

MINUTES OF THE MEETING
OF THE
MICHIGAN STATE UNIVERSITY
BOARD OF TRUSTEES

September 9, 2022

President Stanley called the meeting of the Board of Trustees to order at 8:20 a.m.

Trustees present: Dianne Byrum, Melanie Foster, Renee Knake Jefferson, Dan Kelly, Pat O'Keefe, Brianna Scott, Kelly Tebay and Rema Vassar.

University officers present: President Stanley, Provost and Executive Vice President Woodruff; Executive Vice Presidents Beauchamp and Woo; Senior Vice Presidents Frace, Gore and Wilbur; Vice President and General Counsel Quinn; Secretary Scorsone, Vice Presidents Bollman, Gage, Guerrant, and Swain. Faculty liaisons present: Stephanie Anthony, Karen Kelly-Blake, Anne-Lisa Halvorsen, and d'Ann de Simone. Student liaisons present: Hannah Jeffrey, Jo Kovach, Belle Letcher, and Stevie Quijas.

All actions taken were by unanimous vote of the Trustees present, unless otherwise noted.

1. On a motion by Trustee Byrum, supported by Trustee Foster, the **BOARD VOTED to approve** the proposed agenda.
2. On a motion by Trustee O'Keefe, supported by Trustee Kelly, the **BOARD VOTED to approve** the minutes of the June 24, 2022, Board of Trustees meeting.
3. Public Participation
 - a. Rex LaMore—Investment policies and practice
 - b. Sheridan Phalen—Swim and Dive
 - c. Mark Tarquini—Swim and Dive
 - d. Rachael Holt—Swim and Dive
 - e. Peter Corsetti—Swim and Dive
 - f. Mike Balow—MSU athletic budget & FOIAs
 - g. Theodore Golden—November 2022 election

4. President's Report

President Stanley provided the following report to the Board:

As I start my fourth year as president, I am reminded that I came to MSU with a commitment to prioritize the health and safety of our community. This morning, I would like to pause for just a moment to outline our progress as we strive to

improve our campus culture and prevention and education efforts related to violence and sexual misconduct. By the time I arrived in August 2019, many very important steps had already been taken to address systemic and historical problem areas. By working with the Relationship Violence and Sexual Misconduct Advisory Group, reviewing the data from the spring 2019 Know More Campus Survey and meeting directly with survivors, I was able to work with a number of individuals to map out additional changes and improvements. In 2019, for example, I appointed two RVSM advisors, Professor Rebecca Campbell and now Deputy Chief Andrea Munford, to report directly to me to provide regular guidance and make strategic recommendations, and their efforts have proved invaluable. In 2019 we, meaning the university, created the Center for Survivors Crisis Chat and staffed it with volunteers 12 hours a day/7 day a week. And, we added dozens of staff positions to offices across campus advancing our RVSM prevention work. In 2020, we launched a first-of-its-kind program on a college campus: the Sexual Assault Health Care Program, providing free 24/7 first-response medical care to survivors, both from our campus and the community. We established the Climate and Response unit within our prevention office to promote healing and culture change following incidents and/or investigations of sexual harassment or misconduct. And we established a victim-centered, trauma-informed interview space for law enforcement to conduct interviews with survivors who wish to report sexual assault. 2021 was another productive year with the launch of our institution-wide RVSM strategic plan, which includes a comprehensive set of initiatives for a prevention-focused and trauma-informed approach to RVSM. We also created the MSUPD Community Support Bureau, which consists of the Special Victim and Community Care Units. And we made it possible to revoke emeritus status and other honors and awards in cases of faculty misconduct. Finally, this year, we launched the Support More Initiative to provide guidance for how to respond to RVSM disclosures in a manner that is helpful to survivors, and to promote related campus resources and services. We completed two rounds of reports from Cozen O'Connor, an outside law firm with expertise in Title IX compliance, which stated that investigations by the Office of Institutional Equity are "fair, impartial and thorough." And we updated the Discipline and Dismissal of Tenured Faculty for Cause Policy and expanded staff at MSU Safe Place. In short, there has been a unified commitment starting with the Board of Trustees and moving across all our campus, to achieving the highest standards of care and safety, to preventing misconduct and supporting those who experience RVSM issues in a trauma-informed manner. And, moving forward, we will remain steadfast in advancing this important work. This academic year, for example, we will carefully review 2022 Know More Campus Survey material, which will provide crucial information for continuing to positively transform the culture related to sexual misconduct at MSU. We will develop a new professional standards policy collaboratively between university leadership and academic governance to further foster a culture of respect and belonging. This summer, with the leadership of our two RVSM advisors, we began work to change the organizational structure of our OCR office, bringing in an outside consultant to map and improve the process flow, and launched the search for our new OCR leader while elevating the position to a vice

president role. What is the result of all this work? Preliminary data from our most recent campus survey shows we had reductions in the percentage of women who reported they experienced some form of sexual misconduct, a highly encouraging outcome. We are also seeing a recovery of trust in the institution. Separate research from Edelman shows significant increases in the number of alumni who highly trust the university, from 54 percent in 2020 to 67 percent in 2022, and a significant drop in the number who distrust the university, from 18 percent to 10 percent. We know we still have much work to do, but I am so grateful to the many staff, faculty and leaders who are working so hard to foster a safe and inclusive campus community for all. And I encourage you all to visit MSU's Our Commitment webpage to learn more about our efforts.

The health and safety of our community was on my mind as we started the fall semester and welcomed our largest-ever first-year class. I thoroughly enjoyed meeting students during fall move-in and at activities like the international student ice cream social, the Migrant Student Services CAMP program reception and, of course, Sparticulation. I posed for many pictures with students and their families, and I learned about their path to MSU. Having a welcoming campus is so important. And I want to thank everyone across the university community who volunteered to assist arriving students and produced the Fall Welcome events that start the year on such a wonderful note. That includes the Fall Convocation, where Provost Woodruff and others produced this inspirational induction of our newest Spartans. Provost Woodruff, by the way, is calling in today because she is in Cambridge, Mass., for induction into the American Academy of Arts and Sciences. We will hear more later, but it is a great honor for her and the university to be associated with that prestigious scholarly organization.

As I mentioned earlier, we welcomed a record incoming class of about 9,800 first-year students, which is also among our most diverse. That comes behind a record 57,898 applications. This year we are also welcoming more international students and more than 1,400 transfer students. And we look forward to benefitting from the unique experiences they bring. These numbers are based on paid deposits, and of course, we will be able to tally an official enrollment count after tuition refunds close on September 23. But in an era when many colleges and universities are struggling to maintain enrollments, these numbers speak to continued confidence in the quality and value of a Michigan State University degree. And we are only getting better and more competitive. Forbes last week mentioned MSU among universities surging in their rankings. And earlier this summer, Shanghai Ranking ranked seven Michigan State academic disciplines in the top 25 in the world, with two in the top five: Education ranked number two for the third consecutive year, and Communication ranked number three for the second straight year. Here is another signal we are headed in the right direction, this summer, we closed out a record-setting year for fundraising, totaling more than \$284 million in cash and gift commitments. Our Spartan community is investing in us like never before, with giving from alumni growing more than 26 percent from the previous year. More than 170,000 individual gifts were made to MSU last year, and nearly 9,700

individuals contributed for the first time. And with our strategic plan now guiding our efforts toward greater excellence and impact in the year 2030 and beyond, I believe we are in a very good position to continue to support the success of Spartans and the world we live in.

I often refer to Michigan State University as “Michigan’s state university” because nobody is more active in supporting citizens and communities in Michigan than Michigan State. Whether it is through the services of MSU Extension in every county, our 900-plus medical education clinical affiliate sites across the state or the countless service and research programs engaging Spartans with our communities, MSU is here for the people of Michigan and beyond. That service was acknowledged in this fiscal year’s state budget. In addition to appropriating operating funds to MSU, it included \$53 million for much-needed upgrades to our Dairy Cattle Teaching & Research Center and our greenhouse facilities, both of which support crucial Michigan economic sectors. Today’s agenda includes resolutions authorizing us to begin planning for upgrading these important facilities, and I want to thank the Legislature and Governor Whitmer for making this happen. We saw many examples of MSU’s commitment to Michigan over the summer, including celebrating the 100th anniversary of WKAR. Our strong partnership with WKAR is so important for connecting people with powerful ideas that inspire positive change in our community. We saw MSU’s commitment to the state again when we received a \$10.5 million federal grant alongside the MERIT Network to bring high-speed broadband services to underserved homes and businesses in Michigan and when we joined a multi-state higher education network to address regional and national priorities for semiconductor and microelectronics research, education, and workforce development. This program will be critical to the health of Michigan’s 21st-century technology and manufacturing economy, including the auto industry. Speaking of the auto industry, we will be represented in Detroit next week at the AutoMobili-D program before the North American International Auto Show. We will join our University Research Corridor partners to showcase our technology programs, research, and development and MSU’s connected mobility ecosystem. We are proud to lead the nation’s university innovation clusters in the number of mobility industry graduates we produce, keeping the state at the front of mobility innovation. The MSU electric autonomous bus will also be part of the URC’s display. So, it is fitting that today’s research presentation is on battery technology for electrified transportation. We also recently saw continued confidence in MSU’s ability to innovate for a better future with an over \$10 million Energy Frontiers Research grant from the Department of Energy’s Office of Science. Alongside Argonne National Laboratory and Lawrence Berkeley National Laboratory, our new Center for Catalysis in Biomimetic Confinement will investigate novel means to produce useful compounds for energy and other applications in an environmentally sustainable way. Finally, I want to mention how I saw MSU’s statewide engagement up close during my road trip last month to Michigan’s beautiful Upper Peninsula. Michigan State has been active in research and service in the U.P. for more than 120 years. Since the COVID-19 pandemic limited my travel over the past couple of years, I was eager to visit, tour some of

MSU's facilities and meet Spartans and others north of the bridge. I enjoyed tours of the AgBioResearch Forestry Innovation Center in Escanaba and the College of Human Medicine's Marquette campus, as well as meeting U.P. Extension educators in our Negaunee office. I am proud of the scope, scale, and impact of our activities in the U.P., and the visit underscored the importance we place on serving the entire state.

I want to conclude my remarks today by circling back to the great start to the year we have been having and the centrality of student success in all we do, which our strategic plan reinforces. Students are the heart of the university and welcoming them back is a real highlight. I want to play a brief social media video we have been sharing with our Spartan community, Welcome back, students! Everyone here and all who are listening, I encourage you to register to vote. Once you are registered to vote, I encourage you to make a plan about how you are going to vote, as well.

And so, with that, let us turn to the rest of today's agenda.

5. Gift, Grant, and Contract

Vice President Doug Gage presented the Gifts, Grants and Contracts Report for the period of May 28, 2022, through August 11, 2022. The report is a compilation of 600 Gifts, Grants, and Contracts plus 52 Consignment/Non-Cash Gifts, with a total value of \$192,019,749.

Trustee O'Keefe **moved to approve** the recommendation, with support from Trustee Scott.

THE BOARD VOTED to approve the recommendation.

6. Research Presentation

Vice President Gage introduced Dr. Chengcheng Fang, who gave a presentation entitled "Next-Generation Lithium Batteries for Electrified Transportation" (Appendix A)

7. Personnel Actions

Provost Woodruff presented the following personnel actions:

Michelle R. Moyd, Ph.D.—AY, Red Cedar Distinguished Associate Professor, Department of History, with tenure, effective August 16, 2022.

Maksymilian Chruszcz, Ph.D.—AY, Walter F. Patenge Endowed Professor, Department of Biochemistry and Molecular Biology, with tenure, effective January 1, 2023.

Tuo Wang, Ph.D.—AY, Associate Professor, Department of Chemistry, with tenure, effective August 16, 2022.

Gavin Rumbaugh, Ph.D.—AY, Mall Family Endowed Professor, Department of Pediatrics and Human Development, with tenure, effective January 1, 2023.

Weiwei Xie, Ph.D.—AY, Associate Professor, Department of Chemistry, with tenure, effective August 16, 2022.

Cholani Weebadde, Ph.D.—AY, Associate Professor, Department of Plant Soil and Microbial Sciences, with tenure, effective September 12, 2022.

Judith Whipple, Ph.D.—AN, Donald J. Bowersox and Robert W. Thull Professor and Interim Associate Dean for Eli Broad College of Business, for a change in title to Interim Dean, and for a change in salary effective August 12, 2022.

Rebecca T. Barber, Ph.D.—AN, Vice President for Financial Planning and Analysis, effective October 1, 2022.

Izzo, Thomas, AN—Head Coach—Men's Basketball, Intercollegiate Athletics, Subject to Contract, effective August 22, 2022, to June 30, 2027.

It is recommended that the title of Associate Vice President for Civil Rights and Title IX Education and Compliance be changed to Vice President for Civil Rights and Title IX Education and Compliance and that all applicable policy documents be revised to reflect the change in title, effective upon the completion of a search and a successful appointee.

It is recommended that the position of Senior Associate Vice President of Health Sciences be created, effective September 9, 2022.

Norman E. Hubbard, MBA - AN, Senior Advisor to the Dean, for a change in title to Senior Associate Vice President of Health Sciences, effective September 9, 2022.

Trustee Foster requested that the Interim Dean for the Eli Broad College of Business be voted on separately.

Chairperson Byrum **moved to approve** the separate vote with support from Vice Chairperson Kelly.

Trustee Scott **moved to approve** the remaining recommendations, with support from Trustee O'Keefe.

THE BOARD VOTED to approve the recommendations.

Chairperson Kelly said that he would vote no on the Interim Dean recommendation because he believes that the administration should pause on the appointment. He said that the provost has the authority to move forward with the selection of a candidate for purposes of an interim basis. Vice Chairperson Kelly said that Board requested an independent review of the administration's decision to remove the previous dean of the Eli Broad College of Business and that he believes that the investigation should be completed before voting on an interim.

Chairperson Byrum said that she believes that the Eli Broad College of Business needs an academic head, and it is appropriate to put an interim in place.

Trustee O'Keefe said that he would be voting no on the resolution. He noted the ongoing investigation and that the trustees asked the administration for certain things that were not accomplished, including providing a long-standing dean a due process hearing. Trustee O'Keefe said that it is the Spartan way and fair. He stated that he has nothing against Ms. Judith Whipple, but at this juncture he does not see the need to hurry.

Trustee Tebay said that she would be supporting the recommendation. She noted that the Eli Broad College of Business needs a dean at the helm. Trustee Tebay stated that the recommendation is something that pursuant to the Board policies comes before the trustees for approval and that she would be approving the appointment.

Provost Woodruff stated that Judith Whipple is an outstanding leader for the Eli Broad College of Business and to ensure continuity of academic institution function, as well as accreditation standards and requirements for the College, she does reinforce that she is pleased to recommend Judith Whipple, Ph.D., Donald J. Bowersox and Robert W. Thull Professor to the position of Interim Dean of the Eli Broad College of Business.

Roll Call Vote

Trustee Byrum-Yes
Trustee Foster-Yes
Trustee Knake Jefferson-Yes
Trustee Kelly-No
Trustee O'Keefe-No
Trustee Scott-Yes
Trustee Tebay-Yes
Trustee Vassar-Abstained

THE BOARD VOTED to approve the recommendation.

8. Committee on Budget and Finance

Trustee Foster presented the Trustee Budget and Finance Committee Report and the following recommendations and resolutions.

A. Fund Functioning as an Endowment—Dr. Kenneth Harding Graduate Student Endowed Scholarship

The Trustee Committee on Budget and Finance recommends that the Board of Trustees establish a fund functioning as an endowment to provide financial support to graduate students enrolled in the College of Education.

BE IT RESOLVED, that the Board of Trustees of Michigan State University hereby establishes a fund functioning as an endowment entitled “Dr. Kenneth Harding Graduate Student Endowed Scholarship.”

Trustee Foster **moved to approve** the recommendation, with support from Trustee Byrum.

THE BOARD VOTED to approve the recommendation.

B. Fund Functioning as an Endowment—Thomas J. Ostrander Memorial Endowed Scholarship/Fellowship in Mechanical Engineering

The Trustee Committee on Budget and Finance recommends that the Board of Trustees establish a fund functioning as an endowment to provide financial support to students pursuing a degree in the Department of Mechanical Engineering.

BE IT RESOLVED, that the Board of Trustees adopts the Michigan State University hereby establishes a fund functioning as an endowment entitled “Thomas J. Ostrander Memorial Endowed Scholarship/Fellowship in Mechanical Engineering.”

Trustee Foster **moved to approve** the recommendation, with support from Trustee Kelly.

THE BOARD VOTED to approve the recommendation.

C. Fund Functioning as an Endowment—Shobha Ramanand Graduate Fellowship in Memory of Dr. Kruger and Dr. Sweitzer

The Trustee Committee on Budget and Finance recommends that the Board of Trustees establish a fund functioning as an endowment to provide financial support to students enrolled in graduate programs

BE IT RESOLVED, that the Board of Trustees of Michigan State University hereby establishes a fund functioning as an endowment entitled “Shobha Ramanand Graduate Fellowship in Memory of Dr. Kruger and Dr. Sweitzer.”

Trustee Foster **moved to approve** the recommendation, with support from Trustee Knake Jefferson.

THE BOARD VOTED to approve the recommendation.

D. Authorization to Plan—Dairy Facilities—Research and Teaching and Learning

The Trustee Committee on Budget and Finance recommends that the Board of Trustees authorize the Administration to plan for both renovation and expansion of the MSU Dairy Facilities.

BE IT RESOLVED, that the Board of Trustees of Michigan State University hereby authorizes the Administration to plan for the project entitled “Dairy Facility—Research and Teaching and Learning.”

Trustee Foster **moved to approve** the recommendation, with support from Trustee Byrum.

THE BOARD VOTED to approve the recommendation.

E. Authorization to Plan—Greenhouses—Renovation of Existing and Addition—Research Expansion and Learning

The Trustee Committee on Budget and Finance recommends that the Board of Trustees authorize the Administration to plan for revitalization of the MSU Greenhouses.

BE IT RESOLVED that the Board of Trustees of Michigan State University hereby authorizes the Administration to plan for the project entitled “Greenhouse—Renovation of Existing and Addition—Research Expansion and Learning.”

Trustee Foster **moved to approve** the recommendation, with support from Trustee Scott.

THE BOARD VOTED to approve the recommendation.

9. Committee on Academic Affairs

Trustee Byrum presented the Trustee Academic Affairs Report and the following recommendations and resolutions.

A. Revision to Policy 03-17-03 (Overload Pay)

The Trustee Committee on Academic Affairs recommends that the Board of Trustees approve the revisions to Policy 03-17-03 (Overload pay) shown in Attachment A hereto.

BE IT RESOLVED that the Board of Trustees of Michigan State University hereby approves the revisions to Policy 03-17-03 (Overload pay) shown in Attachment A hereto. (Appendix B)

Trustee Byrum **moved to approve** the recommendation, with support from Trustee Kelly.

THE BOARD VOTED to approve the recommendation.

B. Naming of Recreational Sports & Fitness Services Turf Field Complex

It is recommended that the Board of Trustees approve naming the new Recreational Sports & Fitness Services turf field sports complex Spartan Greens.

BE IT RESOLVED that the Board of Trustees of Michigan State University hereby approves naming the new Recreational Sports & Fitness Services turf field sports complex Spartan Greens.

Trustee Byrum **moved to approve** the recommendation, with support from Trustee O'Keefe.

THE BOARD VOTED to approve the recommendation.

C. Naming of Recreational Sports & Fitness Services Facility

It is recommended that the Board of Trustees approve naming the new Recreational Sports & Fitness Services facility on Cherry Lane Field the Student Recreation and Wellness Center.

BE IT RESOLVED that the Board of Trustees of Michigan State University hereby approves naming the new Recreational Sports & Fitness Services facility on Cherry Lane Field the Student Recreation and Wellness Center.

Trustee Byrum **moved to approve** the recommendation, with support from Trustee Scott.

THE BOARD VOTED to approve the recommendation.

10. Committee on Audit, Risk and Compliance

Trustee Kelly presented the Trustee Audit, Risk and Compliance Committee Report and the following recommendations and resolutions.

A. Approval of Contract Terms

The Trustee Committee on Audit, Risk and Compliance recommends that the Board of Trustees approve a contract between Michigan State University and *Elijah Hamilton-Wray*, an individual, of whom Jeffery C. Wray, a professor of film studies in the College of Arts and Letters is the father.

BE IT RESOLVED that the Board of Trustees of Michigan State University hereby approves a service agreement with *Elijah Hamilton-Wray* with earlier public notice and with a “Service Agreement Term Sheet” presented to the Board for inclusion in its minutes. (Appendix C)

The Trustee Committee on Audit, Risk and Compliance recommends that the Board of Trustees approve a contract between Michigan State University and *IASO Therapeutics, Inc.*, a Delaware corporation, in which Xuefei Huang, Ph.D., MSU Foundation Professor, Departments of Chemistry and Biomedical Engineering, Institute for Quantitative Health Science and Engineering, and members of his families have a financial interest.

BE IT RESOLVED that the Board of Trustees of Michigan State University hereby approves a license agreement with *IASO Therapeutics, Inc.*, with earlier public notice and with a “License Agreement Term Sheet” presented to the Board for inclusion in its minutes. (Appendix D)

The Trustee Committee on Audit, Risk and Compliance recommends that the Board of Trustees approve a contract between Michigan State University and *LifeBlood Corporation*, a Delaware corporation, in which MSU employees Dana Spence and Suzanne E. Summers have a financial interest.

BE IT RESOLVED that the Board of Trustees of Michigan State University hereby approves an option agreement with *LifeBlood Corporation* consistent with earlier public notice and with an “Option Agreement Term Sheet” presented to the Board for inclusion in its minutes. (Appendix E)

The Trustee Committee on Audit, Risk and Compliance recommends that the Board of Trustees approve a contract between Michigan State University and *Med-O-Bloom Farms, LLC*, a Michigan limited liability company, in which James Good, a farm manager at the Dairy Cattle Research Center, holds an equity interest in the company.

BE IT RESOLVED that the Board of Trustees of Michigan State University hereby approves a purchase agreement with *Med-O-Bloom Farms LLC* with earlier public notice and with a “Purchase Agreement Term Sheet” presented to the Board for inclusion in its minutes. (Appendix F)

The Trustee Committee on Audit, Risk and Compliance recommends that the Board of Trustees approve a contract between Michigan State University and *Michigan Center for Rural Health*, a Michigan non-profit corporation, in which Andrea Amalfitano, D.O., Dean of the College of Osteopathic Medicine, is a member of the board of directors.

BE IT RESOLVED that the Board of Trustees of Michigan State University hereby approves a service agreement with *Michigan Center for Rural Health* with earlier public notice and with a “Services Agreement Term Sheet” presented to the Board for inclusion in its minutes. (Appendix G)

The Trustee Committee on Audit, Risk and Compliance recommends that the Board of Trustees approve a contract between Michigan State University and *Mid-Michigan Research LLC*, a Michigan limited liability company, in which MSU faculty member Dr. Harold J. Schock holds a financial interest.

BE IT RESOLVED that the Board of Trustees of Michigan State University hereby approves a service agreement with *Mid-Michigan Research LLC* consistent with earlier public notice and with a “Services Agreement Term Sheet” presented to the Board for inclusion in its minutes. (Appendix H)

The Trustee Committee on Audit, Risk and Compliance recommends that the Board of Trustees approve a contract between Michigan State University and *Motion Grazer AI*, a company in which MSU faculty members Dr. Madonna Benjamin, Dr. Daniel D. Morris and Michael Lavagnino hold a financial interest.

BE IT RESOLVED that the Board of Trustees of Michigan State University hereby approves an option agreement with *Motion Grazer AI* with earlier public notice and with an “Option Agreement Term Sheet” presented to the Board for inclusion in its minutes. (Appendix I)

The Trustee Committee on Audit, Risk and Compliance recommends that the Board of Trustees approve a contract between Michigan State University and *Polyplastic Technologies, LLC*, a Michigan limited liability company, in which MSU faculty member Dr. Muhammad Rabnawaz has a financial interest.

BE IT RESOLVED that the Board of Trustees of Michigan State University hereby approves an option agreement with *Polyplastic Technologies, LLC* consistent with earlier public notice and with an "Option Agreement Term Sheet" presented to the Board for inclusion in its minutes. (Appendix J)

The Trustee Committee on Audit, Risk and Compliance recommends that the Board of Trustees approve a contract between Michigan State University and *RedoxBlox Inc.*, a Delaware corporation, in which Professor James Klausner serves on the Board of Directors of company, Professor Joerg Petrasch serves on the Board of Directors of company and as an Officer, and Research Associates Kelvin Randhir and Nima Rahmatian along with Doctoral Student Alessandro Bo have a one percent or greater interest in the company

BE IT RESOLVED that the Board of Trustees of Michigan State University hereby approves an option agreement with *RedoxBlox Inc.* with earlier public notice and with an "Option Agreement Term Sheet" presented to the Board for inclusion in its minutes. (Appendix K)

The Trustee Committee on Audit, Risk and Compliance recommends that the Board of Trustees approve a contract between Michigan State University and *RedoxBlox Inc.*, a Delaware corporation, in which Prof. James Klausner serves on the Board of Directors of company, Prof. Joerg Petrasch serves on the Board of Directors of company and as an Officer, and Research Associates Kelvin Randhir and Nima Rahmatian along with Doctoral Student Alessandro Bo have a one percent or greater interest in the company

BE IT RESOLVED that the Board of Trustees of Michigan State University hereby approves a license agreement with *RedoxBlox Inc.* with earlier public notice and with a "License Agreement Term Sheet" presented to the Board for inclusion in its minutes. (Appendix L)

The Trustee Committee on Audit, Risk and Compliance recommends that the Board of Trustees approve a contract between Michigan State University and *Tucker Mays Farm*. Wesley Mays, assistant farm manager at the Sheep Farm, is Tucker Mays's brother.

BE IT RESOLVED that the Board of Trustees of Michigan State University hereby approves a purchase agreement with *Tucker Mays Farm* with earlier

public notice and with a “Purchase Agreement Term Sheet” presented to the Board for inclusion in its minutes. (Appendix M)

The Trustee Committee on Audit, Risk and Compliance recommends that the Board of Trustees approve a contract between Michigan State University and *Ubiquitous Energy, Inc.*, a Delaware corporation, in which Dr. Richard Lunt, the Johansen Crosby Endowed Professor in the Department of Chemical Engineering and Materials Science, and his family own or have options to buy an ownership interest of more than one percent but less than five percent of the company.

BE IT RESOLVED that the Board of Trustees of Michigan State University hereby approves a service agreement with *Ubiquitous Energy, Inc.*, with earlier public notice and with a “Research Agreement Term Sheet” presented to the Board for inclusion in its minutes. (Appendix N)

Trustee Kelly **moved to approve** the recommendations, with support from Trustee Tebay.

THE BOARD VOTED to approve the recommendations.

11. Committee on Student Life and Culture

Trustee Scott presented the Trustee Student Life and Culture Committee Report.

Senior Vice President Vennie Gore and Assistant Vice President Allyn Shaw presented the Launch of the Academic Year.

12. Liaisons’ Report, Chairperson’s Report and Trustee Comments

Stevie Quijas, student liaison, provided the following report to the Board:

In addition to my capacity as the Board of Trustees liaison, I serve in ASMSU where I have recently been informed of concerns associated with financial aid. As of September 8, MSU has offered 70,000 students a total amount of over 2.198 million in financial aid for the fall 2021 and spring 2022 semesters. Spartan Advantage is a program within the Office of Financial Aid, which “reduces the educational loan debt of the neediest Michigan students by supplementing institutional funds and other non-loan forms of financial assistance so that the cost of tuition fees room, board and books are covered.” However, because the program is specifically designed for the exceptionally needy based on family income when these revocations have occurred, it has put students into more vulnerable positions than their peers. I have been in discussion with Provost Woodruff and the financial aid administrators to ensure that the University recognizes the extent of the issue in order to properly address student concerns

and find solutions and minimize such instances from occurring in the future. I also look forward to working with student groups on campus and the rest of the board to improve the indigenous and minoritized student relations and other aspects of campus culture. This concludes my report.

Belle Letcher, student liaison, provided the following report to the Board:

I just want to echo everything Stevie has said. I am Belle Letcher, President of RHA. Hall government recruitment is well. I do not know if it is an all-time high because we do not have 50 years of records. But, as of recent history, hall government recruitment is looking good. We may very well have an active hall government in every single hall, which I am very excited for. At the same time, we have our huge incoming class and with that in mind, I want to speak to George, I cannot see him but just our RAs in general do much for this university. It is a particularly difficult year to be one with the huge incoming class of freshmen and on top of that transitional housing, like if you have a floor of nothing but freshmen and some of them are three to a room, then your job as the person in charge of resolving disputes is very difficult. RHA is working very hard to recognize that RAs are constituents too. They live in the residence halls, and we care about them just as much as RAs care about the people on their floor. And as such, we are currently working with both RAs and ICAs to give them seats in RHA, so that they can give their valuable input as students who are very involved in campus and in the residence halls. At the same time, we can provide valuable representation for them. This happened yesterday at the Student Liaison meeting when President Stanley offered to allow me to be involved in the finalizing of the university's budget. I am very excited to be part of that process.

Jo Kovach, student liaison, provided the following report to the Board:

My name is Joe Kovach, and I am the ASMSU and student body president this year, and I also want to echo Stevie's remarks on Spartan Advantage. I am a low-income student who relies on Spartan Advantage myself who has feared losing the scholarship every single year because of the number of students who get to slip through the cracks for it. ASMSU will not stop standing with the MSU swim and dive teams in my term. The lack of transparency and willingness to negotiate with these students is unacceptable and I hope that any further updates will think of those like the students we heard from today who have remained at MSU in hopes of reinstatement. People who have fought for years for this reinstatement. I spoke to one student swimmer this summer, who maintained a near perfect GPA and continued swimming for the swim club, who had to watch all her fellow athletes she came into MSU with receive awards for their outstanding academic achievement as student athletes and had to graduate without one since she is not considered an athlete by MSU. I have been told contrasting information regarding the statement of a higher student rec tax to put a regulation pool in the IM building being built. I have been told that a pool might

not come until after the building is complete. And as someone who spent the last year as the executive director of the Association of Big Ten students, the Big Ten deserves to have to battle MSU and swim and dive as well. ASMSU is in the process of registering students to vote. Vice President for Governmental Affairs, Shawn Modi, is putting in a ton of work to make sure students are informed about their vote and ready to do so. ASMSU advocated for years to have a fall break for students and are so thankful to have finally gotten it last year. We initially asked for voting day to be a part of the initial fall break but heard from people that this could not be a reality because too many students would leave and not vote in East Lansing. I live an hour and a half drive away and know that plenty of other students who live even further in districts that desperately need their vote. I asked that we consider this in the making of the next academic calendar. How can we be Michigan's state university without promoting the vote for the citizens of this beautiful state? For those who do not know, about a month ago my personal office door was vandalized with a hate symbol after an article came out about me being the first openly nonbinary student body president of ASMSU. I had a sticker my freshman year that said that hate has no home here at MSU. Me and every minoritized student knows that this is far from the truth. Hate is alive and well at MSU. There have been several bias incidents since I arrived on this campus. I hope to spend this year working with all of you to bring more of these minoritized students, especially those from our most diverse class of 9800 this year, to the table to make campus safer and to make sure that nobody has to feel afraid to be who they are at MSU. I have also been working with the student body president at the blue school a bit south to promote safety for our game in Ann Arbor next month. I will reach out to all of you about that soon. Lastly, I am excited for my last year here at MSU. Many lasts are coming up for me and I am excited to share those experiences with my fellow Spartan students. The students I speak with, whether it be the 22 I live with every day or those I interact with throughout campus, as much as I can make this campus the beautiful, diverse, and outstanding place that it is. I am pleased to represent them this year. Thank you.

Dr. Karen Kelly-Blake, faculty liaison, provided the following report to the Board:

We want to thank all parties for this past year's active engagement with academic governance, Faculty Senate, the University Committee on Faculty Affairs, our at large members, Provost Woodruff, President Stanley, and you, the Board of Trustees. As always, we extend an invitation to the board to attend the Faculty Senate and University Council meetings. Trustee Vassar is the faculty liaison, and we appreciate and welcome her engagement in those spaces. During our meeting on yesterday, we discussed the many initiatives that are in place regarding safety for members of the MSU community, whether these are involved in training of our campus law enforcement professionals, facilities security and utilization of our university notification systems, mental health and wellness

resources and capacity, and the ongoing strategic response to COVID, and now, monkey pox viruses. Additionally, the university is actively promoting voter engagement for students, staff, and faculty and as Trustee Byrum declared, if we can get young people to engage early with voting, they will become lifelong voters. MSU Votes emphasizes voter registration and planning to vote. As faculty we can prioritize the importance of voting in the classroom and supporting and encouraging students to do so. And reminding them that early voting is an option. We look forward to another year of robust academic governance. Academic governance is a verb. It is the work we do so let us do the work. Thank you.

Chairperson Byrum acknowledged the public speakers and said that she appreciated them taking the time to come before the board. She noted that there is so much good news and welcomed everyone back to campus. She asked for a round of applause for the excitement on campus right now. Chairperson Byrum said that 82 percent of classes are in person, seven percent are hybrid and 11 percent are online. She said that MSU welcomed 49,934 students, noting that it is the largest incoming freshman class. Chairperson Byrum stated that 130 countries and 82 of 83 Michigan counties are represented in the freshman incoming class and the average credit hours are 14.4 credits. She thanked the faculty for highlighting MSU Votes and the importance of student voting noting that she has been very outspoken when it comes to student voting. Chairperson Byrum said that she believes that we need an engaged informed student population that exercises their fundamental rights as citizens to vote. She said that she wants every eligible student registered to vote and making a plan to vote. Chairperson Byrum said that MSU should be encouraging all eligible voters to vote and should not stand idly by with any kind of voter intimidation that would suppress that right to vote. She said that she wants to support access. Chairperson Byrum acknowledged the passing of Dr. James Potchen. She said that Dr. Potchen was someone who had a long history at Michigan State. Chairperson Byrum noted from his obituary that he was a Michigan State University Distinguished Professor and inaugural Chair of the MSU radiology department and passed away on August 20, 2022, at the age of 89. In 1975, Dr. Potchen was appointed the first professor and chair of a new Department of Radiology at Michigan State University. While at MSU, he taught numerous courses in the College of Human Medicine and Osteopathic Medicine, and Lyman Briggs College. In 1990, Dr. Potchen was recognized as a Michigan State University Distinguished Professor. Throughout his life, Dr. Potchen had a passion for nature. Perhaps his most celebrated and enduring success was his vision for in the orchestration of the radiology healing gardens. This caring and calming environment includes beautiful gardens and waterfalls and has been a destination for patients, students and visitors and university employees since the year 2000.

Vice Chairperson Kelly said that he supported some of the comments made by Chairperson Byrum regarding turning out the student vote. He congratulated Provost Woodruff on her honor. Vice Chairperson Kelly said that the Board did approve another five-year contract for Tom Izzo and that he is personally very happy about that. Vice Chairperson Kelly said that this is the first time in 12 years that he has come to East Lansing without having a child on campus as a student. He noted that it is nice to be back on campus and concluded his comments.

Trustee Foster welcomed the largest and most diverse incoming class and said that she is sure Trustee Byrum's efforts will get them all registered to vote. She noted the passing of Dr. James Potchen. Trustee Foster said that he was truly a renaissance man, a character, an advocate, and a leader. She stated that in medicine, business, and horticulture his influence was not just here on campus, but he was instrumental in placing the first MRI in the country of Malawi. Trustee Foster said that he did some spectacular things for humankind and will be sorely missed. She noted that she, Trustee Byrum, and Dan Bollman had the opportunity to tour the Forest Innovation Center and UP Research and Extension Center in July and that there are great faculty working there. She said that she did not realize that maple syrup production could be so technical.

Trustee Knake Jefferson acknowledged the passing of Dr. Potchen and his wife Geri. She noted that she met the Potchen family when she moved to East Lansing in 2005. She said that her son was four months old and while she often says that James learned to walk at Spartan Marching Band practices and feeding ducks at the Red Cedar River, but she really thinks that it was in the MSU Radiology Gardens. Trustee Knake Jefferson said that he also took his senior photos in the gardens last weekend. She said that she would like to think that Dr. Potchen would have been very proud. Trustee Knake Jefferson welcomed everyone back especially the faculty liaisons. She said to student liaison Jo Kovach that she was sorry for the incident and that she admires her example of leadership. Trustee Knake Jefferson said that she appreciates the focus on voting. She echoed her colleague's sentiments and commended all the efforts at Michigan State 25 years ago. She said that MSU Votes was officially established to make it easier and more accessible for students to register to vote. She encouraged all students to do that and to make a plan. Trustee Knake Jefferson said that as someone who was historically excluded from the ballot box, she is mindful that not only do we have an obligation to make a plan for ourselves and how we are going to vote, but we need to think about how we are making sure everyone else has the same access, especially groups that were historically excluded from the ballot box. She encouraged everyone to not just make their plans to vote, but to think about how they will be actively helping others. Trustee Knake Jefferson said that it is important is to consider voter suppression bills noting that one has passed the legislature but was vetoed by

the governor and is now making its way back through signatures. She called on everyone in the campus community to be mindful of different ways that there are obstacles put into place. Trustee Knake Jefferson said that she would especially challenge university leadership, everyone sitting at the table in the administration, to think about how we call together the MSU community, partners, vendors, anyone who is a part of our Spartan community, to come together and to resist voter suppression and to actively call it out. Trustee Knake Jefferson said that she loves hearing from the faculty about the amazing work that they are doing, but it was especially inspiring to hear from them today. Trustee Knake Jefferson said that she would respond to Mr. Golden since he directed his comments to her personally. She said that first she wanted to correct a few things, including the statement issued in 2018, which would not have been possible because she joined the Board in 2019. She said that she did issue statements related to the Nassar situation and noted that she was appointed to the Board because another trustee resigned over disagreements about whether to release documents associated with the Nassar litigation. Trustee Knake Jefferson said that when she joined, she promised that since she did not have agreement from her colleagues to release those documents, she would look at them herself. She said that the statements are on her website. She thanked the Ad Hoc Faculty Committee on Sustainable Investment and said that she appreciates them bringing their efforts to her attention. She said that the way that MSU manages its money is a statement of its values and she thinks that it should be aligned with the strategic plan, and our DEI plan. Trustee Knake Jefferson said that she appreciates the group reminding the trustees to be thinking about that. Trustee Knake Jefferson assured Sheridan that she is more than enough and that she is the best and what we want all our Michigan State students to be. She said that she is sorry that her experience here was not what she thought it would be. She said that like all Spartans, she is taking what she got out of it, and is making the most of it. She thanked her for coming in and telling her story. Trustee Knake Jefferson said that she was finding herself once again apologizing to members of swim and dive that she is sorry for the loss of the program, and she hopes that there will continue to be conversations about the possibility of reinstating the program.

Trustee O'Keefe recognized student liaisons Stevie, Belle, and Jo, for their service and said that he greatly appreciated to have students who want to be in those roles and are able to communicate their ideas. Trustee O'Keefe said that September on campus is when we have freshmen who come to the campus, hoping for a great experience and a great education. He said that they may get intimidated or have anxiety from being at a new school and on a big campus. Trustee O'Keefe said that the advice he would give new students is to finish what they start and for the seniors to make the most of their final year as time goes by so fast. He said to enjoy it and that there is no greater recognition than as a Spartan grad. Trustee O'Keefe said that he echoed some of Chairperson

Byrum's comments on voting. He said that voting is an important right that we all have. He encouraged everyone to exercise it and educate themselves on issues, be passionate about the country and your ability to vote, because a lot of people do not have that right.

Trustee Scott said that she echoed what her colleagues have said. She stated the excitement that she feels when she is on campus. Trustee Scott said that she and Trustee Vassar attended Spartan Remix and noted that it was an amazing experience. She said that she watched the Native American students doing several routines and noted that the singing and the cultural experience is something that she wants faculty, students, and staff to experience. Trustee Scott said that she is looking forward to the completion of the Multicultural Center so there can be exhibits and experiences to share cultures. Trustee Scott said that MSU Votes is awesome, and she encouraged everyone to educate themselves and engage in the process. She said that she would love for students to have the day off to vote because she is one of those who it may take two hours or so to get home. She said that for students who want to vote where they reside that distance is an impediment to voting. Trustee Scott said that she wanted to discuss voter suppression. She noted the article in the Detroit News and said it was discouraging that people believe that it is appropriate to withhold funding for a university based on their political views. Trustee Scott said that it is distressing to her that the resolution did not move forward and that she thinks that it is not right to discourage people from purposefully doing anything to impede the ability of black and brown voters to vote, which is their constitutional right. Trustee Scott said that anyone who supports people who purposely try to engage in tactics that will make it harder for people to vote should be outed and should not be supported. Trustee Scott acknowledged and congratulated Provost Woodruff on being inducted into the National Academy of Arts and Sciences. She thanked Dr. Fang for bringing excitement and energy to her research presentation and giving the students working with her that research opportunity. Trustee Scott thanked Sheridan for sharing her story and said she recognizes that many people tie their identity to certain things or activities. She said that she echoed what Trustee Knake Jefferson said and that she hopes that there will be continued conversations regarding swimming and diving.

Trustee Tebay welcomed student liaisons Stevie, Belle, and Jo and said that she is looking forward to working with them over the next semester. She acknowledged the swim and dive speakers, particularly Sheridan. She thanked her for her bravery and sharing her story. Trustee Tebay said that she regrets that the swim and dive program was cut and that she would vote to reinstate it if given the opportunity. Trustee Tebay said that the success of this country relies on the cornerstone of residents easily and without barrier exercising their right to participate in democracy by voting. She said that she is proud of MSU's role in encouraging our students and staff to engage in this process for the past 25

years through MSU Votes. Trustee Tebay said that when she was a student, she remembered the encouragement to vote regardless of partisan leaning. She said that when used in a healthy way, the debate of ideas ultimately strengthens the country, and this debate was one of the things she loved most about her educational experience at James Madison. Trustee Tebay said that there have been efforts throughout history and happening today in Michigan that discourage residents from free and willful participation. She said that those acts and types of initiatives are in direct conflict with the fundamental rights that our institution has sought to promote for the past two and a half decades. She stated that it is important that we call out the impact that these types of initiatives have sought and by their nature still seek to have in communities of color and poverty, both urban and rural, who have been marginalized and disenfranchised for hundreds of years. Trustee Tebay said that leaders of institutions like Michigan State have a responsibility to call this behavior what it is, voter suppression. She said that it is my intent and hope that administration and trustees will exercise all political and business means we have our disposal to stop efforts such as these that fundamentally weaken the strength of our democracy.

Trustee Vassar thanked the faculty for all they do and will continue to do this year for the students. She thanked the students and those who come to the meetings and persist noting that they really invigorate her and give her a lot of hope. She said that they should hold the Board accountable. Trustee Vassar thanked her colleagues for showing up in authentic ways this this week. She said that she has learned so much and was told to keep this light and be positive, but she just really cannot. Trustee Vassar reminded everyone that there are just 13 days of summer left. She encouraged everyone to enjoy the sun. Trustee Vassar noted that she had her father on her earrings and his birthday is September 11. She stated that he was a veteran and is buried at Fort Custer. She said that he gave her all the fortitude that she has today. Trustee Vassar said that she wanted to read a statement that she has made because he fought for our country, for my rights, and for your rights. Trustee Vassar said that she has committed her whole life to education. She stated that although she primarily has been a teacher, she is also a lifelong learner. Trustee Vassar said that she has learned so much in her role as a trustee. She said that while she may not have decades of experience as a MSU trustee and a public official, she does have decades of academic research and writing about the experience of Black people in this country and is intimately familiar with how law and policy and private corporations have been used to oppress Black people in this country in a million ways, such as education, access to capital for homeownership, access to the ballot, just to name a few. Trustee Vassar said that their access to voting has been and continues to be a critical battlefield for Black freedom. She said that the rapidly changing demographics of this country have sharpened the focus of those who have traditionally been held in in positions of power. Trustee Vassar said that it is the existential threat because people do not understand that

equal rights for others does not mean less rights for them. She noted that it is not pie and that there are going to be more pieces. She said that illogical fear of equity has resulted in every gain for Black people being followed by an intense and often deadly response. Trustee Vassar said that this is true from the country's roots in enslavement of African descendants to the present day for reconstruction, to the Civil War to the ratification of the 13th Amendment, which ended enslavement of African descendants in this country, to the 14th Amendment, which attempted to provide equal rights and protections to all citizens, to the 15th Amendment, which attempted to prohibit states from taking away the right to vote on account of race and color, or previous condition of servitude, and the signing of the Electoral Commission Act in the enactment of Jim Crow efforts in that era in the states like the poll tax. She said that the Grandfather Clause was her grandfather and his father subjected to literacy and citizenship test. She said that the countless acts of heroes, heroism by activist and veterans, white allies to Bloody Sunday, to the passage of the Voting Rights Act to the Supreme Court's decision in Shelby County versus Holder, to modern voter suppression battles in Arizona, Georgia, Texas, Michigan, other states, including right here. She said that throughout the history of Black voter suppression, there is also a constant threat of harm to those who have fought for freedom and fair access to the ballot, including beatings, lynchings, massacres, and now, apparently, threats to eliminate funding to MSU. Trustee Vassar said that this comes as no surprise when considering that the same history of beating, lynching, and death can be detailed for those who have fought for Black children and adults to have fair and equitable access to public education. She said that the threat to defund MSU is particularly troubling when she thinks of a courageous Spartan who risked his life to integrate public schools in Arkansas. Trustee Vassar said that there will be those who engage in propaganda and attempts to distract from what the fight is even about and there will also be those who dodged the draft or provided aid and comfort to the enemy while standing among your ranks as wars like this seemingly never end, the weapons always evolve. She said that just as in conflict, just as her father was in the military, the weapons change, it changes. Trustee Vassar said that as for her and her role as a mother, as an educator, as a Black woman in America, everyone should know that she always fights, and she is not going to stop. She said that she always fights against oppression, sexism, racism, classism, homophobia, homeland normativity, all those things she fights against. Trustee Vassar said that it is not going to end and that the fight is bigger than the MSU Board of Trustees. She said that while she understands this, she is fighting for MSU Spartans, for her children, and the Michiganders who do not have a big salary, big title, or unlimited resources to amplify their opinions, and she is unafraid. Trustee Vassar said that she does not flinch and that she stands with another mom, Governor Whitmer, who also answered the call of public service and who recognized that there were some in this state who, "are participating in a coordinated national attack on voting rights that is designed to undermine

confidence in our election system and systematically disenfranchise Black voters, communities of color, older voters and college students”. Trustee Vassar said that she will have no part in any effort that grants an ounce of credence to this deception, so harmful to our democracy. She said that her commitment to this fight for full and fair access to the ballot is not about partisan affiliation, as some allege. Trustee Vassar said that anyone, be they red, blue, purple plaid, or any entity who seeks to continue these deeply rooted efforts to suppress Black votes without regard to their method means or attempt to claim otherwise will be challenged. Go Green.

13. Request to Adjourn

On a motion by Trustee Kelly, supported by Trustee Byrum, **THE BOARD VOTED to adjourn** at 10:30 a.m.

Respectfully submitted,



Brian Quinn
Interim Secretary of the Board of Trustees



Next-Generation Lithium Batteries for Electrified Transportations

Chengcheng Fang, Ph.D.

Assistant Professor
Department of Chemical Engineering and Materials Science
Michigan State University

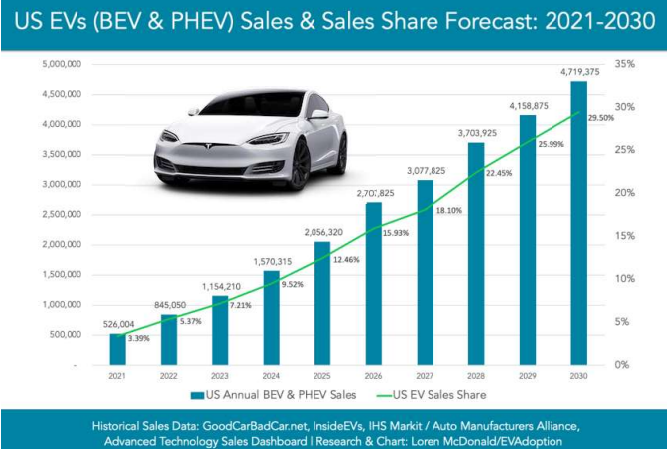
MSU Board of Trustees Meeting
September 9th, 2022

Why Lithium Batteries Matter?

Consumer electronics



EVs



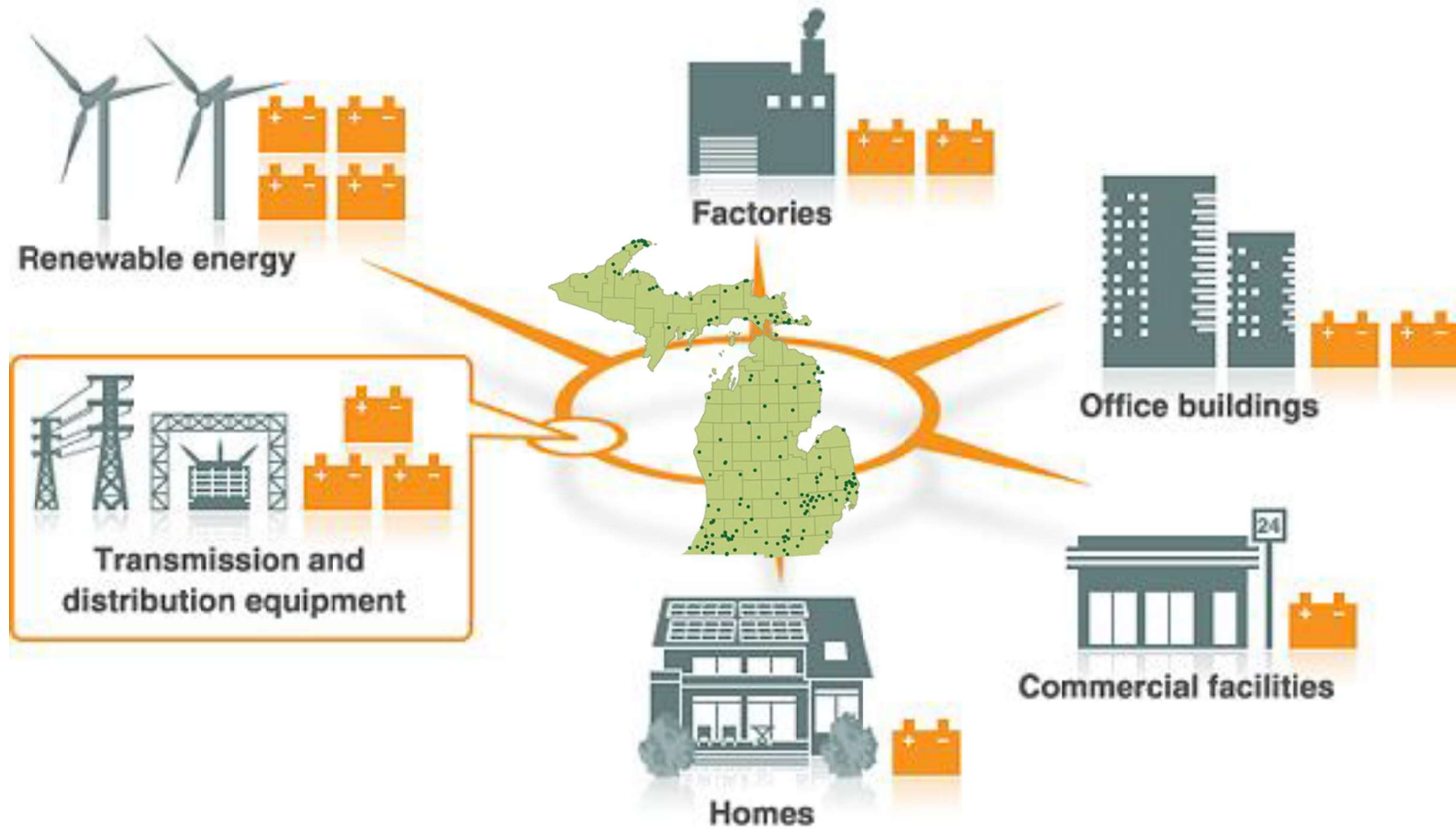
New products & businesses



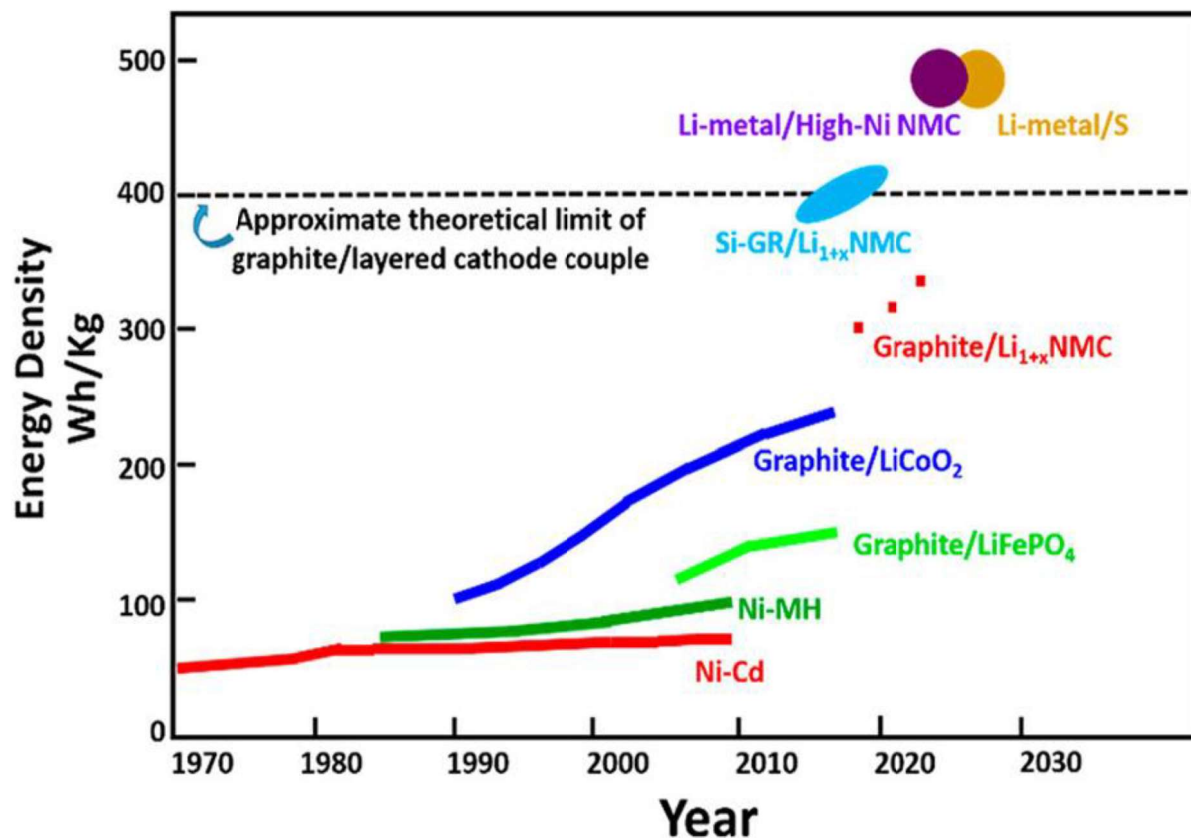
Climate change



Why Lithium Batteries Matter?



Development of Commercial Batteries

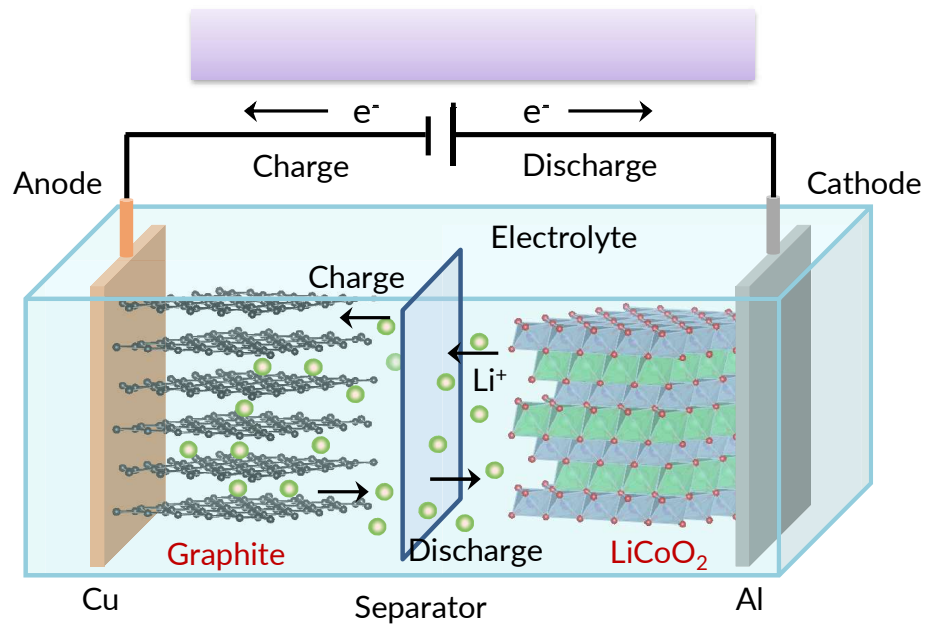


Chem. Rev. 2018, 118, 23, 11433-11456

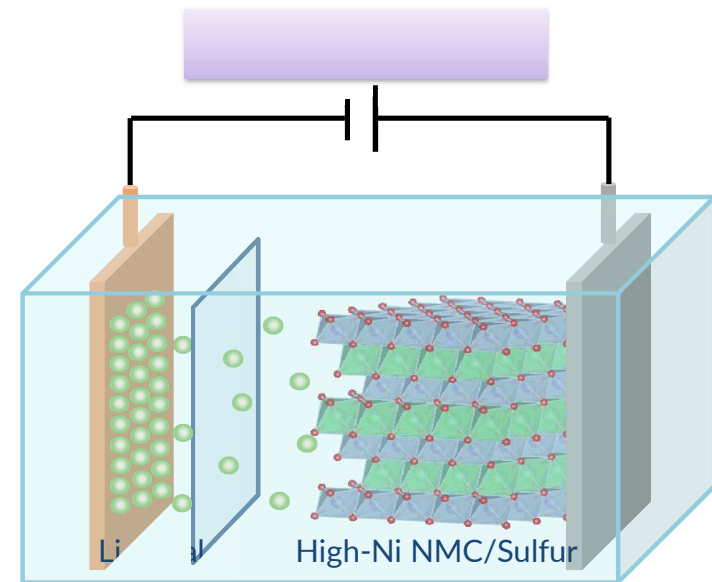
Electrified Transportation

- ✓ High Energy
- ✓ High Power
- ✓ Long Cycle Life
- ✓ Fast Charging
- ✓ Cold Temperature
- ✓ Low Cost
- ✓ Safe

Lithium Batteries: Now and Future



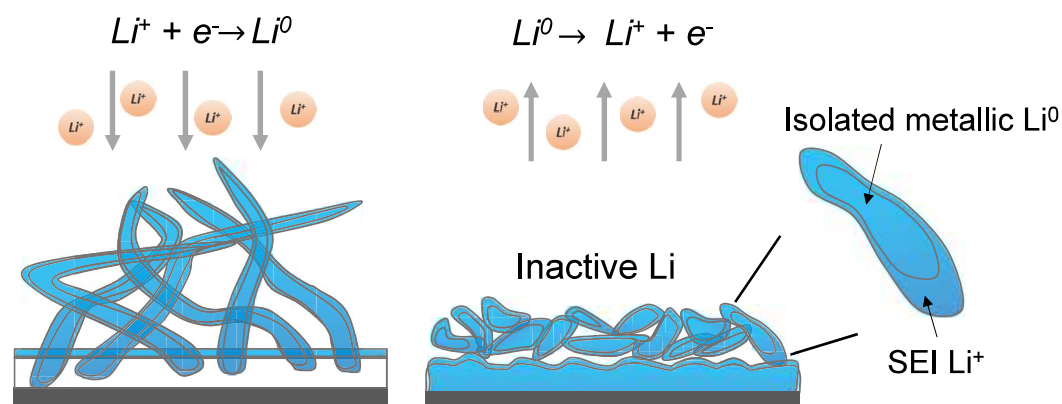
- Intercalation chemistry
- Reaching energy theoretical limitation
- Problematic at fast charging and low temperature operation



- Li electroplating/stripping
- Highest gravimetric energy density
- Reduce cost
- Potential for fast charging

Lithium Metal: the “Holy Grail” Anode

- ✓ Lightest solid
- ✓ Lowest negative potential (- 3.04 V vs. SHE)
- ✓ Ultra-high capacity (3860 mAh/g)
- ✗ Dendrite growth: safety issue
- ✗ Low Coulombic efficiency: short cycle life



Li plating

Li stripping

Dendrite growth
Safety issue

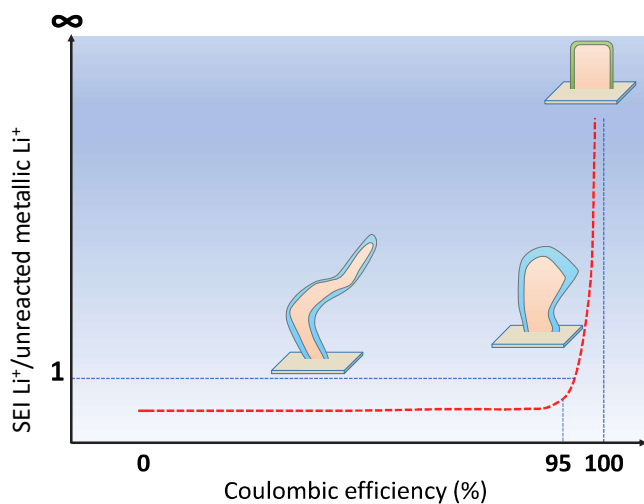
Low Coulombic efficiency
Short cycle life

C. Fang *et al*, *Trends in Chemistry*, 1, 152-158, 2019

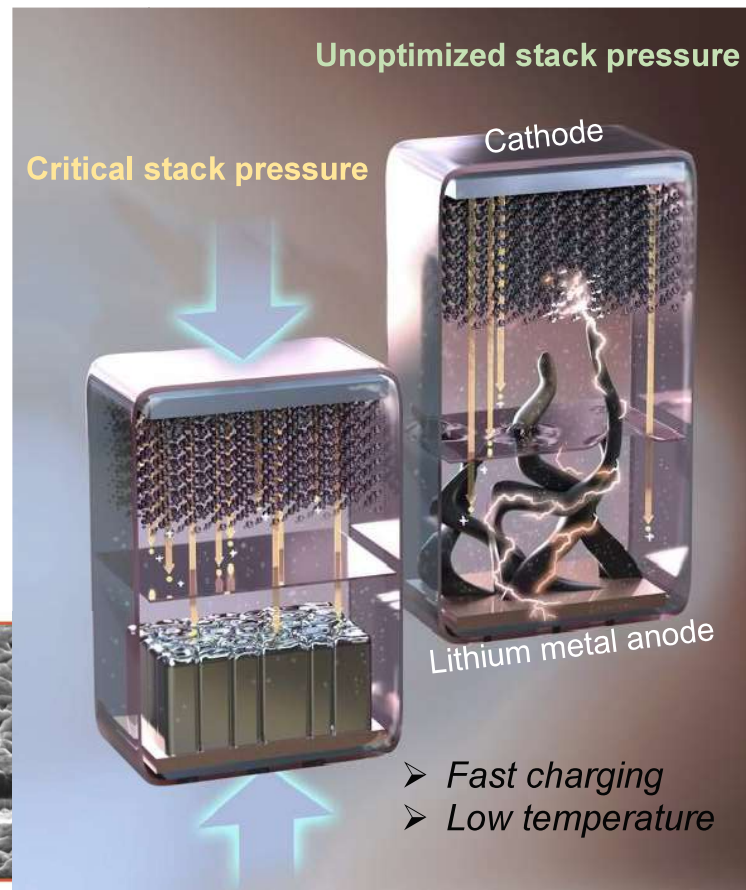
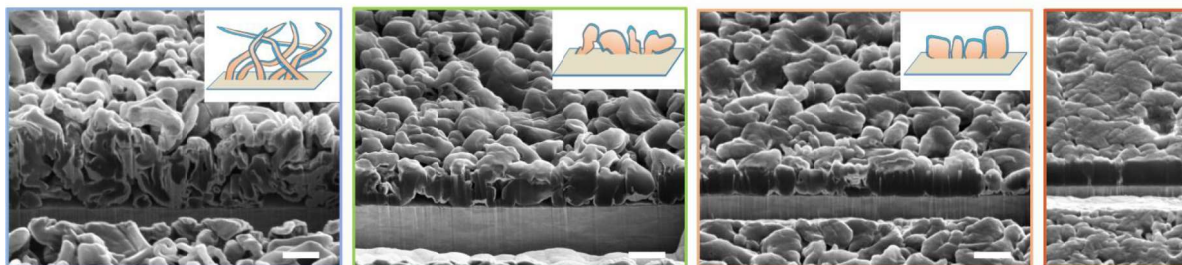
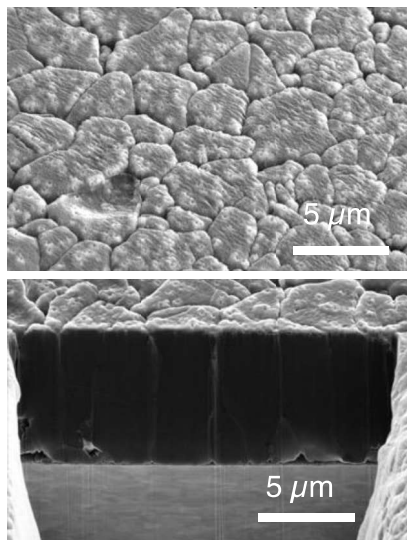


How to control the Li growth, from dendritic to fully dense?

Lithium Metal Battery Research at MSU

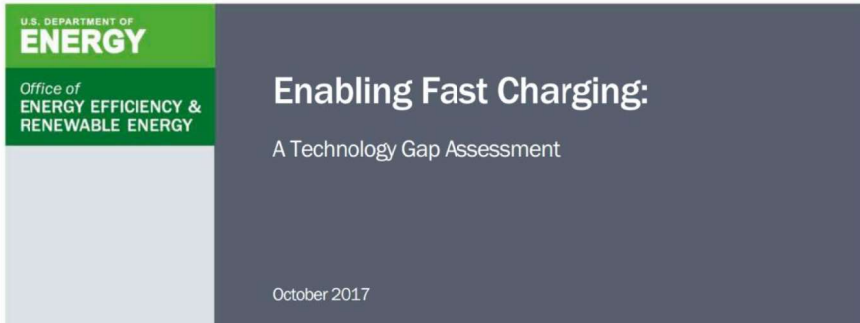


C. Fang, et al., *Nature*, 572, 511–515 (2019)



C. Fang, et al, *Nature Energy*, 6, 987-994 (2021)

Lithium Metal Battery Research at MSU



We are redefining and enabling the “Holy Grail” lithium metal battery at MSU.

Advanced fundamental understanding
Advanced materials
Advanced cell engineering
Advanced manufacturing

- ? Dendrite induced short circuit and thermal runaway
- ? CANNOT be used for high power
- ? CANNOT sustain high current density



Socioeconomic Impacts

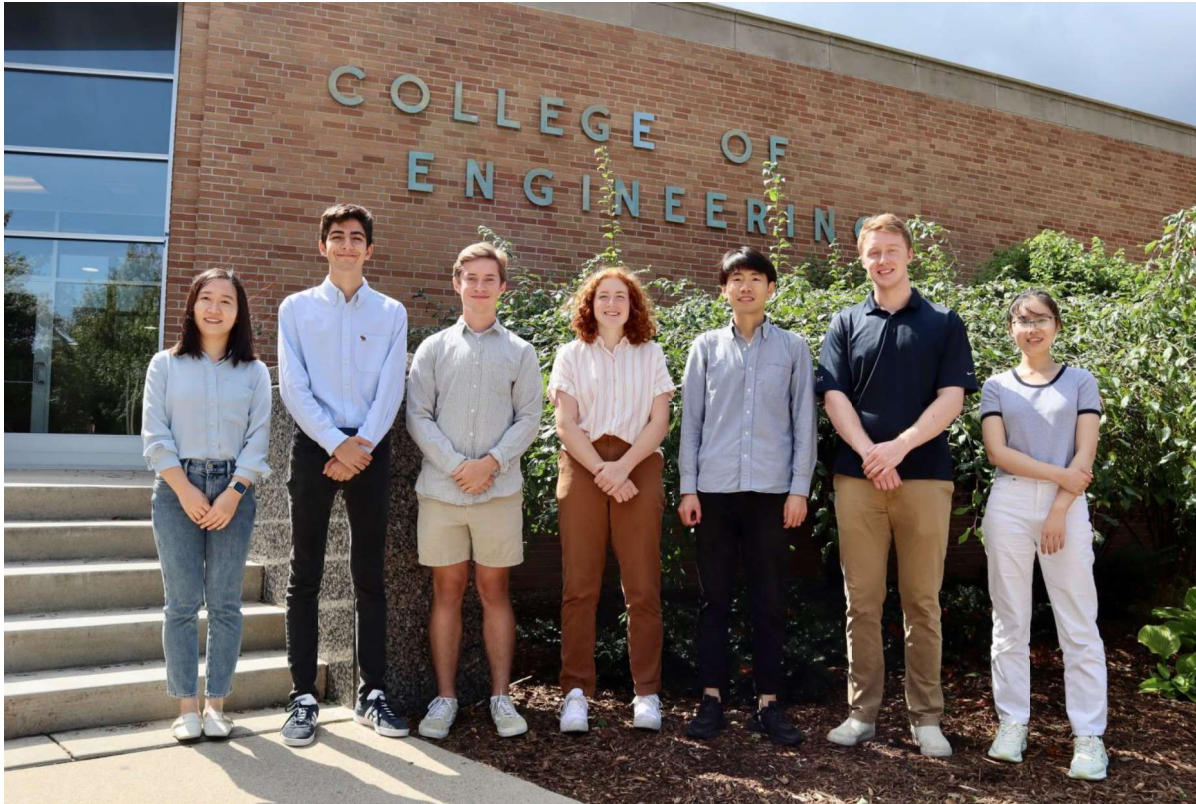


\$2.6 billion GM battery plant coming to Lansing
Total \$7 billion dollars in Lansing and Orion Township
5,000 well-paid jobs building electric vehicles and batteries

- Innovate battery design
- Advance battery manufacturing
- Enable green mobility
- Train talented workforce at different levels
- Drive local economy



Fang Research Group at MSU



2022 summer

Q&A

Thank you!

Attachment A

Overload Pay 03-17-03

The following policy was approved by the Board of Trustees on October 16, 1970 and revised on May 5, 2006 and . (A college may establish a more restrictive policy.)

I. Applicability

This Policy applies to full-time faculty members (tenure system and fixed term) at the rank of instructor through professor, full-time academic staff (including specialists, librarians, and extension field service staff), full-time executive managers, and full-time academic administrators (e.g., deans, department chairs, and school directors).

II. Overload Pay

Faculty and academic staff may request approval for overload pay for overload assignments related to teaching, research, outreach activities, and academic and student support activities. Executive managers and academic administrators may request approval for overload pay for overload assignments related to their administrative duties and/or expertise.¹

III. Required Approval

1. Overload pay assignments require prior written approval (a) by the immediate supervisor of the individual who will undertake the proposed overload pay assignment; (b) by the administrator of the major administrative unit ("MAU") in which that individual is appointed; and (c) if the unit in which the overload pay assignment is to be performed is different from the unit in which the individual is appointed, by the administrator of, and the MAU administrator for, the unit in which the overload pay assignment is to be performed.
2. In order to be approved, an overload pay assignment must meet the following minimum criteria:
 - The individual requesting overload pay must have a full-time assignment in her/his department, school, or other administrative unit and be satisfactorily performing her/his assigned duties; and
 - The individual's immediate supervisor, after consultation with the administrator of the MAU in which the individual is appointed, must determine that:
 - the proposed assignment represents a substantial increase over the individual's regularly assigned duties; and
 - after considering the other commitments of the individual, including her/his regularly assigned duties, approved outside work for pay, and other professional obligations, the proposed assignment will not adversely affect the individual's performance of her/his regularly assigned duties.
3. The approval of each overload pay assignment must be recorded on the Overload Pay form.

IV. Summer Appointments

Faculty and academic staff members appointed on an academic year basis may have part-time or full-time summer appointments in teaching, research, and/or outreach. The salary for such a

summer appointment may not exceed 3/9 of the faculty or academic staff member's salary during the previous academic year. These summer appointments are not considered overload pay assignments and are not subject to this Policy. However, faculty and academic staff members who hold full-time summer appointments are also eligible for overload pay assignments during the summer if such assignments are made pursuant to this Policy.

V. Other Provisions

1. The Office of the Provost shall provide an annual summary of overload pay disbursements made during the prior fiscal year to appropriate MAU administrators.
2. In recognition of collegial expectations usual in a community of scholars, University units may not pay honoraria to faculty members, academic staff, executive managers, or academic administrators for talks, seminars, etc., provided in usual classroom/seminar settings.
3. Individuals performing overload pay assignments pursuant to this Policy remain subject to the same University policies and procedures as are in effect during the performance of their regularly assigned duties.
- ~~4. Assignments which might normally justify the payment of overload pay may, by mutual agreement, be compensated for by subsequent release time for research, the assignment of additional graduate assistants/other support staff, or other forms of programmatic/professional support instead of by overload pay.~~
- 5.4. Major administrative units may establish lower maximum time limits for overload pay than those stipulated in this Policy.

Footnote:

¹ In accordance with the policy on Outside Work for Pay, faculty, executive managers, and academic administrators may request approval to engage in overload pay and/or outside work for pay for up to a total average of four (4) days per month during duty periods. Academic staff (who are not eligible to engage in outside work for pay) may request approval to engage in overload pay for up to an average of four (4) days per month.

Approval of Contract Terms, *Elijah Hamilton-Wray*

September 9, 2022

Page 2

SERVICE AGREEMENT TERM SHEET

Party:	Elijah Hamilton-Wray
Project Description:	Elijah Hamilton-Wray will render drawings of each location (30-35) in the <i>Eclipse</i> screenplay and render storyboard drawings in panel form for keys scenes in the <i>Eclipse</i> screenplay (approximately 50 scenes out of 184 total scenes)
Term/Length of Agreement:	One time purchase of drawings for \$6,237
Payment Terms:	Due July 22, 2022 or when approved by MSU Board of Trustees, whichever is later
Services Provided:	Elijah Hamilton-Wray will provide drawings to MSU. MSU to Elijah Hamilton-Wray: None
Use of University Facilities/ Personnel:	None
Organization Type:	Individual
Personnel Interest:	Jeffery C. Wray, a professor of film studies in the College of Arts and Letters, is the father of <i>Elijah Hamilton-Wray</i> . Professor Wray commissioned <i>Elijah Hamilton-Wray</i> for pre-production artwork on the film <i>Eclipse</i> .

LICENSE AGREEMENT TERM SHEET

Party:	IASO Therapeutics, Inc.
Project Description:	<p>License agreement for an exclusive world-wide license (including sublicensing rights through multiple tiers) to the following patents and biological material: TEC2017-0099, "Engineered virus-like particle Qβ as a novel carrier for vaccine development"; Biological materials: Qβ-A38K, Qβ-A38K/A40C/D102C; Qβ-A40C/D102C, WT-Qβ.</p> <p><i>The parties may add or remove technologies (including biological materials) under the agreement, including improvements generated under a separate sponsored research agreement, provided the change does not affect the financial consideration of the parties or the nature or extent of any pecuniary interest of MSU personnel.</i></p>
Term/Length of Agreement:	Latter of (a) Expiration or termination of licensed patent rights or (b) 10 year anniversary of the first commercial sale
Payment Terms:	<p>License Issue Fees: 7% equity in IASO</p> <p>Financial terms to include:</p> <ol style="list-style-type: none">(1) Royalties on net sales by IASO Therapeutics, Inc., and sublicensees of the products in the range of 2% to 5%. A 50% royalty reduction shall apply in the absence of patent rights. Anti-stacking clause will apply in the event IASO Therapeutics is required to license third party technology in order to practice MSU licensed technology.(2) Non royalty sublicense consideration in the range of 15% to 25%.(3) Pre-and -post commercialization milestone payments in the range of \$50,000.00 to \$30MM(4) Minimum annual royalty payments in the range of \$50,000.00 to \$150,000.00.(5) Patent expense reimbursement

Services Provided: By MSU to IASO Therapeutics, Inc.: None
By IASO Therapeutics, Inc., to MSU: None

**Use of University
Facilities/
Personnel:** None

Organization Type: Delaware Corporation

Personnel Interest: Xuefei Huang, Ph. D., MSU Foundation Professor, Departments of Chemistry and Biomedical Engineering, Institute for Quantitative Health Science and Engineering, and members of his families have, or may have options to buy, an interest in the company or are officers or paid employees of the company.

Option Agreement Term Sheet

Party:	LifeBlood Corporation
Agreement:	Option agreement for "Compositions and methods for diagnosing, monitoring and treating an autoimmune disease;" US Patent No. 10,627,415 (MSU TEC2015-0060)
Term:	18 months from the effective date of the option agreement
Financial Terms:	Option fee of \$1000
Services Provided:	By MSU to LifeBlood Corporation: None By LifeBlood Corporation to MSU: None
Use of University Facilities/Personnel:	None
Organization Type and Domicile:	Delaware corporation
Personnel Interest:	Dana Spence, Ph.D, Professor, Biomedical Engineering and Chemistry, College of Engineering, and Suzanne E. Summers, Research Assistant II, Institute for Quantitative Health, and members of their families own or have options to buy an ownership interest of more than 1% of the company. Dr. Spence is the scientific founder of LifeBlood Corporation and is an officer in the company.

PURCHASE AGREEMENT TERM SHEET

Party:	Med-O-Bloom Farms LLC
Project Description:	Med-O-Bloom Farms LLC will sell a used Skidsteer feed pusher attachment and 20 used calf blankets to MSU
Term/Length of Agreement:	Payment due 30 days from Invoice
Payment Terms:	\$1500 (\$900 for feed pusher and \$600 for calf blankets)
Services Provided:	Med-O-Bloom Farms LLC to sell to MSU MSU to Med-O-Bloom Farms LLC: None
Use of University Facilities/ Personnel:	None
Organization Type:	A Michigan limited liability Company
Personnel Interest:	James Good, a farm manager at the Dairy Cattle Research Center, holds an equity interest in the company.

SERVICE AGREEMENT TERM SHEET

Party:	Michigan Center for Rural Health
Project Description:	The main objective is to increase access to care for underserved veteran populations, improve care coordination for rural veterans, including underserved veterans and caregivers and increase access to pertinent services in mental health, substance abuse and other health care services.
Term/Length of Agreement:	August 1, 2022 to July 31, 2025
Payment Terms:	\$567,699.13
Services Provided:	MSU will provide services to the Michigan Center for Rural Health to increase health care access to underserved veteran populations. Michigan Center for Rural Health to MSU: None
Use of University Facilities/ Personnel:	West Fee Hall; Principal Investigator: Dr. Emre Umucu
Organization Type:	Michigan non-profit corporation
Personnel Interest:	Dr. Andrea Amalfitano, Dean of the College of Osteopathic Medicine, serves on the board of directors for Michigan Center for Rural Health, however, he is not listed as working on this project for MSU.

SERVICE AGREEMENT TERM SHEET

Party: Mid-Michigan Research LLC

Project Description: Testing of a Jetfire Engine Phase II

Term: July 1, 2022 to June 30, 2023

Payment Terms: \$115,000 payment to MSU for services

Services Provided: By MSU to Mid-Michigan Research LLC: MSU will oversee the testing of a Jetfire engine – Phase II.

By Mid-Michigan Research LLC to MSU: None.

Use of University Facilities/ Personnel: Services conducted in the Engineering Research South complex by Dr. Guoming Zhu

Organization Type: Mid-Michigan Research LLC, a Michigan limited liability company

Personnel Interest: Dr. Harold J. Schock, a Professor in the Department of Mechanical Engineering and members of his family own or have options to buy an ownership interest of more than 1% of Mid-Michigan Research LLC.

OPTION AGREEMENT TERM SHEET

Party:	Motion Grazer AI (MGAI)
Project Description:	Amendment #1 to Option Agreement
Term/Length of Agreement:	Term to be amended for 18 months to 36 months
Payment Terms:	There is no cost for the extension of MGAI's option term. Reimbursement of patent expenditures to be amended from Net 30 upon invoice to quarterly reimbursement plan.
Services Provided:	By MSU to MGAI: None By MGAI to MSU: None
Use of University Facilities/ Personnel:	N/A
Organization Type:	Michigan corporation
Personnel Interest:	Madonna Benjamin, an Assistant Professor in Large Animal Clinical Sciences, College of Veterinary Medicine; Daniel D. Morris, and Associate Professor in the College of Engineering; and Michael Lavagnino, and Academic Specialist in the College of Engineering; and members of their families, own, or have options to buy, an interest in the company.

Option Agreement Term Sheet

Party:	Polyplastic Technologies, LLC
Agreement:	Option agreement for an exclusive world-wide license to the patent rights of the following: TEC2021-0040, "Efficient Compatibilization of Polymers" The parties may add or remove technologies under the agreement, including improvements generated under a separate sponsored research agreement, provided the change does not affect the financial consideration of the parties or the nature or extent of any pecuniary interest of MSU personnel.
Term:	18 months from the effective date of the option agreement
Financial Terms:	Option fee of \$1,000
Services Provided:	By MSU to Polyplastic Technologies, LLC: None By Polyplastic Technologies, LLC to MSU: None
Use of University Facilities/Personnel:	None
Organization Type and Domicile:	Michigan limited liability company
Personnel Interest:	Dr. Muhammad Rabnawaz, Assistant Professor, MSU School of Packaging, and members of his family own or have options to buy and ownership interest of more than 1% of the company

OPTION AGREEMENT TERM SHEET

Party: RedoxBlox Inc.

Project Description: Option agreement for TEC2019-0035 Scalable Thermochemical Option for Renewable Energy Storage (STORES) and TEC2020-0080 Electrodes for High Temperature Heating of Conductive Ceramics in Oxidizing Environments

Term/Length of Agreement: 24 Month Option

Payment Terms: \$2,500

Services Provided: MSU to RedoxBlox Inc.: None
RedoxBlox Inc. to MSU: None

Use of University Facilities/ Personnel: None

Organization Type: Delaware corporation

Personnel Interest: Prof. James Klausner serves on the Board of Directors of company, Prof. Joerg Petrasch serves on the Board of Directors of company and as an Officer, and Research Associates Kelvin Randhir and Nima Rahmatian along with Doctoral Student Alessandro Bo have a 1% or greater interest in the company

OPTION AGREEMENT TERM SHEET

Party:	RedoxBlox Inc.
Project Description:	Exclusive License Agreement of the following technology: (1) TEC2019-0035 Scalable Thermochemical Option for Renewable Energy Storage (STORES) (2) TEC2020-0080 Electrodes for High Temperature Heating of Conductive Ceramics in Oxidizing Environments (3) TEC2021-0011 Solid Solar Thermochemical Fuel Apparatus (SoFuel 1) (4) TEC2021-0046 Solid Solar Thermochemical Fuel Apparatus for Hydrogen Production (SoFuel 2) (5) TEC2022-0121 Oxidation Reactor for Solid Solar Thermochemical Fuel (SoFuel 3)
Term/Length of Agreement:	Until the last expired patent right
Payment Terms:	Equity w/pro rata rights, running royalty on Net Sales, minimum annual royalty, share of sublicense revenue, 100% reimbursement of all past and future patent costs.
Services Provided:	MSU to RedoxBlox Inc.: None RedoxBlox Inc. to MSU: None
Use of University Facilities/ Personnel:	None
Organization Type:	Delaware corporation
Personnel Interest:	Prof. James Klausner serves on the Board of Directors of company, Prof. Joerg Petrasch serves on the Board of Directors of company and as an Officer, and Research Associates Kelvin Randhir and Nima Rahmatian along with Doctoral Student Alessandro Bo have a 1% or greater interest in the company.

PURCHASE AGREEMENT TERM SHEET

Party:	Tucker Mays Farm
Project Description:	Tucker Mays Farm will sell to MSU 4,000 small square bales and 50 large round bales of straw to be delivered by November 1, 2022.
Term/Length of Agreement:	Payment due 30 days from Invoice
Payment Terms:	\$18,000
Services Provided:	Tucker Mays Farm to sell to MSU MSU to Tucker Mays Farm: None
Use of University Facilities/ Personnel:	None
Organization Type:	An Individual
Personnel Interest:	Wesley Mays, an assistant farm manager at the Sheep farm is Tucker Mays' brother.

RESEARCH AGREEMENT TERM SHEET

Party:	Ubiquitous Energy, Inc.
Project Description:	Additional research and funding for Transparent and Perovskite Solar Cell Devices (PD 58491)
Term/Length of Agreement:	January 1, 2022 – December 31, 2024
Payment Terms:	\$35,000 to MSU to fund additional research
Services Provided:	By MSU to Ubiquitous Energy: Research towards identifying and demonstrating new semiconductor materials. By Ubiquitous Energy to MSU: None
Use of University Facilities/ Personnel:	MSU Facilities, Dr. Lunt's Molecular and Organic Excitonics Laboratory.
Organization Type:	Delaware corporation
Personnel Interest:	Dr. Richard Lunt, the Johansen Crosby Endowed Professor in the Department of Chemical Engineering and Materials Science, and his family own or have options to buy an ownership interest of more than 1% but less than 5% of the company.