



Formal Session of the Board of Trustees
February 23, 2024
9:00 a.m. – 11:00 a.m.
Location: MUB Ballroom B
Public Meeting

- I Call to Order**
Steve Tomaszewski, Chair
- II. Roll Call**
Sarah Schulte, Secretary
- III. Confirm Agenda**
Steve Tomaszewski, Chair
- IV. Opening Remarks**
 - A. Opening Remarks of the Board Chair** Steve Tomaszewski, Chair
 - B. Opening Remarks of the University President** Richard Koubek, President
- V. Public Comment Period**
- VI. Committee Reports**
 - A. Academic Affairs Committee**
John Bacon, Committee Chair
 - B. Audit and Finance Committee**
Jeff Littmann, Committee Chair
- VII. Consent Agenda**
 - A. Approval of Minutes**
 - B. Degrees in Course**
 - C. Resignations, Retirements, and Off-Payroll**
 - D. Funding Productivity Report**

E. Contracts

VIII. Action and Discussion Items

A. Employee Recognition

Rick Koubek, President

B. Emeritus Rank

Andrew Storer, Provost and Senior Vice President for Academic Affairs

C. Approval of 2024-2025 Room & Board Rates

Nick Stevens, Treasurer

IX. Reports

A. Faculty Presentation: NASA

Paul van Susante, Assistant Professor, MEEM
Students, Parker Bradshaw, Robin Austerberry, and Austen Goddu

B. Undergraduate Student Government

Mason Krause, President

C. Graduate Student Government

Karlee Westrem, President

D. University Senate

Robert Hutchinson, President

X. Informational Items

A. Analysis of Investments

B. Research & Sponsored Programs

C. Advancement & Alumni Relations

D. Media Coverage

E. Employee Safety Statistics

F. Disposal of Surplus Property

XI. Other Business

XII. Date for Next Formal Meeting: April 26, 2024

XIII. Adjourn

Agenda Documents

VII. Consent Agenda

- A. Approval of Minutes**
- B. Degrees in Course**



**Michigan
Technological
University**

Registrar's Office

MEMORANDUM

To: Dr Richard J Koubek
Office of the President

From: Theresa Jacques
Registrar's Office

Date: February 5, 2024

Subject: Candidates for Degree – Conferral Term 202308

The attached list of candidates for degrees, beginning with Satbir S Mangat and ending with Suwash Silwal is submitted for the granting of the appropriate degrees by the Board of Trustees. I certify that these candidates meet all requirements for their respective degrees and that the names have been submitted to and have received the approval of the faculty from their major department.

Theresa Jacques
Registrar

TJ/kg

Michigan Technological University

Degrees Awarded for Conferral Term 202308

Michigan Technological University Registrar's Office February 5, 2024

Associate of Arts in Humanities

- Satbir S Mangat
- Stephanie Franco - Magna Cum Laude

Bachelor of Arts in Communication, Culture, and Media

- Aedan M Haack
- Emily Lynn Bishop - Cum Laude
- Valerie A Helminen - Magna Cum Laude

Bachelor of Arts in Physics

- Teodora Momirovska

Bachelor of Arts in Sound Design

- Cole James Puertas - Cum Laude
- Matthew Wayne Fisher - Summa Cum Laude

Bachelor of Science in Accounting

- Alexa Belle Dembroski - Summa Cum Laude
- Colton John Schmidt
- Daron Jay Hebler - Summa Cum Laude
- Dominic Haden Jolley
- Lukas Jon Bennett

Bachelor of Science in Applied Ecology and Environmental Sciences

- Allyson Grace O'Neill - Summa Cum Laude
- Jess Andrew Fureigh
- Madeline Elizabeth Lukens
- Stelle Acero Barone - Magna Cum Laude

Bachelor of Science in Audio Production and Technology

- Grayson B Asbury
- Isabel R Waldie
- Scott Stephen Bartholomew - Cum Laude

Bachelor of Science in Biochemistry and Molecular Biology

- Alexis Mae Gasco - Magna Cum Laude
- Brice Andrew Cart
- Derrick J Simet

- Hudson McGuire Holm
- Kyle Dean Usimaki - Cum Laude

Bachelor of Science in Biological Sciences

- Sophia C Smit - Magna Cum Laude

Bachelor of Science in Biomedical Engineering

- Abigail Rose Voisinet - Magna Cum Laude
- Alexander Thomas Beecham - Cum Laude
- Izaya Joseph Bengry
- Jessica Joy Illg - Magna Cum Laude
- Kamren Logan VanOs
- Megan Leigh Huggett - Magna Cum Laude
- Morgan Riley Thomas - Magna Cum Laude
- Nicholas David Arnold

Bachelor of Science in Chemistry

- Abel James Stewart
- Daniel R Tucker
- Ronald James Schwandt - Summa Cum Laude
- Ryan William Mackie
- William Michael Green

Bachelor of Science in Civil Engineering

- Alex David Thrasher - Summa Cum Laude
- Alexander Joseph Lehnert
- Allison A Spierling
- Alyssa Leigh Hill - Cum Laude
- Corey Alan Haskins - Cum Laude
- Garrett Henrik Impola - Cum Laude
- Hayden Arthur Mann
- Jackson Arthur Arens
- Jacob Thomas Roberts
- James David Domitrovich
- Kavan Reese Withrow
- Lucas G Betzoldt
- Madison C Poplawski - Cum Laude
- Matthew Jarret Paavo - Summa Cum Laude
- Matthew John Bacon - Summa Cum Laude
- Samara Joy Schlauderaff - Magna Cum Laude
- Sydney Rose Wittla-Sprague

- Tai Dale Coveyou
- Tyler Louis Hintsala

Bachelor of Science in Computational Biology

- Ina Henna Klasner - Summa Cum Laude

Bachelor of Science in Computer Engineering

- Aaron David Jacobsen - Summa Cum Laude
- Adam Edwin Krueger
- Andrew L Tran
- Damean John Ewan - Cum Laude
- David Donald Nayback - Magna Cum Laude
- J Weston Early
- Jayden Thomas Mayer Cozort
- Joshua Peter Maicach
- Micah J Thoreson

Bachelor of Science in Computer Network and System Administration

- Jarrett Scott Buckner
- Robert W Hobkirk

Bachelor of Science in Computer Science

- Andrew Michael Rein
- Brian Michael Conn
- Cecilia M Schmitz - Magna Cum Laude
- Colby James Dummer
- Colton Westley Eberlin
- Dauvin Lloyd Wurst - Summa Cum Laude
- Emily Nicole Wisz
- Emma Grace Smith
- Grace Louise Chandler
- Herman Seth Damstra
- Jack Nicholas Hendrickson
- Jacob Thomas Allen - Magna Cum Laude
- Jared Bradford Webb
- Joseph David Wood - Cum Laude
- Kelsey Ann Hagebusch
- Kevin Andrew Kulich - Summa Cum Laude
- Mark J Halonen
- Nathan James Spence - Summa Cum Laude
- Nicholas Zamora

- Noah Patrick Santoscoy
- Ryan Charles Roest
- Samuel James Milner
- Sara E DeZeeuw - Magna Cum Laude
- Thawng T Hmung - Cum Laude
- Thomas John Quillan - Summa Cum Laude
- Trevor Xavier Petrin - Summa Cum Laude
- Tristan K Singleton

Bachelor of Science in Construction Management

- Ashton Andrew Ordway
- Benjamin Richard Rathnaw
- Grant Marlow Manion
- Ian Patrick Dougherty
- John Weirauch

Bachelor of Science in Cybersecurity

- Dallas Michael Grandy
- Erik Michael Stalsberg Barnett
- Ewan JW Beyer
- Thaddeus Glen Sander
- Tyler James Lynch - Magna Cum Laude

Bachelor of Science in Ecology and Evolutionary Biology

- Alexander S Clark-Braendle
- Caitlin E Warner
- Kali R Kater - Summa Cum Laude
- Keera Eileen Lung - Summa Cum Laude

Bachelor of Science in Electrical Engineering

- Breanna Rae Gorman
- Brett Allen Chafin - Cum Laude
- Caleb Peter Smith
- Cody Allen Roehrs - Magna Cum Laude
- Collin Michio Uchida
- Colton Gregory Smith
- David Joseph Hadd - Magna Cum Laude
- Dylan James Seaberg
- Elijah Neil Herron - Cum Laude
- Elliot Michael Johnson
- Emily Paige Fischer

- Gabriel Robert Allis - Cum Laude
- George Alexander Witt - Magna Cum Laude
- Ian Quin Mattson
- Jack Anders Smitterberg - Cum Laude
- Jesse Ruan Ebenhoeh
- Jhenna Isabella Gamache
- Kory A Skop
- Laina Gale Toivonen - Magna Cum Laude
- Madison L Augustyniak - Magna Cum Laude
- Nicholas Brian McKenzie - Summa Cum Laude
- Noah Alexander Zazula
- Noah Isaac Adams
- Nolan Stephen Pfundt
- Quinlan Mary-Margaret Bray
- Richard Alexander Goulette
- Rocco J Carlson - Magna Cum Laude
- Steven Joseph Ruszkowski
- Suhayb M Zeqlam - Cum Laude
- Timothy J Harikkala - Magna Cum Laude

Bachelor of Science in Electrical Engineering Technology

- Cade A Peppin
- Jacob Scott Podell
- Justin Michael Rish
- Tanner Jay Banfield

Bachelor of Science in Engineering

- Nickolas Charles McCole - Summa Cum Laude

Bachelor of Science in Engineering Management

- Lucas Alexander Kendall - Cum Laude
- Stuart Anthony Werner

Bachelor of Science in Environmental Engineering

- Grace Marie Kluchka
- Jacob Scott Irwin
- Jacqueline R Schulte - Summa Cum Laude
- Jake William McDowell
- Kiersen E Korienek - Cum Laude
- Morgan Jean Hallberg
- Nathan William Kraft

- Nolan Christoff Eisenlohr - Magna Cum Laude
- Rebecca Jayne Costigan - Summa Cum Laude
- Seamus P Lux - Magna Cum Laude
- Wynter Baylee King

Bachelor of Science in Exercise Science

- Antonio Miguel Moreno
- Ethan Francis Martysz
- Nina R Kronenberg - Summa Cum Laude
- Preston Jeffrey Graf
- Ryan L Hakamaki - Magna Cum Laude

Bachelor of Science in Finance

- Jared K Hendricks
- Jaylin Nicole Lang - Cum Laude
- Thomas James Hegewald
- Tyler Lee Inthisone - Cum Laude

Bachelor of Science in Forestry

- Charles Albert Osborn
- Emma Louise Wade
- Sophia Rose Morrisette

Bachelor of Science in Geological Engineering

- Jack William Hawes
- John S Myaard - Magna Cum Laude

Bachelor of Science in Geology

- Elizabeth Elaine McClelland
- Samuel Ari Johnson - Cum Laude

Bachelor of Science in Geospatial Engineering

- Alex David Thrasher - Summa Cum Laude
- Brendan Ryan LeClaire
- Case Matthew Vander Heide
- Wyatt A Iseler - Cum Laude
- Wyatt J Lampel

Bachelor of Science in Human Biology

- Darius Willis

Bachelor of Science in Management

- Austin Eric Schlicht
- Benjamin Parker Knoth
- Jack Wayne Fenton*

- Jacob M Rokos
- James Robert Ward
- Josie L Connors
- Matyas Nesvadba
- Veronica Jo Shelby Buchweitz - Magna Cum Laude
- Victoria Louise Cameron - Cum Laude
- Zackary Paul Ohtonen

Bachelor of Science in Management Information Systems

- Aerith Joan Arboladura Cruz

Bachelor of Science in Marketing

- Jakob Roger Vettori
- Morgan Kai Campbell
- Stephanie Franco - Magna Cum Laude

Bachelor of Science in Materials Science and Engineering

- Andrew C Tellefson
- Dakota Emmet Dorner*
- Emma Shea Quinn - Magna Cum Laude
- Nicholas Steven Overesch
- Philip John Stites
- Robert Kay Payne
- Trent Thomas Graham

Bachelor of Science in Mechanical Engineering

- Aiden Michael Losh
- Alexander Easton Campagne
- Alivia Riley Morgan - Magna Cum Laude
- Andre Dabish
- Andrew John Daavettila
- Andrew Marc Amato
- Atlas Xavier Rosenburg - Cum Laude
- Benjamin Hunter Pokorny - Magna Cum Laude
- Benjamin R Bolduc
- Blake Coates Mahnken
- Bradley Seokhan Kim
- Brian Philip Johnson - Magna Cum Laude
- Cameron Alan Whiteside - Magna Cum Laude
- Cody Lee Creel
- Cyrus L Popovitz

- Dietrich Ragner - Magna Cum Laude
- Dominic W Bianchi - Magna Cum Laude
- Duncan K MacConnell
- Ellie Fisch
- Elliott Louis Kamaloski
- Emilia Marie Fanelli - Magna Cum Laude
- Eric J Balanecki - Cum Laude
- Grace Elizabeth Ackerman - Cum Laude
- Grant C Heyboer
- Gunnar D Gavalis
- Hunter James McGillivray
- Hunter James Minke
- Ian Nicholas Fleury
- J Weston Early
- Jackson D Collins - Summa Cum Laude
- Jackson Lee Holper
- Jacob Joseph Mills
- Jacob Lawrence Lindhorst - Summa Cum Laude
- Jenna Renee Johnson - Magna Cum Laude
- Joseph Lee Davey
- Joseph M LaJoice - Magna Cum Laude
- Kathryn Alyssa Seward
- Kiah Nathan Hollenbeck
- Kincade Raymond Engen - Summa Cum Laude
- Kory A Skop
- Luke A Collison
- Matthew Richard Hossink
- Maxwell Thomas Maas - Magna Cum Laude
- Nicholas Gage Holman
- Nick Paul Auricchio
- Nolan Michael Sarnac
- Paycee Joseph Assenmacher
- Pierfrancesco Stocchi - Cum Laude
- Rachel Mary Tietschert - Magna Cum Laude
- Rachel Veronica Ruman - Summa Cum Laude
- Shane Alexander Moore - Summa Cum Laude
- Soren Peter Vigesaa - Summa Cum Laude

- Spencer Michael Kosc
- Steven Alexandr Sweet
- Ted Charles Gronda
- Thomas M Outinen - Summa Cum Laude
- Tyler Hooyman
- Walker Jeffrey Gosda
- Zachary Lawrence Lee Wood
- Zachary Michael Gerber

Bachelor of Science in Mechanical Engineering Technology

- Haden McLeod Betts
- Ian Roger Lipka
- Jacob P Zellner
- Leo Famiani Guba
- Max L Sutton
- Owen S Davis
- Patrick Jon Knox
- Reeve Michael Thayer
- Spencer Thomas Calkins
- Tommy Fisher
- Tyler R Duffin

Bachelor of Science in Medical Laboratory Science

- Delaney Ann Pietila - Summa Cum Laude
- Emma Kaye Erkkila*
- Evelyn Grace Assenmacher*
- Jake R Vaillancourt - Summa Cum Laude
- Kamille Anne Keeler
- Madison Marie Palosaari - Cum Laude*
- Neve Catherine Badalow - Magna Cum Laude*
- Patrick Rocco Hoxie - Summa Cum Laude*

Bachelor of Science in Mining Engineering

- Maria E Verran

Bachelor of Science in Psychology

- Gabrielle Afina Bosley - Summa Cum Laude
- Kaitlyn Baccus - Magna Cum Laude
- Miranda E Rich - Summa Cum Laude

Bachelor of Science in Robotics Engineering

- Dana K Brouse - Magna Cum Laude

- Hunter David Gipp

Bachelor of Science in Scientific and Technical Communication

- Hannah Kendall Graves
- Henry Sullivant Snapp

Bachelor of Science in Social Sciences

- Johannah Helene Green
- Maxwell Cason Woolworth - Cum Laude
- Ryan Gregory Hozak

Bachelor of Science in Software Engineering

- Austin K Gennrich
- Dorothy Clair Paulson - Magna Cum Laude
- Eric James Belt
- Isaac T Elenbaas - Magna Cum Laude
- Jesse J Hassell
- Parker L Kirwin
- Zayne Alexander Pepin - Magna Cum Laude

Bachelor of Science in Statistics

- Kathleen Anna Rondy

Bachelor of Science in Sustainability Science and Society

- Maya Joy Klanderman - Summa Cum Laude

Bachelor of Science in Theatre and Entertainment Technology

- Laurel Anne Schmidt - Summa Cum Laude
- Maisie E Whitaker
- McKenna P Kusmack
- Riley William Nelson

Bachelor of Science in Wildlife Ecology and Conservation

- Garrett Jeffry Kucharski - Summa Cum Laude
- Miranda E Rich - Summa Cum Laude

Doctor of Philosophy in Applied Cognitive Science and Human Factors

- Anne Linja
- Tauseef Ibne Mamun

Doctor of Philosophy in Applied Physics

- Manpreet Boora
- Sushree Shrabani Dash

Doctor of Philosophy in Atmospheric Sciences

- Susan Mathai

Doctor of Philosophy in Biochemistry and Molecular Biology

- Nazar Gora

Doctor of Philosophy in Chemistry

- Ann Varghese
- Monica Mame Soma Nyansa

Doctor of Philosophy in Civil Engineering

- Dongzhao Jin

Doctor of Philosophy in Computer Science

- Dylan Christopher Gaines
- Niusen Chen
- Soheil Sepahyar
- Zhiyuan Lu

Doctor of Philosophy in Electrical Engineering

- Cheng Fan
- Mehnaz Tabassum

Doctor of Philosophy in Engineering - Computational Science and Engineering

- Chen Zhao

Doctor of Philosophy in Engineering - Environmental Engineering

- Benjamin Barrios Cerda
- Hanrui Su

Doctor of Philosophy in Materials Science and Engineering

- Ben Wang
- Yuhuan Fei

Doctor of Philosophy in Mechanical Engineering - Engineering Mechanics

- Abdolvahhab Rostamijavanani
- Apurva Barun Baruah
- Monty Russell Kennedy
- Ponkrshnan Thiagarajan
- Pradeep Krishna Bhat
- Roya Bagheri
- Shantanu Harishchandra Chavan
- Swapnil Sambhaji Bamane

Doctor of Philosophy in Physics

- Cameron John Shock
- Elise Marie Rosky
- Oindabi Mukherjee

Doctor of Philosophy in Rhetoric, Theory and Culture

- Donna Susan Mathew

Master of Business Administr. in Business Administration

- Abdulmunim Samer A AL Ratrout
- Gabriel Hunter Frontuto
- Jakobe Davidson
- William James Marano

Master of Engineering Mgmt in Engineering Management

- Andrew Jonathan Kleehammer
- Arvita Nilesh Etane
- Kevin Reginald Lee
- Preetham Krishna Reddy Pullaiahgari
- Trupti Sunil Deshpande

Master of Engineering in Engineering

- Benjamin Prosper David

Master of Forestry in Forestry

- Oliver-Hobbes William Jensen

Master of Geographic Info Sci in Geographic Information Science

- John Andrew Sherer
- Kaleb Edward Wiegand
- Sri Renganath Rengarajan

Master of Science in Accounting

- Amena Khatun Toma
- Hillary Rayanne Prout

Master of Science in Applied Cognitive Science and Human Factors

- Lauren Sprague
- Lisa Marie Casper

Master of Science in Applied Ecology

- Manuel Eduardo Anderson

Master of Science in Applied Statistics

- Alex Mis
- Allysa Dawn Quick
- Brady ByBee
- Dylan Lasher
- Lauren Michelle Christian
- Raquel Victoria Leisner

- Rodney Cherry
- Yunlong Qin

Master of Science in Biological Sciences

- Akayla Weatherby
- Vedant Rajeshkumar Buwa

Master of Science in Biomedical Engineering

- Cassandra Sue Bonifas
- Hannah Joy Loughlin
- Kiira Noelle Hadden
- Mitchell Lowell Connon
- Robert Dwyer
- Shaina P Royer-Weeden

Master of Science in Chemical Engineering

- Joseph Prashant Kulkarni

Master of Science in Civil Engineering

- Adam Michael Bau
- Chigozirim Egeruo Ugboaja
- Dale Karl Feil
- Habib Opeyemi Hamzat
- Sunday Afolabi Eniola

Master of Science in Computer Science

- Kirk Lawrence Thelen
- Marcus David Scese
- Roman Formicola
- Saket Sanjeev Chaturvedi

Master of Science in Cybersecurity

- Destiny Victoria Michaels
- Matthew John Gervasi
- Michael Bearden

Master of Science in Data Science

- Doniyorkhon Obidov
- Emily Wood
- Md Nehal Salik
- Stephanie Lynn LeMay

Master of Science in Electrical Engineering

- Lucas James Wolfe

Master of Science in Electrical and Computer Engineering

- Aditya Dhavale
- Antara Deepak Muley
- Gnaneswar Donadi
- Kathryn Ann Miller
- Leela Yaswanth Chilukuri
- M A Aziz Jahan
- Mehnaz Tabassum
- Nicholas Albert Wylie
- Rahim Iqbal

Master of Science in Environmental Engineering

- Jacob Novitch
- Samrat Pradip Surve
- Shivalik Bhattacharjee
- Vaishnavi Sanjay Angathekar

Master of Science in Environmental Engineering Science

- Sri Sumedha Mahima Gade

Master of Science in Environmental and Energy Policy

- Madeline Elizabeth DiLisi
- Robert Allan LaFave
- Sidney Marie Mechling

Master of Science in Forest Molecular Genetics and Biotechnology

- Melanie Anne Ottino

Master of Science in Geology

- Dillon Evan Breen

Master of Science in Geophysics

- Isabella Metts
- Jessica Lynn Devlieg

Master of Science in Health Informatics

- Ankit Chhillar
- Ifunanya Emmanuella Ezeumeh
- Joseph A Gregory
- Kalpana Danaboyina
- Mabel Shekinah Rose Komanduru
- Michael Saad Dabish
- Sai Nihar Reddy Kandi
- Vijaya Lakshmi Challagulla

- Walter Robertson Cayce

Master of Science in Integrated Geospatial Technology

- Connor Welling
- Hammed Adekunle Salami

Master of Science in Kinesiology

- Michael Dion Bates

Master of Science in Mathematical Sciences

- Sontosh Kumar Sahani

Master of Science in Mechanical Engineering

- Arun Prabu Natarajan Chandramohan
- Charles Leonard Carey
- Earl Alexander Getchel
- Elangovan Kandaswamy
- Gaurav Parashar
- James Joseph Daanen
- John Michael Boston
- Krishnakumar Rajendran
- Logan Roger Canull
- Lucas Michael Schloemp
- Manish Vijay Ghuge
- Mary Katherine Bellino
- Parth Tulsyan
- Piyush Lalit Savadekar
- Purvesh Dullabh Gadhiya
- Shahriar Alam
- Sudhanshu Suhas Rankhambe
- Suraj Suryakant Badadapure
- Syed Muzzammil Uddin Qureshi
- Tyler Joseph Fabian

Master of Science in Mechatronics

- Samuel Ejike Nwankwo
- Shivayogi Channappa Akki

Master of Science in Statistics

- Md Mutasim Billah
- Suwash Silwal

* Addendum to Conferral

- Degree Awarded 202305

C. Resignations, Retirements, and Off-Payroll

BOARD OF TRUSTEES OFF-PAYROLL REPORT (November 26, 2023 – February 3, 2024)

RETIRED					
Name	Class	Department	Title	Most Recent Hire Date	Term Date
Stephen Hackney	FF	Material Science & Engineering	Professor	0901/0986	01/01/2024
Patricia Helsel	FF	Visual & Performing Arts	Professor	08/12/2007	01/13/2024

OFF-PAYROLL					
Name	Class	Department	Title	Most Recent Hire Date	Term Date
J. Alan Paavola	AF	Facilities Management	Building Mechanic	07/02/2018	01/01/2024
Katie Perron	AF	Residential Dining	Food Service Helper	09/20/2021	01/01/2024
Bulut Ozturk	CF	General Athletics	Head Coach of Women's Soccer	11/16/2020	01/31/2024
Xiaoyong Yuan	FF	Applied Computing	Assistant Professor	08/17/2020	12/22/2023
Lan Zhang	FF	Electrical & Computer Engineering	Assistant Professor	08/17/2020	01/01/2024
Michael Christianson	FF	Visual & Performing Arts	Associate Professor	08/18/2014	02/03/2024
Gabriel Escobedo	PF	Center for Diversity & Inclusion	Director	12/13/2021	01/01/2024
William Hansley	PF	Advances Power Systems Research Center	Research Test Engineer	09/21/2020	01/01/2024
Brian Paavo	PF	Keweenaw Research Center	Research Security Specialist	06/13/2022	01/01/2024
Blaine Thrope	PF	Center for Technology & Training	Software Developer	06/18/2018	01/02/2024
Alicia Sendrowski	PF	Michigan Tech Research Institute	Research Engineer/Scientist	09/06/2022	01/06/2024
Jessica Stormoen	PF	Residence Education & Housing	Residence Education Coordinator	06/28/2021	01/06/2024
Ian Finch	PF	Information Systems & Services	Business Systems Analyst	06/14/2021	01/20/2024
Jennifer Lane	PF	Career Services	Director	12/26/2022	02/02/2024

D. Funding Productivity Report

**Michigan Technological University
Michigan Tech Fund
Fundraising Productivity Report**
Fiscal Year 2024 through 1/31/2024
Compared to Prior Fiscal Year

FY 2024				FY 2023				
Source	YTD Total	FY Goal	% of Goal	Source	YTD Total	FY Goal	% of Goal	FY Total
Major Gifts (Over 10K)	2,676,732	7.96	34%	Major Gifts (Over 10K)	4,561,266	6.92	66%	5,444,018.85
Planned Gift Commitments	17,095,780	13.35	51%	Planned Gift Commitments	13,121,744	12.04	109%	11,718,599.04
Annual Giving (10K or less)	1,809,058	2.37	76%	Annual Giving (10K or less)	1,797,110	2.31	78%	8,181,044.88
<i>Subtotal: Ind Giving</i>	<i>21,581,570</i>	<i>23.68</i>	<i>72%</i>	<i>Subtotal: Ind Giving</i>	<i>19,480,120</i>	<i>21.27</i>	<i>92%</i>	<i>25,343,662.77</i>
Corporate Giving	1,570,316	2.50	63%	Corporate Giving	1,375,859	2.05	67%	3,066,298.76
Foundation & Other Org Giving	5,732,405	3.00	245%	Foundation & Other Org Giving	643,170	5.13	13%	2,202,536.90
Corporate Sponsored Research	7,739,561	13.67	57%	Corporate Sponsored Research	11,271,307	13.33	85%	16,309,474.00
FUNDRAISING TOTAL	36,623,852	42.85	85%	FUNDRAISING TOTAL	32,770,455	41.77	78%	46,921,972.43

Notes:

The Adjustment totals include changes to gift records (eg. gift received date, amount, or other donor driven gift modifications)

The FUNDRAISING TOTAL includes outright gifts, as well as new pledge and planned gift commitments, made in

E. Contracts

Board Policy 11.13 states that all contracts with a value of \$1,000,000 or greater, with the exception of contracts for the provision or receipt of academic research services, require approval of the Board of Trustees prior to execution by the University except for sales of real property, which require Board of Trustees approval only if the fair market value is equal to or greater than \$5,000,000. The University recommends that the Board authorize the Treasurer and Chief Financial Officer and General Counsel and Secretary to negotiate and execute, should it be in the best interests of the University, the following agreement:

- Daniell Heights StreetScape Project: Replacement of sanitary sewer lines, certain water lines, and pavement in the 1800 block of Woodmar Drive.
 - Anticipated contract dates: April 1, 2024 - August 20, 2024
 - Contract type: Project will be publicly bid at the end of February 2024
 - Anticipated contract amount: \$750,000 - \$1,000,000
 - Funding source: General Fund

- McNair Dining Remodel - Complete remodel of the McNair Dining Hall, kitchen, and storage areas.
 - Anticipated contract dates: April 8, 2024 - September 30, 2024
(operational by move-in weekend)
 - Contract type: Project will be publicly bid in March 2024
 - Anticipated contract amount: \$3 million
 - Funding source: Chartwells (Dining vendor) will fund the project.

RECOMMENDED: that the Board of Trustees approves the Danielle Heights StreetScape Project and the McNair Dining Remodel as presented.

VIII. Action and Discussion Items

A. Employee Recognition

Rick Koubek, President

For our employees that have worked for Michigan Tech for 35 or more years and in recognition of their distinguished service and outstanding contributions to Michigan Tech, the Board would like to honor them with a resolution of appreciation.

RECOMMENDATION: That the Board of Trustees adopts the Resolution of Appreciation for the following individual:

- 1) Stephen Hackney, Professor Emeritus, Department of Materials Science & Engineering – 38 years of service

B. Emeritus Rank

Andrew Storer, Provost and Senior Vice President for Academic Affairs

Recommendation for the granting of faculty emerita/emeritus status originates within the retiree's academic department and proceeds through the respective college. Once approved, the recommendation is presented to the Provost, and if successful, to the President of the University for presentation to the Board of Trustees.

RECOMMENDATION: It is recommended that the Board of Trustees approves the following emerita/emeritus appointments:

- 1) Sheila Milligan, Teaching Professor Emerita, College of Business
- 2) Dr. Tony Rogers, Professor Emeritus, Department of Chemical Engineering

VIII-C. FY2025 ROOM AND BOARD AND APARTMENT RENTAL RATES

The Michigan Tech Residential Enterprise prides itself in providing a transformational residential experience that delivers exceptional facilities, first-rate dining, robust support services, and intentional staff engagement to help our students grow into tenacious leaders prepared to navigate a global environment. We are committed to providing a diversified residential and dining portfolio that provides students with a variety of high-quality living experiences that are centered on personal growth and development.

We are proud to serve the Michigan Tech community and present to you today the recommended rates for our residential and dining portfolios for the 2025 fiscal year. These rates have been reviewed and curated carefully by multiple stakeholders, including feedback from our students, weighing the various costs necessary to continue to deliver an exceptional residential experience.

Our commitment to tenacity in pursuing innovative opportunities remains steadfast as we strive to further distinguish Michigan Tech from other institutions in its endeavor to attract and retain a diverse global student population.

RECOMMENDATION: That the Board approves the recommended residence hall housing rates, meal plan rates, and apartment and house rental rates for FY2025.

Residence Hall Student Housing and Dining Individual Rates 2024- 2025

Residence Halls

Academic Year Occupancy Dates: August 16, 2024 - December 14, 2024 (16 weeks) and January 5, 2025 - April 26, 2025 (15 weeks)

Room Types/Occupancy	2023-2024 Housing	Proposed Increase	2024-2025 Housing	Percent Change
Wadsworth Hall, McNair Hall, Douglas Houghton Hall				
Standard Occupancy (Double/Quad)	\$ 6,975	\$ 279	\$ 7,254	4.00%
Single Occupancy	\$ 8,866	\$ 341	\$ 9,207	3.85%
Triple Occupancy	\$ 6,479	\$ 217	\$ 6,696	3.35%
Wadsworth Hall w/ Private Bath				
Double Occupancy	\$ 7,998	\$ 341	\$ 8,339	4.26%
Single Occupancy	\$ 9,982	\$ 403	\$ 10,385	4.04%
Temporary Housing	\$ 11,129	\$ 434	\$ 11,563	3.90%
Hillside Place Residence Hall				
Single Bedroom in Shared Apartment	\$ 11,005	\$ 868	\$ 11,873	7.89%
Single Bedroom Apartment	\$ 12,028	\$ 837	\$ 12,865	6.96%
Summer Term Residence Hall Rates - Weekly				
Summer Weekly Single Occupancy, Shared Bath	\$ 180	\$ 10	\$ 190	5.56%
Summer Weekly Single Occupancy, Private Bath	\$ 207	\$ 10	\$ 217	4.83%
Summer Double Weekly Occupancy, Shared Bath	\$ 135	\$ 5	\$ 140	3.70%
Summer Double Weekly Occupancy, Private Bath	\$ 162	\$ 8	\$ 170	4.94%

Academic Year Meal Plans

Occupancy Dates: August 16, 2024 - December 14, 2024 (16 weeks) and January 5, 2025 - April 26, 2025 (15 weeks)

Dining Plans	2023-2024	Proposed Increase	2024-2025	Percent Change
Standard Dining Plans				
Premium Gold Unlimited	\$ 5,549	\$ 217	\$ 5,766	3.91%
19 Meal Plan-NEW	-	-	\$ 5,549	-%
14 Meal Plan-NEW (second year+ live on students only)	-	-	\$ 5,208	-%
Summer - Dining Plan Rate (weekly rate disclosed)	150	\$ 7	157	4.67%
Hillside Block Plans				
150 Block Plan with \$150 Dining Dollars (per semester)-NEW	-	-	\$ 3,044	-%
150 Block Plan	\$ 2,640	\$ 104	\$ 2,744	3.94%
100 Block Plan with \$100 Dining Dollars (per semester)-NEW	-	-	\$ 2,164	-%
100 Block Plan	\$ 1,890	\$ 74	\$ 1,964	3.92%
75 Block Plan with \$75 Dining Dollars (per semester)-NEW	-	-	\$ 1,666	-%
75 Block Plan	\$ 1,460	\$ 56	\$ 1,516	3.84%

*IPEDS Standard Housing/Dining Combined Rate	\$ 12,524	\$ 496	\$ 13,020	3.96%
---	------------------	---------------	------------------	--------------

* Rate reported to US Department of Education Integrated Postsecondary Education Data System based on their requirement to report the typical room charge for the full academic year for a full-time student sharing a room with one other student and to report the board charge based on the maximum meal plan available for the full academic year to a full-time student. **Combines standard double with gold meal plan.**

Independent Living-Apartment and House Rates 2024-2025

Daniell Heights Apartments & University Houses

Lease Agreement Dates: July 1, 2024 to June 30, 2025 or August 15, 2024 to June 30, 2025

Monthly Rental Rate	2023-2024	Proposed Increase	2024-2025	Percent Change
Daniell Heights Student Rates				
One Bedroom	\$ 825	\$ 75	\$ 900	9.09%
Two Bedroom	\$ 1,150	\$ 50	\$ 1,200	4.35%
Three Bedroom	\$ 1,460	\$ 50	\$ 1,510	3.42%
Daniell Heights University Employee Rates				
One Bedroom	\$ 1,040	\$ 60	\$ 1,100	5.77%
Two Bedroom	\$ 1,300	\$ 60	\$ 1,360	4.62%
Three Bedroom	\$ 1,610	\$ 60	\$ 1,670	3.73%
University Houses				
Efficiency (small) Single	\$ 420	\$ 50	\$ 470	11.90%
Standard Single	\$ 550	\$ 50	\$ 600	9.09%
Deluxe (large) Single	\$ 600	\$ 60	\$ 660	10.00%

Daniell Heights Flex Housing

Lease Agreement Dates: August 15, 2024 to June 30, 2025 with flexible release policy (month-to-month)

Monthly Rental Rate	2023-2024	Proposed Increase	2024-2025	Percent Change
Daniell Heights Student Rates				
One Bedroom Apartment-Per Bed Rate (2 Occupancy)	\$ 454	\$ 41	\$ 495	9.03%
Two Bedroom Apartment-Per Bed Rate (4 Occupancy)	\$ 316	\$ 14	\$ 330	4.43%

Flex housing was first piloted in the 2022-2023 academic year as a tactic to increase on-campus housing capacity in response to demand. Flex housing divides rent equally and applies a premium for the month-to-month flexibility, increased furniture, and wear and tear on the facilities month-to-month flexibility, increased furniture, and wear and tear on the facilities.

IX. Reports

- A. Faculty Presentation: NASA**
Paul van Susante, Assistant Professor, MEEM
Students, Parker Bradshaw, Robin
Austerberry, and Austen Goddu



Planetary Surface Technology Development Lab Competition Status

[Paul van Susante, Ph.D.](#)

Assistant Professor Mechanical Engineering – Engineering Mechanics
Holder of the Lou & Herbert Wacker Professorship in Mechanical Engineering
Affiliate Assistant Professor of Civil Environmental and Geospatial Engineering
Founder/Director/PI of the Planetary Surface Technology Development Lab
(PSTDL or Huskyworks – www.huskyworks.space)
Faculty Advisor of the Multiplanetary INnovation Enterprise

Michigan Technological University
Houghton, MI, USA
pjvansus@mtu.edu

2/16/2024, 9:00 – 11:00 AM, Houghton, MI
Board of Trustees Meeting



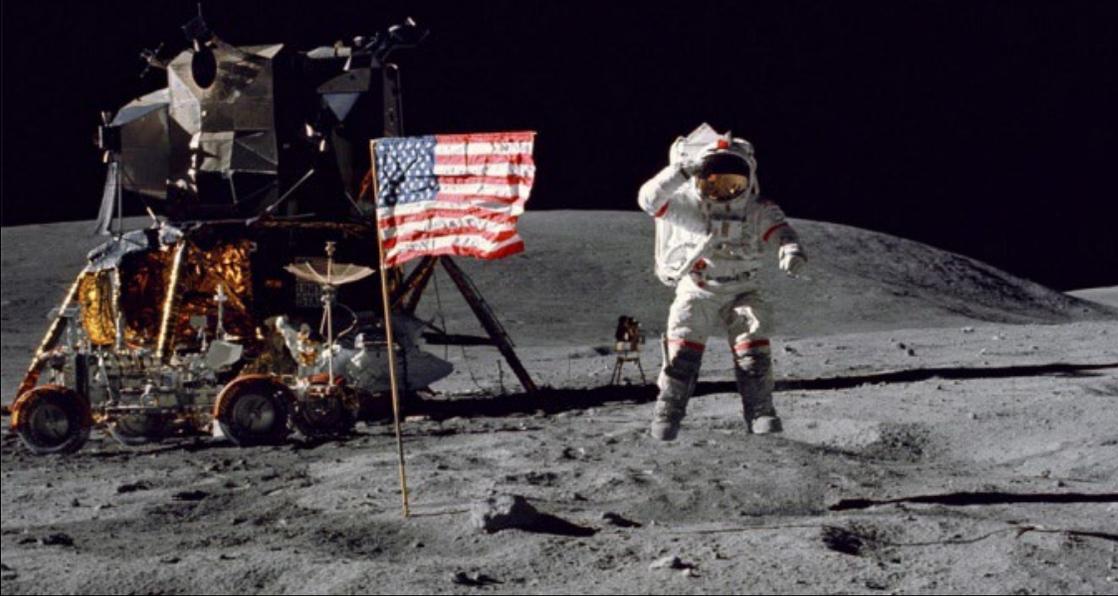
<https://mars.nasa.gov/resources/6453/valles-marineris-hemisphere-enhanced/?site=insight>
https://svs.gsfc.nasa.gov/vis/a000000/a004200/a004236/phase_waxing_gibbous.0701_preview.jpg





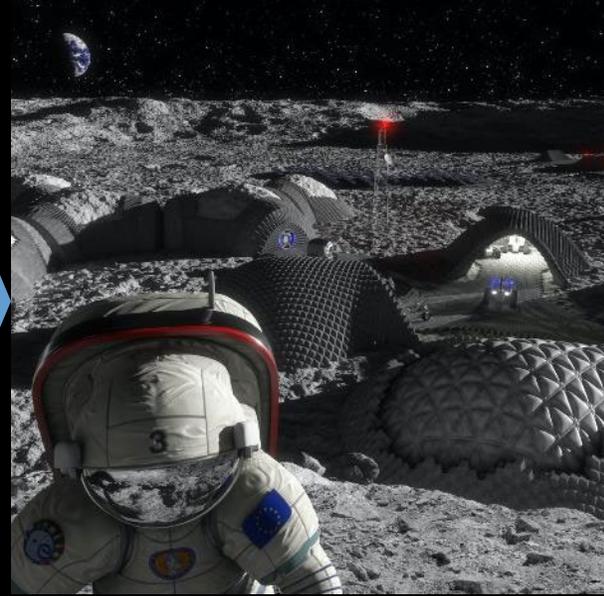
From Apollo to Artemis – background info

Apollo Missions (1960s-1970s)



- “Flags and Footprints” focus.
- Initial data collection.
- Short duration missions (3 days).
- Only focused on the Moon.

Artemis Missions (2022s-onwards)

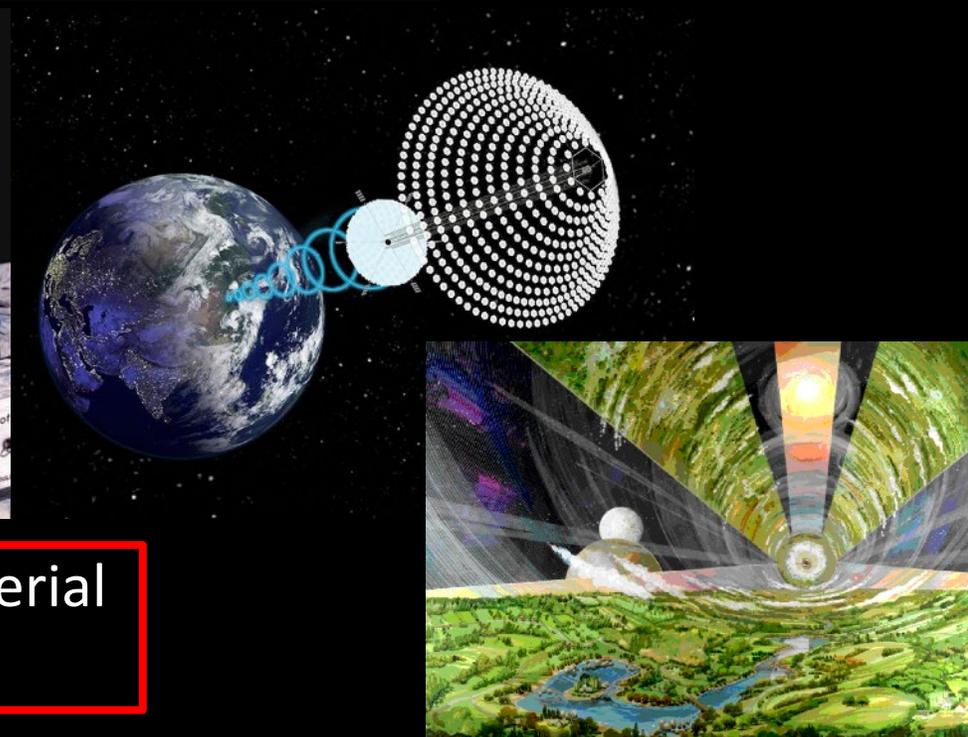


- Science and Exploration focus.
- Developing sustainable lunar economy.
- Moon base(s) with permanent human presence.
- Space station orbiting the Moon (Gateway).
- Preparing to do all the above on Mars.



Goal: Sustainable Space Exploration

Power
Mining
Processing
Manufacturing
Agriculture



Need a lot of Mass to do things at scale – Use local material instead of bringing all from Earth → ISRU



Space Exploration Growth – To the Moon

- NASA – ARTEMIS Program

- ESA
- Luxembourg
- Australia
- Japan
- India

- China – astronauts on Moon by 2030

- Launch vehicles - Transportation

- SpaceX
- NASA
- ULA
- Blue Origin
- Small launchers

- Commercial Space Stations

- ARTEMIS Accords

- 35 countries

- Sustainable Space Exploration

- CIS-Lunar Economic Sphere

- On to Mars & Asteroids

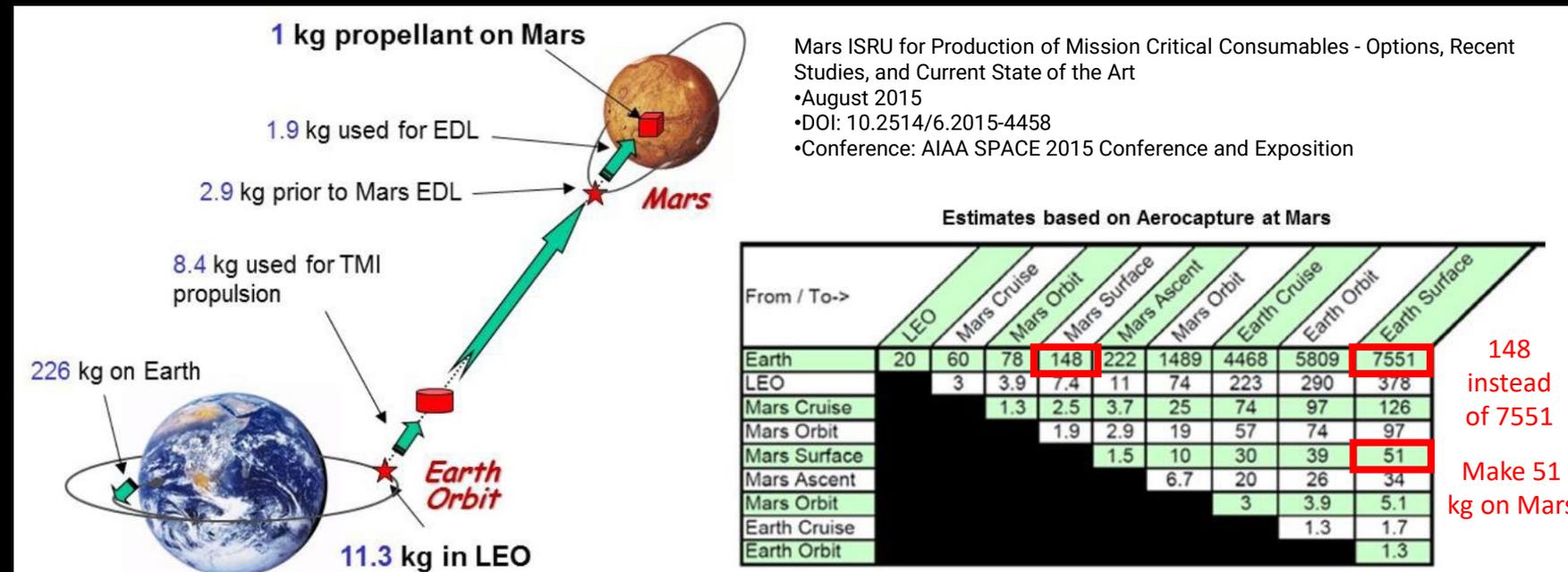


Why ISRU – what is value?

In-Situ Resource Utilization

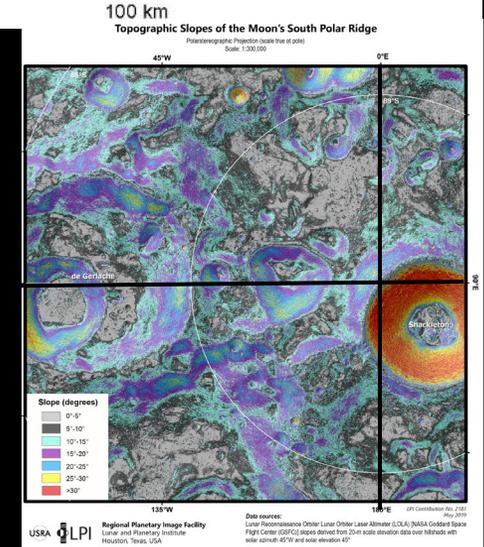
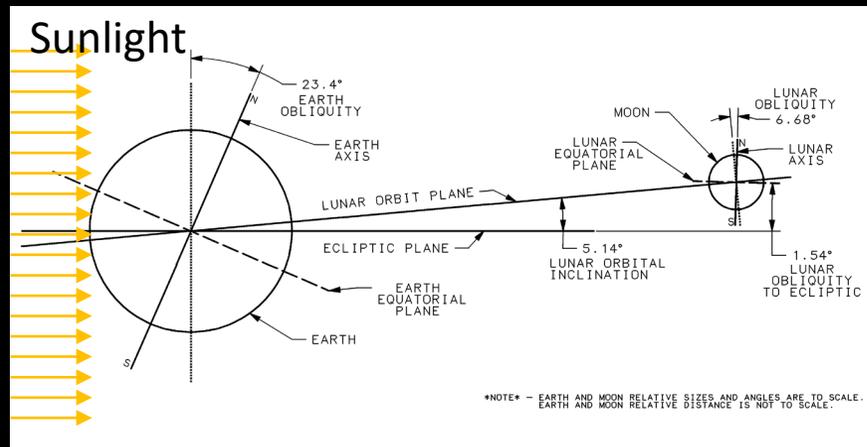
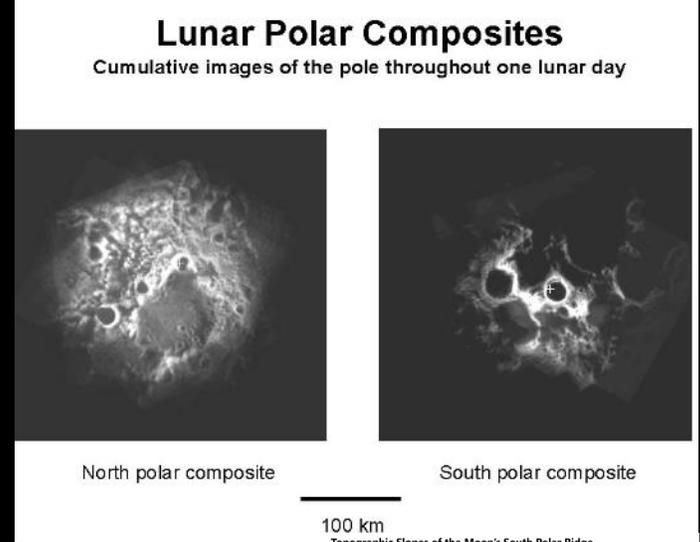
- Information
- Materials
 - Use In-Situ (processed or un-processed)
 - Export to Space
 - Export to Earth
- Energy
- New business models & opportunities
- Leverage
 - save mass & volume
 - increase performance
 - reduce risk

- Sustainability (independence)
- Risk Reduction
- Improve life on Earth





Lunar Permanently Shaded Regions (PSR)

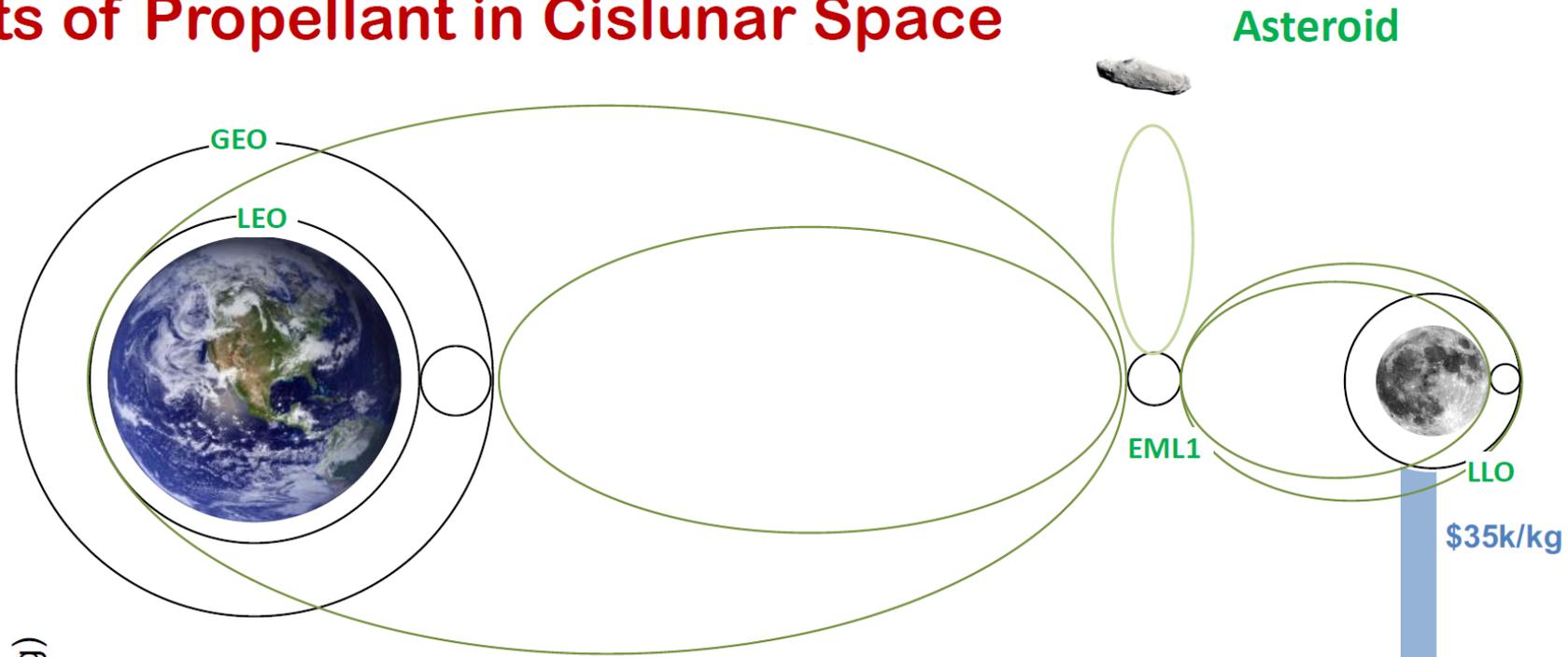


Sun never shines in PSR - Ice Presence detected



Value of propellant – water (H₂ and O₂)

Costs of Propellant in Cislunar Space



MTU's Planetary Surface Technology Development Lab (PSTD L or Huskyworks)



The MTU Planetary Surface Technology Development Laboratory (PSTD L) is a new (since 2019) research facility designed and led by Dr. van Susante at Michigan Technological University (MTU) and consists of several spaces with various equipment and supporting labs.

The goal of the PSTD L is:

to research, prototype, build, test and quickly increase the TRL of technology being developed for lunar and mars missions, partner with government and industry to be part of those payloads and missions to other planetary surfaces.

Launch an MTU payload to the lunar surface and operate it.

www.huskyworks.space



- Lunar PSR Volatile Detection and quantification and Mapping
 - Lunar Ice mining and water extraction
 - Lunar Tethered Power delivery using superconducting tether
 - Lunar ISRU & Construction
 - Landingpads
 - Trenching
 - Simple unpressurized structures for thermal, blast, radiation and micrometeoroid impact protection
 - Construction site work
 - Regolith handling and transport
 - Mars water extraction from hydrated mineral rock
 - Mars water extraction from buried glaciers
 - TRL-6 testing in lunar environmental conditions
- **Find Water Ice**
 - **Provide Power & Comms**
 - **Extract and Process Ice**
 - **ISRU & Construction**
 - **Testing**
- **Mobility**
 - **Field Testing / Proving ground testing**
 - **Lab Testing**
 - **Relevant Environment Testing**
 - **Lunar Simulant Preparation**



MTU PSTDL funding achieved – tech development and risk reduction

NASA Funding Sources - \$5M in 4.5 years to PSTDL



Lunar Surface Innovation Initiative (LSII) Collaboration Highlights



3 proposals in prep
6 in review

LSII has awarded ~\$200M over a broad range of STMD Programs to establish collaborations across industry and academia.

Collaborations & Partnerships



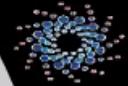
Commercial Lunar Payload Services (CLPS) Technology Demonstrations (i.e. PRIME-1 mass spectrometer and drill, Nokia 4G Wireless and Intuitive Machines Deployable Hopper)

← Future Goal



\$127M – Tipping Points & Collaborative Opportunities (10 TPs & 5 ACOs selected in 2020)

← 2 sub test



\$36M – SBIRs (Ph. I, II, III, CCRPP, Lunar Sequentials)

← 3 sub test
2 STTR



\$14M – Space Technology Research Grants (6 LuSTR Opportunity, ECF, ESI)

← 1 ESI, 1 LuSTR
1 LuSTR sub



\$9.9M – NextSTEP BAA (9 ISRU awardees with multiple ground demos)

← completed



\$3.5M – Vertical Solar Array Technology (VSAT) Solicitation (5 Phase I Awards)



\$3M – NIACs (including first Phase 3 award for Exploration of Lunar Pits)

← completed



\$2M – Breakthrough Innovative Game-changing (BIG) Challenge
2020 Permanently Shadowed Region – 8 teams; 2021 Dust – 7 teams

← Won in 2021



\$1.4M – NASA Tournament Labs (GrabCAD, Yet2, HeroX) Open-source Challenges

← Watts 2021 & 2022



\$1M – Centennial Challenges ('Watts on the Moon' & 'Break the Ice' Challenges)

← Runner up BTIC
Phase 2-3 in prep



APL LSII Integration and Lunar Surface Innovation Consortium

← Watts & BTIC 2-3



Recent Accomplishments



- Won “Artemis Award” in NASA BIG Idea Challenge - for Tethered – permanently shaded REgion eXplorer (T-REX) - **\$163k grant**
- <http://bigidea.nianet.org/past-competition-themes/2020-competition/>

- Won “Grand Prize” in phase I of NASA Watts on the Moon Challenge for scenario 2 - **\$100k** prize for Wired Watts Wherever Whenever you Want (W^5)

- https://www.nasa.gov/directorates/spacetech/centennial_challenges/500k-awarded-in-first-phase-of-5m-watts-on-the-moon-challenge.html

- Won **\$200k award** for Phase 2, level 1 of NASA Watts on the Moon Challenge and moved on to Phase 2, level 2 with TEMPEST (1 of 7 teams)

- https://www.nasa.gov/directorates/spacetech/centennial_challenges/seven-teams-advance-in-nasa-s-5m-watts-on-the-moon-challenge.html

- Won **\$400k award** for Phase 2, level 2 of NASA Watts on the Moon Challenge and moved on to final of Phase 2, level 3 with TEMPEST (1 of 4 teams)

- https://www.nasa.gov/directorates/spacetech/centennial_challenges/four-teams-win-prizes-to-advance-energy-technology-for-moon-missions

- Won “Runner up” prize - **\$25k**, in NASA’s Break the Ice Challenge as part of Team LIQUID
- <https://breaktheicechallenge.com/nasa-awards-500000-in-phase-1-prizes-for-break-the-ice-lunar-challenge/>

- MTU-PSTD team selected and awarded **\$38.5k** for Phase 2, level 1 in NASA’s Break the Ice Challenge (1 of 13)

- https://www.nasa.gov/directorates/spacetech/centennial_challenges/nasa-announces-newest-winners-in-break-the-ice-lunar-challenge.html

- MTU-PSTD team selected and awarded **\$75k** for Phase 2, level 2 in NASA’s Break the Ice Challenge (1 of 6)

- https://www.nasa.gov/directorates/spacetech/centennial_challenges/nasa-announces-newest-winners-in-break-the-ice-lunar-challenge.html



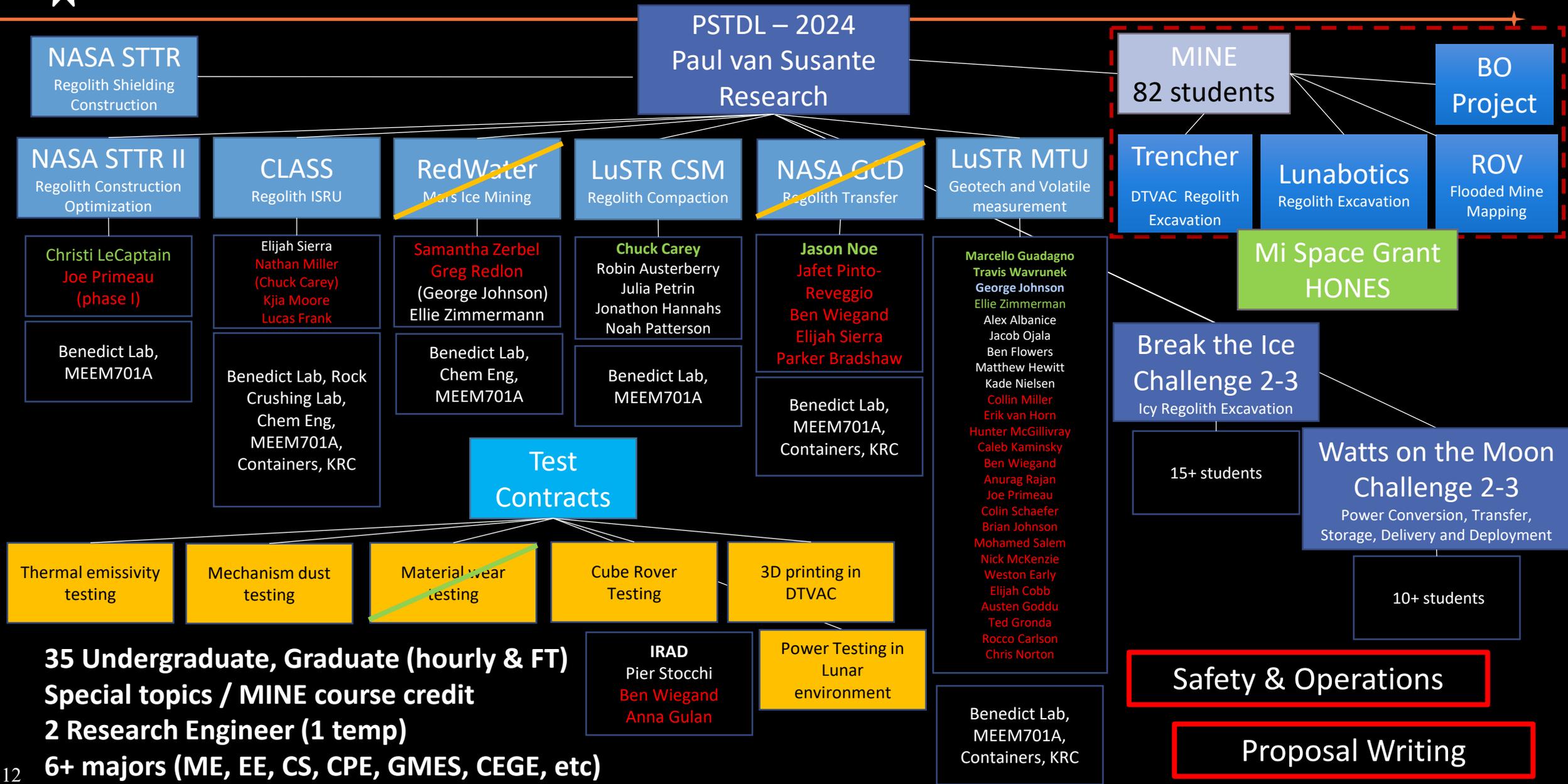
Jim Bridenstine, then Administrator of NASA, presenting MTU team with the Artemis Award for winning the 2020 Big Idea Challenge.



NASA Watts on the Moon, Phase 2, Level 2 award

Total \$1M+

Personnel and Facilities



35 Undergraduate, Graduate (hourly & FT)
Special topics / MINE course credit
2 Research Engineer (1 temp)
6+ majors (ME, EE, CS, CPE, GMES, CEGE, etc)



Lunar Test Facilities at MTU

- Dusty TVAC
 - 2x1.5x1.5 m
 - 3250 gal LN₂
 - Freezer container
 - Heating Container



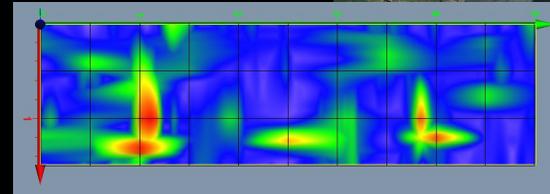
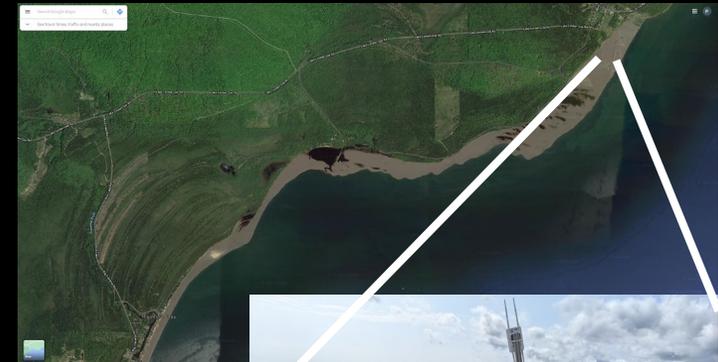
- Lunar test bed
 - Lunar simulant
 - Slopes
 - Obstacles
 - Gravity offloading



- KRC
 - 900 acres proving ground – all terrain / all year
 - 25 metric ton of lunar simulant



- Stamp Sands
 - 1400+ acres
 - Crushed basalt
 - Summer and winter testing

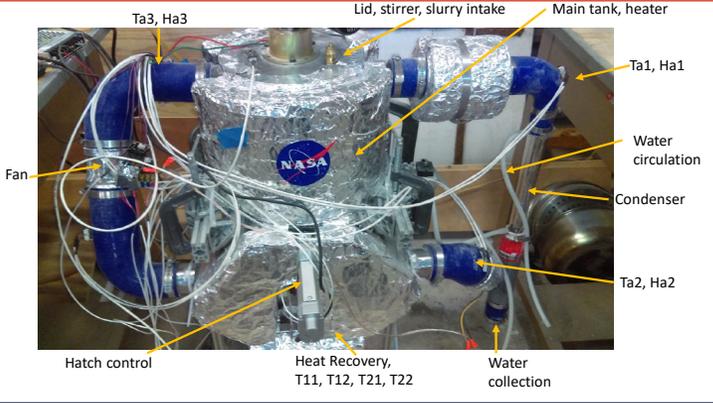




MTU PSTDL ISRU research



Extract Water from Mars Gypsum



Deploy Cable down 45 deg Slope



1m deep Cone Penetrometer



GPR & field rover testing



Traction / Excavation / Wear

Find Water Ice / Volatiles
Excavate and Extract Ice

Deploy Power Provide Power
Transfer / Storage
Regolith transfer/storage

Vacuum Rated Trencher



Vacuum Rated Trencher



"Infinite Regolith Transfer"



Excavate Cemented Material



Long Distance Driving



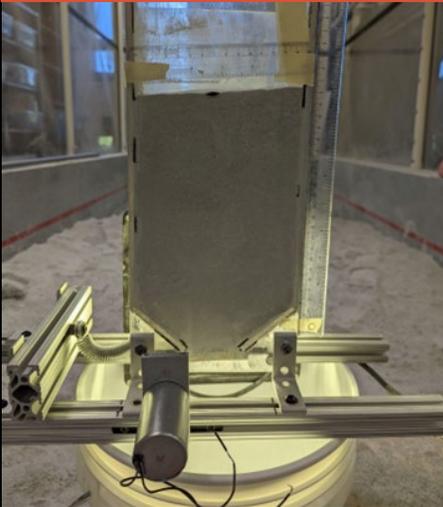


Test operation in lunar Dusty TVAC

Vacuum Regolith
Conveyance



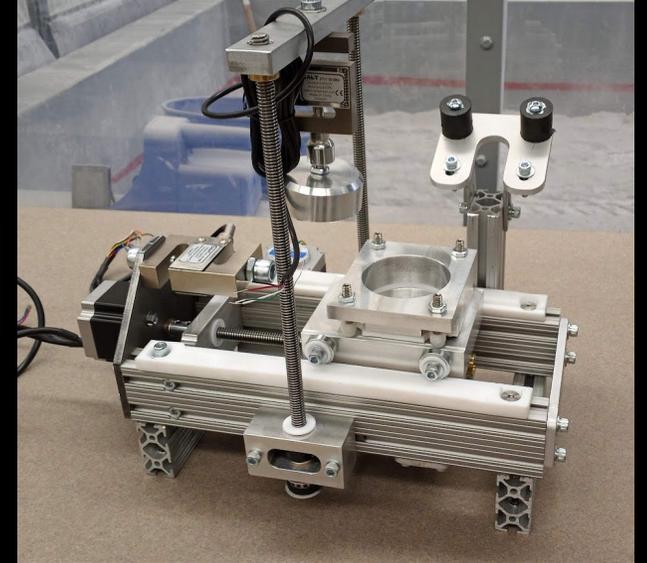
Vacuum Regolith flow
in Hoppers



ASTM G65 Wear Testing



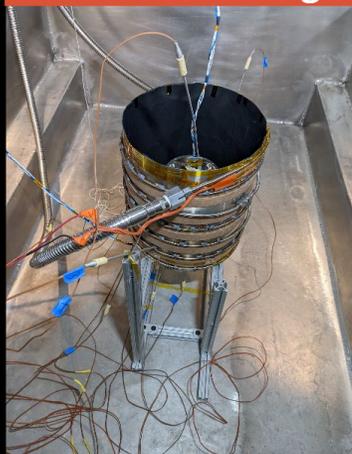
Vacuum Rated Direct Shear Test



Vacuum Rated Trencher



Thermal Testing



Battery
Vacuum
Qualification
Test

Super-Conducting
Power Transfer Test



Super-Conducting Power
Transfer Test





What does Growth Need?

• Supply Chain Challenges

- Need for larger space rated dust tolerant actuators (electric)
- Need for larger space rated motors
- Space Electronics and boards
- Larger space power storage
- High Voltage DC Power conversion
- MI suppliers in growing market?
- US made
- Expand Space Exploration in MI

• Larger Scale Testing in relevant environment

- 100s-1000s of km/year driving
- 1000s metric tons/year excavation
- MTBF: 10 lunar days (300 Earth days) <2 hr to repair
- Weather independent

Capability or KPP	SoA	Threshold	Goal
Excavation	Surveyor Scoop: < 10kg	100s t/year	1000s t/year
Dist. Traveled	Opportunity Rover: 46 km	100s km/year	1000s km/year
Repeated Trafficking	Apollo rover: 5X	100s X	1000s X
Operational Range between resource & delivery site	None	500 m	> 1 km
Recharge Cycles (assuming no on-board PV charging)	None	10s X	100s X
Operational Lifetime	Chinese Yutu Rover Many lunar day/night cycles	1 year	5 years
Reliability & Repair	None	MTBF: 1 lunar day MTTR: <24 hrs	MTBF: 10 lunar days MTTR: <2 hrs

Threshold	Goal
1 measurement per 100 m ²	10 autonomous measurements per 100 m ²
10mm resolution	5mm resolution
4 m tall	7 m tall
25 m radius	50 m radius
<10 cm	<50 cm
1.0 m deep	3.0 m deep



Travel Perspective

Case	# RASSOR-class loads (@80 kg/load)	Distance from Ore to Plant, typical	# RASSOR – class Excavators used (@ 60% On-Duty)	Travel Distance (km in 480 sols)
D1 – Regolith @425K	>25,000	~100 m	3 excavators	5,000 (3) [1,667 (1)]
D2 – Regolith @ 575K	>15,800	~100 m	2 excavators	3,160 (2) [1,580 (1)]
C – Smectite (proximity)	>7,000	~100 m	1 excavator	1,400
B - Gypsum	>2,000	~100 m	1 excavator	400
B - Gypsum	(same)	~1,200 m	1 excavator	4,800
B - Gypsum	(same)	~3,000 m	2 excavators	12,000 (2) [6,000 (1)]

OPPORTUNITY'S MARATHON JOURNEY!

First Marathon "Run" on Another Planet
Distance: 26.2 miles Time: 11 years, 2 months

A GREAT START



At landing, Opportunity first signs of acidic water in Mars' ancient past.

LONG WAY TO GO



Rock layers show the way used and still used on. Any microbes could have had a rough time.

TOUGH CHALLENGE



After Victoria Crater, scientists wonder, "Was the ancient water also too salty for life?"

GETTING IN STRIDE



At last! Opportunity finds the first signs of past water good for life!

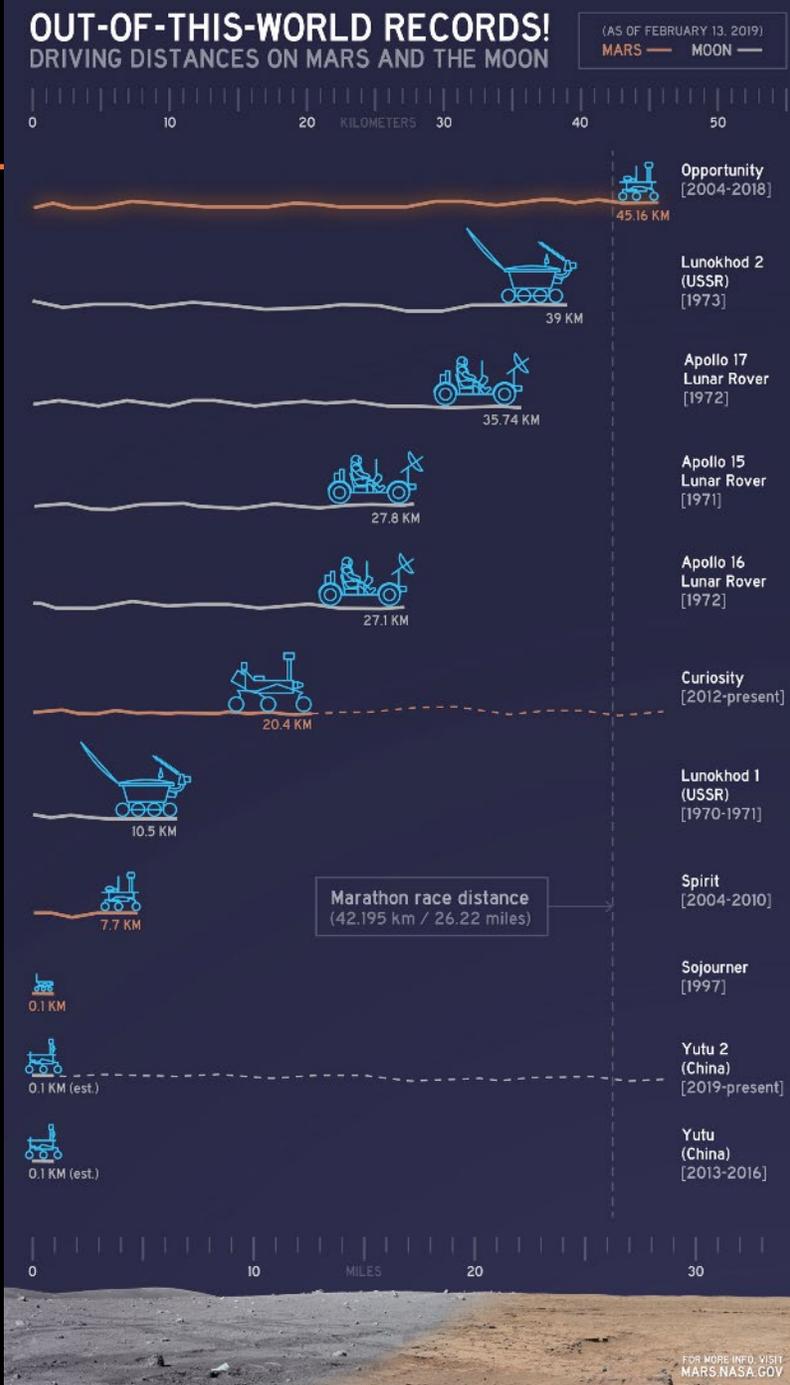
A RUNNING HIGH



Along a mountain ridge, Opportunity explores clay that in the Mars might have been a good habitat.



Follow along: mars.nasa.gov



Break The Ice Lunar Challenge

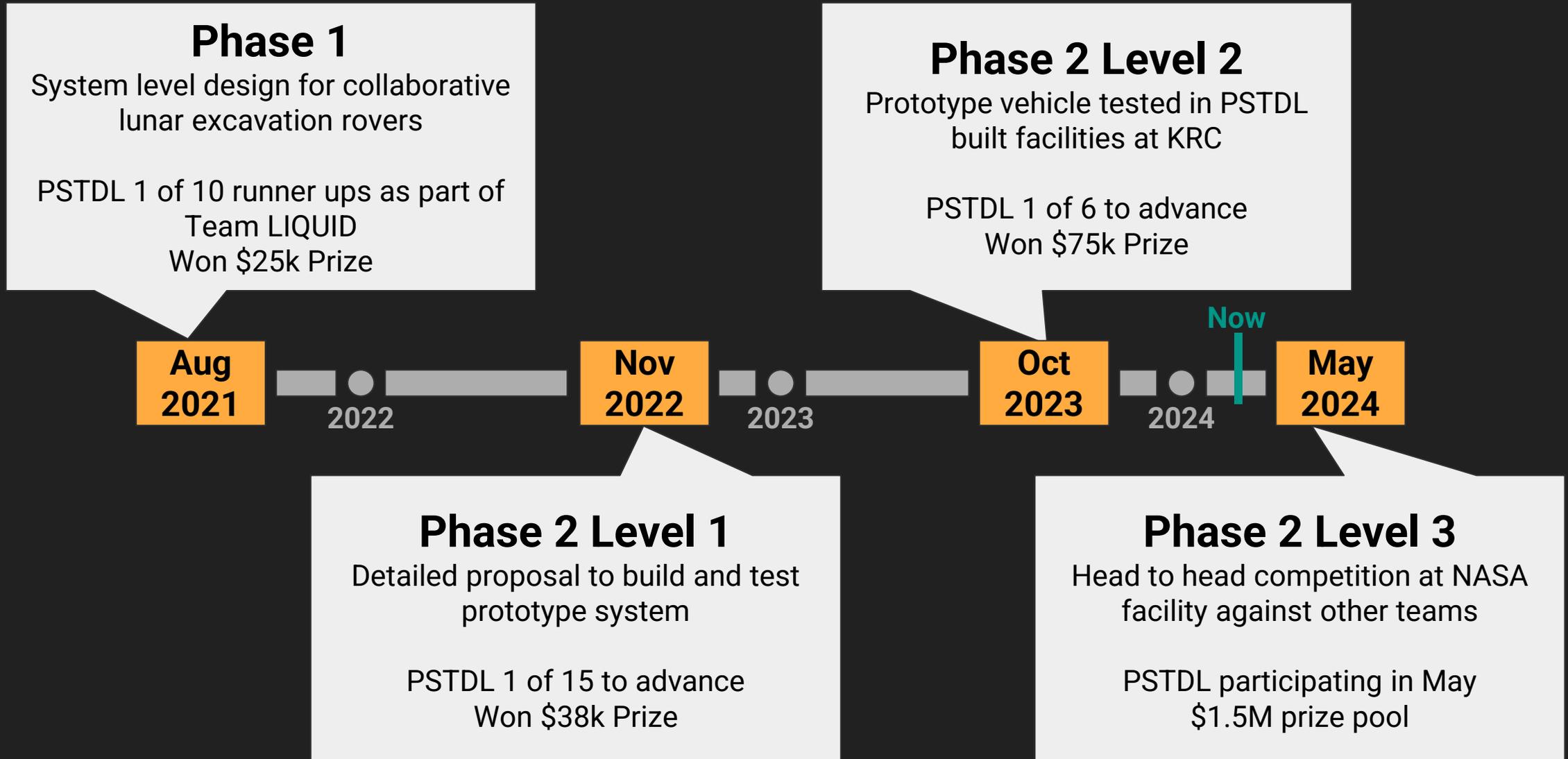
Presented by: Parker Bradshaw, Robin Austerberry, Austen Goddu



**Michigan
Technological
University**



HUSKYWORKS
PLANETARY SURFACE TECHNOLOGY DEVELOPMENT LAB



Dr. Paul van Susante

Chief Engineer
Parker Bradshaw

Project Manager
Kjia Moore

Hopper

Mason K.

Robin A.

Command & Data Handling

Austen G.

Matt Oujiri

Jay Sweeney

Mack Miller

Kevin D.

Electrical Power System

Will Jenness

Austin M.

Leif C.

Audrey A.

Walker S.

Excavation

Marcello G.

Heather G.

Hunter M.

Eli Sierra

Ben Engle

Max Decker

Chassis & Mobility

Lucas Frank

Greg Redlon

Connor D.

Professor

Graduate

Undergrad

Graduating

New U.G.

PRIMROSE

- Persistent Regolith In-situ Mining Rover with Onboard Surface Excavator.
- Single rover solution that excavates, hauls, and delivers material
- Per wheel steering and suspension
- Uses conventional chain trencher

Inspiration



PSTD L team at the end of the level 2 demonstration

Level 2 Experience

Level 2 Testing Arena



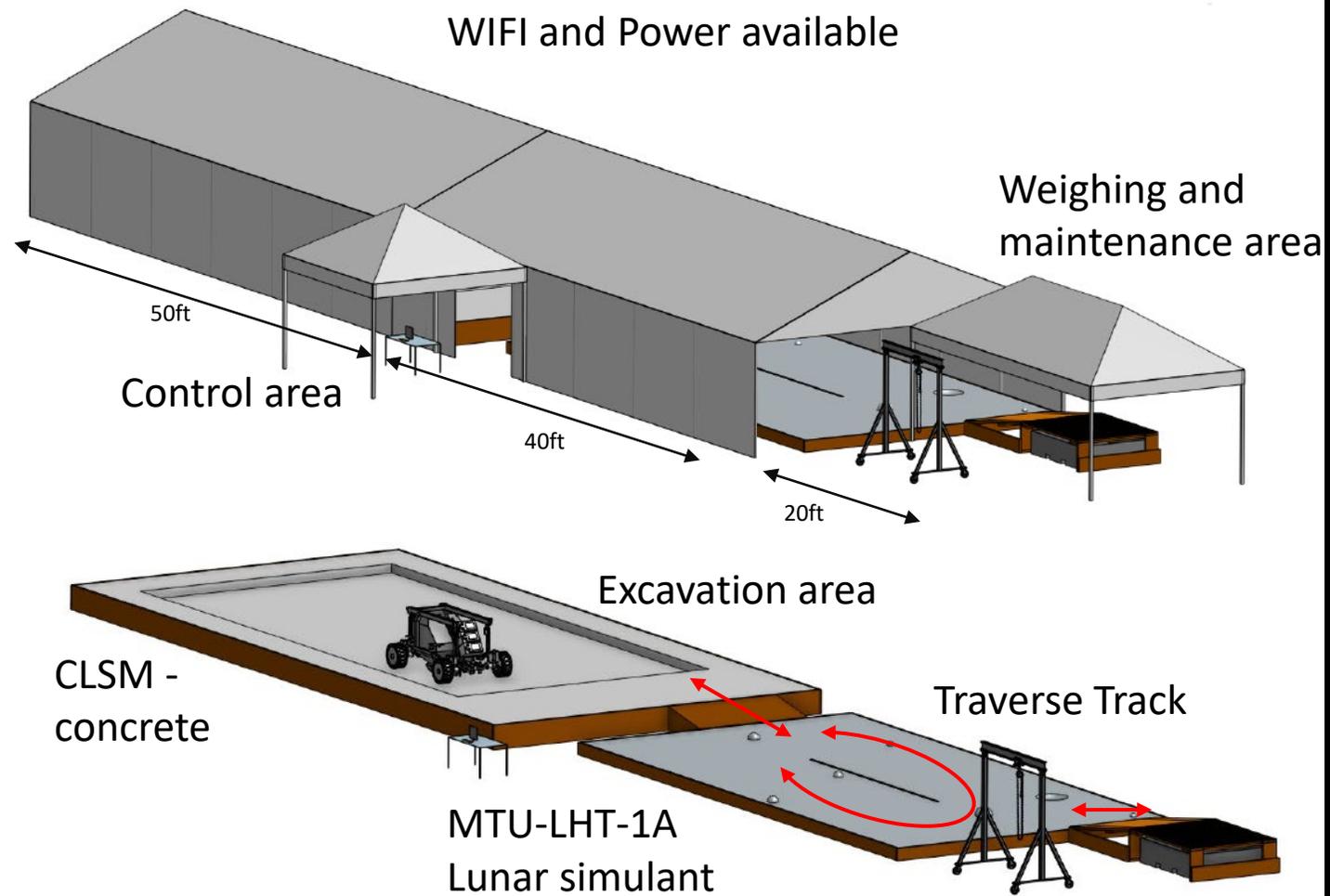
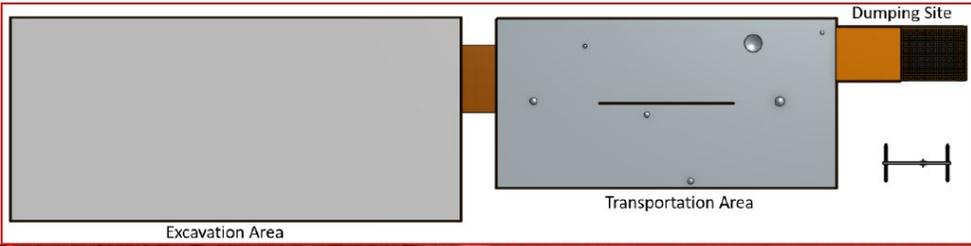
Lunar Proving Ground

- Temporary facility built for BTIL at KRC
- Has transportation area to simulate driving on the moon
 - 16,000 kg of lunar regolith simulant
- Excavation area has cemented material to simulate permafrost
- Staffed 24/7 for 15 days by students





Break the Ice Lunar Challenge - Phase 2 - 2



Target: 12,000 kg (800 kg/day) Excavated, drive 500m each way, 3 trips/day, 45km



15 day BTIL Durability Demonstration Test



Regolith Mixing



Drive zone prep



Excavation zone prep



15 days 24/7



3,000 kg Excavated

30 km driven on regolith



Real World Performance

- Total rover mass: **332 kg**
- Total collected permafrost: **2990 kg**
- Traversed: **30 km**



Performance Bottlenecks

- Mobility issues in regolith simulant track
- Moisture content of terrestrial test facilities
- Excavated CLSM transfer efficiency
- Lack of advanced controls automation
- Communication Loss of Signal



BTIL Finals Venue

- PSTDL team will travel to Alabama A&M to compete
- Competition takes place in June 2024

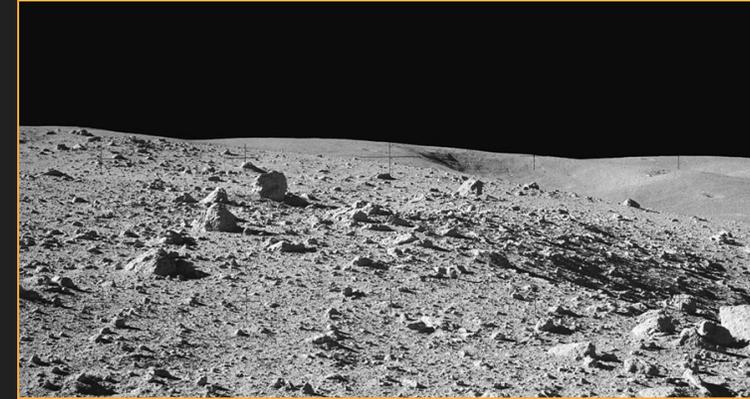
Competition Overview

- Compete head to head with other BTIL teams
- Excavation event and transportation event
- Time trial style where each team gets 60 minutes to complete tasks
- Excavation & Traversing
- High scoring robots must be energy efficient and low mass



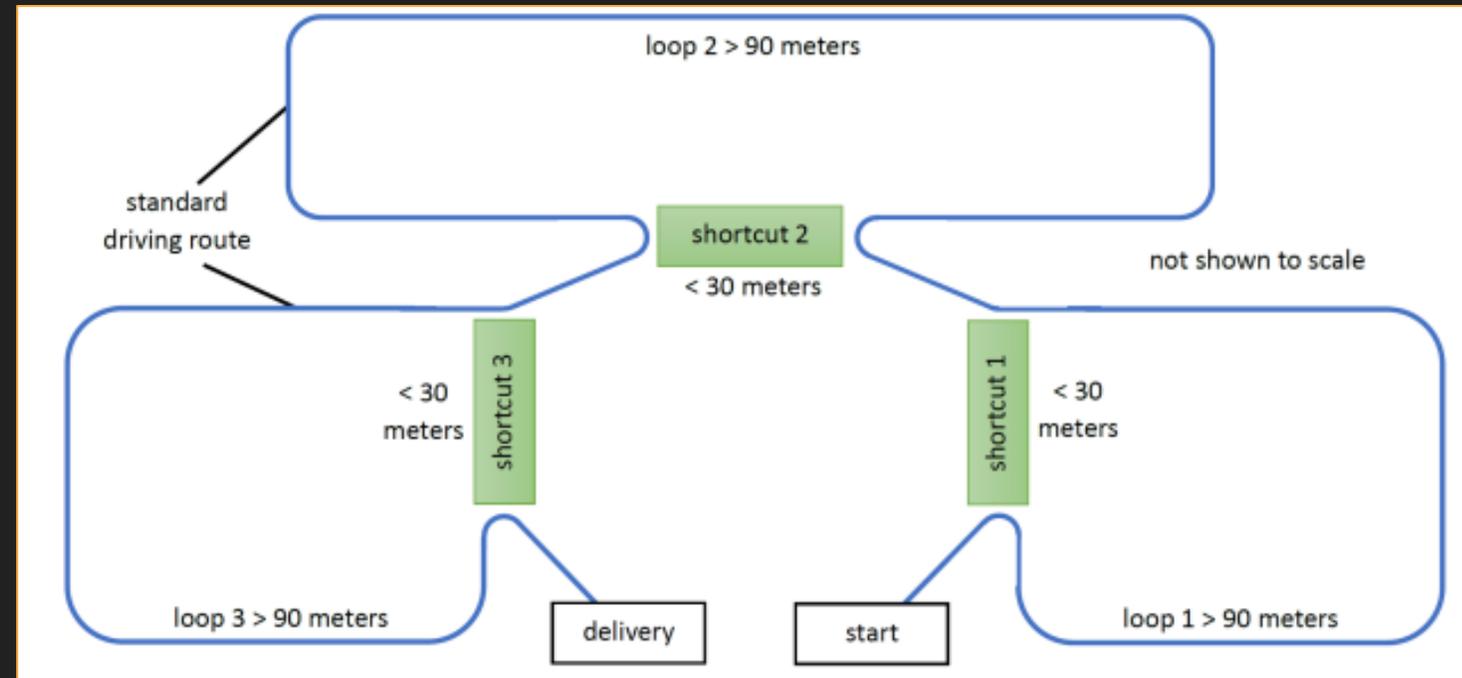
Transportation Event:

- Complex terrain including boulders, rocks, and craters
- BTIL Teams will compete one after another
- Scored on energy use and mass of rovers



Shortcuts

- Three shortcuts are available:
 - 30 degree upward slope
 - 10 degree sideways slope
 - Boulder field
- Fully loaded one way, empty return

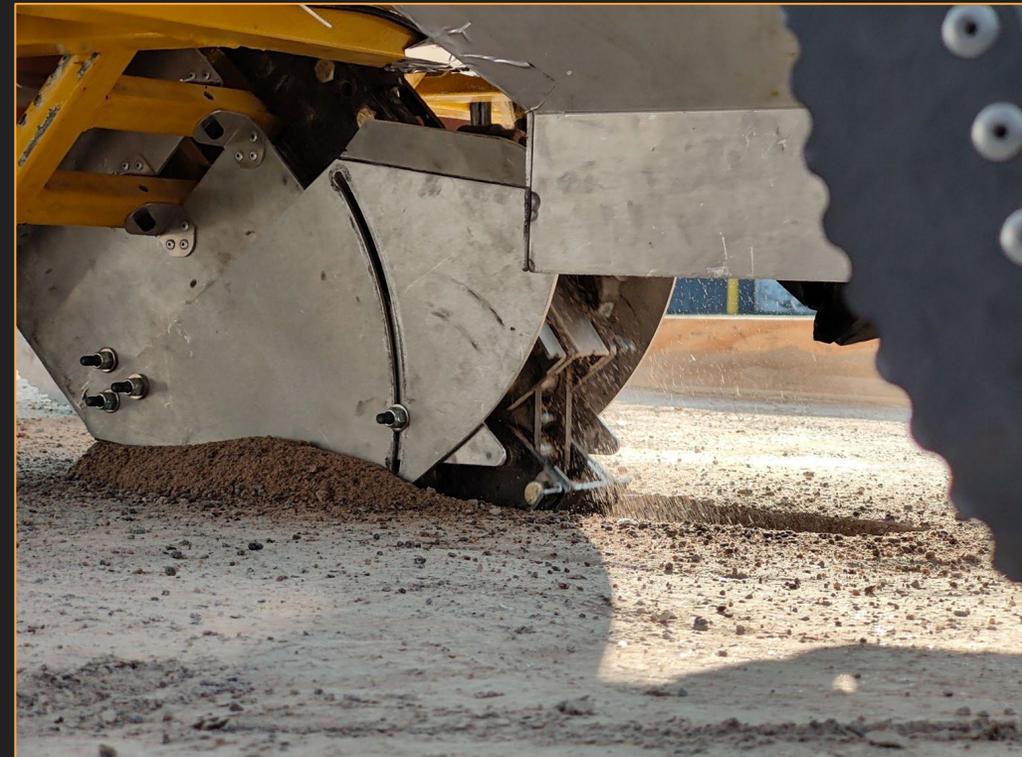


Excavation Event:

- Excavate target amount of permafrost simulant in one hour
- Gravity offloading to simulate lunar gravity

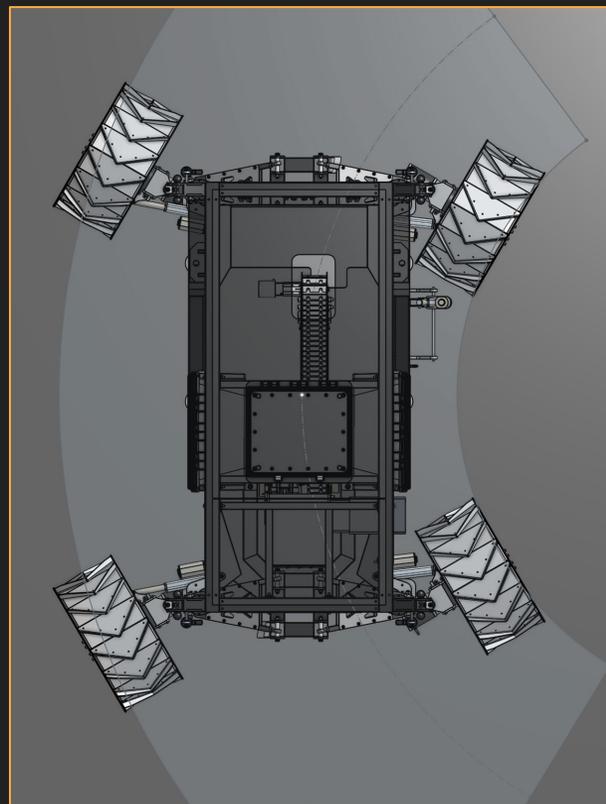
Additional Science

- Planned journal paper about excavation performance
- Energy efficiency and performance ability
- Inform future ISRU mission planners



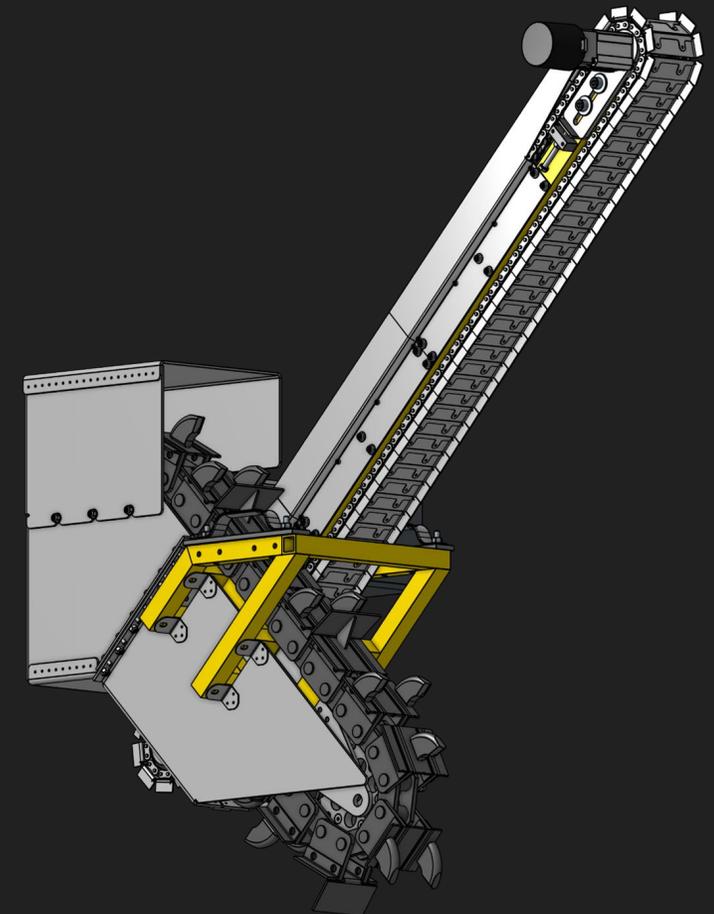
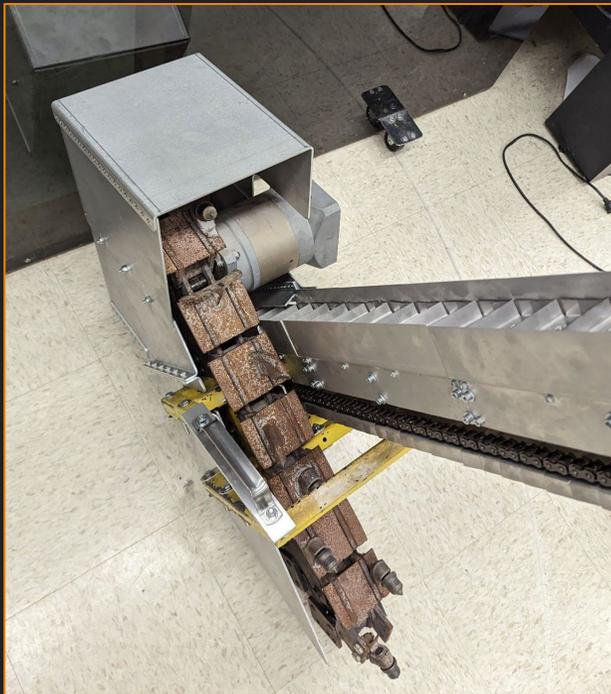
Planned Mobility Upgrades

- Larger wheels, modified steering angles
- New excavator conveyor belt design
- More sensors, more automation



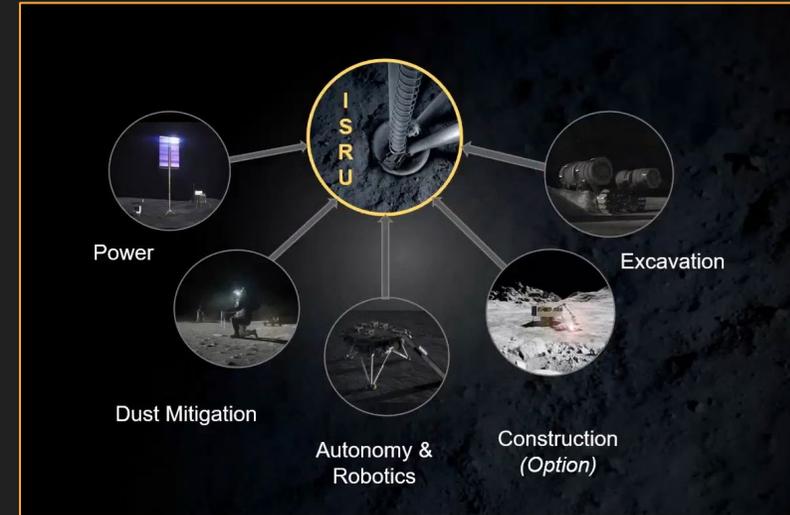
Planned Excavation Upgrades

- New excavator conveyor belt design
- More robust control
- Additional force & power data collection



Lunar Technology

- NASA has ISRU missions being planned now
- BTIL experience is related to mission objectives
- Students with space hardware experience
- Future MTU hardware on Lunar Surface?





The Future Needs Michigan Tech!

To the Moon and Beyond!

Any Questions?

- Website: www.huskyworks.space
- Contact: pjvansus@mtu.edu

Lunar Proving Grounds @ MTU:



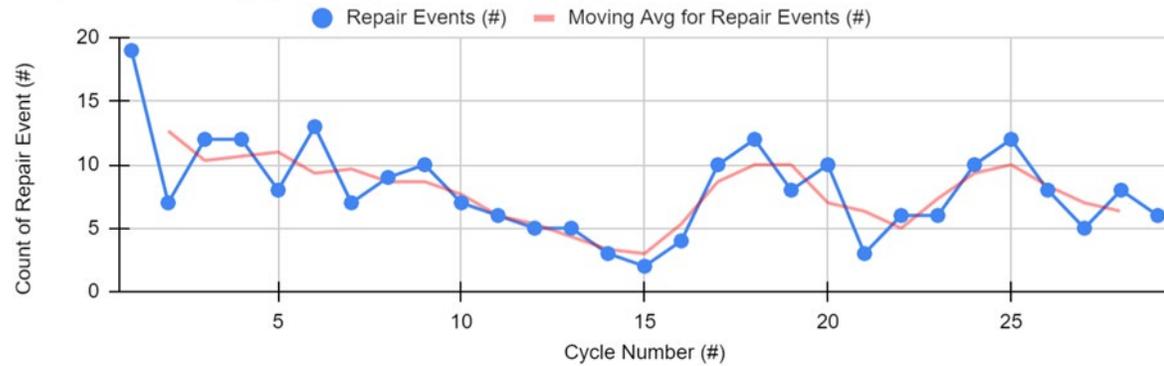
HUSKYWORKS
PLANETARY SURFACE TECHNOLOGY DEVELOPMENT LAB



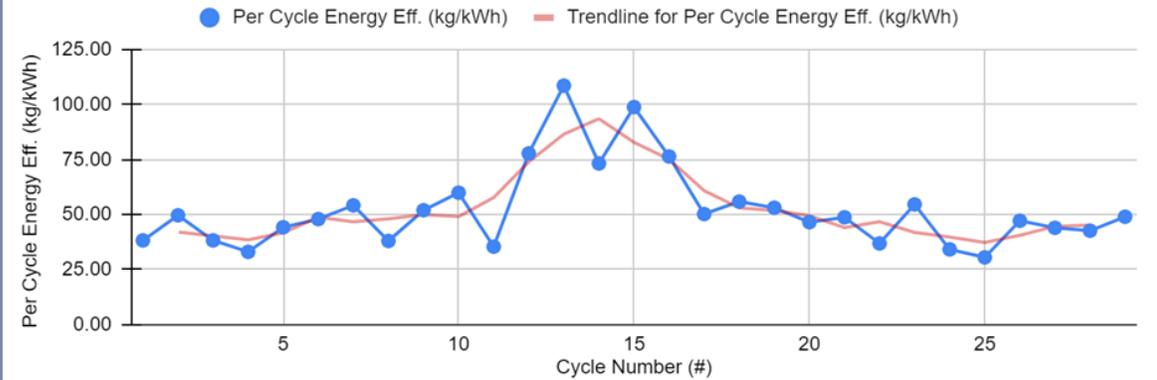
Michigan
Technological
University

[BACKUP] Performance Graphs

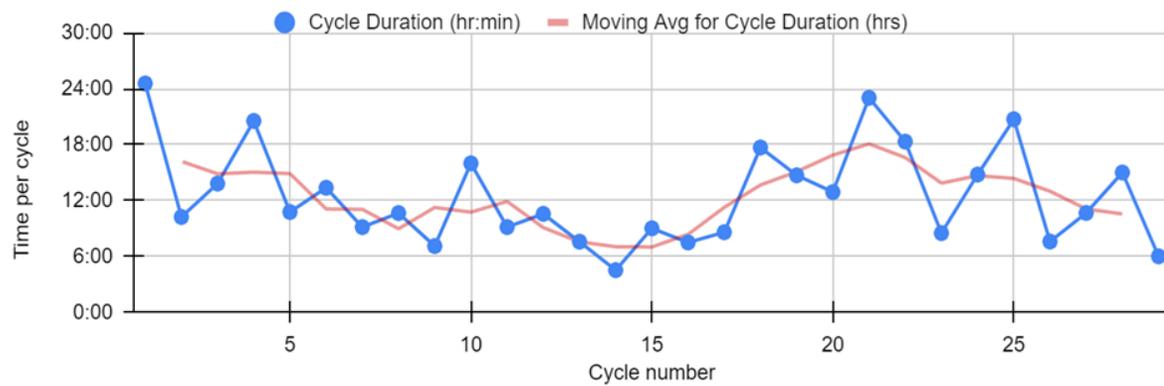
Repair Events (#) vs. Cycle Number (#)



Per Cycle Energy Eff. (kg/kWh) vs. Cycle Number (#)



Cycle Duration vs. Cycle Number



Conference papers already presented

- AIAA ASCEND: Long Duration Testing of a Rover-Mounted Chain Trencher Excavator in Simulated Lunar Surface Conditions
- LSIC Fall Meeting: Watts on the Moon and Break the Ice Lunar Challenge Experiences

Planned Journal Papers

- Mobility Performance of an Articulated Suspension Rover on Complex Terrain
- Icy Regolith Excavation Performance of a Chain Trencher for Moon and Mars
- System architecture paper

B. Undergraduate Student Government
Mason Krause, President

10030
2/23/2024

USG Board of Trustees Presentation

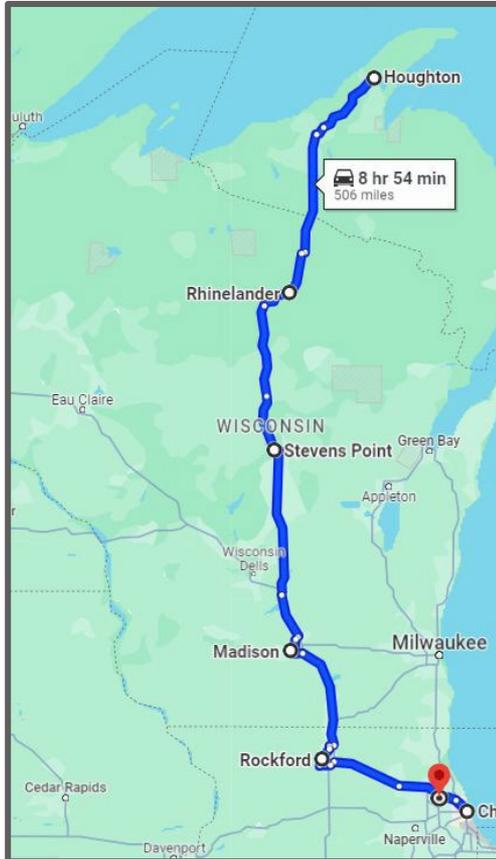
Mason Krause, USG President
2-23-2023



**Michigan
Technological
University**



USG Break Bus Update



Wisconsin/Chicago Bus

- Significant interest for future busses
- 25 of 55 Tickets Sold as of 2/5/24
- Most passengers still departing at Chicago
- Rhinelander and Madison stops removed to reduce cost
- New MTU ticketing software further reduced cost from \$149.29 to \$138.75

USG Committee Updates

18032
2/23/2024



Student Affairs - Connor Zavislak

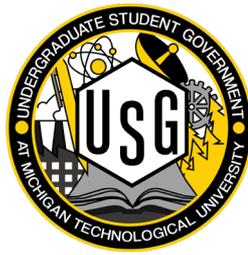
- Looking into the feasibility of a campus lounge for commuter students
- Taking a proactive approach to reaching out to different organizations on campus and asking them how they would like to be supported
- Negotiating with and alongside University Administration on a possible contract with CollegePads

Events - Cole Pierucki

- Continuing development and enhancement of the USG Break Bus
- Increased outreach events
- Revamped body-barn inventory and contract system

USG Committee Updates

18033
2/23/2024



Political Affairs - Brendan Leddy

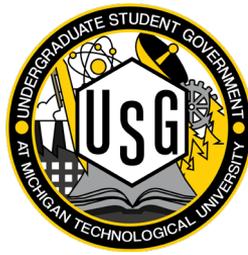
- Preparing for the upcoming primary elections and presidential elections.
 - Aiming to increase student voter registration and voting participation
- Preparing for upcoming USG elections
- Living room conversations returning!

Public Relations - Madison Mattila

- More frequent and in-depth social media posts with “USG Weekly Updates”
- More cohesive and consistent branding across social media, posters, fliers, and table tents
- Updated USG website including new headshots of all members

USG Committee Updates

18034
2/23/2024



Ways and Means - Emily Ruf

- Budget hearings fast approaching
- Continuing to meet with RSO's to go over revision requests, opportunity fund requests, reserve fund requests, and checking and approving purchase request tickets.

Ad Hoc Special Budgetary Group Review Committee - Isobel Bowker

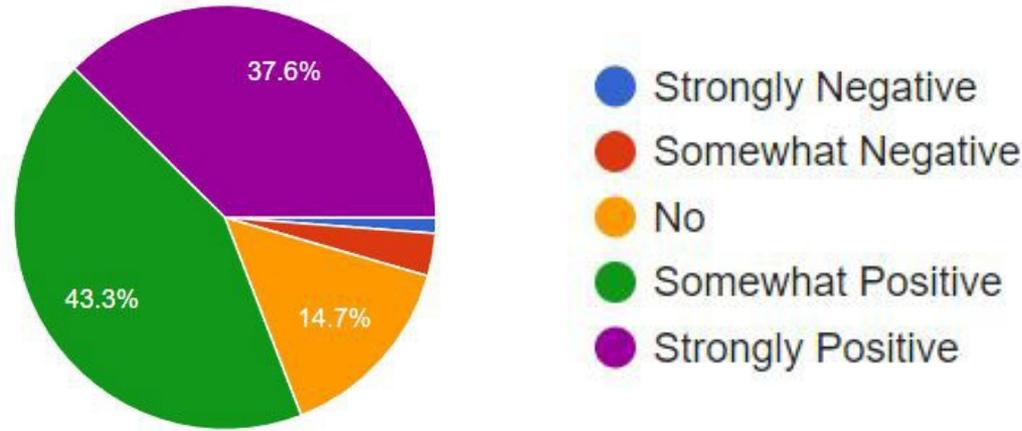
- Successfully sent requests for materials (inventories, event history, attendance information, etc.), met with officers of all SBGs, delivered recommendations to the USG body for approval, and voted to renew SBG status for all 6 groups.
- The committee successfully fulfilled its task with no significant delays!

SAF Review Ad-Hoc Committee

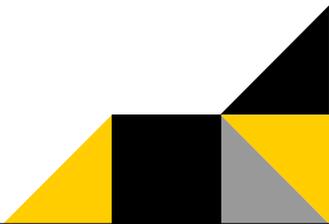
Student Body Survey - 832 Responses



Finish the following statement: Prior to this survey I feel the Student Activity fee has had a _____ impact on my experience at MTU.



80.9% View the SAF as having a positive impact on campus

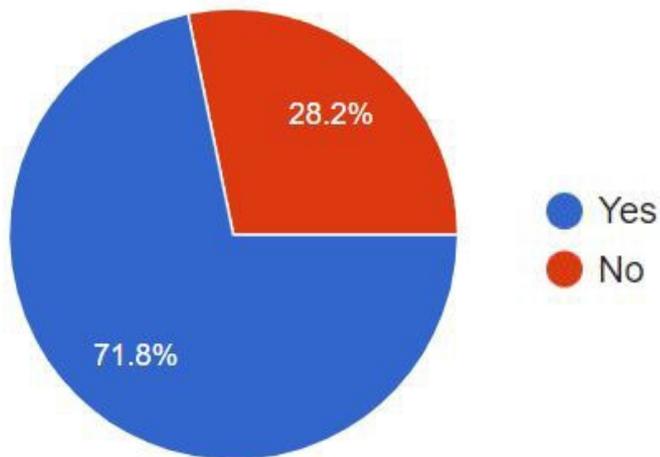


SAF Review Ad-Hoc Committee

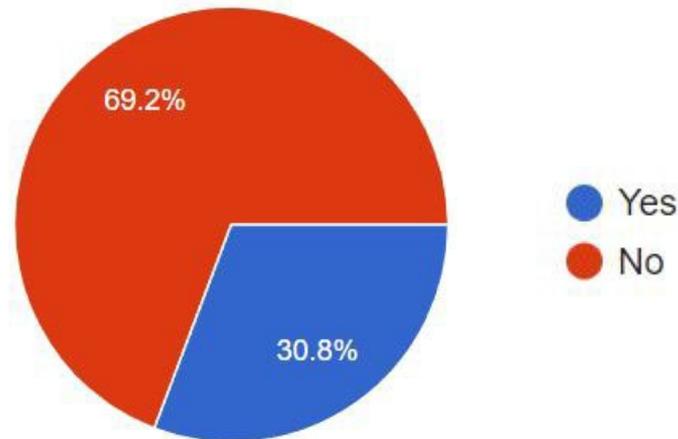
Student Body Survey - Demographic Information



Are you a member of an RSO?



Do you hold a leadership position in an RSO?



SAF Review Ad-Hoc Committee

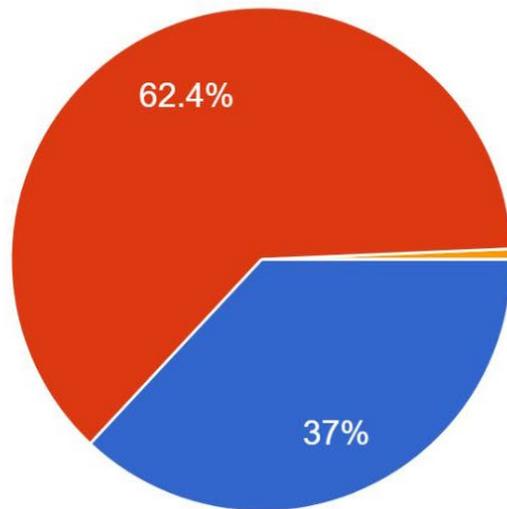
10037
9/23/2023



Student Body Survey - Student Support

Finish the following statement: I feel the RSO's I participate in receive:

587 responses



- too little funding.
- enough funding.
- too much funding.

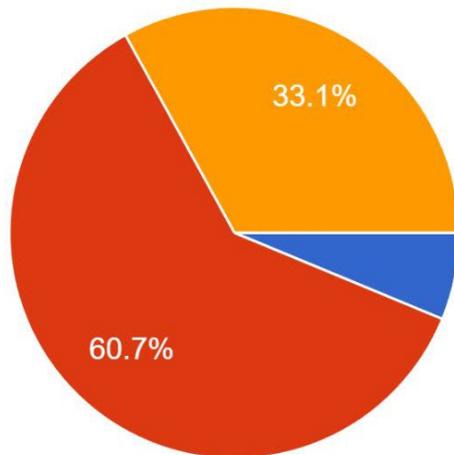
SAF Review Ad-Hoc Committee

Student Body Survey - Student Support



Respond to the following statement: If it meant a change in my RSO's budget I would support:

593 responses



- a decrease in the Student Activity Fee (less money for my RSO's)
- no change in the Student Activity Fee (similar amount of money for my RSO's)
- an increase in the Student Activity Fee (more money for my RSO's)

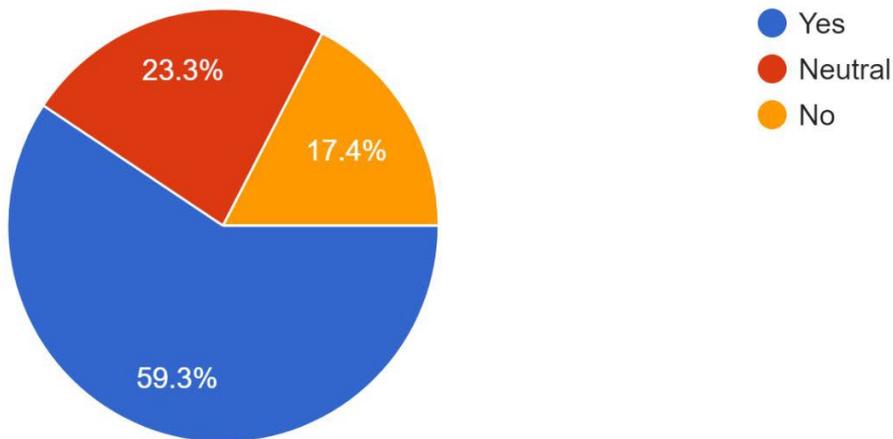
SAF Review Ad-Hoc Committee

Student Body Survey - Student Support



Would you support the student activity fee staying the same for current students but increasing for newly enrolled students?

696 responses



SAF Review Ad-Hoc Committee

Next Steps



November 2023

Plan Making
RSO Officer Survey
SAF Advertising
Student Body Survey

January / February

Survey Data Analysis
Focus Groups
Budget Hearings

March

Begin Preparing for
Recommendation
Continued Focus Groups

April

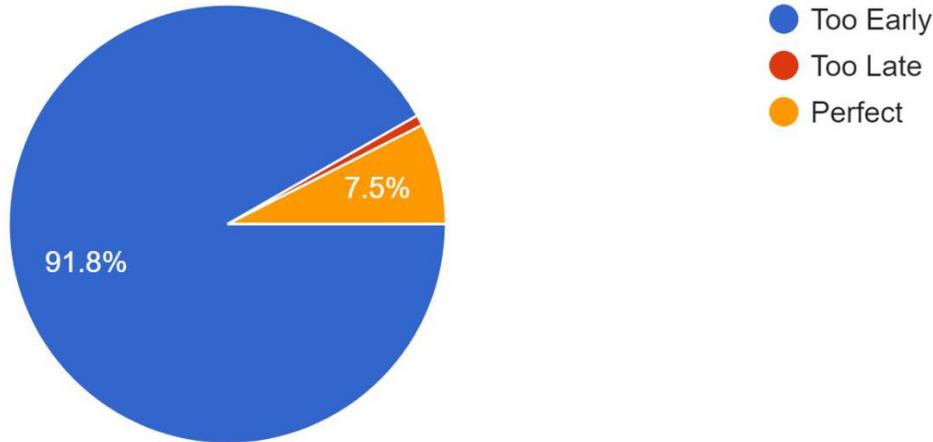
Deliver findings and
recommendation to the
Board of Trustees
(April 26th, 2024)



Spring Break Location

In your opinion, is after Week 7 too early, late, or perfect for Spring Break? (the last week of February)

1,152 responses

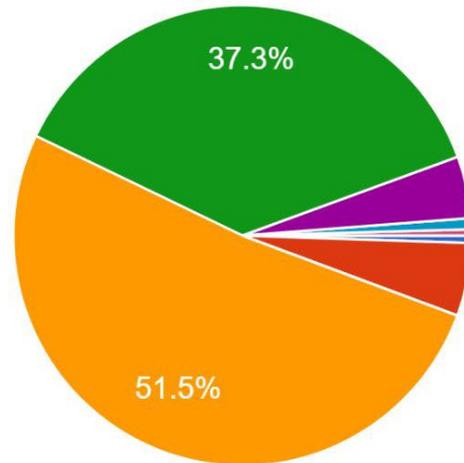




Spring Break Location

AFTER which week would you prefer to see Spring Break begin?

1,152 responses



- Week 6
- Week 7 (Spring 2024)
- Week 8 (Spring 2023 and earlier)
- Week 9
- Week 10
- Week 11
- Week 12

Thank you! Questions or Comments?

Mason Krause
mrkrause@mtu.edu
usg-president@mtu.edu



Michigan
Technological
University



C. Graduate Student Government
Karlee Westrem, President



Presentation to **BOARD OF TRUSTEES**

Karlee Westrem

GRADUATE STUDENT GOVERNMENT

February 23, 2024



GSG Graduate Research Colloquium



March 26th

Oral Presentations 9-3pm in Alumni Lounge
Poster Presentation 5-8pm in Rozsa Lobby

March 27th Annual Banquet 5pm to celebrate research progress, merit awards, graduate school & department awards along with a keynote speaker.

We are looking for faculty judges for both sessions.



Michigan Technological University
College of Computing



Michigan Technological University
College of Engineering



Michigan Technological University
College of Sciences and Arts



Michigan Technological University
Graduate School



Great Lakes
Research Center
Michigan Technological University



Upcoming Events

Career Planning Part 2 Dr. Melissa Baird
Leadership Workshop Dr. Pushpalatha Murthy
H1B workshop Global Detroit

Winter Carnival Chillout Grad Commons
Cultural Night Collaboration with Cultural Organizations
Tea & Pottery Night Magic Kiln
Laser Tag Respawn Laser Tag





Updates

Grad Commons

May 1, 2022 - January 31, 2024

2,664 swipes*

434 unique students

~33% of graduate students

Weekly Events:

Board game nights

Coffee chats

TRAVEL AND CAREER ENRICHMENT GRANTS

121 Travel Grants

9 Career Enrichment

THANK YOU!



D. University Senate
Robert Hutchinson, President

University Senate Update

Robert Hutchinson, Senate President

February 23, 2024



Michigan Tech

Spring 2024

- 5-24: Proposal to Extend Employee Benefits Posthumously to Surviving Beneficiaries
- Referendum approved 41-22: Amendments to the University Senate Constitution
- Approved 2 other curricular proposals and have 10+ more being prepared by the Senate Curricular Policy Committee

Upcoming Agenda Items

- 6-24: Proposal to Modify Sections 2.1 and Appendix L of the Faculty Handbook to Update Instructional Track Faculty Reappointment and Promotion Review
- Continue Working on Search Procedures for and Evaluation Procedures of Department Chairs and School Deans
- University President Review
- Continue working to increase staff participation on the Senate
- Preparing to transition to daytime meetings for the 24-25 academic year



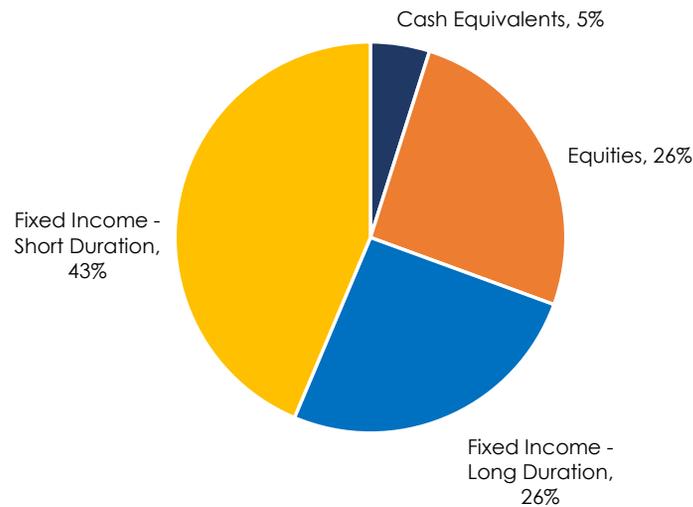
X. Informational Items

A. Analysis of Investments

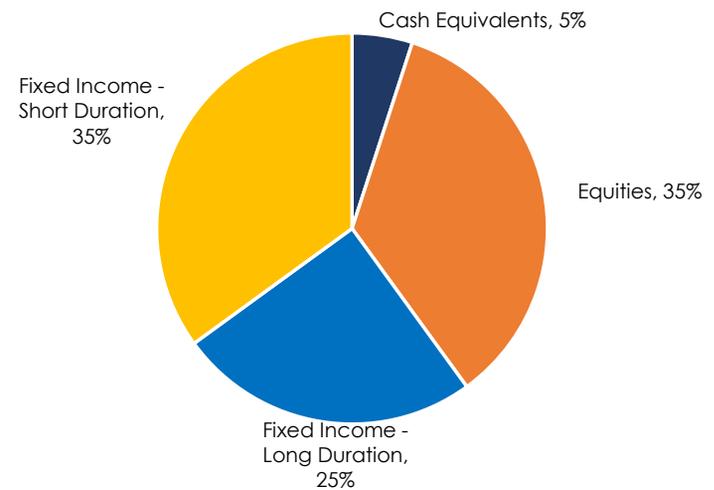
**MICHIGAN TECH UNIVERSITY
INVESTMENT PORTFOLIO
JUNE 30, 2023 THROUGH DECEMBER 31, 2023**

	Market Value 6/30/2023	Market Value 12/31/2023	Fiscal-Year Investment Return	Benchmark Return	Benchmark
Money Market Fund	\$ 1,706,318	\$ 1,797,105	1.71%	1.83%	3-Month T-Bill
Equity Funds:					
Core Equity Fund	7,818,944	5,689,032	8.31%	8.04%	S&P 500
Commonfund Strategic Solutions Equity Fund	5,485,594	3,735,127	6.41%	8.04%	S&P 500
Total Equity Funds	13,304,538	9,424,159			
Fixed Income Funds:					
Intermediate Term Fund	7,252,185	6,217,629	3.43%	3.25%	ICE BofA Merrill Lynch 1-3 Yr Treasury
Commonfund Contingent Asset Portfolio	9,594,832	9,798,799	2.98%	3.25%	ICE BofA Merrill Lynch 1-3 Yr Treasury
High Quality Bond Fund	5,230,205	4,366,933	3.30%	3.37%	Bloomberg Barclays US Aggregate Bond Index
Multi-Strategy Bond Fund	5,899,333	5,097,560	3.16%	3.37%	Bloomberg Barclays US Aggregate Bond Index
Total Fixed Income Funds	27,976,555	25,480,921			
Total	\$ 42,987,411	\$ 36,702,185	4.59%		

Current Asset Allocation



Target Asset Allocation



C. Research & Sponsored Programs

Sponsored Activities Summary

Fiscal Year 2024, Quarter Ended 12/31/2023

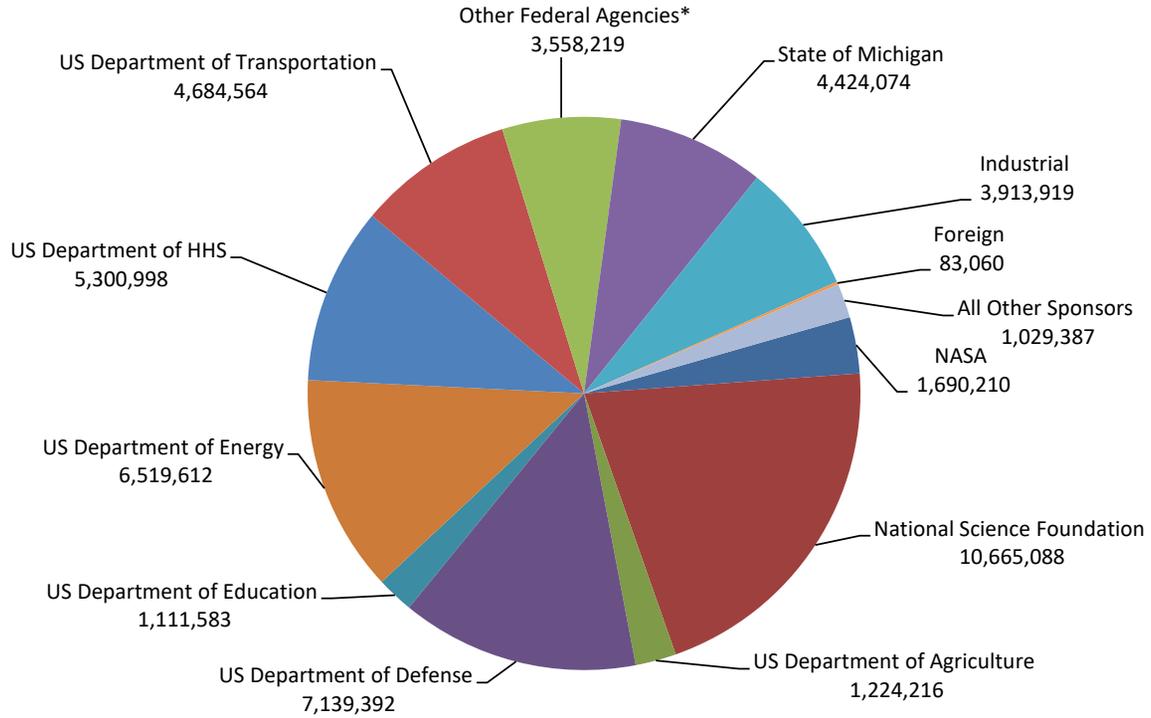
- Total awards are up 26.6% for FY24 compared to FY23.
- Gifts are down 1.0% for FY24 compared to FY23.
- Federal agency awards are up 28.5% for FY24 compared to FY23.
- Overall Industry activity decreased by 37.7% over the last fiscal year. However, it should be noted that a singular \$3 million industry related award was received in Q1 of FY23 which was not the case in FY24.
- Research expenditures are up 3.8% over FY23. External expenditures increased by 1.9% compared to FY23. Internal expenditures are up 6.3% over last fiscal year.

Sponsored Awards
Fiscal Year 2024
2nd Quarter
Ended Dec 31, 2023

TOTAL: \$53,127,739

Pre-Proposals Submitted
(excluded from Proposals Submitted figures below)

FYTD 2023: 33
FYTD 2024: 10



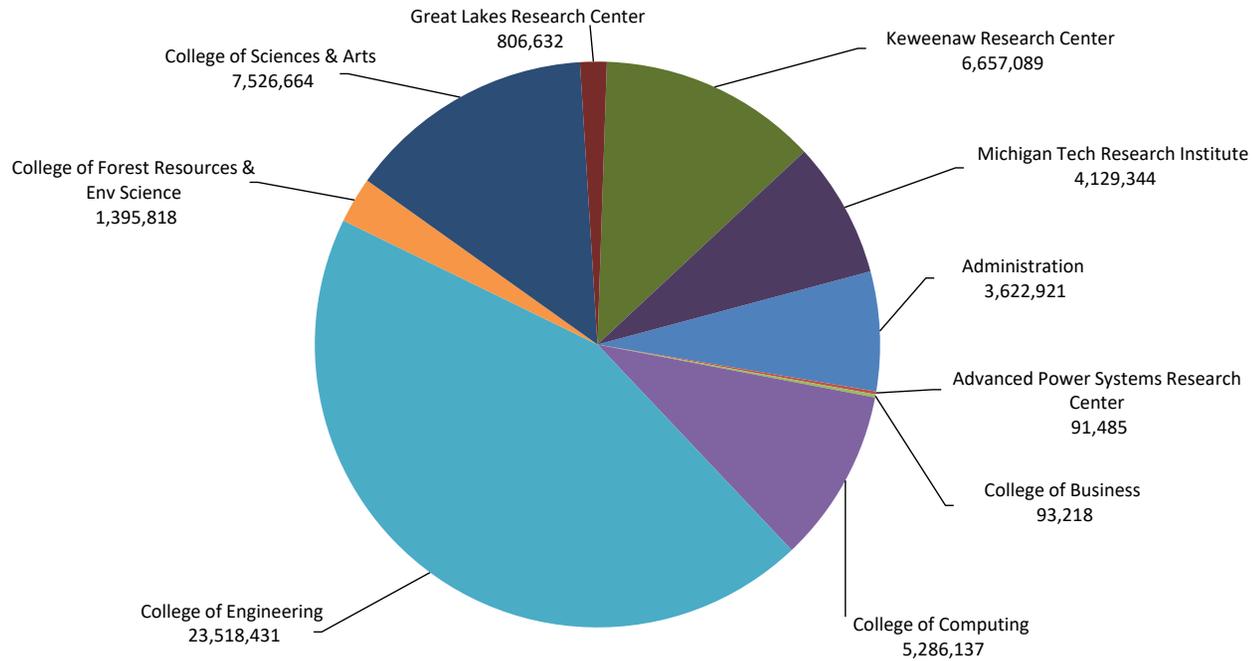
Sponsor	Proposals Submitted		Awards Received		Awards Received (\$)		Variance \$	Variance %
	FY '24 as of 12/31	FY '23 as of 12/31	FY '24 as of 12/31	FY '23 as of 12/31	FY '24 as of 12/31	FY '23 as of 12/31		
NASA	43	45	12	18	1,690,210	2,739,877	-1,049,667	-38.3%
National Science Foundation	91	77	21	30	10,665,088	8,775,173	1,889,915	21.5%
US Department of Agriculture	34	37	17	26	1,224,216	1,968,883	-744,667	-37.8%
US Department of Defense	48	44	32	46	7,139,392	10,877,441	-3,738,049	-34.4%
US Department of Education	2	2	3	2	1,111,583	281,024	830,559	295.5%
US Department of Energy	24	26	19	17	6,519,612	1,209,067	5,310,545	439.2%
US Department of HHS	27	26	18	6	5,300,998	1,489,737	3,811,261	255.8%
US Department of Transportation	9	19	14	11	4,684,564	3,040,688	1,643,876	54.1%
Other Federal Agencies*	31	23	26	15	3,558,219	2,219,707	1,338,512	60.3%
Federal Agency Total	309	299	162	171	41,893,882	32,601,597	9,292,285	28.5%
State of Michigan	26	24	17	15	4,424,074	1,605,089	2,818,985	175.6%
Industrial	96	75	74	70	3,913,919	4,106,786	-192,867	-4.7%
Foreign	3	3	3	5	83,060	331,218	-248,158	-74.9%
All Other Sponsors	43	34	13	16	1,029,387	1,534,053	-504,666	-32.9%
Subtotal	477	435	269	277	51,344,322	40,178,743	11,165,579	27.8%
Gifts**	N/A	N/A	182	121	1,782,029	1,800,890	-18,861	-1.0%
Crowdfunding	N/A	N/A	2	4	1,388	1,281	107	8.4%
Grand Total	477	435	453	402	53,127,739	41,980,914	\$11,146,825	26.6%

* National Archives and Records Administration, National Endowment for the Arts and Humanities, US Dept of Commerce, US Dept of Homeland Security, US Small Business Administration, US Environmental Protection Agency, US Dept of the Interior, US Dept of Labor

**Gifts represent non-contractual funding from corporations, foundations, associations and societies in support of academic programs, scholarships/fellowships, student design & enterprise, research, youth programs and special programs.

10058
2/23/2024
Vice President for Research
Fiscal Year 2024
2nd Quarter
Ended Dec 31, 2023

TOTAL: \$53,127,739



Percentages of Tenured & Tenure Track Faculty (as either PI or Co-PI)

Submitting Proposals since 07/01/2023
55.4%

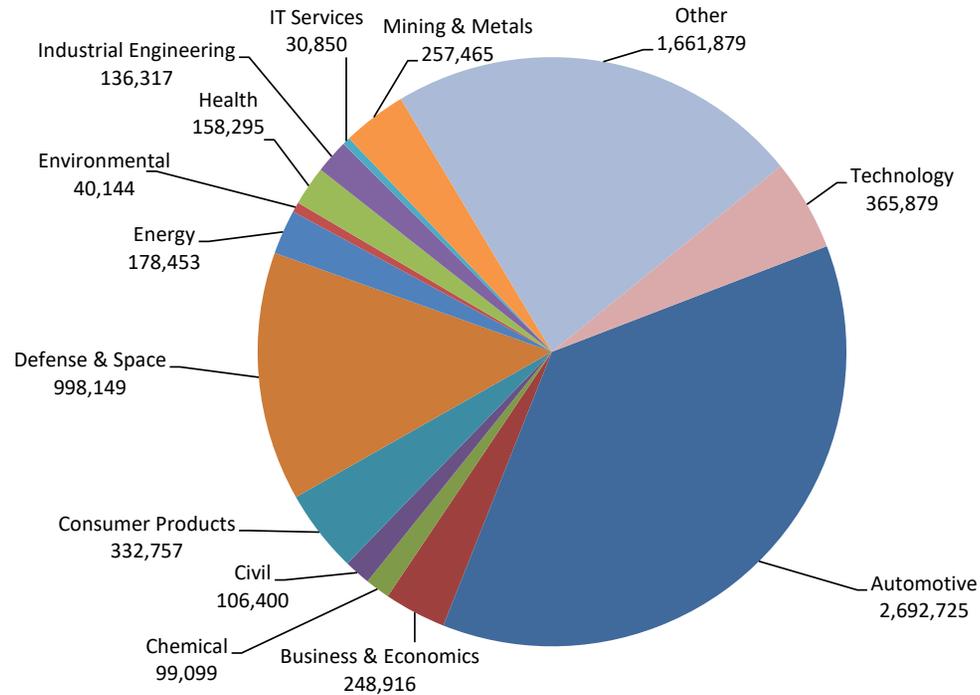
On Active Projects as of 12/31/2023
59.7%

SPO & OIC Metrics ¹	Administration	Advanced Power Systems Research Center	College of Business	College of Computing	College of Engineering	College of Forest Resources & Env Science	College of Sciences & Arts	Great Lakes Research Center	Keweenaw Research Center	Michigan Tech Research Institute	Totals	Fiscal Comparison	Percent Change
	Proposals Submitted	14	3	1	27	221	60	51	18	36	46	477	435
Awards Received	122	3	4	15	169	29	29	15	37	30	453	402	12.7%
Federal	1,511,583	49,980	-	4,644,790	11,850,951	1,149,792	7,045,827	489,525	3,869,210	2,519,555	33,131,213	21,240,014	56.0%
Federal Pass-Through	430,607	-	-	126,500	6,051,125	61,995	279,944	269,080	3,625	1,539,793	8,762,669	11,361,583	-22.9%
Foreign	-	-	-	-	73,000	10,060	-	-	-	-	83,060	331,218	-74.9%
Gifts	1,221,317	-	9,000	69,847	312,931	27,000	123,434	-	18,500	-	1,782,029	1,800,890	-1.0%
Crowdfunding	-	-	-	-	-	-	463	925	-	-	1,388	1,281	8.4%
Industry	25,914	41,505	-	-	936,463	115,725	-	28,558	2,765,754	-	3,913,919	4,106,786	-4.7%
Other	-	-	84,218	-	766,931	31,246	76,996	-	-	69,996	1,029,387	1,534,053	-32.9%
State of MI	433,500	-	-	445,000	3,527,030	-	-	18,544	-	-	4,424,074	1,605,089	175.6%
Total \$ by Division	3,622,921	91,485	93,218	5,286,137	23,518,431	1,395,818	7,526,664	806,632	6,657,089	4,129,344	53,127,739	41,980,914	26.6%
Fiscal Comparison	1,903,905	753,805	78,500	3,907,705	15,382,648	2,891,371	4,589,830	263,247	4,680,315	7,529,588	41,980,914		
Percent Change	90.3%	-87.9%	18.7%	35.3%	52.9%	-51.7%	64.0%	206.4%	42.2%	-45.2%	26.6%		
Disclosures Received ²	-	-	-	-	40.00%	-	20.00%	-	-	40.00%	5	5	0.0%
Nondisclosure Agreements	5	-	-	1	16	1	1	1	10	8	43	55	-21.8%
Patents Filed or Issued ²	-	-	-	-	100.00%	-	-	-	-	-	5	7	-28.6%
License Agreements	-	-	-	-	3	-	-	-	-	-	3	5	-40.0%
Gross Royalties ²	-	-	-	-	75.00%	-	25.00%	-	-	-	47,953	29,940	60.2%

¹ Combined Metrics from both the Sponsored Programs Office (SPO) and Office of Innovation & Commercialization (OIC)

² Percentages reflect the proportional contribution from each Division (calculated by dividing the sum of the fractional contributions of all inventors for each unit by the total number of inventors).

Sponsored Awards
-Industry-
COMBINED
Fiscal Year 2024
2nd Quarter
Ended Dec 31, 2023
TOTAL: \$7,307,328



Industry Segment	Proposals Submitted		Awards Received		Awards Received (\$)		Variance \$	Variance %
	FY '24 as of 12/31	FY '23 as of 12/31	FY '24 as of 12/31	FY '23 as of 12/31	FY '24 as of 12/31	FY '23 as of 12/31		
Automotive	29	28	34	45	2,692,725	2,864,461	-171,736	-6.0%
Business & Economics	1	3	11	6	248,916	356,243	-107,327	-30.1%
Chemical	2	-	6	3	99,099	34,539	64,560	186.9%
Civil	11	3	22	22	106,400	273,038	-166,638	-61.0%
Consumer Products	15	15	36	27	332,757	781,681	-448,924	-57.4%
Defense & Space	16	16	15	22	998,149	5,538,039	-4,539,890	-82.0%
Energy	6	1	20	9	178,453	86,200	92,253	107.0%
Environmental	-	2	2	11	40,144	59,395	-19,251	-32.4%
Health	9	4	8	7	158,295	367,847	-209,552	-57.0%
Industrial Engineering	9	5	10	4	136,317	53,000	83,317	157.2%
IT Services	6	3	8	5	30,850	72,451	-41,601	-57.4%
Mining & Metals	8	9	19	16	257,465	216,100	41,365	19.1%
Other	15	9	54	13	1,661,879	243,563	1,418,316	582.3%
Technology	8	7	8	10	365,879	777,413	-411,534	-52.9%
Total	135	105	253	200	7,307,328	11,723,970	-4,416,642	-37.7%

Michigan Technological University
Total Research Expenditures by College/School/Division
Fiscal Year 2024 & 2023
As of December 31, 2023 and December 31, 2022

College/School/Division	FY2024	FY2023	Variance	%
Administration*	3,254,165	2,921,092	333,073	11.4%
Advanced Power Systems Research Center (APSRC)	853,954	706,289	147,665	20.9%
College of Business	905,089	992,880	(87,791)	-8.8%
College of Computing	2,832,843	2,388,571	444,272	18.6%
College of Engineering	18,212,462	17,264,410	948,052	5.5%
College of Forest Resources & Environmental Science	3,727,184	3,804,784	(77,600)	-2.0%
College of Science & Arts	8,491,334	8,472,233	19,101	0.2%
Great Lakes Research Center (GLRC)**	1,158,701	816,064	342,637	42.0%
Keweenaw Research Center (KRC)	3,615,606	3,621,527	(5,921)	-0.2%
Michigan Tech Research Institute (MTRI)	6,226,929	6,479,184	(252,255)	-3.9%
Total	49,278,267	47,467,034	1,811,233	3.8%

*Includes the Vice Presidents, Provost, and others who report to a VP, Provost or the President. Except for the research institutes that report to the VPR.

**Includes GLRC department (non-academic researchers) expenditures only. All other GLRC center expenditures are shown in the researchers' respective colleges.

D. Advancement & Alumni Relations

Advancement and Alumni Engagement Narrative
Michigan Tech Board of Trustees
February 23, 2024

2023-2024 Goals and Initiatives to be achieved in collaboration with administrative and academic leadership and the Michigan Tech Fund Board of Directors.

- Paramount focus on Donor Integrity
 - Invest in each segment of the donor journey and facilitate a strategic opportunity to match the donor's passion
 - Utilize Flagship Campaign themes and material to jump-start new leadership gift donor relationships and facilitate acceleration of the ask in existing donor work
- Add new constituents and increase movement in the donor pipeline
- Launch and implement CRM
- Enhance donor impact and stewardship
- Get to 45% of the \$350 million campaign goal

FY24 MTF Working Goals

- “The Year of Execution” on a Strong Foundation
 - Donor First: Culture supported by processes, practices and people
 - Campaign Execution: Provide oversight and resources for a successful campaign
 - Cash Flow Management: Execute and enhance cash flow
 - Endowment Growth: Higher emphasis on endowment gifts

Highlights

- Over \$165.1 million in philanthropic contributions and currently 47% to the \$350 million goal
- \$49 million in outstanding asks
- New cash to the endowment since campaign inception: \$19 million
- Planned gifts earmarked for the endowment \$26.4 million
- 68 illustrations, proposals, and gift agreements were provided for donors
- Campaign:
 - Hosted Campaign Executive Committee meeting, January 22, 2024
 - Initiative working groups are meeting
 - Endowment Education and Growth Initiative
 - Principal Gifts (\$1 million or more)
 - Cornerstone Gifts (\$100,000 to \$999,999)
 - Corporate and Foundation Acceleration
 - Volunteer Engagement
 - Pay Forward Culture
 - Hosted Planned Giving Session with college deans on February 19, 2024
- 58th GLI in Grand Rapids alumni event hosted on December 28, 2023
- Winter Carnival
 - Hosted the Alumni Board on campus for meetings and activities.
- Organizational
 - New hires: Director for Charitable Giving
 - Vacant positions:
 - Ongoing search for Director for Charitable Giving
 - Business Systems Analyst/Data Visualization Specialist
- Mark your calendars for Reunion Weekend 2024: August 1-3

Principal Giving

FY 24 Finalized Gifts - Verbal

- Finalized \$12 million estate, outright and gift pledges for the College of Sciences and Arts, College of Engineering, scholarships and research.

FY24/FY25 Pending Gifts

- Working with an alumni and their spouses on over \$5 million in gifts for the College of Business, an endowed faculty position and scholarship in Civil, Environmental, and Geospatial Engineering, Husky Childcare, Center for Convergence and Innovation Building, Athletics Department, and an endowed faculty position in the Electrical and Computer Engineering Department.

FY24 Upcoming Campaign Events

- Donor hosted dinners
 - Naples, FL - March 2024
 - Venice FL - March 2024
 - Armonk, NY - April 2024

FY 25 Upcoming Campaign Events

- Donor Hosted Dinners
 - Houghton/Dollar Bay, MI
 - Traverse City MI
 - Detroit MI
 - Houston TX
 - Northern Michigan

Advancement and Gift Planning

Activity:

- Piloting collaborative fundraising strategy and travel planning with college, deans, and chairs.
- Advancement and Gift Planning frontline fundraisers have raised \$13.15 million this fiscal year including 22 gifts of \$25,000 or more in the month of December.
- Thirty one verbal commitments totalling \$10.36 million have been received with an additional twenty-four gifts totaling \$2.86 million expected to close by June 30, 2024.
- Frontline fundraiser travel is scheduled through March and planned through June 30.
- Enhancing customer service and organization of work with the launch of the adv-help@mtu.edu ticket queue.
- Implementing updated data governance and donor privacy plan in conjunction with the implementation of CRM Advance. The transition is in process with 1,500 records verified. Focus is shifting to automated receipting, fundraising reports, and dashboards. With support from EAS, working to ensure Finance Services and Operations and Student Financial Services receive the data they need from the system.
- Developed a comprehensive giving table and pyramid for athletics programs and priorities totalling \$50 million.

FY 24/25 Pending Gifts

- 24 pending gifts at \$2.86 million in pending proposals expected to close by Jun 30, 2024 , with 31 verbal commitments totaling \$10.36 million.
- Working on over \$19 million in gifts designated to support:
 - Faculty professorships for aerospace engineering in ECE and MEEM
 - Applied physics
 - Endowed scholarship for Marquette County Students; nursing infrastructure
 - URIP and SURF

- MSE professorships
- CDI/MUB building renovation
- SYP course endowment
- EERC renovation
- New residence hall

Alumni Engagement & Annual Giving

The AE team continues to execute its mission to cultivate significant, mutually beneficial, lifelong relationships with alumni through three key pillars: events, communications, and volunteerism. Updates below reflect work done under each pillar.

Communications

- From January - April, we have a full calendar of mass communications dropping to a variety of audiences, both solicitations and non-solicitations alike.
- We will again be hosting a 24-hour giving challenge : Save the Date - [Give Back to the Pack](#): April 10-11, 2024
- Our social media and text message engagement continues to yield positive results - our vendor (that partners with our team on some of our annual giving campaigns) has noted that our text message campaigns - both solicitations and non solicitations - perform better than most institutions they currently are working with. They note it is likely because of our well-rounded engagement efforts all year.

Volunteerism

- The [Time & Talent initiative](#) continues, after a very successful fall 2023 university-wide debut, with a second cohort of alumni planned for a week of guest lectures, meetings, and other volunteerism in early March 2024. Final cohort and dates to be announced soon.
- [Alumni Board of Directors](#) committees had a busy fall and look forward to a productive winter:
 - Recognition & Recruitment Committee: working on two large efforts that will be finalized during the full Alumni Board's Winter Carnival meeting:
 - Identifying a new slate of Directors [to serve on the Alumni Board](#). More than 20 alumni were nominated for seven open positions. This new slate of chosen Directors will begin their six-year term of service on July 1, 2024.
 - Naming the recipients of [Alumni Awards](#) to honor for 2024. Award winners will be notified first, their acceptance will be collected before publicly naming/promoting all winners later this spring. The Alumni Awards Ceremony will take place Friday, August 2, 2024 during Reunion Weekend.
 - The Alumni Resource Matchmaking (ARM) Committee: hosted a second limited-time "ARM crowdfunding campaign" that featured a select group of student organizations that the broader alumni could choose to support during the crowdfunding window. Six student organizations received crucial funds for special projects thanks to this initiative.
- PCA Service component
 - [PCA](#) is beginning on a modified track of the service element, which will provide more clarity for new PCA members, and allow a more tangible impact to an area of need on campus. This new tradition has already kicked off with our 2023 induction class and will carry forward for future induction classes.

Events

- The 2023 GLI pregame social, hosted by the AE Office before Thursday Dec 28's hockey game, had a record 250+ registered in advance, and even more in actual attendance.
- The AE Office continues their tradition of hosting a variety of student-alumni programming and alumni events over Winter Carnival. In addition to hosting the Alumni Board for their regular meetings, the AE Office also:

- Provides free chili to the community during the All-Nighter on Wednesday evening, in coordination with USG and GSG
- Hosts Keweenaw area alumni in a skybox social that is also a scholarship fundraiser on Friday evening
- Hosts an alumni-student broomball tournament on Saturday
- Hosts an alumni social featuring a special Carnival archives display in the library, in partnership with the University Archives team, on Saturday morning
- [Reunion 2024](#) planning is already underway, save the date for August 1-3, 2024. A full weekend of events, including beloved traditions (including the Pasty Dinner, Golden M Ceremony, and Alumni Awards) + new activities are in the works.

D. Media Coverage

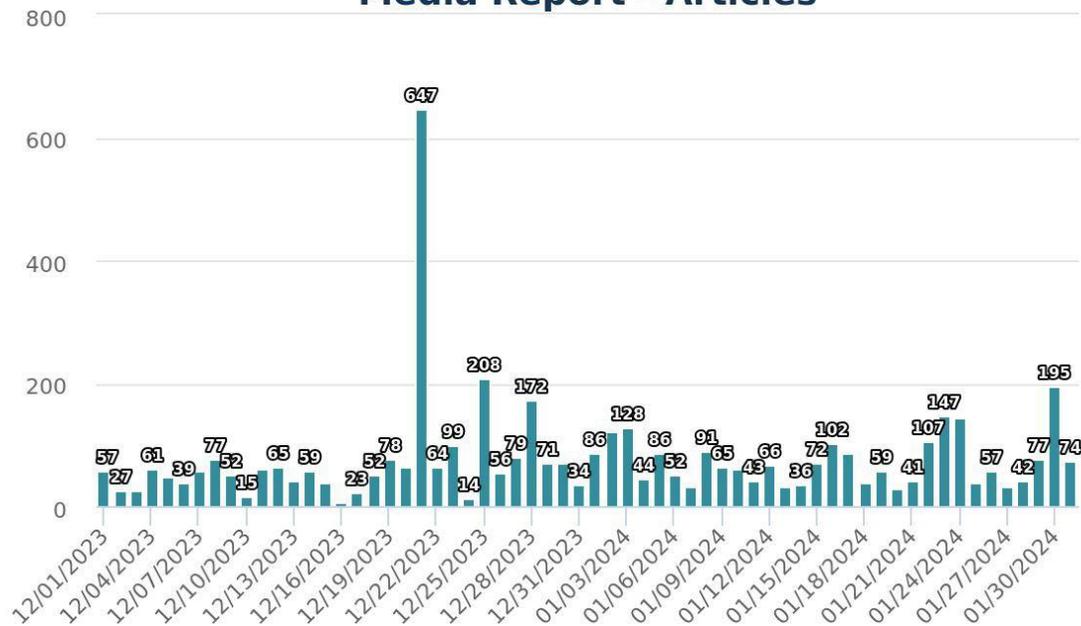
Media Report: Dec. 1, 2023 to Jan. 31, 2024
Michigan Technological University
Regular Meeting of the Board of Trustees
Feb. 23, 2024

Overview

Articles	4,753
Total engagement	~ 136.74K
Average engagement	28
Journalist shares	306
Journalist reach	~ 4.32M
Average unique visitors per month (UVM)	~ 1.93M
Total UVM	~ 9.2B

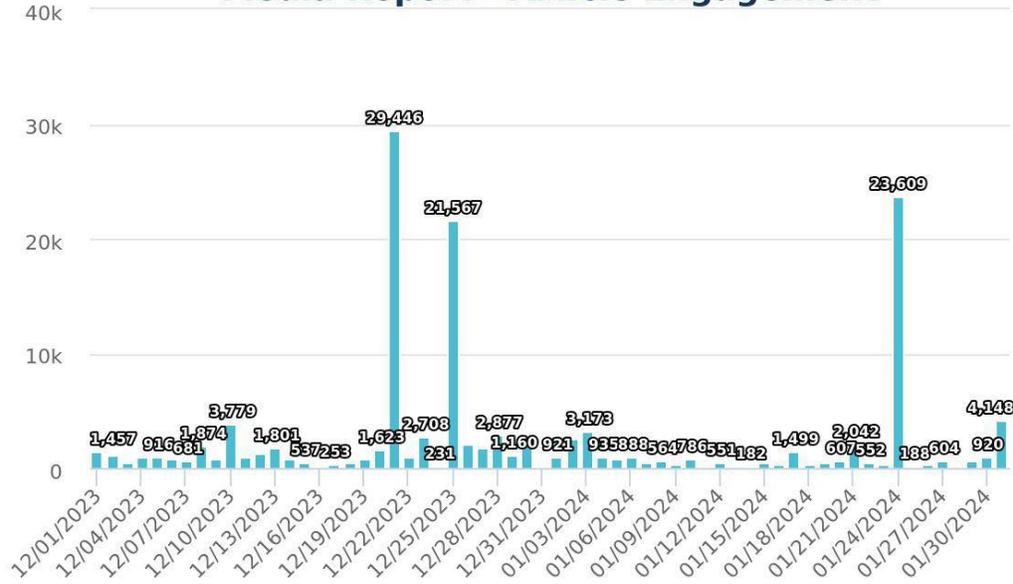
Between Dec. 1, 2023 and Jan. 31, 2024, a total of 4,753 online articles mentioned Michigan Technological University:

**02/23/24 Michigan Tech Board of Trustees Regular Meeting,
Media Report - Articles**



Those 4,753 articles were shared, commented on, or liked on social media roughly 137,00 times, for an average engagement of 28 shares, comments, or likes per article:

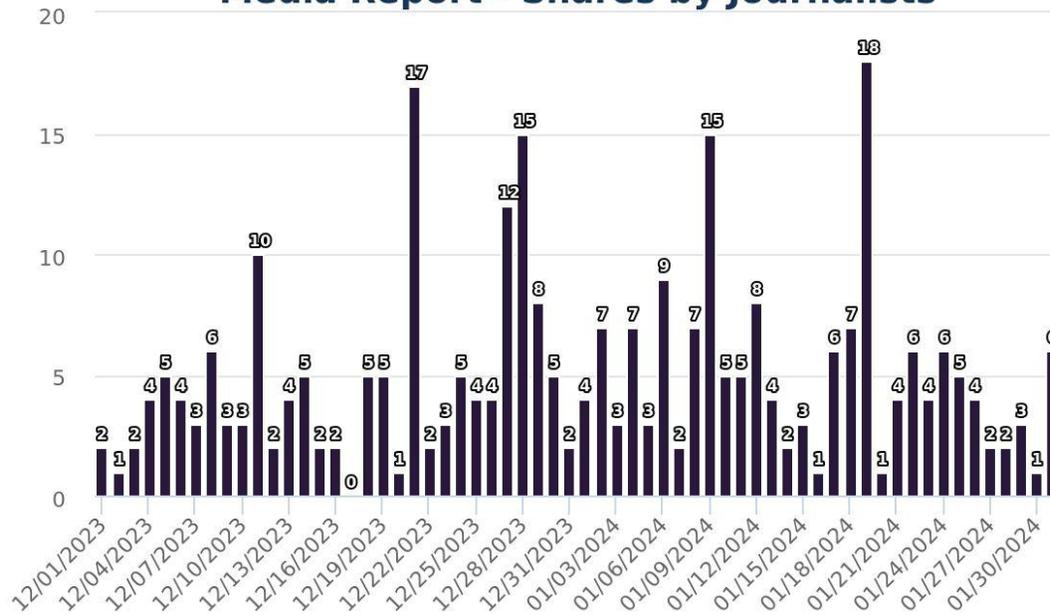
02/23/24 Michigan Tech Board of Trustees Regular Meeting, Media Report - Article Engagement



MUCK RACK

Journalists shared the articles 307 times, resulting in a reach of roughly 4.32 million people:

02/23/24 Michigan Tech Board of Trustees Regular Meeting, Media Report - Shares by Journalists



MUCK RACK

News Highlights:

Research News

Claudio Mazzoleni (Physics) was quoted by [Phys.org](#) in a story about a [study](#), conducted by his team in collaboration with the Environmental Molecular Sciences Laboratory, that examined how solar radiation from the sun interacts with tar balls — individual light-absorbing brown particles that linger in the atmosphere after wildfires. The story was picked up from the [EMSL](#).

[MLive](#) picked up updates on Michigan Tech's 2023-24 study of wolves and moose on Isle Royale, the longest-running predator/prey study in the world. The story relayed comments and photos posted by the Michigan Tech research team from Jan. 21-19 on the [Wolves and Moose of Isle Royale Facebook page](#). In a [separate story](#), MLive covered a first for the study: the research team moving their survey plane off the Lake Superior ice due to warm temperatures.

Raymond Shaw (Physics) was quoted by [Eos](#) in a story about the “startlingly predictable” velocities of falling snow, as revealed by a recent study. The authors were able to measure snowflakes' mass and density using an innovative device involving a frying pan and a camera.

[Great Lakes Echo](#) mentioned Michigan Tech in a story examining the use of smart buoys on Lake Erie to communicate data on water conditions, contaminants and nutrients to researchers and anglers. The buoy network was created by Freeboard Technology, a collaborator of Michigan Tech on other network-involved water studies. The story was picked up by [Great Lakes Now](#).

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[Asian News International](#) mentioned Michigan Tech in a story about three awards given by the United Arab Emirates Research Programme for Rain Enhancement Science (UAEREP). Researchers from MTU received one of the awards for their work on laboratory and modeling studies of cloud susceptibility to hygroscopic seeding. The story was picked up by 24 news outlets around the world.

Sarah Hoy (CFRES) was quoted by [WLUC TV6](#) in a story about a MTU-led study linking periodontitis to severe forms of osteoarthritis and osteoporosis in moose. Michigan Tech's [Unscripted Research Blog](#) published a post on the study earlier this month.

Emeritus Research Professor Charles Kerfoot (BioSci) was quoted by [Great Lakes Now](#) in a story about Buffalo Reef — a high-value fish spawning ground in Grand Traverse Bay threatened by 2.4 million tons of mine tailings, aka stamp sands. The story was first published by [Undark](#).

Sangyoon Han (BioMed) was quoted by [The Scientist](#) in a story about a recent study reporting the promotion of cellular adhesion by the adaptor protein Cas.

Kristin Brzeski (CFRES) was quoted by [Yahoo! News](#) in a story about a town hall meeting Wednesday (Jan. 10) in Galveston, Texas, relating to Galveston Island's unique population of ghost wolves — coyotes with a significant amount of DNA from the critically endangered red wolf. The story was picked up from [FOX 26 Houston](#).

Zhanping You (CEGE) was pictured in the [Iron Mountain Daily News](#) alongside a story about the completion of road projects in 2023 in Dickinson County, with some roads resurfaced using a mix of recycled tire rubber and asphalt.

General News

Robert Nemiroff (Physics) was interviewed by [ABC 10](#) in a TV segment about his recently published book, "Faster Than Light: How Your Shadow Can Do It But You Can't," which uses humor to make physics approachable for general audiences. The [Keweenaw Report](#) also ran a story about Nemiroff's book, which was mentioned in a Q&A published by Michigan Tech's [Stories from Husky Nation](#) in January.

Alyssa Fredin (SFSC) was quoted by [Bridge Michigan](#) in a story exploring how delays in college financial aid will affect Michigan students.

Jay Meldrum (GTRC) was mentioned in a [Crain's Detroit Business](#) story providing an update on fundraising progress for the Freshwater Research & Innovation Center, a facility planned for the Discovery Center & Pier property on West Grand Traverse Bay in Traverse City, Michigan. MTU is a partner on the project.

The [Michigan Chronicle](#), [Michigan Business Network](#), [Crain's Detroit Business](#), the [Michigan Economic Development Corporation](#) and the [University of Michigan](#) mentioned Michigan Tech in stories about the state's new Michigan University Innovation Capital Fund and the Michigan University Innovation Capital Consortium. Driven by a partnership of six Michigan universities, including [Michigan Tech](#), the initiatives were created with a goal of supporting pre-seed startups and early-stage companies across the state. They will be administered by U-M's Innovation Partnerships, which recently received a \$5 million award from the Michigan Innovate Capital Fund to support the program.

The [Daily Mining Gazette](#) mentioned Michigan Tech's two University gardens in a story highlighting the agricultural and horticultural growth happening in the Western Upper Peninsula.

[WLUC TV6](#) mentioned the Mushing Club at Michigan Tech in a story about Heikinpäivä midwinter festival events. Club members were in Calumet on Sunday (Jan. 28) offering free kids' dog sled rides at Agassiz Park.

[Green Car Congress](#) and [DBusiness](#) mentioned Michigan Tech in coverage of the U.S. Army's new five-year agreement with the University of Michigan's Automotive Research Center. Worth up to \$100 million, the agreement boosts work on autonomous vehicle technologies. MTU was listed among the center's participating institutions.

[MLive](#) published a story previewing events for Michigan Tech's [2024 Winter Carnival](#), which is coming up fast! The All-Nighter is next Wednesday (Feb. 7), and Carnival continues through Feb. 10.

[MLive](#) mentioned Michigan Tech in a story about the ever-so-slight increase in enrollment (less than 1%) seen by Michigan colleges and universities in fall 2023. MTU was highlighted as one of three universities in the state to see positive growth over the last decade.

[WLUC TV6](#) mentioned Michigan Tech in a story covering the start of construction on the annual Our Lady of the Snows ice chapel built at St. Albert the Great University Parish. St. Al's ice chapel and MTU were also mentioned by Hope College's [Anchor](#) in a story about an ice altar built on their campus.

The [Traverse City Record-Eagle](#) mentioned Michigan Tech in a story about swim safety measures enacted by Frankfort, Michigan, a Benzie County town on the shore of Lake Michigan. Frankfort was the first town to install the SwimSmart safety warning system, co-developed by Jacob Soter '19 '20 (B.S. Electrical and Computer Engineering, MBA).

Len Switzer (ENT), Nate Yenor (OIC) and Brad King (ME-EM) were quoted by [UPWord](#) in a story previewing [Innovation Week](#), hosted next week (Jan. 22-26) at Michigan Tech. Scheduled events include talks on innovation and entrepreneurship talks, discussion panels and business pitch competitions

[Crain's Detroit Business](#) mentioned Michigan Tech in a story covering the [Michigan Economic Development Corporation's](#) announcement of a total \$4.6 million in grants and matching funds awarded to eight institutes for higher education to support semiconductor education and training programs. MTU's share is \$838,000 according to a press release from [Michigan Tech News](#) in December.

[UPWord](#) picked up the announcement of a collaboration between Michigan Tech and Revex Technologies focused on MTU's research into battery recycling and metal refining technology and Revex's goals of processing recycled materials.

[WLUC TV6](#) mentioned Michigan Tech in a segment about Jessica Elwell '02 '03 (B.S. M.S. Chemical Engineering) and MOXIE — a miniature solid oxide electrolyzer that can convert carbon dioxide into pure oxygen — named one of the best inventions of 2023 by Time Magazine. Elwell and MOXIE were featured by Michigan Tech's [Stories from Husky Nation](#) in December.

E. Employee Safety Statistics



EMPLOYEE SAFETY STATISTICS 2023 ANNUAL REPORT

January 1 - Dec 31, 2022/2023

	Category	Years	Employee Classification							Total
			AFSCME	Faculty	Non-Exempt	POA	Professional	Temporary	UAW	
Number of Recordable Injuries	Injury Only w/Medical - No Lost Time	2022	2	0	0	0	1	0	0	3
		2023	2	0	0	0	1	0	0	3
	Lost Time Cases	2022	5	0	0	1	3	1	0	10
		2023	5	0	0	0	1	0	0	6
	Restricted Work Cases	2022	0	0	0	0	1	0	0	1
		2023	1	0	1	0	0	0	0	2
	Occupational Safety and Health Administration (OSHA) Recordable Injuries (Total of above)	2022	7	0	0	1	5	1	0	14
		2023	8	0	1	0	2	0	0	11
Number of Days	Injury Lost Time 3	2022	171	0	0	6	44	29	0	250
		2023	515	0	0	0	11	0	0	526
	Restricted Work Days 3	2022	0	0	0	0	7	0	0	7
		2023	425	0	17	0	0	0	0	442
Hours Worked	Total Work Hours	2022	246,720	767,524	80,256	17,226	1,153,156	73,003	152,653	2,490,538
		2023	256,035	782,629	83,076	17,579	1,218,317	74,197	164,606	2,596,439
	Percentage of Work Hours	2022	9.9%	30.8%	3.2%	0.7%	46.3%	2.9%	6.1%	100.0%
		2023	9.9%	30.1%	3.2%	0.7%	46.9%	2.9%	6.3%	100.0%
Rates	Lost Time Case Rate 1	2022	4.1	0.0	0.0	11.6	0.5	2.7	0.0	0.8
		2023	3.9	0.0	0.0	0.0	0.2	0.0	0.0	0.5
	Frequency Rate 2 (Recordable)	2022	5.7	0.0	0.0	11.6	0.9	2.7	0.0	1.1
		2023	6.2	0.0	2.4	0.0	0.3	0.0	0.0	0.8

OSHA has established specific calculations that enable the University to report the Recordable Injuries, Lost Time Case Rates and Frequency Rates. The Standard Base Rate (SBR) calculation is based on a rate of 200,000 labor hours which equates to 100 employees who work 40 hours per week for 50 weeks per year. Using the SBR allows the University to calculate their rate(s) per 100 employees.

- 1 The Lost Time Case Rate is calculated by multiplying the number of Lost Time Cases by 200,000 then dividing by the labor hours at the University.
- 2 The Frequency Rate is calculated by multiplying the number of recordable cases by 200,000 then dividing by the labor hours at the University.
- 3 The number of days are total days for the life of the cases first reported during this period.

The Bureau of Labor Statics 2022 Injury, Illness, and Fatalities, Table 1 reports for Colleges and Universities; the average LOST TIME CASE RATE of days away from work was 0.6 and the average FREQUENCY RATE was 1.4.

F. Disposal of Surplus Property

Michigan Technological University
Surplus Property Sales
November 1, 2023 - December 31, 2023

Date	Description	Amount
11/13/23	Miscellaneous scrap metal including: 2006 Yamaha VK Pro Snowmobile 2012 Yamaha Grizzly 700 2016 Yamaha Grizzly 700	\$ 697.22
12/14/23	5.76 Acres of Land, 21569 Coal Dock Road, Hancock, MI	48,500.00
12/18/23	Surplus Telecommunications Equipment	702.01
Total		\$ 49,899.23

XI. Other Business

XII. Date for Next Formal Meeting: April 26, 2024

XIII. Adjourn