SEVENTEENTH ANNUAL ALUMNI SEMINAR  
SATURDAY, APRIL 3, 1954

8:30-9:15 A.M.—REGISTRATION
Dabney Hall of the Humanities

MORNING PROGRAM

9:30-10:20 A.M.
Your choice of the following:

A. FALLING APPLES TO SPLITTING ATOMS
Thomas M. Smith, Assistant Professor of the History of Science

Five hundred years ago most educated people accepted the
philosophical view that the earth was at the center of the
universe and that all matter was constituted of four basic elements.
Today, few people seriously question the Newtonian view of
the world established by science. Professor Smith will discuss the
change in views that occurred and ask how final it is.

B. ANALOGING THE EARTHQUAKE
George W. Housner, '31, Professor of Civil Engineering and
Applied Mechanics

The use of computers continues its growth in the engineering
field with an interesting application in studying the effects of
earthquakes. Replacing the costly and unreliable results obtained
by shaking machines and models, the computer now makes it
possible to evaluate a structure's motions under major earthquake
conditions. The empirical equations developed and the range
of application will be discussed from the structural designer’s
view.

10:20-10:50 A.M. COFFEE TIME
10:50-11:40 A.M.
Your choice of the following:

A. ALL FLESH IS GRASS
A. W. Galston, Associate Professor of Biology

The green plant stands between man and obdiction because of
its unique ability to store radiant energy released in the sun's
thermonuclear conversion of hydrogen to helium. Our knowledge of
the mechanisms of photosynthesis is increasing rapidly, pro-
viding hope that we shall one day, utilizing artificial photosyn-
thetic devices, equal or even surpass the green plant’s efficiency.
Dr. Galston will discuss current developments in this field.

B. THE WHYS OF TRANSISTORS
William Shockley '32, Visiting Professor of Physics, Co-Super-
visor, Solid State Physics Group. Bell Telephone Laboratories

Certain electron characteristics of semiconductors have led to
the development of the modern point-contact transistor. The
effectiveness of these transistors depends upon minute concen-
trations of controlled impurities in otherwise perfect crystals.
Dr. Shockley will discuss the present status of transistor
development.

11:55 A.M.-12:45 P.M.
Your choice of the following:

A. EUROPE LOOKS EAST AND WEST
George K. Tanham, Assistant Professor of History

The attitudes of Western Europe toward the U. S. and the
U.S.S.R. are chief concerns to the Free World. Many view-
points have been expressed on this subject, but none are more
interesting or provocative than those reported from “first-hand”
information. Dr. Tanham has made three extensive tours of
Western Europe—the first with General Patton’s Armored Divi-
sion during World War II; the second on a Belgian-American
Foundation scholarship; and the third on a Ford Foundation
scholarship last year.

B. MOLECULAR DISEASES
Linus Pauling, ’25, Chairman, Division of Chemistry and Chemical
Engineering

Dr. Pauling and his coworkers have recently discovered that
malformed protein molecules are the cause of certain types of
hereditary anemia. He will discuss the present knowledge of the
nature of the abnormal molecules and the molecular diseases,
as well as the electrophoretic and other techniques used in the
work.

1:00-2:00 P.M. LUNCH—STUDENT HOUSES

AFTERNOON PROGRAM

2:30-3:20 P.M.
Your choice of the following:

A. THE SELECTION AND PURCHASE OF GEM STONES
or What to do Until the Appraiser Arrives
Richard H. Johns, ’35, Professor of Geology

What makes a gem valuable? Is the price an index of its true
worth? Is it “the real thing,” or is it glass or some other sub-
stitute? Is it natural, synthetic, or “reconstituted”? These and
other questions will be discussed by Dr. Johns, who also will
describe the conditions under which crystals of gem quality are
formed in nature or in the laboratory.

B. ODDITY TO QUANTITY
William H. Corcoran, ’21, Associate Professor of Chemical
Engineering

Plasma extenders, or less accurately, blood substitutes, are of
titudinal importance in war or peace. Today they have assumed major
roles in planning against atomic disasters. Dextran is one of the
plasma extenders in a group including oxypolygelatin, polyvinyl-
pyrrolidone, and gelatin. Dr. Corcoran has had considerable ex-
perience in bringing the production of those substances into
commercial quantity. He will show the contribution of the chemi-
cal engineer in this most important work.

3:30-4:20 P.M.
Your choice of the following:

A. DESERT FLOWERS
Fritz Witt, Professor of Plant Physiology

It is difficult to realize that plants actually survive in the desert
where existence is subjected to known terrible environmental
change. Color slides will be shown depicting recognizable effects
of variations in temperature, rainfall, and soil salinity on the
amazing and colorful “belly” plants. Because these plants adapt
themselves to sudden and severe changes so nicely and
effectively, their life history provides a basis for discussing some problems
of evolution.

B. SCIENCE OF CHOICE
H. Fredric Bohnenblust, Professor of Mathematics

“Operations Research” and the “Theory of Optimum Probabil-
ity” are terms of growing familiarity in the engineering field. The
progress of logistics from the simple theories of winning games
or making maneuvers to a fascinating, complicated art has been
achieved by the increasing use of mathematics. Dr. Bohnenblust
will describe this progress and the mathematical tools used.

4:30-6:30 P.M.
Relax and meet your friends at the Elks Club, 400 West Colo-
rado Street, Pasadena. The newly decorated dining room and
bar are available.

EVENING PROGRAM

6:30 P.M.—DINNER
Elks Club—400 West Colorado Street, Pasadena
Dress—informal for men and women

AFTER DINNER
Introductions—Gerald P. Foster, President, Alumni Association
Remarks by Dr. Lee J. DuBridge, President, California Institute
of Technology

THE OBLIGATION OF THE NORMAL CITIZEN TO
UNDERSTAND THE WORKINGS OF HIS
GOVERNMENT
Don Kimball, President, Aerojet General Corporation

Southern California is fortunate to have a resident business
executive who has dedicated a number of years of his career to
governmental service. Mr. Kimball recently resigned his post as
Secretary of Navy to devote all his time to industry. His observa-
tion of people’s attitudes inside and outside government should
prove thought-provoking to every “normal citizen.”