



BOARD OF GOVERNORS
Strategy & Planning Committee (S&P)

October 7, 2021
2:00 p.m. to 4:55 p.m.
[Videoconference](#)
+1 613-916-5030 PIN: 478139092

Members: Lynne Zucker (Chair), Eric Agius, Ahmad Barari, Carla Carmichael, Kevin Chan, Christopher Collins, Mitch Frazer, Matthew Mackenzie, Steven Murphy, Dietmar Reiner, Joshua Sankarlal, Jim Wilson

Staff: Sarah Cantrell, Becky Dinwoodie, Cheryl Foy, Les Jacobs, Lori Livingston, Brad Maclsaac, Sue McGovern

AGENDA

No.	Topic	Lead	Allocated Time	Suggested Start Time
	PUBLIC SESSION			
1	Call to Order	Chair		
2	Agenda (M)	Chair		
3	Conflict of Interest Declaration	Chair		
4	Minutes of Public Session of Meeting of May 13, 2021 (M)	Chair		
5	Chair's Remarks	Chair		2:05 p.m.
6	President's Remarks	Steven Murphy	10	2:10 p.m.
7	S&P Terms of Reference Review* (D)	Becky Dinwoodie	5	2:20 p.m.
8	Strategy			
8.1	Strategic Discussion: Strategic Priorities for 2021-2022*	Steven Murphy & Lori Livingston	30	2:25 p.m.
9	Planning			
9.1	Strategic Plan Oversight* (D)	Lori Livingston & Sarah Cantrell	10	2:55 p.m.
9.2	Integrated Plan: Process & Enrolment Update (U)	Lori Livingston	10	3:05 p.m.

No.	Topic	Lead	Allocated Time	Suggested End Time
9.3	Board Retreat Planning (D)	Steven Murphy & Cheryl Foy	10	3:15 p.m.
10	Significant Project & Contract Oversight		15	3:25 p.m.
10.1	New building* (U)	Brad MacIsaac		
10.2	ACE enhancement* (U)	Brad MacIsaac		
10.3	AVIN* (U)	Les Jacobs		
11	Other Business	Chair		3:40 p.m.
12	Adjournment (M)	Chair		3:45 p.m.
	BREAK		10	
	NON-PUBLIC SESSION (material not publicly available)			3:55 p.m.
13	Call to Order	Chair		
14	Conflict of Interest Declaration	Chair		
15	Minutes of Non-Public Session of Meeting of May 13, 2021* (M)	Chair		
16	President's Remarks	Steven Murphy	5	4:00 p.m.
17	Planning			
17.1	2021-2022 Work Plan Review* (I)	Becky Dinwoodie	5	4:05 p.m.
17.2	Strategic Space Planning* (M)	Brad MacIsaac	20	4:10 p.m.
18	Advancement	Sue McGovern	15	4:30 p.m.
18.1	Advancement Update* (U)(P)			
18.2	Million Dollar Matching Fund* (U)			
19	Other Business	Chair		
20	In Camera Session	Chair	10	4:45 p.m.
21	Termination (M)	Chair		4:55 p.m.

Becky Dinwoodie, Secretary



**BOARD OF GOVERNORS
Strategy & Planning Committee (S&P)**

**Minutes of the Public Session of the Meeting of Thursday, May 13, 2021
2:00 p.m. to 3:15 p.m., Videoconference Only**

Attendees: Thorsten Koseck (Chair), Liqun Cao, Kevin Chan, Mitch Frazer, Steven Murphy, Dietmar Reiner, Jim Wilson, Lynne Zucker

Regrets: Azzam Abu-Rayash

Staff: Jamie Bruno, Becky Dinwoodie, Cheryl Foy, Barb Hamilton, Lori Livingston, Sue McGovern

Guests: Chelsea Bauer (FA), Mike Eklund (FA)

1. Call to Order

The Chair called the meeting to order at 2:02 p.m.

2. Agenda

Upon a motion duly made by D. Reiner and seconded by J. Wilson, the Agenda was approved as presented.

3. Conflict of Interest Declaration

There was none.

4. Chair's Remarks

The Chair thanked everyone for attending the meeting. He noted it is the last committee meeting of the Board year. He thanked C. Foy, B. Dinwoodie, L. Livingston, and S. Murphy for all of the work that happens behind the scenes to plan and conduct the meetings.

5. President's Remarks

The President noted that things will continue to change and it is important to build a model of learning that can adapt to these changes. He noted the on-campus experience is a rich and important one and should be built upon whenever possible. The President stated that when we can be back together safely, we will do so as the guidelines allow. He

commended the Provost for all of her work and for encouraging nimbleness in the university's planning and response.

The President discussed the effects of the province's tuition reduction, followed by a tuition freeze. Institutional autonomy has never been under greater threat in his lifetime than it is right now. Maintaining autonomy relies upon strong governance and transparency. The President noted that this is happening not only in Ontario, but in other provinces, as well. We are witnessing changes to the sector and attempts to defund the sector. As we come out of COVID and government budgets are stretched, it will be important to emphasize that the investment in education is investing in the government's people.

The President also discussed the importance of learning from what we have gone through. The pandemic has created circumstances from which we can learn by failure. We learned from the emergency transition online and improved upon that experience this year. Faculty are accomplishing innovative things during the lock down. If we continue to learn through the stages of the pandemic, we will come out stronger. It is integral to focus on the student experience and on using technology to enhance learning.

The Chair thanked the President and his team for a successful transition to online learning. The Chair noted there has been a marked contrast in the experience of his children who attend different universities. The online experience might present a challenge for alumni engagement and advancement, which will make the "sticky campus" all the more important. The President added that they are aware that when return to campus, whether a high school student or returning students, there is a desire to build a community as quickly as possible. Must also consider how we become embedded in a lifelong learning process through graduate degrees or microcredentials, which will also help continue to build a sense of community.

6. Strategy

6.1 Strategic Discussion: Academic Programming

The Provost delivered a presentation on academic programming, which was also included in the meeting material. The committee had the following comments and questions based on the presentation:

- important to focus on the marketing strategy for student recruitment;
- also emphasize that we have programs that will get graduates a job;
- focus on quality of programs being offered – will help build reputation, which will help attract students;
- concern about loss of market share for some of our STEM programs – might not be able to be addressed by creative marketing;
- decline in nuclear and radiation programs - need to see a stronger political voice highlighting nuclear as a clean energy and as a measure to help combat climate change;

- What prevents us from growing course-based Masters programs?
 - political pressures;
 - we do not have much room to support rapid growth of professoriat in those areas;
 - must be strategic in areas of growth;
 - enrolment viability is important but not struggling at the moment – we are paying attention to those programs with stagnant or declining enrolment and monitoring the costs of running those programs;
 - committed to stay on top of monitoring the numbers – tracking them year over year; and
 - Registrar is aware of the trends over 5 years and projections for hot areas of study – related to market viability – we pay close attention to enrolment and application trends.
- nuclear/manufacturing engineering – might be too specific for high school students – consider giving them more generic names to help get students into the program;
- consider implementing industry advisory committees to help repackage programs;
- How do we stay ahead of the game (e.g. autonomous and electric vehicles – is university also monitoring these trends)?
 - the Provost advised that we closely monitor the market viability of programs for our students – new programming is based on an analysis of the market to begin with – part of new program proposals;
 - all about marketing – important to elevate our reputation – challenge of being a young university – marketing in a conscious way that we offer programming that is aligned with our founding mission; and
 - important to diversify our offerings – Registrar and his team are doing an incredible amount of work with respect to market analysis and marketing for student recruitment.

6.2 International Recruitment Strategy

L. Livingston provided an overview of the report included in the meeting material and responded to questions from the committee. She thanked the Registrar and his team, as well as S. McGovern's team, for coordinating the virtual Open Houses. A member asked whether the university is actively planning for contingencies based on continuing travel restrictions for international students. L. Livingston noted the challenges related to investing too heavily in any single country because of geopolitical considerations. A member expressed support for having a target to be achieved. The university's number of international students is among the best in the province right now, likely because of the strength of our remote platform and our ability to offer remote learning until international students are able to travel to Ontario.

6.3 Strategic Planning Metrics

L. Livingston reported that they are working on identifying the most important KPIs and will return to the committee in the fall with recommendations on updated metrics. She responded to questions from the committee. L. Livingston advised that they are conducting a thorough analysis of the university's key documents (Integrated Plan, SMA, etc.) in order to establish the proposed metrics.

7. Planning

7.1 Annual Board Report

B. Dinwoodie presented the draft annual Board report (included in the meeting material) for review and approval.

Upon a motion duly made by D. Reiner and seconded by K. Chan, the Strategy and Planning Committee approved the Annual Board Report, as presented.

8. Consent Agenda

Upon a motion duly made by L. Zucker and seconded by J. Wilson, the Consent Agenda was approved as presented.

8.1 Endowment Disbursement

8.2 Minutes of Public Session of Meeting of March 18, 2021

9. Other Business

10. Adjournment

Upon a motion duly made by L. Zucker, the public session adjourned at 3:15 p.m.

Becky Dinwoodie, Secretary

BOARD OF GOVERNORS STRATEGY AND PLANNING COMMITTEE

1. Terms of Reference

The Strategy and Planning Committee is a standing committee of the university's Board of Governors and is responsible for overseeing the strategic planning for all aspects of the university and assessment of the implementation of the university's plans in the context of the university's vision, mission and values.

The Committee will engage in broad strategic planning by reviewing, at least once every 2 years, and making recommendations to the Board on the following:

- i) the university's strategic plan;
- ii) the plans supporting the implementation of the strategic plan, including those plans that reinforce the core mission of the university including, but not limited to plans in the area of:
 - (1) strategic differentiation and positioning;
 - (2) government and institutional relations;
 - (3) advancement;
 - (4) infrastructure, and;
 - (5) strategic plan performance metrics.
- iii) strategic foresight, risk, and scenario planning;
- iv) annual Board of Governors retreat planning; and
- v) other areas as the Board may assign to the Committee.

The Committee will also oversee the sale or acquisition of real property, including any major renovation or construction projects.

Governance, governance plans and human resources plans are within the purview of the Governance, Nominations and Human Resources Committee.

2. Meetings

The Committee will meet at least four (4) times per year, or otherwise at the Committee's discretion. In accordance with the university's Act and the Board of Governors Meeting Policy and Procedures, the Committee will conduct three types of Meetings as part of its regular administration: Public, Non-Public and *In Camera* (when required).

3. Membership

The Committee will be composed of:

- Between three (3) and seven (7) external governors
- Up to four (4) elected governors

The Chair and Vice-Chair will be selected from among the external governors.

4. Quorum

Quorum requires that half of the Committee members entitled to vote be present.

Strategic Priorities for 2021-2022:

The spring release of the 2021-2023 Integrated Academic-Research Plan marked an enduring commitment to our four priority areas; Learning Re-imagined, Creating a Sticky Campus, Tech with a Conscience and Partnerships. These priorities, when acted upon, will move us towards realizing our University Vision. The following are areas of focal points and actions for the 2021-22 year to move our priorities forward.

1. Sticky Campus: Commitment to Mental Health and Equity, Inclusion and Diversity: Provide supplemental supports by increased resources for faculty, staff and students. Strong acknowledgement of stressors experienced by community members contributed by global pandemic. Concentration on the potential changes to work settings with greater focus on employee choice, conditions to ensure positive engagement and an environment that promotes inclusion, collaboration and equity.
2. Sticky Campus/Learning Re-imagined: Student-centric university: Strategic Enrolment Management Framework – Long term enrolment plan aligned with institutional vision and priorities; retention programming. Concentration on student success and the entire student lifecycle with greater focus on digital recruiting, analytics to help student success and enhanced connections with alumni for life-long learning.
3. Learning Re-imagined/Tech with a Conscience: Innovative programming: Re-invent learning by defining and constructing high-quality pedagogical practices specifically designed for use with technological solutions and experiential components.
4. Learning Re-imagined/Tech with a Conscience: Differentiated Technology and physical space:
Invest in, and utilize, an expanded array of technological platforms and assets while simultaneously exploring and identifying new opportunities in relation to the technology pedagogy interface. Repurpose and re-imagine space to support learning, research and community engagement.
5. Learning Re-imagined/Partnerships: Incentivize Scholarship of Teaching and Enhancing Teaching Practices: Focus on leading in pedagogical research that is learner focused.



COMMITTEE REPORT

SESSION:

Public
 Non-Public

ACTION REQUESTED:

Decision
 Discussion/Direction
 Information

Financial Impact Yes No

Included in Budget Yes No

TO: Strategy & Planning Committee

DATE: October 7, 2021

PRESENTED BY: Dr. Lori Livingston, Provost and Vice-President, Academic & Sarah Cantrell, AVP – Planning and Strategic Analysis

SUBJECT: Update on Strategic Planning Processes

COMMITTEE/BOARD MANDATE:

The committee is responsible for overseeing the strategic planning for all aspects of the university and assessment of the implementation of the university’s plans in the context of the university’s vision, mission and values.

Accordingly, we are providing the committee with an informational update on how our plans and planning processes are evolving toward higher degrees of alignment and integration.

BACKGROUND/CONTEXT & RATIONALE:

The most recent version of the Integrated Academic Research Plan (IARP) 2021-2023 was released in April of this year. Built on the university’s four strategic pillars (i.e., Tech with a conscience; Learning re-imagined; Creating a sticky campus; and, Partnerships), it aligns our recently updated Vision, Mission, and Values with clearly defined priorities, commitments, and action statements. Importantly, integrated planning allows for a sustainable approach to planning the builds relationships, aligns planning efforts within an organization, and emphasizes institutional progress and student success.

Integrated planning has been adopted by universities throughout Canada and provides for sustained focus on an institution's priorities while simultaneously aligning planning activities, operational cycles, and resource allocation processes. By doing so, conscious decisions are made on resourcing priorities and regular progress towards plans may be measured.

Today we are providing you with an overview of our integrated planning process at Ontario Tech. We will also be discussing and seeking your input on how our planning efforts are maturing to include the identification of key metrics and greater alignment with our annual budgeting processes.

SUPPORTING REFERENCE MATERIALS:

- Link to the Integrated Academic Research Plan (2021-2023)
https://shared.ontariotechu.ca/shared/departement/provost/5442_pro_integratedacademicresearchplan_summary_v5_web.pdf
- Link to the Strategic Research Plan 2020-2025
https://shared.ontariotechu.ca/shared/departement/research/documents/ontariotechstrategicresearchplan_2020-2025_final.pdf



Fall 2021 Strategic Plan Oversight



Ontario Tech Planning – Evolving Our Planning Processes

Integrating Our Planning Documents

Integrated Academic-Research Plan 2021-2023
Vision, Mission, Values, Priorities, Commitments

Strategic Pillars
Strategic Mandate Agreement

Enabling Plans

Enrolment
Plan

Institutional
Budget

Master Plan

Resourcing Plans

Budget Plan

Complement
Plan

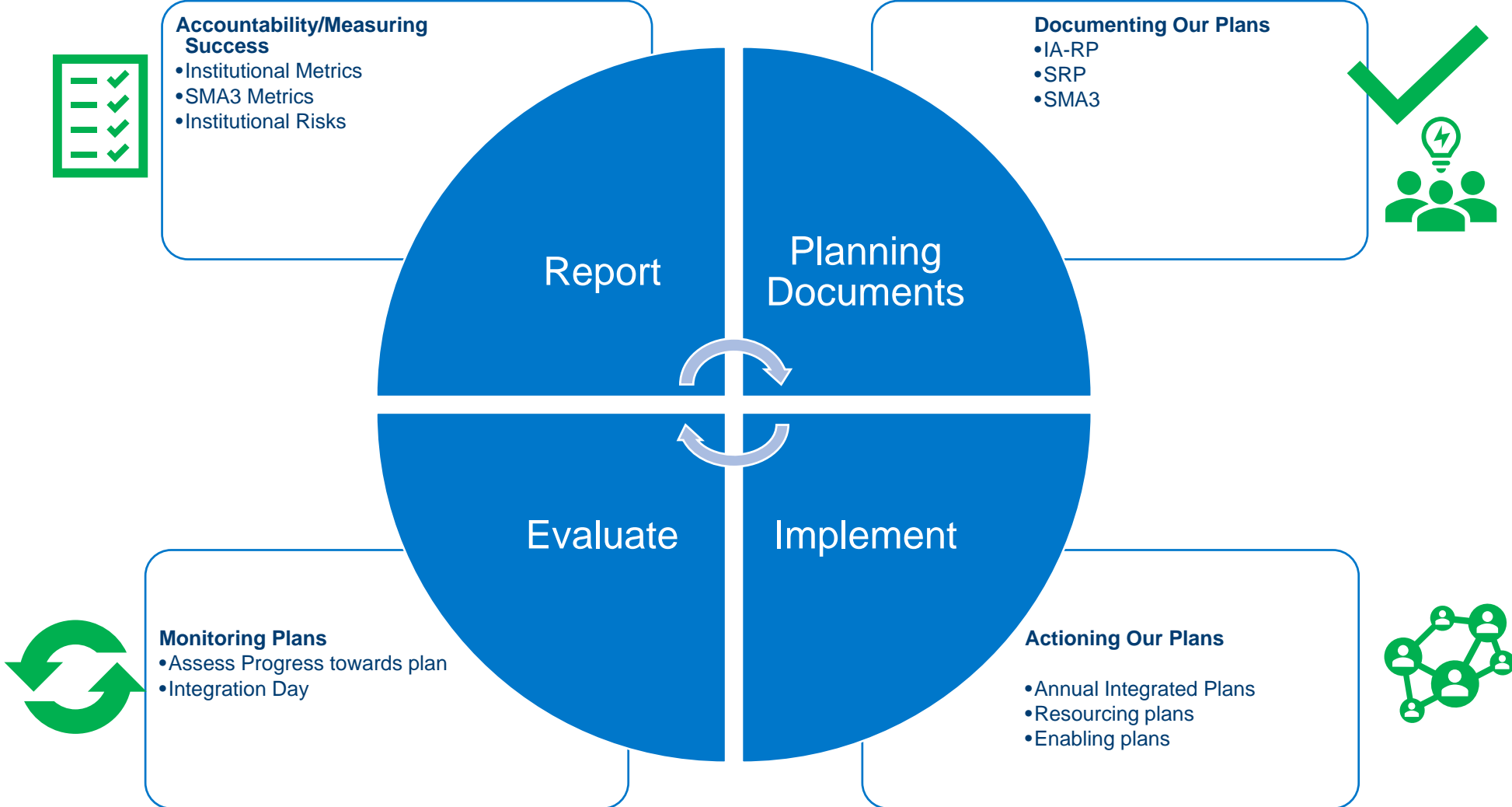
Capital Plan
(Includes IT)





Planning Process – Bringing Our Plans to Life

Actioning Our Plans – Evaluating Our Performance





Planning Cycle Alignment

Annual Reporting Against our Priorities

Qualitative and Quantitative Metrics

Tech with a Conscience



Learning Re-imagined



Creating a Sticky Campus



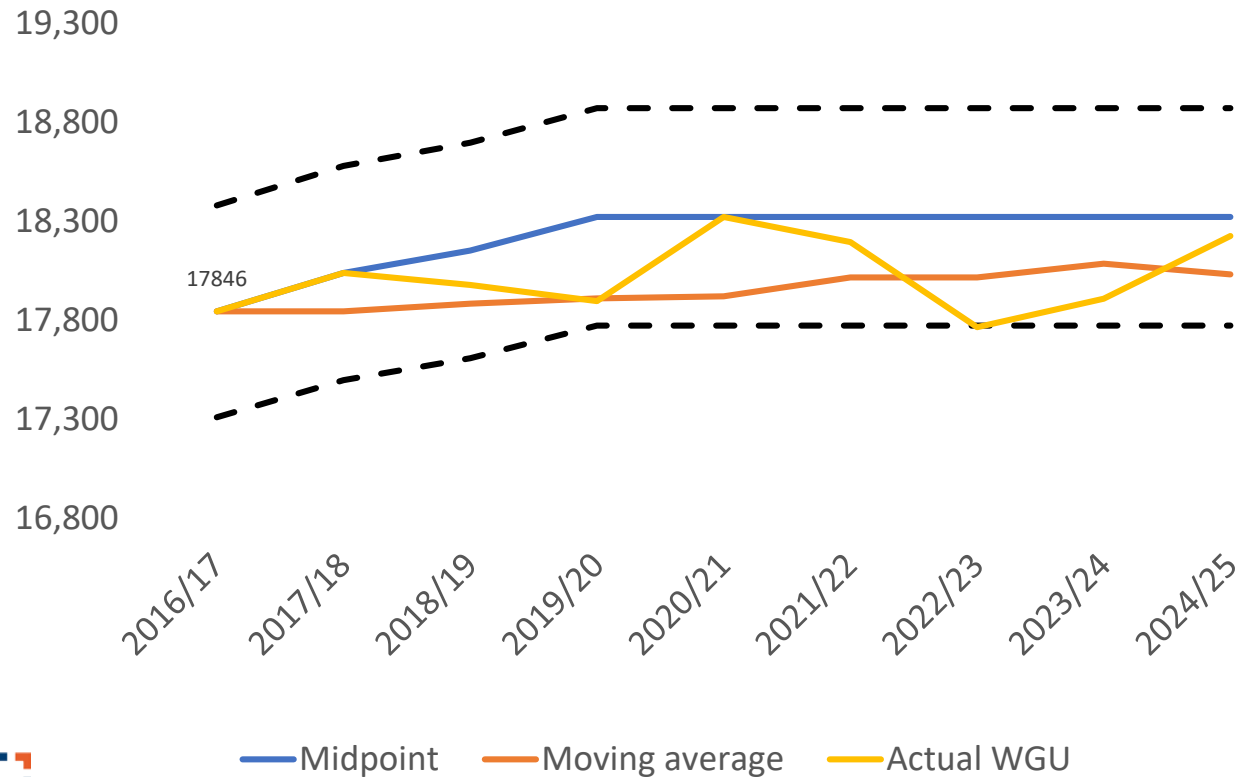
Partnerships



Accountability – SMA3 Metrics

Enrolment Commitments and Performance Based Funding

Enrolment Corridor



Performance Metrics

Graduate Employment Rate in a Related Field
Institutional Strength/Focus
Graduation Rate
Community/Local Impact of Student Enrolment
Economic Impact (Institution-specific)
Research Funding and Capacity: Federal Tri-Agency Funding Secured
Experiential Learning
Research Revenue Attracted from Private Sources
Graduate Employment Earnings
Skills and Competencies





COMMITTEE REPORT

SESSION:

Public
 Non-Public

ACTION REQUESTED:

Decision
 Discussion/Direction
 Information

TO: Strategy & Planning

DATE: October 7, 2021

PRESENTED BY: Brad Maclsaac, VP Administration

SUBJECT: Shawenjigewining Hall Project – Update

COMMITTEE/BOARD MANDATE:

The Strategy and Planning Committee is responsible for overseeing the strategic planning for all aspects of the university and assessment of the plans in the context of the university’s vision, mission and values. More specifically, the committee oversees any major renovation or construction projects.

BACKGROUND/CONTEXT & RATIONALE:

In June 2018 the Board of Governors approved issuing a Request for Proposal for a feature building to complete the Polonsky Commons quad. The intent for this building was not so much about more space but rather higher quality space as we planned to move Student Life and Student Union out of temporary structures and into their new home. Additionally, the space would allow the Faculty of Health Sciences to start to consolidate in one location rather than being spread across numerous buildings.

Beginning July 2018, the university engaged in an inclusive and comprehensive consultation process. The visioning sessions were instrumental in establishing key building planning principles that included notions of the Sticky Campus, Expanding on the notion of Pedagogy and Technology, as well as Wellness. Though all three

elements informed the design process, Wellness emerged as a critical springboard in the



Design Team Member discussing aspects of the design with students. ERC atrium, September 27

overall building organization. Influenced through discussions with indigenous stakeholders who appealed to the team to introduce non-linear and curved spaces, the concept of flow has led to an overall building arrangement that promotes unfettered movement and engagement. This is accomplished through a series of continuous

circulation corridors and curved openings on lower floors to promote penetration of light into the building as well as visual connections. Also critical in influencing these planning decisions were conversations with accessibility champions who expanded on the concept of flow, leading to operable doors on all classrooms, which significantly goes above and beyond current building code requirements.

In addition to direct stakeholder consultations, there were ‘pop-up’ sessions where the design team created temporary presentation centres. Here the design team displayed project graphics aimed at engaging and informing the university community. The team was available to answer questions and solicit feedback both through conversation and by encouraging people to write comments on sticky notes. Interestingly, comments tended to focus on campus experience fundamentals such as need for more varied study spaces. Many of these elements are touchstones in the building design as details evolved.



Design graphics for review, along food service line up. UA, October 18

In November 2018, after reviewing the goals and options, the Board approved a business case for the construction of a six-story, \$48M building connected to the Energy Research Centre. This included a shelled floor that provides the university the opportunity to quickly respond to any future matching grant opportunities as we have a design for the remaining health sciences faculty and research labs. This structure will

increase the quantity of purpose-built, permanent space on campus as well as significantly enhance the learning environment of our university.

Construction began in June of 2019 with a rocky start as we discovered higher ground water levels than anticipated. As we had an existing portable on the site we measured levels around the site but were not able to access to exact area. Additionally, we created a manmade water feature when we hit a watermain. With a softer ground we had to add in extra foundation, which took time we did not have in the schedule. As we got back on the project track entering into 2020, the unexpected pandemic lockdowns shutdown parts of the site for five weeks. However, COVID actually presented some opportunities. We were able to work with our construction team to explore ways to speed up the schedule. As the campus had minimal stakeholders coming in we were able to use a parking lot for laydown and storage. Further, although supply shortages affected us, we prioritized building elements such that certain elements could be pushed until towards the end of the project. For example, about two floors worth of wooden doors were delayed until mid-September.

In September 2021 the university gained occupancy of Shawenjigewining Hall. The components pertaining to the three key planning principles can be seen throughout the building. We have allocated areas for students to study, collaborate and network in desirable areas facing out the windows; we have created classrooms being generic shells (able to be easily modified) without podiums to be prepared for the learning of tomorrow; and we focused on wellness/ sustainability as the new building will draw from an existing geothermal grid and be filled with natural light.

While we are still working through a deficiency list the project was delivered on time and we are fully expecting it to be completed on budget.

NEXT STEPS:

Close out deficiency list

SUPPORTING REFERENCE MATERIALS:

Shawenjigewining Hall update – September 2021

Shawenjigewining Hall

(New Building Project)

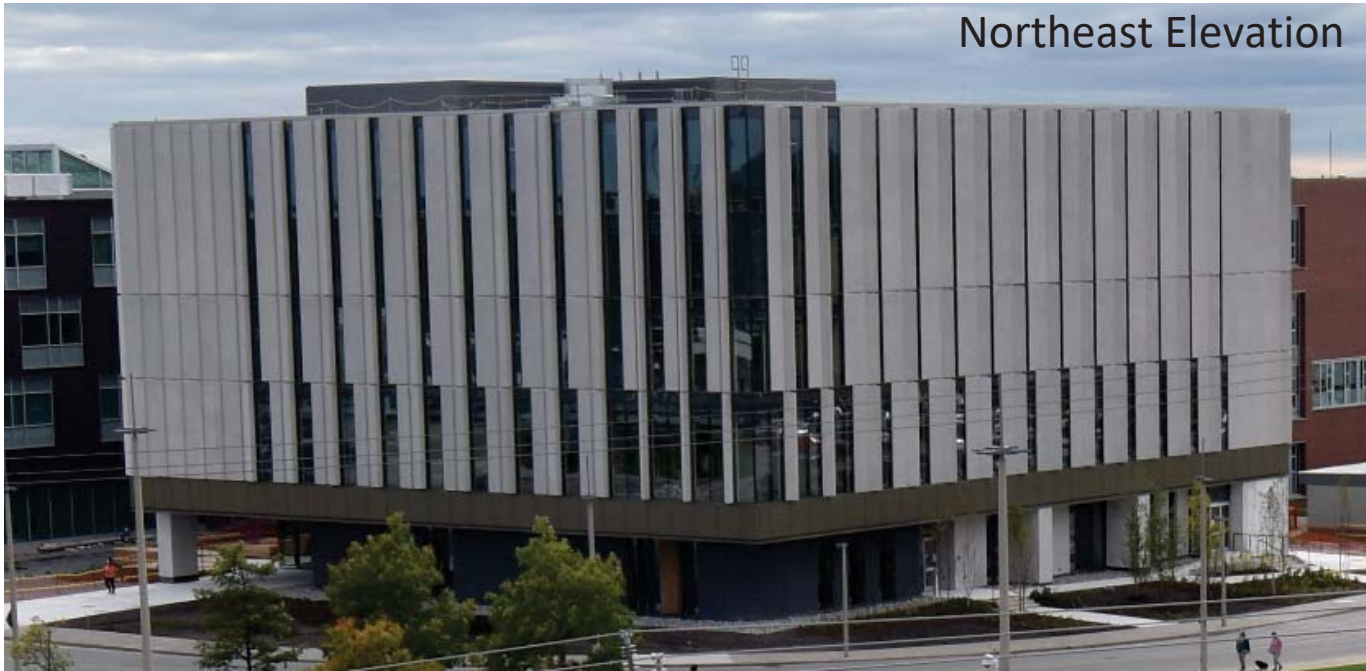


August Project Update
1 October 2021

New Building Update

Construction Achievements (30 September 2021)

- Washroom accessories completed
- Internal door and hardware installation completed
- IT Network installation completed
- Security Surveillance system completed
- Landscape work on going
- Testing and Commissioning on-going
- Electro-mechanical devices installation yet to complete
- Audio-visual system on-going
- Millwork installation yet to complete
- Wayfinding signage and graphics installation on-going
- Building Occupancy obtained 3rd September
- FHS, OSL, USU and CL moved to the building



Northeast Elevation



Southeast Elevation



← 3rd Floor
Elevator
Lobby

2nd Floor
Link to ERC



← Enhanced
Classroom

1st & LL view
from 2nd floor



Forecast Schedule

Next Period Plan

- Electro-mechanical fixtures & devices installation completion
- Audio-visual system completion
- Millwork completion
- Door and hardware installation completion
- Landscape completion
- Replacement of exterior temporary doors
- Mechanical system testing and commissioning completion
- Wayfinding signages and graphics installation completion
- Deficiencies inspection and rectification
- Occupancy pending documents submission
- Project As-built documentation commenced
- Facilities Training and handover

Risk Reporting

- 1 medium risk events closed – Project Schedule Delay
- 19 low risk events closed
- 4 remaining low risks to monitor

Risk Description			Risk Response	Risk Monitoring
Risk ID	Risk Event	Event Effect/ Impact	Completion Date	Status/ Comments
PR04	FFE completion delays not meeting move in date	Owner's move delayed	2021 Oct 31	FFE Design coordination completed 2021.01.08 Furniture tender completed AV tender completed Millwork tender completed Surveillance system completed Internal signage tender completed
PR20	Budget Cost overrun	Project run out of budget	2021 Oct 31	
PR30	Contractual Contention	Cost and schedule dispute	2021 Oct 31	
PR31	Pandemic COVID-19 Impact to Schedule	Project Completion delay	2021 Oct 31	2020.03.26 No manpower decrease but slow production 2020 April 04 to May 03 Construction site closed Government protocol strictly implemented Delay shipments for 3F&4F doors revise install date to end Sept AV equipment delay, equivalent being installed and replace once original parts arrive

Change Control:

- CO 14 – Credit for omission of ceiling at Dry Lab \$2,200
- CO 15 – Insurance Claim for UL Cable damage \$125,529

Procurement Summary:

- Small purchases on-going to furnish the building

Financial Summary:

- Total committed amount to date \$46.3M
- Total project cash outflow to date \$39.5M
- Breakdown of Sources and Uses of funds next slide

A&F Roll up Financial Summary as of 30 September 2021

Sources of Funds - Cash flow						
	Total Funding	Committed Todate	Actual YTD Sep 2021	Sep 2021	Required Funding till Completion	See Notes
Ontario Tech	\$ 48,000,000	\$ 47,501,820	\$ 39,006,480	\$ 2,608,079	\$ 46,991,956	5
Business Enterprises		\$ 250,000	\$ 217,500	\$ -	\$ 250,000	
Foundations		\$ 195,000	\$ 195,000	\$ -	\$ 195,000	
Individuals		\$ 53,180	\$ 51,800	\$ 40	\$ 53,180	
		\$ -	\$ -		\$ -	
Totals	\$ 48,000,000	\$ 48,000,000	\$ 39,470,780	\$ 2,608,119	\$ 47,490,136	5
Uses of Funds - Cash flow						
Description	Total Budget	Committed Todate	Actual YTD Sep 2021	Sep 2021	Estimate at Completion	See Notes
GMP Contract	\$ 39,996,403	\$ 40,340,283	\$ 34,365,063	\$ 1,280,206	\$ 40,340,283	1
FF&E	\$ 3,246,505	\$ 2,272,323	\$ 1,650,735	\$ 1,297,043	\$ 3,246,504	
Soft Cost	\$ 1,940,732	\$ 1,656,387	\$ 1,417,109	\$ 30,870	\$ 1,865,476	2
Portable Relocation	\$ 1,738,512	\$ 1,721,058	\$ 1,721,058	\$ -	\$ 1,721,058	3
New Parking (50% sharing)	\$ 327,848	\$ 316,815	\$ 316,815	\$ -	\$ 316,815	
Contingencies	\$ 750,000	\$ 240,136	\$ 242,411		\$ 509,864	4
Totals	\$ 48,000,000	\$ 46,306,866	\$ 39,470,780	\$ 2,608,119	\$ 48,000,000	
Notes:	1. GMP contract decrease per credit received \$2200					
	2. Current soft cost savings re-allocated to Contingency					
	3. U5 to remain beyond 2022, thus, removal cost (210K\$) re-allocated to Contingency					
	4. Available contingency amount to date					
	5. Funding required by OrtechU (Project cost less remaining contingency)					



COMMITTEE REPORT

SESSION:

Public
 Non-Public

ACTION REQUESTED:

Decision
 Discussion/Direction
 Information

TO: Strategy & Planning

DATE: October 7, 2021

PRESENTED BY: Brad Maclsaac, VP Administration

SUBJECT: ACE Enhancement Project – Update

COMMITTEE/BOARD MANDATE:

The Strategy and Planning Committee is responsible for overseeing the strategic planning for all aspects of the university and assessment of the plans in the context of the university’s vision, mission and values. More specifically, the committee oversees any major renovation or construction projects.

BACKGROUND/CONTEXT & RATIONALE:

The Ontario Tech Automotive Centre of Excellence (ACE) is a research and testing facility offering chambers and technology for climatic, structural durability and life-cycle testing. Facilities include one of the largest and most sophisticated climatic wind tunnels (CWT) on the planet. In the CWT, wind speeds can reach 300 kilometers per hour with temperatures that range from -40 to +60°C. With solar arrays and storm generators ACE can create any weather conditions imaginable, from sweltering jungle downpours to the paralyzing cold of an arctic storm. ACE uses these chambers for research and testing in automotive engineering, mechatronics engineering, advanced manufacturing, aerospace, software and high-performance computing, clean energy, and human performance.

A moving ground plane, or rolling road, was envisaged as part of the original operational parameters of the wind tunnel, but never acquired. The moving ground plane allows for extremely precise (peer reviewed publication level) aeroacoustics measurements significant to the high value auto sector and of importance to researchers from a number of universities across Ontario and other provinces.

- In 2014, while working with an auto industry client, the operating team at ACE learned about a moving ground plane acquired by Old Dominion University (Old Dominion) in Virginia, which was never used because of shifting research priorities.
- June 2016, the **BoG approved** the purchase of the MGP. Management worked swiftly to work with the Provincial Government to secure \$2.5M of the \$2.6M cost as the university was notified the MGP was going to go to auction.
- July 2017, the University spearheaded an industry-university proposal to the Federal Economic Development Agency for Southern Ontario (FedDev) with the installation budget estimated at \$12.465M. This included a request to obtain \$9.465M in funding to install the rolling road noting secured commitments of \$3M (a further \$1.5M from the province, \$1M from Magna, \$500K from the university and Multimatic in-kind to obtain the equipment and support installation).
- August 2018, the FedDev agreement was signed
- November 2018, in advance of RFPs being issued the **BoG approved** a total budget of \$14.5M (estimated multiple contracts up to \$4.1M for the Building Modification and \$10.4M for Integration) with a goal of completing the entire project by March 31, 2020. The increase from the original 2017 estimates are due to inflation and updating obsolete control systems.
- February 2019, management provided an update to A&F on RFP process noting that certain items were coming in over estimates. Even with value engineering (i.e. eliminating storage building) the costs are trending towards \$14.86M.
- June 2019, management provided an update to A&F noting further engineering design would be required due to complex turntable/MGP Nest integration. Additionally, the final contract signing for integration took longer than anticipated. The estimated completion moved to September 2020.
- November 2019, with \$5.5M already spent on the project and the majority of contracts signed the **BoG approved** an increase to \$15.075M. This additional \$575K was comprised of \$360K for updated equipment and \$215K for a two percent contingency. The goal end date remained at September 2020.
- March 2020, the provincial government ordered non-essential business to close. Due to COVID restrictions technical expertise required for integration was not able to cross the border for the planned September 2020 Phase I integration. This date was delayed until December 2020 and then further delayed to March 2021 as the university chose not to assume the risk of bring in American workers during the second wave of COVID. At the October 2020 meeting of A&F, management noted the delays would impact the budget and requested time to understand when integration could occur before submitting a revised budget. To mitigate any further delays, the ACE team worked with MTS to review and initiate the preparations that could be done virtually.

- April 2021, the Board approved an increased budget to \$16.525M. With offsetting “other revenue” this is an increase operating ask of \$1.045M from original November 2018 and 470K from November 2019. This includes a 10% contingency on the remaining MTS work. The university has successfully completed the assembly of the machine thanks to a virtual walk through with technical leaders, the hiring of a local mechanical company and the staff at ACE facility. June/ July will focus on the controls, wiring and integration. Commissioning is planned for September 2021, assuming that the MTS technical team can travel from the US.
- September 2021, the team was not able to complete commissioning as planned due to the requirement to replace a fan rectifier. As we enter the final stages of the project we will wait until facility shutdowns in November, to complete the final controls debugging, and February, to complete final testing. We have decided to use the shutdown period based on staff availability and the desire to run the other sections of ACE commercial activities.

IMPLICATIONS:

The COVID shutdown and delays have added over a year of labour costs to the project. While management explored a number of options in October 2020, including project suspension, the decision was made to look at virtual alternatives instead to mitigate future costs.

As we enter the final integration phase we are able to close out costs and delay contracts in order to work within the Board approved \$16.525M.

NEXT STEPS:

Phase II: Controls/integration & Debug – Nov/ Dec
Phase III: Commissioning and Acceptance – Jan/ Feb

SUPPORTING REFERENCE MATERIALS:

ACE MGP update – September 2021

ACE Enhancement Project



August Project Update

1st October 2021

Progress Update (30 September 2021) :

This period accomplishments

- MGP hardware integration works completed
- Control integration and commissioning on going



Concern & Issue:

- Tunnel main fan rectifier repaired however impacted the schedule by 20 days

BoG – Schedule Approval Tracking

Milestones	Nov-18	Nov-19	Apr-21	Actual	Variance Explanation
Building Modification	Jul-19	Aug-19	Aug-19	Aug-19	
Integration Phase I	Dec-19	Mar-20	Mar-21	Mar-21	increased turntable upgrades and fan repair
Integration Phase II	Mar-20	Sep-20	Sep-21		increased engineering requirements

Upcoming Activities

	Description	Begin Date	End Date	Act Begin	Act End	Comments
Phase I	Assembly & functional operation	3-Feb-21	14-Mar-21	15-Feb-21	18-Mar-21	Moved to virtual installation. Late start has no delay on end date
Phase II A	Systems check & validation	3-May-21	21-May-21	10-May-21	14-Aug-21	Assembly completed and base/support system functioning
Phase II B	Controls integration & debug	21-Jun-21	31-Jul-21	14-Jun-21		Fine tuning o going, target completion next shutdown Nov/Dec
Phase III	Commissioning/Acceptance	1-Aug-21	7-Aug-21			Target next shutdown Jan/Feb

Health & Safety:

- COVID protocol in place, nothing to report this period

Change Control:

- Nothing to report this period

Procurement Summary:

- Nothing to report this period

Financial Summary:

- Total Actual Cash Flow to date \$15.7M
- Project estimated cost at completion \$16.525M
- Cash flow Breakdown of Sources and Uses of funds next slide.

A&F Roll up Financial Report as of 30 September 2021

ACE ENHANCEMENT PROJECT		SEPTEMBER 2021				
Sources of Funds - Cash Flow						
Description	2019 Nov Funding	Actual Total Todate	Sep 2021	Funding at Completion	Balance Funding To date	Comments
FEDDEV	\$ 9,465,000	\$ 9,228,383	\$ -	\$ 9,465,000	\$ 236,617	2.5% yet to received on project completion
PROVINCIAL	\$ 1,500,000	\$ 1,350,000	\$ -	\$ 1,500,000	\$ 150,000	10% to be released upon project completion
MAGNA	\$ 1,000,000	\$ 1,000,000	\$ -	\$ 1,000,000	\$ -	commitment fulfilled
ONTARIO TECH (Announce Contribution)	\$ 500,000	\$ 500,000	\$ -	\$ 500,000	\$ -	commitment fulfilled
ONTARIO TECH (Loan to ACE)	\$ 2,510,000	\$ 2,510,000	\$ -	\$ 2,510,000	\$ -	commitment fulfilled
THE GREENBRIAR FOUNDATION	\$ 100,000	\$ 100,000	\$ -	\$ 100,000	\$ -	commitment fulfilled
GA HAYBALL FOUNDATION		\$ 225,000	\$ -	\$ 225,000	\$ -	commitment fulfilled
ACE INTERNAL (ERF/ Research Fund)		\$ 165,000	\$ -	\$ 165,000	\$ -	commitment fulfilled
ONTARIO TECH (Additional Loan to ACE)		\$ 636,433	\$ 114,424	\$ 1,060,595	\$ 424,162	
Totals	\$ 15,075,000	\$ 15,714,816	\$ 114,424	\$ 16,525,595	\$ 810,779	
Uses of Funds - Cash Flow						
Description	Original Budget	Actual Total Todate	Sep 2021	Estimate at Completion**	Variance / Cost Increase	Variance Explanation
Moving Ground Plane Integration into CWT	\$ 3,350,000	\$ 5,701,452	\$ 73,631	\$ 6,331,276	\$ 2,981,276	Obsolete controls, more complex turntable integration design and build. Repair to MGP & Turntable modifications.
Aerodynamic Enhancements Required for MGP	\$ 2,540,000	\$ 2,346,273	\$ 4,612	\$ 2,341,661	\$ (198,339)	Value engineered design - ride height simplification
Acoustics	\$ 845,000	\$ 712,871	\$ -	\$ 782,225	\$ (62,775)	Competitive market & covid impact from Germany
Precision Measurement Capability	\$ 1,850,000	\$ 1,088,363	\$ 1,775	\$ 1,086,588	\$ (763,412)	In-house design and build
Chamber Modifications	\$ 630,000	\$ 707,412	\$ 757	\$ 706,655	\$ 76,655	System requires more process air and vacuum
Base Building Modifications	\$ 3,645,000	\$ 3,422,391	\$ 2,915	\$ 3,419,476	\$ (225,524)	Competitive market and deletion of Storage Building
Engineering and Project Management	\$ 2,000,000	\$ 1,736,055	\$ 30,733	\$ 1,857,715	\$ (142,285)	Re-engineering contingency amount move to MGP Integration, 12 mos extension of Project team
				\$ -		
Totals	\$ 14,860,000	\$ 15,714,816	\$ 114,424	\$ 16,525,595	\$ 1,665,595	



Strategy & Planning Committee

October 7, 2021

Les Jacobs, PhD, FRSC
Vice-President, Research and Innovation

AVIN RECAP

- On Budget
- Wrapping up March 2022
- Over a dozen spin-off research projects spanning multiple faculties and Brilliant Energy Institute
- Launching Ontario Vehicle Innovation Network April 2022 (AVIN 2.0)



Making Communities Safe for Vulnerable Road Users

Partnering with Smart Cone Technologies to Leverage AV Tech for Community Safety

Intelligent Intersection:

- Collect Data to understand movement of people and vehicles

Intelligent Crosswalks with CNIB*:

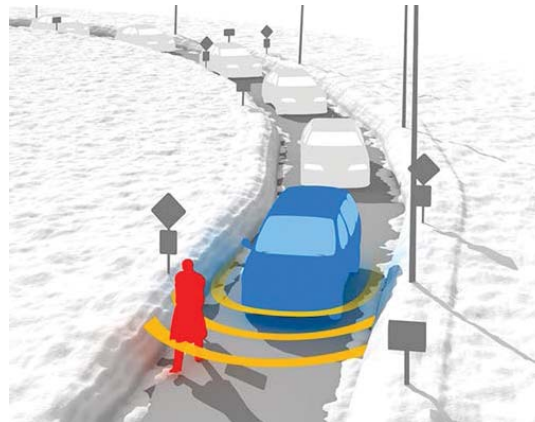
- AI powered monitoring, communication and alerts for both Vulnerable Road Users and connected vehicles at crosswalks

Intelligent Bike Lanes:

- Driver right turn alerts for oncoming cyclists in bike lanes

Crowd Control (Events/School Zones/EMS):

- Drop and Go Perimeter Zones
- Temporary Crossings
- Trusted Vehicle Zones (schools)



*Canadian National Institute for the Blind

Sample of other AVIN Projects

Partnering on AV Research across the Province.

- Autonomous Vehicle Charging
- Whitby Autonomous Shuttle Demo
- AV Software Testing Platform with Toronto based QA Consultants
- High Power Charging for Autonomous Transit
- Runways to Roadways for Municipalities



Community Partner in the Pilot Demonstration of Energy Related Technologies

Initiative	Partners
Develop electric vehicle charging test bed (AVIN RTDS)	Ontario Tech University, e-Camion, OPUC
Develop an autonomous robotic arm capable of charging autonomous vehicles	Ontario Tech University, e-Camion, OPUC, Durham Region Transit
Deploy energy storage and overhead charging technology for transit vehicles	Ontario Tech University, Durham Region Transit, e-Camion, OPUC
Install level 3 chargers in Oshawa to close gaps in EV charging infrastructure	Ontario Tech University, e-Camion, OPUC
AI-Enabled Demand Side Management for Energy Sustainability (AIDEMS)-Eureka AI Program	Ontario Tech University, eCAMION, OPUC, +European Consortium (Sweden, Germany, Turkey)
Ontario-Specific Open Source Advanced Bus Controls Project	Ontario Tech University, Oshawa PUC, City of Oshawa

7 Projects ranging from EV Charging, Energy Use Reduction and AI based methods for integration of renewables and energy storage into energy distribution grid within communities



Rendering of eCamion “Joule” Charging Stations

Project Arrow

“At the intersection of advanced mobility and climate change lies the challenge of our times. Future generations will ask if we ran faster or stretched out our arms farther. The Arrow will be remembered as the gauntlet we dropped in response to this call to action.”—Flavio Volpe, President APMA

A project that will allow Ontario Tech University to Demonstrate Research Excellence In

- Canada’s Energy and Environmental Future
- Autonomous Vehicles and Systems
- Intelligent Manufacturing and Materials Innovation
- Data Science, Artificial Intelligence and New Technologies



 **APMA**

 **PROJECT
ARROW**