

# Speaking Of . . .

## True Confessions

At the 50th anniversary celebration of the founding of the California Institute of Technology Associates, held at the Athenaeum on May 3, Lee A. DuBridge, president emeritus, and chemistry professor Harry B. Gray engaged in some reminiscences of Caltech which, not so incidentally, revealed for the first time how Harry Gray happened to join the Caltech faculty.

GRAY: I'd like to tell you about my first meeting with Lee DuBridge — and I'd like to tell Lee at the same time, because he's forgotten. I was here visiting from Columbia in the spring of 1965. I enjoyed the place very much — indeed I sensed a special atmosphere here as

soon as I arrived. I was asked here to give some lectures in my special field of chemistry. I gave two or three lectures and then Jack Roberts, who was chairman of the Division of Chemistry and Chemical Engineering at the time, called me into his office and said, "Harry, we like what you're doing, and we're impressed with your work . . . We'd like you to come out permanently."

DuBRIDGE: You must have been pretty old — 37 or so?

GRAY: I was 29. (Don't extrapolate!) And he said, "I'd like you to go talk to Lee DuBridge about coming out here."

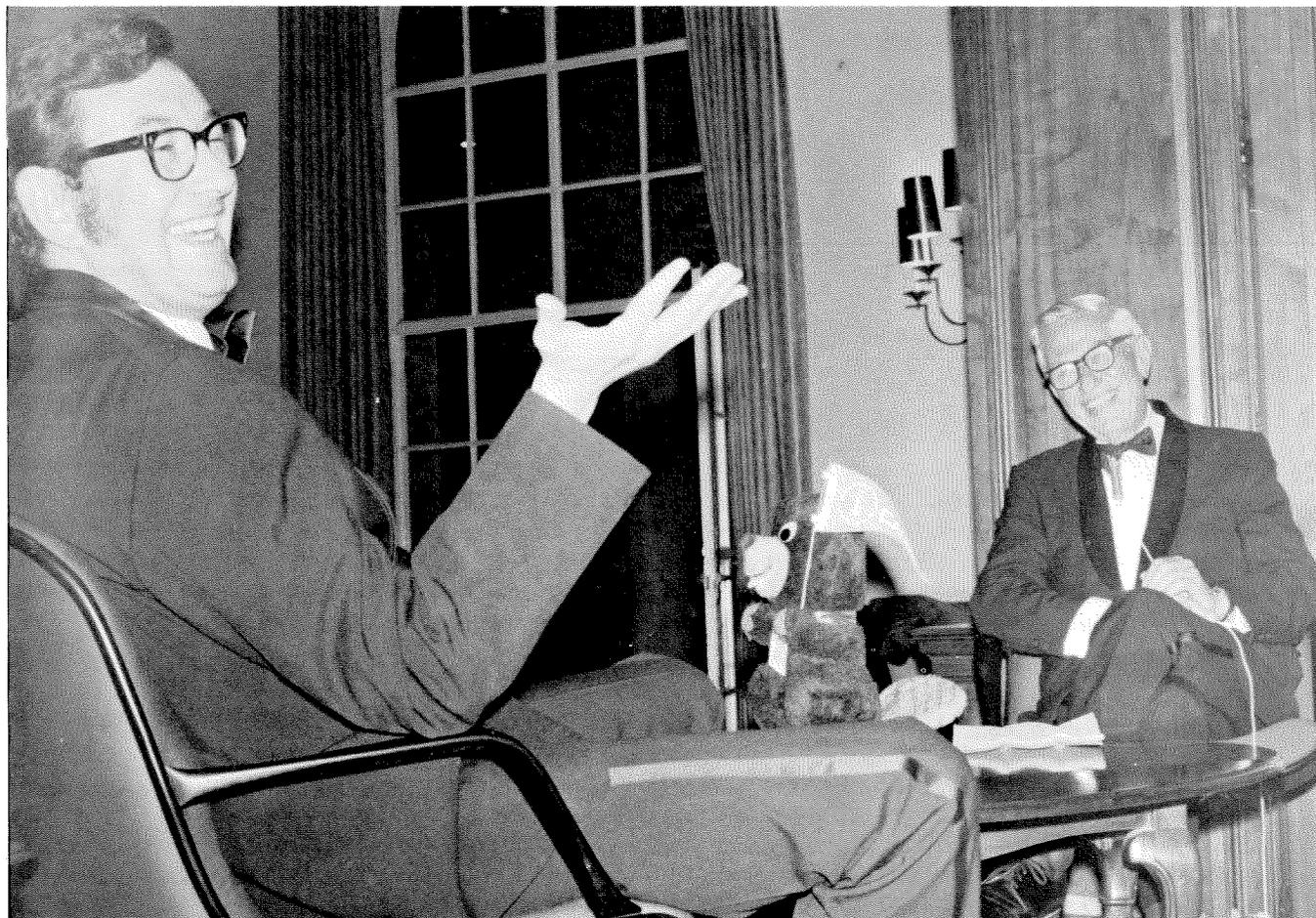
I started shaking at this point and said, "Isn't he president?"

"Yes, he's the president of Caltech."

I said, "I'm sure I couldn't get an appointment with Dr. DuBridge. After all, I've been at Columbia for five years and I've only seen Grayson Kirk once. And that was at long distance."

He said, "Well, Lee DuBridge is waiting to see you now."

So I ran out of the office and from Crellin to Throop — quite in shock — and I ran into your office, and there you were, looking much as you do now.



Remember when? Chemistry Professor Harry Gray and President Emeritus Lee DuBridge reminisce for The Associates.

And you welcomed me and said, "Harry, we've heard very good things about you. What can I do to get you out here from Columbia?"

Then I was in *total shock*, and couldn't think of anything, and so I blurted out the first thing that came to mind, which was, "Dr. DuBridge, you know that Grayson Kirk has just decided to build a physics building on the four beautiful tennis courts at Barnard College?"

And Lee said, "No I didn't know that."

I said, "Well, let me tell you about it."

This is the only thing I could think of at the time. Maybe he'd do anything to get me out here. So I said, "Yes, these are the last four good tennis courts at Columbia"—and since I've always been a tennis enthusiast, I described to Lee how the tennis courts were between my apartment and my laboratory, so I could play going to my lab and on my way back home as well.

Lee was taking all this very well, and I said, "You know, several of us in chemistry who also play tennis wrote a letter to Grayson Kirk in which we said,

*Dear President Kirk: We are very concerned that you decided to build a physics building on top of the four beautiful tennis courts at Barnard College. In our opinion as chemists and tennis players, one good set of tennis is worth at least 12 physicists.*

I realized at this moment that I was talking to a physicist, and I looked around and Lee was still smiling. It was at that moment that I knew Caltech was my kind of place.

So I said, "Dr. DuBridge, if I come to Caltech I want you to promise me that you'll never build a physics building on the three Athenaeum tennis courts."

And he said, "Harry, I'll be happy to promise that. We're desperate for space, but we're not that desperate. And I'll promise you that—but I can't promise you that my successors won't

build on those three beautiful tennis courts."

So I went away happy and I came back to Caltech, and, since I've been here, of course, I've made sure that any physicists appointed as administrators also play tennis, and you see the result—there's not a trace of a physics building on the tennis courts."

### **Where They Go from Here**

What happens to Caltech graduate engineering students after they receive their degrees? Well, everybody knows that most of them go into academic life; quite a few probably go into research organizations to continue advanced research; and a few unfortunates find themselves in industry. After all, industry really wouldn't be attractive to Caltech's graduates. Or would it?

To find out, Ernest E. Sechler, professor of aeronautics, recently reviewed the postgraduate careers of approximately 1000 alumni of the GALTIC (Graduate Aeronautical Laboratories of the California Institute of Technology) from 1939 to 1973.

Sechler found that 51 percent of these alumni (514) are in industry, some in very high positions. At least one is president of a very large corporation, many are research directors, and others have risen to management positions after making significant engineering contributions as members of technical staffs. As might be expected, of those in industry 69 percent (353) are in aerospace-related companies; the remaining 31 percent (161) hold positions in 104 widely diversified industrial organizations.

In the years since GALTIC's founding in 1928, the armed forces have increased their use of technologically complex systems, and the military have found it advantageous to have a few of their officers receive GALTIC's high-level engineering training. This was true in particular during and immediately following World War II and resulted in the second largest group of alumni (208) in Sechler's survey. Of those in the military, 137 are in

the Navy (20 having made Admiral rank), 56 are in the Air Force (2 Generals), 8 are in the Army, and 5 are in the Marine Corps. The Royal Canadian Air Force boasts one GALTIC alumnus who is a Brigadier General and one who is a Colonel.

In the third place numerically are the 18 percent (179) of the graduates who hold positions in 92 academic institutions. Caltech with 14 alumni on its faculty leads the group; Stanford is next with 10; and 9 are at UCLA.

A total of 59 different research laboratories and government agencies employ 75 graduates, or 8 percent. Of these, 40 are at the Jet Propulsion Laboratory, and 21 are connected with foreign agencies or governments.

Seven GALTIC graduates have formed their own consulting companies, and there is an interesting group of 16 who might be classed as in "unusual positions." These include a rancher, a lawyer, a retired guitar maker, a Peace Corps teacher in Malaysia, a car wash owner, a bowling alley proprietor, and two physicians.

Depending upon the changing demands of the outside world, certain cyclic trends appear in an overview of the careers of these 1000 graduates over the 34-year period. Obviously, new industrial interests such as fusion, high-energy lasers, new constructional materials, and new forms of energy have taken some of the more recent graduates. But the diversification is found in essentially every graduating class.

The GALTIC faculty see this as verification of the soundness of the underlying philosophy of their program. It is often said that modern technology demands narrow specialists. This is true only in the sense that a very detailed knowledge of a specific subject is required at any given time. Unfortunately, a short time later the emphasis may shift to another field. Consequently, engineering schooling should be anything but specialized; instead, an appropriate education should result in a broad and deep foundation in science and engineering to enable the professional to adapt rapidly and to change specialization with ease.