



# MANPOWER ASSESSMENT BRIEF

U.S. Department of Energy

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## HEALTH PHYSICS Enrollments Increased at the Bachelor's and Doctoral Level, While Master's Enrollments Decreased. Bachelor's and Master's Degrees Increased Slightly and Doctoral Degrees Decreased.

### SURVEY UNIVERSE

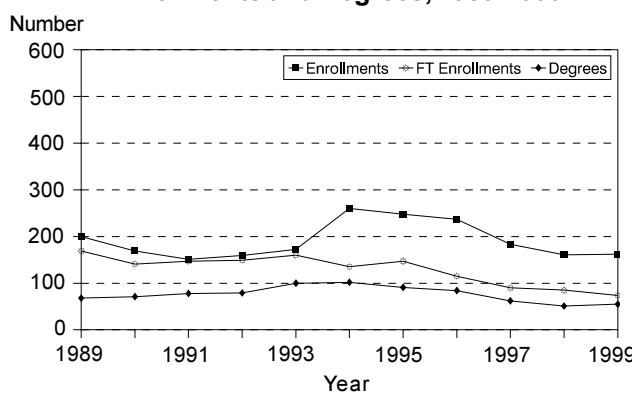
The "Health Physics Enrollments and Degrees, 1999" survey consisted of 49 institutions (51 programs) offering a major in health physics/radiation protection or radiation health, or an option program equivalent to a major (such as radiobiology or biophysics) that prepare the graduates to perform as health physicists. Of the 51 programs, 2 were added in the 1999 survey, 3 programs were suspended reporting their last degrees, 2 were phasing out allowing the students to complete their degrees, and the numbers for 1 program were estimated.

### UNDERGRADUATE ENROLLMENTS AND DEGREES

The total number of undergraduate enrollments increased from 161 to 162; however, the number of full-time students decreased from 85 to 74. (Figure 1.) The decrease was due to the suspended programs and the continuing general decline. The majority of the students were enrolled in the health physics/radiation protection or radiation health major (98 percent), and the remaining 2 percent were within the "all other option programs."

Undergraduate degrees increased from 51 to 55 students in 1999. As with enrollments, most of the degrees were awarded within the health physics/

**Figure 1. Health Physics Undergraduate Enrollments and Degrees, 1989-1999**



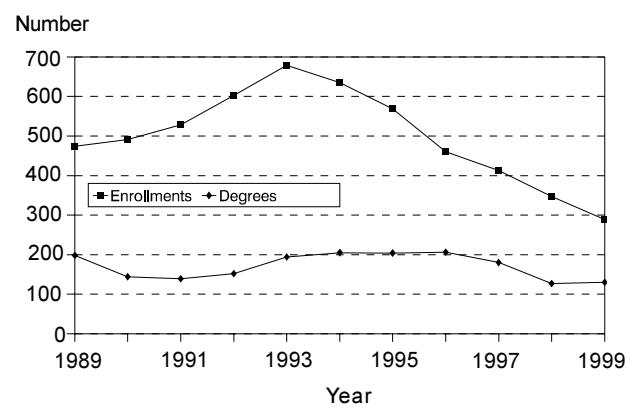
Undergraduate = Junior and Senior Level.  
Source: U.S. Department of Energy.

radiation protection or radiation health major (93 percent), while medical or radiological physics and all other health physics option programs awarded the remaining degrees, or collectively, 7 percent of the total.

### MASTER'S ENROLLMENTS AND DEGREES

In 1999, the number of master's enrollments decreased by 17 percent, or from 347 students to 289, continuing the downward trend since 1993. Of the 38 programs reporting master's enrollments in 1998, 8 reported increased enrollments in 1999, 22 reported decreased enrollments, and 8 reported no change in enrollments. (Figure 2.) 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 50 students, while all other option programs enrolled 10 percent (28 students).

**Figure 2. Health Physics Master's Enrollments and Degrees, 1989-1999**



Source: U.S. Department of Energy.

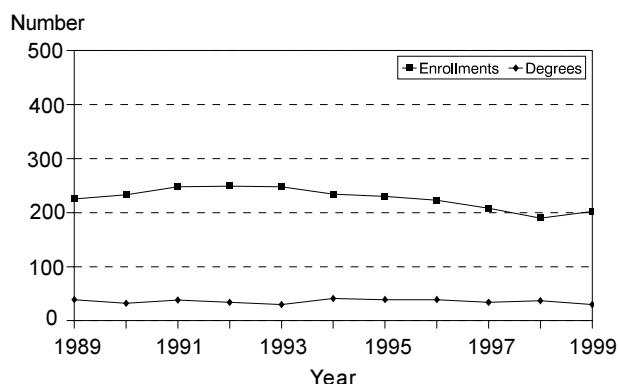
The number of master's degrees increased in 1999 from 127 to 130 students, or by 2 percent from 1998. The majority of the degrees (72 percent) were awarded within the health physics/radiation protection or radiation health major, followed by health physics option within medical or radiological physics programs (22 percent), and all other option programs awarded 6 percent of the total.

## DOCTORAL ENROLLMENTS AND DEGREES

Doctoral enrollments increased in 1999 by 7 percent, or from 188 students in 1998 to 202. (Figure 3.) Forty-five percent were enrolled in the health physics option within medical or radiological physics programs (91 students), the health physics/radiation protection or radiological health major accounted for 43 percent (86 students), and all other health physics option programs enrolled 12 percent (25 students).

Doctoral degrees decreased in 1999 by 19 percent, or from 37 in 1998 to 30 students, and continued their fluctuating pattern. The highest number of degrees (53 percent or 16 students) were awarded within the health physics/radiation protection or radiological health programs, while the health physics option within medical or radiological physics programs accounted for 37 percent, or 11 students, and the remaining 10 percent (3 students) were among the other option programs.

**Figure 3. Health Physics Doctoral Enrollments and Degrees, 1989-1999**



Source: U.S. Department of Energy.

## EMPLOYMENT OR POSTGRADUATION PLANS

Of the known employment or postgraduation plans of the new graduates, 16 percent of the bachelor's elected to continue study for a higher degree, 15 percent were working in U.S. industries, while graduation plans for 29 percent of the bachelor's was unknown. (Table 1.) Twenty-six percent of the master's elected to continue study for a higher degree, 13 percent of the graduates were working in medical facilities, and 13 percent was unknown. For the doctorates, 27 percent were engaged in postdoctoral studies, and academic employment, medical facilities, and U.S. other industrial employment accounted for 20 percent each.

## FOREIGN NATIONAL PARTICIPATION

Among the participating institutions in the survey, only 1 foreign national received a bachelor's degree in 1999, and the student elected to continue study for a higher degree. (See Table 2 for percent distribution of foreign nationals.) Master's degrees awarded to foreign nationals increased in 1999 from 13 to 23 students. Twelve of the students were continuing study for a higher degree, while 5 went to work for a foreign employer. Of the 6 foreign national doctorates, 3 were reported as working in medical facilities, and 2 were working in U.S. other industrial employment.

**Table 1. Employment or Postgraduation Plans of Health Physics Graduates by Degree Level, 1999 (Percent Distribution)**

Employment or Postgraduation Plans	B.S.	M.S.	Ph.D.
Continued study	16%	26%	27%
U.S. academic employ.	5	5	20
Federal gov. employ.	0	6	0
DOE contractors (M&Os)	7	7	0
State and local gov. employ.	4	2	0
Medical facilities employ.	7	13	20
U.S. nuclear utility employ.	5	8	0
U.S. other industrial employ.	15	7	20
Employ. with foreign employer	0	4	0
U.S. military service	5	5	3
Other	2	4	0
Still seeking employment	4	1	0
Unknown	29	13	10
<b>TOTALS</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

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

**Table 2. Percentage of Health Physics Degrees Awarded to Foreign Nationals, 1995-1999**

Year	B.S.	M.S.	Ph.D.
1995	2%	17%	51%
1996	0	11	26
1997	3	12	26
1998	4	10	32
1999	2	18	20

Source: U.S. Department of Energy.

**Table 3. Health Physics Enrollments and Degrees, by State and Institution, 1999**

State	Institution	Enrollments			Degrees		
		Undergraduate	Master's	Doctoral	B.S.	M.S.	Ph.D.
ARIZONA	Arizona State University <sup>1</sup>	-	-	-	1	-	-
CALIFORNIA	San Diego State University	-	14	-	-	4	-
	San Jose State University <sup>2</sup>	-	3	-	-	1	-
	University of California, Irvine	-	-	1	-	-	2
	University of California, Los Angeles	-	1	49	-	5	4
	University of Southern California	-	-	1	-	-	-
COLORADO	Colorado State University	-	5	8	-	5	-
	National Technological University <sup>1</sup>	-	-	-	-	6	-
	University of Colorado HSC	-	6	-	-	2	-
DIST. OF COLUMBIA	Georgetown University	-	21	-	-	2	-
FLORIDA	Florida A&M University	-	3	-	-	1	-
	University of Florida, Gainesville	7	24	7	1	7	2
GEORGIA	Georgia Institute of Technology	-	19	-	-	15	-
IDAHO	Idaho State University	10	25	5	4	4	-
ILLINOIS	Rush University	-	3	6	-	-	1
	University of Illinois, Urbana	-	4	1	-	-	2
INDIANA	Purdue University	8	4	4	13	1	-
KENTUCKY	University of Kentucky	-	11	-	-	6	-
LOUISIANA	Louisiana State University	-	15	-	-	1	-
MAINE	University of Maine	3	2	-	-	-	-
MARYLAND	Johns Hopkins Sch. of Public Health	-	-	4	-	2	2
MASSACHUSETTS	Harvard School of Public Health	-	-	1	-	-	-
	Massachusetts Institute of Technology	-	4	4	-	1	-
	University of Massachusetts Lowell	2	20	18	1	8	1
MICHIGAN	The University of Michigan <sup>3</sup>	-	9	3	-	7	1
MISSOURI	University of Missouri, Columbia	-	9	9	-	4	-
	University of Missouri, Rolla	1	1	1	-	-	-
NEVADA	University of Nevada, Las Vegas	12	1	-	2	1	-
NEW JERSEY	Rutgers University <sup>1</sup>	-	-	-	-	2	1
	Thomas Edison State College	80	-	-	12	-	-
NEW MEXICO	University of New Mexico	-	4	-	-	4	-
NEW YORK	Rensselaer Polytechnic Institute	5	1	7	3	1	2
NORTH CAROLINA	East Carolina University <sup>2</sup>	1	-	-	1	-	-
	Univ. of North Carolina, Chapel Hill	-	4	-	-	1	1
OHIO	Medical College of Ohio	-	2	4	-	2	-
	University of Cincinnati <sup>4</sup>	-	9	-	-	4	-
	The Ohio State University	-	6	4	-	3	1
OREGON	Oregon State University	16	6	4	6	5	-
PENNSYLVANIA	Bloomsburg Univ. of Pennsylvania	3	-	-	2	-	-
	Dickinson College	1	-	-	2	-	-
	University of Pittsburgh*	-	2	-	-	-	-
SOUTH CAROLINA	Clemson University	-	12	4	-	3	-
	Francis Marion College	2	-	-	5	-	-
TENNESSEE	University of Tennessee, Knoxville	1	13	8	-	5	3
TEXAS	Texas A&M University	10	6	12	2	5	2
	University of Texas, Austin <sup>5</sup>	-	3	2	-	-	-
UTAH	University of Utah	-	1	5	-	-	1
WASHINGTON	Washington State Univ. Tri-Cities	-	1	-	-	2	-
WISCONSIN	University of Wisconsin, Madison	-	15	30	-	10	4
<b>TOTALS</b>		<b>162</b>	<b>289</b>	<b>202</b>	<b>55</b>	<b>130</b>	<b>30</b>

\*Estimated

NOTES: <sup>1</sup>Program suspended; last degrees awarded 1999.<sup>2</sup>Program suspended; students are being allowed to complete their degrees.<sup>3</sup>The 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.<sup>4</sup>The number of health physics students within the mechanical, industrial, and nuclear engineering department at the University of Cincinnati are included with the radiological health program numbers above.<sup>5</sup>The program at the University of Texas, Austin began in 1997.