



MANPOWER ASSESSMENT BRIEF

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HEALTH PHYSICS Enrollments Decreased at All Levels in 1998. Undergraduate and Master's Degrees Decreased, While Doctoral Degrees Increased Slightly.

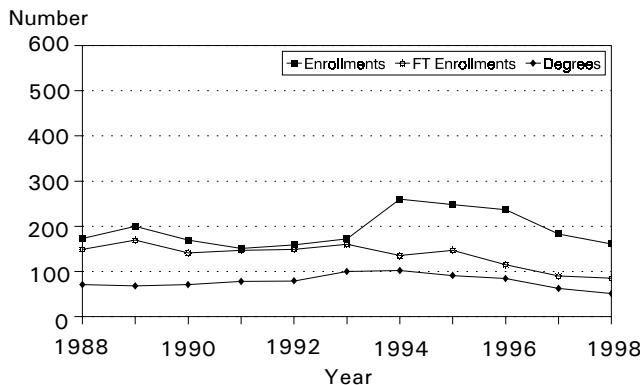
SURVEY UNIVERSE

The "Health Physics Enrollments and Degrees, 1998" survey consisted of 47 institutions (49 programs) offering a major in health physics/radiation protection or radiation health, or an option program equivalent to a major (for example, in radiobiology or biophysics) that prepare the graduates to perform as health physicists. Of the 49 programs, 3 have been suspended but are allowing the students to complete their degrees.

UNDERGRADUATE ENROLLMENTS AND DEGREES

The total number of undergraduate enrollments decreased from 183 to 161 students, or by 12 percent from 1997. The number of full-time students decreased from 90 to 85. (Figure 1.) As in 1997, the decrease was attributed to the suspended programs, and a general decline among all programs. The majority of the students were enrolled in the health physics/radiation protection or radiation health major (95 percent), followed by health physics option within medical or radiological physics programs (4 percent).

Figure 1. Health Physics Undergraduate Enrollments and Degrees, 1988-1998



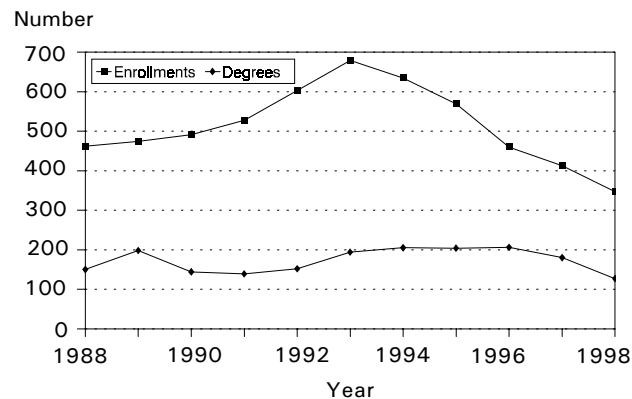
Undergraduate = Junior and Senior Level.
Source: U.S. Department of Energy.

Undergraduate degrees decreased from 62 to 51 students in 1998. As with enrollments, most of the degrees were awarded with the health physics/radiation protection or radiation health major (96 percent), while all other health physics option programs awarded only 2 degrees, or 4 percent of the total undergraduates.

MASTER'S ENROLLMENTS AND DEGREES

In 1998, the number of master's enrollments decreased from 413 students to 347, or by 16 percent, continuing the downward trend since 1993. (Figure 2.)

Figure 2. Health Physics Master's Enrollments and Degrees, 1988-1998



Source: U.S. Department of Energy.

About one-third of the decrease was attributed to one program that is in the process of phasing out. Seventy-three percent of the students were enrolled in the health physics/radiation protection or radiation health programs. Health physics option within medical or radiological physics programs enrolled 17 percent, or 58 students, while all other health physics option programs enrolled 10 percent (36 students).

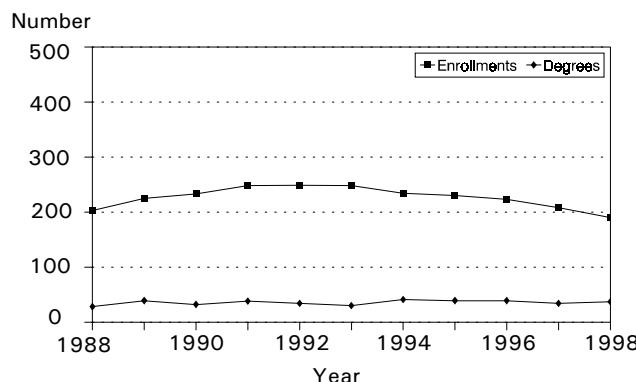
The number of master's degrees decreased from 180 to 127 students, or by 29 percent from 1997. The majority of the degrees were awarded within the health physics/radiation protection or radiation health major

(70 percent or 89 students), followed by health physics option within medical or radiological physics programs (21 percent), and all other option programs awarded 9 percent of the degrees.

DOCTORAL ENROLLMENTS AND DEGREES

Doctoral enrollments decreased in 1998 by 9 percent, or from 208 students in 1997 to 190. (Figure 3.) Forty-nine percent were enrolled in the health physics/radiation protection or radiological health major (93 students), health physics option within medical or radiological physics programs enrolled 38 percent (72 students), and all other option programs enrolled 13 percent, or 25 students.

Figure 3. Health Physics Doctoral Enrollments and Degrees, 1988-1998



Source: U.S. Department of Energy.

Doctoral degrees increased in 1998 by 9 percent, or from 34 to 37 students. The highest number of degrees (46 percent or 17 students) were awarded within the health physics/radiation protection or radiation health major, while the health physics option within medical or radiological physics programs accounted for 40 percent, or 15 students.

EMPLOYMENT OR POSTGRADUATION PLANS

Of the known employment or postgraduation plans of the new graduates, 31 percent of the bachelor's elected to continue study for a higher degree, 16 percent went to work for nuclear utilities, and 10 percent were employed in U.S. academia. (Table 1.) Seventeen percent of the master's went to work in medical facilities, 16 percent were continuing study for a higher degree, and 14 percent of the graduates were working in other

U.S. industries. For the new doctorates, 24 percent were involved in post-doctoral study, and medical facilities and U.S. industrial employment each accounted for 19 percent of the students.

Table 1. Employment or Postgraduation Plans of Health Physics Graduates by Degree Level, 1998 (Percent Distribution)

Employment or Postgraduation Plans	B.S.	M.S.	Ph.D.
Continued study	31%	16%	24%
U.S. academic employ.	10	4	11
Federal gov. employ.	4	8	3
DOE contractors (M&Os)	8	8	5
State and local gov. employ.	0	4	0
Medical facilities employ.	4	17	19
U.S. nuclear utility employ.	16	11	0
U.S. other industrial employ.	8	14	19
Employ. with foreign employer	0	2	14
U.S. military service	6	5	5
Other	2	4	0
Unknown	8	1	0
Still seeking employment	4	7	0
TOTALS	100%	100%	100%

NOTE: Percentages are rounded to nearest whole number.
Source: U.S. Department of Energy.

FOREIGN NATIONAL PARTICIPATION

Only 2 foreign nationals received a bachelor's degree in 1998, and they elected to continue study for a higher degree. Master's degrees awarded to foreign nationals decreased from 21 in 1997 to 13 students. Three students were continuing study, and state and local government and medical facilities accounted for 2 each. Of the 12 foreign national doctorates, 5 students returned to a foreign country for employment, and post-doctoral study, academia, and other industrial employment accounted for 2 students each. (See Table 2 for percent distribution of foreign nationals.)

Table 2. Percentage of Health Physics Degrees Awarded to Foreign Nationals, 1994-1998

Year	B.S.	M.S.	Ph.D.
1994	2	15	46
1995	2	17	51
1996	0	11	26
1997	3	12	26
1998	4	10	32

NOTE: Ethnicity data were not collected for the 1998 survey.
Source: U.S. Department of Energy.

Table 3. Health Physics Enrollments and Degrees, by State and Institution, 1998

State	Institution	Enrollments			Degrees		
		Undergraduate	Master's	Doctoral	B.S.	M.S.	Ph.D.
ARIZONA	Arizona State University*	1	-	-	-	-	1
CALIFORNIA	San Diego State University	-	8	-	-	2	-
	San Jose State University*	-	4	-	-	2	-
	University of California, Irvine	-	-	3	-	1	2
	University of California, Los Angeles	-	5	39	-	5	3
	University of Southern California	-	-	2	-	-	1
COLORADO	Colorado State University	-	7	6	-	3	1
	National Technological University	-	9	-	-	1	-
	University of Colorado HSC	-	6	-	-	1	-
DIST. OF COLUMBIA	Georgetown University	-	19	-	-	1	-
FLORIDA	Florida A&M University	-	3	-	-	-	-
	University of Florida, Gainesville ¹	-	19	9	-	6	2
GEORGIA	Georgia Institute of Technology	-	28	-	-	12	-
IDAHO	Idaho State University	11	27	3	5	2	-
ILLINOIS	Rush University	-	3	7	-	-	1
	University of Illinois, Urbana	-	2	3	-	-	-
INDIANA	Purdue University	18	4	4	4	1	-
KENTUCKY	University of Kentucky	-	14	-	-	6	-
LOUISIANA	Louisiana State University	-	10	-	-	5	-
MAINE	University of Maine	3	1	1	1	-	-
MARYLAND	Johns Hopkins Sch. of Public Health	-	2	3	-	-	2
MASSACHUSETTS	Harvard School of Public Health	-	-	1	-	-	1
	Massachusetts Institute of Technology	-	3	4	-	4	1
	University of Massachusetts Lowell	3	30	16	3	9	-
MICHIGAN	The University of Michigan ²	-	11	4	-	13	-
MISSOURI	University of Missouri, Columbia	-	10	8	-	3	4
	University of Missouri, Rolla	4	1	1	2	-	-
NEVADA	University of Nevada, Las Vegas	15	9	-	2	-	-
NEW JERSEY	Rutgers University	-	8	7	-	4	2
	Thomas Edison State College	72	-	-	17	-	-
NEW MEXICO	University of New Mexico	-	7	2	-	4	-
NORTH CAROLINA	East Carolina University*	1	-	-	-	-	-
	Univ. of North Carolina, Chapel Hill	-	4	1	-	3	-
OHIO	Medical College of Ohio	-	4	3	-	-	1
	University of Cincinnati ³	-	10	-	-	5	-
	The Ohio State University	-	6	2	-	3	1
OREGON	Oregon State University	13	9	3	6	2	-
PENNSYLVANIA	Bloomsburg Univ. of Pennsylvania	4	-	-	-	-	-
	Dickinson College	1	-	-	1	-	-
	University of Pittsburgh	-	1	-	-	1	-
SOUTH CAROLINA	Clemson University	-	15	4	-	7	1
	Francis Marion College	7	-	-	-	-	-
TENNESSEE	University of Tennessee, Knoxville	2	14	16	5	7	2
TEXAS	Texas A&M University	6	14	9	5	9	3
UTAH	University of Utah	-	1	5	-	-	-
WASHINGTON	Washington State Univ. Tri-Cities	-	2	-	-	1	-
WISCONSIN	University of Wisconsin, Madison	-	17	24	-	4	8
TOTALS		161	347	190	51	127	37

*Program suspended; students are being allowed to complete their degrees.

NOTES: ¹The undergraduate program at the University of Florida, Gainesville, was revised in 1997. All health physics students are now being classified as nuclear engineers.

²The number of health physics students within the environmental and industrial health department at the University of Michigan are included with the radiological health program numbers above.

³The number of health physics students within the nuclear and radiological engineering department at the University of Cincinnati are included with the radiology (Rad Physics) numbers above.

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All opinions expressed in this report are the authors' and do not necessarily reflect policies and views of the U.S. Department of Energy or the Oak Ridge Institute for Science and Education.

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