

College Freshmen Shift Majors

Although data on freshmen entering college over the past six years reveal no great change in interest in science and engineering as a whole, there are clear signs of disenchantment with certain science and engineering fields. In all likelihood, the trends reflect both attitudinal changes among students regarding their own goals and those of society, and real or presumed changes in employment prospects in various fields. The resulting relationship of the size of the potential pool of scientific manpower in certain fields to future manpower requirements may have a profound impact on the future of science.

About one-third of the entering freshmen each year from 1966 to 1971 indicated some science or engineering field as a probable major. The proportion of men interested in science or engineering fields declined slightly; women's interests remained essentially unchanged. In each year, men were approximately twice as likely as women to indicate a probable major in a science or engineering field. But when the various science and engineering fields are considered separately, the data reveal some major shifts.

Interest in physical sciences and mathematics has steadily declined over the period, among both men and women. A sharp drop in interest in engineering has occurred in the last two years, presumably as a result of changing employment prospects. Interest in the life sciences remained stable over most of the period, but rose for both sexes between 1970 and 1971. Freshmen plans for majoring in the social sciences remained fairly stable

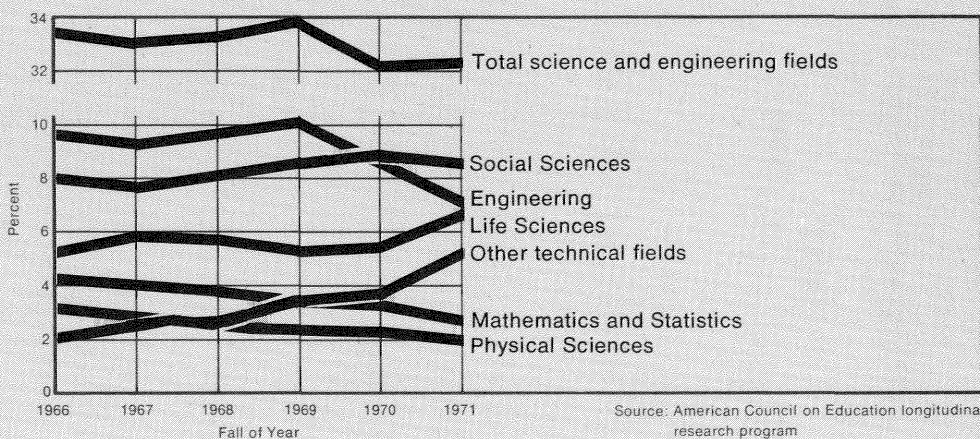
over the period for both sexes. Large increases were reported in the proportion planning to major in "other" technical fields—which include electronics, computer science, and industrial arts—and in the health professions below the M.D. level—such as nursing, pharmacy, therapy, and health technology. Freshmen planning to major in premedical fields are not separable from those who expect to major in any other preprofessional field because of the manner in which the data have been accumulated. They are included in the residual item "all other fields."

This information is derived from an ongoing longitudinal research program, partially supported by NSF, and carried out by the American Council on Education. Since 1966, the ACE has conducted a nationwide survey of full-time entering freshmen in a sample of institutions

representing a wide range of colleges and universities. Data are collected with respect to biographic and demographic characteristics, students' high school backgrounds, career plans, educational aspirations, financial arrangements, high school activities and behavior, and current attitudes. Each entering freshman is asked to indicate his "probable major field of study" from a list of 68 undergraduate major fields grouped in general categories. The data for various types of institutions are differentially weighted to represent the population of entering freshman students at all higher education institutions in the United States.

The trend data presented here do not reflect trends in interests among students of varying abilities. Analysis of trends by ability level is currently under way in the Division of Science Resources Studies in NSF.

Percent of full-time freshmen entering college whose probable major was in a science or engineering field. Fall 1966 to Fall 1971



Percent of full-time freshmen entering college whose probable major was in a science or engineering field, by sex and type of institution, fall 1966 and fall 1971

Probable major	Total		Men		Women		2-year colleges		4-year colleges		Universities	
	1966	1971	1966	1971	1966	1971	1966	1971	1966	1971	1966	1971
Total, all fields	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total, science and engineering fields	33.6	32.4	43.7	41.6	21.8	22.2	31.6	31.7	33.5	31.0	35.9	36.5
Physical sciences	3.3	2.0	5.0	3.1	1.2	.8	1.8	1.0	3.6	2.3	4.0	3.3
Engineering	9.8	7.2	17.9	13.2	.3	.3	11.2	8.2	7.2	5.4	12.7	8.5
Mathematics and statistics	4.5	2.7	4.6	2.6	4.5	2.9	1.9	1.3	6.0	3.6	4.5	3.8
Life sciences ^a	5.6	6.8	7.6	9.8	3.2	3.4	5.2	7.5	5.6	5.5	6.0	7.8
Social sciences	8.2	8.6	5.2	5.6	11.7	12.2	7.3	6.2	9.3	10.8	7.3	9.2
Other technical fields ^b	2.2	5.1	3.4	7.3	.9	2.6	4.2	7.5	1.8	3.4	1.4	3.9
Health professions ^c	5.3	8.8	1.5	2.6	9.8	16.1	7.1	10.6	3.7	7.6	6.4	7.9
All other fields ^d	61.1	58.8	54.8	55.8	68.4	61.7	61.3	57.7	62.8	61.4	57.7	55.6

^a Includes agriculture, forestry, and biological sciences.

^b Includes computer science, electronics, industrial arts, and other technical fields.

^c Includes health technology, nursing, pharmacy, and therapy; excludes premedical.

^d Includes arts and humanities, education, business, prelaw, premedical, and other nontechnical fields.