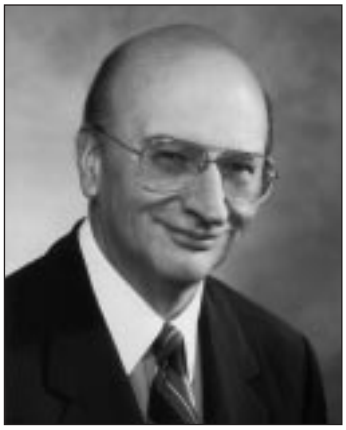
Giving to the Department of Physics

BY ELIZABETH CHADIS, DEVELOPMENT OFFICER

JOHN K. CASTLE (EC '63) AND THE CASTLE FELLOWSHIP

"At MIT, economics is the application of mathematical modeling to the world of economics, just as physics is the application of mathematical modeling to the physical world. It's the notion of mathematical modeling that has always fascinated me." John Castle has spent his life balancing science and math with the economics of finance.



Bachrach

John K. Castle (EC '63)

In the late 1960s, Castle was one of the founders of the institutional private equity market. The founder of Castle Harlan Inc., and former President and Chief Executive of Donaldson, Lufkin & Jenrette, he thrives in the world of private equity investments. "People see me as a businessman, but when I look at the manufacturing plant I see it through a mathematical and scientific prism. All businesses have some engineering, chemistry or physics. I feel I have a decided advantage that has proven quite useful in business transactions."

Castle thoroughly enjoyed the time he spent as a student at MIT. "I remember Professor Krakauer leading the lecture in classical mechanics; he was terrific." Even though he took more mathematical and physics courses than economics classes, Castle knew in the long haul he would chose a business career. "MIT is an extraordinary institution, unique in America. It functions as a key economic engine for the whole country." MIT faculty and students have founded thousands of companies, creating millions of jobs while generating billions of dollars in revenues. It is central to America's competitive edge in the world economy.

Once Castle determined he would make a major gift to the MIT campaign, he considered carefully how best to designate his gift. "Serving on the Physics Department Visiting Committee made me acutely aware of the need for graduate fellowships." Over the years, Castle has given four graduate fellowships to MIT, including a new one in physics. In addition, he has funded a Career Development Professorship in Economics.

STILL "FIDDLING WITH THE KNOBS"

Virgil Elings (PhD '66)

"One of the most important things I learned at MIT was from Bill Lobar, Lou's [Professor of Physics Emeritus Louis S. Osborne] technician. I asked him one day to show me how the oscilloscope worked, since I'd forgotten whatever I'd learned in undergraduate labs. Bill said, 'fiddle with the knobs, you'll figure it out.' He was right, and it works with almost everything in life. I'll bet Lou fostered that kind of thinking."

Virgil Elings, originally from Des Moines, Iowa, earned his S.B. in Mechanical Engineering from Iowa State University in 1961 and his Ph.D. in Physics from MIT in 1966. He spent the next 20 years on the physics faculty of the University of California at Santa Barbara. While on sabbatical leave in 1987, Elings co-founded Digital Instruments, which designs and sells scanning probe microscopes (SPMs). These microscopes magnify objects 10–20 million times, enabling scientists to view materials at the atomic level. In 1998, the company was acquired and Elings retired a year later. Today, he spends time at his horse ranch, tending his lavender fields, and enjoying his vintage motorcycle museum. In addition to his philanthropic support of civic projects in Santa Barbara, where he lives, Elings made a $3.5 million gift to the Department of Physics. Development Officer Elizabeth Chadis caught up with Virgil Elings while visiting MIT recently to help celebrate the 80th birthday of his friend and former thesis advisor, Professor of Physics Emeritus Louis S. Osborne.

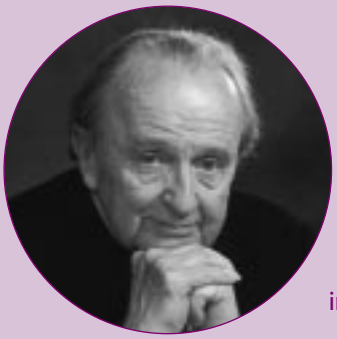
Elizabeth Chadis: **Virgil, tell us about your experiences as a grad student working with Louis Osborne.**

Virgil Elings (PhD '66)

Virgil Elings: Lou was absolutely great. He taught me the important things in life (one of which is *not* high energy physics). I had the job [in the Osborne group] of trying to understand the klugy electronics in the experiment, which was documented mostly in the mind of Sergio Tatzari, who was heading back to Italy. One day, as I was puzzling over the wiring, Lou came in and ripped all the wiring out. I said to him, "Are you crazy?" and he replied, "I think you can figure it out and redo it," and then he left. Did he understand, I wondered, that my background was in mechanical engineering and if I couldn't understand the stuff he had just delayed the experiment for a very long time? Wow, no one ever had confidence in me like that. My dad wouldn't even let me replace spark plugs in his car when I was young. I always remembered that lesson when working with others and it has worked really well in my business, determining when people are smart and then giving them free rein.

Lou was always on the edge of technology (which, of course, I didn't realize at the time). We had probably the world's first mini-computer (the LINC prototype built by Lincoln Labs, which was later sort of copied by DEC) on-line in the experiment, and it was then connected by phone lines from Harvard to MIT to an IBM computer. The LINC was given to Lou on condition that he wouldn't ask why it didn't work. This thing had 4k bits of magnetic core memory and was a bear to program.

I had the dubious honor of being in the Cambridge Electron Accelerator when the liquid hydrogen bubble chamber blew up. After getting myself (and my data) out of the building, I called Lou. I told him something blew up and he wanted to know what, thinking it some trivial event. I said the whole place blew up, and he thought I was exaggerating. Lou went outside his house, looking out toward Cambridge, and saw a big black cloud; he finally got the message. When he got to the site, I told him that when I went back into the building to get my data, I'd heard a voice from the dark



Professor of Physics Emeritus Louis S. Osborne

experimental hall yelling for help. At that moment, the fire department was still busy pouring water into the hall, which could have drowned the person. Lou, after being ignored by the Captain ("This is an atomic plant, we can't go down there."), found a Sergeant and they went down into the hall and carried out a fellow, who had broken his back. Again, Lou knew what was important, even as his experiment burned.

***EC:* What initially led you to MIT?**

VE: Dave Frisch asked that same question at a meeting he held for graduate students at his house. He expected answers like, "I knew the professors were great," and stuff like that. Instead, Frisch was blown away by the random answers. I remember one student saying, "I saw MIT on someone's sweatshirt so I thought I might apply." As for me, I refused to check the square, "Would you come without financial aid?" so I got a Whitney Fellowship. Stanford wouldn't give me aid, so I went to MIT. We both won. I went to the best place and MIT got its money back (a thousandfold).

***EC:* There's a rumor you rode your motorcycle up and down the infinite corridor. Clearly, motorcycles have always been important in your life.**

VE: Early in my life, motorcycles were a source of freedom (especially in Boston, where I could park anywhere). Now I collect them because I enjoy the diversity of engineering. To me, they're sort of a bank account I can enjoy. No relation to high energy physics, and there doesn't need to be. No relation to lavender farming, either.

***EC:* Virgil, is there anything else you want to share with the MIT physics community?**

VE: I think one of the downsides of a Ph.D. education is that it usually sets the tone for the rest of one's life, especially if one goes into academics — in which case you typically do the same thing the rest of your life. I wish people would treat it more as an experience, not as a basis for life. Life is too rich for that. I enjoyed my time at MIT and, as I said, learned important things from Lou. So, I am glad to help with the gift.

Photo: Bachrach

GIVING TO THE DEPARTMENT OF PHYSICS

ALL GIFTS, IN ALL FORMS, ARE VITAL TO THE PREEMINENCE OF PHYSICS AT MIT.

Naming opportunities exist for graduate fellowships, both expendable and endowed. A select number of naming opportunities are still available in the new Green Center for Physics. As important as outright gifts are to the Department, deferred gifts and other tax planning approaches can often make more substantial gifts possible. Through a planned gift, alumni/ae can give assets to MIT while retaining the income. Charitable remainder trusts, pooled income funds and charitable gift annuities allow donors to give assets without loss of income. In addition to planned gifts, bequests enable donors to make substantial gifts to the Department through their estate.

For more information on naming opportunities and making an outright or planned gift to the Department of Physics, please contact:

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You may also make a gift by going directly to the MIT web site at *http://web.mit.edu/giving/givenow/index.html*, and selecting one of the Physics Department Funds, listed below.

Jerome Friedman Fellowship Fund	3874300
Green Center Renovation Fund	3712902
Department of Physics Unrestricted	2657500