

Single Audit Reporting Package
Michigan Technological University
Year Ended June 30, 2020

Michigan Technological University

Single Audit Reporting Package

Year Ended June 30, 2020

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Independent Auditors' Report on Internal Control Over Financial Reporting
and on Compliance and Other Matters Based on an Audit of Financial Statements
Performed in Accordance with *Government Auditing Standards*

Board of Trustees
Michigan Technological University
Houghton, Michigan

We have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of Michigan Technological University (University), as of and for the year ended June 30, 2020, and the related notes to the financial statements, which collectively comprise the University's basic financial statements, and have issued our report thereon dated November 30, 2020.

Internal Control over Financial Reporting

In planning and performing our audit of the financial statements, we considered the University's internal control over financial reporting (internal control) as a basis for designing audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the University's internal control. Accordingly, we do not express an opinion on the effectiveness of the University's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements, on a timely basis. *A material weakness* is a deficiency, or combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the University's financial statements will not be prevented, or detected and corrected, on a timely basis. *A significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or, significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the University's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the financial statements. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the University's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the University's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

Andrews Hooper Pavlik PLC

Bay City, Michigan
November 30, 2020

Independent Auditors' Report on Compliance for Each Major Program;
Report on Internal Control Over Compliance; and Report on Schedule of Expenditures of
Federal Awards Required by the Uniform Guidance

Board of Trustees
Michigan Technological University
Houghton, Michigan

Report on Compliance for Each Major Federal Program

We have audited Michigan Technological University's (University) compliance with the types of compliance requirements described in the *OMB Compliance Supplement* that could have a direct and material effect on each of the University's major federal programs for the year ended June 30, 2020. The University's major federal programs are identified in the summary of auditor's results section of the accompanying schedule of findings and questioned costs.

Management's Responsibility

Management is responsible for compliance with federal statutes, regulations, and the terms and conditions of its federal awards applicable to its federal programs.

Auditors' Responsibility

Our responsibility is to express an opinion on compliance for each of the University's major federal programs based on our audit of the types of compliance requirements referred to above. We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and the audit requirements of Title 2 U.S. *Code of Federal Regulations* Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance). Those standards and the Uniform Guidance require that we plan and perform the audit to obtain reasonable assurance about whether noncompliance with the types of compliance requirements referred to above that could have a direct and material effect on a major federal program occurred. An audit includes examining, on a test basis, evidence about the University's compliance with those requirements and performing such other procedures as we considered necessary in the circumstances.

We believe that our audit provides a reasonable basis for our opinion on compliance for each major federal program. However, our audit does not provide a legal determination of the University's compliance.

Opinion on Each Major Federal Program

In our opinion, Michigan Technological University complied, in all material respects, with the types of compliance requirements referred to above that could have a direct and material effect on each of its major federal programs for the year ended June 30, 2020.

Report on Internal Control over Compliance

Management of Michigan Technological University is responsible for establishing and maintaining effective internal control over compliance with the types of compliance requirements referred to above. In planning and performing our audit of compliance, we considered the University's internal control over compliance with the types of requirements that could have a direct and material effect on each major federal program to determine the auditing procedures that are appropriate in the circumstances for the purpose of expressing an opinion on compliance for each major federal program and to test and report on internal control over compliance in accordance with the Uniform Guidance, but not for the purpose of expressing an opinion on the effectiveness of internal control over compliance. Accordingly, we do not express an opinion on the effectiveness of the University's internal control over compliance.

A deficiency in internal control over compliance exists when the design or operation of a control over compliance does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, noncompliance with a type of compliance requirement of a federal program on a timely basis. *A material weakness in internal control over compliance* is a deficiency, or combination of deficiencies, in internal control over compliance, such that there is a reasonable possibility that material noncompliance with a type of compliance requirement of a federal program will not be prevented, or detected and corrected, on a timely basis. *A significant deficiency in internal control over compliance* is a deficiency, or a combination of deficiencies, in internal control over compliance with a type of compliance requirement of a federal program that is less severe than a material weakness in internal control over compliance, yet important enough to merit attention by those charged with governance.

Our consideration of internal control over compliance was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over compliance that might be material weaknesses or significant deficiencies. We did not identify any deficiencies in internal control over compliance that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

The purpose of this report on internal control over compliance is solely to describe the scope of our testing of internal control over compliance and the results of that testing based on the requirements of the Uniform Guidance. Accordingly, this report is not suitable for any other purpose.

Report on Schedule of Expenditures of Federal Awards Required by the Uniform Guidance

We have audited the financial statements of Michigan Technological University, as of and for the year ended June 30, 2020, and the related notes to the financial statements, which collectively comprise the University's basic financial statements. We issued our report thereon dated November 30, 2020, which contained an unmodified opinion on those financial statements. Our audit was conducted for the purpose of forming an opinion on the basic financial statements as a whole. The accompanying schedule of expenditures of federal awards is presented for purposes of additional analysis as required by the Uniform Guidance and is not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the schedule of expenditures of federal awards is fairly stated in all material respects in relation to the basic financial statements as a whole.

Andrews Hooper Paulik PLC

Bay City, Michigan
March 19, 2021

Michigan Technological University

Schedule of Expenditures of Federal Awards

Year Ended June 30, 2020

Federal Grantor/Pass-Through Grantor/Program or Cluster Title	Federal CFDA Number	Passed Through	Award Number	Passed Through to Subrecipients	Federal Expenditures
Student Financial Aid Cluster					
U.S. Department of Education					
Federal Supplemental Education Opportunity Grant	84.007	Direct	P007A192046	\$ -	\$ 286,084
Federal Work Study Program	84.033	Direct	P033A192046	-	240,782
Federal Perkins Loan	84.038	Direct	n/a	-	9,249,713
Federal Pell Grant Program	84.063	Direct	P063P190234	-	5,374,420
Federal Direct Student Loans	84.268	Direct	P268K200234	-	27,887,901
Total Student Financial Aid Cluster				-	43,038,900
Research and Development Cluster					
U.S. Department of Agriculture					
No CFDA Number:					
USAGR-Post-Fire Response Fire Mgmt	10.RD	US Department of Agriculture	18-JV-11272139-003	-	11,513
USAGR-ESC-FFC-Post-Fire Salvage Log	10.RD	Direct	14-JV-11221634-138	-	5,345
USAGR-ESC-FFC-Study of Harvest Gaps	10.RD	Direct	14-JV-11242307-084	-	2,378
USAGR-ESC-FFC-Black Ash Wetlands	10.RD	Direct	14-JV-11242307-153	-	907
USAGR-Smoke Management	10.RD	Direct	15-CR-11261987-035	-	47,572
USAGR-ESC-FFC-Radiocarbon Collabora	10.RD	Direct	16-CR-11242306-094	-	75,286
USAGR-ESC-FFC-Tropical Ecosystems	10.RD	Direct	17-JV-11242306-017	-	19,434
USAGR-ESC-FFC-Lakes State Hardwoods	10.RD	Direct	17-JV-11111133-018	-	14,669
USAGR-ESC-FFC-Coasatal Wetland	10.RD	Direct	17-PA-11091000-023	-	4,937
USAGR-ESC-FFC-KISMA Agreement	10.RD	Direct	17-PA-11090700-026	-	49,269
USAGR-ESC-FFC-Peat Accumulation	10.RD	Direct	17-PA-11091000-038	-	6,792
USAGR-ESC-FFC-Black Ash Wetland	10.RD	Direct	17-JV-11242307-133	-	129,875
USAGR-Estimating Upland Watersheds	10.RD	Direct	18-JV-11221634-020	-	20,517
USAGR-FFC-Genetic Improvement	10.RD	Direct	18-JV-11111133-009	-	4,971
USAGR-ESC-FFC-Satellite Detection	10.RD	Direct	18-CR-11221676-160	-	17,689
USAGR-Riparian Buffer Delineation	10.RD	Direct	18-CS-11132422-306	-	139,864
USAGR-ESC-FFC-Forest Tax Programs	10.RD	Direct	19-JV-11242309-029	-	15,574
USAGR-UAS Based LiDAR	10.RD	Direct	19-PA-11091000-012	-	1,115
USAGR-ESC-FFC-Tactical Trailer Deck	10.RD	Direct	19-JV-11111133-064	-	3,298
USAGR-ESC-FFC-Argonne Exp Forest	10.RD	Direct	19-JV-11242307-043	-	15,574
NATUR-ESC-FFC-Mapping Coastal Wetla	10.RD	The Nature Conservancy	Contract # - 021320-1	-	19,025
				-	605,604
Cooperative Forestry Research:					
USAGR-MS-ESC-FFC-FY19-Admi	10.202	Direct	NI19MSCFRXXXG015	-	181,010
USAGR-MS-ESC-FFC-ADV ACCT-FY20 Admi	10.202	Direct	ADVANCE ACCOUNT	-	174,670
				-	355,680
Sustainable Agriculture Research and Education:					
UNIVE-Engaging Women Farmland Owner	10.215	University of Nebraska - Lincoln	26-6122-0947-002	-	2,992
Biotechnology Risk Assessment Research:					
USAGR-LSTI-FFC-STERILE APETALA(SAP)	10.219	Direct	2016-33522-25626	-	135,961
Agriculture and Food Research Initiative:					
USAGR-ESC-FFC-Novel Timber Systems	10.310	Direct	2017-67013-26261	-	100,857
MICHI-ESC-FFC-Xeric Jack PineForest	10.310	Michigan State University	2015-67019-23007 RC104605MTU	-	(44)
UNIVE-GLRC-Sustainable Water-Desert	10.310	University of Texas at El Paso	SUBAWARD NO. 226300313E	-	77,692
				-	178,505
Cooperative Forestry Assistance:					
USAGR-ESC-FFC-Tree Planting EAB	10.664	Direct	19-DG-11420000-032	-	16,381
USAGR-ESC-FFC-Pilgram River Wetland	10.664	Direct	20-DG-11094200-008	-	16,761
				-	33,142
Wood Utilization Assistance:					
USAGR-ESC-FFC-Beetle-Killed Tree	10.674	Direct	16-DG-11420004-166	-	17,947
UNIVE-ESC-FFC-Thermal Modification	10.674	University of Minnesota-Duluth	D004865401/15-DG-11420004-082	-	40,614
				-	58,561
Partnership Agreements:					
USAGR-ESC-FFC-Web Dev USDA Climate	10.699	Direct	17-CR-11242306-105	-	409
USAGR-ESC-FFC-Design Thinking/Lean	10.699	Direct	17-JV-11242306-044	-	91,604
USAGR-ESC-FFC-Hardwood Cross Lamina	10.699	Direct	17-JV-11111133-034	-	9,962
USAGR-ESC-FFC-Ecosystem Adaptation	10.699	Direct	19-CR-11242306-025	-	4,197
USAGR-ESC-FFC-RadioCarbon Collabora	10.699	Direct	18-CR-11242306-072	-	23,842
				-	130,014
Research Joint Venture and Cost Reimbursable Agreements:					
USAGR-ESC-FFC-Application of MCAT	10.707	Direct	19-JV-11330140-017	-	85,434
Environmental Quality Incentives Program:					
USAGR-ESC-FFC-Forest Road Surfacing	10.912	Direct	69-5D21-17-116	-	1,531
Total U.S. Department of Agriculture				-	1,587,424

See Notes to Schedule of Expenditures of Federal Awards.

Michigan Technological University

Schedule of Expenditures of Federal Awards

Year Ended June 30, 2020

Federal Grantor/Pass-Through Grantor/Program or Cluster Title	Federal CFDA Number	Passed Through	Award Number	Passed Through to Subrecipients	Federal Expenditures
Research and Development Cluster (continued)					
U.S. Department of Commerce					
No CFDA Number:					
MIDAT-GLRC-Survey for Golden Tilefi	11.RD	Mid-Atlantic Fishery Management Council	NA15NMF4410006	\$ -	\$ 18,347
Integrated Ocean Observing System:					
GLOS-GLRC-High Frequency Radar	11.012	Great Lakes Observing System	NA16NOS0120025	-	13,693
GLOS-GLRC-Implementation Network	11.012	Great Lakes Observing System	PROJECT NUMBER: IOOS/NBN-01	-	76,074
				-	89,767
Sea Grant Support:					
REGEN-GLRC-Lake MI Cladophora	11.417	Regents of the University of Michigan	NA180AR4170102 SUB 3004932531	16,031	55,892
REGEN-GLRC-Anishinaabe-Gikendaasowi	11.417	Regents of the University of Michigan	SUBK00012244	-	17,228
REGEN-GLRC-PSP Approach Shore Prote	11.417	Regents of the University of Michigan	SUBK00012245	-	3,741
				16,031	76,861
Coastal Zone Management Estuarine					
Research Reserves:					
MINAT-GLRC-FNR-CMP-Resiliency Yr3	11.419	Michigan Dept of Natural Resources	#19-Resiliency Strategy-002	-	128,384
MIDEQ-GLRC-FNR-Advancing Coastal	11.419	Michigan Department of Environment, Great Lakes, and Energy	19-Hazard Alternatives-001	-	42,027
				-	170,411
National Oceanic and Atmospheric Administration (NOAA) Cooperative Institutes:					
REGEN-Remote Sensing Products	11.432	Regents of the University of Michigan	SUBCONTRACT NO. 3005203302	-	48,990
UNIVE-Laurentian-Great Lakes	11.432	Regents of the University of Michigan	SUBK00008752/PO#3005008452	-	95,876
UNIVE-EPSSI-POESS & GOES Broadcast	11.432	University of Wisconsin	846K333	-	36,682
UNIVE-GLRC-CIGLR Cooperative	11.432	University of Michigan	SUBK00009476/PO#3005166938	-	8,220
REGEN-GLRC-Coastal Coupling Lakes	11.432	Regents of the University of Michigan	SUBK00011609 PO 3005745206	-	26,234
REGEN-GLRC-Temperature Currents YR2	11.432	Regents of the University of Michigan	SUBK00011313 PO#3005725813	-	17,518
REGEN-Remote Sensing Products	11.432	Regents of the University of Michigan	SUBK00011367/PO#3005681795	-	118,051
UNIVE-GLRC-CIGLR Rapid Respon Buoy	11.432	University of Michigan	SUBAWARD NO. SUBK00013455	-	5,827
				-	357,398
Gulf Coast Ecosystem Restoration Science, Observation, Monitoring, and Technology:					
BOARD-GLRC-Approaches to Restoratio	11.451	Board of Supervisors of Louisiana State University	SUBAWARD NO. PO-0000038194	-	31,760
Center for Sponsored Coastal Ocean Research Coastal Ocean Program:					
OHIOS-GLRC-ECOHAH 2017	11.478	Ohio State University	PO#RF01495490/PROJECT#60061695	-	67,978
Measurement and Engineering Research and Standards:					
NATIO-Wildland Fire Incident Operat	11.609	Direct	70NANB17H174	98,417	172,101
Total U.S. Department of Commerce				114,448	984,623
U.S. Department of Defense					
No CFDA Number:					
USAIR-ESCAPE	12.RD	Direct	FA8750-16-C-0072	-	134,657
NAVAL-AIM-Hydrodynamic Control Xba	12.RD	Direct	N39430-16-C-1883	125,140	152,373
USAIR-Electronic Support Critical	12.RD	Direct	FA8650-17-C-1058	-	235,365
TACOM-ASSURED III-NG NRMM	12.RD	Direct	W56HZV-14-C-0286 P00053 WD 025	-	(754)
TACOM-ASSURED III-MRAP PI	12.RD	Direct	W56HZV-14-C-0286 P00039 WD 28	-	296,796
TACOM-ASSURED III-APU Treatments	12.RD	Direct	W56HZV-14-C-0286 WD 30	-	70,725
TACOM-ASSURED III - GVSP APS	12.RD	Direct	W56HZV-14-C-0286 WD 027	-	5,004
USAIR-Global Cropland Fire Sensing	12.RD	Direct	FA8810-18-C-0017	113,358	271,039
TACOM-ASSURED III-Trailer Decks	12.RD	Direct	W56HZV-14-C-0286 WD 033	-	259,101
DARPA-BARCS	12.RD	Direct	HR001118C0124	-	224,179
DARPA-Localized Urban Swarm Tech	12.RD	Direct	HR001118C0144	-	4,232
DARPA-Geometrically Invariant Neura	12.RD	Direct	HR00111890039	-	492,544
Tacom-ASSURED IV-Blast Hull Mitiga	12.RD	Direct	W56HZV-19-C-0053 WD001	-	174,321
Tacom-ASSURED III-BCS Blade	12.RD	Direct	W56HZV-14-C-0286 WD 034	-	1,235,778
TACOM-ASSURED III-MTRRS	12.RD	Direct	W56HZV-14-C-0286	-	327,346
TACOM-ASSURED III-NG NRMM	12.RD	Direct	W56HZV-14-C-0286 WD36	-	21,416
TACOM-ASSURED IV-PAM	12.RD	Direct	W56HZV-19-C-0053 WD 002	-	224,041
TACOM-ASSURED IV-Ice Cleat Maturati	12.RD	Direct	W56HZV-19-C-0053 WD 03	-	273,683
TACOM-ASSURED TV-JLTV Noise	12.RD	Direct	W56HZV-19-C-0053 WD 04	-	20,990
TACOM-ASSURED IV-Frozen Soil Traffi	12.RD	Direct	W56HZV-19-C-0053 WD 05	-	125,960
TACOM-ASSURED IV-LT-CMS Roller Proto	12.RD	Direct	W56HZV-19-C-0053 WD 06	-	125,818
TACOM-ASSURED IV-JLTV Countermeasur	12.RD	Direct	W56HZV-19-C-0053 WD 007	-	307,361
TACOM-ASSURED IV M1 Track Load	12.RD	Direct	W56HZV-19-C-0053 WD08	-	470,789
TACOM-ASSURED IV-MPVS Product Impr	12.RD	Direct	W56HZV-19-C-0053 WD09	-	704,224
TACOM-ASSURED IV-Stryker APU	12.RD	Direct	W56HZV-19-C-0053 WD10	-	5,076
TACOM-HMMWV Brackets-ASSURED IV	12.RD	Direct	W56HZV-19-C-0053 WD011	-	59,413
DARPA-SSAS	12.RD	Direct	HR001119C0117	136,479	305,381
DARPA-Autonomous Storming, Norming	12.RD	Direct	HR00112090021	170,303	449,619

See Notes to Schedule of Expenditures of Federal Awards.

Michigan Technological University

Schedule of Expenditures of Federal Awards

Year Ended June 30, 2020

Federal Grantor/Pass-Through Grantor/Program or Cluster Title	Federal CFDA Number	Passed Through	Award Number	Passed Through to Subrecipients	Federal Expenditures
Research and Development Cluster (continued)					
U.S. Department of Defense (continued)					
No CFDA Number (continued):					
TACOM-ASSURED IV-Countermeas Hrdwr	12.RD	Direct	DOD W56HZV-19-C-0053 WD013	\$ -	\$ 21,502
OFFIC-ASSURED IV-M109 Fan Noise	12.RD	Direct	W56HZV-19-C-0053 WD 014	-	4,348
DARPA-The Grand Deception	12.RD	Direct	HR001120C0075	-	109,374
DARPA-OMNI 360-VIS	12.RD	Direct	HR001120C0079 items 0001-0002	-	89,635
TACOM-ASSURED IV-Snow Mobility	12.RD	Direct	W56HZV-19-C-0053	-	19,792
TACOM-ASSURED IV-Vehicle Load	12.RD	Direct	W56HZV19C0053 WD 017	-	6,419
AKELA-Detection and Location	12.RD	AKELA Inc	SUBCONTRACT #AK-2016-0810	-	1,674
AMERI-IMP-ICME Tools in Casting	12.RD	American Foundry Society Inc	AFS; Prime #SP4701-17-D-1134	-	63,246
BOOZA-RECON-Base	12.RD	Booz-Allen-Hamilton	S902439BAH	-	103,825
BOEING-MARC-Density Filter Dev	12.RD	Boeing Defense & Space Group	Purchase Contract #1755374	-	86,787
BOOZA-Advanced Signal Processing	12.RD	Booz-Allen-Hamilton	SUB#S903841BAH; PRIME #FA8075-	-	105,000
ARETE-Predictive Graph Convolutona	12.RD	Arete Associates, Inc.	Sub#CA-401434,N68335-19-C-0309	-	34,906
AMERI-IMP-WAAM Magnesium Alloys	12.RD	American Lightweight Materials Manufacturing Innovation Inst	ALMMH Subaward A015-02	-	50,000
AMERI-IMP-Differential Carrier Iron	12.RD	American Lightweight Materials Manufacturing Innovation Inst	ALMMH Sub #A011-02	-	40,000
DYNET-Algorithm Develop Support	12.RD	Dynetics Inc	PO GC003036	-	27,267
DZYNE-Student Design: Waterborne Su	12.RD	DZYNE Technologies	MON0001-S-016-3	-	3,153
ETEGE-AF171-090 Improving Trust	12.RD	Etegent Technologies Ltd	PRIME#FA865118C0063 SUB#ETE132	-	128,925
FIBER-Algorithm for UAV Mounted GPR	12.RD	Fibertek	Subcontract No. W909MY-MTU-575	-	260,261
ENDEC-Multifunctional Cargo Pocket	12.RD	Endectra, LLC	MI Tech Agreement #1902001	-	31,201
ETEGE-MOLNMR	12.RD	Etegent Technologies Ltd	SUBCONTRACT #ETE.19.ODIN.02	-	202,840
GLSVE-AIM-Modular Buoyancy Kit Wave	12.RD	GLSV Engineering & Consulting	CO#1911043P-2; PO# GLSV09262	-	19,964
HELIO-Target ID + Radar Backtrackin	12.RD	Helios Remote Sensing Systems	Sub#1270-S01-HRSSI/Prime-->	-	43,000
HELIO-ISAR Imaging of EA	12.RD	Helios Remote Sensing Systems	Subcontract #1285-S01-HRSSI	-	39,943
INFOR-RADAR Resource Allocation	12.RD	Information Systems Laboratories	SUB #10044; PO#2050002	-	25,184
LEIDO- Opera T02	12.RD	Leidos Inc	P010151900-2 FA8650-13-D-1622	-	33,184
LEIDO-PRIDE	12.RD	Leidos Inc	P010189654 / FA8650-16-C-1732	-	9,448
LEIDO-ACME 4	12.RD	Leidos Inc	SUBCONTRACT NO P010192299	-	728,051
LEIDO-CASE T03	12.RD	Leidos Inc	SUBCONTRACT NO P010201230	-	2,806
LEIDO-Shazam	12.RD	Leidos Oak Ridge	LEIDOS PO P010217731	-	12,360
MZAAS-ICC-FNR-ATRS-Phase II	12.RD	MZA Associates Corporation	Subcontract No. S19004	-	135,940
LOUKU-IMP-High Ductility Magnesium	12.RD	Loukus Technologies, Inc.	N00014-14-2-0002; Sub# A009-01	-	47,891
LEIDO-StarFall	12.RD	Leidos Inc	SubP0120237489/Prime 20-C-8957	-	94,581
NATIO-Tracked Vehicle Suspension	12.RD	National Advanced Mobility Consortium	NAMC AGREEMENT 69-201515 #T02	56,603	89,831
NATIO-Amored Fixtures	12.RD	National Advanced Mobility Consortium	NAMC Agrmnt 69-201805	-	320,220
NORTH-PRECISE	12.RD	Northrop Grumman	PO #5300003528	-	41,162
NATIO-LIFT-Enterprise:Raspberry PI	12.RD	National Center for the Advancement of STEM Education	NCASE Agreement	-	2,756
PCIDR-GLRC-Weather Keweenaw Stamp S	12.RD	PCI Dredging	MTU CO#2002023	-	4,968
SANDI-AIM-FNR-Pulsed Load Microgrid	12.RD	Sandia National Laboratories	PO#1746491/REVISION:13	-	57,679
SRICO-CQP-Optical Isolators Phase 2	12.RD	SRICO Inc	SUB NO. 17089MTU	-	115,085
SOART-GLRC Ocean of Things TA2	12.RD	Soar Technology, Inc.	Subcontract Number: SC-18-027	-	502,262
STEVE-LIFT-Sr Design:SERC MARSOC	12.RD	Stevens Institute of Technology	Agreement#2102796-09	-	3,149
STEVE-LIFT-Senior Design SERC AFRL	12.RD	Stevens Institute of Technology	SERC 2102796-07	-	467
STEVE-SERC 2018 USCG 01 Mass Rescue	12.RD	Stevens Institute of Technology	SERC 2102796-13	-	2,206
STEVE-SERC 2018 NSW 12 Vision	12.RD	Stevens Institute of Technology	SERC 2102796-12	-	42
STEVEN-LIFT-SERC 2018 AFRL 04	12.RD	Stevens Institute of Technology	SERC 2102796-04	-	1,196
STEVE-LIFT-Enterprise:SERC 2018AFRL	12.RD	Stevens Institute of Technology	SERC 2102796-03	-	405
STEVE-LIFT-Enterprise:SERC 18 AFSOC	12.RD	Stevens Institute of Technology	MTU #1808041 SERC#2102796-06	-	2,338
STEVE-LIFT-Enterprise 18 NSW 05	12.RD	Stevens Institute of Technology	MTU #1808025 SERC#2102796-11	-	5,000
STEVE-LIFT-SERC 2018 Army 01	12.RD	Stevens Institute of Technology	MTU#1808024 SERC#2102796-08	-	4,636
TWINL-AIM-Magnetic Sensor Suite	12.RD	Twinleaf LLC	MTU AGREEMENT 1702021A	-	518
SCOTF-Lightweight Track Tech SBIR	12.RD	Scot Forge Company	MTU Proposal #1806019	-	46,857
SOART-DARPA OFFSET Spirit 4	12.RD	Soar Technology, Inc.	Subcontract No SC-19-023	-	29,996
STEVE-LIFT-Enterprise:2019 AFRL 01	12.RD	Stevens Institute of Technology	Subcontract #2102964-01	-	1,434
STEVE-LIFT-Sr Design:SERC Ground Fo	12.RD	Stevens Institute of Technology	#2102964-03,HQ003419D0003	-	232
STEVE-LIFT-Sr Design:SERC Future	12.RD	Stevens Institute of Technology	SUB#2102964-04	-	235
SOART-Autonomous Sub for UAS	12.RD	Soar Technology, Inc.	Subcontract #SC-20-003	-	5,595
UNIVE-STUDENT Design:Aerospace Prop	12.RD	Universal Technology Corporation	SUB #142411-16F2639-19-48-C6	-	12,545
KESTR-CLEARVIEW Spotter Scope	12.RD	Kestrel Corporation	SUBCONTRACT FOR 1907011P2	-	6,307
UTAHS-FNR-Auris Cubesat	12.RD	Utah State University Research Foundation	CP0053711	-	85,085
UNIVE-IMP-Open Polymer Laser Welder	12.RD	University of Alaska-Fairbanks	Univ of Alaska PO#542469	-	15,435
USDOD-Automated Bathymetry Generat	12.RD	Direct	HM157520P0058	-	482
				601,883	10,917,107
Basic and Applied Scientific Research:					
OFFIC-Metamaterial Devices	12.300	Direct	N00014-15-1-2684	-	9,445
OFFIC-AIM-Undersea Persistence	12.300	Direct	N00014-15-1-2599	-	6,554
OFFIC-AIM-Autonomous Microgrids	12.300	Direct	N00014-16-1-2422	-	271,641
OFFIC-LSTI-FNR-Smart Adhesive	12.300	Direct	N00014-16-1-2463	-	69,374
OFFIC-GLRC-ONR STEM ROTC Cyber Educ	12.300	Direct	N00014-20-1-2263	-	19,442

See Notes to Schedule of Expenditures of Federal Awards.

Michigan Technological University

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Federal Grantor/Pass-Through Grantor/Program or Cluster Title	Federal CFDA Number	Passed Through	Award Number	Passed Through to Subrecipients	Federal Expenditures
Research and Development Cluster (continued)					
U.S. Department of Defense (continued)					
Basic and Applied Scientific Research (continued):					
OFFIC-IMP-Microalloyed Aluminum	12.300	Direct	N00014-16-1-2878	\$ -	\$ 132,539
OFFIC-AIM-Increasing Ship Power Sys	12.300	Direct	N00014-16-1-3044	3,479	8,837
OFFIC-GLRC-ONR Graduate Traineeship	12.300	Direct	N00014-18-1-2592	-	6,591
OFFIC-HRI-Mussel Adhesive Chemistry	12.300	Direct	N00014-20-1-2230	-	19,605
OFFIC-ICC-NPT-03/04 On-Ice Underwat	12.300	Direct	N00174-19-1-0004	-	96,134
				<u>3,479</u>	<u>640,162</u>
Military Medical Research and Development:					
USARM-HRI-Biomimetic Adhesive	12.420	Direct	W81XWH1810610	-	195,144
Basic Scientific Research:					
USARM-AIM-Agent-Based Control AEN	12.431	Direct	W911NF-17-2-0130	-	75,169
USARM-CQP-First Principles Studies	12.431	Direct	W911NF-14-2-0088	-	96,743
NATIO-LIFT-ENTERPRISE: Robot Leader	12.431	National Center for the Advancement of STEM Education	GRANT #W15QKN-14-1-0001	-	5,001
TECHN-Senior Design: Air Force Chall	12.431	Technology Service Corporation	TSC-1188-6000; PRIME FA8650-16	-	13,829
UNIVE-CQP-Supersymmetry	12.431	University of Central Florida	SUBAWARD #65016323-01	-	63,152
				<u>-</u>	<u>253,894</u>
Basic, Applied, and Advanced Research in Science and Engineering:					
AMERI-IMP-Melt R2-5: Development	12.630	American Lightweight Materials Manufacturing Innovation Inst	SUBAWARD AGREEMENT:0002E-6	-	4,334
AMERI-IMP-Enterprise: 3D Printing	12.630	American Lightweight Materials Manufacturing Innovation Inst	Subaward Agreement:0001	-	886
				<u>-</u>	<u>5,220</u>
Air Force Defense Research Sciences Program:					
USAIR-ICC-FNR-Induced Anisoplanatis	12.800	Direct	FA9550-17-1-0201	-	112,623
CyberSecurity Core Curriculum:					
NATIO-ICC-MTU CyberSecurity	12.905	Direct	H98230-17-1-0414	-	8,716
Research and Technology Development:					
USINT-GLRC-Bilge Water Microbiomes	12.910	Direct	D16AP00146	-	17,242
FLORI-ICC-DARPA XAI	12.910	Florida Institute for Human and Machine Cognition	FA8650-17-2-7711-1	-	185,169
REGEN-ICC-Robust Terrain ID/Path PL	12.910	Regents of the University of Michigan	SUB 3004831295/W56HZV1420001	-	(8,084)
REGEN-ICC-Robust Terrain	12.910	Regents of the University of Michigan	SUBK00011121 PO#3005466601	-	100,595
REGEN-MTTI-Next Gen NATO Mobility	12.910	Regents of the University of Michigan	SUBK00011314 PO#3005489743	-	106,141
REGEN-ICC-Robust Terrain Yr 3	12.910	Regents of the University of Michigan	SUBK00011121 PO#3005466601	-	499
				<u>-</u>	<u>401,562</u>
Total U.S. Department of Defense				<u>605,362</u>	<u>12,534,428</u>
U.S. Department of Housing and Urban Development					
No CFDA Number:					
ALGER-MTTI-Log Movement Super Regio	14.RD	Alger County	AGREEMENT DATED 2/27/18	-	19,006
Healthy Homes Technical Studies Grants:					
USHOU-Cleanup Lead Based Paint Soil	14.906	Direct	MILTS0007-17 AMEND NO. 1	66,252	120,416
Total U.S. Department of Housing and Urban Development				<u>66,252</u>	<u>139,422</u>
U.S. Department of Interior					
No CFDA Number:					
CHARL-ICC-FOCUS	15.RD	Charles River Analytics	SUBCONTRACT# SC1809502	-	33,436
USPAR-ESC-FFC-Isle Royale Wolves	15.RD	Direct	MTU CO#1909093	-	11,551
OFFIC-ASSURED IV-RCIS	15.RD	Direct	W56HZV-19-C-0053 WD 012	-	38,947
KEWEE-GLRC-Buffalo Reef Mapping	15.RD	Keweenaw Bay Indian Community	TIER II SERVICES AGREEMENT	-	17,834
SOART-Urban Reconnaissance	15.RD	Soar Technology, Inc.	SubContract # SC-19-02	-	313,699
				<u>-</u>	<u>415,467</u>
Tribal Climate Resilience:					
BUREA-GLRC-Keweenaw Bay Sand Point	15.156	Direct	A19AC00030	-	75,238
Cooperative Ecosystem Studies Units:					
USFIS-Coastal Wetlands YR2	15.678	Direct	F18AC00039	-	101,967
U.S. Geological Survey Research and Data Collection:					
USGEO-GLRC-Robot -Assisted Computer	15.808	Direct	G18AC00108	-	67,387
WESTE-EPSSI-Earth MRI Project	15.808	Western Michigan University	SUBAWARD #10471	-	18,506
USGEO-Benthic Organism Detection	15.808	Direct	G18AC00365	-	99,415
				<u>-</u>	<u>185,308</u>
National Cooperative Geologic Mapping:					
USGEO-EPSSI-Keweenaw Fault	15.810	Direct	G19AC00140	-	23,817
USGEO-Invasive Phragmites CoastalGL	15.810	Direct	G17AC00351	-	(138)
				<u>-</u>	<u>23,679</u>

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Research and Development Cluster (continued)					
U.S. Department of Interior (continued)					
National Land Remote Sensing-Education					
Outreach and Research:					
AMERI-State View Prog Development	15.815	AmericaView	AV18-MI-01	\$ -	\$ 14,062
AMERI-State View Program Year 2	15.815	AmericaView	AV18-MI-01 Modification No.001	-	13,686
				-	27,748
National Resource Stewardship:					
USPAR-ESC-FFC-Wolf-Moose monitoring	15.944	Direct	TASK AGREEMENT #P16AC00004	-	45,569
Cooperative Research and Training Programs - Resources of the National Park System:					
USPAR-ESC-FFC-Beech Reintroduction	15.945	Direct	P16AC01398	-	81,717
USPAR-Pullman National Monument	15.945	Direct	TASK AGRM # P17AC00005	-	34,241
USPAR-ESC-FFC-Park Ecosystem-Climat	15.945	Direct	P17AC01063	-	5,382
USPAR-Mapping Potential Vernal Pool	15.945	Direct	P19AC00286	-	28,816
USINT-Keweenaw NPS & Isle Royale NP	15.945	Direct	P18AC00178	-	67,100
				-	217,256
				-	1,092,232
Total U.S. Department of Interior					
U.S. Department of State					
Public Diplomacy Programs:					
USSTA-EPSSI-Disaster Mngmt in India	19.040	Direct	SIN65019GR0023	-	38,020
Total U.S. Department of State					
				-	38,020
U.S. Department of Transportation					
No CFDA Number:					
USTRA-MTTI-Railroad Crossings	20.RD	Direct	693J16-19-C-000022	14,220	124,673
USTRA-MTTI-IN-Vehicle Auditory Aler	20.RD	Direct	693J1618C000027	112,134	154,471
USTRA-MTTI-RAILS	20.RD	Direct	693J1619C000001	-	81,387
ENGIN-MTTI-Pavement Life Cycle	20.RD	Engineering & Software Consultants, Inc	ESCINC SUBCONTRACT#: 18-49	-	90,456
MTRII-MTTI-Automated Drone-Based	20.RD	MTRI Inc.	MTU Agreement #1904015	-	49,812
UNIVE-MTTI-Leveraging Connected Hig	20.RD	University of Illinois at Urbana-Champaign	097547-17640	-	19,213
MITRA-Deploy 3D BRIDGE App	20.RD	Michigan Dept of Transportation	2018-0283/JN200888 N1	-	19,302
UNIVE-Radar Congestion Task 1	20.RD	University of Michigan	SUBK00010081 PO#3005266707	-	191,075
				126,354	730,389
Metropolitan Transportation Planning and State and Non-Metropolitan Planning and Research:					
MITRA-MTTI-Freeze Thaw Model	20.505	Michigan Dept of Transportation	2016-0067 Z5 JOB #132228	-	15,338
MITRA-MTTI-Calc of Scour Potential	20.505	Michigan Dept of Transportation	2016-0067/#Z28/JN204647N1	-	47,255
MITRA-MTTI-Integration of Aerial	20.505	Michigan Dept of Transportation	Contract No. 2019-0311, Aut Z1	15,462	354,794
				15,462	417,387
University Transportation Centers Program:					
UNIVE-MTTI-NURail Tier 1	20.701	University of Illinois at Urbana-Champaign	072614-14811	-	62,511
Total U.S. Department of Transportation					
				141,816	1,210,287
National Aeronautics and Space Administration					
No CFDA Number:					
USNAS-Harmful Algal Blooms	43.RD	Direct	NNC15VA51P	-	15,973
HONEY-MARC-FNR-RedWater Mars Lee	43.RD	Honeybee Robotics	Prime 80HQTR19C0017	-	20,306
JETPR-EPSSI-FNR-Volcanic C02	43.RD	Jet Propulsion Laboratory	RSA No. 1647992	-	25,000
RESEA-Situ Lake Ontario-Cladophora	43.RD	Research Foundation for SUNY/Buffalo State	RF Award 82578/Project 1149422	-	13,500
NATIO-MARC-T-REX	43.RD	National Institute of Aerospace	Check #29622 (Phase I)	-	67,125
				-	141,904
Science:					
USNAS-FNR-Dev Workshop SMAP	43.001	Direct	80NSSC20K0367	-	9,162
USNAS - EPSSI - FNR - Climatology	43.001	Direct	NNX13AF50G	-	76,541
USNAS-EPSSI-FNR-EIC Observations	43.001	Direct	NNX15AC61G	-	23,195
USNAS-FNR-L and S Band SAR Great Lakes	43.001	Direct	80NSSC20K6079	-	2,959
USNAS-Boreal-Taiga Ecosystems	43.001	Direct	NNX15AT83A	-	1,880
USNAS-SMAP-Data Soil Fuel Moisture	43.001	Direct	NNX16AN09G	23,638	84,825
USNAS-EPSSI-FNR-Snowfall in GPM Era	43.001	Direct	80NSSC17K0058	43,308	56,558
USNAS-GLRC-FNR-Laurentian Basin	43.001	Direct	80NSSC17K0287	-	35,693
USNAS-Great Lake Basin	43.001	Direct	80NSSC17K0262	321,603	507,134
USNAS-FNR-Next Generation AVIRIS-NG	43.001	Direct	80NSSC17K0543	-	45,203
USNAS-New Carbon Monitoring	43.001	Direct	80NSSC17K0712	-	201,645
USNAS-EPSSI-FNR-Volcanic Emiss	43.001	Direct	80NSSC20K0983	-	11,355
USNAS-EPSSI-FNR-Exploiting High-Cad	43.001	Direct	80NSSC19K0771	-	3,522
USNAS-FNR-Waterfowl Habitat ABOVE	43.001	Direct	80NSSC19M0108	-	244,801
USNAS-Wildfire & Boreal-Taiga	43.001	Direct	80NSSC19M0107	4,145	221,615
MIAMI-Southern Vietnam Land-cover	43.001	Miami University	MCCARTY-NASA-MICHTECH-G03016	-	13,283
UNIVE-EPSSI-FNR-Satellite Data	43.001	University of Maryland College Park	SUBAWARD NO. 19311-Z6929001	-	1,682

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Research and Development Cluster (continued)					
National Aeronautics and Space Administration (continued)					
Science (continued):					
UNIVE-Repeated Wildfire Burning	43.001	University of Maryland	Z6981001 / NNX15AT79A / PO31017	\$ -	\$ 8,477
UNIVE-EPSSI-FNR-NASA OMI SO2 Produ	43.001	University of Maryland	53894-Z6044201	-	74,956
UNIVE-FNR-Impact of Wildfire Emissi	43.001	University of Maryland College Park	77464-Z6207201	-	81,595
UNIVE-Wildland Fire Analysis	43.001	University Corporation for Atmospheric Research	SUBAWD002090-P2010817	-	25,133
UNIVE-EPSSI-FNR-Extending NASA EOS	43.001	University of Maryland College Park	60783-Z6098201	-	26,172
				<u>392,694</u>	<u>1,757,386</u>
Aeronautics:					
UNIVE-MARC-Model Adv Fiber-Reinforc	43.002	University of Massachusetts - Lowell	S5200000043905	-	4,579
Exploration					
UNIVE-MARC-FNR-NASA-Lunar and Aster	43.003	University of Central Florida	24086235-03	-	9,042
Space Operations:					
USNAS-MuSTI-FNR-Vapor Bubble Data	43.007	Direct	80NSSC19K0160	-	87,755
Education:					
USNAS-FNR-LIFT-Stratus: A CubeSat	43.008	Direct	NNX16A174A	-	15,435
UNIVE-HRI-FNR-MSGC-Setting Foot Mar	43.008	University of Michigan	SUBK000011239 PO 3005540064	-	1,301
UNIVE-MSGC-FNR-Convolutional Neural	43.008	University of Michigan	SUBK000010292	-	7,257
UNIVE-MSGC-EPSSI-FNR-Water Vapor	43.008	University of Michigan	SUBK000010292	-	1,071
				<u>-</u>	<u>25,064</u>
Space Technology:					
USNAS-MARC-FNR-Ultra-Strong Composi	43.012	Direct	NNX17AJ32G	2,005,719	2,376,664
USNAS-MUSTI-FNR-Excavation Gypsum	43.012	Direct	80NSSC18K0252	24,257	94,199
				<u>2,029,976</u>	<u>2,470,863</u>
Total National Aeronautics and Space Administration					
				<u>2,422,670</u>	<u>4,496,593</u>
National Science Foundation					
No CFDA Number:					
RE:3D-IMP-Increasing Maker Manufact	47.RD	re:3D Inc	Mich Tech Agreement #1807056	-	72,750
MICRO-Microfabrication Fac Services	47.RD	Microdevice Engineering Inc	MTU CO#1703052;PO#13	-	1
RESEA-Phase 1/11 - WIDER Evaluation	47.RD	Research Foundation for SUNY/Buffalo State	Partnership Agmt dated 7/9/18	-	373
				<u>-</u>	<u>73,124</u>
Engineering Grants:					
NSF-CAREER: Operation Distr Grids	47.041	Direct	1751460	-	10,303
NSF-HRI-CAREER:Improved Virus Remo	47.041	Direct	1451959	-	70,815
NSF-ILI-I-Corps Site Program	47.041	Direct	1450364	-	16,563
NSF-HRI-GOALI:Graphen PaperSensor	47.041	Direct	1510006	-	1,086
NSF-MTTI-Active Mobile Sensor Net	47.041	Direct	1538105	-	97,205
NSF-Workshop on Solar Power	47.041	Direct	1543702	-	(323)
NSF-CWS-RET Site-Promoting Learning	47.041	Direct	1542383	-	28,211
NSF-SFI-SusChEM:Efficient Hydrolysi	47.041	Direct	1605105	-	90,864
NSF-SFI-INFEWS/T3 Conservation	47.041	Direct	1639342	421,117	715,459
NSF-GLRC-Collab Rsch: Bubble Impact	47.041	Direct	1920013	-	7,686
NSF-GLRC-CAREER:Underwater Acoustic	47.041	Direct	1651135	-	125,641
NSF-IMP-Nanofabrication Three-Dimen	47.041	Direct	1661699	-	57,517
NSF-ICC-Wearable Electronics	47.041	Direct	1710862	-	13,867
NATIO-MTTI-Image-Data-Driven Learn	47.041	Direct	1742656	-	78,591
NSF-ICC-Transformation Optics	47.041	Direct	1709991	-	79,113
NSF-MuSTI-Collab Rsch:Surface Tensi	47.041	Direct	1749634	-	38,693
NSF-ICC-Cyber Risk Management	47.041	Direct	1739422	-	53,300
NSF-HRI-Vaccine Development	47.041	Direct	1818906	23,259	60,887
NSF-ICC-CAREER: System-on-Cloth	47.041	Direct	1751454	-	27,321
NSF-GLRC-PTI-TT: Noise-Cancelling	47.041	Direct	1827486	-	125,853
NSF-GLRC-Impacts of Biocides Associ	47.041	Direct	1804685	-	40,519
NSF-APS-Control-Oriented Modeling	47.041	Direct	1762520	-	102,881
NSF-CQP-Collaborative Rsh:Wave Mix	47.041	Direct	1807552	-	55,559
NSF-APS-Organic Wastes Streams	47.041	Direct	1827364	60,750	265,228
NSF-AIM-CAREER: Battery Lifetime	47.041	Direct	1651256	-	33,362
NSF-SFI-RAPID: COVID-19 (C-CAR)	47.041	Direct	2031677	-	125
GEORG-HRI-Engineering Center CMaT	47.041	Georgia Institute of Technology	SUBAWARD RJ375-G6	-	(563)
NSF-HRI-Stem Cell Patch-Vasculatur	47.041	Direct	1703570	-	54,928
NSF-SFI-I-Corps: Process Refinery	47.041	Direct	2015919	-	4,049
STABI-CQP-High Brightness Fluoropho	47.041	Stabilus Biosciences Inc.	MICHIGAN TECH AGMT #1702043	-	84,883
NSF-MTTI-CAREER: Tackling congestio	47.041	Direct	1846795	-	16,036
NSF-PFT-TT:Affordable Polyethylene	47.041	Direct	1918585	-	55,556
NSF-MuSTI-EAGER:	47.041	Direct	1937983	-	67,363
NSF-APS-Planning Grant ERC-DEES	47.041	Direct	1936861	-	20,975
				<u>505,126</u>	<u>2,499,553</u>

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Research and Development Cluster (continued)					
National Science Foundation (continued):					
Mathematical and Physical Sciences:					
NSF-IMP-Collab Research-Martensites	47.049	Direct	1506936	\$ -	\$ 20,209
NSF-EPSSI-Galactic Plane Morphology	47.049	Direct	1607415	-	79,384
NSF-HRI-New Identity of Galectin-3	47.049	Direct	1608537	-	161,153
NSF-High-Order Numerical Methods	47.049	Direct	1818467	-	69,858
NSF-GLRC-Photochemical Fate Amino	47.049	Direct	1808052	-	118,276
NSF-HRI-Collaborative Rsch-Ethylen	47.049	Direct	1904215	-	43,544
NSF-EPSSI-WoU-MMA Tracing CosmicRay	47.049	Direct	1914549	-	86,120
				-	578,544
Geosciences:					
NSF-EPPSI-Single Silicate Crystals	47.050	Direct	1519967	-	9,902
NSF-EPSSI-Heterogeneous Ice Nucleat	47.050	Direct	1541998	-	42,513
NSF-EPSSI-MRI:Develop Mapping Style	47.050	Direct	1625598	-	29,721
NSF-EPSSI-Magma Storage	47.050	Direct	1654128	-	119,355
NSF-EPSSI-Aerosol-Cloud Interaction	47.050	Direct	1754244	-	182,864
NSF-GLRC-Collaborative Rsch:Groundw	47.050	Direct	1743370	-	83,615
NSF-EPSSI-RAPID: Fuego Volcano	47.050	Direct	1841852	-	565
NATIO-NSF-EPSSI-Collaborative:Therm	47.050	Direct	1806287	-	16,778
NSF-EPSSI-Collab Rsch:Geomagnetic	47.050	Direct	1828866	-	67,770
NSF-EPSSI-Correlated Random Process	47.050	Direct	1639868	-	157,419
PENNS-Convergence NNA	47.050	Pennsylvania State University	5697-MTU-NSF-5369	-	12,734
PENNS-Pursuing Opportunities POLARI	47.050	Pennsylvania State University	5000075-NSF	-	1,634
				-	724,870
Computer and Information Science and Engineering:					
CAREER-ICC-Heterogeneous Manycore	47.070	Direct	1350206	-	10,238
NSF-ICC-XPS Collaborative Sphinx	47.070	Direct	1533828	-	19,882
NSF-AIM-Collab Research:CRISP Type2	47.070	Direct	1541000	-	6,557
NSF-ICC-Scalable Spectral Sparsfca	47.070	Direct	1618364	-	25,190
NSF-ICC-CSR:Small:Miss Ratio Curves	47.070	Direct	1618384	-	122,200
NSF-ICC-SHF:SMALL:Collaborative Rsh	47.070	Direct	1745748	-	75,870
NSF-ICC-FNR-Algorithm CORES	47.070	Direct	1708299	-	100,877
NSF-ICC-CAREER: Technology Assisted	47.070	Direct	1750193	-	95,308
NSF-ICC-FoMR:Collaborative Rsch	47.070	Direct	1823398	-	75,483
NSF-LIFT-I-Corps Site Program	47.070	Direct	1829222	-	13,312
NSF-ICC-EAGER-Enabling Secure Data	47.070	Direct	1938130	-	54,120
NSF-ICC-CHS=Small:Rich Surface Inte	47.070	Direct	1909089	-	73,762
NSF-ICC-SHF:Medium	47.070	Direct	1901005	-	76,476
NSF-ICC-SATC:CORE:Small:Collaborati	47.070	Direct	1928349	-	53,991
NSF-ICC-CHS:Small:Collaborative	47.070	Direct	1909248	-	29,030
				-	832,296
Biological Sciences:					
NSF-FFC-ESC-Peatland C Fluxes	47.074	Direct	1354370	-	3,227
NSF-ESC-FFC-LTREB Terrestrial Chain	47.074	Direct	1453041	-	67,784
NSF-ESC-FNR-Career Riverine Ecosys	47.074	Direct	1451919	-	114,363
NSF-LSTI-FFC-ABI Innovation G2P	47.074	Direct	1458130	-	(356)
NSF-HRI-Dimensions: Collaborative	47.074	Direct	1737877	-	88,423
NSF-ESC-FFC-Impact of Microbial Ter	47.074	Direct	1754603	-	136,307
NSF-ESC-FFC-CAREER: Materials Costs	47.074	Direct	1941309	-	57,151
NSF-ESC-FFC-LTREB Renewal	47.074	Direct	1939399	-	5,053
COLOR-ESC-FFC-Peru's Cordillera	47.074	Colorado State University	SUBAWARD #G-96772-1	-	16,871
CIUDA-ESC-FFC-Into The Deep	47.074	Ciudadanos del Karso	SUB 1754713	-	31,120
KANSA-LSTI-EPA-PGR: Under The Hood	47.074	Kansas State University	S19023	-	64,484
NORTH-ICC-Collaborative-Rsch: MSB	47.074	Northern Arizona University	1003744-01	-	2,384
				-	586,811
Social, Behavioral, and Economic Sciences:					
NATIO-IPEC-New Frontier STEM Policy	47.075	Direct	1911453	-	29,685
NSF-GLRC-Standard Grant: Anthropece	47.075	Direct	1921911	-	103,553
				-	133,238
Education and Human Resources:					
NSF-Revamping Robotics Education	47.076	Direct	1501335	1,315	18,506
NSF-ICC-EDU:Collaborative:VACCS	47.076	Direct	1523017	-	4,468
NSF-RISE-Building on MOSTs	47.076	Direct	1720566	-	63,521
NSF-ADVANCE Adaptation AMP-UP	47.076	Direct	1760585	-	235,447
NSF-ADVANCE Partnership: Joining	47.076	Direct	1935932	-	11,008
FLORI-D&D K-12 STEM Observation	47.076	Florida International University	800010570-01UG	-	31,025
SANDIA-Unscripted Dialogic Videos	47.076	San Diego State University Research Foundation	SA0000699 PTE NO. 19077	-	32,642
UNIVE-GLRC-Elementary Student Syste	47.076	University of Virginia	GA11384.PO#2213323/PTE 1850296	-	26,497
				1,315	423,114

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Federal Grantor/Pass-Through Grantor/Program or Cluster Title	Federal CFDA Number	Passed Through	Award Number	Passed Through to Subrecipients	Federal Expenditures
Research and Development Cluster (continued)					
National Science Foundation (continued):					
Office of International Science and Engineering:					
NSF-SFI-Bioenergy Development	47.079	Direct	1243444	\$ (937)	\$ (937)
NSF-HRI-FNR-IRES: Biosensors	47.079	Direct	1559445	-	21,341
NSF-EPSSI-FNR-IRES-Track III-El Sal	47.079	Direct	1855690	-	9,961
				(937)	30,365
Office of Integrative Activities					
NSF-SFI-Collab Rsch:GCR:MICARES	47.083	Direct	1934346	-	122,941
Total National Science Foundation				505,504	6,004,856
U.S. Environmental Protection Agency					
P3 Award: National Student Design Competition for Sustainability:					
USENV-Direct-Recycle-Reuse (DR2)	66.516	Direct	SV-83948501-0	-	12,959
Total U.S. Environmental Protection Agency				-	12,959
U.S. Department of Energy					
No CFDA Number:					
BATTE-APS-Torrefaction MSW	81.RD	Battelle Energy Alliance, LLC	Contract No. 209856	-	141,096
ARGON-APSRC-Ait Fuels Research	81.RD	Argonne National Laboratory	9F-60098	-	81,473
ARGON-GLRC-Chemistry Using Froth	81.RD	Argonne National Laboratory	Subcontract No. 9F-60080	-	112,224
AQUAH-AIM-Power Electronics Design	81.RD	AquaHarmonics Inc	MTU Agreement# 1904005	-	60,000
ALLIA-APS-Compression-Ignition	81.RD	National Renewable Energy Laboratory	NHQ-9-82305-06	-	266,965
BROOK-EPSSI-Cloud Chamber	81.RD	Brookhaven National Laboratory	Subcontract #381481	-	9,922
CLEMS-SFI-Life Cycle Lignin Process	81.RD	Clemson University	Sub #2184-219-2023054	-	29,205
GENER-IMP-Low Mass&High Efficiency	81.RD	General Motors LLC	PO#4301052432	-	20,533
HONEY-APSRC-Freq Response AM Parts	81.RD	Honeywell Federal Manufacturing & Technologies, LLC	PO N000293572	-	55,376
HONEY-APS-Tailor Reson Plate Shoc	81.RD	Honeywell Federal Manufacturing & Technologies, LLC	PO N000293460	-	38,474
HONEY-APSRC-Multi-Axis Resonant	81.RD	Honeywell Federal Manufacturing & Technologies, LLC	PO# N000338831	-	60,536
HONEY-APSRC-Full Field Dynamic Resp	81.RD	Honeywell Federal Manufacturing & Technologies, LLC	PO# N000341836	-	55,807
HONEY-APSRC-Frequency Response	81.RD	Honeywell Federal Manufacturing & Technologies, LLC	PO# N000343641	-	43,798
PACCA-Fuel Surrogate & Chemical Kin	81.RD	PACCAR Technical Center	PACCAR PO #PO0155658	-	4,192
OHIOS-IMP-Steel Alloy Casting	81.RD	Ohio State University	MTU CO#1904013 OSU PO#RF155680	-	6
REMA-D-SFI-PET & Olefin Polymers	81.RD	REMADE Institute	DE-E0007897/#SA-19-10	-	68,186
SANDI-IMP-FNR-Snow Characteristics	81.RD	Sandia National Laboratories	PO# 1980526	-	71,970
SANDI-APS-FNR-Wind Control Code	81.RD	Sandia National Laboratories	PO #2074866	-	58,064
SANDI-APS-FNR-Wind Control Code	81.RD	Sandia National Laboratories	PO#2159403	-	13,519
SANDI-AIM-FNR-Meta-Stability Microg	81.RD	Sandia National Laboratories	PO#2157059	-	9,440
UCHIC-AIM-Physical Sense of Machine	81.RD	UChicago Argonne LLC	9F-60281	-	230,518
UCHIC-AIM-FY20-Interoperability	81.RD	UChicago Argonne LLC	OF-60090	-	69,772
				-	1,501,076
Office of Science Financial Assistance Program:					
USENE-ESC-FFC-Tropical C Cycling	81.049	Direct	DE-SC0012000	7,484	7,484
USENE-IMP-Yr1-Grain Boundary Struct	81.049	Direct	DE-SC0016314	-	88,191
USENE-ESC-FFC-Hurricane Disturb YR1	81.049	Direct	DE-SC0018942	-	70,372
USENE-EPSSI-Cloud Scavenging	81.049	Direct	DE-SC0018931	-	143,443
USENE-EPSS-Marine Boundary	81.049	Direct	DE-SC0020053	-	86,287
BRECH-EPSSI-Aerosol Light Asorb Dev	81.049	Brechtel Manufacturing Inc.	Prime DE-SC0019638	-	44,024
FARAD-SFI-LCA Support DOE SBIR	81.049	Faraday Technology Inc.	SC-40-01014-401034-46	-	1,506
UNIVE-SFI-Great Lakes Bioenergy	81.049	University of Wisconsin-Madison	AGREEMENT NUMBER 812K943	-	252,984
REGEN-ESC-Amazonian Peatland	81.049	Regents of the University of Minnesota	Subaward No. H007829703	-	24,682
				7,484	718,973
Conservation Research and Development:					
USENE-APS-FNR-Spraywall Interaction	81.086	Direct	DE-EE0007292	9,026	50,172
USENE-APS-FNR-Natural Gas Engine	81.086	Direct	DE-EE0007331	-	64,998
USENE-APS-Gas Clothes	81.086	Direct	DE-EE0008685	-	187,427
AMERI-Validating Vehicle Models	81.086	The American Center for Mobility	DE-EE0008407-01	-	822,425
Co-Optimized PPCI-SI Engine System	81.086	Hyundai-Kia American Technical Center Inc	#1807015	-	382,862
				9,026	1,507,884
Renewable Energy Research and Development:					
USENE-IMP-FNR-Energizer Bunny	81.087	Direct	DE-EE0008990	23,035	77,279
LANZA-SFI-LCA Support for PD2B3 Pro	81.087	Lanza Tech	#1607041 SUB DE-EE0007966/0001	-	38,863
THREE-MuSTI-Novel Lonomers	81.087	3M Corporation	3M USMMM3KR5T CO3 PO3500616289	-	98,803
				23,035	214,945
Fossil Energy Research and Development:					
USENE-IMP-FNR-Nickle-Base Superallo	81.089	Direct	DE-FE0027822	-	68,509
Electricity Delivery and Energy Reliability, Research, Development and Analysis:					
UNIVE-AIM-Signatures Anomalies	81.122	University of California, Riverside	S-001221 DE-OE0000916	-	57,456

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Research and Development Cluster (continued)					
U.S. Department of Energy (continued)					
Advanced Research Projects Agency - Energy:					
USENE-APS-NEXTCAR Hybrid	81.135	Direct	DE-AR0000788	\$ -	\$ 503,480
USENE-APS-3D Lattices	81.135	Direct	DE-AR0001126	93,348	179,114
LANZA-SFI-LCA Support Gas Conversio	81.135	Lanza Tech	MICHIGAN TECH AGMT #1306017	-	23,054
UNIVE-ICC-Packetized Energy Manage	81.135	University of Vermont	30382 SUB52046 MICHIGAN	-	13,891
				<u>93,348</u>	<u>719,539</u>
Total U.S. Department of Energy				<u>132,893</u>	<u>4,788,382</u>
U.S. Department of Education					
Education Research, Development and Dissemination:					
UNIVE-Enhancing Middle School Math	84.305	University of Cincinnati	011275-007	-	53,611
Total U.S. Department of Education				<u>-</u>	<u>53,611</u>
U.S. Department of Health and Human Services					
No CFDA Number:					
CENTE-GLRC-Respirable Coal Mine	93.RD	Direct	75D30119C05527	28,430	90,598
PEDIA-IMP-Novel Zinc Materials	93.RD	PediaStent LLC	#1802057	-	12,363
				<u>28,430</u>	<u>102,961</u>
Oral Diseases and Disorders Research:					
NIH-LSTI-Dev Multi-epitope L2 Bacte	93.121	Direct	1 R15 DE025812-01A1	-	31,886
Human Genome Research:					
NIH-HRI-Rare Variant Assoc Studies	93.172	Direct	1 R15 HG008209-01A1	-	49,636
National Center on Sleep Disorders Research:					
REGEN-Sleep Apnea After Stroke	93.233	Regents of the University of Michigan	SUBK00003964	-	3,939
Alcohol Research Programs:					
NIH-HRI-Alcohol and Neurovascular	93.273	Direct	1R01AA024892-01A1	30,798	85,456
UNIVE-HRI-Alcohol & Neurovascular	93.273	Montana State University	G258-20-W8275	-	189,889
				<u>30,798</u>	<u>275,345</u>
Discovery and Applied Research for Technological Innovations to Improve Human Health:					
NIH-HRI-Magnetoelastic System	93.286	Direct	1R15EB023648-01	41,534	110,573
NIH-HRI-Elastography-Based Analyti	93.286	Direct	1R15EB026197-01	-	94,988
				<u>41,534</u>	<u>205,561</u>
Cancer Detection and Diagnosis Research:					
NIH-Exploiting Cellular Discriminat	93.394	Direct	1R15CA242401-01	-	170,084
Cancer Treatment Research:					
NIH-HRI-Exploiting Synthetic Lethal	93.395	Direct	1R15CA246336-01	-	7,982
Cardiovascular Diseases Research:					
NIH-HRI-Brain (Pro)renin	93.837	Direct	1R15HL129213-01A1	-	74,595
NIH-HRI-Mindfulness & Neural Cardi	93.837	Direct	1R15HL140596-01	16,109	166,181
NIH-HRI-Sm Diameter Blood Vessel	93.837	Direct	1R15HL145654-01	-	267,487
NIH-IMP-Arterial Devices	93.837	Direct	1R15HL147299-01	8,957	299,444
NIH-IMP-Bioabsorbable Stents	93.837	Direct	1R01HL144739-01A1	-	356,709
NIH-HRI-Neural Mechanism	93.837	Direct	1R15HL145655-01	-	84,511
NIH-Engineered Human Cardiac Patch	93.837	Direct	1R01HL146652-01A1	39,555	59,359
				<u>64,621</u>	<u>1,308,286</u>
Arthritis, Musculoskeletal and Skin Diseases Research:					
GEORG-LSTI-Rats w/ Segmented Bone	93.846	Georgia Institute of Technology	RG760-G3 - AMENDMENT 2	-	(8,601)
UNIVE-HRI-Rats w/ Segmented Bone	93.846	University of Oregon	217180B	-	7,744
				<u>-</u>	<u>(857)</u>
Extramural Research Programs in the Neurosciences and Neurological Disorders:					
USFED-Dissection of Pallidal Circui	93.853	Direct	7R03NS108097-02	-	113,948
Allergy, Immunology and Transplantation Research:					
NIH Develop Novel + Broadly Applica	93.855	Direct	1R15AI146982-01A1	-	40,240
Biomedical Research and Research Training:					
NIH-HRI-Dream Complex	93.859	Direct	1R15GM137145-01	-	22,250
NIH-HRI-Role of Toolkit Genes	93.859	Direct	1 R15 GM107801-01A1	-	15,655
NIH-HRI-Biomimetic Tissue Adhesive	93.859	Direct	2R15 GM104846-02	-	66,013
NIH-HRI-Oligodeoxy Nucleotide	93.859	Direct	2R15GM109288-02	-	93,119
NIH-HRI-Lysosomal pH in Living Cell	93.859	Direct	1 R15 GM114751-02	-	106,893
NIH-Extracellular Matrix Stiffness	93.859	Direct	1R15GM135806-01	-	57,787
NIH-Diabetic Wound Repair	93.859	Direct	1R15GM135875-01	-	34,200
NIH-HRI-Structure Function Relation	93.859	Direct	1R15GM132873-01A1	-	35,958
NIH-Wound Healing & Tissue Engr	93.859	Direct	1R15GM137298	-	30,423
				<u>-</u>	<u>462,298</u>

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Federal Grantor/Pass-Through Grantor/Program or Cluster Title	Federal CFDA Number	Passed Through	Award Number	Passed Through to Subrecipients	Federal Expenditures
Research and Development Cluster (continued)					
U.S. Department of Health and Human Services (continued)					
Aging Research:					
NIH-ICC-Motor Learning-Alzheimer	93.866	Direct	1 R15 AG059095-01	\$ -	\$ 96,744
TULAN-ICC-Studies for Male Osteopor	93.866	Tulane University	TUL-HSC-557631-19/20 /5U19AG05	-	24,497
				-	121,241
Total U.S. Department of Health and Human Services				<u>165,383</u>	<u>2,892,550</u>
Central Intelligence Agency					
No CFDA Number:					
APPLI-FNR-The Amon Hen Project	99.RD	Applied Technology Associates	MTU SUBCONTRACT #180637	-	336,634
Total Central Intelligence Agency				-	336,634
Total Research and Development Cluster				<u>4,154,328</u>	<u>36,172,021</u>
Other Programs					
U.S. Department of Agriculture					
No CFDA Number:					
USAGR-ESC-FFC-Climate Change	10.U01	Direct	15-CR-11242306-043	-	156,889
USAGR-ESC-FFC-Fire Preparedness	10.U01	Direct	15-CS-11242306-044	-	21,165
USAGR-ESC-FFC-Climate Change	10.U01	Direct	15-CR-11242306-059	-	32,223
USAGR-ESC-FFC-Support Forest Climat	10.U01	Direct	16-CR-11242306-095	-	22,308
USAGR-ESC-FFC-Belowground Ecosystem	10.U01	Direct	17-JV-11242306-011	-	33,314
USAGR-Archaeological Collection-ONF	10.U01	Direct	18-CS-11090700-004	-	741
USAGR-ESC-FFC-Web Development CCRC	10.U01	Direct	18-CR-11242306-085	-	39,747
USFOR-ESC-FFC Land & Climate Progra	10.U01	Direct	19-CR-11242306-004	-	32,280
USAGR-Hiawatha Archae Collection	10.U01	Direct	19-CS-11091000-001	-	9,535
USAGR-Archaeological Collections	10.U01	Direct	20-CS-11091000-002	-	1,898
				-	350,100
Child and Adult Care Food Program:					
Child Care Food Program	10.558	Michigan Dept of Education		-	10,006
Cooperative Forestry Assistance:					
USDOW-ESC-FFC-Mass Timber Building	10.664	U.S. Endowment for Forestry and Communities	E19-65	-	10,800
Mass Timber Building H-Stem	10.664	U.S. Endowment for Forestry and Communities	E19-65	-	25,153
				-	35,953
Wood Utilization Assistance:					
RENEW-FFC-Wood Innovation Team	10.674	Renewable Resource Solutions LLC	CONTRACTOR AGMNT DATED 10/4/16	-	5,230
Partnership Agreements:					
USAGR-ESC-FFC-Climate Change	10.699	Direct	17-CR-11242306-031	-	168,970
USAGR-ESC-FFC-Climate Change Suppor	10.699	Direct	18-CR-11242306-049	-	158,378
				-	327,348
Research Joint Venture and Cost Reimbursable Agreements:					
USAGR-ESC-FFC-Collaborative Adapt	10.707	Direct	19-cr-11242306-094	-	1,982
Total U.S. Department of Agriculture				-	730,619
U.S. Department of Commerce					
Sea Grant Support:					
REGEN-E. Eberhard Fellowship	11.417	Regents of the University of Michigan	SUBK00012243	-	6,481
REGEN-GLRC-Great Lakes Anglers	11.417	Regents of the University of Michigan	NA180AR4170102 / 3004932532	-	1,254
				-	7,735
Marine Sanctuary Program:					
USCOM-GLRC-Lake Superior Stewardship	11.429	Direct	NA19NOS4290020	-	60,045
Total U.S. Department of Commerce				-	67,780
U.S. Department of Defense					
Basic, Applied, and Advanced Research in Science and Engineering:					
TECHN-PIOI-2019-20 UNITE Program	12.630	Technology Student Association	MTU #1904008	-	30,320
GenCyber Grants Program:					
OFFIC-ICC-GenCyber Learning K-12	12.903	Direct	H98230-19-1-0143	-	75,123
NATIO-ICC-FNR-Innovative GenCyber	12.903	Direct	H98230-19-1-0074	-	48,357
				-	123,480
Total U.S. Department of Defense				-	153,800
U.S. Department of Interior					
Keweenaw National Historical Park (NHP) Preservation Grants:					
KEWEE-Processing and Preservation	15.407	Keweenaw NHP Advisory Commission	C2018-014	-	2,832

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Other Programs (continued):					
U.S. Department of Interior (continued):					
Wildlife Restoration and Basic Hunter Education:					
SDC Shooting Range Remediation	15.611	Michigan Department of Natural Resources	Memorandum of Agreement dated 1/31/18	\$ -	\$ 4,437
Cooperative Research and Training Programs - Resources of the National Park System:					
USPAR-ESC-FFC-Isle Royale Membership	15.945	Direct	TASK AGREEMENT NO P15AC00157	-	12,700
USPAR-ESC-FFC-Wolf Moose Study	15.945	Direct	P18AC00331	-	85,064
				-	97,764
				-	105,033
Total U.S. Department of Interior					
U.S. Department of Labor					
Mine Health and Safety Grants:					
USLAB-FY18 Mine Safety	17.600	Direct	MS-05046-18-55-26	-	52,485
USLAB-FY19 Mine Safety	17.600	Direct	MS-02601-19-55-26	-	257,591
				-	310,076
Total U.S. Department of Labor					
U.S. Department of Transportation					
No CFDA Number:					
USTRA-MITTI-Rail Learning System	20.U02	Direct	DTFR5317P00053	-	2,486
MITRA-CTT-Roadsoft/MDOT Safety	20.U02	Michigan Department of Transportation	CONT# 2019-0449 JOB NO. 201436	-	3,801
MITRA-CTT-Bridge Design Phase II	20.U02	Michigan Department of Transportation	CONTRACT NO 2013-0506 AMEND A2	-	94,021
MITRA-CTT-Roadsoft 2019	20.U02	Michigan Department of Transportation	2017-0299-Z002	-	497,021
				-	597,329
Highway Planning and Construction:					
MITRA-CTT-MERL 2019	20.205	Michigan Dept of Transportation	MDOT-Research 2018-0057 AuthZ5	-	15,802
MITRA-CTT-Local Agency Pavemnt-STIC	20.205	Michigan Dept of Transportation	2018-0057 Authorization Z6	-	50,941
MITRA-CTT-Roadsoft 2020	20.205	Michigan Dept of Transportation	2018-0057/AUTH Z10/209441NI	-	493,234
MITRA-CTT-MERL 2020	20.205	Michigan Dept of Transportation	2018-0057 Z12/ JOB#205618NI	-	88,827
				-	648,804
Highway Training and Education:					
MITRA-CTT-LTAP 2019	20.215	Michigan Dept of Transportation	AUTHORIZATION Z1,Z2,Z3	-	124,068
MITRA-PIOI-FHWA-NSTI 2019	20.215	Michigan Dept of Transportation	Contract No. 2019-0595	-	40,440
MITRA-CTT-LTAP 2020	20.215	Michigan Dept of Transportation	2018-0713 AUTHORIZATION Z4-Z6	-	382,652
				-	547,160
State and Community Highway Safety:					
MITRA-CTT-MIRE Upgrades in Roadsoft	20.600	Michigan Dept of Transportation	Contract #2017-0299 Auth Z3	-	15,387
				-	1,808,680
Total U.S. Department of Transportation					
National Aeronautics and Space Administration					
No CFDA Number:					
COPPE-GLRC-MI-Space Grant Consortiu	43.U03	Copper Country Intermediate School District	2031.OTH;Task Order 2001032-02	-	1,573
Science:					
USNAS-FFC-FNR-Fellowship-K Meingast	43.001	Direct	NNX16AN96H	-	4,967
USNAS-FNR-Chandrakar-Fellowship	43.001	Direct	80NSSC17K0449/P00001	-	896
USNAS-EPSSI-FNR-Astronomy Picture	43.001	Direct	80NSSC17M0076	-	88,049
				-	93,912
Education:					
UNIVE-MSGC-LIFT-FNR-Admin 18	43.008	University of Michigan	SUBK00009427 PO 3005005436	-	2,012
UNIVE-FNR-GLRC-MSGC-STEM Detroit HS	43.008	University of Michigan	SUBK00009427 PO 3005005436	-	6,344
UNIVE-ESC-FFC-FNR-Groundwater Flow	43.008	University of Michigan	SUBK00011239/PO#3005540064	-	5,000
UNIVE-FNR-GLRC-MSGC D. Trepoli Fell	43.008	University of Michigan	SUBK00011239 PO# 3005540064	-	(1,000)
UNIVE-FNR-MSGC-Rodriguez	43.008	University of Michigan	SUBK00011239 PO#3005540064	-	5,000
UNIVE-GLRC-FNR-MSGC-Families in UP	43.008	University of Michigan	SUBK00011239 PO 3005540064	-	5,758
UNIVE-LIFT-FNR-MSGC- Admin 19	43.008	University of Michigan	SUBK00011239 PO 3005540064	-	4,175
UNIVE-FNR-MSGC-Dissolved Amino Acid	43.008	University of Michigan	SUBK00011239/PO#3005540064	-	5,000
UNIV-FNR-MSGC-Blue Light Exposure	43.008	University of Michigan	SUBK00011239/PO#3005540064	-	2,882
UNIVE-FNR-MSGC-Negative Energy Bala	43.008	University of Michigan	SUBK00011239 PO# 3005540064	-	3,933
UNIVE-HRI-FNR-MSGC-Space Medicine	43.008	University of Michigan	SUBK00011239/PO#300554064	-	5,000
UNIVE-FNR-MSGC-Upper Body Aerobic	43.008	University of Michigan	SUBK00011239 PO# 3005540064	-	4,986
UNIVE-FNR-MSGC-Porcine Mammary Arte	43.008	University of Michigan	SUBK00011239/PO#3005540064	-	2,800
UNIVE-FNR-MSGC-Keweenaw 2018 Flood	43.008	University of Michigan	SUBK00011239	-	5,000
UNIV-FRN-MSGC-N2 Fixation W	43.008	University of Michigan	SUBK00011239/PO#3005540064	-	3,615
UNIVE-MARC-FNR-NASA Lunaboies Compe	43.008	University of Michigan	SUBK00011239 PO 3005540064	-	5,000
REGEN-FNR-MSGC-L. Morath Fellowship	43.008	Regents of the University of Michigan	SUBK00010292	-	259
				-	65,764
				-	161,249
Total National Aeronautics and Space Administration					

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Other Programs (continued):					
National Endowment for the Humanities					
Promotion of the Arts Partnership Agreements:					
Stars of American Ballet	45.025	Arts Midwest	Case Number 00024650	\$ -	\$ 3,200
MICHI-Rozsa Presenting Series 19-20	45.025	Michigan Council for Arts and Cultural Affairs	20PS5644AC	-	19,500
				-	22,700
Promotion of the Humanities - Division of Preservation and Access:					
NATIO-GLRC-CC Historical Spatial	45.149	Direct	PW-234885-16	-	10,599
Promotion of the Humanities - Teaching and Learning Resources and Curriculum Development					
NATIO-Centered Engr Initia	45.162	Direct	AWARD AKA-265701-19	-	29,349
Total National Endowment for the Humanities				-	62,648
National Science Foundation					
Engineering Grants:					
UNIVE-Parylene Coating	47.041	University of Oregon	CO#2003007/PO110400-00259	-	1,000
Mathematical and Physical Sciences:					
NSF-Symposium Comp Modeling Biomed	47.049	Direct	1931844	-	10,994
Geosciences:					
NSF-EPSI-Workshop Explore Science	47.050	Direct	1945681	-	25,840
Education and Human Resources:					
NSF-Professoriate Progression	47.076	Direct	1305678	-	14,867
NSF-IMP-FNR-Morgan GRFP	47.076	Direct	1546592	-	11,803
NSF-FNR-Cummings GRFP	47.076	Direct	1546592	-	2,833
NSF-SFI-GRFP	47.076	Direct	1546592	-	2,739
NNSF-FNR-ADV ACCT-Guillory GRFP	47.076	Direct	1546592	-	12,533
NSF-LIFT-FNR-ETS-IMPRESS	47.076	Direct	1742286	-	135,332
NSF-FNR-RISE-NOYCE Fellows Program	47.076	Direct	1758392	9,240	238,200
NSF-Graduate Fellowship-Turner-GRFP	47.076	Direct	1546592	-	43,167
WAYNE-GLRC-FACTS & Careers STEM	47.076	Wayne State University	SUBAWARD# WSU17042	-	8,650
Total National Science Foundation				9,240	470,124
				9,240	507,958
Small Business Administration					
Small Business Development Centers:					
GRAND-2019 Region 1 MI-SBDC Host	59.037	Grand Valley State University	Subaward No. MISBDC-2019-01	-	306,314
GRAND-2020 Region 1 MI-SBDC Host	59.037	Grand Valley State University	MISBDC-2020-01 PO# P0088822	-	15,907
Total Small Business Administration				-	322,221
Environmental Protection Agency					
Environmental Finance Center Grants:					
USENV-CTT-EPA Region 5	66.203	Direct	00E01979	-	75,492
Surveys, Studies, Investigations, Demonstrations, and Training Grants - Section 1442 of the Safe Drinking Water Act:					
UNIVE-CTT-Smart Water Systems	66.424	University of North Carolina at Chapel Hill	5111291	-	16,169
Environmental Education Grants:					
USENV-GLRC-Great Lakes Stewards	66.951	Direct	NE-00E02260-0	7,609	10,468
Total Environmental Protection Agency				7,609	102,129
U.S. Department of Education					
No CFDA Number:					
BHKCH-GLRC-GE-STEM Clubs	84.U04	BHK Child Development Board	MTU CO#1910031	-	4,787
Twenty-First Century Community Learning Centers:					
BHKCH-GLRC-Great Explorations STEM	84.287	BHK Child Development Board	MTU CONFIRMING ORDER#1809035	-	42
Gaining Early Awareness and Readiness for Undergraduate Programs:					
MILAB-PIOI-Gear Up Year 7 Extension	84.334	Michigan Dept of Labor & Economic Growth	Grant Number 18-00-07	-	4,549
Education Stabilization Fund					
COVID-19 - CARES Act - HEERF Student Aid Portion	84.425E	Direct	P425E203543	-	40,269
COVID-19 - CARES Act - HEERF Institutional Portion	84.425F	Direct	P425F202710	-	4,962
Total U.S. Department of Education				-	54,609

See Notes to Schedule of Expenditures of Federal Awards.

Michigan Technological University

Schedule of Expenditures of Federal Awards

Year Ended June 30, 2020

Federal Grantor/Pass-Through Grantor/Program or Cluster Title	Federal CFDA Number	Passed Through	Award Number	Passed Through to Subrecipients	Federal Expenditures
Other Programs (continued):					
National Historical Publications					
National Historical Publications and Records Grants:					
NORTH-Digital Preservation Network	89.003	Northern Michigan University	Contract for #1911013	\$ -	\$ 2,164
Total National Historical Publications				-	2,164
U.S. Department of Health and Human Services					
Environmental Health					
REGEN-CA Wildland Fire/Smoke Exposu	93.113	Regents of the University of Michigan	#5500016656/PO 3005948379	-	20,000
Injury Prevention and Control Research and State and Community Based Programs:					
MICH-DELTA Impact	93.136	Michigan Coalition to End Domestic & Sexual Violence MCEDSV	Proposal #1812086	-	47,074
Total U.S. Department of Health and Human Services				-	67,074
U.S. Department of Homeland Security					
Disaster Grants - Public Assistance (Presidentially Declared Disasters):					
FEMA-4381-DR-MI, Public Assistance Grant Program	97.036	Michigan State Police	FEMA-4381-DR-MI	-	18,016
FEMA-4381-DR-MI, Public Assistance Grant Program	97.036	Michigan State Police	FEMA-4381-DR-MI	-	5,000
FEMA-4381-DR-MI, Public Assistance Grant Program	97.036	Michigan State Police	FEMA-4381-DR-MI	-	118,137
Total U.S. Department of Homeland Security				-	141,153
Total Other Programs				16,849	4,597,193
Total Expenditures of Federal Awards				\$ 4,171,177	\$ 83,808,114

See Notes to Schedule of Expenditures of Federal Awards.

Michigan Technological University

Notes to Schedule of Expenditures of Federal Awards

Year Ended June 30, 2020

1. Basis of Presentation

The accompanying schedule of expenditures of federal awards (Schedule) includes the federal grant activity of Michigan Technological University (University) under programs of the federal government for the year ended June 30, 2020. Expenditures reported on the Schedule are reported on the same basis of accounting as the financial statements, although the basis for determining when federal awards are expended is presented in accordance with the requirements of the Uniform Guidance, wherein certain types of expenditures are not allowable or are limited as to reimbursement. Therefore, some amounts presented in the Schedule may differ from amounts presented in, or used in the preparation of, the financial statements.

Because the Schedule presents only a selected portion of the operations of the University, it is not intended to, and does not present the financial position, changes in net position, or cash flows of Michigan Technological University.

2. Summary of Significant Accounting Policies

Expenditures reported on the Schedule are reported on the accrual basis of accounting, which is described in Note 1 to the University's financial statements. Such expenditures are recognized following the cost principles contained in Uniform Guidance, wherein certain types of expenditures are not allowable or are limited as to reimbursement. Negative amounts shown on the Schedule represent adjustments or credits made in the normal course of business to amounts reported as expenditures in prior years. Pass-through entity identifying numbers are presented where available.

3. Indirect Cost Rate

The University has not elected to use the 10% de minimis indirect cost rate allowed under the Uniform Guidance.

4. Major Programs and Clusters

As defined in the Uniform Guidance, the Student Financial Assistance programs and Research and Development programs are considered to be clusters of programs and, accordingly, have been classified as one program for testing purposes. The Student Financial Assistance program has been defined as a major program.

5. Federal Perkins Loan Program

The University utilizes the services of Heartland ECSI (ECSI) to administer the repayment of Perkins Loans and perform certain due diligence procedures. During the 2019/2020 fiscal year, there were no program disbursements under the Federal Perkins Loan Program, and no current year federal contribution. There was \$7,317,662 of Federal Perkins Loans (CFDA Number 84.038) outstanding as of June 30, 2020.

Michigan Technological University

Schedule of Findings and Questioned Costs

Year Ended June 30, 2020

Section I – Summary of Auditor’s Results

Financial Statements

Type of auditor's report issued: Unmodified

Internal control over financial reporting:

Material weakness identified? _____ Yes X No

Significant deficiency identified not considered
to be material weakness? _____ Yes X None reported

Noncompliance material to financial statements
noted? _____ Yes X No

Federal Awards

Internal control over major programs:

Material weakness identified? _____ Yes X No

Significant deficiency identified not considered
to be material weakness? _____ Yes X None reported

Type of auditor’s report issued on compliance for
major programs: Unmodified

Any audit findings disclosed that are required to
be reported in accordance with 2 CFR
section 200.516(a)? _____ Yes X No

Michigan Technological University

Schedule of Findings and Questioned Costs

Year Ended June 30, 2020

Section I – Summary of Auditor’s Results (continued)

Federal Awards (continued)

Identification of Major Programs:

<u>Federal CFDA Number</u>	<u>Name of Federal Program or Cluster</u>
	Student Financial Assistance Cluster:
84.007	Federal Supplemental Education Opportunity Grant
84.033	Federal Work Study Program
84.038	Federal Perkins Loans Outstanding
84.063	Federal Pell Grant Program
84.268	Federal Direct Student Loans

Dollar threshold used to distinguish between
Type A and Type B programs:

\$ 2,514,243

Auditee qualified as low-risk auditee?

 X Yes

 No

Section II – Financial Statements Findings

None.

Section III – Federal Award Findings and Questioned Costs

None.

Michigan Technological University

Summary Schedule of Prior Audit Findings

Year Ended June 30, 2020

None.