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 view that occurred and ask how final it is.

B. ANALOGING THE EARTHQUAKE

George W. Housner, '34, 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 oblivion 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, providing hope that we shall one day, utilizing artificial photosynthetic 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-Supervisor, Solid State Physics Group, Bell Telephone Laboratories

Certain electron characteristics of semi-conductors have led to the development of the modern point-contact transistor. The effectiveness of these transistors depends upon minute concentrations of controlled imperfections 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 viewpoints 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 Division 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. Jahns, '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 substitute? Is it natural, synthetic, or "reconstituted"? These and other questions will be discussed by Dr. Jahns, 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, '41, Associate Professor of Chemical Engineering

Plasma extenders, or less accurately, blood substitutes, are of vital 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, polyvinylpyrollidone, and gelatin. Dr. Corcoran has had considerable experience in bringing the production of these substances into commercial quantity. He will show the contribution of the chemical engineer in this most important work.

3:30-4:20 P.M.

Your choice of the following:

A. DESERT FLOWERS

Fritz Went, Professor of Plant Physiology

It is difficult to realize that plants actually survive in the desert where existence is subjected to known terrific 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 Probability" are terms of growing familiarity in the engineering field. The progression 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 Colorado 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 A. DuBridge, President, California Institute of Technology

THE OBLIGATION OF THE NORMAL CITIZEN TO UNDERSTAND THE WORKINGS OF HIS GOVERNMENT

Dan Kimball, President, Aerojet General Corporation

Southern California is fortunate to have a resident and 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 observation of people's attitudes inside and outside government should prove thought-provoking to every "normal citizen."