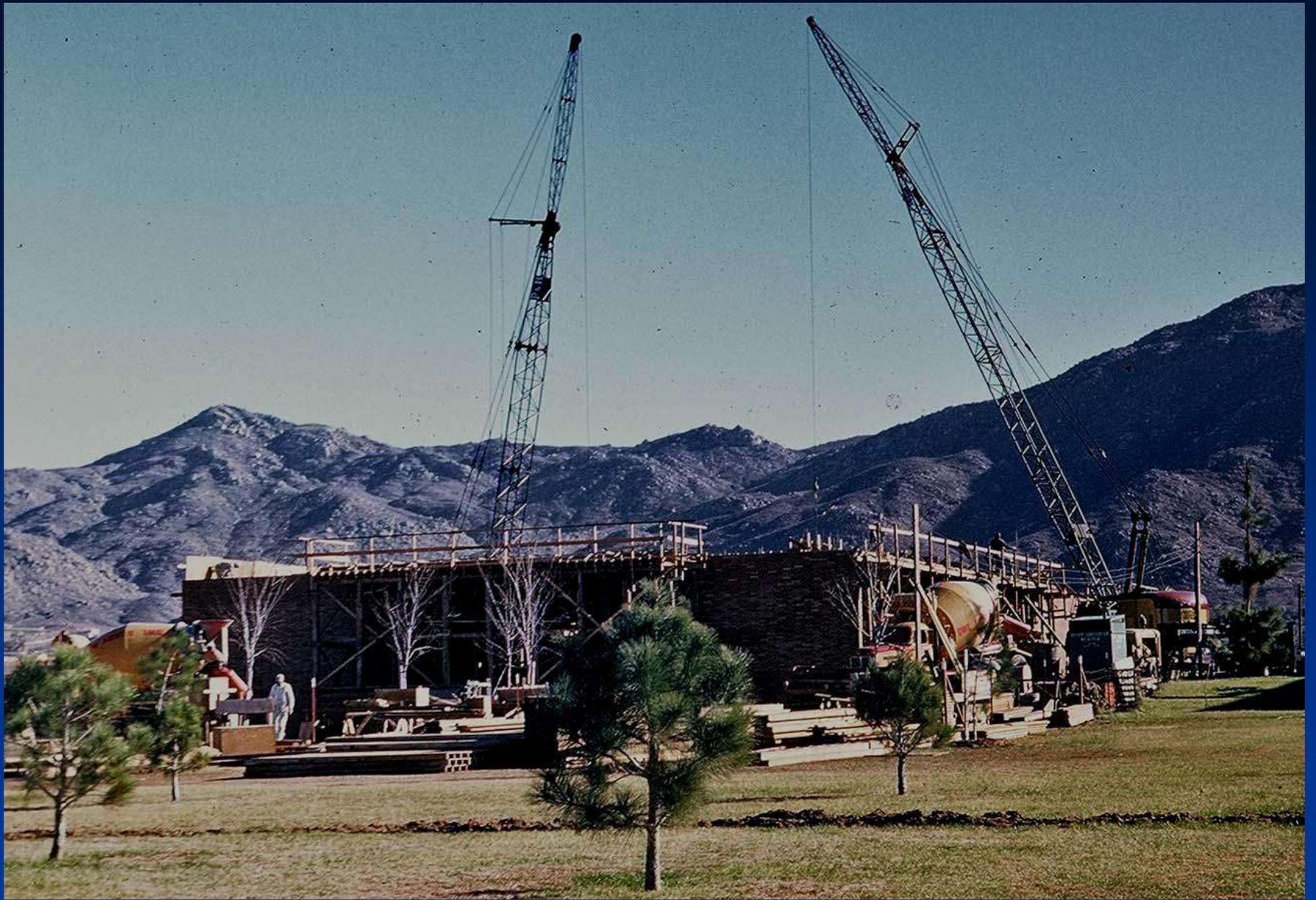
Herman
Spieth

George
Helmkamp

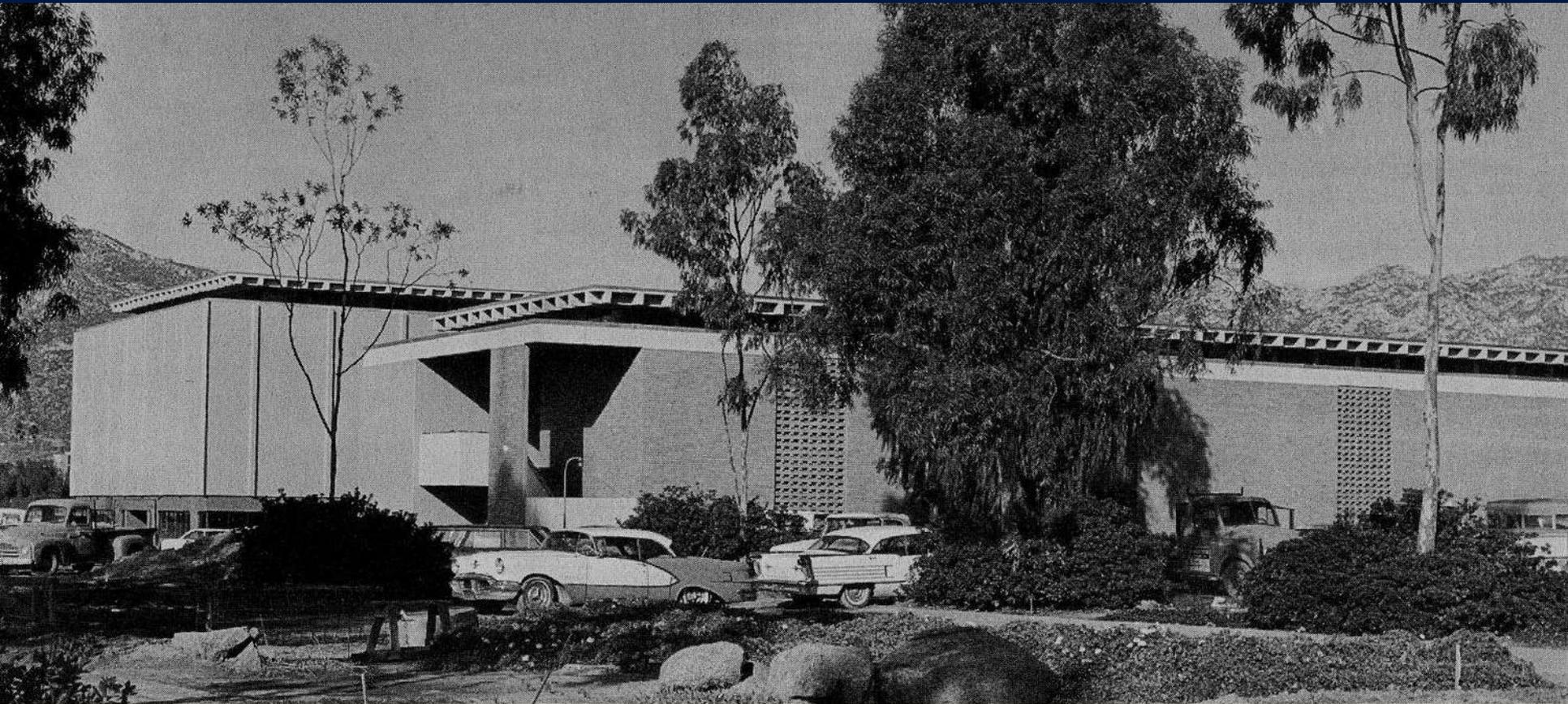
James
Pitts

Thomas
Jenkin

Ground breaking for Pierce Hall - 1964



Pierce Hall: 1965



Pierce Hall; near completion; 1966



NSF Wing, Pierce Hall; 1967



Joe Behar, Robert C. Neuman student. HR-100 NMR. Pierce Hall. May, 1967

UCR Will Establish Multi-College System

Katherine Tracy

As of July 1, 1970 the College of Letters and Science will no longer exist. In its place, theoretically, at least, will be four smaller colleges organized according to subject matter—the College of Humanities, the College of Physical Sciences, the College of Social Sciences, and the College of General Studies.

The history of this plan is complex and controversial, involving not only the usual bureaucratic labyrinth but also direct clashes between administrators and the faculty and between faculty and faculty.

One source of the idea of cluster or multi-colleges for the

UC system was former Berkeley Chancellor and UC President Clark Kerr. In a 1967 speech, in fact, Kerr said that "A modern university cannot be small, but it can seem small to its individual participants . . . [cluster colleges] will provide a more intimate group that can treat each student and faculty member as a unique individual."

Kerr wanted to see multi-colleges established on the UC campuses. He had proposed such a system for Berkeley, but it was never established.

Somewhat ironically, one week after making the previous statement, Kerr was fired by the Board of Regents in the midst of

a heated controversy involving Governor Reagan's cutting the UC budget and Kerr's freezing admissions until the budget situation could be clarified. Actually, many of the board members who voted for the ouster had long-standing beefs against Kerr, the exact nature of which may never be learned.

Anyway, Chancellor Hinderaker took up the multi-college torch and held it aloft, announcing the idea apparently first formally at a special conference held at UC's Lake Arrowhead Conference Center in February, 1967.

Judging from comments after the meeting, several of the

department heads attending the meeting voiced strong opposition to the plan, apparently much to the surprise of the Chancellor and other top advocates of the plan, including then Letters and Science Dean Carlo Golino and Vice-Chancellor for Academic Affairs Thomas Jenkin.

On Charter Day, in the spring of 1967, Hinderaker's plan was soundly and somewhat emotionally defeated in meetings of both the College of Letters and Science and later in the day the Academic Senate. The votes were 77-29 and 101-31 respectively.

During the Academic Senate

meeting, applause followed several speeches against the plan, leading the Chancellor at one point toward the end of the meeting to comment, "I don't regard this as anything personal." After the vote came, a number of faculty members hastily left the meeting smiling, one saying, "We showed him he can't ram this down our necks without a fight."

Especially infuriating to some faculty members was their basic lack of power to do anything about the imposition of the plan by the Administration. One faculty member commented, "This is something they can do

Please turn to page 3.

The Highlander

November 5, 1969

3

Multi-College Hassle . . . Continued from page 1

by fiat, and from where I am it looks like that's just what is happening, all right."

The wrangle continued, it seemed, for nearly a year from that point. It didn't die suddenly; it just tapered off because more and more faculty members came around to support it, or at least to tacitly not oppose it. Some had been vociferous opponents in the early stages of debate.

One such faculty member said in March, 1967, "If this thing goes through, I'm leaving UCR. I won't stay here at all."

A year later he said, "Now that I finally understand it, I can't see the harm I originally thought it contained."

Presently, pre-executive committees—which "formulate proposals for rules and curricula and define general structure"—are working. And at least one committee, the pre-executive committee for the College of Humanities, has

produced a program printed on page nine of this issue.

This will hopefully be the first in a series of articles concerned with the changeover at UCR.

A great deal in terms of mechanics still has to be clarified.

One such area is whether there will be a College of

General Studies. Several faculty members have raised questions in this area. There is as well the question as to what the college will be if it is indeed created.

Furthermore, a most important question arises in a period of financial crisis in the University: how much is it all going to cost.

Highlander

University of California, Riverside

Special Late Issue

Wednesday, November 5, 1969

Discussion about splitting
the College: 1967 - present!

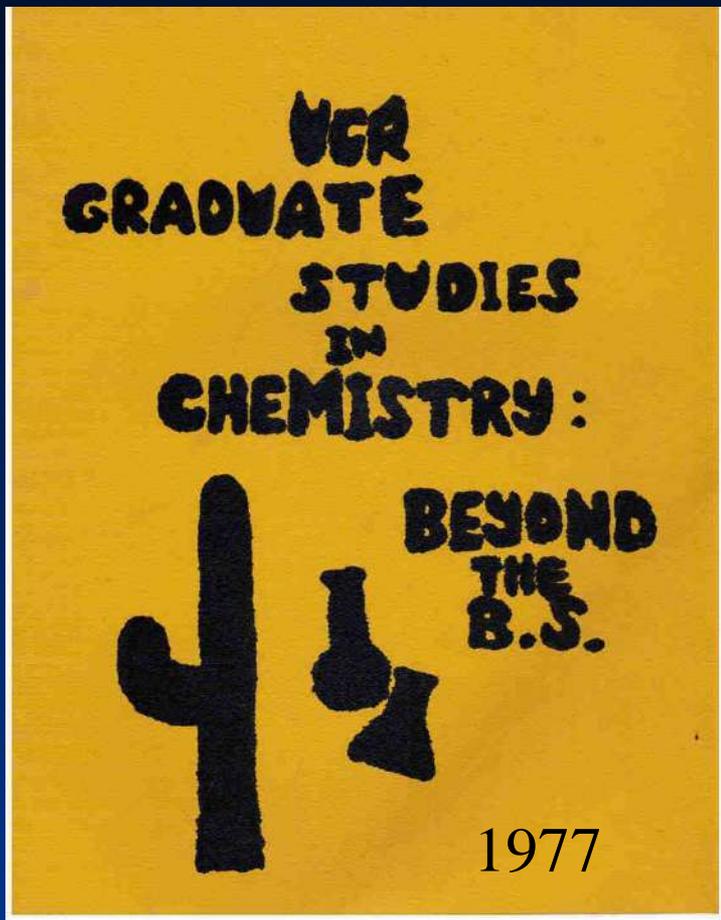
From "The Man in the White Suit", 1951



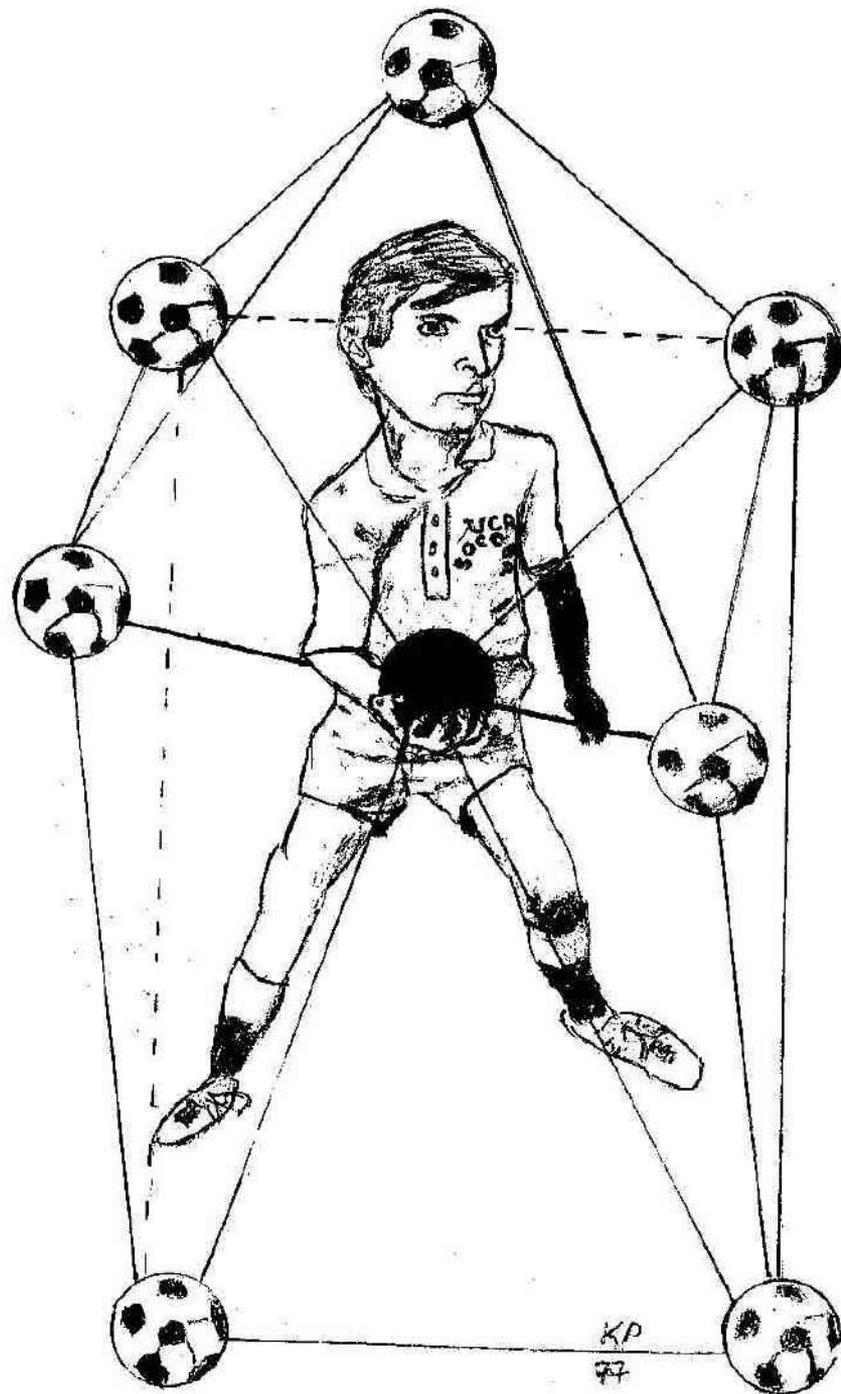
Organic Chemistry Teaching Lab



Pierce Hall Third Floor Lab - vacated 2003



1977: Professor Wing
Already thinking of extending
carborane cages to carbon buckyball
cages ... and putting objects inside of
them...





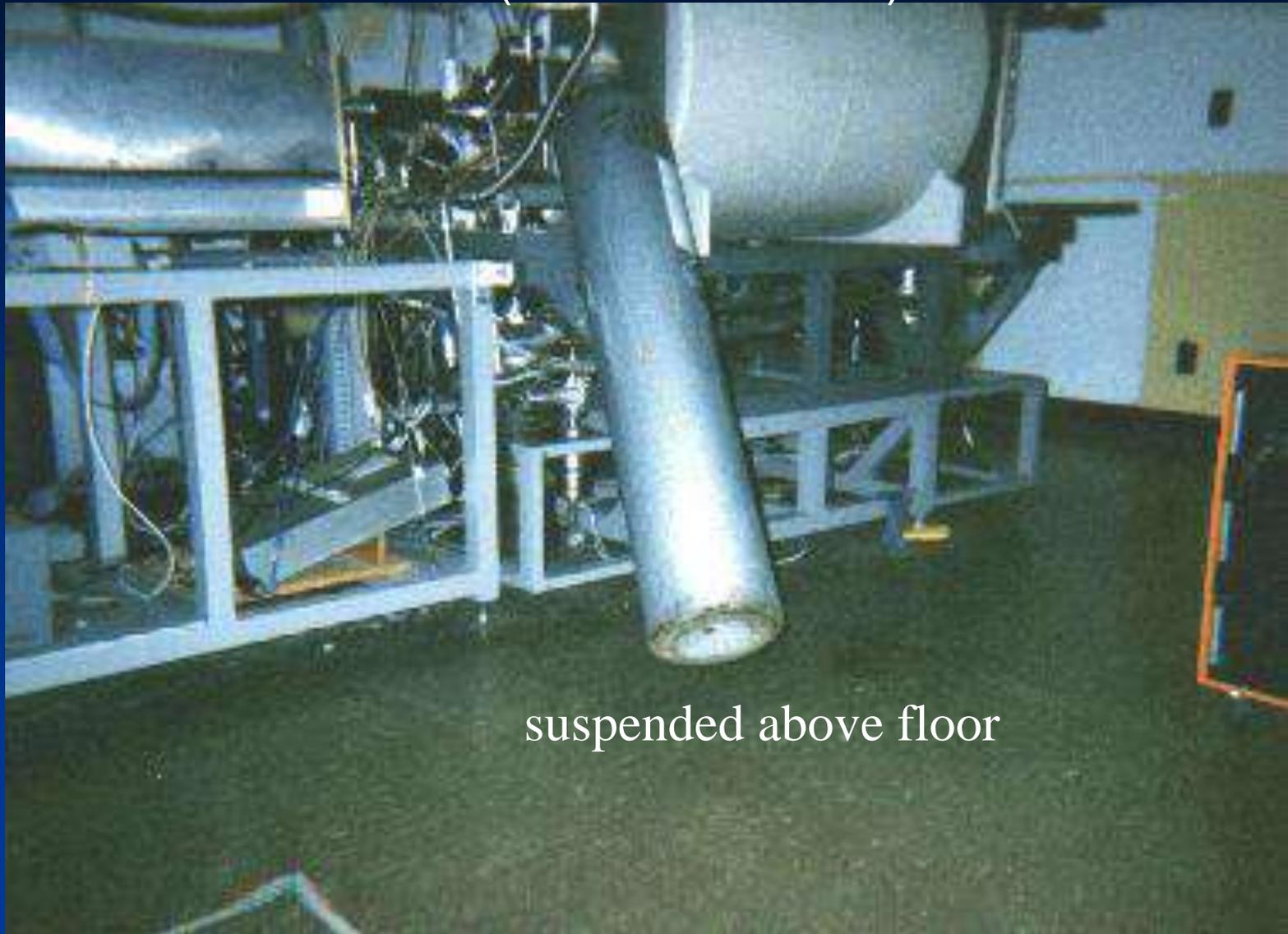
Michael Rettig (before Nancy); 1967

THF Still Explodes, Blows Windows Out – Pierce 1326

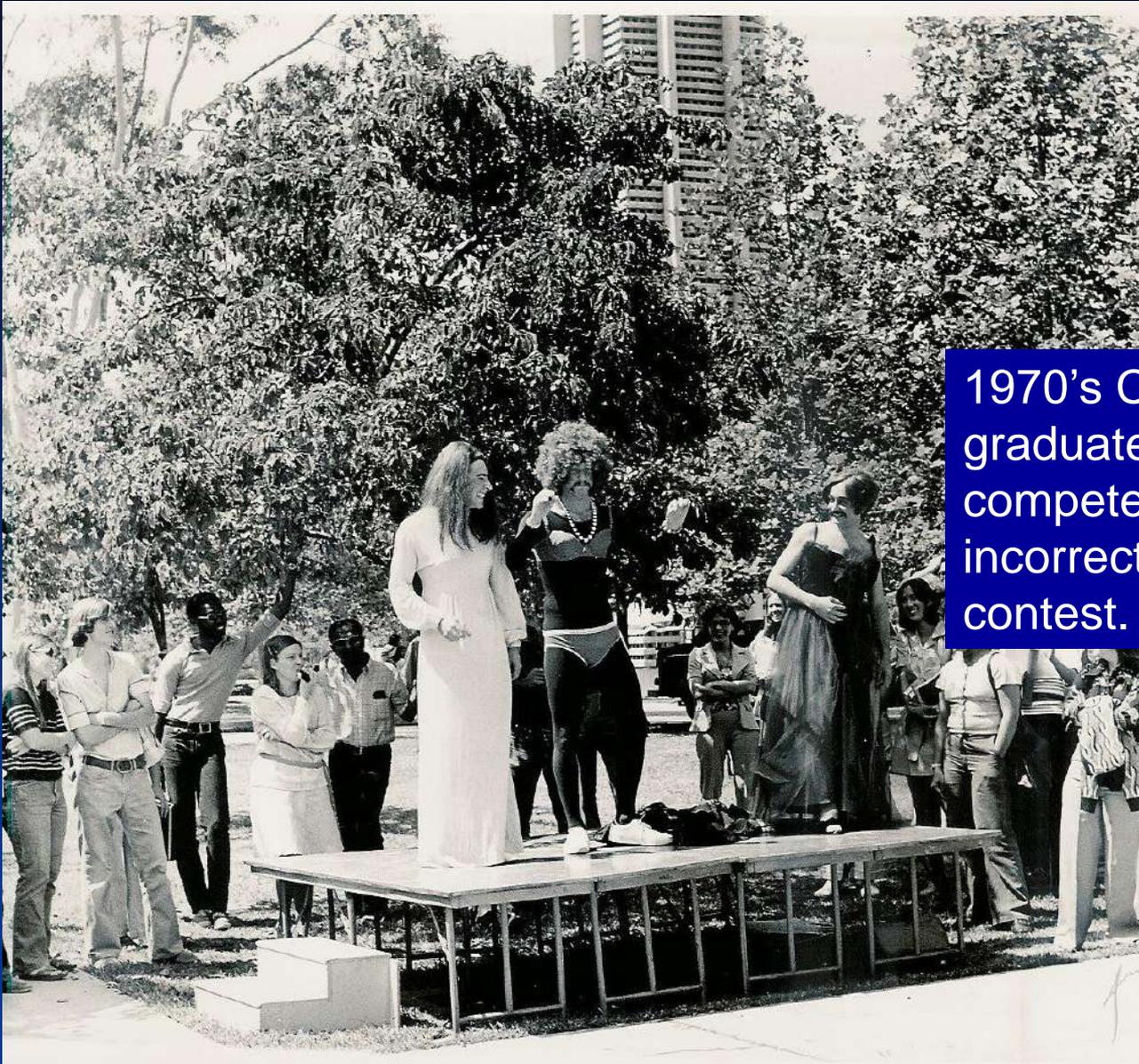


George Helmkamp toasting his explosion, fall 1977

Compressed gas tank meets high field magnet (neither survived)

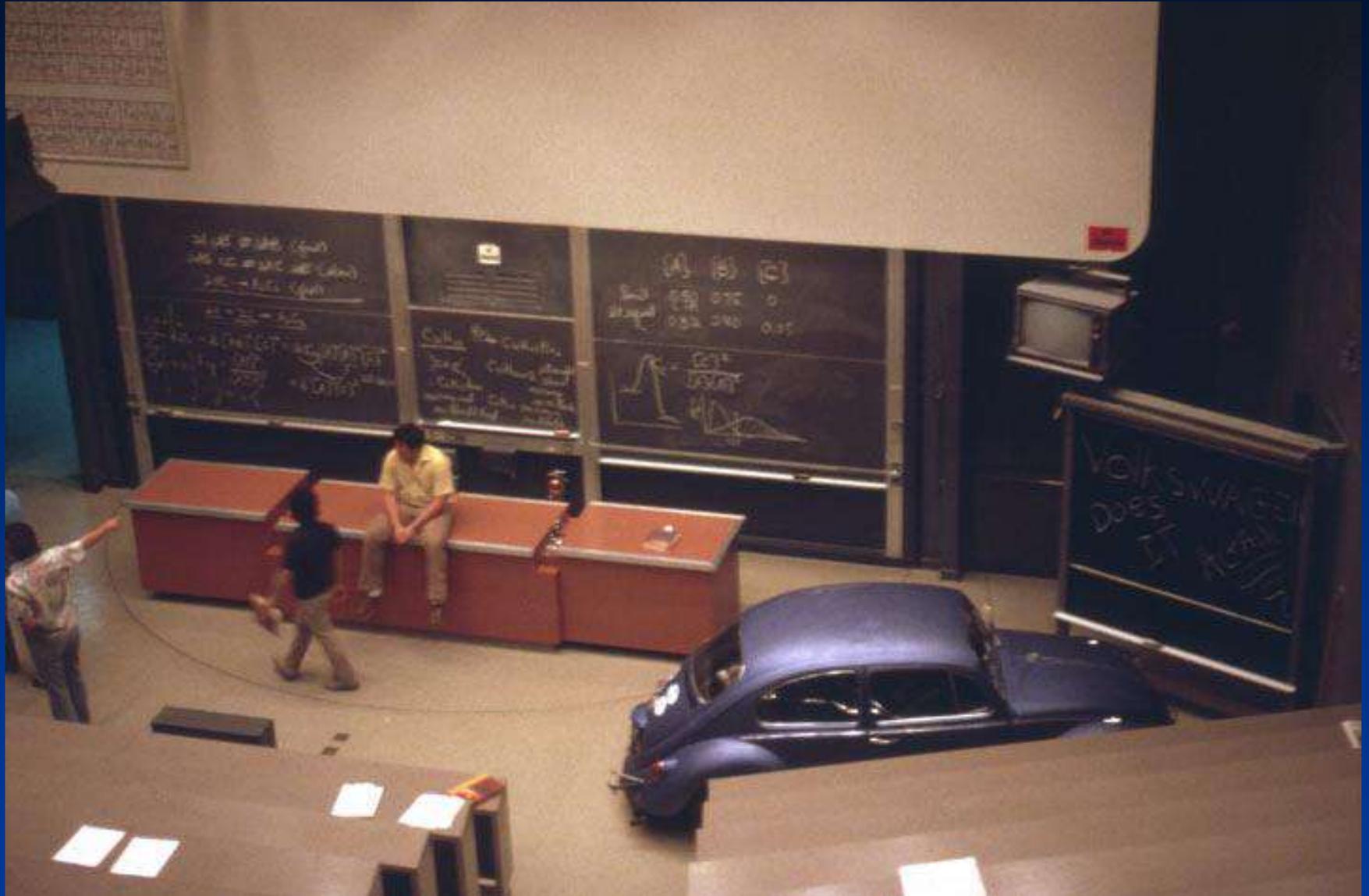


suspended above floor



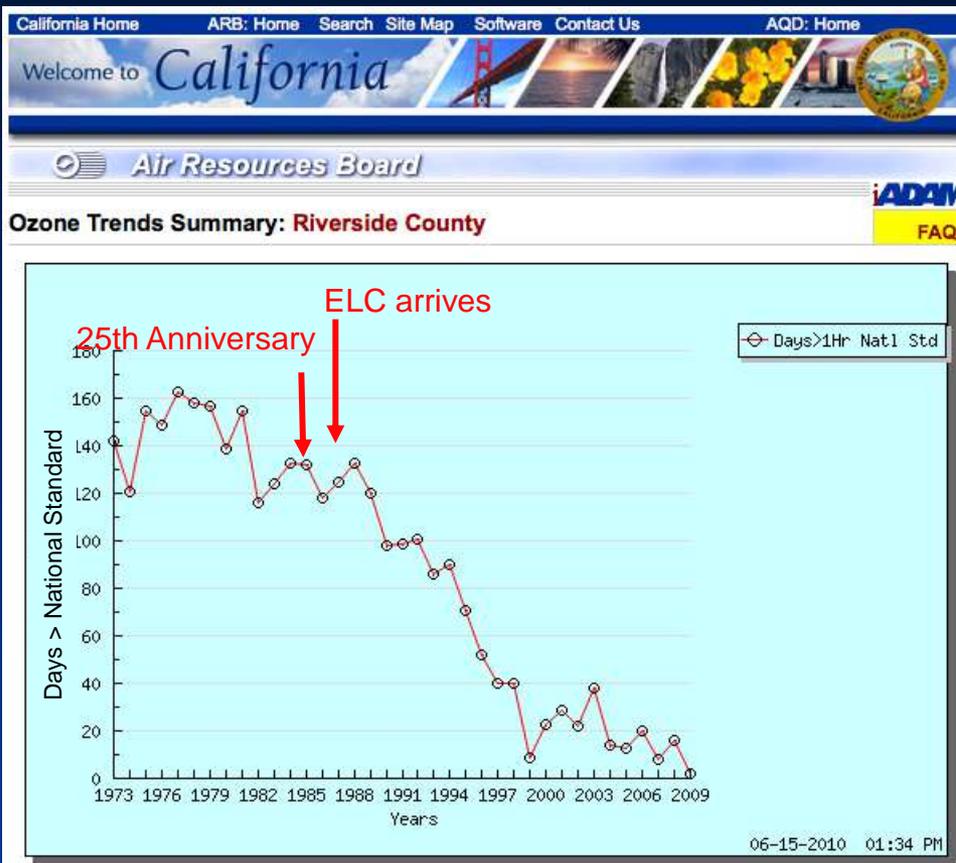
1970's Chemistry graduate students compete in (politically incorrect) Drag Queen contest.

Scot's Week – UCR Spring Revelry



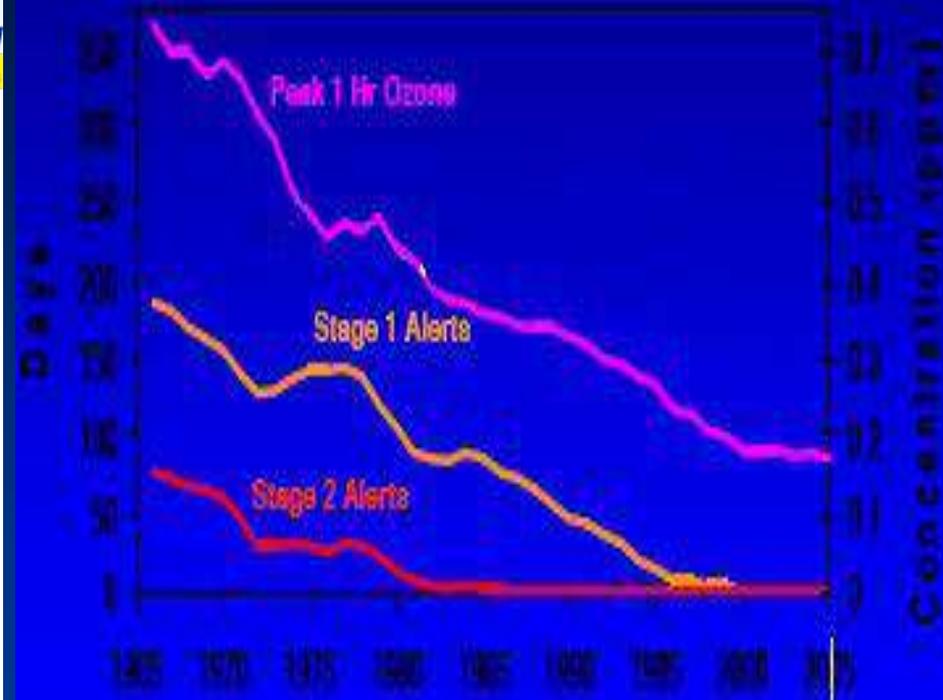
Physics 2000 mid 70's

Breathe Easier (>1980)!



Days /Yr above National Standard

Ozone Trends in the South Coast



South Coast Air Quality Management District

Days /Yr of Stage 1 & 2 Alerts

Chemistry Teaching and Research Buildings



Physical Sciences
(i.e. Geology)
(1954, 1959 addition)

→
Chemical
Sciences
(2005)

Pierce
Hall
(1966)

Pierce Hall
Annex
(2000)

Science
Labs 1
(2003)

Science Laboratories I (2003) viewed from Life Science lawn



Geology 1100
used to be here

1st Floor: 5 organic chemistry teaching labs,
two conference rooms, stockroom

Science Laboratories - First Floor



Organic Chemistry Teaching Laboratory

2005

Science Laboratories Explosion:

Science Labs organic stockroom.

Suspected AgN_3 formation in
Tollen's reagent
waste. "Spontaneous" explosion.



Chemical Sciences 2005



Mass Spectrometry Laboratory



Chemical Sciences

Nuclear Magnetic Resonance Laboratory



Chemical Sciences

Quantitative Analysis Lab



Research Laboratory



Student carrel by window

Year	# UGrads campus	# Grads campus	# Chem Grads	# Chem Students*	# Chem Faculty
1960	1500	44	17	?	7
1965	2600	831	68	?	14
1970	4400	1289	60	1500	18
1975	3600	1266	39	1600	20
1980	3000	1351	49	1700	16
1985	3500	1303	58	1950	16
1990	7000	1463	65	3400	22
1995	7000	1377	55	4600	20
2000	11000	1533	69	5200	21
2005	16000	2000	106	7000	24
2010	17500	2500	115	9000	26

*sum of enrollment of chem 1 (1W), 1ABC, organic 8/112 ABC, for calendar year.

Distinguished Teaching Awards -Chemistry

George Helmkamp 1973-1974

Steve Angle 1990-1991

Robert Neuman 1997-1998

Michael Marsella 2007-2008

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
Roger Atkinson	2006
Christopher Reed	2010

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

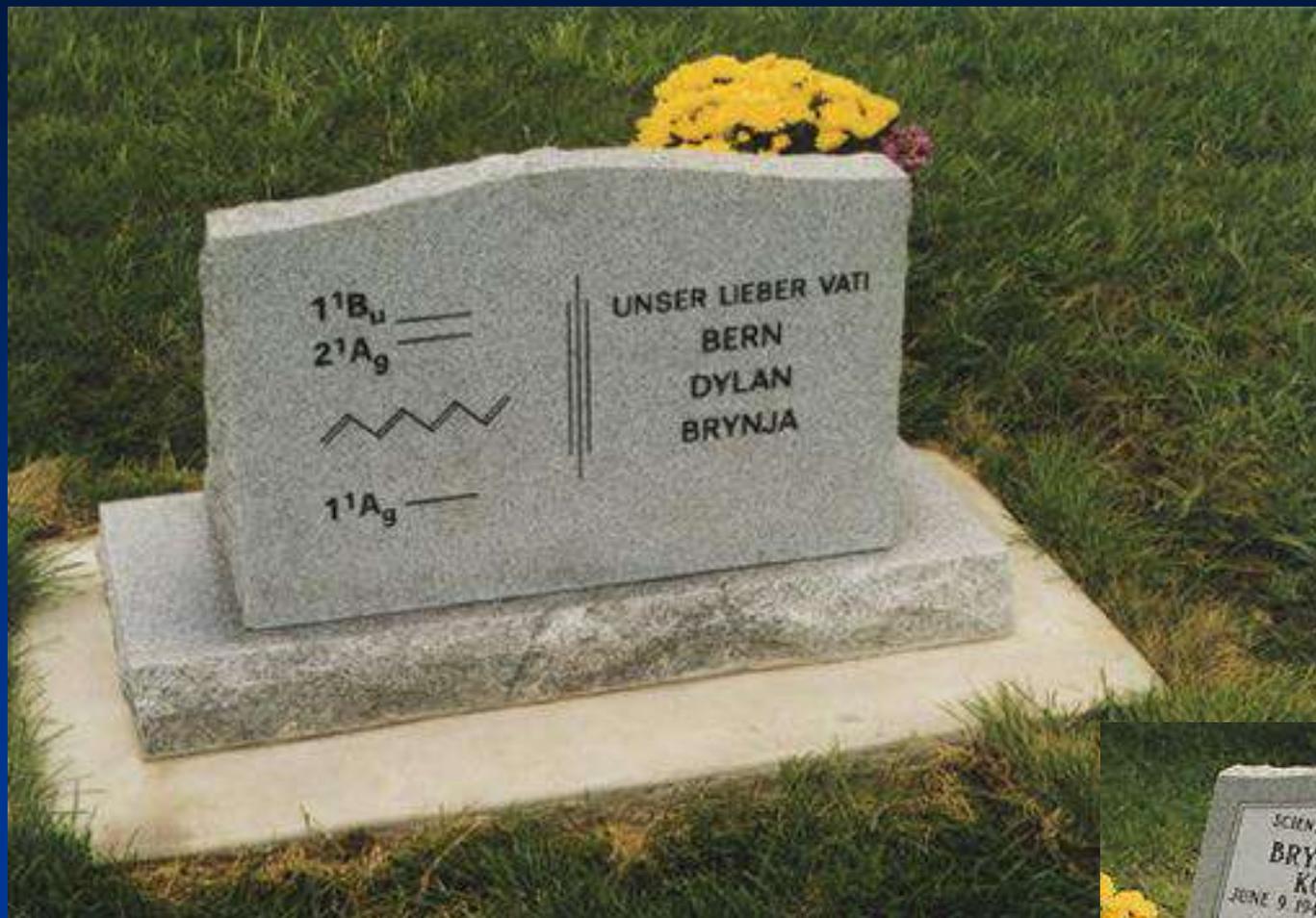
Awarded annually by the Southern California Section of the ACS to recognize outstanding contributions to chemistry.

*UCR 1962-1970,
UCLA 1971-

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-'06
Mike Rettig	'80-'82	Eric Chronister	'06-'12
		Cynthia Larive	'12-

Bryan Kohler 1940 - 1997



Thank you all for helping to celebrate
our **50th anniversary!**

Next up:
Professor Jodie Holt
Chair, Depart. of Botany & Plant Sciences

“Avatar: Bridging Science and the Public”

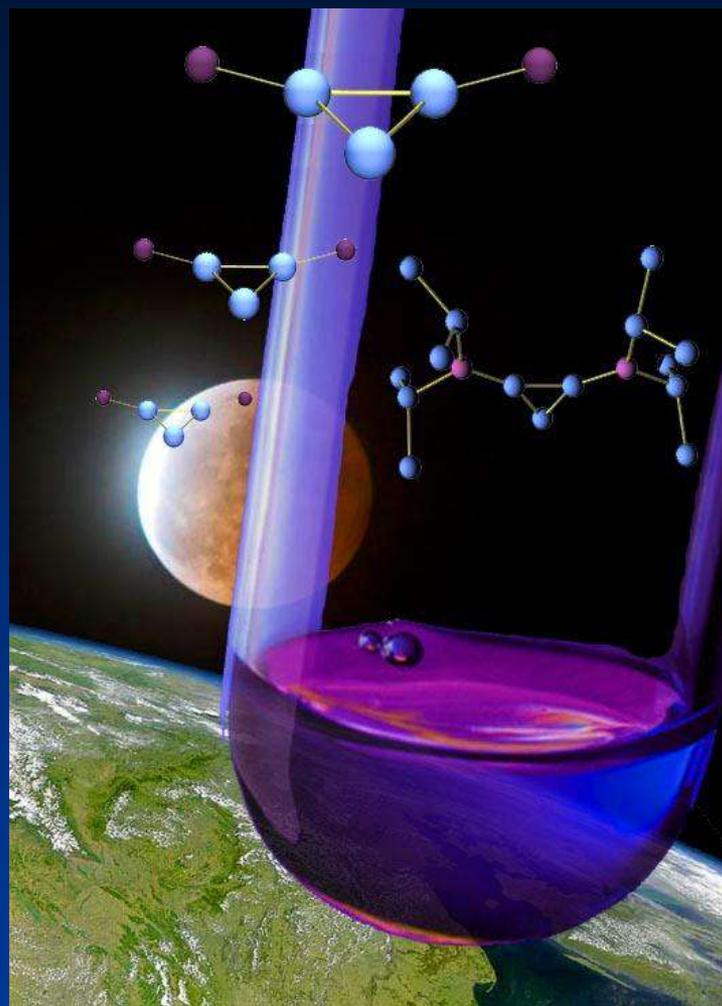
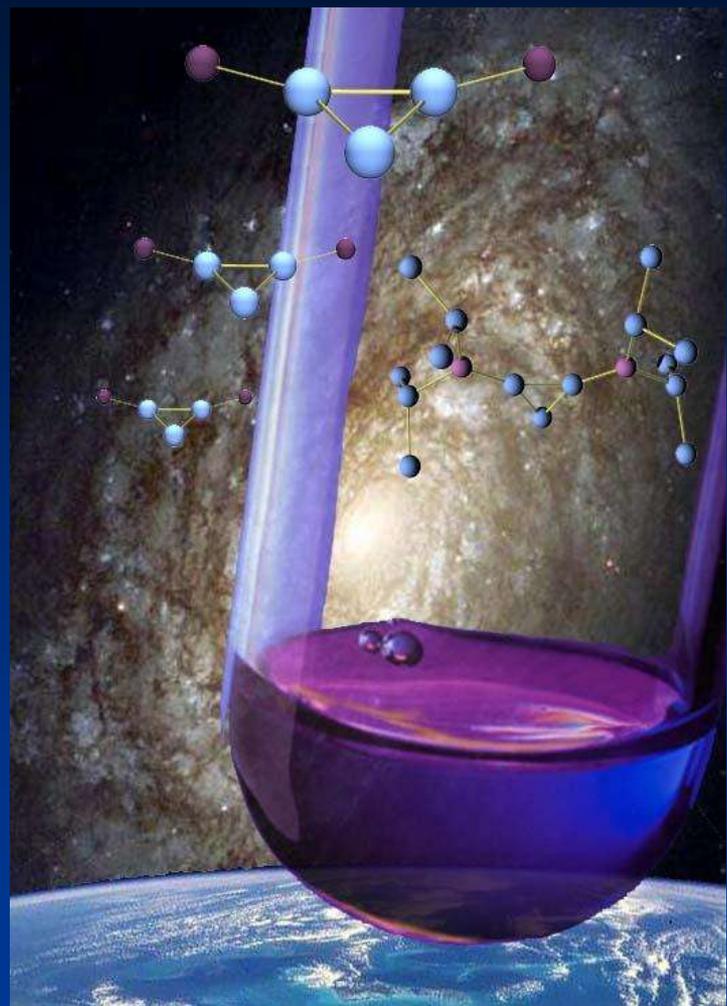
END

The following slides were not formally presented. They are available here for future historical reference.

Note the Luncheon Awards Program near the end!

ELC 1/2013

Out of this world research: Interstellar molecules in a bottle



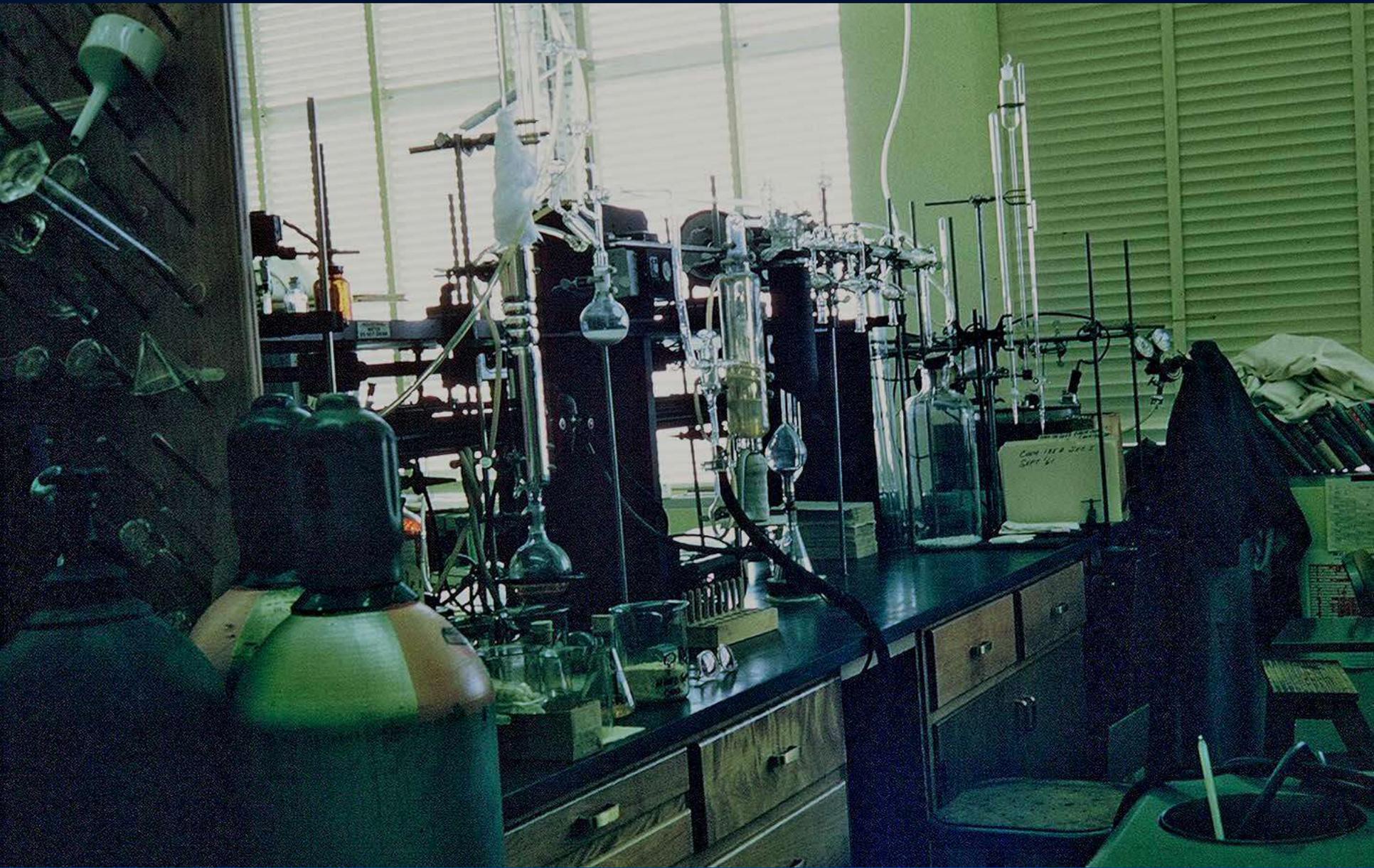
Carbenes in a Bottle. Prof. Guy Bertrand



Description: UCR's first graduating class attends commencement in 1954

Research and Technology Frontiers

- Physical Organic Chemistry; Synthesis & Natural Products; Polymer Chemistry
- Coordination Chemistry; X-ray crystal structures; Boron & Organo-metallic Chemistry
- Molecular Spectroscopy; UV-vis, IR, NMR, ESR, Raman
- Instrumental Analysis; Cyclic Voltammetry, Mass Spectrometry, GC, GC-MS, HPLC, X-ray fluor, AA & ICP, FIA, Digital Electronics, FT-data processing via digital computers
- Protein Chemistry & Molecular Biology



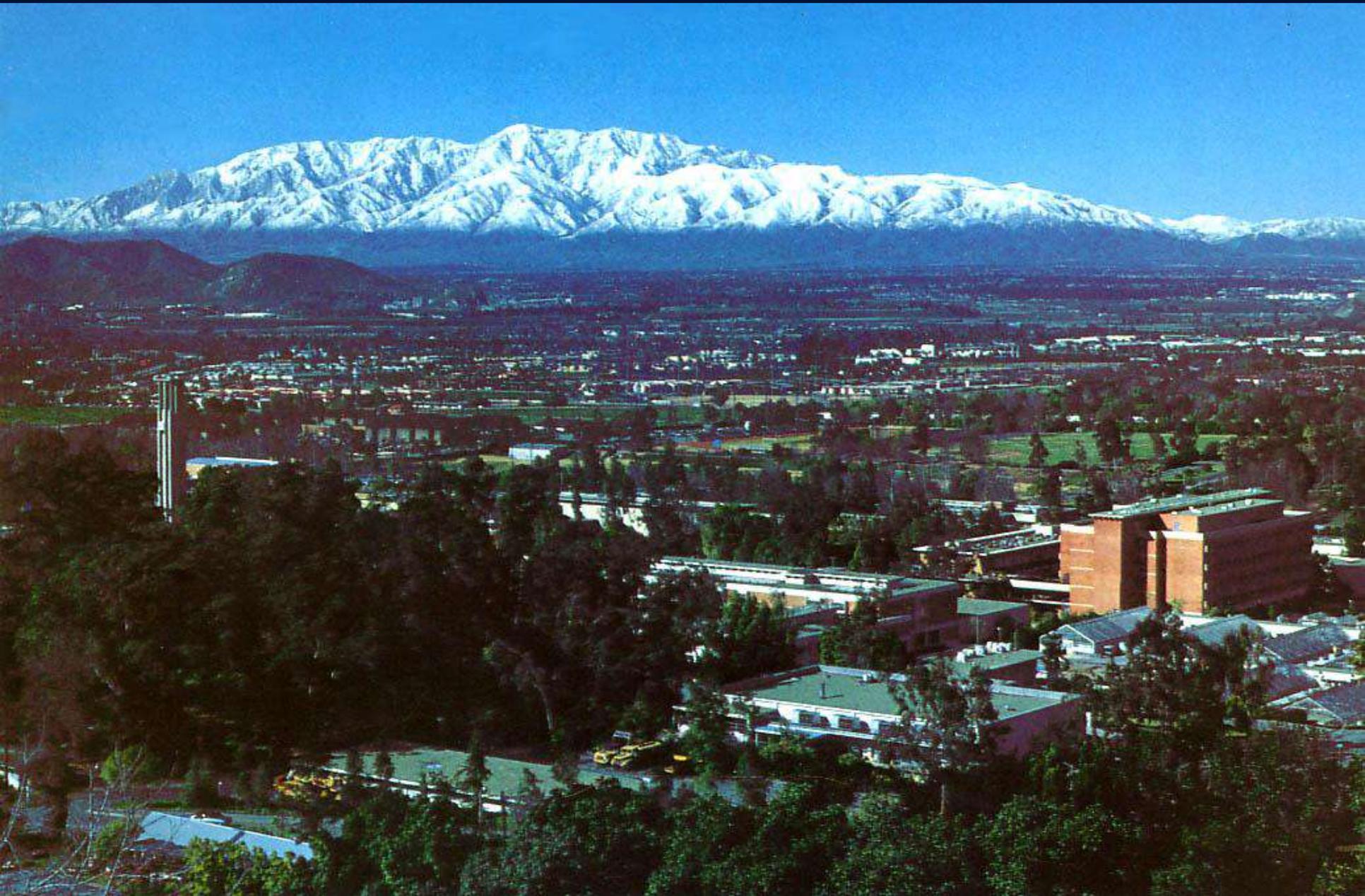
Research Lab, Physical Sciences Addition; 1960s



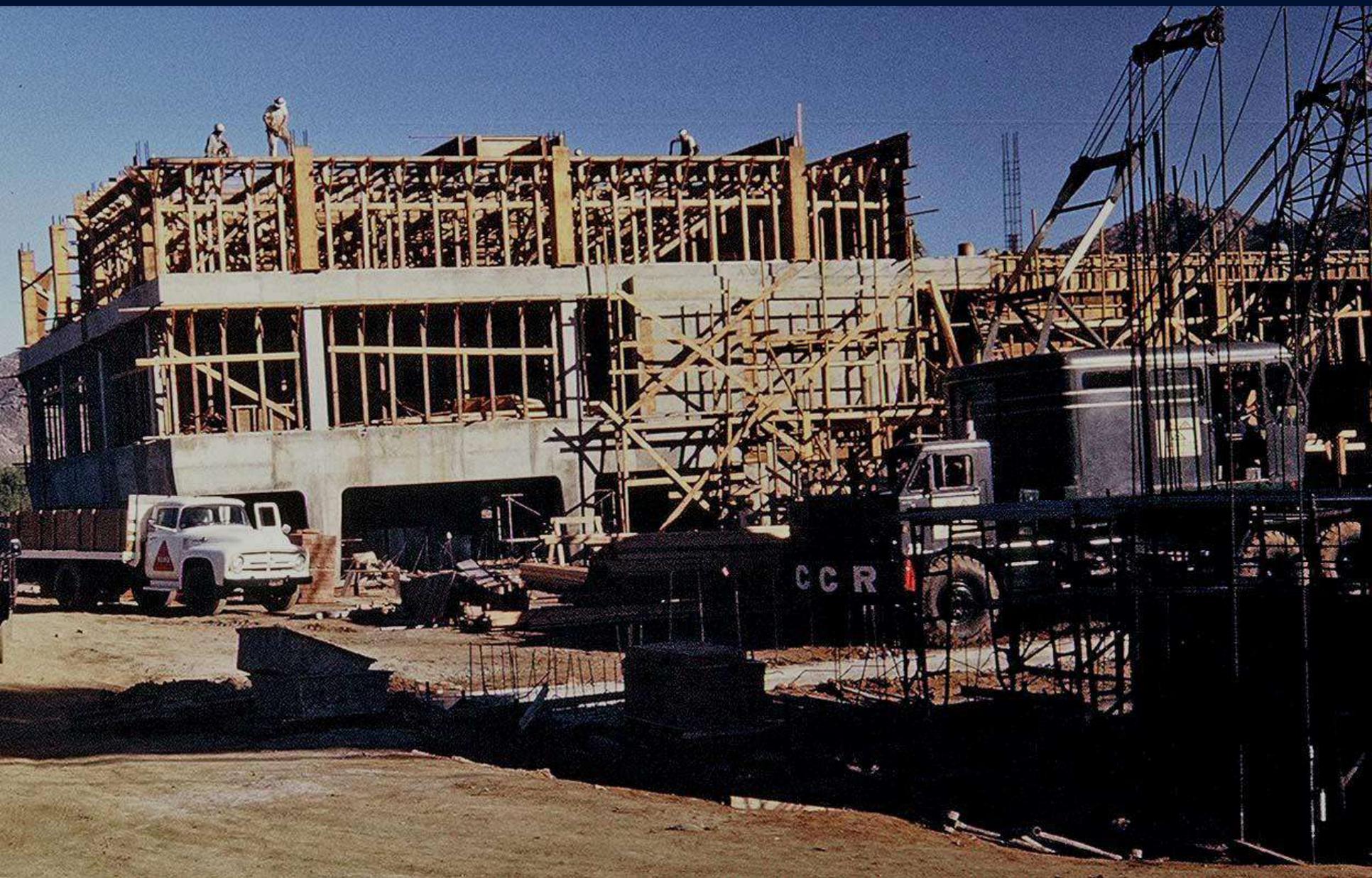
Varian A-60 NMR; Bob Neuman; 1967



UCR; 12-79

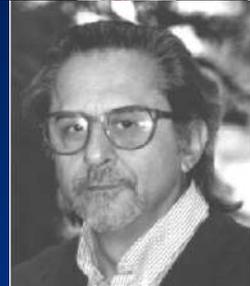
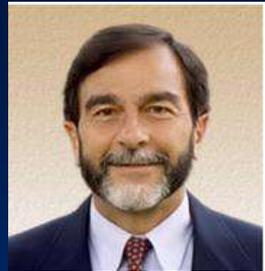
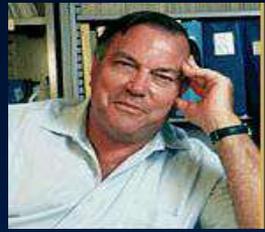


UCR; 1984



Pierce Hall, 1965

Some Distinguished Students



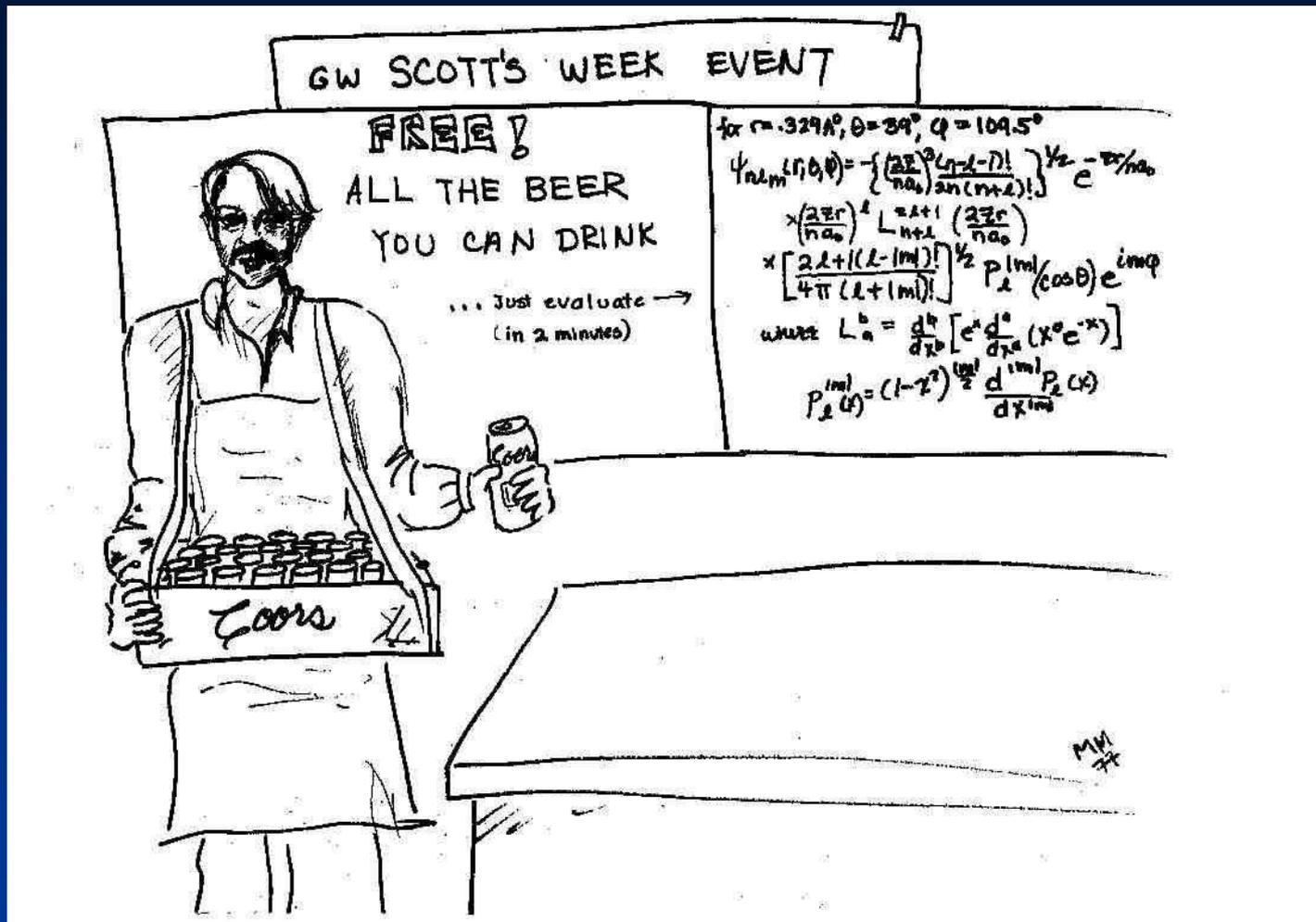
• Undergraduates

- Albert Page, 1956; UCR (soils)
- Bruce Rickborn, 1956; UCSB
- L. Donald Shields, 1959; Pres. Cal State Fullerton & SMU
- Leonard Interrante, 1960; UCB, GE, RPI (Chair)
- Richard Kula, 1960; NSF Fellowship, U of Wisc
- Dino Tinti, 1962; UC Davis
- Guenter Ahlers, 1962; UCB Physics (National Academy)
- Howard Needles, 1963; UCD
- Clifford Woolfok, 1963; UCI Biochem
- Richard R. Schrock, 1967; MIT (Nobel Prize, 2005)
- Richard McCreery, 1970; Ohio State (Dow prof; Chair)

• Graduates

- Richard Kula, 1964; U of Wisc (Dean Rabenstein's mentor)
- Frank Schultz, 1967; U of Indiana/Purdue (Chair)
- William Fenical, 1968; Scripps Inst Ocean, UCSD

Scot's Week Host: Professor Scott





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

Commons Area

ca. early '70s

Chemical Sciences (previously Physical Sciences 1)



View is toward north. Occupied 2005

Chemistry Faculty Research Areas

“Then” (1970):	Analytical	1
	Inorganic	4
	Organic	6
	Physical	7
Now (2009):	Analytical	7
	Biological	10
	Environmental	4
	Inorganic	5
	Organic	12
	Physical	9
	Materials	9
	Computational	2

*18 faculty in 1970, 26 faculty in 2009

Academic Senate CNAS Distinguished Faculty Lecturers (9 out of 39 total)

2010	Christopher Reed	"TBD"
2006	Roger Atkinson	"Exploring Alkane Atmospheric Chemistry"
2001	Dallas L. Rabenstein	"Nuclear Magnetic Resonance Studies of the Chemistry of Biomolecules"
1994	Charles Wilkins	"New Mass Spectrometry Tools for Biochemical and Polymer Analysis"
1990	William H. Okamura	"Vitamin D and Vitamin A -- On the Architecture of Natural and Unnatural Products"
1979	Donald T. Sawyer	"Trace Metals, Air and Life"
1975	David R. Kearns	"NMR--The New Rosetta Stone"
1966	James N. Pitts, Jr.	"Basic Research and Undergraduate Education: Conflicting or Complementary"
1959	W. Conway Pierce	"Absorption at Solid Surfaces"

Chemistry Department Distinguished Professors

Guy Bertrand

David Bocian

Robert Haddon (joint appointment Engineering)

Francois Mathey

Dallas Rabenstein

Chris Reed

Francisco Zaera (pending)

University of California Presidential Chair

Michael Pirrung

Administrative Service by Chemistry Faculty

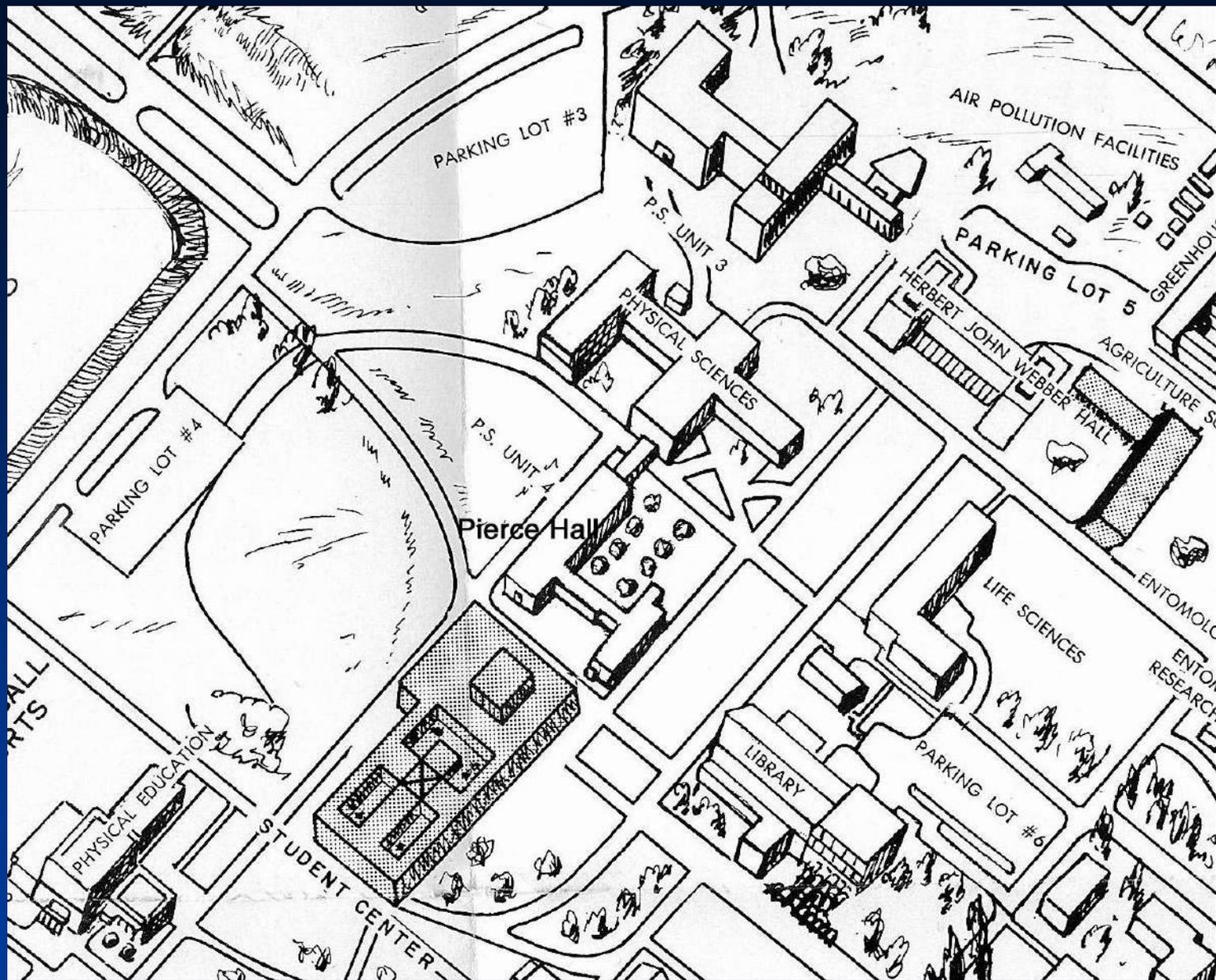
Executive Vice Chancellor: Everly Fleischer
Dallas Rabenstein

College Dean: Don Sawyer, Physical Sciences
Dallas Rabenstein, CNAS
Steve Angle, Natural and Agricultural Sciences

Associate Dean: George Helmkamp, Physical Sciences
(College) Charlie Wilkins, Physical Sciences

Associate Dean, Student Affairs: Gary Scott
(College)

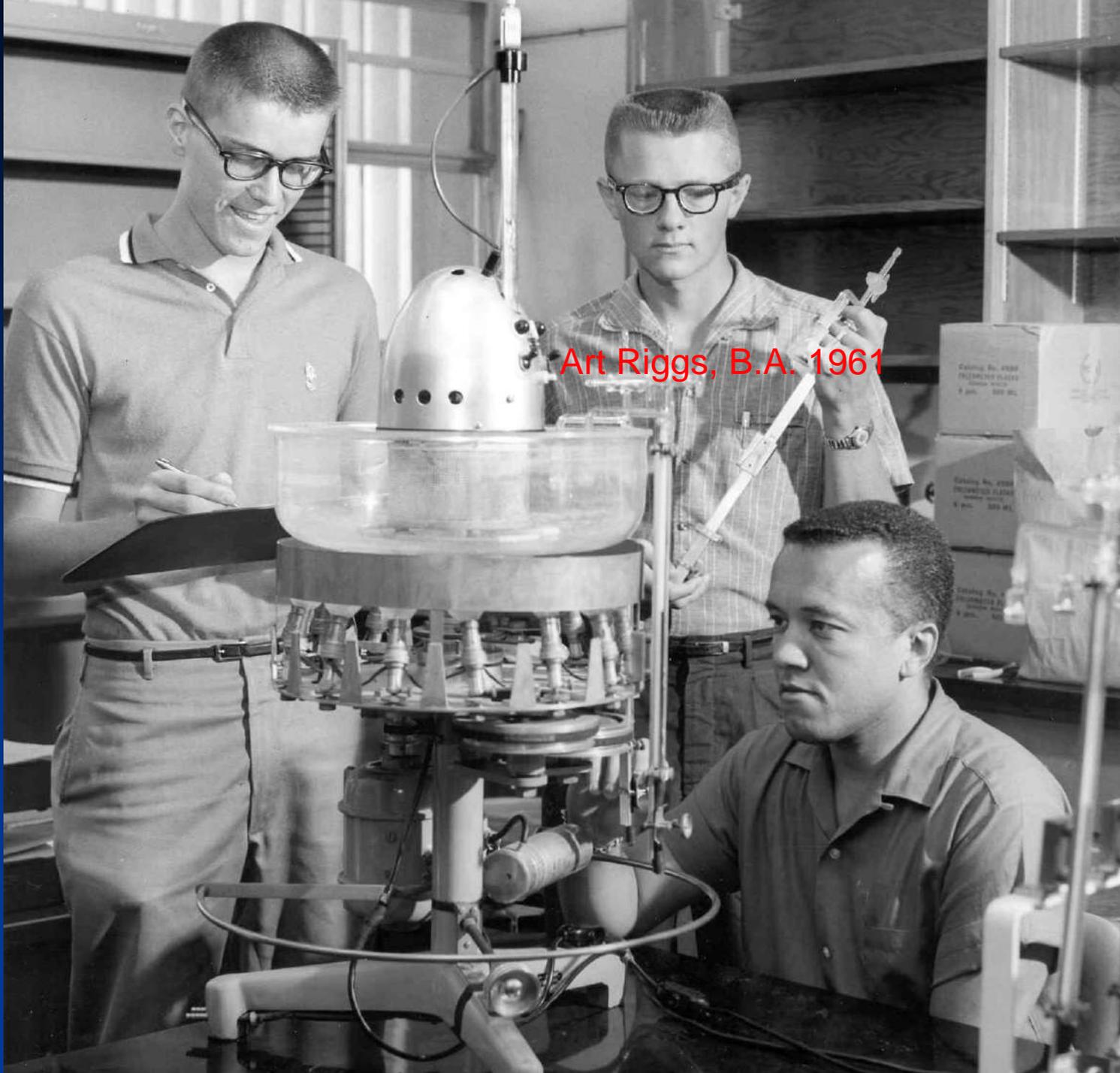
Graduate Dean: Harry Johnson
Dallas Rabenstein



UCR campus: 1965



PHYSICAL SCIENCES



Art Riggs, B.A. 1961



Webber Hall; 8-63

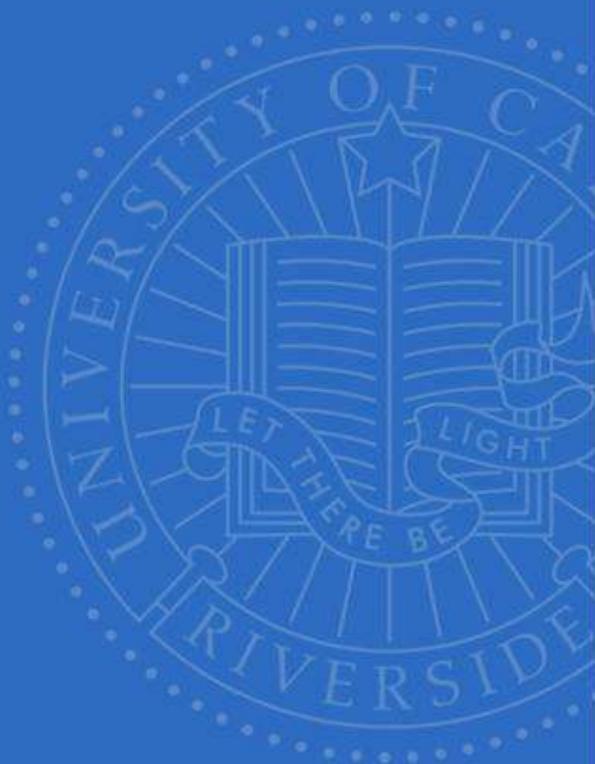
UCR

50th anniversary

Chemistry Symposium

June 18, 2010

Lunch Awards Program



UNIVERSITY OF CALIFORNIA, RIVERSIDE

- › Karin-Moore-Gandolfo Scholarship
- › Kuwana & Sawyer Undergraduate Award
- › ACS Award in Analytical Chemistry
- › ACS Award in Inorganic Chemistry
- › Donald T. Sawyer Graduate Award in Analytical Chemistry

Department of Chemistry 2010 Outstanding Teaching Assistants

- › David Medina (Jingsong Zhang)
- › Miaomiao Luo (Ludwig Bartles)
- › Kayla Kaiser (Cindy Larive)
- › Aaron Moehlig (Tom Morton)

- › **2009 – 2010 Ph.D. Degrees**
 - › Tangyuan Cao (Morton) posthumous
 - › Lingling Chen (Mueller)
 - › John Michael Kaiser (Mueller)
 - › Jinfeng Lai (Mueller)
 - › Stacie Eldridge (Larive)
 - › Aiko Matsunaga (Ziemann)
 - › Glenn Kuchenbeiser (Bertrand)
 - › Amy Avelar (Reed)
 - › Tony Ly (Julian)
 - › Ye Tian (Mueller)
- › **Ph.D. degrees expected by Fall 2010**
 - › Mark Hamza (Rabenstein)
 - › Theresa Massoud (Pirrung)
 - › Kevin Weber (Zhang)
 - › Yong Jiang (Wang)
 - › Hongxia Wang (Wang)
- › **2009 – 2010 Thesis M.S. Degree**
 - › Olivia Alley (Mueller)

Faculty Awards and Recognition



- › *June 2010* Michael Pirrung, Editor-in-Chief of the *Journal of Combinatorial Chemistry*
- › *June 2010* Guy Bertrand, Senior Editor of *Chemical Reviews*
- › *February 2010* Yadong Yin was selected to receive a 3M Nontenured Faculty Award
- › *December 2009* Yadong Yin was awarded an NSF CAREER award
- › *December 2009* Eric Chronister was elected a AAAS Fellow
- › *September 2009* Chia-en Chang was awarded the 2010 HP Outstanding Junior Faculty award from the ACS Division of Computers in Chemistry
- › *July 2009* Francisco Zaera was selected as an inaugural ACS Fellow
- › *May 2009* Yadong Yin was named a 2009 Cottrell Scholar
- › *May 2009* Tom Morton received the 2009 Chancellor's Award for Faculty Excellence in Undergraduate Research
- › *May 2009* Chris Reed was selected as the 58th annual Faculty Research Lecturer
- › *February 2009* Dallas Rabenstein was appointed Executive Vice Chancellor and Provost of UCR

Recognition of Former UCR Faculty

- › Werner Kuhr
- › Mark Midland
- › Robert Neuman
- › Mike Rettig
- › Don Sawyer
- › Hart Schmidt
- › Dick Wing



Pierce Hall; 1966



Pierce Hall. May, 1967

Science Laboratories I Building



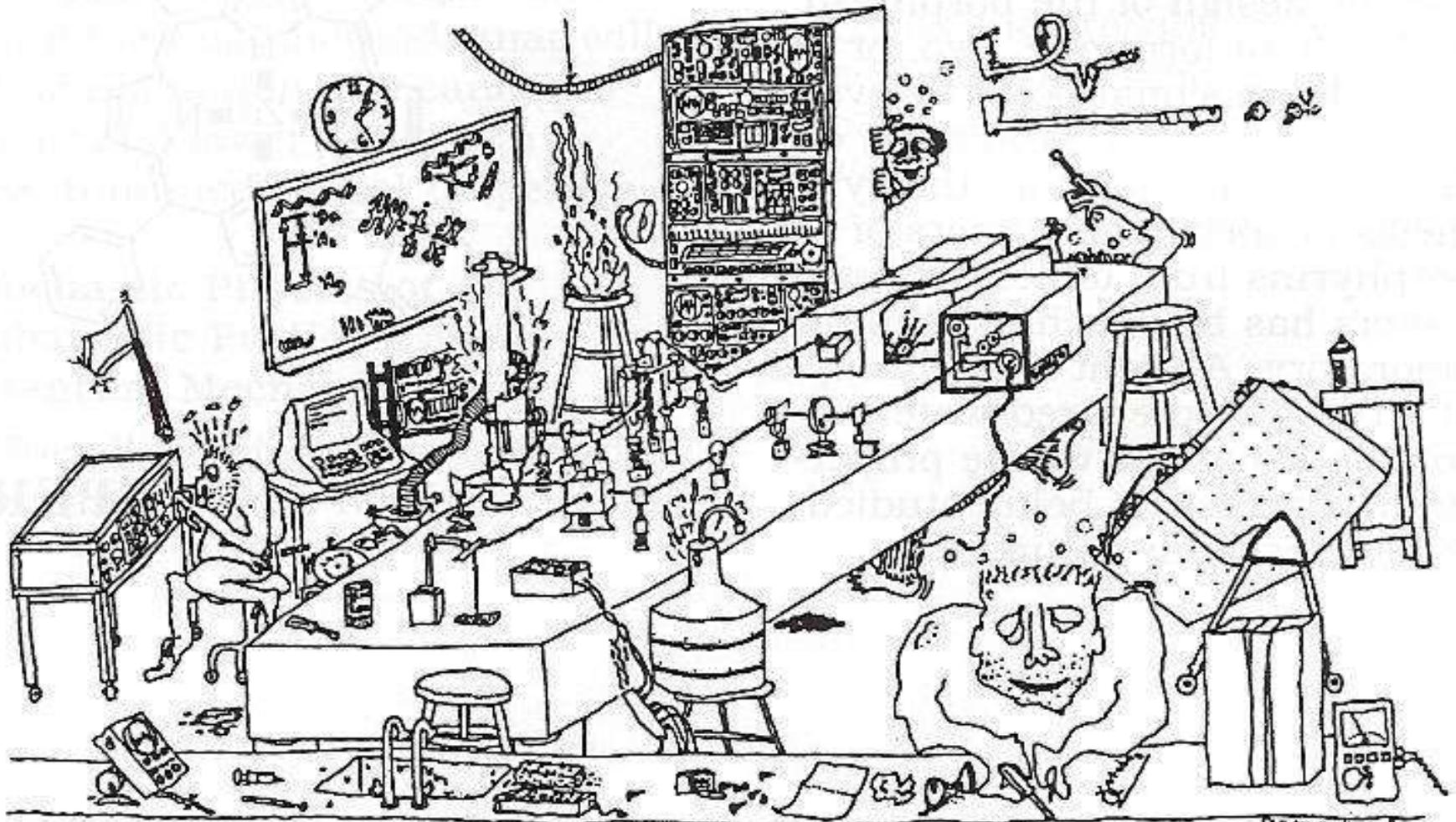
Upper two floors
are Dept. of
Environmental
Sciences research
laboratories

Geology 1100
used to be here

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

Science Laboratories I - Main Entrance South





DYLAN KOHLER

DYLAN KOHLER

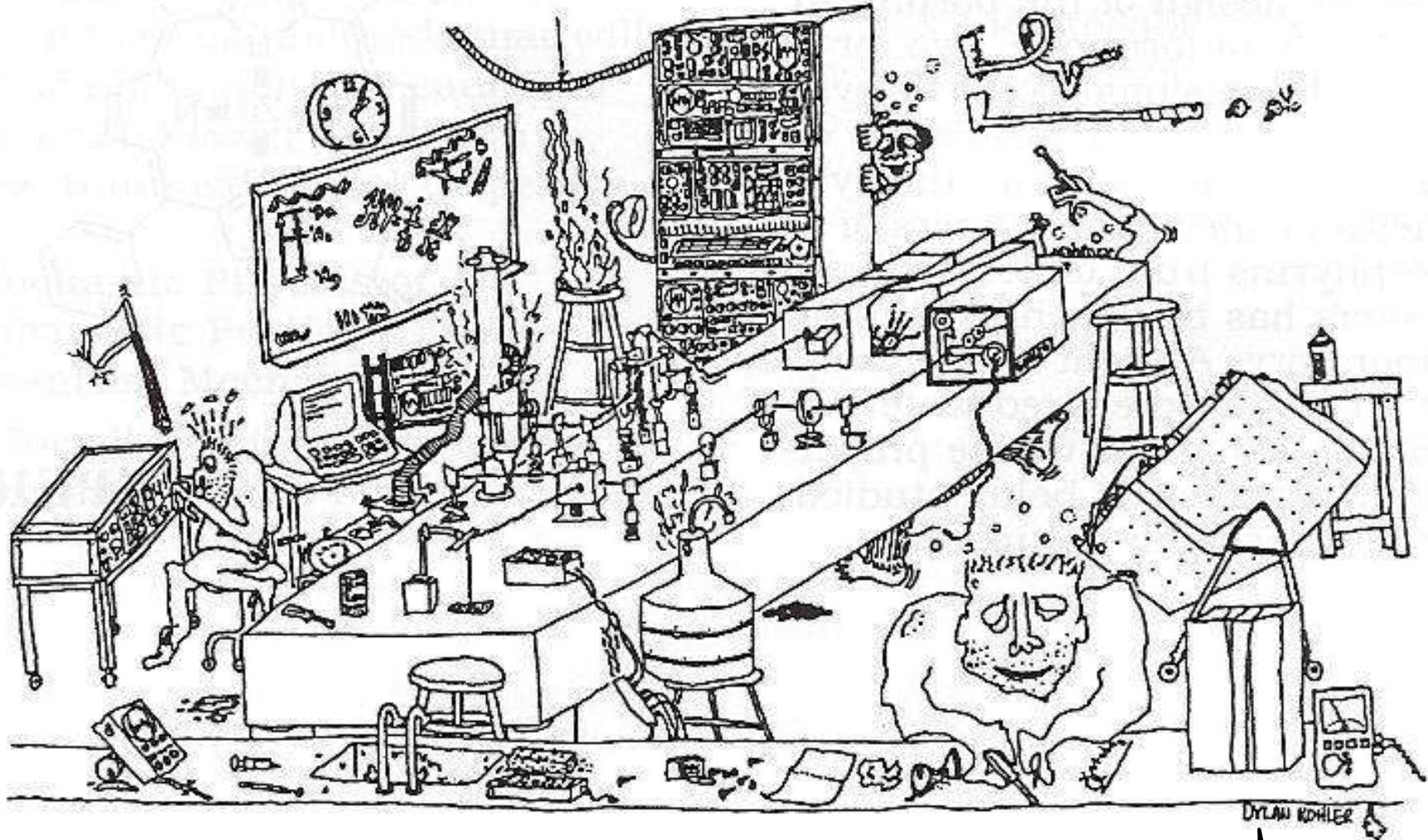


Preparations for Pierce Hall. Physical Sciences: 1964

Bryan E. Kohler (1940-1997)

Two extensions of our spectro-

Selected Publications



DYLAN KOHLER