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**U.S. Department of  
Transportation**

Office of the Secretary  
of Transportation

# FY 1984 DOT Awards to Academic Institutions

FILE COPY

G.K. MEGERIAN

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University Research  
Program

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

DOT/OST/P-34/85/025  
August 1985

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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 1984.  <p style="text-align: center;"><u>TABLE OF CONTENTS</u></p> Summary of Contract/Grant Awards to Universities  SECTION I - Awards by agency within DOT and by university  SECTION II - Awards by university and title of the contract/grant  SECTION III - Awards by state and university			
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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.

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 1984. Total obligations amounted to more than \$30 million, including approximately \$5 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.

A handwritten signature in cursive script that reads "Louis W. Roberts".

Louis W. Roberts  
Director



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**DEPARTMENT OF TRANSPORTATION**  
**SUMMARY OF CONTRACT/GRANT AWARDS TO UNIVERSITIES**

*Fiscal Year Obligations in Thousands*

	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
OST	\$ 582	\$ 3,045	\$ 4,311	\$ 7,367	\$ 4,813	\$ 3,581	\$ 4,152	*	*	*	*	\$ 109	\$ 0
USCG	1,445	651	1,022	758	621	633	614	\$ 558	\$ 373	\$ 600	\$ 75	495	510
FAA	1,966	736	3,432	3,806	3,199	2,863	2,864	3,036	2,601	2,762	13,677	16,659	13,138
FIHWA	1,438	2,283	3,979	2,706	7,127	10,993	10,102	9,128	9,282	9,562	6,645	7,275	9,432
FRA	589	719	328	795	2,018	887	309	477	258	147	20	0	170
NHTSA	3,515	4,408	4,497	5,029	4940	6,961	6,334	3,651	3,145	3,613	2,057	2,473	2,862
UMTA	3,898	3,610	3,750	2,426	3,197	2,851	3,497	2,681	2,271	1,872	2,046	1,507	798
MARAD	---	---	---	---	---	---	---	---	---	---	288	530	1,088
RSPA	---	---	---	---	---	---	---	5,218	4,862	4,368	2,675	4,578	2,386
<b>Totals</b>	<b>\$13,433</b>	<b>\$15,452</b>	<b>\$21,299</b>	<b>\$22,887</b>	<b>\$25,887</b>	<b>\$28,769</b>	<b>\$27,872</b>	<b>\$24,749</b>	<b>\$22,792</b>	<b>\$22,924</b>	<b>\$27,483</b>	<b>\$33,517</b>	<b>\$30,384</b>

NOTE: Fiscal Year 1984 data for the Federal Highway Administration include direct obligations of \$4,131,673 and \$5,300,319 indirect 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

UNIVERSITY OF CALIFORNIA

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**UNITED STATES COAST GUARD**

<i>University</i>	<i>City</i>	<i>State</i>	<i>Contract Number</i>	<i>Contract Amount</i>	<i>Short Contract Title</i>
Connecticut, University of	Storrs	CT	DTCCG3984-C-80108	\$ 5,901	Sea grant trainee research system
Dartmouth College	Hanover	NH	DTCCG6079-C-1948	1,286	ADP Timesharing Service
			DTCCG3983-C-00831	<u>237,910</u> <u>239,196</u>	ADP Timesharing Service
Illinois, University of	Urbana	IL	DTCCG2384-C-20018	122,947	Fatigue characterization of fab. ship details
Indiana University	Bloomington	IN	DTCCG3984-C-00105	2,038	Workshop - teacher effectiveness
South Alabama, University of	Mobile	AL	DTCCG3984-C-00053	20,168	Housing - cadet training program
Yosemite College	Modesto	CA	DTCCG3284-C-00007	120,086	Training - criminal justice

**UNITED STATES COAST GUARD - TOTAL**

**\$510,336**

**FEDERAL AVIATION ADMINISTRATION**

University	City	State	Contract Number	Contract Amount	Short Contract Title
Cameron University	Lawton	OK	DTFA0270-AC-2179	\$1,560,570	Mgmt. training facilities w/services
Central State University	Wilberforce	OH	DTFA0184-C-00023	100,000	Airport pavement stabilization systems
Drexel University	Philadelphia	PA	DTFA0383-C-00070	22,463	Training courses
Embry Riddle Aero. University	Orlando	FL	DTFA0384-C-00003	69,365	Training program
North Dakota, University of	Grand Forks	ND	DTFA0283-C-83200	24,505	Curriculum review
Ohio University	Athens	OH	DTFA0181-C-20004 DTFA0181-C-20101 DTFA0182-C-10050 DTFA0183-C-20025	7,488 7,611 34,227 205,301 254,627	Supplemental funding - antenna specs Engineering and technical services Localizer critical area requirements Engineering and technical services
Oklahoma, University of	Norman	OK	DTFA0280-C-80001 DTFA0278-C-8560 DTFA0282-D-82005	1,374,881 466,693 9,000,034 10,841,608	Management training services Predevelopmental training Air traffic training support
Oklahoma City Community College	Oklahoma City	OK	DTFA0284-D-84037	11,239	Computer literacy training
Pennsylvania State University	University Park	PA	DTFA0184-C-00053	25,000	Use of acoustical emissions
Princeton University	Princeton	NJ	DTFA0382-C-00046	184,698	Air traffic control performance
Texas A&M University	College Station	TX	DTFA0183-C-30076	39,061	Airport pavements study
Utah, University of	Salt Lake City	UT	DTFA0282-D-82065	4,864	Laboratory analysis

**FEDERAL AVIATION ADMINISTRATION - TOTAL**

**\$13,138,000**

FEDERAL HIGHWAY ADMINISTRATION - DIRECT OBLIGATIONS

University	City	State	Contract Number	Contract Amount	Short Contract Title
Auburn University	Auburn	AL	DTFH6183-C-00030	\$ 9,871	Coal-based synthetic asphalt
Colorado State University	Ft. Collins	CO	DTFH6183-C-00018	27,062	Bridge flutter and buffeting
Florida, University of	Gainesville	FL	DTFH6183-C-00133 DTFH6180-C-00072	90,000 11,276 <u>101,276</u>	Arterial analysis - maint. and support Traffic signal timing
Georgia, University of	Athens	GA	DTFH6183-C-00147	16,409	CMA manufacture
Georgia Institute of Technology	Atlanta	GA	DTFH6181-C-00034	7,800	High performance coating systems
Iowa State University	Ames	IA	DTFH6184-C-00111	247,615	Use of vane probe for foundation design
Johns Hopkins University	Baltimore	MD	DTFH6182-F-10128	219,000	Computer time-sharing services
Lehigh University	Bethlehem	PA	DTFH6183-C-00091 FHWA0011-9448	100,000 6,690 <u>106,690</u>	Structural evaluation - bridges Corrosion fatigue - bridge steel
Massachusetts Institute of Technology	Cambridge	MA	DTFH6184-C-00094	229,563	Cost analysis new pavement projects
Michigan, University of	Ann Arbor	MI	DTFH6182-C-00054 DTFH6182-C-00019 DTFH6183-C-00123	40,791 19,591 48,620 <u>109,002</u>	Impact of geometric features on track safety Side friction on curves Road roughness profiling
New Mexico State University	Las Cruces	NM	DTFH6182-C-00097	97,900	Highway bridge inspection
New York, Polytechnic Institute of	Brooklyn	NY	DTFH6181-C-00100 DTFH6184-C-00113	47,839 155,000 <u>202,839</u>	Tire/pavement noise assessment Hwy. capacity manual/software development
North Carolina, University of	Chapel Hill	NC	DTFH6184-C-00067 DTFH6184-C-00079 DTFH6184-C-00084	118,667 150,000 100,000 <u>368,667</u>	Geometric design for mini-cars Measures for highway safety analysis Correlation/driver and driver's record
Oregon Graduate Center	Beaverton	OR	DTFH6183-C-00112	100,000	Characteristics of electroslag welds

FEDERAL HIGHWAY ADMINISTRATION - DIRECT OBLIGATIONS continued

University	City	State	Contract Number	Contract Amount	Short Contract Title
Pennsylvania State University	University Park	PA	FHWA0011-9591	\$15,707	Pavement service texture
			DTFH6180-C-00049	2,958	Waste water treatment system
			DTFH6181-C-00090	15,700	Changes in pavement friction
			DTFH6184-C-00061	176,009	Cold wet weather pavement patching material
			DTFH6184-C-00078	<u>466,464</u>	Pavement friction study
				<u>676,838</u>	
Purdue University	Lafayette	IN	DTFH6182-C-00035	63,489	Design to prevent pumping in rigid pavement
			DTFH6182-C-00077	<u>14,300</u>	Slope stability program
				<u>77,789</u>	
Southern Methodist University	Dallas	TX	DTFH6184-P-00967	15,000	Second World Conference on Rescue Archaeology
Tennessee, University of	Knoxville	TN	DTFH6180-C-00180	243,899	RR crossing warning devices
Texas A&M University	College Station	TX	FHWA0011-9603	18,699	Functional requirements hwy. safety features
			DTFH6180-C-00040	17,041	Skid test center
			DTFH6180-C-00080	24,000	Sulphex binders
			DTFH6181-C-00102	40,000	Traffic control in work zones
			DTFH6182-C-00051	37,341	Evaluation barrier limit capacity
			DTFH6182-C-00061	20,000	Traffic signal yellow time
			DTFH6184-C-00066	287,599	Asphalt additives
			DTFH6184-C-00069	69,821	Assessment of existing databases
			DTFH6184-C-00051	109,535	Left turn phase sequence in sign network
			DTFH6184-C-00052	72,683	New traffic attention system
			DTFH6184-C-00010	64,050	Maximal bandwidth arterial sign optim. prod.
			DTFH6184-C-00022	<u>92,037</u>	Bridge formula development
			<u>852,806</u>		
Wisconsin, University of	Milwaukee	WI	DTFH6184-C-00095	77,952	Training course

FEDERAL HIGHWAY ADMINISTRATION - DIRECT OBLIGATIONS - TOTAL \$4,131,673

FEDERAL HIGHWAY ADMINISTRATION - INDIRECT OBLIGATIONS - HP&R/NCGRP FUNDS

University	City	State	Contract Amount	Short Contract Title
Alabama, University of	University	AL	\$15,078	Aggregate characteristics - bituminous pavements
Alaska, University of	Fairbanks	AK	55,000	Fish passage through roadway drainage structures
Arizona, University of	Tucson	AZ	47,500 40,000 67,800 <u>35,000</u> 190,300	Field testing sign structures Asphalt concrete mix design evaluation Evaluation of methods to control debonding Optimization of traffic signal change interval
Arizona State University	Tempe	AZ	36,000 44,000 42,000 20,000 142,000	Visual processing and driving safety Light sources for guide signs Left turn signal warrants Information systems
Arkansas, University of	Fayetteville	AR	10,745	Bridge deck surface durability
Auburn University	Auburn	AL	54,284	Asphalt aggregate characteristics & additives
California, University of	Berkeley	CA	20,000 34,000 7,000 28,000 35,000 124,000	Pavement response to dynamic loads Analysis and behavior of hwy. bridges Bicycle trip - making patterns Freeway control for incident conditions Optimizing use of park-and-ride lots
California, University of	Davis	CA	57,000	Behavior of elastomeric bridge bearings
California, University of	Irvine	CA	28,239	Engr. strategies for reconstruction of hways.
California, University of	Los Angeles	CA	80,000	Seismic testing of box girder bridge
California State University	Sacramento	CA	47,000	Performance of thin wall concrete pipes
Case Western Reserve University	Cleveland	OH	70,000 <u>75,000</u> 145,000	Design of concrete bridge decks Weigh-in motion applied to bridge evaluation



FEDERAL HIGHWAY ADMINISTRATION - INDIRECT OBLIGATIONS - HP&R/NCHRP FUNDS - continued

University	City	State	Contract Amount	Short Contract Title
Georgia, University of	Athens	GA	\$14,300	Herbicides for highway use
Illinois, University of	Urbana	IL	40,000	Pavement feedback system
			<u>58,000</u>	Mechanistic design procedures
			<u>98,000</u>	
Kentucky, University of	Lexington	KY	43,400	Composite pavement design methodology
			57,500	Evaluation of sandstone bases and surfaces
			48,000	Stability of asphaltic concrete mixtures
			28,000	Effectiveness of traffic noise barriers
			51,000	Native aggregates for skid resistance
			<u>41,100</u>	Procedures for testing aggregates
			<u>269,000</u>	
Lehigh University	Bethlehem	PA	28,000	I-79 tied arch cracking- Neville Island bridge
Maryland, University of	College Park	MD	60,833	Real-time system for hydrologic analysis
			40,000	Real-time system for hydrologic analysis
			12,150	Storm water mgmt. infiltration structures
			<u>71,510</u>	Relationships between environmental stability of asphalt and composition
			<u>184,493</u>	
Michigan State University	East Lansing	MI	3,700	Management of roadside vegetation
Mississippi State University	Mississippi State	MS	11,802	Utilization of plant growth regulators
			25,000	Accidents in rural no passing zones
			<u>40,502</u>	
			<u>42,044</u>	Analysis of horiz. curved box girder bridges
Montana State University	Bozeman	MT	7,400	Abilities of salmonids to swim through hwy. culverts
Nebraska, University of	Omaha	NE	18,000	Concrete box culvert design
New Mexico State University	Las Cruces	NM	20,000	Bridge deck rehabilitation
North Carolina, University of	Chapel Hill	NC	29,576	Correlation between distress parameters and condition rating
North Carolina State University	Raleigh	NC	34,723	Turfgrass release & growth retardant timing
			<u>34,404</u>	Nondestructive structural evaluation of flexible pavements
			<u>69,127</u>	

FEDERAL HIGHWAY ADMINISTRATION - INDIRECT OBLIGATIONS - HP&R/NCHRP FUNDS - continued

University	City	State	Contract Amount	Short Contract Title
Ohio State University	Columbus	OH	\$35,000	Upgrading low quality aggregates Global positioning system exploitation by OH DOT
			<u>56,081</u>	
			<b>91,081</b>	
Pennsylvania State University	University Park	PA	74,000	Cost effective bridge systems Acoustic emissions study
			<u>30,000</u>	
			<u>104,000</u>	
Purdue University	West Lafayette	IN	8,000	Rapid test method for asphalt content Performance of asphalt pavement mixtures Pore structure of concrete Claims/disputes settlement by arbitration for highway construction Assessment of routine maintenance needs
			31,394	
			29,175	
			11,616	
			<u>42,884</u>	
			<u>123,069</u>	
South Carolina, University of	Columbia	SC	<b>61,453</b>	Flexible pavement overlay design
Texas, University of	Austin	TX	50,000	Reinforcement in concrete Optimum design of bridge girders Two dimensional backwater model Segregation in asphalt mixtures Falling weight deflectometer Condition surveys - overlaid rigid pavements Field compaction of asphalt mixtures Evaluation of testing methods Study of truck lane needs N-D measurement of thickness of pavement layers Production of concrete containing fly ash Resistance of anchor bolts to fatigue Candidate toll roads in hwy. development Effect of tire pressures on flexible & rigid pavements
			80,000	
			34,900	
			30,000	
			131,000	
			116,200	
			33,489	
			70,000	
			65,200	
			50,000	
			<u>46,500</u>	
			<u>50,000</u>	
			<u>50,000</u>	
			<b>872,289</b>	

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	\$200,000	Determination of asphaltic concrete pavement structural properties
			50,000	Prestressed concrete pavement design
			65,000	Specifications of hot mix asphaltic concrete
			50,000	Incorporation of road life data in pavement evaluation
			46,000	Effects of truck tire pressures on flexible pavements
			30,000	Safer road surfaces
			30,000	Overhead vehicle sensor system
			87,033	Characteristics of guide signs
			60,000	Modified type T5 bridge rail to redirect trucks/buses
			40,000	Energy absorbing traffic rail
			46,877	Identification of special use truck traffic
			80,000	Truck lane needs
			45,000	Optimization of large truck transport
			80,000	Evaluation of shoulders on urban freeways
			65,000	Warrants for intersection traffic control
			80,000	Handling traffic in work zones
			76,000	Travel time and accident costs for hwy. project evaluations
65,000	Speed zoning/control			
74,000	Project ranking and allocation of construction funds			
65,000	Freeway data base model			
90,000	Traffic enforcement requirements for hwy. maintenance			
125,000	Improving urban mobility through high occupancy vehicle treatments			
20,000	Film on multi-agency cooperation			
43,038	Storage/retrieval system for technical info.			
1,612,948				
Toledo, University of	Toledo	OH	39,381	Precast concrete box sections
Tulane University	New Orleans	LA	68,000	Instrumentation of Mississippi River bridge
Washington, University of	Seattle	WA	150,000	Elastomeric bearings design - construction
			12,974	Instrumentation of pavement test track
			162,974	

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

<i>University</i>	<i>City</i>	<i>State</i>	<i>Contract Amount</i>	<i>Short Contract Title</i>
Washington State University	Pullman	WA	\$ 16,400 <u>18,000</u> 34,400	Guidelines for cuts in loess soils Guidelines for control of pile driving
West Virginia University	Morgantown	WV	37,505 60,394 <u>32,617</u>	Steel grid decks Non-metric cameras in hwy. maintenance Natural brines as additive to abrasive materials
			67,916 3,000 <u>11,588</u> 213,020	Oil/gas field brines as hwy. deicing agents Oil/gas field brines as hwy. deicing agents Creating wetlands along hways.
Wisconsin, University of	Madison	WI	3,000	Macrometer GPS surveying
Wyoming, University of	Laramie	WY	5,000 <u>40,616</u> 45,616	Corrosion resistance criteria Rural signing
<b>FEDERAL HIGHWAY ADMINISTRATION - INDIRECT OBLIGATIONS - TOTAL</b>			<b><u>\$5,300,319</u></b>	<b><u>HP + R/NCHRP FUNDS</u></b>

**FEDERAL RAILROAD ADMINISTRATION**

University	City	State	Contract Number	Contract Amount	Short Contract Title
Illinois, University of	Champaign	IL	DTFR53-84-C-00036	\$ 70,000	Grain marketing and transportation flow
Iowa State University	Ames	IA	DTFR53-84-C-00033	99,592	Impact of rail grain rates on farmers

**FEDERAL RAILROAD ADMINISTRATION - TOTAL**

**\$169,592**

City	State	Contract Number	Contract Amount	Short Contract Title	
Champaign	IL	DTFR53-84-C-00036	\$ 70,000	Grain marketing and transportation flow	
Ames	IA	DTFR53-84-C-00033	99,592	Impact of rail grain rates on farmers	
<b><u>TOTAL</u></b>				<b><u>\$169,592</u></b>	

**NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION**

<i>University</i>	<i>City</i>	<i>State</i>	<i>Contract Number</i>	<i>Contract Amount</i>	<i>Short Contract Title</i>
Indiana University	Indianapolis	IN	DTNH2282-C-07275 DTNH2281-C-57205	\$732,423 15,000 <u>747,423</u>	Operations of Central Zone Center A Operations of a primary sampling unit
Michigan, University of	Ann Arbor	MI	DTNH2283-C-07187 DTNH2283-C-07095 DTNH2283-C-07005 DTNH2284-C-07198 DTNH2281-C-07416 DTNH2284-C-07338 DTNH2284-D-07080 DTNH2283-D-17019 DOT-HS-9-02209	182,668 134,540 358,348 137,512 2,500 9,000 33,104 70,000 29,900 <u>957,572</u>	Heavy truck dynamic performance Head injury research Advanced anthropomorphic tests FMUSS 108 upgrade Usage of HSRI accident system Usage of UMTRI data system Review of driver models Data on body segments Material catalog
Montevallo, University of	Montevallo	AL	DTNH2283-C-07154	285,000	Operations of primary sampling units
New Mexico, University of	Albuquerque	NM	DTNH2284-C-05051	74,655	Evaluation of alcohol projects
North Carolina, University of	Chapel Hill	NC	DTNH2282-C-07393	10,000	Analysis of accident data files
Northwestern University	Evanston	IL	DTNH2284-C-05116 DTNH2283-C-07276 DTNH2284-C-05004 DTNH2284-Z-05067 DTNH2284-Z-05094 DTNH2284-Z-05095	59,979 135,339 66,976 15,484 13,984 17,734 <u>309,496</u>	Technical assistance for alcohol enforcement Sanctions for DWI DWI enforcement training DWI workshop DWI workshop DWI workshop
Texas A&M University	College Station	TX	DTNH2283-C-07158 DTNH2284-C-25051	132,500 52,804 <u>185,304</u>	Operations of a primary sampling unit Operations of a primary sampling unit
Virginia, University of	Charlottesville	VA	DTNH2284-C-07359	35,000	Safety systems model
Wayne State University	Detroit	MI	DTNH2283-D-27019 DOT-HS-7-01785	138,932 80,300 <u>219,232</u>	Analysis of biomechanical data Injury study DWI program study
Wright State University	Dayton	OH	DTNH2283-C-05150	38,784	

**NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION - TOTAL**

**\$2,862,466**

# URBAN MASS TRANSPORTATION ADMINISTRATION

University	City	State	Grant Number	Grant Amount	Short Grant Title
Benedict College	Columbia	SC	SC-11-0004	\$ 78,500	Construction impacts on mass transit projects
Brandeis University	Waltham	MA	MA-11-0042	42,569	User-side subsidies for transit financing
Iowa, University of	Iowa City	IA	IA-11-0006	74,221	Course in disaggregate mode choice modeling
Kansas, University of	Lawrence	KS	KS-11-0003	57,330	Analysis of census data on transit trips
New York, City University of	New York	NY	NY-11-0034	71,766	Impact of training program on new cab drivers
North Florida, University of	Jacksonville	FL	FL-11-0014	72,110	Effective policy making in transit
Northwestern University	Evanston	IL	IL-11-0031	74,482	Analysis of bus transit accidents
Oklahoma, University of	Norman	OK	OK-11-0005	84,754	Evaluation of bus maintenance systems
Puerto Rico, University of	Mayaguez	PR	PR-11-0004	44,232	Evaluation of transferability of the "Publico" system
Rice University	Houston	TX	TX-11-0017	80,516	Public vs private ownership of transit systems
Rust College	Holly Springs	MS	MS-11-0002	43,000	Elderly/handicapped transit program study
Syracuse University	Syracuse	NY	NY-11-0035	74,539	Financial planning guide - low cost transportation programs
				<b>\$798,019</b>	

**URBAN MASS TRANSPORTATION ADMINISTRATION - TOTAL**

**MARITIME ADMINISTRATION**

<i>University</i>	<i>City</i>	<i>State</i>	<i>Contract Number</i>	<i>Contract Amount</i>	<i>Short Contract Title</i>
California, University of	Berkeley	CA	DTMA9184-C-41012	\$ 44,458	Ship hull ultimate strength models
New York, City University of	New York	NY	DTMA9184-C-41001	39,582	Industrial policy for maritime industry
Dartmouth College	Hanover	NH	MA-81-SAC-10056	37,518	Lease/maintenance computer terminals
Illinois, University of	Urbana	IL	DTMA9184-C-41013	37,245	Yaw/roll control design
Lehigh University	Bethlehem	PA	DTMA9184-C-41002	49,990	Torsional strength of longitudinals in hulls
Massachusetts Institute of Technology	Cambridge	MA	DTMA9184-C-41014 DTMA9184-C-41015 DTMA9184-C-41022	49,955 46,906 49,984 <u>146,845</u>	Sea trials to determine hydrodynamic coef. Impact of tech. changes on U.S. port devel. Port development to serve incineration ships
Michigan, University of	Ann Arbor	MI	DTMA9184-C-41016 DTMA9184-C-41045	49,774 <u>470,000</u> 519,774	Comparison - Japanese vs U.S. shipyard Shipbuilding education program
Stevens Institute of Technology	Hoboken	NJ	DTMA9184-C-41017	38,734	Shiphandling performance predictions
Tennessee, University of	Knoxville	TN	DTMA9184-C-41018	53,623	Revenue sources - inland waterway ports
Washington, University of	Seattle	WA	DTMA9184-C-41019	60,000	Sampling procedures
Webb Institute of Naval Architecture	Glen Cove	NY	DTMA9184-C-41020 DTMA9184-C-41021	39,430 <u>21,020</u> 60,450	Design of stern of single - screw ship Perf. characteristics of superheater

**MARITIME ADMINISTRATION - TOTAL**

**\$ 1,088,219**



**RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION**

<i>University</i>	<i>City</i>	<i>State</i>	<i>Contract Number</i>	<i>Contract Amount</i>	<i>Short Contract Title</i>
Alabama State University	Montgomery	AL	DTRS5683-C-00023	\$184,489	Transit efficiency for inner city minorities
Arizona State University	Tempe	AZ	DTRS5683-C-00001	85,153	Automation of air traffic control
Benedict College	Columbia	SC	DTRS5683-C-00024	143,535	Influence of heavy trucks on pavement
California, University of	Berkeley	CA	DTRS5682-C-00020 DTRS5683-C-00026	5,000 130,000 <u>135,000</u>	Supplemental funding - automated control Artificial intelligence techniques in ATC
California, University of	Irvine	CA	DTRS5683-C-00027	15,493	Safety boat legislation
Dillard University	New Orleans	LA	DTRS5683-C-00030	100,000	Implementation of workshops
Florida Atlantic University	Boca Raton	FL	DTRS5683-C-00033	87,783	Drift prediction
George Washington University	Washington	DC	DTRS5683-C-00002	59,435	Maritime cargo protection
Georgia, University of	Athens	GA	DTRS5683-C-00053	21,494	Teaching adolescents about alcohol
Iowa State University	Ames	IA	DTRS5682-C-00021	73,780	Investment strategies to solve rural bridge problems
Lehigh University	Bethlehem	PA	DTRS5682-C-00013 DTRS5782-C-00014	60,000 30,000 <u>90,000</u>	Fatigue strength - riveted members Corrosion fatigue in pipelines
Massachusetts, University of	Amherst	MA	DTRS5683-C-00038	86,404	Transportation and revitalization downtown
Massachusetts Institute of Technology	Cambridge	MA	DTRS5684-C-00001	160,000	Evaluation of load impact-heavy trucks
Michigan, University of	Ann Arbor	MI	DTRS5683-C-00005	75,744	Upgrading towed vessel safety
Michigan State University	Lansing	MI	DTRS5683-C-00039 DTRS5683-C-00056	70,842 91,630 <u>162,472</u>	Dispersion of oil slick Alcohol impaired driving
North Carolina, University of	Chapel Hill	NC	DTRS5683-C-00041	136	Supplemental funding
North Carolina A&T State University	Greensboro	NC	DTRS5682-C-00023	58,526	Motor carrier regulatory reform

**RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION continued**

<i>University</i>	<i>City</i>	<i>State</i>	<i>Contract Number</i>	<i>Contract Amount</i>	<i>Short Contract Title</i>
North Carolina State University	Raleigh	NC	DTRS5681-C-00002 DTRS5683-C-00043	\$ 100,000 <u>77,823</u> 177,823	Tire/pavement interaction Design/construction of bridges
Northwestern University	Evanston	IL	DTRS5683-C-00055	14,060	Intercity passenger transportation demand
Pennsylvania State University	University Park	PA	DTRS5683-C-00006	79,999	Distress in highway pavements
Purdue University	Lafayette	IN	DTRS5683-C-00047	37,000	Monitoring person-machine systems
Syracuse University	Syracuse	NY	DTRS5681-C-00028	58,699	Shipper mode choice in rural areas
Virginia, University of	Charlottesville	VA	DTRS5681-C-00031	20,000	Public transportation terminals /land use
Washington, University of	Seattle	WA	DTRS5683-C-00007 DTRS5683-C-00009	76,208 <u>200,000</u> 276,208	Foreign competition - a/c mfg. industry Cracks in pipelines
Wayne State University	Detroit	MI	DTRS5683-C-00051	54,156	Cadaveric bone strength
Western Kentucky University	Bowling Green	KY	DTRS5683-C-00052	68,285	Data bank on self-heating of coal

**RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION - TOTAL**

**\$2,385,674**

# SECTION II

AWARDS BY UNIVERSITY  
AND  
TITLE OF CONTRACT/GRANT

1870

1871

1872

1873

**AWARDS BY UNIVERSITY AND TITLE OF CONTRACT /GRANT**

University	DOT Admin.	Contract Number	Contract Amount	Short Contract Title
Alabama, University of	FHWA	HP&R/NCIIRP Funds	\$15,078	Aggregate characteristics - bituminous pavements
Alabama State University	RSPA	DTRS5683-C-00023	184,489	Transit efficiency for inner city minorities
Alaska, University of	FHWA	HP&R/NCNHRP Funds	55,000	Fish passage through roadway drainage structures
Arizona State University	FHWA	HP&R/NCIIRP Funds	47,500	Field testing sign structures
	FHWA		40,000	Asphalt concrete mix design evaluation
	FHWA		67,800	Evaluation of methods to control debonding
	FHWA		35,000	Optimization of traffic signal change interval
			190,300	
Arizona, University of	RSPA	DTRS5683-C-00024	85,153	Automation of air traffic control
	FHWA		36,000	Visual processing and driving safety
	FHWA		44,000	Light sources for guide signs
	FHWA		42,000	Left turn signal warrants
			20,000	Information systems
			227,153	
Arkansas, University of	FHWA	HP&R/NCIIRP Funds	10,745	Bridge deck surface durability
Auburn University	FHWA	DTFH-6183-C-00030 HP&R/NCNHRP Funds	9,781	Coal based synthetic asphalts
	FHWA		54,284	Asphalt aggregate characteristics
			64,065	
Benedict College	RSPA UMTA	DTRS5683-C-00024 SC-11-0004*	143,535 78,500 222,035	Influence of heavy trucks on pavement Construction impacts on mass transit projects
Brandeis University	UMTA	MA-11-0042*	42,569	User-side subsidies for transit financing
California, University of (Berkeley)	MARAD	DTMA9184-C-41012 DTRS5682-C-00020 DTRS5683-C-00026	44,458	Ship hull strength models
	RSPA		5,000	Supplemental funds - automated control
	RSPA		130,000	Artificial intelligence techniques in ATC
	FHWA	HP&R/NCIIRP Funds	20,000	Pavement response to dynamic loads
	FHWA		34,000	Analysis/behavior of highway bridges
	FHWA		7,000	Bicycle trip-making patterns
	FHWA		28,000	Freeway control for incident conditions
		35,000	Optimizing use of park-and-ride lots	
			303,458	
California, University of (Davis)	FHWA	HP&R/NCNHRP Funds	57,000	Behavior of elastomeric bridge bearings

## AWARDS BY UNIVERSITY AND TITLE OF CONTRACT /GRANT

<i>University</i>	<i>DOT Admin.</i>	<i>Contract Number</i>	<i>Contract Amount</i>	<i>Short Contract Title</i>
California, University of (Irvine)	FHWA RSPA	IIP&R/NCIHRP Funds DTRS6183-C-00027	\$ 28,239 <u>15,493</u> 43,732	Engr. strategies for reconstruction of highways Safety boat legislation
California, University of (Los Angeles)	FHWA	HP&R/NCIHRP Funds	80,000	Seismic testing of box girder bridge
California State University	FHWA	IIP&R/NCIHRP Funds	47,000	Performance of thin wall concrete pipes
Cameron University	FAA	DTFA0270-AC-2179	1,560,570	Management training facilities w/services
Case Western Reserve University	FHWA	HP&R/NCIHRP Funds HP&R/NCIHRP Funds	70,000 <u>75,000</u> 145,000	Design of concrete bridge decks Weigh-in motion applied to bridge evaluation
Central State University	FAA	DTFA0184-C-00023	100,000	Airport pavement stabilization systems
Colorado State University	FHWA	DTFH6183-C-00018	27,062	Bridge flutter and buffeting
Connecticut, University of	USCG	DTCG3984-C-80108	5,901	Sea grant trainee research system
Dartmouth College	USCG USCG MARAD	DTCG6079-C-1948 DTCG3983-C-00831 MA-81-SAC-10056	1,286 237,910 37,518 <u>276,714</u>	ADP timesharing service ADP timesharing service Lease/maintenance computer terminals
Dillard University	RSPA	DTRS5683-C-00030	100,000	Implementation of workshops
Drexel University	FAA	DTFA0383-C-00070	22,463	Training courses
Embry Riddle Aero. University	FAA	DTFA0384-C-00003	69,365	Training program
Florida, University of	FHWA FHWA	DTFH6183-C-00133 DTFH6180-C-00072	90,000 <u>11,276</u> 101,276	Arterial analysis - maintenance and support Traffic signal timing
Florida Atlantic University	RSPA	DTRS5683-C-00033	87,783	Drift prediction
George Washington University	RSPA	DTRS5683-C-00002	59,435	Maritime cargo protection
Georgia, University of	RSPA FHWA FHWA	DTRS5683-C-00053 DTFH6183-C-00147 HP&R/NCIHRP Funds	\$ 21,494 16,409 14,300 <u>52,203</u>	Teaching adolescents about alcohol CMA Manufacture Herbicides for highway use

University	DOT Admin.	Contract Number	Contract Amount	Short Contract Title
Georgia Institute of Technology	FHWA	DTFH6181-C-00034	\$7,800	High performance coating systems
Illinois, University of (Champaign)	FRA	DTFR5384-C-00036	70,000	Grain marketing/transportation flow
Illinois, University of (Urbana)	USCG	DTCG2384-C-20018	122,947	Fatigue characterization of fab. ship details
	MARAD	DTMA9184-C-41013	37,245	Yaw/roll control design
Illinois, University of (Urbana)	FHWA	HP&R/NCHRP Funds	40,000	Pavement feedback system
	FHWA	HP&R/NCHRP Funds	58,000	Mechanistic design procedures for PCC pavements
			<u>258,192</u>	
Indiana University (Bloomington)	USCG	DTCG2384-C-00105	2,038	Workshop - teacher effectiveness
Indiana, University of (Indianapolis)	NHTSA	DTNH2282-C-07275	732,423	Operation of zone center A
	NHTSA	DTNH2281-C-57205	15,000	Operation of a primary sampling unit
			<u>747,423</u>	
Iowa, University of	UMTA	IA-11-0006*	74,221	Course in disaggregate mode choice modeling
Iowa State University	FHWA	DTFH6184-C-00111	247,615	Use of vane probe for foundation design
	RSPA	DTRS5682-C-00021	73,780	Investment strategies to solve rural bridge problems
	FRA	DTFR5384-C-00033	99,592	Impact of rail grain rates on farmers
			<u>420,987</u>	
Johns Hopkins University	FHWA	DTFH6182-F-10128	219,000	Computer time-sharing services
Kansas, University of	UMTA	KS-11-0003*	57,330	Analysis of census data on transit trips
Kentucky, University of	FHWA	HP&R/NCHRP Funds	43,400	Composite pavement design methodology
	FHWA		57,500	Evaluation of sandstone bases and surfaces
	FHWA		48,000	Stability of asphaltic concrete mixtures
	FHWA		28,000	Effectiveness of traffic noise barriers
	FHWA		51,000	Native aggregates for skid resistance
	FHWA		41,100	Procedures for testing aggregates
			<u>269,000</u>	
Lehigh University	RSPA	DTRS5682-C-00013	60,000	Fatigue strength - riveted members
	RSPA	DTRS5682-C-00014	30,000	Corrosion fatigue in pipelines
	MARAD	DTMA9184-C-41002	49,990	Torsional strength of longitudinal in hulls
	FHWA	DTFH6183-C-00091	100,000	Structural evaluation - bridges
	FHWA	FHWA0011-9448	6,690	Corrosion fatigue characteristics
	FHWA	HP&R/NCHRP Funds	28,000	I-79 tied arch cracking - Neville Island bridge
			<u>274,680</u>	

\*Denotes grant, not contract

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

University	DOT Admin.	Contract Number	Contract Amount	Short Contract Title
Maryland, University of	FHWA	HIP&R/NCIHRP Funds	\$60,833 40,000 12,150 <u>71,510</u> 184,493	Real-time system for hydrologic analysis
	FHWA			Real-time system for hydrologic analysis
	FHWA			Storm water mgt. infiltration structures
	FHWA			Relationships between envir. stability of asphalt & composition
Massachusetts, University of	RSPA	DTRS5683-C-00038	86,404	Transportation and revitalization downtown
Massachusetts Institute of Technology	RSPA	DTRS5684-C-00001	160,000	Evaluation of load impact - heavy trucks
	MARAD	DTMA9184-C-41014	49,955	Sea trials to determine hydrodynamic coefficient
	MARAD	DTMA9184-C-41015	46,906	Impact of technical changes on U.S. port development
	MARAD	DTMA9184-C-41022	49,984	Port development to serve incinerator ships
	FHWA	DTFH6184-C-00094	<u>229,563</u> 536,408	Cost analysis new pavement projects
	Michigan, University of	RSPA	DTRS5683-C-00005	75,744
MARAD		DTMA9184-C-41016	49,774	Comparison - Japanese vs. U.S. shipyard
MARAD		DTMA9184-C-41045	470,000	Shipbuilding education program
FHWA		DTFH6182-C-00054	40,791	Impact of geometric features on track safety
FHWA		DTFH6183-C-00019	19,591	Side friction on curves
FHWA		DTFH6183-C-00123	48,620	Road roughness profiling
NIITSA		DTNH2283-C-07187	182,668	Heavy truck dynamic performance
NIITSA		DTNH2283-C-07095	134,540	Head injury research
NIITSA		DTNH2283-C-07005	358,348	Advanced anthropomorphic tests
NIITSA		DTNH2284-C-07198	137,512	FMUSS 108 upgrade
NIITSA		DTNH2281-C-07416	2,500	Usage of HSRI accident system
NIITSA		DTNH2284-C-07338	9,000	Usage of UMTRI data system
NIITSA		DTNH2284-D-07080	33,104	Review of driver models
NIITSA		DTNH2283-D-17019	70,000	Data on body segments
NIITSA		DOT-IIS-9-02209	29,900	Material catalog
				<u>1,659,092</u>
Michigan State University	FHWA	HIP&R/NCIHRP Funds	3,700 11,802 25,000 70,842 91,630 <u>202,974</u>	Management of roadside vegetation
	FHWA			Utilization of plant growth regulations
	FHWA			Accidents in rural no passing zones
	RSPA			Dispersion of oil slick
RSPA	DTRS5683-C-00039			Alcohol impaired driving
RSPA	DTRS5683-C-00056			
Mississippi State University	FHWA	HP&R/NCIHRP Funds	42,044	Analysis of horizontal curved box girder bridges
Montana State University	FHWA	HP&R/NCIHRP Funds	7,400	Abilities of salmonids to swim through hwy. culverts



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

University	DOT Admin.	Contract Number	Contract Amount	Short Contract Title
Montevallo, University of	NHTSA	DTNH2283-C-07154	\$285,000	Operation of primary sampling units
Nebraska, University of	FHWA	HP&R/NCHRP Funds	18,000	Concrete box culvert design
New Mexico, University of	NHTSA	DTNH2284-C-05051	74,655	Evaluation of alcohol projects
New Mexico State University	FHWA FHWA	HP&R/NCHRP Funds DTFH6182-C-00097	20,000 97,900 <u>117,900</u>	Bridge deck rehabilitation Highway bridge inspection
New York, City University of	UMTA	NY-11-0034*	71,766	Impact of training program on new cab drivers
New York, Polytechnic Institute of	FHWA FHWA	DTFH6181-C-00100 DTFH6184-C-00113	47,839 155,000 <u>202,839</u>	Tire/pavement noise assessment Highway capacity manual/software development
North Carolina, University of	RSPA NHTSA FHWA FHWA FHWA FHWA	DTRS5683-C-00041 DTNH2282-C-07393 DTFH6184-C-00067 DTFH6184-C-00079 DTFH6184-C-00084 HP&R/NCHRP Funds	136 10,000 118,667 150,000 100,000 <u>29,576</u> 408,379	Supplemental funding Analysis of accident data files Geometric design for mini-cars Measures for highway safety analysis Correlation/driver and driver's record Correlation between distress parameters and condition rating
North Carolina A&T State University	RSPA	DTRS5682-C-00023	58,526	Motor carrier regulatory reform
North Carolina State University	RSPA RSPA FHWA FHWA	DTRS5681-C-00002 DTRS5683-C-00043 HP&R/NCHRP Funds HP&R/NCHRP Funds	100,000 77,823 34,723 <u>34,404</u> 246,950	Tire/pavement interaction Design/construction of bridges Turf grass release/growth retardant timing Nondestructive structural evaluation of flexible pavements
North Dakota, University of	FAA	DTFA0283-C-83200	24,505	Curriculum review
North Florida, University of	UMTA	FL-11-0014*	72,110	Effective policy making in transit

\*Denotes grant, not contract

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

University	DOT Admin.	Contract Number	Contract Amount	Short Contract Title
North western University	RSPA	DTRS5683-C-00055	\$14,060	Intercity passenger transportation demand
	NHTSA	DTNH2284-C-05116	59,979	Technical assistance for alcohol enforcement
	NHTSA	DTNH2284-C-07276	135,339	Sanctions for DWI
	NHTSA	DTNH2284-C-05004	66,976	DWI enforcement training
	NHTSA	DTNH2284-C-05067	15,484	DWI workshop
	NHTSA	DTNH2284-C-05094	13,984	DWI workshop
	NHTSA	DTNH2284-C-05095	17,734	DWI workshop
	UMTA	IL-11-0031*	74,482	Analysis of bus transit accidents
		<b>398,038</b>		
Ohio University	FAA	DTFA0181-C-20004	7,488	Antenna specs
	FAA	DTFA0181-C-20101	7,611	Engineering and technical services
	FAA	DTFA0182-C-10050	34,227	Localizer critical area requirements
	FAA	DTFA0183-C-20025	205,301	Engineering and technical services
		<b>254,627</b>		
Ohio State University	FHWA	HP&R/NCHRP Funds	35,000	Upgrading low quality aggregates
	FHWA	HP&R/NCHRP Funds	56,081	Global position system exploitation by OH DOT
		<b>91,081</b>		
Oklahoma, University of	FAA	DTFA0280-C-80001	1,374,881	Management training development instruction
	FAA	DTFA0278-AC-8560	466,693	Redevelopmental training
	FAA	DTFA0282-D-82005	9,000,034	Air traffic recovery assistance
	UMTA	OK-11-0005*	84,754	Evaluation of bus maintenance systems
			<b>10,926,362</b>	
Oklahoma City Community College	FAA	DTFA0284-D-84037	11,239	Computer literacy training
	FHWA	DTFH6183-C-00112	100,000	Characteristics of electroslag welds
Pennsylvania State University	FAA	DTFA0184-C-00053	25,000	Use of acoustical emissions
	RSPA	DTRS5683-C-00006	79,999	Distress in highway pavements
	FHWA	FHWA0011-9591	15,707	Pavement service texture
	FHWA	DTFH6180-C-00049	2,958	Waste water treatment system
	FHWA	DTFH6181-C-00090	15,700	Changes in pavement friction
	FHWA	DTFH6184-C-00061	176,009	Cold wet weather pavement patching material
	FHWA	DTFH6184-C-00078	466,464	Pavement friction study
	FHWA	HP&R/NCHRP Funds	30,000	Acoustic emissions study
	HP&R/NCHRP Funds	74,000	Cost effective bridge systems	
		<b>885,837</b>		
Princeton University	FAA	DTFA0382-C-00046	184,698	Air traffic control performance
Puerto Rico, University of	UMTA	PR-11-0004*	44,232	Evaluation of transferability of the "Publico" system

University	DOT Admin.	Contract Number	Contract Amount	Short Contract Title
Purdue University	FHWA	DTFH6182-C-00035	\$63,489	Design to prevent pumping in rigid pavement
	FHWA	DTFH6182-C-00077	14,300	Slope stability program
	FHWA	HP&R/NCHRP Funds	8,000	Test method for asphalt content
	FHWA		31,394	Performance of asphalt pavement mixtures
	FHWA		29,175	Pore structure of concrete
	FHWA		11,616	Claims/disputes settlement by arbitration for hwy. const.
	FHWA		42,884	Assessment of routine maintenance needs
RSPA	DTRS5683-C-00047	37,000	Monitoring person - machine systems	
			<b>237,858</b>	
Rice University	UMTA	TX-11-0017*	80,516	Public vs private ownership of transit systems
Rust College	UMTA	MS-11-0002*	43,000	Elderly/handicapped transit program study
South Alabama, University of	USCG	DTCG3984-C-00053	20,168	Housing - cadet training program
South Carolina, University of	FHWA	HP&R/NCHRP Funds	61,453	Flexible pavement overlay design
Southern Methodist University	FHWA	DTFH6184-P-00967	15,000	Second World Conference on Rescue Archeology
Stevens Institute of Technology	MARAD	DTMA9184-C-41017	38,734	Ship handling performance predictions
Syracuse University	UMTA	NY-11-0035*	74,539	Financial planning guide-low cost transportation prgms.
	RSPA	DTRS5681-C-00028	58,699	Shipper mode choice in rural areas
			<b>133,238</b>	
Tennessee, University of	MARAD	DTMA9184-C-41018	53,623	Revenue sources - inland waterway ports
	FHWA	DTFH6180-C-00180	243,899	RR crossing warning devices
			<b>297,522</b>	
Texas, University of	FHWA	HP&R/NCHRP Funds	50,000	Reinforcement in concrete
	FHWA		80,000	Optimum design of bridge girders
	FHWA		34,900	Two dimensional back water model
	FHWA		30,000	Segregation in asphalt mixtures
	FHWA		131,000	Falling weight deflectometer
	FHWA		116,200	Condition surveys - overlaid rigid pavements
	FHWA		33,489	Field compaction of asphalt mixtures
	FHWA		70,000	Evaluation of testing methods
	FHWA		65,200	Study of truck lane needs
	FHWA		50,000	N-D measurement of thickness of pavement layers
	FHWA		65,000	Production of concrete containing fly ash
	FHWA		46,500	Resistance of anchor bolts to fatigue
	FHWA		50,000	Candidate toll roads in highway development
	FHWA		50,000	Effect of tire pressures of flexible/rigid pavements
			<b>872,289</b>	

\*Denotes grant, not contract

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

University	DOT Admin.	Contract Number	Contract Amount	Short Contract Title
Texas A&M University	NHTSA	DTNH2283-C-07158	\$132,500	Operations of a primary sampling unit
	NHTSA	DTNH2284-C-25051	52,804	Operations of a primary sampling unit
	FAA	DTFA0183-C-30076	39,061	Airport pavements study
	FHWA	FHWA0011-9603	18,699	Functional requirements highway safety features
	FHWA	DTFH6180-C-00040	17,041	Skid test center
	FHWA	DTFH6181-C-00080	24,000	Sulphix binders
	FHWA	DTFH6181-C-00102	40,000	Traffic control in work zones
	FHWA	DTFH6182-C-00051	37,341	Evaluation barrier limit capacity
	FHWA	DTFH6182-C-00061	20,000	Traffic signal yellow time
	FHWA	DTFH6184-C-00066	287,599	Asphalt additives
	FHWA	DTFH6184-C-00069	69,821	Assessment of existing data bases
	FHWA	DTFH6184-C-00051	109,535	Left turn phase sequence in sign network
	FHWA	DTFH6184-C-00052	72,683	New traffic attenuation system
	FHWA	DTFH6184-C-00010	64,050	Maximal bandwidth arterial sign optim. prod.
	FHWA	DTFH6184-C-00022	92,037	Bridge formula development
	FHWA		200,000	Asphaltic concrete pavement structural properties
	FHWA		50,000	Prestressed concrete pavement design
	FHWA		65,000	Specifications of hot mix asphaltic concrete
	FHWA		50,000	Incorporation of road life data in pavement eval. system
	FHWA		46,000	Effects of truck tire pressures on flexible pavements
	FHWA		30,000	Safer road surfaces
	FHWA		30,000	Overhead vehicle sensor system
	FHWA		87,033	Characteristics of guide signs
FHWA		60,000	Type T5 bridge rail to redirect trucks/buses	
FHWA		40,000	Energy absorbing traffic rail	
FHWA		46,877	Identification of special use truck traffic	
FHWA		80,000	Truck lane needs	
FHWA		45,000	Optimization of large truck transport	
FHWA		80,000	Evaluation of shoulders on urban freeways	
FHWA		65,000	Warrants for intersection traffic control	
FHWA		80,000	Handling traffic in work zones	
FHWA		76,000	Travel time and accident costs for highway project evaluation	
FHWA		65,000	Speed zoning/control	
FHWA		74,000	Project ranking and allocation of construction funds	
FHWA		65,000	Freeway data base model	
FHWA		90,000	Traffic enforcement requirements for hwy. maintenance	
FHWA		125,000	Urban mobility thru. high occupancy vehicle treatments	
FHWA		20,000	Film on multi-agency cooperation	
FHWA		43,038	Storage/retrieval system for technical information	
			<b>2,690,119</b>	

}   
 IIP&R/NCIIRP Funds   
 }

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

University	DOT Admin.	Contract Number	Contract Amount	Short Contract Title
Toledo, University of	FHWA	HP&R/NCHRP Funds	\$39,381	Precast concrete box sections
Tulane University	FHWA	HP&R/NCHRP Funds	68,000	Instrumentation of Mississippi River bridge
Utah, University of	FAA	DTFA0282-D-82065	4,864	Lab analysis
Virginia, University of	NHTSA RSPA	DTNH2284-C-07359 DTRS55681-C-00031	35,000 20,000 <u>55,000</u>	Safety systems model Public transportation terminals/land use
Washington, University of	RSPA RSPA MARAD FHWA FHWA	DTRS55683-C-00007 DTRS55683-C-00009 DTMA9184-C-41019 HP&R/NCHRP Funds HP&R/NCHRP Funds	76,208 200,000 60,000 150,000 <u>12,974</u> <u>499,182</u>	Foreign competition - aircraft manufacturing. Cracks in pipelines Sampling procedure Elastomeric bearings design Instrumentation of pavement test track
Washington State University	FHWA FHWA	HP&R/NCHRP Funds HP&R/NCHRP Funds	16,400 <u>18,000</u> <u>34,400</u>	Guidelines for cuts in loess soils Guidelines for control of pile driving
Wayne State University	RSPA NHTSA NHTSA	DTRS55683-C-00051 DTNH2283-D-27019 DOT-HS-7-01785	54,156 138,932 80,300 <u>273,388</u>	Cadaveric bone strength Analysis biomed data Injury study
Webb Institute of Naval Architecture	MARAD MARAD	DTMA9184-C-41020 DTMA9184-C-41021	39,430 <u>21,020</u> <u>60,450</u>	Stern design Characteristics of super heater
West Virginia University	FHWA FHWA FHWA FHWA FHWA	HP&R/NCHRP Funds	37,505 60,394 32,617 67,916 3,000 <u>11,588</u> <u>213,020</u>	Steel grid decks Non-metric cameras in highway maintenance Natural brines as additives to abrasive materials Oil/gas field brines as highway deicing agents Oil/gas field brines as highway deicing agents Creating wetlands along highways.
Western Kentucky University	RSPA	DTRS5683-C-00052	68,285	Data bank on self healing of coal
Wisconsin, University of (Milwaukee)	FHWA	DTFH6184-C-00095	77,952	Training course

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

<i>University</i>	<i>DOT Admin.</i>	<i>Contract Number</i>	<i>Contract Amount</i>	<i>Short Contract Title</i>
Wisconsin, University of (Madison)	FHWA	IIP&R/NCIRP Funds	\$ 3,000	Macrometer GPS surveying
Wright State University	NIITSA	DTNII2283-C-05150	38,784	DWI program study
Wyoming, University of	FHWA FHWA	HP&R/NCIRP Funds HP&R/NCIRP Funds	5,000 40,616 <u>45,616</u>	Corrosion resistance criteria Rural signing
Yosemite College	USCG	DTCCG3284-C-00007	120,086	Training - criminal justice

**SECTION  
III**

**SUMMARY BY STATES**

THE UNIVERSITY OF CHICAGO

1954



## SUMMARY BY STATES

<i>State/University</i>	<i>Total FY 1984 Obligations</i>
<b>1. ALABAMA</b>	
Alabama, University of	\$15,078
Alabama State University	184,489
Auburn University	64,065
Montevallo, University of	285,000
South Alabama, University of	<u>20,168</u>
	<b>\$568,800</b>
<b>2. ALASKA</b>	
Alaska, University of	\$55,000
<b>3. ARIZONA</b>	
Arizona, University of	\$190,300
Arizona State University	<u>227,153</u>
	<b>\$417,453</b>
<b>4. ARKANSAS</b>	
Arkansas, University of	\$10,745
<b>5. CALIFORNIA</b>	
California, University of (Berkeley)	\$303,458
California, University of (Davis)	57,000
California, University of (Irvine)	43,732
California, University of (Los Angeles)	80,000
California State University	47,000
Yosemite College	<u>120,086</u>
	<b>\$651,276</b>
<b>6. COLORADO</b>	
Colorado State University	\$27,062
<b>7. CONNECTICUT</b>	
Connecticut, University of	\$5901
<b>8. DISTRICT OF COLUMBIA</b>	
George Washington University	\$119,435
<b>9. FLORIDA</b>	
Embry Riddle Aeronautical University	\$69,365
Florida, University of	101,276
Florida Atlantic University	87,783
North Florida, University of	<u>72,110</u>
	<b>\$330,534</b>
<b>10. GEORGIA</b>	
Georgia, University of	\$52,203
Georgia Institute of Technology	<u>7,800</u>
	<b>\$60,003</b>

**SUMMARY BY STATES** *continued*

*Total FY 1984  
Obligations*

*State/University*

<b>11. ILLINOIS</b>	
Illinois, University of (Urbana)	\$328,192
Northwestern University	<u>398,038</u>
	<b>\$726,230</b>
<b>12. INDIANA</b>	
Indiana University (Bloomington)	\$2,038
Indiana University (Indianapolis)	747,423
Purdue University	<u>237,858</u>
	<b>\$987,319</b>
<b>13. IOWA</b>	
Iowa, University of	\$74,221
Iowa State University	<u>420,987</u>
	<b>\$495,208</b>
<b>14. KANSAS</b>	
Kansas, University of	\$57,330
<b>15. KENTUCKY</b>	
Kentucky, University of	\$269,000
Western Kentucky University	<u>68,285</u>
	<b>\$337,285</b>
<b>16. LOUISIANA</b>	
Dillard University	\$100,000
Tulane University	<u>68,000</u>
	<b>\$168,000</b>
<b>17. MARYLAND</b>	
Johns Hopkins University	\$219,000
Maryland, University of	<u>184,483</u>
	<b>\$403,483</b>
<b>18. MASSACHUSETTS</b>	
Brandeis University	\$42,569
Massachusetts, University of	86,404
Massachusetts Institute of Technology	<u>536,408</u>
	<b>\$665,381</b>
<b>19. MICHIGAN</b>	
Michigan, University of	\$1,662,092
Michigan State University	202,974
Wayne State University	<u>273,388</u>
	<b>\$2,138,454</b>

**SUMMARY BY STATES *continued***

<i>State/University</i>	<i>Total FY 1984 Obligations</i>
<b>20. MISSISSIPPI</b>	
Mississippi State University	\$42,044
Rust College	<u>43,000</u>
	<b>\$85,044</b>
<b>21. MONTANA</b>	
Montana State University	<b>\$7,400</b>
<b>22. NEBRASKA</b>	
Nebraska, University of	<b>\$18,000</b>
<b>23. NEW HAMPSHIRE</b>	
Dartmouth College	<b>\$276,714</b>
<b>24. NEW JERSEY</b>	
Princeton University	\$184,698
Stevens Institute of Technology	<u>38,734</u>
	<b>\$223,432</b>
<b>25. NEW MEXICO</b>	
New Mexico, University of	\$74,655
New Mexico State University	<u>117,900</u>
	<b>\$192,555</b>
<b>26. NEW YORK</b>	
New York, City University of	\$111,348
New York, Polytechnic Institute of	202,839
Syracuse University	133,238
Webb Institute of Naval Architecture	<u>60,450</u>
	<b>\$507,875</b>
<b>27. NORTH CAROLINA</b>	
North Carolina, University of	\$408,379
North Carolina A&T State University	58,526
North Carolina State University	<u>246,950</u>
	<b>\$713,855</b>
<b>28. NORTH DAKOTA</b>	
North Dakota, University of	<b>\$24,505</b>
<b>29. OHIO</b>	
Case Western Reserve University	\$145,000
Central State University	100,000
Ohio University	254,627
Ohio State University	91,081
Toledo, University of	39,381
Wright State University	<u>38,784</u>
	<b>\$668,873</b>

**SUMMARY BY STATES** *continued*

<i>State/University</i>	<i>Total FY 1984 Obligations</i>
<b>30. OKLAHOMA</b>	
Cameron University	\$1,560,570
Oklahoma, University of	11,169,362
Oklahoma City Communiy College	<u>11,239</u>
	<b>\$12,741,171</b>
<b>31. OREGON</b>	
Oregon Graduate Center	<b>\$100,000</b>
<b>32. PENNSYLVANIA</b>	
Drexel University	\$22,463
Lehigh University	274,680
Pennsylvania State University	<u>885,837</u>
	<b>\$1,182,980</b>
<b>33. PUERTO RICO</b>	
Puerto Rico, University of	<b>\$44,232</b>
<b>34. SOUTH CAROLINA</b>	
Benedict College	\$222,035
South Carolina, University of	<u>61,453</u>
	<b>\$283,488</b>
<b>35. TENNESSEE</b>	
Tennessee, University of	<b>\$297,522</b>
<b>36. TEXAS</b>	
Rice University	\$80,516
Southern Methodist University	15,000
Texas, University of	872,289
Texas A&M University	<u>2,690,119</u>
	<b>\$3,657,924</b>
<b>37. UTAH</b>	
Utah, University of	<b>\$4,864</b>
<b>38. VIRGINIA</b>	
Virginia, University of	<b>\$55,000</b>

**SUMMARY BY STATES** *continued*

<i>State/University</i>	<i>Total FY 1984 Obligations</i>
<b>39. WASHINGTON</b>	
Washington, University of	\$499,182
Washington State University	<u>34,400</u>
	<b>\$533,582</b>
<b>40. WEST VIRGINIA</b>	
West Virginia University	<b>\$213,020</b>
<b>41. WISCONSIN</b>	
Wisconsin, University of (Madison)	\$3,000
Wisconsin, University of (Milwaukee)	<u>77,952</u>
	<b>\$80,952</b>
<b>42. WYOMING</b>	
Wyoming, University of	<b>\$45,616</b>

Accounting 101: The Basics

Account Name	Debit	Credit
Accounts Receivable	100	
Accounts Payable		50
Inventory	200	
Prepaid Insurance	50	
Equipment	300	
Accumulated Depreciation		150
Common Stock		1000
Retained Earnings		250
Revenue		500
Cost of Goods Sold	200	
Salaries Expense	100	
Utilities Expense	20	
Insurance Expense	25	
Depreciation Expense	50	