

MANPOWER ASSESSMENT BRIEF

U.S. Department of Energy

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HEALTH PHYSICS/RADIATION PROTECTION Undergraduate Enrollments Increased by 51 Percent, While Master's and Doctoral Enrollments Decreased by 6 Percent Each; Degrees Increased by 7 Percent Overall in 1994.

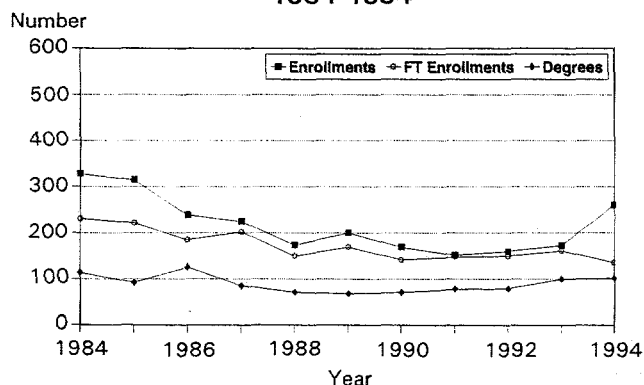
SURVEY UNIVERSE

The "Health Physics/Radiation Protection Enrollments and Degrees, 1994" survey consisted of 53 institutions 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). Of the 53 programs, 1 program was new to the survey, 4 programs were suspended, allowing the students to complete their degrees, and 1 undergraduate program was suspended and reported the last degrees in 1994. As in previous years, adjustments have been made to prior years' data to reflect additional information or corrections received.

UNDERGRADUATE ENROLLMENTS AND DEGREES

In 1994, undergraduate enrollments increased 51 percent over 1993, due mainly to the addition of a program, designed primarily for part-time students. (Figure 1.) The number of full-time students actually decreased by 16 percent, from 160 to 135 students.

Figure 1. Health Physics/Radiation Protection Undergraduate Enrollments and Degrees, 1984-1994



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

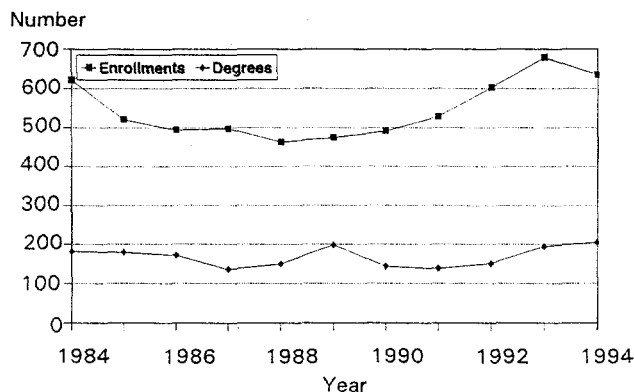
The majority of the 260 students were enrolled in the health physics/radiation protection or radiation health major (77 percent) followed by engineering or basic sciences (20 percent).

Undergraduate degrees increased from 100 to 102; 27 degrees were from the one program added in 1994. As with enrollments, most of the degrees were awarded within the health physics/radiation protection or radiation health major (68 percent), and engineering or basic science programs accounted for a little more than 25 percent.

MASTER'S ENROLLMENTS AND DEGREES

The number of master's enrollments decreased by 6 percent over 1993, after an upward trend since 1988. (Figure 2.) A large decrease of 51 part-time enrollments more than offset a small increase in full-time enrollments of 7 students. Fifty-eight percent of the 635 master's candidates were enrolled in the health physics/radiation protection or radiation health programs. Among the other categories, medical or

Figure 2. Health Physics/Radiation Protection Master's Enrollments and Degrees, 1984-1994



Source: U.S. Department of Energy.

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MASTER

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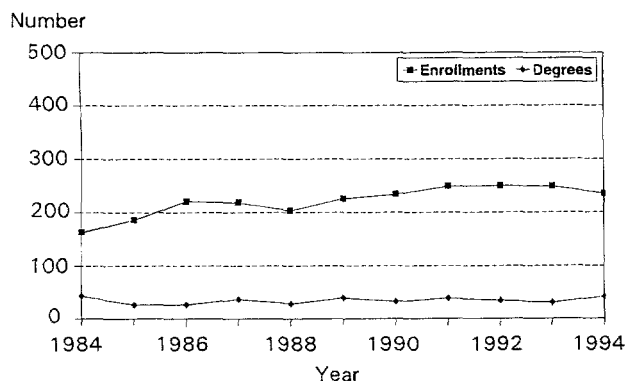
radiological physics accounted for 19 percent, and health physics/radiation protection engineering accounted for 9 percent of the students.

The number of master's degrees increased by 6 percent in 1994 (from 194 to 205 students) continuing an upward pattern since 1991. The majority of the students (58 percent) were awarded degrees within the health physics/radiation protection or radiation health major. Sixteen percent of the students received their degrees within medical or radiological physics, and health physics/radiation protection engineering programs represented 10 percent.

DOCTORAL ENROLLMENTS AND DEGREES

In 1994, doctoral enrollments decreased by 6 percent over the previous year. (Figure 3.) Of the 234 students (192 full-time and 42 part-time), medical and radiological physics programs accounted for 42 percent, and 32 percent were enrolled within the health physics/radiation protection or radiation health major.

Figure 3. Health Physics/Radiation Protection Doctoral Enrollments and Degrees, 1984-1994



Source: U.S. Department of Energy.

Doctoral degrees increased from 30 in 1993 to 41. As with doctoral enrollments, medical or radiological physics programs accounted for most of the students with 46 percent, followed by the health physics/radiation protection or radiation health category with 32 percent.

FOREIGN NATIONAL PARTICIPATION

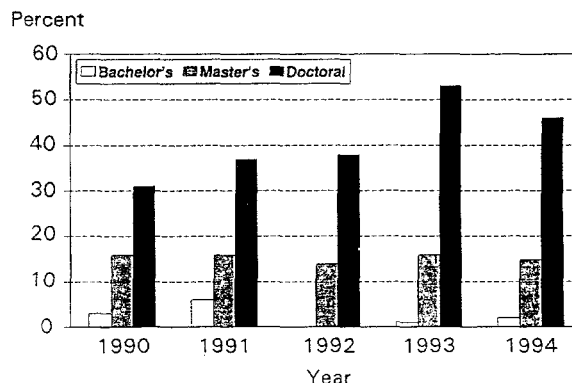
Foreign national undergraduate enrollments in health physics/radiation protection or radiation health remained low with only 2 seniors enrolled. Master's

enrollments rose from 64 to 84 students in 1994.

Foreign national doctoral enrollments decreased for the second year, by 17 students or from 36 to 31 percent of the total.

Only 2 foreign national students received a bachelor's degree. Master's degrees remained the same as 1993 (31 students), while doctoral degrees awarded to foreign nationals increased from 16 to 19 students, but decreased by 7 percentage points as a portion of total degrees awarded. (See Figure 4.)

Figure 4. Percentage of Health Physics/Radiation Protection Degrees Granted to Foreign Nationals, 1990-1994



Source: U.S. Department of Energy.

Postgraduation plans for the 2 foreign national bachelor's degree recipients were continued study and medical facilities employment. For the 31 foreign national master's recipients, 10 were continuing study for a higher degree, 7 went to work for a foreign employer, and the remaining were scattered among the other categories. Of the 19 doctoral degree recipients, 7 went to work for a foreign employer; continued study and medical facilities accounted for 4 each.

FEMALE PARTICIPATION

The number of female health physics/radiation protection students decreased at all levels in 1994 except for juniors, which increased from 17 to 19 students. Master's enrollments decreased by 20 students to 24 percent of the total. Degrees awarded to women stayed the same as 1993 at the bachelor's level (18 students), decreased from 60 students to 52 at the master's level, and increased from 3 to 4 students at the doctoral level.

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MINORITY PARTICIPATION

Minority enrollments and degrees in health physics/radiation protection programs (excluding foreign nationals) changed very little from 1993 with increases or decreases of only 1 to 4 students across minorities. African American enrollments increased at the junior and master's level, but the number of degrees decreased at all levels. Hispanic American master's enrollments decreased from 20 to 19 students. After two years of no degrees awarded, there were 4 bachelor's degrees awarded to Hispanic Americans in 1994.

EMPLOYMENT OR POSTGRADUATION PLANS

Of the known employment or postgraduation plans of all new graduates, 30 percent of the bachelor's elected to continue study for a higher degree, 19 percent went to work in nuclear utilities, and 11 percent went to DOE contractor facilities (M&Os). (Figure 5.) Twenty percent of the master's degree recipients went to work in medical facilities, 13 percent at M&Os, 13 percent in U.S. industry, and 9 percent in nuclear utilities. Eleven percent chose to continue study. Of the doctoral degree recipients, 24 percent went to work in medical facilities, 20 percent went with a foreign employer, 17 percent were involved in postdoctoral study; the rest were scattered among academia, M&Os, and U.S. industry.

Notes:

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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.

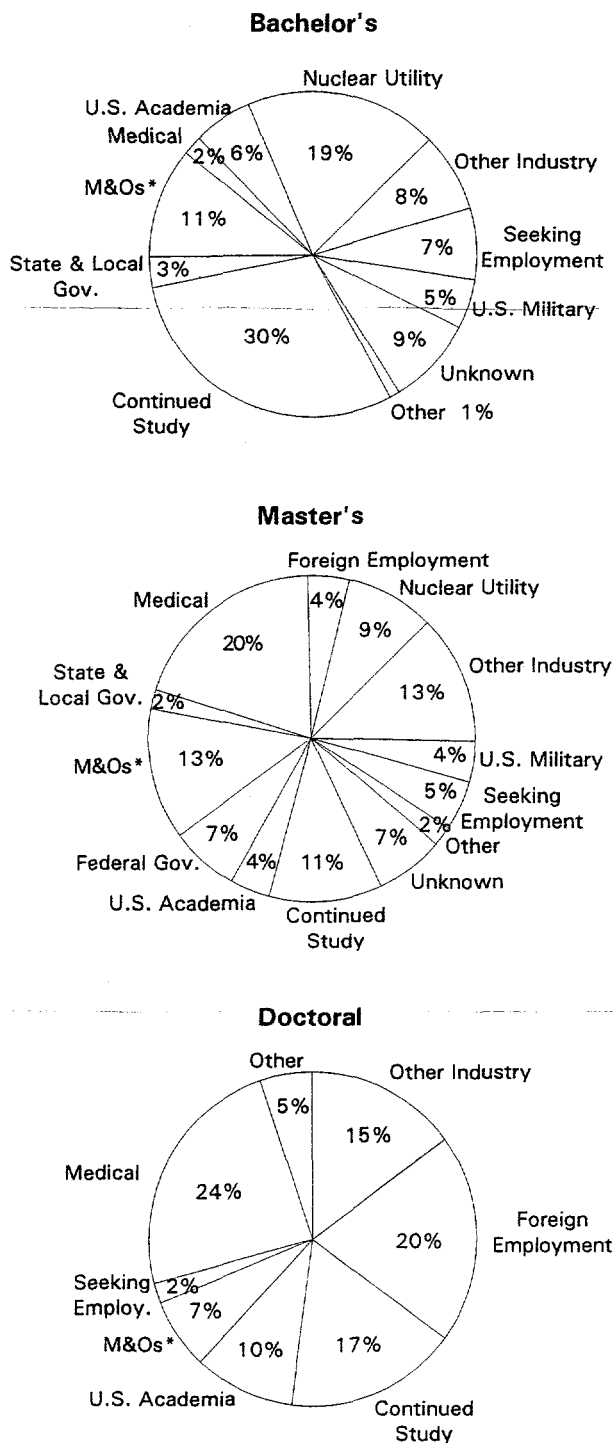
Additional survey information, providing details by individual schools and by type of program, is available from:

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Figure 5. Employment or Postgraduation Plans of Health Physics/Radiation Protection Graduates, by Degree Level, 1994



*DOE contractor facilities.

NOTE: Percentages may not add to 100 percent due to rounding.

Source: U.S. Department of Energy.

Health Physics/Radiation Protection Enrollments and Degrees, by State and Institution, 1994

State and Institution	Enrollments			Degrees		
	Undergraduate	Master's	Doctoral	B.S.	M.S.	Ph.D.
ARIZONA	-Arizona State Univ. (See Note)	1	-	2	1	-
ARKANSAS	-Univ. of AR for Med. Sci.	-	1	-	1	-
CALIFORNIA	-San Diego State Univ.	-	16	-	10	-
	-San Jose State Univ.	-	26	-	4	-
	-Univ. of CA, Irvine	-	-	11	-	3
	-Univ. of CA, Los Angeles	-	1	45	3	6
	-Univ. of Southern California	-	-	6	-	2
COLORADO	-Colorado State Univ.	-	15	11	10	3
	-National Technological Univ.	-	16	-	1	-
	-Univ. of Colorado HSC	-	18	1	2	2
DIST. OF COLUMBIA	-Georgetown Univ.	-	25	-	6	-
FLORIDA	-Univ. of FL, Gainesville	7	29	11	7	11
GEORGIA	-Georgia Tech. (See Note)	-	54	-	27	-
IDAHO	-Idaho State University	23	18	-	14	1
ILLINOIS	-Northwestern Univ.*	1	1	-	1	3
	-Rush Univ.	-	5	11	-	4
	-Univ. of IL, Urbana	-	-	1	1	-
INDIANA	-Purdue Univ.	23	2	1	9	4
IOWA	-Univ. of Iowa*	-	1	-	1	1
KENTUCKY	-Univ. of Kentucky (See Note)	-	7	-	2	6
LOUISIANA	-Louisiana State Univ.	-	22	-	3	-
MAINE	-Univ. of Maine	3	1	-	2	2
MARYLAND	-Johns Hopkins Sch. of Public Health	-	3	3	-	-
MASSACHUSETTS	-Harvard Sch. of Public Health	-	1	11	-	2
	-MIT, Cambridge	-	2	3	-	1
	-Univ. of MA Lowell	16	37	22	8	11
MICHIGAN	-Univ. of Michigan	-	16	5	-	5
MISSOURI	-Univ. of MO, Columbia	-	30	14	-	12
	-Univ. of MO, Rolla	3	1	-	2	1
NEVADA	-Univ. of Nevada	8	-	-	2	-
NEW JERSEY	-Rutgers Univ.	6	47	10	2	8
	-Thomas Edison State College	108	-	-	27	-
NEW MEXICO	-Univ. of New Mexico	-	25	1	-	1
NEW YORK	-NY Univ. Med. Ctr.	-	-	5	-	1
	-SUNY, Buffalo	9	6	-	4	2
NORTH CAROLINA	-Univ. of NC, Chapel Hill	-	5	1	-	3
OHIO	-Univ. of Cincinnati	-	26	-	-	4
	-Univ. of Findlay	15	-	-	2	-
	-Ohio State Univ.	-	10	4	-	3
OREGON	-Oregon State Univ.	7	16	-	7	3
PENNSYLVANIA	-Bloomsburg Univ. of PA	7	-	-	2	-
	-Dickinson College	1	-	-	-	-
	-Univ. of Pittsburgh	-	4	-	-	3
SOUTH CAROLINA	-Clemson Univ.	-	17	3	-	4
	-Francis Marion College	12	-	-	2	-
TENNESSEE	-Univ. of TN, Knoxville	-	28	7	-	9
TEXAS	-Texas A&M	10	35	15	7	7
UTAH	-Univ. of Utah	-	1	15	-	-
WASHINGTON	-Univ. of Washington	-	1	-	-	2
	-Washington State Univ. Tri-Cities	-	8	-	-	1
WEST VIRGINIA	-West Virginia Univ.	-	30	-	-	19
WISCONSIN	-Univ. of WI, Madison	-	28	17	-	5
TOTALS	260	635	234	102	205	41

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

NOTES: Arizona State University's nuclear science program has been suspended. Current health physics students enrolled are being allowed to complete their degrees.

In 1993, Georgia Institute of Technology's health physics Ph.D. degrees were reclassified as nuclear engineering degrees.

The University of Kentucky's undergraduate program has been suspended; last degrees granted in 1994.