Chapter 19

Federal Research and Development in Louisiana

- Approximately $244 million of federal R&D funds are spent each year in Louisiana.
- Louisiana ranks 36th among the 50 states, District of Columbia, and Puerto Rico in terms of the amount of federal R&D dollars received annually.
- Approximately 3 percent of all federal funds spent in Louisiana 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.

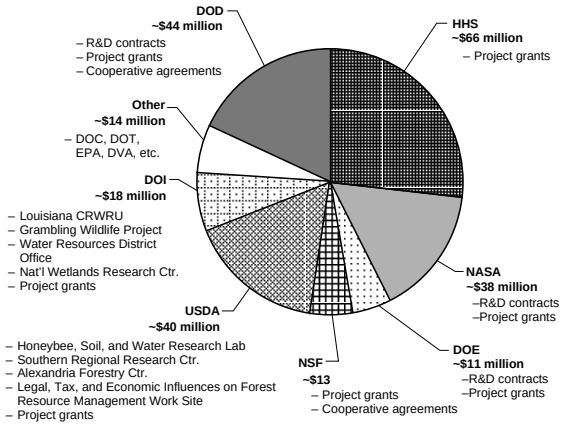

Figure 19.1 – Sources of Federal R&D Dollars Spent in Louisiana (Total Federal R&D ~$244 million)

Background

In recent years, the federal government has spent in the neighborhood of $244 million annually in Louisiana on research and development (R&D) activities. On average, federal R&D dollars account for approximately 3 percent of all federal funds spent in Louisiana 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 Louisiana. Foremost among these agencies are the Departments of Health and Human Services (HHS), Defense (DOD), and Agriculture (USDA) and the National Aeronautics and Space Administration (NASA), which account for 27, 18, 16 and 16 percent of all federal R&D dollars spent in the state, respectively. The Department of Interior (DOI), the National Science Foundation (NSF), and the Department of Energy (DOE) account for an additional 7, 5, and 5 percent of all federal R&D dollars spent in Louisiana, respectively. The remaining federal R&D dollars come collectively from the Environmental Protection Agency (EPA), the Department of Commerce (DOC), and several other federal agencies.[19]

All federal R&D dollars spent in Louisiana 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 Louisiana.

Federal R&D Units in Louisiana

Baton Rouge, Louisiana, is home to USDA's Honeybee, Soil, and Water Research Laboratory and DOI's Louisiana Cooperative Fish and Wildlife Research Unit and Louisiana District Office of Water Resources.

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[19] For a complete agency-by-agency breakdown of these R&D dollars, see Appendix C.

- The Honeybee, Soil, and Water Research Laboratory is a unit of USDA's Agricultural Research Service (ARS) located on the campus of Louisiana State University. It conducts research on honeybee breeding and genetic studies of the honeybee and transport and fate of agrochemicals in high water table soils. Specific research activities of the laboratory include studies to develop a genetic resistance to mites for honeybees and the development of improved water management systems and operating criteria to improve crop production. This federal R&D unit annually receives approximately $2.7 million in federal R&D funds and has about 24 FTEs.

- The Louisiana Cooperative Fish and Wildlife Research Unit is part of DOI's U.S. Geological Survey (USGS). It is on the campus of Louisiana State University. It conducts research on aquaculture of crawfish, catfish, and other species with aquacultural potential in Louisiana and the southern United States. Specific research activities of this unit include a study of changes on the limnology and aquatic ecology in the Atchafalaya basin stemming from human activity. This federal R&D unit annually receives approximately $266,000 in federal R&D funds and has about three FTEs.

- The Louisiana District Office of Water Resources is a unit of DOI's USGS. It oversees the R&D activities of USGS's National Water-Quality Assessment (NAWQA), Ground-Water Resources Assessment, Toxic Substances Hydrology, and Federal State Cooperatives programs. The NAWQA program conducts research on the nation's surface and groundwater resources to better understand the effect of pesticides, erosion, and bacterial contamination on water quality. The Ground-Water Resources Assessment program studies groundwater systems to develop models and simulations to better understand the workings of these systems. The Toxic Substances Hydrology program studies the behavior of toxic substances in hydrologic environments. These research activities investigate subsurface contamination at local releases and aquatic ecosystem contamination on a wa-

tershed and regional scale. The Federal State Cooperatives program studies the effects of agricultural chemicals, floods, droughts, and waste disposal on water supply and groundwater quality. This federal unit annually receives approximately $1.3 million in federal R&D funds.

Grambling, Louisiana, is home to DOI's Grambling Wildlife Project.

- The Grambling Wildlife Project is a unit of DOI's USGS. It is on the campus of Grambling State University. Specific research activities of this unit include assisting and preparing minority students in the field of wildlife and fishery research. This federal R&D unit annually receives approximately $88,000 in federal R&D funds and has one FTE.

Lafayette, Louisiana, is home to DOI's National Wetlands Research Center.

- The National Wetlands Research Center is a unit of DOI's USGS. It develops and disseminates scientific information on wetland habitats through a system of peer reviewed journal articles, databases, synthesis reports, workshops, conferences, technical assistance, training, and information/library services. Specific research activities of this center and its field unit in Baton Rouge include a broad array of projects on wetland ecology, values, management, restoration and creation; and research on the ecology of a wide variety of plant and animal species and ecosystems found in wetlands. These federal R&D units combined annually receive approximately $3.8 million in federal R&D funds and have about 83 FTEs.

New Orleans, Louisiana, is home to USDA's Southern Regional Research Center and Legal, Tax, and Economic Influences on Forest Resource Management Work Site and a Department of Veterans Affairs (DVA) R&D unit.

- The Southern Regional Research Center, a unit of USDA's ARS, consists of eight research divisions focusing on commodity utilization, cotton fiber quality, cotton textile chemistry, cotton textile engineering, food and feed safety, food processing and sen-

sory quality, Formosan subterranean termites, and sugarcane. It conducts fundamental and applied research related primarily to postharvest processing, product enhancement, safety, and use of agricultural commodities produced in the southern United States. Specific research activities of the center include developing ways to improve fiber measurement technologies for such properties as length, strength, maturity, and surface friction; characterizing factors that contribute to contamination of food/feed/fiber commodities by mycotoxins; and developing chemical and biological methods to detoxify harmful contaminants in commodities. This federal R&D unit annually receives approximately $25 million in federal R&D funds and has about 233 FTEs.

- The Legal, Tax, and Economic Influences on Forest Resource Management Work Site is a unit of the Southern Research Station inside USDA's Forest Service. It is on the campuses of Louisiana State University and Louisiana Tech. It conducts research on the effects of federal, state, and local taxes, laws, and regulations on forestry. Specific research activities of this unit and a sister unit in Tuskegee, Alabama, include analyzing export markets for southern softwood products and the economics of innovative silvicultural practices for southern forests. This federal R&D unit annually receives approximately $930,000 of R&D funds and has about 10 employees.

- While the principal focus of the New Orleans 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 226 projects with total funding of approximately $2 million. These R&D activities focus on a wide range of topics, including hypertension, heart disease, pain management, kidney disease, prostate cancer, posttraumatic stress disorder, and addictions.

Pineville, Louisiana, is home to USDA's Alexandria Forestry Center.

- The Alexandria Forestry Center is a unit of the Southern Research Station inside USDA's Forest Service. It is on the cam-

puses of Louisiana State University and Louisiana Tech. Specific research activities include providing fundamental knowledge on the ecology and physiology of southern pine species and even-aged management options to enhance and sustain the productivity of southern pine ecosystems. Other activities include improving methods for predicting and managing the southern pine beetle through acquisition and use of basic knowledge of its ecology and behavior and defining and applying fundamental chemistry, material science, and engineering principles to the utilization and processing of southern forest resources in an environmentally sound way. This federal R&D unit annually receives approximately $3.5 million of federal R&D dollars and has about 43 employees.

Shreveport, Louisiana, is home to a DVA R&D unit.

- While the principal focus of the Shreveport 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 106 projects with total funding of approximately $400,000. These R&D activities focus on a wide range of topics, including neoplasms, congestive heart failure, and prostatic disorders.

Federal R&D Grants to Louisiana Entities

Every major institution of higher education in Louisiana 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, DOD, NSF, and USDA to individual faculty members and therefore ultimately inure to the benefit of such institutions as the Louisiana State University system (LSU), Tulane University, the University of Louisiana system, and Southern University. The table below shows the number of R&D grants active in FY 1998, highlighting those made by HHS, DOD, NSF, and USDA to parties at the various 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 LSU are ones from EPA ($3 million), DOC ($3 million), DOE ($2 million), and NASA ($2 million). Most of the comparable grants going to the University of Louisiana system are from EPA and those awarded to Southern University are split mainly among EPA and NASA.

Table 19.1 – Sources of Federal R&D Grants to Higher Education in Louisiana

	HHS		DOD		NSF		USDA		Other Agencies		Total	
Institution	Amount	#	Amount	#	Amount	#	Amount	#	Amount	#	Amount	#
LSU	$26M	192	$8M	21	$4M	117	$5M	271	$10M	75	$54M	676
Tulane	$27M	117	<$1M	5	$2M	53	0	0	$1M	18	$31M	193
U of Louisiana	$2M	14	$2M	4	$2M	30	<$1M	10	$2M	18	$7M	76
Southern U	$1M	3	$1M	4	<$1M	3	$1M	14	$2M	31	$6M	55
Other	$1M	3	<$1M	2	<$1M	2	<$1M	1	<$1M	9	$1M	17
Total	$57M	329	$11M	36	$8M	205	$7M	296	$16M	151	$99M	1,017

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, such as the Health Sciences Center at LSU.

Several other nonacademic institutions in Louisiana also receive federal R&D grants each year. Foremost among these institutions that received R&D grants in FY 1998 are the Pennington Biomedical Research Center (located at LSU) in Baton Rouge ($5 million), Children's Hospital in New Orleans ($3 million), the Louisiana State Department of Health & Hospitals in New Orleans ($1 million), and the Alton Ochsner Medical Foundation in New Orleans ($1 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 Louisiana received nine SBIR awards totaling close to $2 million. Examples include a $600,000 award from the Navy to Neptune Sciences, Inc., in Slidell to develop a family of miniature, expendable, environmental sensors and a $100,000 award from NSF to The Venture Group in Lafayette to study chitosan-based biopolymers as additives to oil well drilling fluids.

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 Louisiana are ones valued at more than $4.7 million from 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 DOI's USGS to the Water Resources Research Institute in Louisiana every year to foster research in water and water-related problems.

Other Federal R&D Activities in Louisiana

Several entities in Louisiana also receive notable sums in the form of contracts or cooperative agreements from federal agencies for specific R&D efforts. By far the majority of these funds go to Textron, Inc., which in FY 1998 received close to $23 million from the Army for engineering and manufacturing development of the Lightweight 155-mm Howitzer. In addition, Lockheed Martin Corp. ($3 million), Neptune Sciences, Inc. ($3 million), and John E. Chance and Assoc., Inc. ($2 million), received significant R&D contracts from federal agencies in FY 1998. The University of Louisiana system ($3 million), Tulane University ($2 million), and LSU ($2 million) 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 $29 million of federal R&D dollars was also received in FY 1998 by entities located in Louisiana in the form of cooperative agreements. The largest of these cooperative agreements ($7 million in FY 1998) came from DOD (Navy) to the University of New Orleans campus of LSU to operate the Gulf Coast Region Maritime Technology Center. Other federal agencies awarding cooperative agreements to Louisiana-based entities include DOC and NSF.