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U.S. Department of Transportation

Office of the Secretary of Transportation

# FY 1985 DOT Awards to Academic Institutions

EK Megerian

University Research Program

Prepared by:
University Research and Technology Innovation Office
Transportation Systems Center

DOT/OST/P-34/86/037
May 1986

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15. Supplementary Notes

These awards cover contracts and grants for research and training.

16. Abstract

This report is a comprehensive listing of contracts and grants awarded by the U.S. Department of Transportation to colleges and universities during the fiscal year 1985.

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U.S. Department
of Transportation

**Research and
Special Programs
Administration**

Transportation
Systems Center

Kendall Square
Cambridge, Massachusetts 02142

The Department of Transportation recognizes the innovative capabilities and professional expertise of the Nation's academic community as a critical resource in addressing transportation-related problems and policies at the local, state, regional and national levels. In addition to funding transportation research and training, the Department convenes representatives of academia, industry, and government in university-based seminars to enhance understanding of technical and socio-economic issues and opportunities in all modes of transportation. These seminars serve as a valuable forum for the exchange of information on current transportation research results.

This publication, prepared annually by the Transportation Systems Center, University Research and Technology Innovation Office, summarizes the Department's contracts and grants awarded to colleges and universities during the fiscal year 1985. Total obligations amounted to almost $30 million, including $4.4 million of indirect highway-related R&D funding to universities via state governments and other agencies. Details of these awards are contained herein as noted in the table of contents. Inquiries concerning additional information may be directed to the University Research and Technology Innovation Office.

We believe that the academic community, through the Department's research and training programs, is making significant contributions to improving the safety, economics and efficiency of the Nation's transportation system.

L. W. Roberts

Louis W. Roberts
Director

# DEPARTMENT OF TRANSPORTATION

## SUMMARY OF CONTRACT/GRANT AWARDS TO UNIVERSITIES

*Fiscal Year Obligations in Thousands*

| | *1973* | *1974* | *1975* | *1976* | *1977* | *1978* | *1979* | *1980* | *1981* | *1982* | *1983* | *1984* | *1985* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **OST** | $ 3,045 | $ 4,311 | $ 7,367 | $ 4,813 | $ 3,581 | $ 4,152 | * | * | * | * | $ 109 | $ -0- | $ -0- |
| **USCG** | 651 | 1,022 | 758 | 621 | 633 | 614 | $ 558 | $ 373 | $ 600 | $ 75 | 495 | 510 | 652 |
| **FAA** | 736 | 3,432 | 3,806 | 3,199 | 2,863 | 2,864 | 3,036 | 2,601 | 2,762 | 13,677 | 16,659 | 13,138 | 24,714 |
| **FHWA** | 2,283 | 3,979 | 2,706 | 7,127 | 10,993 | 10,102 | 9,128 | 9,282 | 9,562 | 6,645 | 7,275 | 9,432 | 7,261 |
| **FRA** | 719 | 328 | 795 | 2,018 | 887 | 309 | 477 | 258 | 147 | 20 | 0 | 170 | 50 |
| **NHTSA** | 4,408 | 4,497 | 5,029 | 4,940 | 6,961 | 6,334 | 3,651 | 3,145 | 3,613 | 2,057 | 2,473 | 2,862 | 3,092 |
| **UMTA** | 3,610 | 3,750 | 2,426 | 3,197 | 2,851 | 3,497 | 2,681 | 2,271 | 1,872 | 2,046 | 1,507 | 798 | 810 |
| **MARAD** | — | — | — | — | — | — | — | — | — | 288 | 530 | 1,088 | 1,215 |
| **RSPA** | — | — | — | — | — | — | 5,218 | 4,862 | 4,368 | 2,675 | 4,578 | 2,386 | 1,930 |
| **Totals** | **$15,452** | **$21,299** | **$22,887** | **$25,887** | **$28,769** | **$27,872** | **$24,749** | **$22,792** | **$22,924** | **$27,483** | **$33,517** | **$30,384** | **$39,724** |

*NOTE: Fiscal Year 1985 data for the Federal Highway Administration include direct obligations of $2,852,222 and indirect obligations of $4,408,425 for highway-related R&D funding to universities via state governments and other agencies.*

*(*) Denotes included with RSPA*

# SECTION I

## AWARDS BY AGENCY WITHIN DOT AND BY UNIVERSITY

## OFFICE OF THE SECRETARY

| *University* | *City* | *State* | *Contract Number* | *Contract Amount* | *Short Contract Title* |
|---|---|---|---|---|---|
| None | | | | | |

## UNITED STATES COAST GUARD

| *University* | *City* | *State* | *Contract Number* | *Contract Amount* | *Short Contract Title* |
|---|---|---|---|---|---|
| **California, University of** | Los Angeles | CA | DTCG3985-C-80205 | $ **87,631** | Dev. chromatic/luminance contrast scale |
| **Connecticut, University of** | Storrs | CT | DTCG3985-C-00183 | **10,740** | Technical services |
| **Dartmouth College** | Hanover | NH | DTCG3983-C-00831 | **328,417** | ADP timesharing service |
| **Michigan, University of** | Ann Arbor | MI | Project 3300/9000.1 | **15,000** | Engineering consortium |
| **Rhode Island, University of** | Kingston | RI | DTCG3985-C-00190 | **8,000** | Technical services |
| **South Alabama, University of** | Mobile | AL | DTCG3985-C-00198 | **24,413** | Housing for cadets |
| **Worcester Polytechnic Institute** | Worcester | MA | DTCG3985-A-80196 | **17,082** | Marine fire research |
| **Yosemite College** | Modesto | CA | DTCG3284-C-00007 | **160,245** | Training—criminal justice |

**UNITED STATES COAST GUARD—TOTAL** $ **651,528**

## FEDERAL AVIATION ADMINISTRATION

| *University* | *City* | *State* | *Contract Number* | *Contract Amount* | *Short Contract Title* |
|---|---|---|---|---|---|
| **Auburn University** | Auburn | AL | DTFA0185-C-00057 | $ 99,932 | Std. delay reporting system data |
| | | | DTFA0284-D-84143 | 84,391 | Airway science program |
| | | | | **184,323** | |
| **California, University of** | Los Angeles | CA | DTFA0285-P-31784 | 25,000 | Training |
| | | | DTFA0385-C-00037 | 144,611 | New detection concepts |
| | | | | **169,611** | |
| **Cameron University** | Lawton | OK | DOT-FA70AC-2179 | **1,262,766** | Mgt. training facilities w/ services |
| **Catholic University** | Washington | DC | DTFA0185-C-00046 | **80,387** | Dev. experimental ATC forms of tests |
| **Central State University** | Wilberforce | OH | DTFA0184-C-00023 | **80,581** | Airport pavement stabilization systems |
| **Dayton, University of** | Dayton | OH | DTFA0385-C-00009 | **121,272** | Worldwide aircraft icing data study |
| **Drexel University** | Philadelphia | PA | DTFA0385-P-00505 | **24,600** | Tuition/books |
| **Embry-Riddle Aeronautical University** | Daytona Beach | FL | DTFA0385-P-00818 | 15,200 | Tuition/books |
| | | | DTFA0384-C-00003 | 24,700 | Master in aviation program |
| | | | | **39,900** | |
| **Florida State University** | Tallahassee | FL | DTFA0285-D-85012 | **713,794** | CBI support |
| **Michigan, University of** | Ann Arbor | MI | DTFA0285-P-32618 | **12,656** | Training |
| **Ohio University** | Athens | OH | DTFA0183-C-10007 | 5,530 | Industrial, scientific, medical study |
| | | | DTFA0183-C-20025 | 117,951 | Engineering/technical services |
| | | | | **123,481** | |
| **Oklahoma, University of** | Norman | OK | DTFA0280-C-80001 | 2,210,717 | Mgt. training Development/ Instruction |
| | | | DTFA0282-D-82005 | 6,067,832 | Air traffic recovery assistance |
| | | | DTFA0285-D-85047 | 13,516,838 | Air traffic training |
| | | | DTFA0985-F-30760 | 49,500 | Mgt. training |
| | | | | **21,844,887** | |

## FEDERAL AVIATION ADMINISTRATION—*continued*

| *University* | *City* | *State* | *Contract Number* | *Contract Amount* | *Short Contract Title* |
|---|---|---|---|---|---|
| **Oklahoma City Community College** | Oklahoma City | OK | DTFA0284-D-84037 | **17,439** | Computer literacy training |
| **Oklahoma State University** | Stillwater | OK | DTFA0285-D-85116 | **15,000** | Chemical analysis |
| **Pennsylvania State University** | University Park | PA | DTFA0184-C-00053 | **15,000** | Use of acoustical emissions |
| **Princeton University** | Princeton | NJ | DTFA0382-C-00046 | **5,863** | Task order contract |
| **Utah, University of** | Salt Lake City | UT | DTFA0282-D-82065 | **2,743** | Laboratory analysis |

**FEDERAL AVIATION ADMINISTRATION—TOTAL** **$24,714,303**

## FEDERAL HIGHWAY ADMINISTRATION—DIRECT OBLIGATIONS

| *University* | *City* | *State* | *Contract Number* | *Contract Amount* | *Short Contract Title* |
|---|---|---|---|---|---|
| **Colorado, University of** | Denver | CO | DTFH6185-C-00150 | $ **49,945** | Pavement drainage stable channel design |
| **Florida, University of** | Gainesville | FL | DTFH6183-C-00133 | **23,168** | Arterial analysis package |
| **Georgia Institute of Technology** | Atlanta | GA | DTFH6181-C-00034 | **2,477** | High performance coating systems |
| **Illinois, University of** | Urbana | IL | DTFH6185-C-00103 | **205,467** | Field evaluation—rigid pavement design |
| **Illinois, University of** | Champaign | IL | DTFH6185-C-00004 | **378,338** | Determination of rehabilitation |
| **Kansas State University** | Manhattan | KS | DTFH6185-C-00139 | **149,512** | Guidelines for protective systems—hazmat spills |
| **Lehigh University** | Bethlehem | PA | DTFH6183-C-00091 | **99,888** | Structural evaluation of in-service bridges |
| **Maryland, University of** | College Park | MD | DTFH6185-C-00092 | **94,000** | Guidelines for design of multi-span bridges |
| **Michigan, University of** | Ann Arbor | MI | DTFH6185-C-00091 | 150,000 | Safety implications of truck configurations |
| | | | DTFH6185-C-00112 | 125,000 | Design loads for future bridges |
| | | | DTFH6185-C-00122 | 206,868 | Reengineering of Part 393 |
| | | | DTFH6183-C-00046 | 37,272 | Truck tractive power criteria |
| | | | | **519,140** | |
| **New Mexico State University** | Las Cruces | NM | DTFH6182-C-00097 | **57,208** | Highway bridge inspection |
| **North Carolina, University of** | Chapel Hill | NC | DTFH6184-C-00067 | 13,753 | Safe geometric design for mini-cars |
| | | | DTFH6184-C-00084 | 54,654 | Correlation-driver's driving record |
| | | | | **68,407** | |
| **Pennsylvania State University** | University Park | PA | DTFH6185-C-00111 | 172,861 | Asphalt behavior at low service temperatures |
| | | | DTFH6181-C-00090 | 3,004 | Prediction methods for changes in pavement friction |
| | | | | **175,865** | |

## FEDERAL HIGHWAY ADMINISTRATION—DIRECT OBLIGATIONS—*continued*

| *University* | *City* | *State* | *Contract Number* | *Contract Amount* | *Short Contract Title* |
|---|---|---|---|---|---|
| **Texas, University of** | Austin | TX | DTFH6185-C-00174 | $ 137,494 | High strength bolts for bridges |
| | | | DTFH6182-C-00007 | 96,403 | Study in pavement mgt. metal culverts |
| | | | | **233,897** | |
| **Texas A&M University** | College Station | TX | DTFH6185-C-00083 | 121,322 | Prediction of equivalent axle loads |
| | | | DTFH6185-C-00101 | 243,606 | Heavy vehicle impact forces |
| | | | DTFH6185-C-00129 | 167,346 | Rollover caused by concrete barriers |
| | | | DTFH6180-C-00040 | 99,000 | Skid test/calibration services |
| | | | DTFH6181-C-00080 | 54,191 | Second generation of sulphex binders |
| | | | DTFH6182-C-00074 | 19,329 | Properties of asphalt-rubber paving mats |
| | | | | **704,794** | |
| **West Virginia University** | Morgantown | WV | DTFH6185-C-00113 | **90,116** | Low volume bridges |

**FEDERAL HIGHWAY ADMINISTRATION—DIRECT OBLIGATIONS— TOTAL** **$ 2,852,222**

## FEDERAL HIGHWAY ADMINISTRATION—INDIRECT OBLIGATIONS—HP&R/NCHRP FUNDS

| *University* | *City* | *State* | *Contract Amount* | *Short Contract Title* |
|---|---|---|---|---|
| **Alaska, University of** | Fairbanks | AK | $ 8,768 | Design of depressed invert culverts |
| | | | 10,184 | Hydrologic criteria for fish passage |
| | | | **18,952** | |
| **Arizona, University of** | Tucson | AZ | **74,966** | Scour in supercritical flow |
| **Arizona State University** | Tempe | AZ | 27,127 | Visual processing and driving safety |
| | | | 35,000 | Transport of hazardous materials |
| | | | **62,127** | |
| **Arkansas, University of** | Fayetteville | AR | **32,182** | Resilient properties of Arkansas soils |
| **California, University of** | Berkeley | CA | 19,840 | Effect of septic tank additives on scum in tanks |
| | | | 37,964 | Investigation of potential safety hazards |
| | | | **57,804** | |
| **California, University of** | Irvine | CA | **15,900** | Analysis of truck related freeway incidents |
| **California, University of** | Los Angeles | CA | **20,000** | Evaluation of closed circuit TV for freeway surveillance |
| **California, University of** | San Diego | CA | **110,000** | Concrete overlays in bridge deck rehabilitation |
| **California State University** | San Diego | CA | **26,264** | Perf. meas.-ramp metering system |
| **Case Western Reserve Unversity** | Cleveland | OH | **97,000** | Design of steel bonded connection |
| **Central Florida, University of** | Orlando | FL | **50,000** | Management practices of storm water runoff |
| **Colorado, University of** | Denver | CO | **6,505** | Peak runoff prediction for State of Colorado |

## FEDERAL HIGHWAY ADMINISTRATION—INDIRECT OBLIGATIONS—HP&R/NCHRP FUNDS—*continued*

| *University* | *City* | *State* | *Contract Amount* | *Short Contract Title* |
|---|---|---|---|---|
| **Georgia, University of** | Athens | GA | $ 1,000 | Eval. of scotch broom cultivars for roadsides |
| **Georgia State University** | Atlanta | GA | 9,762 | Shoreline enhancement for wetlan |
| **Illinois, University of** | Urbana | IL | 21,000 | Highway drainage manual |
| **Kentucky, University of** | Lexington | KY | 58,000 | Eval. of sandstone bases |
| | | | 42,000 | Strategies for pavement management |
| | | | 28,000 | Effectiveness of noise barriers |
| | | | 5,000 | Guidelines for left turn phasing |
| | | | 133,000 | |
| **Lafayette College** | Easton | PA | 40,000 | Cost effectiveness of bridge repair details |
| **Lehigh University** | Bethlehem | PA | 149,930 | Redundancy of welded steel I-girder bridges |
| **Mississippi State University** | Mississippi State | MS | 28,124 | Microbial deterioration of asphalt overlays |
| | | | 22,565 | Spray drift eval. for roadside sprayers |
| | | | 50,689 | |
| **New Mexico State University** | Las Cruces | NM | 100,000 | Surveys of concrete bridge components |
| **Oklahoma, University of** | Norman | OK | 31,120 | Investigation of elastomeric expansion bridge bearings |
| **Pennsylvania State University** | University Park | PA | 44,628 | Dev. of storm atlas |
| **Pittsburgh, University of** | Pittsburgh | PA | 174,985 | Value iteration program for actuated signals |

## FEDERAL HIGHWAY ADMINISTRATION—INDIRECT OBLIGATIONS—HP&R/NCHRP FUNDS—*continued*

| *University* | *City* | *State* | *Contract Amount* | *Short Contract Title* |
|---|---|---|---|---|
| **Purdue University** | Lafayette | IN | $ 36,000 | Hi-strength concrete I-beam sections |
| | | | 25,000 | Overlay design for rigid pavement |
| | | | 7,540 | Layer coefficients in terms of mixture characteristics |
| | | | 22,110 | Image analysis of highway materials |
| | | | **90,650** | |
| **Rutgers University** | New Brunswick | NJ | **54,087** | Repair of bridge deck structures |
| **Texas, University of** | Austin | TX | 60,000 | Candidate toll roads |
| | | | 60,000 | Rigid pavement data base |
| | | | 65,950 | Load transfer across joints/cracks in pavements |
| | | | 80,000 | Thin bonded overlay implementation |
| | | | 50,000 | Eval. strength precast girder |
| | | | 100,000 | Eval. density in asphalt mixtures |
| | | | 43,500 | Shaft retaining walls |
| | | | 55,000 | Eval./training related to drum mix plants |
| | | | 100,000 | Fatigue strength of post tensioned concrete |
| | | | 25,000 | Alkali-aggregate reaction in concrete |
| | | | 73,500 | Resistance of anchor bolts to fatigue |
| | | | 50,000 | Strategies for bridge replacement |
| | | | 75,000 | Longer/wider trucks on Texas hwy system |
| | | | 60,000 | Candidate toll roads |
| | | | 59,000 | Analysis of curved steel girder units |
| | | | **956,950** | |

## FEDERAL HIGHWAY ADMINISTRATION—INDIRECT OBLIGATIONS—HP&R/NCHRP FUNDS—*continued*

| *University* | *City* | *State* | *Contract Amount* | *Short Contract Title* |
|---|---|---|---|---|
| **Texas A&M University** | College Station | TX | $ 63,000 | Asphalt concrete mixtures |
| | | | 80,500 | Pavement evaluation system improvements |
| | | | 63,000 | Design of ACP overlays on concrete pavements |
| | | | 50,000 | Stable foundation for highway RR grade crossings |
| | | | 65,000 | Predicting load equivalencies |
| | | | 50,000 | Multiple seal cost design and construction |
| | | | 5,500 | Automating truck tire pressure data collection |
| | | | 150,000 | Vehicle downsizing and roadside safety hardware |
| | | | 82,000 | Project completion time and cost overruns |
| | | | 69,000 | Air quality modeling |
| | | | 71,000 | Vehicle emission from roadways |
| | | | 10,019 | Fabrics under base courses |
| | | | 47,000 | Consolidation of continuously reinforced concrete |
| | | | 95,000 | Overhead vehicle sensor system |
| | | | 45,000 | Use of fly overs and grade-separated ramps |
| | | | 95,000 | Demonstration of exclusive truck facilities |
| | | | 50,000 | Guardrails—low fill bridge length culverts |
| | | | 59,382 | Sm. sign support anal. |
| | | | 50,000 | T5 bridge rail |
| | | | 60,000 | Energy absorbing traffic rail |
| | | | 105,000 | Traffic control for construction operations |
| | | | 20,500 | MUTCD work zone traffic control |
| | | | 97,000 | Longer/wider trucks on Texas hwy. sys. |
| | | | 84,000 | Travel time and accident costs for hwy. projects |
| | | | 73,359 | Analysis of accident rates |
| | | | 84,000 | Allocation of construction funds |
| | | | 158,000 | Automated system for technical info |
| | | | 1,882,260 | |

## FEDERAL HIGHWAY ADMINISTRATION—INDIRECT OBLIGATIONS—HP&R/NCHRP FUNDS—*continued*

| *University* | *City* | *State* | *Contract Amount* | *Short Contract Title* |
|---|---|---|---|---|
| **Tulane University** | New Orleans | LA | $ 74,057 | Prestressed concrete/steel beams for bridge widening |
| **Vanderbilt University** | Nashville | TN | 70,000 | Metal tube crash cushion |
| **Washington, University of** | Seattle | WA | 6,664 | Utilization of sewage sludge |
| | | | 100,000 | Monitoring of calcium magnesium acetate |
| | | | **106,664** | |

## FEDERAL HIGHWAY ADMINISTRATION—INDIRECT OBLIGATIONS—TOTAL **$ 4,408,425**

## FEDERAL RAILROAD ADMINISTRATION

| *University* | *City* | *State* | *Contract Number* | *Contract Amount* | *Short Contract Title* |
|---|---|---|---|---|---|
| **Illinois, University of** | Champaign | IL | DTFR5384-C-00036 | **$ 50,000** | Grain marketing/transportation flow study |
| **FEDERAL RAILROAD ADMINISTRATION—TOTALS** | | | | **$ 50,000** | |

## NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

| *University* | *City* | *State* | *Contract Number* | *Contract Amount* | *Short Contract Title* |
|---|---|---|---|---|---|
| **American University** | Washington | DC | DTNH2285-Z-05781 | $ 80,420 | Motor vehicle Truma-A preventive approach |
| **Georgia, University of** | Athens | GA | DTNH2285-6-07243 | 21,494 | Teachng adolescents about alcohol |
| **Indiana University** | Indianapolis | IN | DTNH2285-C-05741 | 124,190 | Occupant protection program workshops |
| | | | DTNH2282-C-07275 | 381,398 | Operations of Central Zone Center A |
| | | | DTNH2281-C-57205 | 160,345 | Estab. & operate primary sampling unit |
| | | | | 665,933 | |
| **Kansas, University of** | Lawrence | KS | DTNH2285-C-15404 | 464,362 | Highway safety project |
| **Michigan, University of** | Ann Arbor | MI | DTNH2284-D-07080 | 92,298 | Crash avoidance research |
| | | | DTNH2284-C-07338 | 11,000 | Usage of UMTRI accident data system |
| | | | DTNH2284-C-07198 | 29,930 | FM VSS 108 harmonization upgrade |
| | | | DTNH2283-D-17019 | 82,000 | Dev. of biomechanical data—human surrogate |
| | | | DTNH2283-C-07005 | 75,640 | Eval. anthropomorphic test device |
| | | | DTNH2283-C-07187 | 25,000 | Heavy truck dynamic performance |
| | | | HS-9-02209 | 46,497 | Public info material catalog |
| | | | | 362,365 | |
| **Montevallo, University of** | Montevallo | AL | DTNH2283-C-07154 | 286,035 | Estab. PSU-Shelby/Tuscaloosa County |
| **Nebraska, University of** | Omaha | NE | DTNH2285-Z-05162 | 9,950 | Data collection/evaluation-alcohol program |
| **North Carolina, University of** | Chapel Hill | NC | DTNH2285-C-07225 | 24,990 | Evaluation child safety restraints |
| | | | DTNH2282-C-07393 | 20,000 | Exploratory analysis-accident data |
| | | | | 44,990 | |
| **Northwestern University** | Evanston | IL | DTNH2285-C-05120 | 24,555 | Training for accident reconstructionists |
| | | | DTNH2285-C-15401 | 510,337 | Child safety seat usage project |
| | | | DTNH2285-Z-05109 | 41,676 | Seminar for traffic law enforcement |
| | | | DTNH2285-Z-05018 | 9,809 | Baker award for achievements |
| | | | DTNH2283-C-07276 | 14,591 | Deterrence value of alt. sanctions for DWI |
| | | | | 600,968 | |

## NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION—*continued*

| *University* | *City* | *State* | *Contract Number* | *Contract Amount* | *Short Contract Title* |
|---|---|---|---|---|---|
| **Pennsylvania, University of** | Philadelphia | PA | DTNH2282-C-07187 | **$ 60,316** | Biomechanics of head injury |
| **Texas, University of** | Dallas | TX | DTNH2285-C-07253 | **99,257** | Increase use of safety belts |
| **Texas A&M University** | College Station | TX | DTNH2283-C-07158 | 135,345 | Establish/operate of PSU-5 Texas |
| | | | DTNH2283-C-07153 | 95,345 | Establish/operate of PSU-Arkansas |
| | | | | **230,690** | |
| **Virginia Polytechnic Institute and State University** | Blacksburg | VA | DTNH2285-C-07301 | **50,000** | Promoting safety belt use |
| **Wayne State University** | Detroit | MI | DTNH2283-D-27019 | **115,000** | Dev./analysis of biomedical data |

**NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTATION—TOTAL** **$ 3,091,780**

## URBAN MASS TRANSPORTATION ADMINISTRATION

| *University* | *City* | *State* | *Grant Number* | *Grant Amount* | *Grant Title* |
|---|---|---|---|---|---|
| **Alablama A&M University** | **Normal** | **AL** | **AL-11-0003** | **$ 66,893** | **Developing local support and funding for transportation services in rural areas** |
| **California State University** | **Long Beach** | **CA** | **CA-11-0030** | **74,434** | **Increasing private sector involvement in urban mass transportation planning and service** |
| **Carnegie-Mellon University** | **Pittsburgh** | **PA** | **PA-11-0033** | **81,664** | **Innovate financial strategies during facility construction** |
| **Columbia University** | **New York** | **NY** | **NY-11-0039** | **79,000** | **Potentials and problems of private sector transportation service** |
| **East Tennessee State University** | **Johnson City** | **TN** | **TN-11-0017** | **25,131** | **Joint funding agreements between universities and transit operating properties** |
| **Georgia Institute of Technology** | **Atlanta** | **GA** | **GA-11-0017** | **76,545** | **Overcoming barriers to greater private sector involvement in transportation** |
| **Illinois, University of** | **Chicago** | **IL** | **IL-11-0032** | **36,631** | **Moving people: a 1985 revision** |
| **North Dakota State University** | **Fargo** | **ND** | **ND-11-0001** | **51,420** | **Training courses for small urban and rural transportation management** |
| **Ohio State University** | **Columbus** | **OH** | **OH-11-0007** | **49,876** | **Evaluating the desirability of transit deregulation** |
| **Pennsylvania, University of** | **Philadelphia** | **PA** | **PA-11-0032** | **80,106** | **Monopoly, deregulation and Coordination of public mobility services** |
| **Puerto Rico, University of** | **Rio Piedras** | **PR** | **PR-11-0005** | **65,809** | **Use of microcomputers in study of population trends and impact on transportation needs in rapidly growing metropolitan areas** |
| **Rensselaer Polytechnic Institute** | **Troy** | **NY** | **NY-11-0038** | **42,997** | **Transit safety: case study of New York State's Public Transportation Safety Board** |
| **Virginia Polytechnic Institute Blacksburg and State University** | **Blacksburg** | **VA** | **VA-11-0015** | **79,012** | **Effect of employee attitudes and productivity** |

**URBAN MASS TRANSPORTATION ADMINISTRATION—TOTAL** **$ 809,518**

## MARITIME ADMINISTRATION

| University | City | State | Contract Number | Contract Amount | Short Contract Title |
|---|---|---|---|---|---|
| California, University of | Berkeley | CA | DTMA9185-C-50103 | $ 50,248 | Investigation of ship hull ultimate strength |
| Dartmouth College | Hanover | NH | DTMA9185-C-50007 | 110,096 | Lease of computer terminals |
| George Washington University | Washington | DC | DTMA9185-C-50114 | 49,700 | Rotary-jet marine propulsion study |
| Iowa, University of | Iowa City | IA | DTMA9185-C-50115 | 49,522 | Study of heave and pitch motions |
| Louisiana State University | Baton Rouge | LA | DTMA9185-C-50116 | 48,782 | Study-container transport by inland waterways |
| Massachusetts Institute of Technology | Cambridge | MA | DTMA9184-C-41014 | 51,325 | Sea trials on selected ships |
| Michigan, University of | Ann Arbor | MI | DTMA9184-C-41045 | 425,000 | Shipbuilding education/training program |
| | | | DTMA9185-C-50118 | 38,465 | Study-bow impact loads |
| | | | DTMA9185-C-50127 | 50,924 | Application of artificial intelligence ir marine indutry |
| | | | | 514,389 | |
| Morgan State University | Baltimore | MD | DTMA9183-C-30033 | 45,000 | Study-accession/retention of minority CG officers |
| Rensselaer Polytechnic Institute | Troy | NY | DTMA9185-C-50119 | 135,429 | Decision support to Master, Pilots, Mates on Watch |
| Texas A&M University | College Station | TX | DTMA9185-C-50120 | 49,768 | Study—liquid sloshing loads |
| Virginia Polytechnic Institute and State University | Blacksburg | VA | DTMA9185-C-50121 | 32,108 | Analysis of theory recavitating propeller induced hull pressures |
| Washington, University of | Seattle | WA | DTMA9185-C-50122 | 50,000 | Accuracy control variation merging equations |
| Webb Institute of Naval Architecture | Glen Cove | NY | DTMA9185-C-50123 | 28 ,786 | Arctic operation requirements for shi mach. systems |
| **MARITIME ADMINISTRATION—TOTAL** | | | | $ 1,215,153 | |

## RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION

| *University* | *City* | *State* | *Contract Number* | *Contract Amount* | *Short Contract Title* |
|---|---|---|---|---|---|
| **Bradley University** | Peoria | IL | DTRS5783-C-00118 | $ 8,158 | Development of demo. microprocessor software for GPS |
| **Carnegie-Mellon University** | Pittsburgh | PA | DTRS5785-C-00098 | 25,000 | Adv. digital communications |
| **Dillard University** | New Orleans | LA | DTRS5683-C-00030 | 55,000 | Implementation of workshops |
| **Howard University** | Washington | DC | DTRS5683-C-00035 | 200,000 | Rapid transit station sites |
| **Lehigh University** | Bethlehem | PA | DTRS5785-C-00093 | 20,300 | Structural integrity |
| **Lowell, University of** | Lowell | MA | DTRS5785-C-00088 | 35,000 | Navigation/sur system analysis |
| **Maryland, University of** | College Park | M | DTRS5785-C-00105 | 49,704 | Wake vortex study |
| **Massachusetts Institute of Technology** | Cambridge | MA | DTRS5684-C-00001 | 357,594 | Load impact—heavy trucks |
| | | | DTRS5785-C-00029 | 53,264 | Metallurgical analysis |
| | | | DTRS5783-C-00085 | 62,906 | Small aircraft pilot error study |
| | | | TSC-1320 | 25,743 | References services |
| | | | | 499,507 | |
| **North Carolina A&T State University** | Greensboro | NC | DTRS5683-C-00042 | 800 | Total factor productivity trans. analysis |
| **North Carolina State University** | Raleigh | NC | DTRS5681-C-00002 | 100,000 | Tire/pavement interaction |
| | | | DTRS5683-C-00043 | 55,000 | Design/construction of bridges |
| | | | | 155,000 | |
| **Ohio University** | Athens | OH | DTRS5783-C-00097 | 129,984 | Research support |
| | | | DTRS5785-C-00063 | 611,323 | Modernize FAA ATC system |
| | | | | 741,307 | |
| **Syracuse University** | Syracuse | NY | DTRS5681-C-00028 | 5,000 | Shipper mode choice in rural areas |
| **Virginia, University of** | Charlottesville | VA | DTRS5785-C-00007 | 124,971 | Safety system optimization model |
| | | | DTRS5785-C-00103 | 10,000 | Vehicle crashworthiness |
| | | | | 134,971 | |
| **RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION—TOTAL** | | | | $ 1,929,747 | |

# SECTION II

## AWARDS BY UNIVERSITY AND TITLE OF CONTRACT/GRANT

## AWARDS BY UNIVERSITY AND TITLE OF CONTRACT/GRANT

| *University* | *DOT Admin.* | *Contract Number* | *Contract Amount* | *Short Contract Title* |
|---|---|---|---|---|
| **Alabama A&M University** | UMTA | AL-11-0003* | $ 66,893 | Support for rural transportation services |
| **Alaska, University of** | FHWA | HP&R/NCHRP Funds | 8,768 | Design for depressed invert culverts |
| | | | 10,184 | Hydrologic criteria for fish passage |
| | | | 18,952 | |
| **American University** | NHTSA | DTNH2285-Z-05781 | 80,420 | Motor vehicle truma-A preventive approach |
| **Arizona, University of** | FHWA | HP&R/NCHRP Funds | 74,966 | Scour in supercritical flow |
| **Arizona State University** | FHWA | HP&R/NCHRP Funds | 27,127 | Visual process and driver safety |
| | | | 35,000 | Transport of hazardous materials |
| | | | 62,127 | |
| **Arkansas, University of** | FHWA | HP&R/NCHRP Funds | 32,182 | Resilient properties of Arkansas soils |
| **Auburn University** | FAA | DTFA0185-C-00057 | 99,932 | Std. delay reporting system data |
| | FAA | DTFA0284-D-84143 | 84,391 | Airway science program |
| | | | 184,323 | |
| **Bradley University** | RSPA | DTRS5783-C-00118 | 8,158 | Dev. of demo. microprocessor software for GPS |
| **California, University of/Berkeley** | FHWA | HP&R/NCHRP Funds | 19,840 | Septic tank additives on scum in tanks |
| | FHWA | HP&R/NCHRP Funds | 37,964 | Investigation of potential safety hazards |
| | MARAD | DTMA9185-C-50103 | 50,248 | Ship hull ultimate strength study |
| | | | 106,052 | |
| **California, University of/Irvine** | FHWA | HP&R/NCHRP Funds | 15,900 | Truck related freeway incidents |
| **California, University of/Los Angeles** | FHWA | HP&R/NCHRP Funds | 20,000 | Closed circuit TV for freeway surveillance |
| | FAA | DTFA0285-P-31784 | 25,000 | Training |
| | FAA | DTFA0385-C-00037 | 144,611 | New detection concepts |
| | USCG | DTCG3985-C-80205 | 87,631 | Chromatic/luminance contrast scale |
| | | | 277,242 | |

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## AWARDS BY UNIVERSITY AND TITLE OF CONTRACT/GRANT —*continued*

| *University* | *DOT Admin.* | *Contract Number* | *Contract Amount* | *Short Contract Title* |
|---|---|---|---|---|
| **California, University of/San Diego** | FHWA | HP&R/NCHRP Funds | **$ 110,000** | Concrete overlays in bridge deck rehab. |
| **California State University/Long Beach** | UMTA | CA-11-0030* | **74,434** | Private sector involvement in urban mass T service |
| **California State University/San Diego** | FHWA | HP&R/NCHRP Funds | **26,264** | Perf. meas.—ramp metering system |
| **Cameron University** | FAA | DOT-FA70AC-2179 | **1,262,766** | Mgt. training facilities w/ services |
| **Carnegie-Mellon University** | RSPA | DTRS5785-C-0098 | 25,000 | Adv. digital communications |
| | UMTA | PA-11-0033* | 81,664 | Financial strategies—facility construction |
| | | | **106,664** | |
| **Case Western Reserve University** | FHWA | HP&R/NCHRP Funds | **97,000** | Steel to steel bonded connections |
| **Catholic University** | FAA | DTFA0185-C-00046 | **80,387** | Experimental ATC forms of tests |
| **Central Florida, University of** | FHWA | HP&R/NCHRP Funds | **50,000** | Mgt. practices of storm water runoff |
| **Central State University** | FAA | DTFA0184-C-00023 | **80,581** | Airport pavement stabilization systems |
| **Colorado, University of/Denver** | FHWA | HP&R/NCHRP Funds | 6,505 | Peak runoff prediction |
| | FHWA | DTFH6185-C-00150 | 49,945 | Pavement drainage design |
| | | | **56,450** | |
| **Columbia University** | UMTA | NY-11-0039* | **79,000** | Problems of private sector transport. services |
| **Connecticut, University of** | USCG | DTCG3985-C-00183 | **10,740** | Technical services |
| **Dartmouth College** | MARAD | DTMA9185-C-50007 | 110,096 | Lease of computer terminals |
| | USCG | DTCG3983-C-00831 | 328,417 | ADP timesharing services |
| | | | **438,513** | |

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## AWARDS BY UNIVERSITY AND TITLE OF CONTRACT/GRANT—*continued*

| *University* | *DOT Admin.* | *Contract Number* | *Contract Amount* | *Short Contract Title* |
|---|---|---|---|---|
| **Dayton, University of** | FAA | DTFA0385-C-00009 | **$ 121,272** | Aircraft icing data study |
| **Dillard University** | RSPA | DTRS5683-C-00030 | **55,000** | Implementation of workshops |
| **Drexel University** | FAA | DTFA0385-P-00505 | **24,600** | Tuition/books |
| **East Tennessee State University** | UMTA | TN-11-0007* | **25,131** | Funding agreements/universities and transit properties |
| **Embry Riddle Aeronautical University** | FAA | DTFA0385-P-00818 | 15,200 | Tuition/books |
| | FAA | DTFA0384-C-00003 | 24,700 | Master in aviation program |
| | | | **39,900** | |
| **Florida, University of** | FHWA | DTFH6183-C-00133 | **23,168** | Arterial analysis package |
| **Florida State University** | FAA | DTFA0285-D-85012 | **713,794** | CBI support |
| **George Washington University** | MARAD | DTMA9185-C-50114 | **49,700** | Rotary-jet marine propulsion study |
| **Georgia, University of** | NHTSA | DTNH2285-C-07243 | 21,494 | Teaching adolescents about alcohol |
| | FHWA | HP&R/NCHRP Funds | 1,000 | Cultivars for roadsides |
| | | | **22,494** | |
| **Georgia Institute of Technology** | FHWA | DTFH6181-C-00034 | 2,477 | Coating systems |
| | UMTA | GA-11-0017* | 76,545 | Private sector involvement in transportation |
| | | | **79,022** | |
| **Georgia State University** | FHWA | HP&R/NCHRP | **9,762** | Shoreline enhancement for wetlands |
| **Howard University** | RSPA | DTRS5683-C-00035 | **200,000** | Rapid transit station sites |
| **Illinois, University of/Champaign** | FRA | DTFR5384-C-00036 | 50,000 | Grain transportation study |
| | FHWA | DTFH6185-C-00004 | 378,338 | Determination of rehabilitations |
| | | | **428,338** | |

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## AWARDS BY UNIVERSITY AND TITLE OF CONTRACT/GRANT—*continued*

| *University* | *DOT Admin.* | *Contract Number* | *Contract Amount* | *Short Contract Title* |
|---|---|---|---|---|
| **Illinois, University of/Chicago** | UMTA | IL-11-0032* | **$ 36,631** | Moving people: a 1985 revision |
| **Illinois, University of/Urbana** | FHWA | DTFH6185-C-00103 | 205,467 | Field eval.-rigid pavement design |
| | FHWA | HP&R/NCHRP Funds | 21,000 | Highway drainage manual |
| | | | **226,467** | |
| **Indiana University** | NHTSA | DTNH2285-C-05741 | 124,190 | Occupant protection program workshops |
| | NHTSA | DTNH2282-C-07275 | 381,398 | Operations of Central Zone Center A |
| | NHTSA | DTNH2281-C-57205 | 160,345 | Estab./operate primary s. |
| | | | **665,933** | |
| **Iowa, University of** | MARAD | DTMA9185-C-50115 | 49,522 | Study of heave and pitch motions |
| **Kansas, University of** | NHTSA | DTNH2285-C-15404 | **464,362** | Highway safety project |
| **Kansas State University** | FHWA | DTFH6185-C-00139 | **149,512** | Guidelines for protective systems-haznat spills |
| **Kentucky, University of** | FHWA | HP&R/NCHRP Funds | 58,000 | Eval. of sandstone bases |
| | FHWA | | 42,000 | Strategies of pavement management |
| | FHWA | | 28,000 | Effectiveness of noise barriers |
| | FHWA | | 5,000 | Guidelines for left turn phasing |
| | | | **133,000** | |
| **Lafayette College** | FHWA | HP&R/NCHRP Funds | **40,000** | Cost effectiveness of bridge rapair details |
| **Lehigh University** | FHWA | HP&R/NCHRP Funds | 149,930 | Redundancy of welded steel I-girder bridges |
| | FHWA | DTFH6183-C-00091 | 99.888 | Structural eval. of in-service bridges |
| | RSPA | DTRS5785-C-00093 | 20,300 | Structural integrity |
| | | | **270,088** | |
| **Louisiana State University** | MARAD | DTMA9185-C-50116 | **48,782** | Study-container transport by inland waterways |
| **Lowell University** | RSPA | DTRS5785-C-00088 | **35,000** | Navigation/surveillance sys. analysis |
| **Maryland, University of** | RSPA | DTRS5785-C-00105 | 49,704 | Wake vortex study |
| | FHWA | DTFH6185-C-00092 | 94,000 | Guidelines for design of multi-span bridges |
| | | | **143,704** | |

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| *University* | *DOT Admin.* | *Contract Number* | *Contract Amount* | *Short Contract Title* |
|---|---|---|---|---|
| **Massachusetts Institute of Technology** | MARAD | DTMA9184-C-41014 | $ 51,325 | Sea trials on selected ships |
| | RSPA | DTRS5684-C-00001 | 357,594 | Load impact-heavy trucks |
| | RSPA | DTRS5785-C-00029 | 53,264 | Metallurgical analysis |
| | RSPA | DTRS5783-C-00085 | 62,906 | Small aircraft pilot error study |
| | RSPA | TSC-1320 | 25,743 | Reference services |
| | | | 550,832 | |
| **Michigan, University of** | MARAD | DTMA9184-C-41045 | 425,000 | Shipbuilding education/training program |
| | MARAD | DTMA9185-C-50118 | 38,465 | Study - bow impact loads |
| | MARAD | DTMA9185-C-50127 | 50,924 | Application of artificial intelligence in marine industry |
| | FHWA | DTFH6185-C-00091 | 150,000 | Safety implications of truck configurations |
| | FHWA | DTFH6185-C-00112 | 125,000 | Design loads for future bridges |
| | FHWA | DTFH6185-C-00122 | 206,868 | Reengineering of Port 393 |
| | FHWA | DTFH6183-C-00046 | 37,272 | Truck tractive power criteria |
| | FAA | DTFA0285-P-32618 | 12,656 | Training |
| | USCG | Project 3300/9000.1 | 15,000 | Engineering consortium |
| | NHTSA | DTNH2284-D-07080 | 92,298 | Crash avoidance research |
| | NHTSA | DTNH2284-C-07338 | 11,000 | Usage of UMTRI accident data system |
| | NHTSA | DTNH2284-C-07198 | 29,930 | FMVSS 108 harmonization upgrade |
| | NHTSA | DTNH2283-D-17019 | 82,000 | Dev. of biomechanical data-human surrogate |
| | NHTSA | DTNH2283-C-07005 | 75,640 | Eval. anthropomorphic test device |
| | NHTSA | DTNH2283-C-07187 | 25,000 | Heavy truck dynamic performance |
| | NHTSA | HS-9-02209 | 46,497 | Public info material catalog |
| | | | 1,423,550 | |
| **Mississippi State University** | FHWA | HP&R/NCHRP Funds | 28,124 | Microbial deterioration of asphalt overlays |
| | FHWA | | 22,565 | Spray drift eval. for roadside sprayers |
| | | | 50,689 | |
| **Montevallo, University of** | NHTSA | DTNH2283-C-07154 | 286,035 | Establish PSU-Shelby/Tuscaloosa County |
| **Morgan State University** | MARAD | DTMA9183-C-30033 | 45,000 | Study-accession/retention of minority CG officers |
| **Nebraska, University of** | NHTSA | DTNH2285-Z-05162 | 9,950 | Data collection/evaluation—alcohol program |

## AWARDS BY UNIVERSITY AND TITLE OF CONTRACT/GRANT—*continued*

| *University* | *DOT Admin.* | *Contract Number* | *Contract Amount* | *Short Contract Title* |
|---|---|---|---|---|
| **New Mexico State University** | FHWA | DTFH6182-C-00097 | $ 57,208 | Highway bridge inspection |
| | FHWA | HP&R/NCHRP Funds | 100,000 | Surveys of concrete bridge components |
| | | | **157,208** | |
| **North Carolina, University of** | FHWA | DTFH6184-C-00067 | 13,753 | Safe geometric design for mini-cars |
| | FHWA | DTFH6184-C-00084 | 54,654 | Correlation—driver's driving record |
| | NHTSA | DTNH2285-C-07225 | 24,990 | Evaluation—child safety restraints |
| | NHTSA | DTNH2282-C-07393 | 20,000 | Exploratory analysis—accident data |
| | | | **113,397** | |
| **North Carolina A&T State University** | RSPA | DTRS5683-C-00042 | **800** | Total factor productivity trans. analysis |
| **North Carolina State University** | RSPA | DTRS5681-C-00002 | 100,000 | Tire/pavement interaction |
| | RSPA | DTRS5683-C-00043 | 55,000 | Design/construction of bridges |
| | | | **155,000** | |
| **North Dakota State University** | UMTA | ND-11-0001* | **51,420** | Management training courses |
| **Northwestern University** | NHTSA | DTNH2285-C-05120 | 24,555 | Training for accident reconstructionists |
| | NHTSA | DTNH2285-C-15401 | 510,337 | Child safety seat usage project |
| | NHTSA | DTNH2285-Z-05109 | 41,676 | Seminar for traffic law enforcement |
| | NHTSA | DTNH2285-Z-05018 | 9,809 | Baker award for achievements |
| | NHTSA | DTNH2283-C-07276 | 14,591 | Deterrence value of alt. sanctions for DWI |
| | | | **600,968** | |
| **Ohio University** | FAA | DTFA0183-C-10007 | 5,530 | Industrial, scientific, medical study |
| | FAA | DTFA0183-C-20025 | 117,951 | Engineering, technical services |
| | RSPA | DTRS5783-C-00097 | 129,984 | Research support |
| | RSPA | DTRS5785-C-00063 | 611,323 | Modernize FAA ATC system |
| | | | **864,788** | |
| **Ohio State University** | UMTA | OH-11-0007* | **49,876** | Eval. desirability of transit deregulation |
| **Oklahoma, University of** | FHWA | HP&R/NCHRP Funds | 31,120 | Elastomeric expansion of bridge bearings |
| | FAA | DTFA0280-C-80001 | 2,210,717 | Management training/instruction |
| | FAA | DTFA0282-D-82005 | 6,067,832 | Air traffic recovery assistance |
| | FAA | DTFA0285-D-85047 | 13,516,838 | Air traffic training |
| | FAA | DTFA0985-F-30760 | 49,500 | Mgt. training |
| | | | **21,876,007** | |

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## AWARDS BY UNIVERSITY AND TITLE OF CONTRACT/GRANT—*continued*

| *University* | *DOT Admin.* | *Contract Number* | *Contract Amount* | *Short Contract Title* |
|---|---|---|---|---|
| **Oklahoma City Community College** | FAA | DTFA0284-D-84037 | $ 17,439 | Computer literacy training |
| **Oklahoma State University** | FAA | DTFA0285-D-85116 | 15,000 | Chemical analysis |
| **Pennsylvania, University of** | UMTA | PA-11-0032* | 80,106 | Deregulation of public mobility services |
| | NHTSA | DTNH2282-C-07187 | 60,316 | Biomechanics of head injury |
| | | | 140,422 | |
| **Pennsylvania State University** | FHWA | DTFH6185-C-00111 | 172,861 | Asphalt behavior at low service temps. |
| | FHWA | DTFH6181-C-00090 | 3,004 | Prediction methods for changes in pavement friction |
| | FAA | DTFA0184-C-00053 | 15,000 | Use of acoustical emissions |
| | FHWA | HP&R/NCHRP Funds | 44,628 | Dev. of storm altas |
| | | | 235,493 | |
| **Pittsburgh, University of** | FHWA | HP&R/NCHRP Funds | 174,985 | Value iteration program—actuated signals |
| **Princeton University** | FAA | DTFA0382-C-00046 | 5,863 | Task order contract |
| **Puerto Rico, University of** | UMTA | PR-11-0005* | 65,809 | Microcomputers in study of pop. trends |
| **Purdue University** | FHWA | HP&R/NCHRP Funds | 36,000 | Concrete I-beam sections |
| | FHWA | | 25,000 | Overlay design for rigid pavements |
| | FHWA | | 7,540 | Layer coefficients |
| | FHWA | | 22,110 | Image analysis—highway materials |
| | | | 90,650 | |
| **Rensselaer Polytechnic Institute** | UMTA | NY-11-0038* | 42,997 | Transit safety study |
| | MARAD | DTMA9185-C-50119 | 135,429 | Decision support to pilots, et al on watch |
| | | | 178,426 | |
| **Rhode Island, University of** | USCG | DTCG3985-C-00190 | 8,000 | Technical services |
| **Rutgers University** | FHWA | HP&R/NCHRP Funds | 54,087 | Repair of bridge deck structures |

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## AWARDS BY UNIVERSITY AND TITLE OF CONTRACT/GRANT—*continued*

| *University* | *DOT Admin.* | *Contract Number* | *Contract Amount* | *Short Contract Title* |
|---|---|---|---|---|
| **South Alabama, University of** | USCG | DTCG3985-C-00198 | $ **24,413** | Housing for cadets |
| **Syracuse University** | RSPA | DTRS5681-C-00028 | **5,000** | Shipper mode choice in rural areas |
| **Texas, University of (Austin)** | FHWA | DTFH6185-C-00174 | 137,494 | Hi strength bolts for bridges |
| | FHWA | DTFH6182-C-00007 | 96,403 | Study in pavement mgt. metal culverts |
| | FHWA | HP&R/NCHRP Funds | 60,000 | Candidate toll roads |
| | | | 60,000 | Rigid pavement data base |
| | | | 65,950 | Load transfer across joints |
| | | | 80,000 | Thin bonded overlay implementation |
| | | | 50,000 | Eval. strength precast girder |
| | | | 100,000 | Eval. density in asphalt mixtures |
| | | | 43,500 | Shaft retaining walls |
| | | | 55,000 | Eval./training—drum mix plants |
| | | | 100,000 | Fatigue strength study |
| | | | 25,000 | Alkali-aggregate reaction in concrete |
| | | | 73,500 | Resistance of anchor bolts to fatigue |
| | | | 50,000 | Strategies for bridge replacement |
| | | | 75,000 | Longer/wider trucks study |
| | | | 60,000 | Candidate toll roads |
| | | | 59,000 | Analysis—curved steel girder units |
| | | | **1,190,847** | |
| **Texas, University of (Dallas)** | NHTSA | DTNH2285-C-07253 | **99,257** | Increase use of safety belts |

## AWARDS BY UNIVERSITY AND TITLE OF CONTRACT/GRANT—*continued*

| *University* | *DOT Admin.* | *Contract Number* | *Contract Amount* | *Short Contract Title* |
|---|---|---|---|---|
| **Texas A&M University** | MARAD | DTMA9185-C-50120 | $ 49,768 | Study—liquid sloshing loads |
| | NHTSA | DTNH2283-C-07158 | 135,345 | Establish-operate PSU—S. Texas |
| | NHTSA | DTNH2283-C-07153 | 95,345 | Establish-operate PSU—Arkansas |
| | FHWA | DTFH6185-C-00083 | 121,322 | Prediction of equivalent axle loads |
| | FHWA | DTFH6185-C-00101 | 243,606 | Heavy vehicle impact forces |
| | FHWA | DTFH6185-C-00129 | 167,346 | Rollover caused by concrete barriers |
| | FHWA | DTFH6180-C-00040 | 99,000 | Skid test/calibration services |
| | FHWA | DTFH6181-C-00080 | 54,191 | Second generation of sulphex binders |
| | FHWA | DTFH6182-C-00074 | 19,329 | Properties of asphalt-rubber paving mats |
| | FHWA | HP&R/NCHRP Funds | 63,000 | Asphalt concrete mixtures |
| | | | 80,500 | Pavement evaluation system improvements |
| | | | 63,000 | Design of ACP overlays on concrete pavements |
| | | | 50,000 | Stable foundations for hwy. RR grade crossings |
| | | | 65,000 | Predicting load equivalencies |
| | | | 50,000 | Multiple seal cost design and construction |
| | | | 5,500 | Automating truck tire pressure data collection |
| | | | 150,000 | Vehicle downsizing and roadside safety hardware |
| | | | 82,000 | Project completion time and cost overruns |
| | | | 69,000 | Air quality modeling |
| | | | 71,000 | Vehicle emission from roadways |
| | | | 10,019 | Fabrics under base courses |
| | | | 47,000 | Consolidation of continuously reinforced concrete |
| | | | 95,000 | Overhead vehicle sensor system |
| | | | 45,000 | Use of fly overs and grade-separated ramps |
| | | | 95,000 | Demo of exclusive truck facilities |
| | | | 50,000 | Guardrails—low fill bridge length culverts |
| | | | 59,382 | Small sign support analysis |
| | | | 50,000 | T5 bridge rail to redirect buses/trucks |
| | | | 60,000 | Energy absorbing traffic rail |
| | | | 105,000 | Traffic control for construction operations |
| | | | 20,500 | MUTCD work zone traffic control |
| | | | 97,000 | Longer/wider trucks on Texas hwy. system |
| | | | 84,000 | Travel time and accident costs for hwy. projects |
| | | | 73,359 | Analysis accident rates |
| | | | 84,000 | Allocation of construction funds |
| | | | 158,000 | Automated system for technical info |
| | | | 2,867,512 | |

## AWARDS BY UNIVERSITY AND TITLE OF CONTRACT/GRANT—*continued*

| *University* | *DOT Admin.* | *Contract Number* | *Contract Amount* | *Short Contract Title* |
|---|---|---|---|---|
| **Tulane University** | FHWA | HP&R/NCHRP Funds | **$ 74,057** | Prestressed concrete/steel beams for bridge widening |
| **Utah, University of** | FAA | DTFA0282-D-82065 | **2,743** | Laboratory analysis |
| **Vanderbilt University** | FHWA | HP&R/NCHRP Funds | **70,000** | Metal tube crash cushion |
| **Virginia, University of** | RSPA | DTRS5785-C-00007 | 124,971 | Safety system optimization model |
| | RSPA | DTRS5785-C-00103 | 10,000 | Vehicle crashworthiness |
| | | | **134,971** | |
| **Virginia Polytechnic Institute and State University** | UMTA | VA-11-0015* | 79,012 | Effect of employee attitude and productivity |
| | MARAD | DTMA9185-C-50121 | 32,108 | Analysts of theory re induced hull pressures |
| | NHTSA | DTNH2285-C-07301 | 50,000 | Promoting safety belt use |
| | | | **161,120** | |
| **Washington, University of** | FHWA | HP&R/NCHRP Funds | 6,664 | Utilization of sewage sludge |
| | FHWA | | 100,000 | Monitoring of calcium magnesium acetate |
| | MARAD | DTMA9185-C-50122 | 50,000 | Accuracy control variation merging equations |
| | | | **156,664** | |
| **Wayne State University** | NHTSA | DTNH2283-D-27019 | **115,000** | Dev./analysis biomedical data |
| **Webb Institute of Naval Architecture** | MARAD | DTMA9185-C-50123 | **28,786** | Arctic operation requirements for ship mach. sys. |
| **West Virginia University** | FHWA | DTFH6185-C-00113 | **90,116** | Low volume bridges |
| **Worcester Polytechnic Institute** | USCG | DTCG3985-A-80196 | **17,082** | Marine fire research |
| **Yosemite College** | USCG | DTCG3284-C-00007 | **160,245** | Training—criminal justice |

*Denotes Grant

# SECTION III

## SUMMARY BY STATES

## SUMMARY BY STATES

| *State/University* | *Total FY 1985 Obligations* |
|---|---|
| **1. ALABAMA** | |
| Alabama A&M University | $ 66,893 |
| Auburn University | 184,323 |
| Montevallo, University of | 286,035 |
| South Alabama, University of | 24,413 |
| | **$ 561,664** |
| **2. ALASKA** | |
| Alaska, University of | **$ 18,952** |
| **3. ARIZONA** | |
| Arizona, University of | $ 74,966 |
| Arizona State University | 62,127 |
| | **$ 137,093** |
| **4. ARKANSAS** | |
| Arkansas, University of | **$ 32,182** |
| **5. CALIFORNIA** | |
| California, University of/Berkeley | $ 108,052 |
| California, University of/Irvine | 15,900 |
| California, University of/Los Angeles | 277,242 |
| California, University of/San Diego | 110,000 |
| California State University/Long Beach | 74,434 |
| California State University/San Diego | 26,264 |
| Yosemite College | 160,245 |
| | **$ 772,137** |
| **6. COLORADO** | |
| Colorado, University of/Denver | **$ 56,450** |
| **7. CONNECTICUT** | |
| Connecticut, University of | **$ 10,740** |
| **8. DISTRICT OF COLUMBIA** | |
| American University | $ 80,420 |
| Catholic University | 80,387 |
| George Washington University | 49,700 |
| Howard University | 200,000 |
| | **$ 410,507** |
| **9. FLORIDA** | |
| Central Florida, University of | $ 50,000 |
| Embry Riddle Aeronautical University | 39,900 |
| Florida, University of | 23,168 |
| Florida State University | 713,794 |
| | **$ 826,862** |

## SUMMARY BY STATES—*continued*

| *State/University* | *Total FY 1985 Obligations* |
|---|---|
| **10. GEORGIA** | |
| Georgia, University of | $ 22,494 |
| Georgia Institute of Technology | 79,022 |
| Georgia State University | 9,762 |
| | **$ 111,278** |
| **11. ILLINOIS** | |
| Bradley University | $ 8,158 |
| Illinois, University of/Champaign | 428,338 |
| Illinois, University of/Chicago | 36,631 |
| Illinois, University of/Urbana | 226,467 |
| Northwestern University | 600,968 |
| | **$ 1,300,562** |
| **12. INDIANA** | |
| Indiana University/Indianapolis | $ 665,933 |
| Purdue University | 90,650 |
| | **$ 756,583** |
| **13. IOWA** | |
| Iowa, University of | **$ 49,522** |
| **14. KANSAS** | |
| Kansas, University of | $ 464,362 |
| Kansas State University | 149,512 |
| | **$ 613,874** |
| **15. KENTUCKY** | |
| Kentucky, University of | **$133,000** |
| **16. LOUISIANA** | |
| Dillard University | $ 55,000 |
| Louisiana State University | 48,782 |
| Tulane University | 74,057 |
| | **$ 177,839** |
| **17. MARYLAND** | |
| Maryland, University of | $ 143,704 |
| Morgan State University | 45,000 |
| | **$ 188,704** |
| **18. MASSACHUSETTS** | |
| Lowell, University of | $ 35,000 |
| Massachusetts Institution of Technology | 550,832 |
| Worcester Polytechnic Institute | 17,082 |
| | **$ 602,914** |

## SUMMARY BY STATES—*continued*

| *State/University* | *Total FY 1985 Obligations* |
|---|---|
| **19. MICHIGAN** | |
| Michigan, University of | $ 1,423,550 |
| Wayne State University | 115,000 |
| | **$ 1,538,550** |
| **20. MISSISSIPPI** | |
| Mississippi State University | **$ 50,689** |
| **21. NEBRASKA** | |
| Nebraska, University of | **$ 9,950** |
| **22. NEW HAMPSHIRE** | |
| Dartmouth College | **$ 438,513** |
| **23. NEW JERSEY** | |
| Princeton University | $ 5,863 |
| Rutgers University | 54,087 |
| | **$ 59,950** |
| **24. NEW MEXICO** | |
| New Mexico State University | **$ 157,208** |
| **25. NEW YORK** | |
| Columbia University | $ 79,000 |
| Rensselaer Polytechnic Institute | 178,426 |
| Syracuse University | 5,000 |
| Webb Institute of Naval Architecture | 28,786 |
| | **$ 291,212** |
| **26. NORTH CAROLINA** | |
| North Carolina, University of | $ 113,397 |
| North Carolina A&T State University | 800 |
| North Carolina State University | 155,000 |
| | **$ 269,197** |
| **27. NORTH DAKOTA** | |
| North Dakota State University | **$ 51,420** |
| **28. OHIO** | |
| Case Western Reserve University | $ 97,000 |
| Central State University | 80,581 |
| Dayton, University of | 121,272 |
| Ohio University | 864,788 |
| Ohio State University | 49,876 |
| | **$ 1,213,517** |

## SUMMARY BY STATES—*continued*

| *State/University* | *Total FY 1985 Obligations* |
|---|---|
| **29. OKLAHOMA** | |
| Cameron University | $ 1,262,766 |
| Oklahoma, University of | 21,875,997 |
| Oklahoma City Community College | 17,439 |
| Oklahoma State University | 15,000 |
| | **$23,171,202** |
| **30. PENNSYLVANIA** | |
| Carnegie Mellon University | $ 25,000 |
| Drexel University | 24,600 |
| Lafayette College | 40,000 |
| Lehigh University | 270,118 |
| Pennsylvania, University of | 140,422 |
| Pennsylvania State University | 235,493 |
| Pittsburgh, University of | 174,985 |
| | **$ 810,730** |
| **30. PENNSYLVANIA** | |
| Carnegie Mellon University | $25,000 |
| Drexel University | 24,600 |
| Lafayette College | 40,000 |
| Lehigh University | 270,118 |
| Pennsylvania, University of | 140,422 |
| Pennsylvania State University | 235,493 |
| Pittsburgh, University of | 174,985 |
| | **$ 810,730** |
| **31. PUERTO RICO** | |
| Puerto Rico, University of | **$ 65,809** |
| **32. RHODE ISLAND** | |
| Rhode Island, University of | **$ 8,000** |
| **33. TENNESSEE** | |
| East Tennessee State University | $ 25,131 |
| Vanderbilt University | 70,000 |
| | **$ 95,131** |
| **34. TEXAS** | |
| Texas, University of/Austin | $ 1,190,847 |
| Texas, University of/Dallas | 99,257 |
| Texas A&M University | 2,867,512 |
| | **$ 4,157,616** |
| **35. UTAH** | |
| Utah, University of | **$ 2,743** |

## SUMMARY BY STATES—*continued*

| *State/University* | *Total FY 1985 Obligations* |
|---|---|
| **36. VIRGINIA** | |
| Virginia, University of | $134,971 |
| Virginia Polytechnic Institute and State University | 161,120 |
| | **$ 296,091** |
| **37. WASHINGTON** | |
| Washington, University of | **$156,664** |
| **38. WEST VIRGINIA** | |
| West Virginia University | **$90,116** |

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