

LARS Report 091978

Annual Financial Report  
to the University

Fiscal Year 1978

Laboratory for Applications of Remote Sensing  
Purdue University West Lafayette, Indiana 47906 USA  
1978

TABLE 1

LARS RESEARCH FUNDING

July 1, 1977 to June 30, 1978

<u>Project Title</u>	<u>Sponsor</u>	<u>Expenditures</u>
- Research in Remote Sensing of Agriculture, Earth Resources, and the Environment	National Aeronautics and Space Administration	\$ 653,504
- Research in Remote Sensing of Agriculture, Earth Resources, and the Environment	National Aeronautics and Space Administration	504,268
- The Application of Remote Sensing Technology to the Solution of Problems in the Management of Resources in Indiana	National Aeronautics and Space Administration	195,998
- Project to Develop an Operational Forest Resource Information System	National Aeronautics and Space Administration	109,683
- Thermal Behavior of Dispersive Electrodes	New Dimensions in Medicine Corporation	97,622
- Technical Coordination and Implementation of Remote Sensing Experiments for Analogous Vegetative Areas in the U.S. and the Soviet Union	National Aeronautics and Space Administration	76,061
- Optical Detection of Neonatal Jaundice (II)	National Institute of Health, H.E.W.	67,482
- Indiana State University Earth Resources Data Processing Remote Terminal Support	Indiana State University	52,378
- Preprocessing and Analysis of Geophysical Remote Sensing Data	National Science Foundation	50,857
- Mapping of Derelict Mine Land in Southwestern Indiana	Department of National Resources, Division of Reclamation, State of Indiana	49,951
- Visiting Scientist Program	Participants' Sponsors	46,833
- A Study of the Feasibility of Using a Cyber/Icon System as the Nucleus of an Experimental Agriculture Data Center	Control Data Corporation	44,419
- Central American Project	Inter-American Development Bank	43,500
- Synthetic Aperture Radar Data Registration System Study	Wallops Flight Center	33,034
- Wallops Flight Center Earth Resources Data Processing Remote Terminal Support	Wallops Flight Center	8,642
- Digital Processing of Landsat MSS and Topographic Data to Improve Capabilities for Computerized Mapping of Forest Cover Types	National Aeronautics and Space Administration	30,563
- Short Course	Participants' Sponsors	25,000

TABLE 1 Continued

- Ohio River Basin Energy Study	Environmental Protection Agency	18,243
- A Proposal for Goddard Space Flight Center Earth Resources Data Processing Remote Terminal Support	Goddard Space Flight Center	10,344
- A Proposal for Goddard Space Flight Center Earth Resources Data Processing Remote Terminal Support	Goddard Space Flight Center	10,007
- Goddard Space Flight Center Earth Resources Data Processing Remote Terminal Support	Goddard Space Flight Center	3,511
- Conversion of the Brazilian Landsat CCT Format to NASA Landsat CCT Format	U.S. Agency for International Development	8,382
- Technical Assistance for the Implementation of Selected LARSYS Processors in a Bolivian Computer Facility - Phase III	Bolivian ERTS Program	8,218
- Technical Assistance for the Implementation of Selected LARSYS Processors in a Bolivian Computer Facility	U.S. Agency for International Development	3,246
- Digital Agricultural Mapping of the Santa Cruz, Bolivia Integrated Sub-Region (A Follow-On Cooperative Project between the ERTS/Bolivia Program and LARS/Purdue)	ERTS/Bolivia Program	1,928
- Field Measurements of the Spectral Response of Water Bodies for Correlation with Multispectral Classification of LANDSAT MSS Data	South-Central Michigan Planning Council	7,865
- Evaluation of Usefulness of Classified MSS Data in Inventorying Natural Resources in Saudi Arabia	Joint U.S./Saudi Arabian Commission on Economic Cooperation	6,173
- Urban and Natural Resource Classification by Digital Image Processing	U.S. Geological Survey	3,911
- Republic of China	Economic Counselor of the Embassy of the Republic of China	3,245
- Soil Survey of the Winkleman, Arizona Area	Bureau of Land Management	619
- Bureau of Land Management	Bureau of Land Management	599
- Evaluation of Cities Service Minerals Corporation Remote Sensor Data	Cities Service Minerals Corporation	482
		\$2,176,568
TOTAL RESEARCH FUNDING		

TABLE 2

LARS RESEARCH EXPENDITURES

July 1, 1977 to June 30, 1978

Salaries:

Engineering	\$427,801
Agriculture	234,274
Science	53,801
HSSE	<u>12,425</u>

\$ 728,301

Fringe Benefits	\$ 83,796
Overhead	461,540
Computer	636,948
Travel	67,742
Supplies	181,260
Capital	<u>16,981</u>

\$1,448,267

TOTAL RESEARCH EXPENDITURES

\$2,176,568

TABLE 2A

## ENGINEERING RESEARCH EXPENDITURES

July 1, 1977 to June 30, 1978

	<u>EES</u>	<u>CHM</u>	<u>CE</u>	<u>EE</u>	<u>IE</u>	<u>ME</u>	<u>NUCL</u>	<u>IDE</u>	<u>BIOMED</u>	<u>TOTAL</u>
Salaries	\$ 226,816	\$1,685	\$2,708	\$164,912	\$1,166	\$20,196	\$3,250	\$371	\$ 6,697	\$ 427,801
Fringe Benefits	22,765	3	448	18,098	15	1,105	409	21	733	43,597
Overhead	136,486	1,070	1,855	108,694	799	13,292	2,226	254	4,525	269,201
Computer	636,948									636,948
Travel	67,135	18		119		54			416	67,742
Supplies	184,937			147		50	(2,453)		1,763	184,444
Capital	16,981									16,981
Total	\$1,292,068	\$2,776	\$5,011	\$291,970	\$1,980	\$34,697	\$3,432	\$646	\$14,134	\$1,646,714

TABLE 2B

## AGRICULTURE RESEARCH EXPENDITURES

July 1, 1977 to June 30, 1978

	<u>Agronomy</u>	<u>Forestry and Natural Resources</u>	<u>Total</u>
Salaries	\$178,029	\$ 56,245	\$234,274
Fringe Benefits	25,823	8,317	34,140
Overhead	116,676	36,752	153,428
Computer			
Travel			
Supplies	(2,365)	(680)	(3,045)
Capital			
Total	\$318,163	\$100,634	\$418,797

TABLE 2C

## SCIENCE RESEARCH EXPENDITURES

July 1, 1977 to June 30, 1978

	<u>Geoscience</u>	<u>Computer</u>	<u>Statistics</u>	<u>Total</u>
Salaries	\$ 20,202	\$5,946	\$27,653	\$53,801
Fringe Benefits	1,843	9	1,314	3,166
Overhead	13,429	3,846	18,001	35,276
Computer				
Travel				
Supplies	(139)			(139)
Capital				
	<hr/>	<hr/>	<hr/>	<hr/>
Total	\$35,335	\$9,801	\$46,968	\$92,104

TABLE 2D

## HSSE RESEARCH EXPENDITURES

July 1, 1977 to June 30, 1978

	<u>Communication</u>	<u>Total</u>
Salaries	\$12,425	\$12,425
Fringe Benefits	2,893	2,893
Overhead	3,635	3,635
Computer		
Travel		
Supplies		
Capital		
	<hr/>	<hr/>
Total	\$18,953	\$18,953

TABLE 3  
LARS GENERAL FUND ALLOCATION  
July 1, 1977 to June 30, 1978

Allocation:

Recurring	\$122,228
Non-Recurring	<u>12,152</u>

\$134,380

Expenditures:

Salaries	\$ 90,711
Supplies	33,634
Travel	124
Computer	6,377
Capital	<u>3,534</u>

\$134,380

Balance

-0-

TABLE 4

LARS SYSTEM SERVICES

July 1, 1977 to June 30, 1978

Income:

LARS Research	\$672,558
LARS System Services	150,449
LARS Administration	9,745
Other Purdue	34,860
Outside Accounts	<u>4,300</u>

\$871,912

Expenditures:

Salaries	\$216,092
Computer Rental	533,489
Supplies	<u>112,688</u>

\$862,269

Balance Forward from Prior Year

\$ 9,643  
99,075

Balance Forward June 30, 1978

\$108,718



TABLE 5  
 FUNDED PROJECTS  
 As of July 1, 1978

<u>Project</u>	<u>Source</u>	<u>FY79</u>	<u>Duration</u>
General Funds	Purdue	\$ 130,688	7/78 - 6/79
SR&T	NASA	498,460	12/77 - 11/78
PY	NASA	129,174	6/77 - 5/79
US/USSR	NASA	52,304	8/76 - 11/78
Wallops Terminal	NASA	6,371	11/75 - 9/78
Goddard Terminal	NASA	8,333	3/77 - 2/79
Visiting Scientist	Various	19,267	4/74 - 6/79
NSF	NSF	14,152	9/76 - 2/79
Republic of China	Republic of China	817	8/76 - 8/78
Electrosurgery	NDM	12,289	5/76 - 10/78
Neonatal Jaundice	NIH	5,620	9/76 - 12/78
Bureau of Land Management	BLM	95	4/77 - 8/78
Bureau of Land Management II	BLM	881	9/77 - 00/00
ISU	State of Indiana	44,818	3/74 - 6/79
Short Course	Purdue	38,287	7/78 - 6/79
Forestry Resource Information System	St. Regis/NASA	176,943	10/77 - 3/79
Forestry Topography	NASA	60,693	12/77 - 11/78
MSS Data Inventory Saudi Arabia	Saudi Arabia	5,748	10/77 - 12/78
Central America	Inter. Amer. Dev. Bank	49,700	11/77 - 9/78
Bolivia	Bolivia	4,489	11/77 - 12/78
Control Data Corporation	CDC	5,581	8/77 - 12/78
EDC Data Analysis	USGS	1,043	1/78 - 12/78
Mini Courses Development	Purdue	24,794	7/78 - 6/79
		<u>\$1,290,547</u>	

TABLE 6

CAPITAL EQUIPMENT

<u>ITEM</u>	<u>ORIGINAL COST</u>	<u>YEAR ACQUISITION</u>
Monochrometer CAT 33-86-25	788	1965
Recorder Port Mol SP300 mfg. Ampex	\$ 8,450	1966
Radiometer MDL 14-313 mfg. Barnes	3,750	1966
Spectroradiometer MDL SR mfg. Isco Instr. Spec.	2,000	1966
Oscilloscope Type 317 mfg. Tektronix	875	1966
Oscilloscope w/plug-in 555 Tektronix	2,650	1966
Oscilloscope MDL 564 mfg. Tektronix	875	1966
A/D Equipment	185,336	1967-71
Camper/Pickup	4,897	1967
Monochrometer Mol 98 mfg. Perkin-Elmer	4,100	1967
Oscillator Mdl 32008 mfg. Hewlett-Packard	530	1967
Oscillator Mdl 652A mfg. Hewlett-Packard	730	1967
Oscilloscope Mdl 545B mfg. Tektronix	1,550	1967
Thermometer Mol prt-5 mfg. Barnes Eng.	6,959	1968
Digital Display	487,640	1969
Hi-Ranger	17,500	1971
Disk Drive 2314	105,990	1971
Camera w/lens 103 Hulchers	3,167	1971
Camera w/lens 103 Hulchers	3,167	1971
Modems	8,920	1971
Target Tri-color Data Corp	6,081	1971
Enlarger D-4 Simon-Omega	1,632	1971
Scanning Machine Gistafax Jr. 380	1,167	1971
Line Scanner	8,605	1972
Spectroradiometer and Accessories	131,127	1972
Tape Recorder/Reproducer	36,827	1972
Oscilloscope 7603 mfg. Tektronix	1,687	1973
Fast Scan Thermal Camera and Accessories	30,000	1974
Computer Terminal Graphic 801	16,635	1974
Radiometer ERTS Band 100A Exotech, Inc.	2,610	1974
Radiometer ERTS Band 100A Exotech, Inc.	2,610	1974

Imaging System Infrared w/accessories	24,183	1974
Lens Infrared w/mounting flange 250G	1,552	1974
Oscilloscope Storage 5103n/011 Tektronix	1,104	1974
Field Radiometers and Accessories	15,000	1975
Zoom Transfer Scope	4,750	1975
Terminal Send-Receive 735TX	2,693	1975
Terminal Send-Receive 735TX	2,693	1975
Data Logger	1,500	1975
Generator	4,774	1976
029 Keypunch Interface	2,500	1976
Lamboda Intr. Portable Area Meter	3,300	1976
GT CRT Terminal	1,275	1976
GTX CRT Terminal	990	1976
Video Casette Recorder	1,434	1976
Frequency Charger	1,665	1976
Shelving Unit	2,052	1976
System Dictating Recording	1,298	1976
Computer System 11T34-EA Digital	41,220	1976
ACC for computer S45 Digital	2,716	1976
Paper tape Recorder PC11 Digital	1,832	1976
Paper tape Recorder PC11 Digital	2,748	1976
Digitizer Cybergraphic 660A	9,664	1976
Trailer/Generator	935	1976
Rack Tape Cannisters Tab	1,124	1976
Instrumentation Tape Recorder	7,850	1977
Strip Chart Recorder	1,613	1977
Data Terminals	2,875	1977
Reader/Printer	1,418	1977
Photocopy Machine mfg. IBM	6,394	1978
Pick-up Truck	900	1978
Auto	1,000	1978
5 GTX CRT Terminals	4,750	1978
LA-36 Deck Writer	1,335	1978
Tape Reel Rack	1,233	1978

1,233  
\$1,262,732