
Michigan Technological University

Federal Awards Supplemental Information
June 30, 2021

Independent Auditor's Reports

Report on Schedule of Expenditures of Federal Awards Required by the Uniform Guidance 1

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* 2-3

Report on Compliance for Each Major Federal Program and Report on Internal Control Over
Compliance Required by the Uniform Guidance 4-5

Schedule of Expenditures of Federal Awards 6-19

Notes to Schedule of Expenditures of Federal Awards 20

Schedule of Findings and Questioned Costs 21-22

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

Independent Auditor's Report

To the Board of Trustees
Michigan Technological University

We have audited the financial statements of Michigan Technological University (the "University") as of and for the year ended June 30, 2021 and the related notes to the financial statements, which collectively comprise the University's basic financial statements. We issued our report thereon dated December 17, 2021, which contained an unmodified opinion on the financial statements. Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the basic financial statements. We have not performed any procedures with respect to the audited financial statements subsequent to December 17, 2021.

The accompanying schedule of expenditures of federal awards is presented for the purpose 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 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 information is fairly stated in all material respects in relation to the financial statements as a whole.

A handwritten signature in black ink that reads "Plante & Moran, PLLC".

August 31, 2022

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*

Independent Auditor's Report

To Management and the Board of Trustees
Michigan Technological University

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 (the "University") as of and for the year ended June 30, 2021 and the related notes to the financial statements, which collectively comprise the University's basic financial statements, and have issued our report thereon dated December 17, 2021. The financial statements of the Michigan Tech Fund, a blended component unit, were not audited in accordance with *Government Auditing Standards*.

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 opinions 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 a 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*.

To Management and the Board of Trustees
Michigan Technological University

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.

Plante & Moran, PLLC

December 17, 2021

Report on Compliance for Each Major Federal Program and Report on Internal Control Over Compliance
Required by the Uniform Guidance

Independent Auditor's Report

To the Board of Trustees
Michigan Technological University

Report on Compliance for Each Major Federal Program

We have audited Michigan Technological University's (the "University") compliance with the types of compliance requirements described in the U.S. Office of Management and Budget (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, 2021. 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.

Auditor's 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* (the "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, the 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 the major federal programs for the year ended June 30, 2021.

Report on Internal Control Over Compliance

Management of the 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.

To the Board of Trustees
Michigan Technological University

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 a 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.

Plante & Moran, PLLC

August 31, 2022

Schedule of Expenditures of Federal Awards

Year Ended June 30, 2021

Federal Agency/Pass-through Agency/Program Title	Direct/Pass-through	Assistance Listing Number	Grant ID / Pass-through Entity Identifying Number	Total Amount Provided to Subrecipients	Federal Expenditures
Student Financial Assistance Cluster					
Department of Education					
Federal Supplemental Educational Opportunity Grant	Direct	84.007	P007A202046	\$ -	\$ 370,006
Federal Work-Study Program	Direct	84.033	P033A202046	-	190,901
Federal Pell Grant Program	Direct	84.063	P063P200234	-	5,109,267
Federal Perkins Loan Program	Direct	84.038	N/A	-	7,317,662
Federal Direct Student Loans	Direct	84.268	P268K210234	-	26,757,588
Total Student Financial Assistance Cluster				-	39,745,424
Research and Development Cluster					
U.S. Department of Agriculture					
Biotechnology Risk Assessment Research	Direct	10.219	2016-33522-25626	-	14,695
Agriculture and Food Research Initiative (AFRI)	Direct	10.310	2017-67013-26261	-	115,344
Agriculture and Food Research Initiative (AFRI)	Direct	10.310	2020-67023-31638	-	24,834
Partnership Agreements	Direct	10.699	17-JV-11111133-034	-	3,705
Effect of Silvicultural Practices on the Physical and Mechanical Properties of Lake States Hardwoods	Direct	10.RD	17-JV-11111133-018	-	3,517
Student Remote Sensing Support of Satellite Detection Surveys	Direct	10.RD	18-CR-11221676-160	-	43,347
Advancement of the Riparian Buffer Delineation Model and Its Utility Across a Variety of Ecosystems	Direct	10.RD	18-CS-11132422-306	-	145,254
Using UAS Based LIDAR to Map Archaeology Features	Direct	10.RD	19-PA-11091000-012	-	5,877
Demonstrate the Durability of Enhanced Domestic Hardwoods for U.S. Army Tactical Trailer Decking	Direct	10.RD	19-JV-11111133-064	-	7,346
Passed through the University of Nebraska - Lincoln:					
Sustainable Agriculture Research and Education	Pass-through	10.215	26-6122-0947-002	-	722
Cooperative Forestry Research	Direct	10.202	NI20MSCFRXXG044	-	171,095
Cooperative Forestry Research	Direct	10.202	NI21MSCFRXXG022	-	79,267
Subtotal U.S. Department of Agriculture				-	615,003
U.S. Department of Agriculture - Forest Service					
Mapping Fuels for Regional Smoke Management and Emissions Inventories	Direct	10.RD	15-CR-11261987-035	-	6,111
Targeted control of invasive plants on recreational trail system: demonstration, education, and implementation	Direct	10.RD	17-PA-11090700-026	-	46,117
Peat accumulation rates in Lake States forested wetlands	Direct	10.RD	17-PA-11091000-038	-	21,483
Black Ash Wetland Ecosystem Processes	Direct	10.RD	17-JV-11242307-133	-	97,090
Estimating Upland Watersheds Risk to Increased Sediment, Ash and Nutrients Due to Wildfires in the Continental US	Direct	10.RD	18-JV-11221634-020	-	8,867
How are Forest Tax Programs Impacting Local Municipalities	Direct	10.RD	19-JV-11242309-029	-	16,550
Assessing 65 years of growth and yield from single-tree selection cuttings at the Cutting Methods Study, Argonne Experimental Forest	Direct	10.RD	19-JV-11242307-043	-	17,459
Applied Carbon Research and Management	Direct	10.RD	20-CR-11242306-109	-	184
Estimating Upland Watersheds Risk to Increased Sediment, Ash and Nutrients Due to Wildfires in the Continental US	Direct	10.RD	20-JV-11221634-214	-	15,080
GLRI Plant Sample Tissue Analysis for d13C	Direct	10.RD	1263PX20P0042/998535	-	9,718
Cooperative Forestry Assistance	Direct	10.664	20-DG-11094200-008	-	18,111
Cooperative Forestry Assistance	Direct	10.664	19-DG-11420000-032	-	37,711
Forest Health Protection	Direct	10.680	20-DG-11094200-241	-	31,720
Forest Health Protection	Direct	10.680	21-DG-11094200-063	-	8,028
Partnership Agreements	Direct	10.699	18-CR-11242306-072	-	10,251
Partnership Agreements	Direct	10.699	17-JV-11242306-044	-	78,325
Partnership Agreements	Direct	10.699	20-CS-11242306-096	-	11,230
Partnership Agreements	Direct	10.699	20-CS-11242306-119	-	42,882
Partnership Agreements	Direct	10.707	19-JV-11330140-017	-	39,339
Partnership Agreements	Direct	10.707	20-JV-11330180-087	-	22,500
Radiocarbon Collaborative and Graphite Lab Operation	Direct	10.RD	16-CR-11242306-094	-	76,328
Collaboration for Research and Capacity Building in Wetland Carbon Cycling in Tropical Ecosystems	Direct	10.RD	17-JV-11242306-017	-	28,097
Coastal Wetland Re-Connection	Direct	10.RD	17-PA-11091000-023	-	7,321
Partnership Agreements	Direct	10.699	16-CR-11242306-100	-	47,334
Passed through The Nature Conservancy					
Mapping Coastal Wetland for the Hiawatha National Forest Along Lakes Michigan and Huron	Pass-through	10.RD	Contract # - 021320-1	-	11,375
Passed through the University of Minnesota - Duluth					
Wood Utilization Assistance	Pass-through	10.674	D004865401/15-DG-11420004-082	-	4,447
Subtotal U.S. Department of Agriculture - Forest Service				-	713,658
Total U.S. Department of Agriculture				-	1,328,661
U.S. Department of Commerce - National Institute for Standards and Technology					
Measurement and Engineering Research and Standards	Direct	11.609	70NANB17H174	80,709	80,709
Science, Technology, Business and/or Education Outreach	Direct	11.620	70NANB21H037	-	2,230
Subtotal U.S. Department of Commerce - National Institute for Standards and Technology				80,709	82,939

Schedule of Expenditures of Federal Awards

Year Ended June 30, 2021

Federal Agency/Pass-through Agency/Program Title	Direct/Pass-through	Assistance Listing Number	Grant ID / Pass-through Entity Identifying Number	Total Amount Provided to Subrecipients	Federal Expenditures
Research and Development Cluster (Continued)					
U.S. Department of Commerce - National Oceanic and Atmospheric Administration					
Passed through Board of Supervisors of Louisiana State University					
Gulf Coast Ecosystem Restoration Science, Observation, Monitoring, and Technology	Pass-through	11.451	SUBAWARD NO. PO-0000038194	\$ -	\$ 26,573
Passed through Great Lakes Observing System:					
Integrated Ocean Observing System (IOOS)	Pass-through	11.012	IOOS025/GL-14	-	34,598
Integrated Ocean Observing System (IOOS)	Pass-through	11.012	NA16NOS0120025 IOOS/HFR-01	-	33,296
Integrated Ocean Observing System (IOOS)	Pass-through	11.012	PROJECT NUMBER: IOOS/NBN-01	-	85,356
Passed through Michigan Department of Environment, Great Lakes, and Energy:					
Coastal Zone Management Administration Awards	Pass-through	11.419	#19-Resiliency Strategy-002	-	22,168
Coastal Zone Management Administration Awards	Pass-through	11.419	19-Hazard Alternatives-001	-	51,620
Coastal Zone Management Administration Awards	Pass-through	11.419	PROJECT21 RESILIENCY 003	-	16,825
Passed through Mid-Atlantic Fishery Management Council Fisheries-Independent Survey For Golden (Lopholatilus Chamaelonticeps) Tilefish Throughout the Range from Georges Bank to Cape Hatteras	Pass-through	11.RD	NA15NMF4410006	-	59,449
Passed through Ohio State University					
Center for Sponsored Coastal Ocean Research_Coastal Ocean Program	Pass-through	11.478	PO#RF01495490/PROJECT #60061695	-	31,882
Passed through Regents of the University of Michigan					
Sea Grant Support	Pass-through	11.417	NA180AR4170102 /SUB3004932531	3,968	108,014
Sea Grant Support	Pass-through	11.417	SUBK00012244	-	64,169
Sea Grant Support	Pass-through	11.417	SUBK00012245	-	35,256
Passed through Regents of the University of Michigan (Continued)					
National Oceanic and Atmospheric Administration (NOAA) Cooperative Institutes	Pass-through	11.432	SUBK00008752/PO#3005008452	-	7,614
National Oceanic and Atmospheric Administration (NOAA) Cooperative Institutes	Pass-through	11.432	Subcontract No. SUBK00011367	-	92,480
National Oceanic and Atmospheric Administration (NOAA) Cooperative Institutes	Pass-through	11.432	SUBK00011609 PO 3005745206	-	98,933
National Oceanic and Atmospheric Administration (NOAA) Cooperative Institutes	Pass-through	11.432	SUBK00011313 PO#3005725813	-	45,409
Passed through University of Michigan					
National Oceanic and Atmospheric Administration (NOAA) Cooperative Institutes	Pass-through	11.432	SUBAWARD NO. SUBK00013455	-	4,153
Passed through University of Wisconsin					
National Oceanic and Atmospheric Administration (NOAA) Cooperative Institutes	Pass-through	11.432	846K333	-	79,870
Subtotal U.S. Department of Commerce - National Oceanic and Atmospheric Administration				3,968	897,665
Total U.S. Department of Commerce				84,677	980,604
U.S. Department of Defense - U.S. Air Force					
Experiments, Scenarios, CONOPS, and Prototype Engineering (ESCAPE)	Direct	12.RD	FA8750-16-C-0072	-	135,750
Electronic Support Critical Experiment (ESCE)	Direct	12.RD	FA8650-17-C-1058	-	191,720
Global Cropland Fire Sensing and Characterization Using SBIRS Data	Direct	12.RD	FA8810-18-C-0017	35,303	83,906
Multi-Scale Fusion & Allocation for Heterogeneous Sensing (MSFAHS)	Direct	12.RD	FA8750-21-C-1003	-	31,093
Air Force Defense Research Sciences Program	Direct	12.800	FA9550-17-1-0201	-	54,444
Air Force Defense Research Sciences Program	Direct	12.800	FA9550-20-1-0434	-	42,952
Passed through Applied Research Solutions, Inc					
Fusion of Observation, Inference and Learning (FOIL)	Pass-through	12.RD	SUB CON NO. S00016/PO S00016	-	7,517
Passed through A-Tech, LLC					
The Amon Hen Project	Pass-through	12.RD	MTU SUBCONTRACT #180637	-	82,447
Passed through ARCTROS Technology Solutions, LLC					
Aerospace Propulsion Outreach Program: Design of Low Loss Ducted Inlet	Pass-through	12.RD	142411-16F2639-20-53-C6	-	8,740
Passed through Booz-Allen-Hamilton					
Research, Analysis and Development for Advanced Signal Processing of a CDO Environment	Pass-through	12.RD	Sub #S903841BAH, Prime #FA8075	-	210,810
Passed through DZYNE Technologies					
STUDENT DESIGN: Waterborne Survival Rescue and Recovery Device	Pass-through	12.RD	MON0001-S-016-3	-	12,990
Passed through Enectra, LLC					
Multifunctional Integrated Cargo Pocket UAS Phase II	Pass-through	12.RD	MTU AGREEMENT #2005006	-	68,192
Passed through Etegent Technologies Ltd.					
AF171-090 Improving Trust in Autonomy Through Modeling Performance	Pass-through	12.RD	PRIMECONTRACT; #FA8651-18-C-0063	-	40,304
Passed through Great Lakes Sound & Vibration Inc.					
Dual Use CNT applications	Pass-through	12.RD	MTU Agreement 2012010	-	45,000

Schedule of Expenditures of Federal Awards

Year Ended June 30, 2021

Federal Agency/Pass-through Agency/Program Title	Direct/Pass-through	Assistance Listing Number	Grant ID / Pass-through Entity Identifying Number	Total Amount Provided to Subrecipients	Federal Expenditures
Research and Development Cluster (Continued)					
U.S. Department of Defense - U.S. Air Force (Continued)					
Passed through Information Systems Laboratories					
Fully Adaptive RADAR Resource Allocation	Pass-through	12.RD	SUB #10044; PO#2050002	\$ -	\$ 49,816
Passed through Leidos Inc.					
Opera TO2	Pass-through	12.RD	P010151900-2	-	81,116
PRIDE (Passive Radio Frequency Identification Environment)	Pass-through	12.RD	P010189654 / FA8650-16-C-1732	-	153,081
ACME 4 (RFP No: SRG2016-BAA-XXX-03RB)	Pass-through	12.RD	SUBCONTRACT NO P010192299	-	512,021
Passed through MZA Associates Corporation					
Atmospheric Refractivity and Turbulence Sensor (ATRS) Phase II	Pass-through	12.RD	Subcontract No. S19004	-	55,225
Passed through Northrop Grumman					
PRECISE	Pass-through	12.RD	PO #5300003528	-	53,020
Passed through Pennsylvania State University					
Air Force Defense Research Sciences Program	Pass-through	12.800	SUB. NO. 501884-AFOSR	-	9,259
Passed through SPG Institute, Inc.					
Air Force Defense Research Sciences Program	Pass-through	12.800	2020-ARC-S-20006	-	26,299
Passed through SRICO Inc.					
Materials Processing for Heterogeneous Integration of Optical Isolators: Phase 2	Pass-through	12.RD	SUB NO. 17089MTU	-	102,615
Passed through Stevens Institute of Technology					
Senior Design: SERC AFRL 05 Personnel Recovery-Power	Pass-through	12.RD	SERC 2102796-07	-	2,969
STEVEN-LIFT-SERC 2018 AFRL 04	Pass-through	12.RD	SERC 2102796-04	-	1,082
Enterprise: SERC 2018 AFSOC 03 HOTAS Radio Control	Pass-through	12.RD	MTU #1808041 SERC#2102796-06	-	2,662
Passed through Teleqo Technical Solutions Inc.					
ENTERPRISE: Market Analysis for Multi Sensor Data Fusion for Situational Awareness	Pass-through	12.RD	MTU AGREEMENT #2010083	-	12,411
Passed through Utah State University Research Foundation					
Auris: A Cubesat to Characterize and Locate Geostationary Communications Emitters	Pass-through	12.RD	CP0053711	-	82,817
Subtotal U.S. Department of Defense - U.S. Air Force				35,303	2,160,258
U.S. Department of Defense - U.S. Army					
Basic Scientific Research	Direct	12.431	W911NF-14-2-0088	-	119,558
Military Medical Research and Development	Direct	12.420	W81XWH1810610	-	64,320
Basic Scientific Research	Direct	12.431	W911NF-17-2-0130	-	24,281
JLTV Noise	Direct	12.RD	W56HZV-19-C-0053 WD 04	-	121,326
US DoD Army Ground Vehicle Systems Center	Direct	12.RD	W56HZV-19-C-0053 WD 012	-	279,824
Trailer Decks	Direct	12.RD	W56HZV-14-C-0286 WD 033	-	186,308
Blast Hull Mitigation	Direct	12.RD	W56HZV-19-C-0053 WD001	-	(3,598)
Frozen Soil Trafficability	Direct	12.RD	W56HZV-19-C-0053 WD 05	-	6
LTCMS Roller Prototype Maturation	Direct	12.RD	W56HZV-19-C-0053 WD 06	-	(491)
JLTV Countermeasure Integration	Direct	12.RD	W56HZV-19-C-0053 WD 007	-	90,198
M1 Track Load Determination	Direct	12.RD	W56HZV-19-C-0053 WD08	-	(16,957)
MPVs Product Improvements	Direct	12.RD	W56HZV-19-C-0053 WD09	-	366,296
US DoD Army Ground Vehicle Systems Center	Direct	12.RD	W56HZV-19-C-0053 WD10	-	190,936
HMMWV Brackets	Direct	12.RD	W56HZV-19-C-0053 WD011	-	3,160
Countermine Hardware	Direct	12.RD	DOD W56HZV-19-C-0053 WD013	-	78,373
M109 Fan Noise	Direct	12.RD	W56HZV-19-C-0053 WD 014	84,958	111,121
Snow Mobility & Soil Testing	Direct	12.RD	W56HZV-19-C-0053	-	179,149
US DoD Army, Ground Vehicle Systems Center	Direct	12.RD	W56HZV-19-C-0053 WD 009	-	163,022
Vehicle Load Acquisition	Direct	12.RD	W56HZV-19-C-0053 WD 017	-	131,747
CASSINO	Direct	12.RD	W56HZV-19-C-0053 WD 018	-	238,971
ONR PAM	Direct	12.RD	W56HZV-19-C-0053 WD 019	294,815	515,072
BCS Blade Modification	Direct	12.RD	W56HZV-19-C-0053 WD 20	-	94,542
HEMTT	Direct	12.RD	W56HZV-19-C-0053 WD 21	-	114,599
M1E1 Track Loads	Direct	12.RD	W56HZV-19-C-0053 WD 08	-	346,491
HIPPO	Direct	12.RD	W56HZV-19-C-0053 WD 22	-	697,685
Snow Mobility & Soil Testing	Direct	12.RD	W56HZV-19-C-0053 WD 015	-	115,174
Defense Mobility System	Direct	12.RD	W56HZV-19-C-0053 P00023 WD016	930,984	1,578,514
Sensors for Adaptive Armor	Direct	12.RD	W56HZV-19-C-0053 P00030 WD 023	405,295	447,661
MPVS	Direct	12.RD	W56HZV-19-C-0053 WD 009	-	258,004
JLTV Tire Chain Testing	Direct	12.RD	DOD W56HZV-19-C-0053	-	148,736
EHP Roller Technical Manual	Direct	12.RD	W56HZV-19-C-0053 WD 025	-	4,567
HEMTT CROWS Testing	Direct	12.RD	W56HZV-19-C-0053 WD 026	-	2,150
M1E1 Track Loads Phase 4	Direct	12.RD	W56HZV-19-C-0053 WD 027	-	64,917
Passed through SOSSEC Incorporated					
Modeling and Algorithm Development for Adaptive Adversarial AI for Complex Autonomy	Pass-through	12.RD	ERDC-MECI-PLA-0003	-	111,241

Schedule of Expenditures of Federal Awards

Year Ended June 30, 2021

Federal Agency/Pass-through Agency/Program Title	Direct/Pass-through	Assistance Listing Number	Grant ID / Pass-through Entity Identifying Number	Total Amount Provided to Subrecipients	Federal Expenditures
Research and Development Cluster (Continued)					
U.S. Department of Defense - U.S. Army (Continued)					
Passed through University of California at San Diego					
Deployment of an Experimental Buoy - 2020	Pass-through	12.RD	Univ of Cali PO92212604	\$ -	\$ 4,268
Deployment of an Experimental Buoy - 2020	Pass-through	12.RD	PO #PUR00068728-0	-	4,161
Passed through Fibertek					
Algorithm Development for UAV Mounted GPR	Pass-through	12.RD	Subcontract No. W909MY-MTU-575	-	28,344
Surface and Buries Object Detection Using UAS-based RADAR	Pass-through	12.RD	Agreement #820739129	-	138,085
Passed through Helios Remote Sensing Systems					
Soldier-Borne Radar Detector	Pass-through	12.RD	Subcontract No. 1315-S01-HRSSI	-	39,073
Passed through Mettle Ops					
Soft Catch Frame	Pass-through	12.RD	PO NO. 321 REV 4; T&CS 8/4/20	-	143,973
Passed through National Center for the Advancement of STEM Education					
ENTERPRISE: Raspberry PI Weather Station	Pass-through	12.RD	NCASE Agreement	-	1,448
ENTERPRISE: Robot Leader Follower Phase 2	Pass-through	12.RD	GRANT W15QKN-20-1-1000	-	4,801
ENTERPRISE: Real Time Strategy Game for Military Commanders	Pass-through	12.RD	CAPSTONEW 15QKN-20-1-1000	-	2,402
Passed through Regents of the University of Michigan					
Research and Technology Development	Pass-through	12.910	SUBK00011121 PO#3005466601	-	82,505
Research and Technology Development	Pass-through	12.910	SUBK00011314 PO#3005489743	-	60,154
Passed through Signature Research Inc					
October 2020 Test Course License	Pass-through	12.RD	MTU TCL&SRI PO 01-349-0S4-R1	-	1,021
Passed through University of Central Florida					
Basic Scientific Research	Pass-through	12.431	65016323-01	-	19,444
Passed through Advanced Matrix-AEM Group JV, LLC					
Keweenaw Stamp Sands Geotechnical and Chemical Investigation	Pass-through	12.RD	SC#-JV0004 (W911XK-16-D-0014)	-	2,067
Subtotal U.S. Department of Defense - U.S. Army				1,716,052	7,358,649
U.S. Department of Defense - U.S. Navy					
Hydrodynamic Control Using X-Band Radar for Wave Energy					
Converter Technology	Direct	12.RD	N39430-16-C-1883	46,645	46,645
Basic and Applied Scientific Research	Direct	12.300	N00014-16-1-2422	-	22,828
Basic and Applied Scientific Research	Direct	12.300	N00014-16-1-2463	-	25
Basic and Applied Scientific Research	Direct	12.300	N00014-16-1-2878	-	37,855
Basic and Applied Scientific Research	Direct	12.300	N00014-20-1-2230	-	188,820
Passed through University of Alaska-Fairbanks					
Open Source Polymer Laser Welder	Pass-through	12.RD	Univ of Alaska PO#542489	-	12,377
Passed through Advanced Technology & Research Corporation					
Ship Vibration Mitigation for Additive Manufacturing Equipment	Pass-through	12.RD	SUB NO. ATR-20-S-103010-01	-	83,843
Passed through Applied Research in Acoustics LLC (ARIA)					
Redesign and Implementation of USDA Proxy Language-Phase II	Pass-through	12.RD	MTU#2102054	-	14,113
Passed through GLSV Engineering & Consulting					
Modular Buoyancy Kit Wave Tank Testing	Pass-through	12.RD	CO#1911043P-2; PO# GLSV09262	-	8,995
Passed through Sandia National Laboratories					
Meta-Stability of Pulsed Load Microgrids	Pass-through	12.RD	PO#1746491/REVISION:13	-	3,967
Passed through Soar Technology, Inc.					
Ocean of Things TA2	Pass-through	12.RD	Subcontract Number: SC-18-027	-	29,222
Resilient Autonomous Subsystems for Unmanned Air Systems (UAS)	Pass-through	12.RD	Subcontract #SC-20-003	-	19,405
Passed through Stevens Institute of Technology					
Senior Design: SERC NSW 01 Boat HUD	Pass-through	12.RD	SERC 2102796-10	-	4,090
ENTERPRISE: SERC Dry Combat Submersible Salinity	Pass-through	12.RD	HQ003419D0003	-	5,000
Subtotal U.S. Department of Defense - U.S. Navy				46,645	477,185
U.S. Department of Defense - Defense Advance Research Project					
Bayesian Adaptive Robotic Control System (BARCS)	Direct	12.RD	2103140-02 HR001118C0124	-	235,732
Structure Situational Awareness for Swarms (SSAS)	Direct	12.RD	HR001119C0117	71,126	116,999
Autonomous Storming, Norming and Performing	Direct	12.RD	HR00112090021	185,964	479,727
The Grand Deception	Direct	12.RD	HR001120C0075	-	316,623
Odometry and Machine Navigation Inferred from 360° Video and Image Sources (OMNI 360-VIS)	Direct	12.RD	HR001120C0079	-	336,049
Passed through Centauri					
Moving Target Recognition	Pass-through	12.RD	14350-0000-MTU-002	-	269,977
Passed through Florida Institute for Human and Machine Cognition					
Research and Technology Development	Pass-through	12.910	FA8650-17-2-7711-1	-	254,775
Passed through Leidos, Inc.					
Providence TA-2	Pass-through	12.RD	Subcontract No. P010244078	-	665,254
Passed through Soar Technology, Inc.					
URBAN RECONNAISSANCE THROUGH SUPERVISED AUTONOMY (RUSA) PROGRAM - PHASE 2	Pass-through	12.RD	SUBCONTRACT NUMBER: SC-20-030	-	550,752
Subtotal U.S. Department of Defense - Defense Advance Research Project				257,090	3,225,888

Schedule of Expenditures of Federal Awards

Year Ended June 30, 2021

Federal Agency/Pass-through Agency/Program Title	Direct/Pass-through	Assistance Listing Number	Grant ID / Pass-through Entity Identifying Number	Total Amount Provided to Subrecipients	Federal Expenditures
Research and Development Cluster (Continued)					
U.S. Department of Defense					
Basic and Applied Scientific Research	Direct	12.300	N00174-19-1-0004	\$ -	\$ 91,038
Basic and Applied Scientific Research	Direct	12.300	N00014-20-1-2793	-	243,349
Science, Technology, Engineering & Mathematics (STEM) Education, Outreach and Workforce Program	Direct	12.330	N00014-20-1-2263	-	207,976
Basic Scientific Research	Direct	12.431	W911NF2020273	-	44,284
Research and Technology Development	Direct	12.910	HR0011-20-2-0033	188,202	1,474,584
Hierarchical Adversarial Response Machine (HARM)	Direct	12.RD	HR00112090113	-	383,798
High Order Modulation Studies	Direct	12.RD	FA8650-20-C-7035	-	402,746
Automated Bathymetry Generation and Algorithm	Direct	12.RD	HM157520P0058	-	490,361
Passed through American Foundry Society Inc					
Integration of ICME Tools in Casting Design and Process Optimization for Intelligent Manufacturing	Pass-through	12.RD	AFS; Prime #SP4701-17-D-1134	-	37,432
Passed through Applied Research in Acoustics LLC (ARIA)					
Redesign and Implementation of USDS-Proxy Language	Pass-through	12.RD	Agreement #2003058	-	59,428
Passed through Booz-Allen-Hamilton					
RECON	Pass-through	12.RD	S902439BAH	-	56,173
Passed through Etegent Technologies Ltd:					
Algorithm Performance Evaluation with Low Sample Size	Pass-through	12.RD	ATP	-	222
Maritime Object Labeling Using Neural Networks for Imaging RADARS (MOLNNIR)	Pass-through	12.RD	SUBCONTRACT #ETE.19.ODIN.02	-	116,271
Passed through Kestrel Corporation					
CLEARVIEW Spotter Scope	Pass-through	12.RD	SUBCONTRACT FOR 1907011P2	-	126,997
Passed through Lawrence Livermore National Security LLC					
Theoretical Support for Gas-Gun Experiments: Towards Mutual Suppression of Shockwave Instabilities	Pass-through	12.RD	B645370	-	44,659
Passed through Leidos, Inc.:					
StarFall	Pass-through	12.RD	SubP0120237489/Prime 20-C-8957	-	134,229
PERSEUS SUPPORT	Pass-through	12.RD	P010247684; PRIME 16-C-0048	-	12,098
IVY	Pass-through	12.RD	P010252458; PRIME 21-C-2001	-	26,042
SPARTA	Pass-through	12.RD	PO10253718	-	166,792
Passed through Loukus Technologies, Inc.					
Intelligen Pre-Alloying of Cerium Master Alloys to Optimize Magnesium and Aluminum Alloy Strength and High Temperature Properties	Pass-through	12.RD	MTU #2104020; LIFT #21002	-	9,034
Passed through National Advanced Mobility Consortium					
Tracked Vehicle Suspension Load System	Pass-through	12.RD	NAMC AGREEMENT 69-201515 #T02	32,823	32,823
Passed through Northrop Grumman Corporation					
Sun King	Pass-through	12.RD	Northrop Grumman PO#5300005408	-	22,662
Passed through Signature Research Inc					
Algorithms for Look-Down Infrared Target Exploitation-Phase II	Pass-through	12.RD	PO#01-383-02S1	-	135,359
Passed through Stevens Institute of Technology:					
Enterprise: SERC 2018 USCG 01 Mass Rescue Devices	Pass-through	12.RD	SERC 2102796-13	-	2,303
SENIOR DESIGN: SERC 2019 AFRL 03 Rapidly Deployable Mass Rescue Devices for Marine Environments	Pass-through	12.RD	MTU#1909075	-	5,000
ENTERPRISE: 2019 AFRL 01 Cooling Aid for Maintainers in Protective Gear	Pass-through	12.RD	Subcontract #2102964-01	-	1,234
SENIOR DESIGN: SERC Ground Force Commander Simulator	Pass-through	12.RD	#2102964-03,HQ003419D0003	-	4,448
SENIOR DESIGN: SERC Future Vehicle Stopping	Pass-through	12.RD	SUB#2102964-04;	-	2,300
STUDENT DESIGN: SERC Wearable Technologies	Pass-through	12.RD	2103140-06 Prime #HQ003419D003	-	5,169
STUDENT DESIGN: SERC Ground Force Commander Simulator Phase 2	Pass-through	12.RD	2103140-07 Prime,#HQ003419D00	-	2,717
ENTERPRISE: SERC Emojis In Context	Pass-through	12.RD	2103140-08 Prime #HQ003419D00	-	2,215
STUDENT DESIGN: SERC Dry Combat Submersible Regenerative Charging	Pass-through	12.RD	2103140-03 Prime #HQ003419D0003	-	406
Subtotal U.S. Department of Defense				221,025	4,344,149
Total U.S. Department of Defense				2,276,115	17,566,129
U.S. Department of Housing and Urban Development					
Healthy Homes Technical Studies Grants	Direct	14.906	MILTS0007-17 AMEND NO. 1	73,222	104,541
Total U.S. Department of Housing and Urban Development				73,222	104,541
U.S. Department of Interior - Bureau of Indian Affairs					
Cooperative Landscape Conservation	Direct	15.156	A19AC00030	-	20,302
Passed through Keewenaw Bay Indian Community					
Buffalo Reef Mapping of Percentage of Stamp Sands, Sediment Copper Concentrations, and Impacts on Benthic Biota	Pass-through	15.RD	TIER II SERVICES AGREEMENT	-	43,310
Climate Resiliency Plan and amendment of the Integrated Resource Management Plan	Pass-through	15.RD	KBIC SERVICES AGRMNT #2101026	-	2,106
Subtotal U.S. Department of Interior - Bureau of Indian Affairs				-	65,718

Schedule of Expenditures of Federal Awards

Year Ended June 30, 2021

Federal Agency/Pass-through Agency/Program Title	Direct/Pass-through	Assistance Listing Number	Grant ID / Pass-through Entity Identifying Number	Total Amount Provided to Subrecipients	Federal Expenditures
Research and Development Cluster (Continued)					
U.S. Department of Interior - Fish & Wildlife Service					
Great Lakes Restoration	Direct	15.662	F16AC01002	\$ -	\$ 8,820
Cooperative Landscape Conservation	Direct	15.669	F20AC11140-00	-	123,557
Cooperative Ecosystem Studies Units	Direct	15.678	F18AC00039	-	77,325
Passed through Michigan Department of Natural Resources					
Wildlife Restoration and Basic Hunter Education	Pass-through	15.611	MOA_MTU_CKMR	-	4,356
Passed through SharedGeo					
Great Lakes Monitoring Outreach and Data Sharing	Pass-through	15.RD	SharedGeo Preferred Vendor Agr	-	14,063
Subtotal U.S. Department of Interior - Fish & Wildlife Service				-	228,121
U.S. Department of Interior - U.S. Geological Survey					
National Cooperative Geologic Mapping Program	Direct	15.810	ADVANCE ACCOUNT	-	1,720
U.S. Geological Survey_ Research and Data Collection	Direct	15.808	G21AC10141-00	-	7,326
U.S. Geological Survey_ Research and Data Collection	Direct	15.808	G18AC00365	-	147,150
National Cooperative Geologic Mapping Program	Direct	15.810	G19AC00140	-	417
Passed through AmericaView:					
National Land Remote Sensing_Education Outreach and Research	Pass-through	15.815	AV18-MI-01 Modification No.001	-	9,814
National Land Remote Sensing_Education Outreach and Research	Pass-through	15.815	AV18-MI-01 MODIFICATION NO. 03	-	9,007
Passed through Western Michigan University					
U.S. Geological Survey_ Research and Data Collection	Pass-through	15.808	SUBAWARD #10471	-	8,757
Subtotal U.S. Department of Interior - U.S. Geological Survey				-	184,191
U.S. Department of Interior					
Passed through Charles River Analytics					
Forecasting Counterfactuals in Uncontrolled Settings (FOCUS)	Pass-through	15.RD	Subcontract# SC1809502	-	2,852
Passed through Soar Technology, Inc.					
Urban Reconnaissance through Supervised Autonomy	Pass-through	15.RD	SubContract # SC-19-02	-	96,435
Subtotal U.S. Department of Interior				-	99,287
U.S. Department of Interior - National Park Service					
Pine Gulch Fire	Direct	15.RD	Confirming Order #2009042	-	7,128
Monitoring Genetic Health of Isle Royale Wolves	Direct	15.RD	MTU CO#1909093	-	32,661
Mill Creek Modeling	Direct	15.RD	Confirming Order	-	1,781
Natural Resource Stewardship	Direct	15.944	P16AC00004	-	16,196
Cooperative Research and Training Programs – Resources of the National Park System	Direct	15.945	P16AC01398	-	29,937
Cooperative Research and Training Programs – Resources of the National Park System	Direct	15.945	P18AC00178	-	57,504
Cooperative Research and Training Programs – Resources of the National Park System	Direct	15.945	P19AC00286	-	45,082
Cooperative Research and Training Programs – Resources of the National Park System	Direct	15.945	P20AC00377	-	15,105
Subtotal U.S. Department of Interior - National Park Service				-	205,394
Total U.S. Department of Interior				-	782,711
U.S. Department of State					
Passed through University of Nebraska Omaha					
Public Diplomacy Programs	Pass-through	19.040	45-24020-1031-312	-	16,144
Public Diplomacy Programs	Direct	19.040	SIN65019GR0023	-	(3)
Total U.S. Department of State				-	16,141
U.S. Department of Transportation					
Passed through Engineering & Software Consultants, Inc					
Mapping of Unit/Product System Processes for Pavement Life Cycle Assessment and Demonstration Case Studies	Pass-through	20.RD	ESCINC SUBCONTRACT#: 18-49	-	57,671
Mapping of Unit/Product System Processes for Pavement Life Cycle Assessment and Demonstration Case Studies	Pass-through	20.RD	ESCINC SUBCONTRACT #: 18-49	-	50,000
Passed through Genex Systems					
Real-Time Monitoring and Modeling of Scour	Pass-through	20.RD	469-SBIRDOT-20FH3-1	-	48,342
Passed through MTRI Inc.					
Automated, Drone-based Grade Crossing Inspection Phase II	Pass-through	20.RD	PRIME AWA#6913G620C100017	-	7,019
Passed through University of Illinois at Urbana-Champaign					
Leveraging Connected Highway Vehicle Platooning Technology to Improve the Efficiency and Effectiveness of Train Fleeting	Pass-through	20.RD	097547-17640	-	39,343
University Transportation Centers Program	Pass-through	20.701	072614-14811	-	10,529
Passed through University of Michigan					
Radar Congestion Testing	Pass-through	20.RD	SUBK00010081 PO#3005266707	-	53,928
Subtotal U.S. Department of Transportation				-	266,832

Schedule of Expenditures of Federal Awards

Year Ended June 30, 2021

Federal Agency/Pass-through Agency/Program Title	Direct/Pass-through	Assistance Listing Number	Grant ID / Pass-through Entity Identifying Number	Total Amount Provided to Subrecipients	Federal Expenditures
Research and Development Cluster (Continued)					
U.S. Department of Transportation - Federal Aviation					
Passed through Iowa State University					
Small Unmanned Aircraft System (sUAS) for Pavement Inspection	Pass-through	20.RD	Award # 023139B	\$ -	\$ 57,137
Passed through Old Dominion University Research Foundation					
ENTERPRISE: The Runway Intersection Marking Next Steps Proposal	Pass-through	20.RD	SUBAWARD NO. 21-165-400204-010	-	7,961
Passed through Texas Tech University					
Revision of ASTM, E2461: Standard Practices for Determining the Thickness of Glass in Airport Traffic Control Towers	Pass-through	20.RD	Subaward #21L006-01	-	23,046
Subtotal U.S. Department of Transportation - Federal Aviation				-	88,144
U.S. Department of Transportation - Federal Highway					
Autonomous Winter Road Maintenance Decision Making Enabled by Boosting Existing Transportation Data Infrastructure with Deep and Reinforcement Learning	Direct	20.RD	693JJ320C000022	-	103,710
Passed through Michigan Dept of Transportation					
Metropolitan Transportation Planning and State and Non-Metropolitan Planning and Research	Pass-through	20.505	2016-0067/#Z8/JN204647NI	-	21,461
Metropolitan Transportation Planning and State and Non-Metropolitan Planning and Research	Pass-through	20.505	Contract No. 2019-0311, Aut Z1	89,321	268,315
Metropolitan Transportation Planning and State and Non-Metropolitan Planning and Research	Pass-through	20.505	2019-0311, Z2/ JN 211062NI	-	42,915
Subtotal U.S. Department of Transportation - Federal Highway				89,321	436,401
U.S. Department of Transportation - Federal Railroad					
Effect of In-Vehicle Auditory Alerts on Driver Behaviors at Highway-Rail Grade Crossings	Direct	20.RD	693JJ618C000027	74,090	87,942
Railroad Artificial Intelligence Intruder Learning System (RAIILS)	Direct	20.RD	693JJ619C000001	-	82,878
Developing Safe and Efficient Driving and Routing Strategies at Railroad Grade Crossings Based on Highway-Railway Connectivity	Direct	20.RD	693JJ6-19-C-000022	45,855	131,716
Subtotal U.S. Department of Transportation - Federal Railroad				119,945	302,536
Total U.S. Department of Transportation				209,266	1,093,913
U.S. Department of Treasury					
Passed through Western UP Health Department					
COVID-19 - Coronavirus Relief Fund	Pass-through	21.019	WUPHD-MTU MATERIALS TESTING	-	291,283
Total U.S. Department of Treasury				-	291,283
National Aeronautics and Space Administration					
Exploring CV19 Impacts on Great Lakes Water Quality	Direct	43.RD	80NSSC20P2097	-	50,390
Science	Direct	43.001	80NSSC17K0287	-	12,426
Science	Direct	43.001	80NSSC17K0262	81,919	149,521
Science	Direct	43.001	80NSSC17K0712	-	29,250
Science	Direct	43.001	80NSSC19M0107SUP#P00001	93,828	184,160
Science	Direct	43.001	80NSSC20K0367	-	17,155
Science	Direct	43.001	80NSSC20K6079	-	65,706
Science	Direct	43.001	80NSSC20K0983	-	2,820
Science	Direct	43.001	80NSSC20K1480	-	40,012
Science	Direct	43.001	80NNSC20M022	-	114,706
Science	Direct	43.001	80NSSC20K1773	-	27,222
Science	Direct	43.001	80NSSC21K0174	-	31,550
Space Operations	Direct	43.007	80NSSC19K0160	-	52,214
Space Technology	Direct	43.012	NNX17AJ32G	2,151,871	2,551,203
Space Technology	Direct	43.012	80NSSC18K0252	42,960	120,290
Space Technology	Direct	43.012	80NSSC21K0769	-	91,644
Science	Direct	43.001	NNX15AC61G	-	54,140
Science	Direct	43.001	NNX16AN09G	-	15,911
Science	Direct	43.001	80NSSC17K0058	884	884
Science	Direct	43.001	80NSSC19K0771	-	13,920
Science	Direct	43.001	80NSSC19M0108	-	194,391
Science	Direct	43.001	SUPPLEMENT #P003	-	
Science	Direct	43.001	80NSSC21K0928	-	13,570
Passed through Arizona State University:					
STUDENT DESIGN: Landing System for Uncertain Terrain	Pass-through	43.RD	ASU Agreement/ NASA Prime NNM1	-	81
STUDENT DESIGN: Robotic Explorer for Hypothesized Surfaces	Pass-through	43.RD	ASU Agreement/ NASA Prime NNM1	-	403
Passed through Honeybee Robotics					
RedWater: Extraction of Water from Mars' Ice Deposits	Pass-through	43.RD	Prime 80HQTR19C0017	-	42,734

Schedule of Expenditures of Federal Awards

Year Ended June 30, 2021

Federal Agency/Pass-through Agency/Program Title	Direct/Pass-through	Assistance Listing Number	Grant ID / Pass-through Entity Identifying Number	Total Amount Provided to Subrecipients	Federal Expenditures
Research and Development Cluster (Continued)					
National Aeronautics and Space Administration (Continued)					
Passed through Miami University Science	Pass-through	43.001	MCCARTY-NASA-MICHTECH-G03016	\$ -	\$ 17,548
Passed through National Institute of Aerospace T-REX (Tethered - Permanently Shade Region Explorer)	Pass-through	43.RD	Check #29622 (Phase I)	-	(2,126)
Passed through Trans Astronautica Corporation NIAC Phase 2: Lunar Polar Mining Outpost	Pass-through	43.RD	CO #2001052	-	45,687
Passed through University Corporation for Atmospheric Research Science	Pass-through	43.001	SUBAWD002090-P2010817	-	116,929
Passed through University of Central Florida Exploration	Pass-through	43.003	24086235-03	-	30,229
Passed through University of Maryland Science	Pass-through	43.001	53894-Z6044201	-	39,825
Passed through University of Maryland College Park: Science	Pass-through	43.001	60783-Z6098201	-	27,155
Science	Pass-through	43.001	77464-Z6207201	-	103,498
Passed through University of Massachusetts - Lowell Aeronautics	Pass-through	43.002	S5200000043905	-	(754)
Passed through University of Michigan: Education	Pass-through	43.008	SUBK00010292	-	1,529
Education	Pass-through	43.008	SUBK00013747 (PHASE II)	-	88,048
Total National Aeronautics and Space Administration				2,371,462	4,343,871
National Science Foundation					
Engineering Grants	Direct	47.041	1451959	-	89,768
Engineering Grants	Direct	47.041	1450364	-	(3,304)
Engineering Grants	Direct	47.041	1605105	-	119,104
Engineering Grants	Direct	47.041	1639342	159,185	399,711
Engineering Grants	Direct	47.041	1651135	-	142,885
Engineering Grants	Direct	47.041	1661699	-	70,145
Engineering Grants	Direct	47.041	1710862	-	41,573
Engineering Grants	Direct	47.041	1742656	-	48,382
Engineering Grants	Direct	47.041	1709991	-	59,632
Engineering Grants	Direct	47.041	1749634	-	73,211
Engineering Grants	Direct	47.041	1739422	-	24,979
Engineering Grants	Direct	47.041	1818906	-	62,283
Engineering Grants	Direct	47.041	1751454	-	87,959
Engineering Grants	Direct	47.041	1827486	-	39,193
Engineering Grants	Direct	47.041	1804685	-	50,564
Engineering Grants	Direct	47.041	1762520	-	78,305
Engineering Grants	Direct	47.041	1807552	-	47,274
Engineering Grants	Direct	47.041	1827364	51,976	319,761
Engineering Grants	Direct	47.041	1846795	-	17,977
Engineering Grants	Direct	47.041	1918585	-	97,006
Engineering Grants	Direct	47.041	1937983	-	62,553
Engineering Grants	Direct	47.041	1936861	-	14,853
Engineering Grants	Direct	47.041	1920013	-	5,289
Engineering Grants	Direct	47.041	2031677	-	77,071
Engineering Grants	Direct	47.041	2015919	-	643
Engineering Grants	Direct	47.041	2025449	-	16,618
Engineering Grants	Direct	47.041	2024970	-	57,184
Engineering Grants	Direct	47.041	2105887	-	18,829
Engineering Grants	Direct	47.041	2050739	-	38,575
Engineering Grants	Direct	47.041	1703570	-	4,810
Mathematical and Physical Sciences	Direct	47.049	1608537	-	83,776
Mathematical and Physical Sciences	Direct	47.049	1818467	-	58,917
Mathematical and Physical Sciences	Direct	47.049	1808052	-	71,747
Mathematical and Physical Sciences	Direct	47.049	1904215	-	66,890
Mathematical and Physical Sciences	Direct	47.049	1914549	-	115,137
Mathematical and Physical Sciences	Direct	47.049	1954041	-	8,984
Mathematical and Physical Sciences	Direct	47.049	2001076	-	47,228
Mathematical and Physical Sciences	Direct	47.049	2018254	-	356,969
Mathematical and Physical Sciences	Direct	47.049	1944211	-	42,640
Mathematical and Physical Sciences	Direct	47.049	2012944	17,235	41,894
Geosciences	Direct	47.050	1541998	-	11,970
Geosciences	Direct	47.050	1625598	-	140,705
Geosciences	Direct	47.050	1654128	-	8,975
Geosciences	Direct	47.050	1754244	-	119,315
Geosciences	Direct	47.050	1743370	-	64,899
Geosciences	Direct	47.050	1806287	-	4,301

Schedule of Expenditures of Federal Awards

Year Ended June 30, 2021

Federal Agency/Pass-through Agency/Program Title	Direct/Pass-through	Assistance Listing Number	Grant ID / Pass-through Entity Identifying Number	Total Amount Provided to Subrecipients	Federal Expenditures
Research and Development Cluster (Continued)					
National Science Foundation (Continued)					
Geosciences	Direct	47.050	1828866	\$ -	\$ 36,999
Geosciences	Direct	47.050	1914526	-	48,153
Geosciences	Direct	47.050	2019649	-	31,547
Geosciences	Direct	47.050	2021768	-	23,488
Geosciences	Direct	47.050	1639868	-	31,014
Computer and Information Science and Engineering	Direct	47.070	1618384	-	50,450
Computer and Information Science and Engineering	Direct	47.070	1745748	-	78,501
Computer and Information Science and Engineering	Direct	47.070	1708299	-	110,120
Computer and Information Science and Engineering	Direct	47.070	1750193	-	76,780
Computer and Information Science and Engineering	Direct	47.070	1823398	-	85,586
Computer and Information Science and Engineering	Direct	47.070	1829222	-	23,969
Computer and Information Science and Engineering	Direct	47.070	1938130	-	74,130
Computer and Information Science and Engineering	Direct	47.070	1909089	-	165,403
Computer and Information Science and Engineering	Direct	47.070	1901005	-	104,881
Computer and Information Science and Engineering	Direct	47.070	1928349	-	42,319
Computer and Information Science and Engineering	Direct	47.070	1909248	-	16,331
Computer and Information Science and Engineering	Direct	47.070	2042881	4,394	27,955
Computer and Information Science and Engineering	Direct	47.070	2105006	-	10,706
Biological Sciences	Direct	47.074	2011257	-	5,787
Biological Sciences	Direct	47.074	1451919	-	45,172
Biological Sciences	Direct	47.074	1737877	-	118,624
Biological Sciences	Direct	47.074	1754603	36,958	223,870
Biological Sciences	Direct	47.074	1941309	-	138,958
Biological Sciences	Direct	47.074	1939399	-	74,732
Biological Sciences	Direct	47.074	2018315	-	327,067
Social, Behavioral, and Economic Sciences	Direct	47.075	1911453	-	16,277
Social, Behavioral, and Economic Sciences	Direct	47.075	1921911	-	140,061
Social, Behavioral, and Economic Sciences	Direct	47.075	2009258	1,176	86,260
Education and Human Resources	Direct	47.076	1720566	-	115,078
Education and Human Resources	Direct	47.076	1760585	-	147,801
Education and Human Resources	Direct	47.076	1935932	-	32,435
Education and Human Resources	Direct	47.076	1954908	-	56,449
Office of International Science and Engineering	Direct	47.079	1855690	-	12,681
Office of Integrative Activities	Direct	47.083	1934346	5,995	320,271
Passed through Arizona State University					
Computer and Information Science and Engineering	Pass-through	47.070	ASUB00000217	-	12,801
Passed through Ciudadanos del Karso					
Biological Sciences	Pass-through	47.074	SUB 1754713	-	64,608
Passed through Colorado State University					
Biological Sciences	Pass-through	47.074	SUBAWARD #G-96772-1	-	132
Passed through Florida International University					
Education and Human Resources	Pass-through	47.076	800010570-01UG	-	8,199
Passed through Intertribal Agriculture Council					
Social, Behavioral, and Economic Sciences	Pass-through	47.075	Sub Agreement No. IAC-Michigan	-	8,275
Passed through Kansas State University					
Biological Sciences	Pass-through	47.074	S19023	-	69,657
Passed through Northern Arizona University					
Biological Sciences	Pass-through	47.074	1003744-01	-	3,550
Passed through Pennsylvania State University					
Geosciences	Pass-through	47.050	5697-MTU-NSF-5369	-	10,891
Passed through re:3D Inc					
Increasing Maker Manufacturing through 3D Printing with Reclaimed Plastic & Direct Drive Pellet Extrusion	Pass-through	47.RD	Mich Tech Agreement #1807056	-	101,725
Passed through San Diego State University Research Foundation					
Education and Human Resources	Pass-through	47.076	SA0000699	-	81,900
Passed through Stabilix Biosciences Inc.					
Engineering Grants	Pass-through	47.041	MICHIGAN TECH AGMT #1702043	-	63,910
Engineering Grants	Pass-through	47.041	MTU Agreement 2005024	-	13,461
Passed through University of Nebraska - Lincoln					
Education and Human Resources	Pass-through	47.076	25-0536-0045-006	-	4,817
Passed through University of Rhode Island					
MARS Support for University of Rhode Island Autonomous Vessel Under Ice Testing	Pass-through	47.RD	CO# 2102009 PO# 0000173492	-	6,002
Passed through University of Virginia					
Education and Human Resources	Pass-through	47.076	GA11384.PO#2213323/PTE 1850296	-	62,973
Education and Human Resources	Direct	47.076	1305678	-	20,849
Education and Human Resources	Direct	47.076	1546592	-	1,417
Education and Human Resources	Direct	47.076	1742286	-	101,936
Education and Human Resources	Direct	47.076	1758392	14,252	328,305

Schedule of Expenditures of Federal Awards

Year Ended June 30, 2021

Federal Agency/Pass-through Agency/Program Title	Direct/Pass-through	Assistance Listing Number	Grant ID / Pass-through Entity Identifying Number	Total Amount Provided to Subrecipients	Federal Expenditures
Research and Development Cluster (Continued)					
National Science Foundation (Continued)					
Education and Human Resources	Direct	47.076	1546592	\$ -	\$ 2,833
Education and Human Resources	Direct	47.076	2034833	-	54,500
Education and Human Resources	Direct	47.076	2034833	-	43,167
Education and Human Resources	Direct	47.076	2034833	-	43,167
Education and Human Resources	Direct	47.076	2043022	-	32,086
Passed through Wayne State University					
Education and Human Resources	Pass-through	47.076	SUBAWARD# WSU17042	-	17,239
Passed through Colorado State University					
Biological Sciences	Pass-through	47.074	G-45144-02	-	2,224
Total National Science Foundation				291,171	7,467,659
Environmental Protection Agency					
P3 Award: National Student Design Competition for Sustainability	Direct	66.516	SV-83948501-0	-	29,216
Passed through the U.S. Department of Agriculture					
Post-Fire Response to the Forest Management Mitigations of Improved Water Quality Performance	Pass-through	66.RD	18-JV-11272139-003	-	5,086
Total Environmental Protection Agency				-	34,302
U.S. Department of Energy					
Office of Science Financial Assistance Program	Direct	81.049	DE-SC0016314	-	3,227
Office of Science Financial Assistance Program	Direct	81.049	DE-SC0018942	-	73,853
Office of Science Financial Assistance Program	Direct	81.049	DE-SC0018931	-	78,754
Office of Science Financial Assistance Program	Direct	81.049	DE-SC0020053	-	125,421
Office of Science Financial Assistance Program	Direct	81.049	DE-SC0021168	-	61,007
Conservation Research and Development	Direct	81.086	DE-EE0008685	-	84,920
Conservation Research and Development	Direct	81.086	DE-EE0008800	-	406,876
Conservation Research and Development	Direct	81.086	DE-EE0009122	20,144	132,287
Conservation Research and Development	Direct	81.086	DE-EE0009209	139,618	193,715
Renewable Energy Research and Development	Direct	81.087	DE-EE0008990	26,862	105,301
Fossil Energy Research and Development	Direct	81.089	DE-FE0027822	-	23,895
Advanced Research Projects Agency - Energy	Direct	81.135	DE-AR0000788	-	691,536
Advanced Research Projects Agency - Energy	Direct	81.135	DE-AR0001126	249,921	512,196
Advanced Research Projects Agency - Energy	Direct	81.135	DE-AR0001336 MOD 0001	-	15,265
Passed through Argonne National Laboratory:					
Investigation to Separate Lithium-ion Battery Active Cathode Materials by Chemistry Using Froth Flotation	Pass-through	81.RD	Subcontract No. 9F-60080	-	82,491
Pengfei Xue Joint Appointment Argonne National Labs	Pass-through	81.RD	Pengfei Xue Joint Appointment	-	42,152
Alternative Fuels Research with Argonne National Laboratory	Pass-through	81.RD	9F-60098	-	87,506
Passed through Battelle Energy Alliance, LLC					
Torrefaction of Sorted MSW Pellets to Produce a Uniform Feedstock for Biopower	Pass-through	81.RD	Contract No. 209856	-	98,111
Passed through Battelle Memorial Institute					
Reduced Cost and Complexity for Off-Highway Aftertreatment	Pass-through	81.RD	Contract No. 554645	-	23,654
Passed through Brookhaven National Laboratory					
Simulations to Support Designing a Cloud Chamber for Studies of Aerosol-Cloud Interactions	Pass-through	81.RD	Subcontract #381481	-	138,272
Passed through Clemson University					
Renewable Energy Research and Development	Pass-through	81.087	Sub #2184-219-2023054	-	9,508
Passed through Faraday Technology Inc.					
Office of Science Financial Assistance Program	Pass-through	81.049	SC-40-01014-401034-46	-	22,078
Passed through Gas Technology Institute					
Renewable Energy Research and Development	Pass-through	81.087	GTI Agre #S948; Project #22530	-	70,727
Passed through General Motors LLC					
Low Mass and High Efficiency Engine for Medium-Duty Truck Applications	Pass-through	81.RD	PO#4301052432	-	113,826
Passed through Honeywell Federal Manufacturing & Technologies, LLC:					
Multi-Axis Resonant Fixture Shock (Tailorable Resonant Plate Shock)	Pass-through	81.RD	PO# N000338831	-	37,767
Full Field Dynamic Response	Pass-through	81.RD	PO# N000341836	-	11,335
Frequency Response Inspection of AM Parts	Pass-through	81.RD	PO# N000343641	-	14,646
Multi-Axis Resonant Fixture Shock (Tailorable Resonant Plate Shock)	Pass-through	81.RD	PO#N000338831 MODIFICATION #1	-	22,237
Full Field Dynamic Response	Pass-through	81.RD	PO# N000341836 MODIFICATION #1	-	22,393
Frequency Response Inspection of AM Parts	Pass-through	81.RD	PO# N000343641 Modification #1	-	25,000
Full Field Response for Simulation and Prediction	Pass-through	81.RD	PO#N000378013	-	51,076
Time-Domain & Multi-Axis Resonant Plate Shock Test	Pass-through	81.RD	PO#N000380166	-	57,637
Frequency Response Inspection of AM Parts	Pass-through	81.RD	PO#N000387435	-	40,681
Passed through Hyundai-Kia American Technical Center Inc.					
Conservation Research and Development	Pass-through	81.086	#1807015	-	274,982
Passed through Lawrence Livermore National Security LLC					
Chemistry and Stability of Al Surfaces in Corrosive Environments	Pass-through	81.RD	B642420	-	18,850

Schedule of Expenditures of Federal Awards

Year Ended June 30, 2021

Federal Agency/Pass-through Agency/Program Title	Direct/Pass-through	Assistance Listing Number	Grant ID / Pass-through Entity Identifying Number	Total Amount Provided to Subrecipients	Federal Expenditures
Research and Development Cluster (Continued)					
U.S. Department of Energy (Continued)					
Passed through Loukus Technologies					
Processing, Testing, and Analyses	Pass-through	81.RD	MTU CO 2102030	\$ -	\$ 5,841
Passed through National Renewable Energy Laboratory					
A Compression Ignition Mono-Fueled NG High-Efficiency, High-Output Engine for Medium and Heavy Duty Applications	Pass-through	81.RD	NHQ-9-82305-06	-	430,600
Passed through Regents of University of Minnesota					
Office of Science Financial Assistance Program	Pass-through	81.049	AMEND. NO. 1	-	67,166
Passed through REMADE Institute					
Systems Analysis for PET and Olefin Polymers in a Circular Economy	Pass-through	81.RD	DE-E0007897#SA-19-10	-	1,522
Passed through Sandia National Laboratories:					
Snow Characteristics as a Factor in PV Performance and Reliability	Pass-through	81.RD	PO# 1980526	-	48,653
Wind Turbine and Wind Farm Controls Code Evaluation for Reduced Order Models	Pass-through	81.RD	PO #2074866	-	26,936
Wind Turbine and Wind Farm Controls Code Evaluation for Reduced Order Models	Pass-through	81.RD	PO #2159403	-	114,500
Meta-Stability of Pulsed Loaded Microgrids	Pass-through	81.RD	PO#2157059	-	40,789
Meta-Stability of Pulsed Loaded Microgrids	Pass-through	81.RD	PO #2169602	-	142,099
Passed through Terves LLC					
Low Mass Magnesium Based Conductors	Pass-through	81.RD	MTU CO# 2009041	-	4,903
Passed through The American Center for Mobility					
Conservation Research and Development	Pass-through	81.086	DE-EE0008407-01	-	704,749
Passed through Uchicago Argonne LLC					
Making Physical Sense of Machine Learning: Full Field, High Resolution Imaging of Structural Dynamics	Pass-through	81.RD	9F-60281	-	69,482
FY2020 Interoperability and Grid Integration Support	Pass-through	81.RD	OF-60090	-	96,720
Passed through University of California, Riverside					
Electricity Delivery and Energy Reliability, Research, Development and Analysis	Pass-through	81.122	S-001221 DE-OE0000916	-	42,276
Passed through University of Wisconsin-Madison					
Office of Science Financial Assistance Program	Pass-through	81.049	AGREEMENT NUMBER 812K943	-	268,194
Total U.S. Department of Energy				436,545	5,837,612
U.S. Department of Health and Human Services - Centers for Disease Control					
Temporal and Spatial Characterization of Respirable Coal Mine Dust					
Using Area Monitoring Devices and X-Ray CT	Direct	93.RD	75D30119C05527	28,430	64,420
Subtotal U.S. Department of Health and Human Services - Centers for Disease Control				28,430	64,420
U.S. Department of Health and Human Services - National Institute of Health					
Discovery and Applied Research for Technological Innovations to Improve Human Health	Direct	93.286	1R15EB026197-01	-	64,244
Discovery and Applied Research for Technological Innovations to Improve Human Health	Direct	93.286	R01EB029570-01A0	-	62,188
Cancer Detection and Diagnosis Research	Direct	93.394	1R15CA242401-01	-	166,617
Cancer Treatment Research	Direct	93.395	1R15CA246336-01	-	114,694
Cardiovascular Diseases Research	Direct	93.837	1R15HL129213-01A1	-	(1,364)
Cardiovascular Diseases Research	Direct	93.837	1R15HL140596-01	10,132	37,177
Cardiovascular Diseases Research	Direct	93.837	1R15HL145654-01	-	103,108
Cardiovascular Diseases Research	Direct	93.837	1R15HL147299-01	8,546	151,811
Cardiovascular Diseases Research	Direct	93.837	1R01HL144739-01A1	-	320,164
Cardiovascular Diseases Research	Direct	93.837	1R15HL145655-01	-	111,666
Cardiovascular Diseases Research	Direct	93.837	1R15HL150703-01A1	-	71,583
Cardiovascular Diseases Research	Direct	93.837	1R01HL146652-01A1	(15,380)	10,246
Extramural Research Programs in the Neurosciences and Neurological Disorders	Direct	93.853	1R15NS115032-01A1	-	36,941
Allergy and Infectious Diseases Research	Direct	93.855	1R21AI150962-01	69,400	119,102
Allergy and Infectious Diseases Research	Direct	93.855	1R15AI146982-01A1	-	14,127
Biomedical Research and Research Training	Direct	93.859	1R15GM137145-01	-	57,423
Biomedical Research and Research Training	Direct	93.859	2R15GM109288-02	-	77,774
Biomedical Research and Research Training	Direct	93.859	1 R15 GM114751-02	-	75,596
Biomedical Research and Research Training	Direct	93.859	1R15GM135806-01	-	152,745
Biomedical Research and Research Training	Direct	93.859	1R15GM135875-01	-	117,152
Biomedical Research and Research Training	Direct	93.859	1R15GM132873-01A1	53,634	128,074
Biomedical Research and Research Training	Direct	93.859	1R15GM137298	8,987	144,935
Aging Research	Direct	93.866	1 R15 AG059095-01	-	66,145
Passed through Montana State University					
Alcohol Research Programs	Pass-through	93.273	G258-20-W8275	-	7,310

Schedule of Expenditures of Federal Awards

Year Ended June 30, 2021

Federal Agency/Pass-through Agency/Program Title	Direct/Pass-through	Assistance Listing Number	Grant ID / Pass-through Entity Identifying Number	Total Amount Provided to Subrecipients	Federal Expenditures
Research and Development Cluster (Continued)					
U.S. Department of Health and Human Services - National Institute of Health (Continued)					
Passed through Regents of the University of Michigan National Center on Sleep Disorders Research	Pass-through	93.233	SUBK00003964 PO#3005929257	\$ -	\$ 16,061
Passed through Tulane University Aging Research	Pass-through	93.866	TUL-HSC-559015-21/22	-	8,683
Passed through University of Wisconsin-Madison Child Health and Human Development Extramural Research	Pass-through	93.865	Subaward No. 0000000663	-	<u>6,928</u>
Subtotal U.S. Department of Health and Human Services - National Institute of Health				<u>135,319</u>	<u>2,241,130</u>
Total U.S. Department of Health and Human Services				<u>163,749</u>	<u>2,305,550</u>
Total Research and Development Cluster				5,906,207	42,152,977
Highway Planning and Construction Cluster					
U.S. Department of Transportation - Federal Highway Administration					
Passed through Michigan Department of Transportation Highway Planning and Construction	Pass-through	20.205	2021-0058 AUTH Z4/JN. 211788NI	-	16,852
Highway Planning and Construction	Pass-through	20.205	2018-0057 Z12/ JOB#205618NI	-	58,105
Highway Planning and Construction	Pass-through	20.205	2018-0057/AUTH Z10/209441NI	-	361,985
Highway Planning and Construction	Pass-through	20.205	2021-0058 AUTH Z1 JN 211589NI	-	<u>360,288</u>
Total Highway Planning and Construction Cluster				-	797,230
Highway Safety Cluster					
U.S. Department of Transportation - Federal Highway Administration					
Passed through Michigan Dept of Transportation National Priority Safety Programs	Pass-through	20.616	2021-0058, Z7/ JN 204329NI	-	66,903
National Priority Safety Programs	Pass-through	20.616	2021-0058 AUTH Z6/JN 204329NI	-	<u>28,572</u>
Total Highway Safety Cluster				-	<u>95,475</u>
Total Clusters				5,906,207	82,791,106
Other Federal Awards					
U.S. Department of Agriculture					
Partnership Agreements Archaeological Collection Cooperative Management Hiawatha National Forest	Direct	10.699	18-CR-11242306-049	-	77,844
Passed through Michigan State University Cooperative Extension Service	Direct	10.U01	20-CS-11091000-002	-	18,148
Passed through Michigan Department of Education Child Care Food Program	Pass-through	10.500	RC110795A	-	20,257
	Pass-through	10.558		-	<u>7,884</u>
Subtotal U.S. Department of Agriculture				-	124,133
U.S. Department of Agriculture - Forest Service					
Climate change science assessment, synthesis, and science delivery	Direct	10.U01	15-CS-11242306-044	-	(1)
Partnership Agreements	Direct	10.699	17-CR-11242306-049	-	58,017
Partnership Agreements	Direct	10.707	19-cr-11242306-094	-	13,646
Support of the USDA Northern Forest Climate Hub	Direct	10.U02	16-CR-11242306-095	-	93,519
Digital Science Communication	Direct	10.U03	19-CR-11242306-118	-	25,550
Forest Service Research Web Modernization - Content Delivery	Direct	10.U04	20-CR-11242306-094	-	28,258
Archaeological Collection Cooperative Management-Hiawatha National Forest	Direct	10.U05	21CS-11091000-032	-	2,170
Belowground Ecosystem Ecologist	Direct	10.U06	17-JV-11242306-011	-	78,957
Web Development for the Climate Change Resource Center	Direct	10.U07	18-CR-11242306-085	-	60,643
Partnership Agreements	Direct	10.699	17-CR-11242306-031	-	104,966
Passed through U.S. Endowment for Forestry and Communities Cooperative Forestry Assistance	Pass-through	10.664	E19-65	-	35,853
Passed through Renewable Resource Solutions LLC Wood Utilization Assistance	Pass-through	10.674	CONTRACTOR AGMNT	-	<u>11,871</u>
Subtotal U.S. Department of Agriculture - Forest Service				-	<u>513,449</u>
Total U.S. Department of Agriculture				-	637,582
U.S. Department of Commerce					
Passed through Michigan State University Pilot Student Project To Develop Innovation Ecosystem, Build Knowledge And Develop the Local Supply Chain	Pass-through	11.U01	MSU MOU	-	<u>2,500</u>
Subtotal U.S. Department of Commerce				-	2,500

Schedule of Expenditures of Federal Awards

Year Ended June 30, 2021

Federal Agency/Pass-through Agency/Program Title	Direct/Pass-through	Assistance Listing Number	Grant ID / Pass-through Entity Identifying Number	Total Amount Provided to Subrecipients	Federal Expenditures
Other Federal Awards (Continued)					
U.S. Department of Commerce - National Oceanic and Atmospheric Administration					
Marine Sanctuary Program	Direct	11.429	NA19NOS4290020	\$ -	\$ 9,661
Passed through Regents of the University of Michigan					
Sea Grant Support	Pass-through	11.417	/PO#3005993181	-	43,114
Passed through Michigan State University					
Climate and Atmospheric Research	Pass-through	11.431	Subaward No. RC106491 - MTU	-	30,300
Subtotal U.S. Department of Commerce - National Oceanic and Atmospheric Administration				-	83,075
Total U.S. Department of Commerce				-	85,575
U.S. Department of Defense - National Security Agency					
GenCyber Grants Program	Direct	12.903	H98230-20-1-0077	-	29,740
Subtotal U.S. Department of Defense - National Security Agency				-	29,740
U.S. Department of Defense - U.S. Army					
Delivery of Professional Development Modules in Fundamentals of Electrified Propulsion Systems	Direct	12.U01	CO # 2103045	-	13,747
Delivery of Professional Development Module in Fundamentals of Electrified Propulsion Systems	Direct	12.U02	CO #2104018	-	13,644
Delivery of Hands-On Professional Development Modules in Diesel Engine Calibration and Powertrain Instrumentation	Direct	12.U03	EMAIL DATED 11/20/18	-	513
Subtotal U.S. Department of Defense - U.S. Army				-	27,904
Total U.S. Department of Defense				-	57,644
U.S. Department of Interior					
Passed through Keweenaw NHP Advisory Commission					
Keweenaw National Historical Park (NHP) and Keweenaw NHP Advisory Commission Partner Enhancement Grants	Pass-through	15.407	C2018-014	-	2
Subtotal U.S. Department of Interior				-	2
U.S. Department of Interior - National Park Service					
Cooperative Research and Training Programs – Resources of the National Park System	Direct	15.945	P20AC00379	-	19,400
Cooperative Research and Training Programs – Resources of the National Park System	Direct	15.945	P18AC00331	-	23,720
AIS outreach and portable boat wash support for KISMA	Direct	15.U01	Confirming Order #2103046	-	2,716
Subtotal U.S. Department of Interior - National Park Service				-	45,836
U.S. Department of Interior - Fish and Wildlife Service					
Great Lakes Restoration	Direct	15.662	F20AC10756-00	-	31,032
Subtotal U.S. Department of Interior - Fish and Wildlife Service				-	31,032
Total U.S. Department of Interior				-	76,870
U.S. Department of Justice					
Passed through Michigan State Police					
COVID-19 - Coronavirus Emergency Supplement Funding - MIPOL-FY20 Supplement Fund	Pass-through	16.034	CESF-0157-2020	-	8,049
Total U.S. Department of Justice				-	8,049
U.S. Department of Labor					
Mine Health and Safety Grants	Direct	17.600	MS-02601-19-55-26	-	(4,057)
Mine Health and Safety Grants	Direct	17.600	MS-35473-20-6-R-26	-	233,761
Total U.S. Department of Labor				-	229,704
U.S. Department of Transportation - Federal Highway Administration					
Passed through Michigan Department of Transportation					
Roadsoft Support for MDOT Safety Services	Pass-through	20.U02	CONT# 2019-0449 JOB NO. 201436	-	4,390
Passed through Michigan Dept of Transportation					
Highway Training and Education	Pass-through	20.215	2018-0713 AUTHORIZATION Z4-Z6	-	142,560
Highway Training and Education	Pass-through	20.215	2018-0713, AUTHORIZATION Z7-Z9	-	356,050
Total U.S. Department of Transportation - Federal Highway Administration				-	503,000
U.S. Department of Transportation - Federal Railroad Administration					
Implementation of Online Training Modules to Rail Learning System	Direct	20.U01	DTRF5317P00053	-	674
Total U.S. Department of Transportation - Federal Railroad Administration				-	674

Schedule of Expenditures of Federal Awards

Year Ended June 30, 2021

Federal Agency/Pass-through Agency/Program Title	Direct/Pass-through	Assistance Listing Number	Grant ID / Pass-through Entity Identifying Number	Total Amount Provided to Subrecipients	Federal Expenditures
Other Federal Awards (Continued)					
U.S. Department of Treasury					
Passed through the State of Michigan COVID-19 - Coronavirus Relief Fund	Pass-through	21.019		\$ -	\$ 5,615,100
Passed through the Michigan Strategic Fund COVID-19 - Coronavirus Relief Fund	Pass-through	21.019	Case - 317395	-	400,000
Total U.S. Department of Treasury				-	6,015,100
National Aeronautics and Space Administration					
Science	Direct	43.001	NNX16AN96H	-	4,395
Science	Direct	43.001	80NSC17M0076/SUPPL#002	-	89,894
Passed through Regents of the University of Michigan Education	Pass-through	43.008	SUBK00010292	-	86,933
Passed through Copper Country Intermediate School District Education	Pass-through	43.008	2031.OTH;Task Order 2001032-02	-	3,427
Passed through University of Michigan Education	Pass-through	43.008	SUBK00011239/PO#3005540064	-	1,196
Education	Pass-through	43.008	SUBK00015391	-	5,189
Total National Aeronautics and Space Administration				-	191,034
National Endowment for Humanities					
Promotion of the Humanities_Teaching and Learning Resources and Curriculum Development	Direct	45.162	AWARD AKA-265701-19	-	1,071
Promotion of the Humanities_Office of Digital Humanities	Direct	45.169	HAA-271717-20	-	118,994
Passed through Michigan Humanities Council Justice in Transition	Pass-through	45.U01	BM21-009	-	1,500
Total National Endowment for Humanities				-	121,565
Small Business Administration					
Passed through Grand Valley State University Small Business Development Centers	Pass-through	59.037	Subaward No. MISBDC-2019-01	-	(1,103)
Small Business Development Centers	Pass-through	59.037	MISBDC-2020-01 PO# P0088822	-	350,786
Total Small Business Association				-	349,683
Environmental Protection Agency					
Environmental Finance Center Grants	Direct	66.203	00E01979	-	90,840
Passed through University of North Carolina at Chapel Hill Surveys, Studies, Investigations, Demonstrations, and Training Grants - Section 1442 of the Safe Drinking Water Act	Pass-through	66.424	5111291	-	2,758
Total Environmental Protection Agency				-	93,598
Other Federal Awards (Continued)					
Department of Energy					
Passed through Sandia National Laboratories Creation of a Northern-Climatic Photovoltaic Test Site	Pass-through	81.U01	PO 2203470	-	180,037
Total Department of Energy				-	180,037
U.S. Department of Education					
Passed through BHK Child Development Board Great Explorations After School STEM Clubs	Pass-through	84.U01	MTU CO#1910031	-	161
Great Explorations STEM Clubs	Pass-through	84.U02	MTU CO 2012016	-	4,791
COVID-19 - Education Stabilization Fund - Student Aid 18004(a)(1)	Direct	84.425E	P425E203543	-	4,565,511
COVID-19 - Education Stabilization Fund - Institutional Portion 18004(a)(1)	Direct	84.425F	P425F202710	-	6,988,335
Total U.S. Department of Education				-	11,558,798
U.S. Department of Homeland Security - Federal Emergency Management Agency					
Passed through Michigan State Police Disaster Grants - Public Assistance (Presidentially Declared Disasters)	Pass-through	97.036	FEMA-4381-DR-MI	-	111,956
Total U.S. Department of Homeland Security - Federal Emergency Management Agency				-	111,956
Total Other Federal Awards				-	20,220,869
Total Federal Awards				\$ 5,906,207	\$ 103,011,975

Notes to Schedule of Expenditures of Federal Awards

Year Ended June 30, 2021

Note 1 - Basis of Presentation

The accompanying schedule of expenditures of federal awards (the "Schedule") includes the federal grant activity of Michigan Technological University (the "University") under programs of the federal government for the year ended June 30, 2021. The information in the Schedule is presented in accordance with the requirements of Title 2 U.S. Code of Federal Regulations Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (the "Uniform Guidance"). 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 the University.

Note 2 - Summary of Significant Accounting Policies

Expenditures reported in the Schedule are reported on the accrual basis of accounting. Such expenditures are recognized following the cost principles contained in Title 2 U.S. Code of Federal Regulations Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards*, wherein certain types of expenditures are not allowable or are limited as to reimbursement, except for expenditures related to ALN 21.019, Coronavirus Relief Fund (CRF). CRF does not apply the cost principles contained in Title 2 U.S. Code of Federal Regulations Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards*, but rather applies the U.S. Department of the Treasury's guidance. 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. The pass-through entity identifying numbers are presented where available.

The University has elected not to use the 10 percent *de minimis* indirect cost rate to recover indirect costs, as allowed under the Uniform Guidance.

Note 3 - Loans Balances

Loans outstanding at the beginning of the year and loans made during the year are included in the federal expenditures presented in the schedule of expenditures of federal awards. The balances of loans outstanding consist solely of the Perkins Loan program, which had an outstanding loan balance of \$5,634,975 at June 30, 2021.

Note 4 - Assistance Listing Numbers (ALN)

All programs with identifiable ALNs have been listed separately. Award numbers have been provided for all programs for which ALNs were not available. Programs without an identifiable ALN are identified by agency number only. If the agency number is not known, the program is listed using an agency number of 99.

Note 5 - Transfers

As allowable and in accordance with federal regulations issued by the U.S. Department of Education, during the year ended June 30, 2021, the University transferred \$105,300 of Federal Work-Study (FWS) Program (ALN 84.033) award funds to the Federal Supplemental Educational Opportunity Grant (SEOG) Program (ALN 84.007).

Schedule of Findings and Questioned Costs

Schedule of Findings and Questioned Costs

Year Ended June 30, 2021

Section I - Summary of Auditor's Results

Financial Statements

Type of auditor's report issued: Unmodified

Internal control over financial reporting:

- Material weakness(es) identified? Yes No
- Significant deficiency(ies) identified that are not considered to be material weaknesses? Yes None reported
- Noncompliance material to financial statements noted? Yes None reported

Federal Awards

Internal control over major programs:

- Material weakness(es) identified? Yes No
- Significant deficiency(ies) identified that are not considered to be material weaknesses? Yes None reported
- Any audit findings disclosed that are required to be reported in accordance with Section 2 CFR 200.516(a)? Yes No

Identification of major programs:

ALN	Name of Federal Program or Cluster	Opinion
Multiple	Research and Development Cluster	Unmodified
84.425	COVID-19 - Education Stabilization Fund	Unmodified
21.019	COVID-19 - Coronavirus Relief Fund	Unmodified

Dollar threshold used to distinguish between type A and type B programs: \$3,000,000

Auditee qualified as low-risk auditee? Yes No

Section II - Financial Statement Audit Findings

Reference Number	Finding
Current Year	None

Section III - Federal Program Audit Findings

Reference Number	Finding
Current Year	None