

Chapter 41

# Federal Research and Development in Rhode Island

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- Approximately \$515 million of federal R&D funds are spent each year in Rhode Island.
  - Rhode Island ranks 25th among the 50 states, District of Columbia, and Puerto Rico in terms of the amount of federal R&D dollars received annually.
  - Approximately 22 percent of all federal funds spent in Rhode Island each year on matters other than the direct support of individuals (i.e., such entitlements as retirement, disability, and housing assistance) is spent on R&D.
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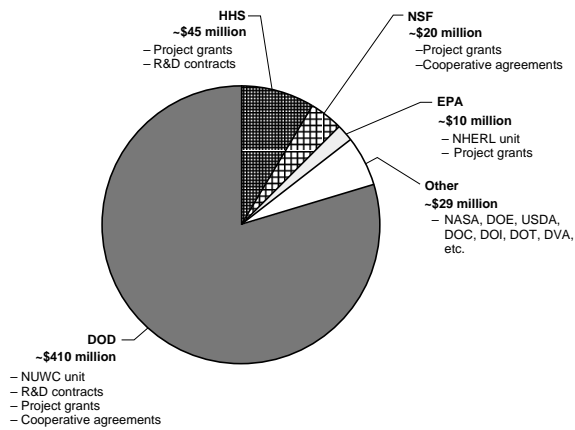


Figure 41.1 – Sources of Federal R&D Dollars Spent in Rhode Island  
(Total Federal R&D ~\$515 million)

## BACKGROUND

In recent years, the federal government has spent in the neighborhood of \$515 million annually in Rhode Island on research and development (R&D) activities. On average, federal R&D dollars account for approximately 22 percent of all federal funds spent in Rhode Island each year on matters other than the direct support of individuals (i.e., such entitlements as retirement, disability, and housing assistance).

Most major federal agencies that currently support federal R&D efforts provide funding for R&D activities in Rhode Island. Foremost among these agencies is the Department of Defense (DOD), which accounts for 80 percent of all federal R&D dollars spent in the state. The Department of Health and Human Services (HHS) and the National Science Foundation (NSF) account for an additional 9 and 4 percent of all federal R&D dollars spent in Rhode Island, respectively. The remaining federal R&D dollars come collectively from the Departments of Commerce (DOC), the National Aeronautics and Space Administration (NASA), the Department of Energy (DOE), and several other federal agencies.<sup>41</sup>

All federal R&D dollars spent in Rhode Island either cover the costs of operating federal R&D units in the state, including paying the salaries of federal R&D personnel working at these units, or are awarded as grants, contracts, or cooperative agreements to entities in the state. The following is an overview of what becomes of these federal R&D dollars once they arrive in Rhode Island.

## FEDERAL R&D UNITS IN RHODE ISLAND

Narragansett, Rhode Island, is home to DOC's Narragansett Laboratory and the Environmental Protection Agency's (EPA's) Atlantic Ecology Division.

- The Narragansett Laboratory is a unit of the Northeast Fisheries Science Center inside DOC's National Oceanic and Atmospheric Administration. It conducts research on ocean circula-

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<sup>41</sup> For a complete agency-by-agency breakdown of these R&D dollars, see Appendix C.

tion, nutrients, temperature fluctuations, and fish populations as related to fish life cycles. Specifically, research activities focus on environmental processes and fisheries ecology with specific investigations in marine climatology, early life history dynamics, plankton ecology, and apex predator ecology. This federal unit annually receives approximately \$2.4 million of federal R&D dollars and has about 34 FTEs, only a portion of whom are involved in R&D activities.

- The Atlantic Ecology Division is a unit of EPA's National Health and Environmental Effects Research Laboratory headquartered in Research Triangle Park, North Carolina. The division conducts studies in marine, coastal, and estuarine water quality. It also develops and evaluates theory, methods, and data to better understand and quantify the environmental effects of anthropogenic stressors on the coastal waters and watershed of the Atlantic seaboard. This federal unit annually receives approximately \$9.7 million in federal R&D dollars and has about 82 FTEs.

Newport, Rhode Island, is home to DOD's Naval Undersea Warfare Center Newport Division.

- The Naval Undersea Warfare Center Newport Division is a unit of DOD. It conducts R&D with a strong emphasis on basic research, performs system and component prototyping, and develops entire ship's systems. This federal unit annually receives approximately \$169 million in federal R&D dollars for in-house activities and has about 2,901 civilian personnel, only a portion of whom are involved in R&D activities.

Providence, Rhode Island, is home to a Department of Veterans Affairs R&D unit.

- While the principal focus of the Providence VA Medical Center is providing medical care to veterans, it is also the location of a number of research activities. In a recent year, this federally owned and operated facility was the site of 97 projects with total funding of approximately \$2 million. These R&D activities

focus on a wide range of topics, including alcoholism, congestive heart failure, schizophrenia, bipolar disorder, neoplasms, and depression.

#### FEDERAL R&D GRANTS TO RHODE ISLAND ENTITIES

Every major institution of higher education in Rhode Island is the recipient of significant federal R&D dollars each year through grants made by federal agencies to faculty, graduate students, and research centers. The vast majority of the R&D grants are made by HHS, NSF, and DOD to individual faculty members and therefore ultimately inure to the benefit of such institutions as Brown University and the University of Rhode Island (URI). The table below shows the number of R&D grants active in FY 1998, highlighting those made by HHS, NSF, and DOD to parties at these institutions and estimates of the total dollars transferred to them in FY 1998 pursuant to the terms of these grants. Among the grants in the “Other Agencies” category going to Brown University are close to \$2 million each from DOE and NASA. Most of the comparable grants going to URI are provided by DOC (\$2.5 million) and USDA (\$2 million).

**Table 41.1 – Sources of Federal R&D Grants to Higher Education in Rhode Island**

Institution	HHS		NSF		DOD		Other Agencies		Total	
	Amount	#	Amount	#	Amount	#	Amount	#	Amount	#
Brown	\$21M	131	\$8M	168	\$6M	35	\$4M	54	\$39M	388
URI	\$6M	16	\$5M	74	\$2M	27	\$6M	93	\$19M	210
Total	\$27M	147	\$13M	242	\$8M	62	\$10M	147	\$58M	598

These activities are particularly significant because they fund much of the “basic research” so critical to expanding our knowledge and understanding of fundamental scientific phenomena. In addition, these funds account for a substantial portion of the dollars available each year to various academic departments within these institutions.

Several other nonacademic institutions in Rhode Island also receive federal R&D grants each year. Foremost among the institutions that received R&D grants in FY 1998 are Rhode Island Hospital in Providence (\$9 million), Miriam Hospital in Providence (\$6 million), Memorial Hospital in Pawtucket (\$3 million), Emma Pendleton Bradley Hospital in Providence (\$2 million), and the Rhode Island State Department of Health (\$2 million).

Scattered among these grants, as well as among the contracts discussed in the section below, are small business innovative research (SBIR) awards. These are special awards made by the SBIR programs supported by the 10 federal agencies with annual budgets for extramural R&D of more than \$100 million. In a recent year, small businesses in Rhode Island received eight SBIR awards totaling close to \$1 million. Examples include a \$100,000 award from the Air Force to Marine Acoustics, Inc., in Middletown for work on advanced analytic sonic boom underwater propagation analysis and a \$100,000 award from HHS to Psych Products Press in East Greenwich to develop a comprehensive outcome scale for outpatient psychiatry.

Also included among these grants are formula grants from federal agencies. Formula grants differ from the much more common project grants in that the money transmitted through formula grants is allocated to a state or one of its subdivisions in accordance with a distribution formula prescribed by law or regulation. Among the formula grants benefiting Rhode Island are ones valued at more than \$1.1 million from the Department of Agriculture (USDA's) Cooperative State Research, Education, and Extension Service (CSREES) to State Agricultural Experiment Stations, forestry schools, and veterinary colleges for the support of research in agriculture, forestry, and animal health and disease. Similarly, a modest formula grant goes from the Department of Interior's (DOI's) USGS to the Water Resources Research Institute in Rhode Island every year to foster research in water and water-related problems.

### OTHER FEDERAL R&D ACTIVITIES IN RHODE ISLAND

Several entities in Rhode Island also receive notable sums in the form of contracts or cooperative agreements from federal agencies for specific R&D efforts. The majority of these funds go to Textron, Inc., which in FY 1998 received close to \$12 million from DOD (Army) primarily for work on the XM93 Wide Area Munition (WAM) Program. Most of this work, however, is actually performed by Textron Systems Division in Wilmington, Massachusetts. In addition, the Raytheon Company (\$10 million), Memorial Hospital (\$5 million), and the Rhode Island State Department of Health (\$2 million) received significant R&D contracts from federal agencies in FY 1998. Note that these amounts are in addition to the federal R&D grants also received by Memorial Hospital and the State Department of Health. Brown University (\$2 million) and URI (\$500,000) also receive contracts from various federal agencies to conduct R&D for the federal government. Although these amounts are notable, they do not come close to eclipsing the funds that these institutions receive from federal R&D grants.

A total of \$4 million of federal R&D dollars was also received in FY 1998 by entities located in Rhode Island in the form of cooperative agreements. The largest of these cooperative agreements (\$1 million in FY 1998) came from NSF to Brown University to operate one of NSF's Materials Research Science and Engineering Centers—the Center for Advanced Materials Research. Other federal agencies awarding cooperative agreements to Rhode Island-based entities include DOC and DOD.