of recent physics PhD's received undergraduate training at institutions that, at the time of the undergraduate work, *did not* have graduate physics programs. Also many master's programs are at institutions that are predominantly undergraduate. Accordingly, the statement, "based on NAS data, four-year colleges will provide only 11% of future physics PhD's," is highly speculative and will probably not be borne out by future events.

Undergraduate enrollments have increased at different rates in different types of institutions. Undergraduate enrollment increases should, therefore, be compared with science-doctorate contributions for various types of institutions. This has been done recently by Albert B. Stewart (physics department, Antioch College). The results are in table 2.

These statistics do not give a complete picture, and physics is not explicitly identified. However *all* undergraduate colleges have increased their number of science doctorates by a greater percentage than their enrollments have increased. In most cases the number has risen more in biological-science doctorates. In contrast, *leading* baccalaureate sources of doctorates have grown more rapidly in undergraduate enrollments than as baccalaureate sources of doctorates in science. Their contribution to physical-science doctorates in contrast with biological sciences has increased a good deal more. Technical institutions are more similar to undergraduate colleges, with much larger source increases than enrollment increases. Their contribution to physical-science doctorates has risen much more than that to biological sciences. These statistics certainly present a different and far more favorable picture of undergraduate institutions as doctorate sources than that indicated by the PHYSICS TODAY report.

ROBERT H. LINNELL
National Science Foundation

Table 2. Increases in Science-Doctorate Origins and Enrollments (%)

	*Increase as source of science PhD's**			
Type of institution	*Physical sciences*	*Biological sciences*	*All sciences*	*Undergraduate enrollment increase Fall 1951 to Fall 1958*
Great Lakes College Association[a]	+47	+46	+47	+22
Associated Colleges of the Midwest[b]	+81	+107	+88	+16
Central States College Association[c]	+22	+76	+56	+41
Three regional groups[d]	+64	+125	+82	+8
Leading private liberal arts colleges[e]	+59	+90	+68	+11
Leading sources of PhD's[f]	+40	+12	+30	+36
Leading technical institutions[g]	+98	+33	+93	+20

* Baccalaureate sources of PhD's awarded in 1950–59 as opposed to those awarded in 1961–65. The latter were multiplied by two and the percent increase then calculated.

[a] Albion, Antioch, Denison, DePauw, Earlham, Hope, Kalamazoo, Kenyon, Oberlin, Ohio-Wesleyan, Wabash, Wooster

[b] Beloit, Carleton, Coe, Cornell (Iowa), Grinnell, Knox, Lawrence, Monmouth, Ripon, Olaf

[c] Alma, Augustana, Carroll, Gustavus Adolphus, Illinois-Wesleyan, Luther, MacMurray, Manchester, Millikin, Mundelein, St. John's (Minn.), Simpson

[d] Amherst, Mount Holyoke, Smith, Bryn Mawr, Haverford, Swarthmore, Pomona, Occidental, Redlands, Whittier

[e] Oberlin, Dartmouth, Swarthmore, Amherst, Reed, Wooster, Vassar, Union, Wellesley, Mount Holyoke

[f] California-Berkeley, CCNY, Illinois, Chicago, Wisconsin, Harvard, Minnesota, Michigan, Columbia, Cornell

[g] MIT, Cal Tech, Carnegie, Rensselaer, Rice, Lehigh, IIT, Brooklyn Polytech, VPI, Case Inst.

A CORRECTION: PHYSICS TODAY stated my address incorrectly in September. Since June 1966 I have been an associate professor of astronomy at the University of Arizona, Tucson and in the Lunar and Planetary Laboratory.

ELIZABETH ROEMER