

SCIENCE EDUCATION

Physics Doctorates

A study of doctorate production in the United States since 1920 has been made by Lindsey R. Harmon and Herbert Soldz (available as Publication #1142, National Academy of Sciences-National Research Council).^{*} It is based on the records maintained by the Academy's Office of Scientific Personnel, with support from the US Office of Education and the National Science Foundation.

The number of doctorates awarded in physics has shown a fairly steady annual increase, with the major exception of 1944-47 when the effects of wartime interruption of education

remained steady at eighteen to nineteen percent.

The fields of doctorate specialization have been tabulated since 1957, and are detailed in Table 2. The authors were able to include 1962 data shortly before press time. Nuclear and particle physics accounted for almost one-third of the theses.

The University of California at Berkeley is by far the largest producer of physics PhD's not only over the past decade, but over the past forty years as well. Geographically, Cambridge is the top source, thanks to the activity at MIT and Harvard. The top ten sources since 1920 appear in Table 3 which shows their over-all production, and their output in the period 1950-61.

The mean lead time from bachelor's degrees to PhD degrees in physics was 7.4 years over the entire period studied.

Mathematicians took 8.2 years and chemists only 6.5 years. Education degrees took the longest—14.9 years.

Summer Programs

The Commission on College Physics has announced the following conferences for college physics teachers to be held during the summer of 1964:

Florida State University, June 16-July 10: electricity, magnetism, and classical electromagnetics with its implications for atomic structure. Professor R. A. Kromhout, Florida State University, Tallahassee, Fla.

Montana State College, August 3-28: particular topics in electricity and magnetism. Professor K. E. Davis, Reed College, Portland, Ore.

Wesleyan University, August 9-28: selected topics in electromagnetic theory. Dr. W. L. Parker, Reed College, Portland, Ore.

University of Colorado, August 3-28: kinematics and dynamics of a particle, rotational dynamics, and special relativity. Professor Malcolm Correll, Hellems 16E, University of Colorado, Boulder, Colo.

Southern Methodist University, August 17-September 5: kinematics and dynamics of a particle, rotational mechanics, and special relativity. Dr. C. B. Clark, Southern Methodist University, Dallas, Tex.

The conferences are supported by the National Science Foundation, and per-diem (\$15 maximum) and travel allowances are available. Requests for application blanks, which must be returned by March 31, and inquiries should be addressed to the individual conference directors listed above.

A summer research-participation program for faculty members of small colleges is being offered by the Department of Physics and Astronomy at the University of Maryland. A total of ten college teachers will be selected, and each will be assigned to one of the University's research

Table 1. Doctorates

Years	Physics Degrees	Physical Science Degrees
1920-29	651	3485
1930-39	1336	7514
1940-49	1483	9622
1950-59	4972	25177
1960-61	1176	6411

were felt. The largest number of physical science degrees was in chemistry, for each of the decades studied. The proportion of degrees in physics has

^{*} Some of this material also appeared in "Physics PhD's . . . whence . . . whither . . . when?" by L. R. Harmon, *Physics Today*, Oct. 1962, p. 21.

Table 3. Top Ten Producers of Physics PhD's

University	1920-61	1950-61
U. Cal. Berkeley	717	458
MIT	563	356
Harvard	506	330
U. Chicago	458	184
Cal. Tech	368	172
U. Michigan	367	161
Cornell	363	188
Columbia	335	214
U. Illinois	313	203
U. Wisconsin	284	152

Table 2. Fields of Specialization for PhD's in Physics

Specialty	1957	1958	1959	1960	1961	1962	1957-1962
Astronomy	9	20	22	10	19	30	110
Atomic & Molec. Phys.	58	61	59	56	65	84	383
Elec. & Magnetism	13	7	7	10	19	26	82
Mechanics	6	1	4	1	4	6	22
Acoustics	6	16	10	8	9	9	58
Fluids	—	—	1	7	25	26	59
Optics	2	3	9	6	7	7	34
Thermal Phenomena	—	—	—	3	2	5	10 ¹
Elementary Particles	45	47	49	50	73	132	396
Nuclear Physics	4	10	—	2	2	—	18 ²
Nuclear Structure	101	101	111	125	117	159	714
Solid State	91	106	121	142	123	184	767
Theoretical Physics	64	79	90	107	109	30	479
Other Physics Fields	37	31	30	39	21	35	193
Physics, General	26	22	10	8	7	32	105
Total	462	504	523	574	602	765	3430

¹ This field added in Feb. '60, so probably understated because earlier forms were still used after that.

² Recoded as Elementary Particles or Nuclear Structure, except for 18 which could not be recoded.