Some Additional Data on the Production of Physicists

By Henry A. Barton

THE American Institute of Physics has two general reasons for compiling manpower statistics annually. The first reason stems from the Institute's purpose "to advance the science of physics". It helps this purpose to be able to acquaint the public, government, industry, and academic circles with statistical facts about the education, employment, remuneration, special competences, etc. of the physics profession. Policies affecting the advance of physics are, and should be, based on such information. Second, the Institute needs to predict the number of physicists who will, in the years of the next decade, have need of its publishing and other services to physicists and to the AIP Member Societies to which they belong. Only in this manner can the necessary space, facilities, and personnel be made available with greatest economy and efficiency. The Institute's motives are thus in part to be of public service and in part simple business foresight.

The accompanying charts illustrate some uses of manpower studies. The data of Figures 1, 2, and 3 should be helpful to physics departments in predicting their "educational load" and presenting their needs to the administrative officers of their institutions. The data have been cited in the forthcoming final report of the AAPT-AIP Project on the Design of Physics Buildings.

Figure 4 and Table I are of interest to graduate schools of physics and also to personnel officers of employing organizations. The retarded rise in PhD's is one of the considerations which has led the AIP to make a survey of the circumstances of graduate students. At the time that this is written, 5000 questionnaires have been returned by physics graduate students and are now in process of analysis. A further report will be made when the present study is completed.

Table II is of more general interest, indicating the distribution of emphasis at the undergraduate level between the major fields of learning for three successive academic years.

The information in the accompanying figures is here presented without analysis as an illustration of the kind of work which the Institute is doing and for such use as readers may care to make of the data presented. The collection and analysis of such statistics will continue. From time to time compilations will be published in *Physics Today* articles, together with suitable analyses and interpretations.

H. A. Barton serves as administrative consultant to the American Institute of Physics.

Table I. Age of Attaining Doctorate Physical Sciences*

(1957 and 1958 combined)

Age of PhD	*Number*	*%*
20–23	16	0.4
24–27	1519	33.7
28–31	1649	36.6
32–35	805	17.9
36–39	335	7.4
40–43	123	2.7
44–47	43	0.9
48–51	13	0.3
52 up	4	0.1

(Compiled by Lindsay R. Harmon, Office of Scientific Personnel, National Academy of Sciences-National Research Council)

* Math., Phys., Chem., Engr., Geol.

Table II. Percent Distribution of Earned Degrees Awarded

(From reports of US Office of Education)

	Bachelor's & First Prof.		
	56–57	*57–58*	*58–59*
Natural Sciences	11.7	12.2	12.7
Engineering	9.2	9.7	9.9
Health and Other Technical Professions	11.3*	10.8*	10.5*
Humanities and Arts	17.6	16.9	16.8
Social Sciences	13.0	13.2	12.9
Business, Commerce and Industrial	14.1	14.4	14.2
Education	22.9	22.6	22.8
Not Classifiable	0.2	0.2	0.2

* Includes MD, DDS, etc.

The information included in these pages was presented by Dr. Barton as part of a summation of AIP activities at the Third Annual Meeting of the Corporate Associates of the American Institute of Physics, held at Arden House, Harriman, N. Y., on September 29, 1960.

Fig. 1

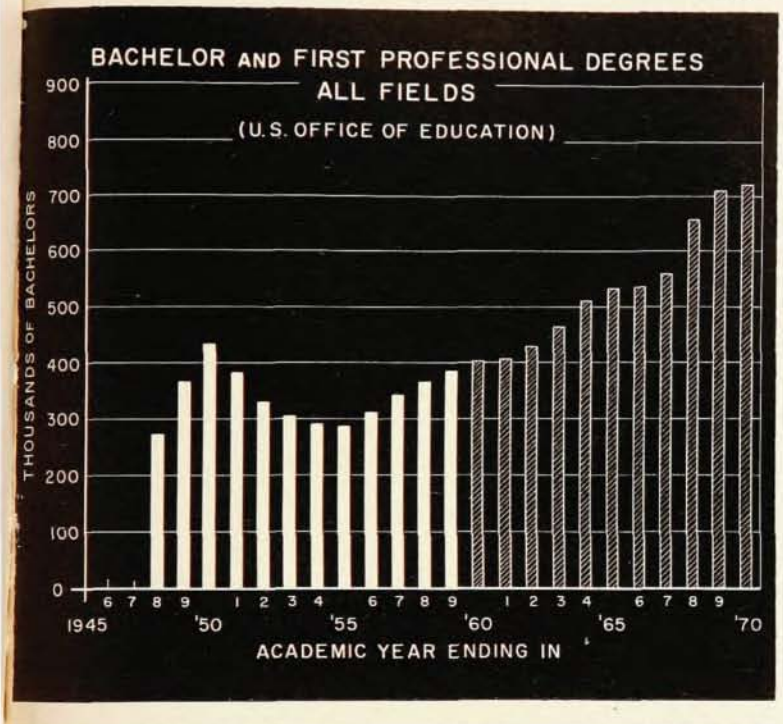

Fig. 2

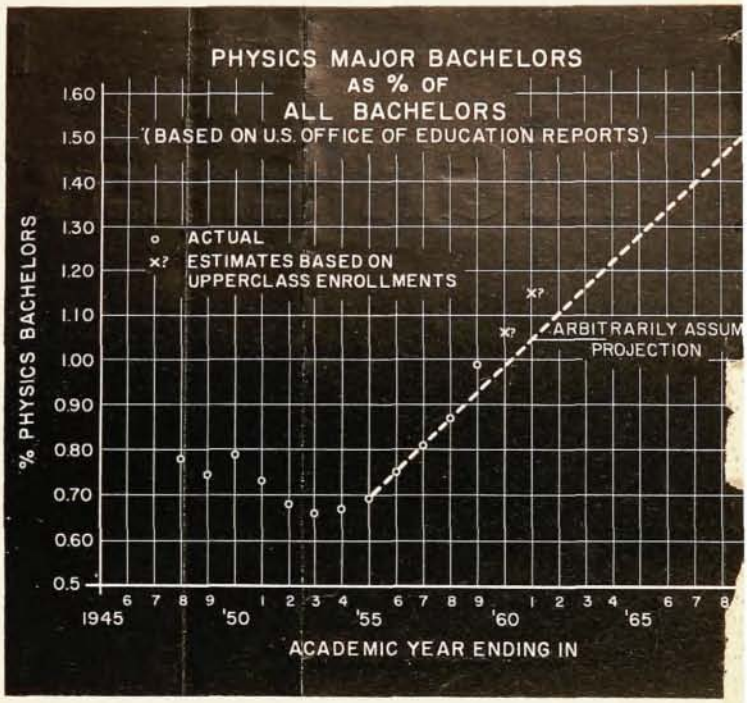

Fig. 3

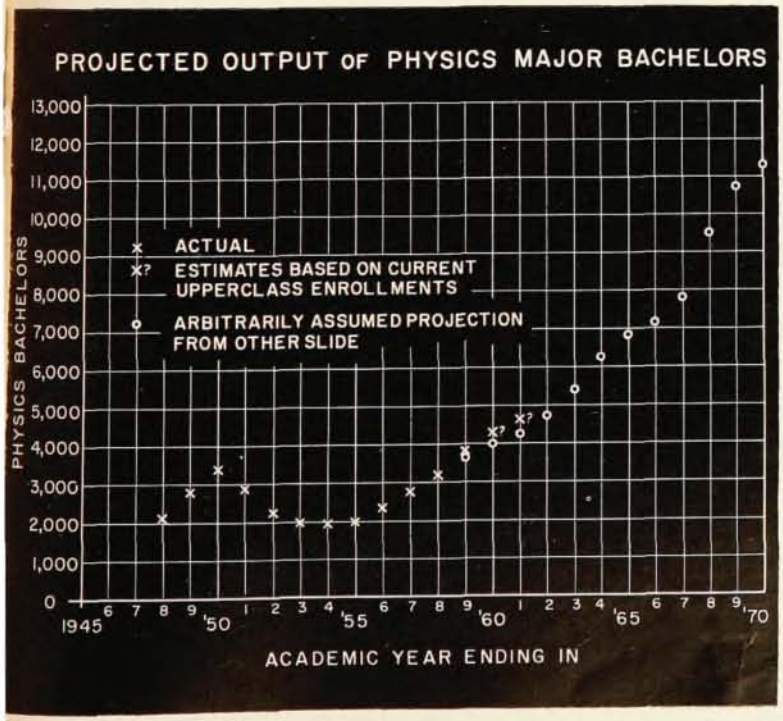

Fig. 4