



The Clifford S. and Ruth A. Mead  
Memorial Undergraduate Chemistry Laboratory

## Dedication Program

Monday, April 19, 1982  
5:00 p.m.

WELCOME Harry B. Gray  
*Chairman, Division of Chemistry  
and Chemical Engineering  
Arnold O. Beckman Professor of Chemistry*

CHEMISTRY LABORATORIES: THEN AND NOW  
Arnold O. Beckman  
*Chairman Emeritus, Board of Trustees*

TEACHING IN A STATE-OF-THE-ART  
UNDERGRADUATE LABORATORY  
Peter B. Dervan  
*Associate Professor of Chemistry*

CLOSING REMARKS  
Dr. Gray

## Undergraduate Laboratory Chemistry at Caltech

Caltech's faculty is dedicated to training the best scientists and engineers in the world. Undergraduate chemistry laboratory courses are one vital part of this training.

In order to prepare students for future encounters with research, it is important that they experience a situation in which careful observation, awareness of variables, and precise measurements are stressed. Thus, chemistry laboratory courses focus on observation and data collection regarding the properties and transformations of matter.

The chemistry faculty has recently redesigned the undergraduate chemistry curriculum in order to improve instruction in the techniques of modern chemistry. The new curriculum emphasizes the teaching of laboratory methods for the preparation, purification, and characterization of both organic and inorganic compounds.

A new sequence of courses has been introduced which fully integrates the traditional organic and inorganic disciplines. This sequence is modular and allows a student to move at his or her own pace from simple, straightforward procedures to the performance of highly sophisticated experiments on compounds which are normally very difficult to handle.

The Clifford S. and Ruth A. Mead Memorial Undergraduate Chemistry Laboratory has been designed to resemble research facilities so as to complement the research-type experiments in the new curriculum. The laboratory courses of the first two years prepare students for research work in chemical synthesis, mechanistic studies, and structural characterization, enabling some students to initiate original research as early as the junior year.

With the opening of The Mead Laboratory, Caltech takes the lead in educational innovation for the benefit of the Institute's most important product — its students.

## The Clifford S. and Ruth A. Mead Memorial Undergraduate Chemistry Laboratory

The Clifford S. and Ruth A. Mead Memorial Undergraduate Chemistry Laboratory has been designed to meet the most modern standards of chemistry instruction and safety.

Undergraduate chemistry laboratory courses were once conducted in Gates Chemical Laboratory, which suffered severe earthquake damage in the 1971 San Fernando earthquake and had to be vacated. Temporary laboratories were then hastily erected and fitted with the old furnishings from Gates. Chemistry faculty members hoped that updated facilities would soon become available to further enhance the quality of chemistry instruction. The Clifford S. and Ruth A. Mead Memorial Undergraduate Chemistry Laboratory has now fulfilled that hope.

The laboratory has been completely rebuilt into a modern and safe instructional facility. Two teaching laboratories, based on a single module, feature student work stations situated around central, glass-walled instrument rooms. Each student area has a hood for eliminating noxious fumes, a bench, and a shared sink. The central instrument rooms house the balances, spectrometers, chromatographs, melting point apparatus, and other equipment. Teachers can monitor all their students anywhere in either room at all times.

This innovative design achieves a natural unification of "wet" chemistry and instrumental techniques of characterization. To our knowledge, no other undergraduate laboratories in the world approach these in teaching effectiveness and student safety.

The Mead Laboratory is situated west of the adjacent Arthur A. Noyes Laboratory of Chemical Physics on the northwest edge of the campus. The laboratory was initially designed by Mr. Ken Copenhagen and was constructed by the O.K. Earl Corporation of Pasadena.

## The Mead Gift

The new undergraduate chemistry laboratory is named in honor of Clifford S. and Ruth A. Mead, who provided the Institute with generous gifts from their estates.

Clifford Stickney Mead, a prominent Pasadena businessman, established the C. S. Mead Motor Company in Pasadena in 1916 and continued in that business until his retirement in 1957. He enjoyed the distinction of having the oldest Chevrolet dealership in the world.

Mr. Mead was a member of the Pasadena Overland Club, serving three consecutive terms as its president. He was also a great lover of the outdoors. His special interest in horses led to his affiliation with the Rancheros Vistadores of Santa Barbara and the Vaqueros del Desierto of Palm Springs. Mr. Mead, an avid yachtsman, and Mrs. Mead were also members of the Newport Harbor Yacht Club. Mrs. Mead was a founding member of Boys Republic.

At Caltech we are proud to have the tangible evidence of the Meads' personal interest and generosity. The Clifford S. and Ruth A. Mead Memorial Undergraduate Chemistry Laboratory will play a large part in fulfilling the Institute's commitment to excellence in education.