

THURSDAY, AUGUST 17, 2023
RESEARCH, INNOVATION & STRATEGIC PARTNERSHIPS COMMITTEE MEETING

Lewis Von Thaeer, chair
Reginald A. Wilkinson, vice chair
Juan Jose Perez
Phillip Popovich
Taylor A. Schwein
Hiroyuki Fujita (*ex officio*)

Location: Vitria on the Square - University Square North (USN)
14 E. 15th Avenue, Columbus, OH 43201

Time: 1:00 – 2:30 pm

Public Session

ITEMS FOR DISCUSSION

1. *Committee Chair's Remarks – Mr. Lou Von Thaeer* 1:00-1:05pm
2. *Quarter Highlights for Research, Innovation and Knowledge - Dr. Peter Mohler* 1:05-1:10pm
3. *Ohio State Strategic Focus Area - Smart Mobility: Ohio State's Role in the Future of Transportation – Mr. Brett Roubinek, Mr. Larry Geise, Mr. Trey Brown* 1:10-1:30pm

ITEM FOR ACTION

4. Approval of May 2023 Committee Meeting Minutes – Mr. Lou Von Thaeer 1:30-1:35pm

Executive Session

1:35– 2:30pm

Research, Innovation and Knowledge – Quarterly Highlights

August 2023



Research, Innovation and Knowledge Strategy



Inspire a culture of research, innovation and knowledge excellence



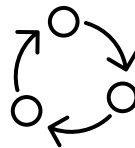
Be renowned for discoveries, knowledge generation and creative expression



Develop partnerships, innovation and entrepreneurship to drive impact



Create and sustain dynamic infrastructure that drive discoveries



Increase operational excellence to enable success



\$12 million awarded to study therapies for gestational diabetes

Maternal Fetal Medicine team in Department of Obstetrics and Gynecology awarded funding to study the best treatment options when medication becomes necessary in patients with gestational diabetes.

Funding from Patient-Centered Outcomes Research Institute (PCORI)

<https://wexnermedical.osu.edu/mediaroom/pressreleaselisting/12-million-award-to-study-gestational-diabetes>



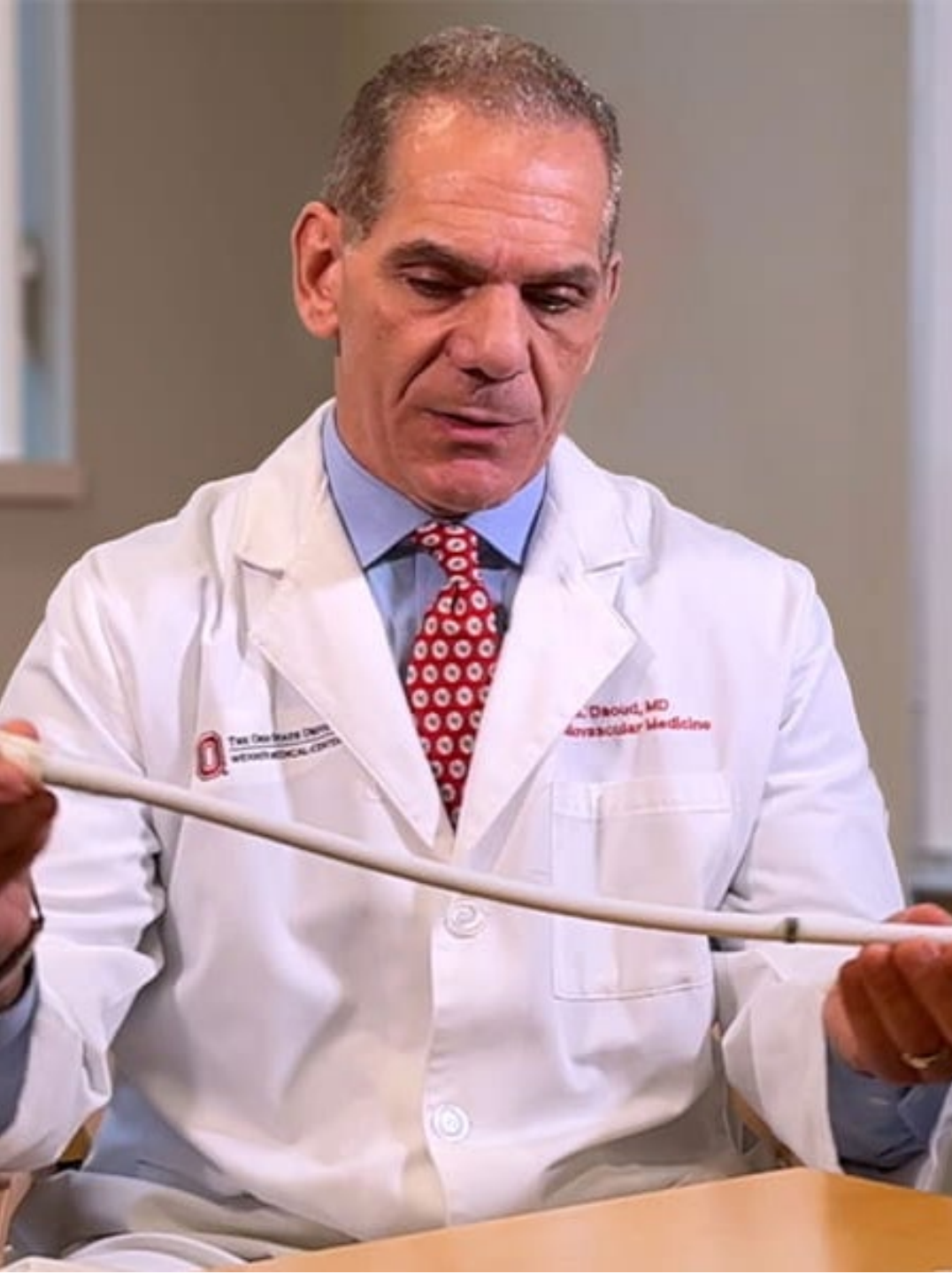
\$22 million NIH award will accelerate gene editing research at Ohio State, UC Berkeley

This funding will allow Ohio State researchers to develop new approaches to treat multiple neurodegenerative diseases, including Huntington's Disease and ALS, with new gene editing therapies.

The research team is working towards an approved Investigational New Drug application within five years.

Collaboration between Department of Neurosurgery in College of Medicine and Dr. Doudna at UC Berkeley.

<https://wexnermedical.osu.edu/mediaroom/pressrelease/asetlisting/nih-crispr-award>



Ohio State spinoff raises \$5 million to take device to market

Emile Daoud, clinical cardiac electrophysiologist, is co-inventor of a medical device that protects the esophagus during treatment for atrial fibrillation.

The device is licensed to Ohio State startup S4 Medical.

These funds are expected to take the medical device through regulatory approvals and into use by mid-2024.

<https://wexnermedical.osu.edu/mediaroom/pressreleases/afib-mmr>

Ohio State startup exits stealth mode, raises significant funds

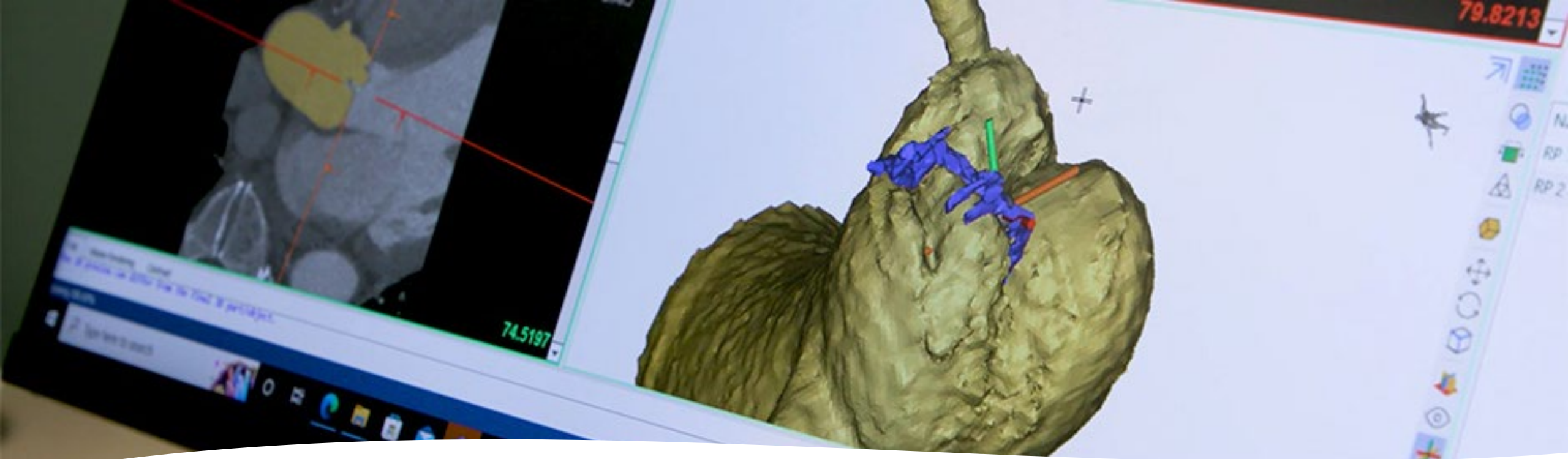
Ohio State's 2023 Innovator of the Year, Tom Darrah, co-founded Koloma, a geologic hydrogen company, which recently announced it had raised \$91 million.

Initial funding comes from several venture firms including Breakthrough Energy Ventures, Energy Impact Partners, Evök Innovations, Prelude Ventures and Piva Capital.



<https://www.forbes.com/sites/alanojnsman/2023/07/19/bill-gates-koloma-geologic-hydrogen/?sh=4bc3350698f7>

<https://www.bizjournals.com/columbus/inno/stories/news/2023/07/20/koloma-clean-hydrogen-startup.html>



Ohio State spinoff gets FDA approval for heart surgery simulation software

Dasi Simulations received FDA medical device approval for its AI-guided 3D modeling software that is used in heart valve replacement surgery.

Currently, heart surgeons at more than 50 heart centers nationwide are using the software. Approval will allow for additional marketing, increased use in procedures and eligibility for insurance reimbursement.

<https://www.bizjournals.com/columbus/inno/stories/news/2023/06/06/dasi-simulations-fda-clearance.html>

The Columbus Dispatch

FRIDAY, AUGUST 4, 2023 | DISPATCH.COM

152 YEARS | SINCE 1871

PART OF THE USA TODAY NETWORK

Labs provide a way to see 'science on display'



People work at labs in Ohio State's new Pelotonia Research Center, which officially opened in May at Carmenton. This 305,000-square-foot laboratory building is equipped with new spaces, technologies and resources needed for researchers to work across disciplines to accelerate new discoveries. COURTNEY HERGESHEIMER/COLUMBUS DISPATCH

<https://www.dispatch.com/story/news/education/2023/08/04/inside-ohio-state-university-new-pelotonia-research-center-in-carmenton/70408323007/>

Ohio State recently opened its \$227M Pelotonia Research Center in Carmenton

Sheridan Hendrix
Columbus Dispatch
USA TODAY NETWORK

Ohio State University students aren't the only ones moving in this month.

Researchers have started setting up shop in the Pelotonia Research Center, a \$227.8 million, 305-square-foot inter-

disciplinary laboratory building that officially opened in May in Carmenton, Ohio State's burgeoning West Campus research district.

At full occupancy, the building, located at 2255 Kenny Road, will be home to 150 principal researchers and more than 1,000 scientists, faculty members, students and other research staff.

The space is named in recognition of Pelotonia's collaboration with Ohio State. About 6,500 cyclists will cruise into downtown Columbus this weekend for Pelotonia Ride Weekend, all with the goal of raising money for cancer research at Ohio State. Since 2008,

See LABS, Page 13A

Smart Mobility: Ohio State's Role in the Future of Transportation

August 2023



Featured Strategic Area: Mobility & Transportation

Foundational R&D • Innovation & Commercialization • Economic Development & Impact to State of Ohio



**Center for
Automotive Research**



**CARMEN+ University
Transportation Center**



**Transportation Research
Center (TRC)**



Brett Roubinek
President and CEO
Transportation Research
Center, Inc.



Celebrating 50 Years of Shaping the Future of Transportation

TRC is the leading engineering services firm featuring two locations.

East Liberty, Ohio

- **4,500** acres
- **540** acre autonomous and connected testing facility
- **7.5** mile high speed test track
- Over **70** acres of vehicle dynamic areas
- **4** labs



Research & Testing Areas

- ADS Development test planning
- Connectivity application assessment
- FMVSS, CMVSS, ECE, Lane change, Fishhook, SAE J1321 & J2263
- Advanced driver assist technologies
- Automated driving systems
- NCAP, EuroNCAP, IIHS, RCAR
- ADAS development test planning

TRC SMARTCenter

- **540** acres
- Dedicated AV/CV test facility
- **6** lane high speed intersection
- Configurable traffic signals
- Urban network
- **10,200** sq. ft. Control building
- Fiber network
- Facility monitoring cameras
- V2X communications with DSRC
- High-speed wireless communications



TRC California: Providing a Pipeline for West Coast Innovators to Ohio

Atwater, California

- **225** acres
- **39+** acres of vehicle dynamic areas
- **2.2** mile Oval and **1** mile of intersections
- Multi-lane roadways and intersections, highway on and off ramps
- Traffic signals, road signs, barriers and other roadside furniture
- Low mu pad
- Planned durability course
- Off road area

Research & Testing Areas:

- NHTSA, IIHS, RCAR & EuroNCAP
- ADS Development Test Planning
- Connectivity Assessment
- Dynamics, durability, performance, compliance & more



TRC History



1974

State of Ohio opens TRC as a state entity to drive economic development

1976

NHTSA establishes onsite presence with the only Vehicle Research Test Center in the Country

1988

Honda purchases the property. TRC Inc. nonprofit created as affiliated entity to The Ohio State University. Annually, OSU recognizes TRC revenue as Research Expenditures

2018

TRC & Honda leadership reimagine relationship to fuel TRC growth. SMARTCenter AV/CV campus opens

2021

TRC establishes presence in California providing a pipeline for West Coast innovators to Ohio

2023





Vision

To help our clients solve problems and address critical challenges to **safely, effectively, and efficiently move goods and people** throughout the world by applying the most advanced, **leading-edge expertise, by a team of passionate and dedicated professionals** not found anywhere else.

Mission

To be an indispensable partner and **the most trusted leader** enabling solutions that **shape our transportation future and make the world a safer place.**

BOARD OF DIRECTORS

Ex-Officio Directors



Dr. Ayanna Howard

Dean, College of
Engineering
*The Ohio State
University*



Brett Roubinek

President & CEO
TRC Inc.



Michael Papadakis

Sr. VP Business & Finance
The Ohio State University



Dr. Peter Mohler

VP Research
*The Ohio State
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Joanna Pinkerton

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President & CEO
Columbus Partnership
Chief Economic Officer
One Columbus



Stephanie Villegas

Founder, Chef
Laurel
Retired Autonomous
Specialist

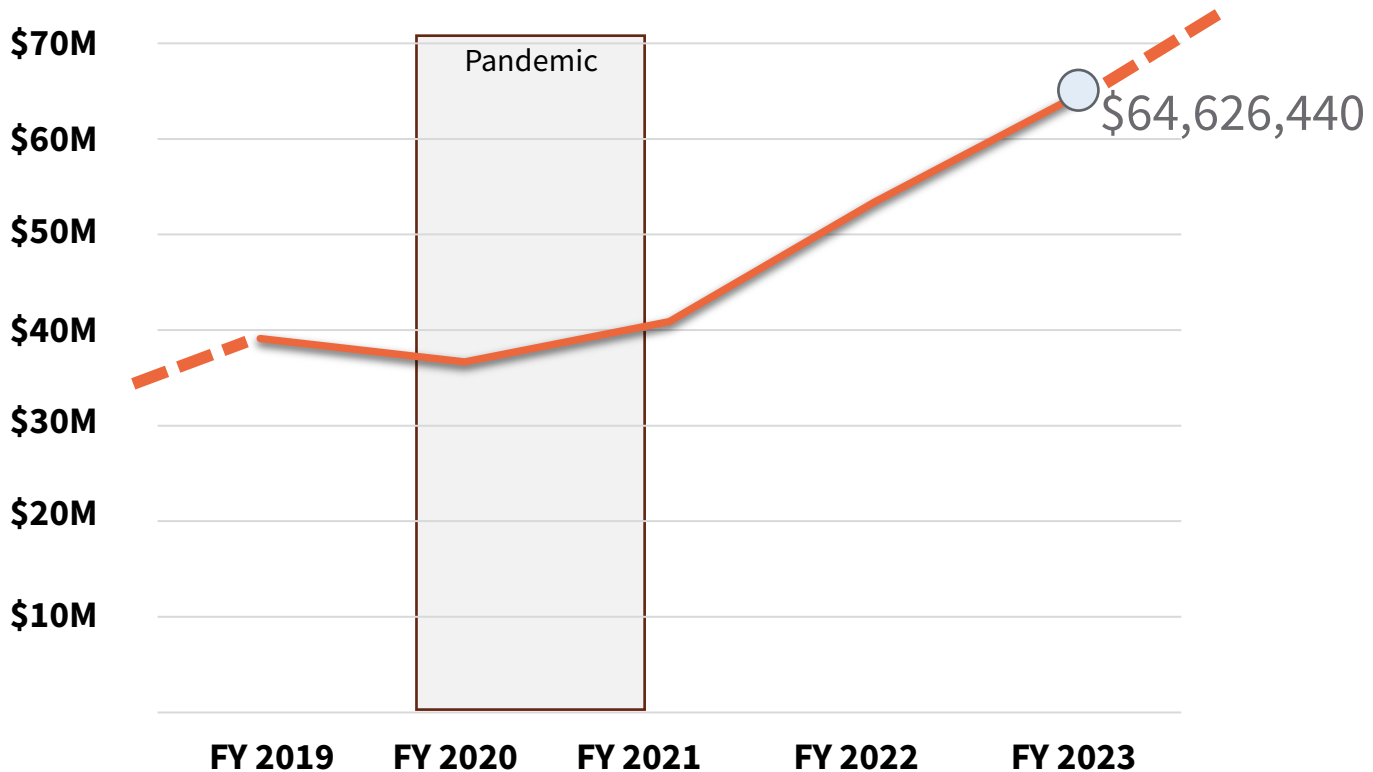


Mark Kvamme

Co-Founder & Partner
Emeritus
Drive Capital

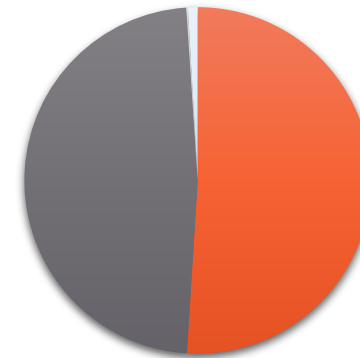
Key Financial Metrics

Five Year Revenue Trend



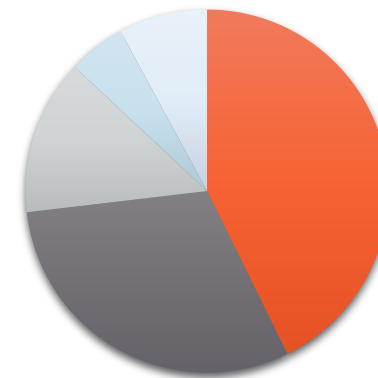
Revenue distribution (Top 5 Clients)

FY19



- CLIENT A
- CLIENT B
- CLIENT C
- CLIENT D
- CLIENT E

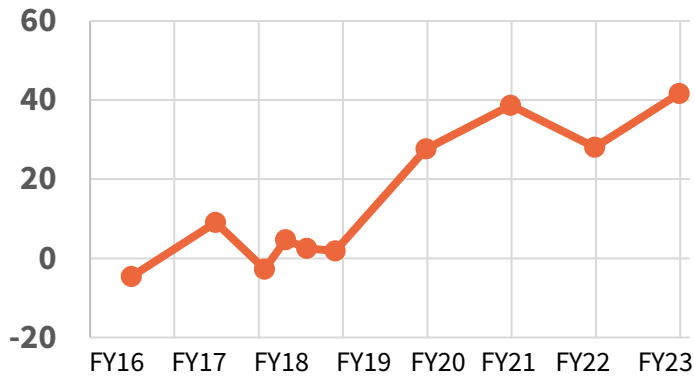
FY23



Our Expert Team Gives Us a Competitive Advantage

“One of my favorite parts of working here is that TRC is continually looking for new ways to improve things for their employees.”

Employee Engagement Survey



504 employees

169 employees embedded in client operations

Employees reside in **23** different Counties

Test drivers, technicians, research scientists, engineers

Serving more than **370** clients annually

Supporting **25** Resident clients





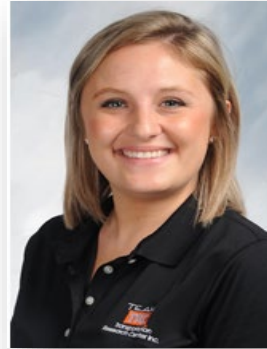
TRCnext

Michelle Murach

Manager, Crash Safety, Vehicle Research & Test Center

Master's Degree
Science in Biomedical Engineering
The Ohio State University

Bachelor's Degree
Biomedical Engineering
The Ohio State University



- Provide data analysis & technical reports summarizing experimental results
- Facilitate experimental testing specific to the development of anthropomorphic test devices
- Communication across business units within TRC to develop, improve, and enforce business and operational processes to ensure compliance
- Member, TRC WOMEN (Women Offering Mentorship, Education & Networking)

Mohit Mandikot

Manager, Engineering, Advanced Mobility

Master's Degree
Mechanical Engineering
The Ohio State University

Bachelor's Degree
Mechanical Engineering
BITS Pilani Goa Campus



- Develop test plans for performance & safety evaluation of autonomous vehicles in on-track scenarios
- Develop test proposals for validation of L1 & L2 ADAS systems per NHTSA & Euro NCAP Standards.
 - CIB-DBS, Automated Emergency Braking
 - Park Assist, Traffic Jam Assist Systems
- Member, TRC Employee Recognition Team



Larry Geise

**Executive Vice President,
Honda Development &
Manufacturing of
America, LLC**



Trey Brown

Aerospace Engineering PhD Student



SUMMARY OF ACTIONS TAKEN

May 18, 2023 – Research, Innovation & Strategic Partnerships Committee

Members Present:

Lewis Von Thae
Reginald A. Wilkinson

Juan Jose Perez
Tanner R. Hunt

Phillip Popovich

Members Present via Zoom: N/A

Members Absent:

Hiroyuki Fujita (ex officio)

The Research, Innovation & Strategic Partnerships Committee of The Ohio State University Board of Trustees convened on Thursday, May 18, 2023, in person at Longaberger Alumni House on the Columbus campus. Committee Chair Lewis Von Thae called the meeting to order at 12:58 p.m.

PUBLIC SESSION

Items for Discussion

1. **Committee Chair's Remarks:** Mr. Von Thae kicked off the meeting by extending congratulations on the opening of the Pelotonia Research Center at Carmenton. This center will house researchers working to identify solutions and accelerate collaboration to address cancer, cardiovascular and pulmonary medicine, neurological disease, microbiomes and food systems and health.
2. **George Washington Carver Science Park and the Terrestrial Analog Facility Impacts on Research, Education and Economic Development:** Interim Executive Vice President for Research, Innovation and Knowledge Peter Mohler introduced a panel to discuss the research, education and economic development implications of the Voyager Space/Nanoracks partnership and our collective work on Starlab, the George Washington Carver Science Park and the Terrestrial Analog Facility to be housed at Ohio State. Dr. John M. Horack, Neil Armstrong Chair in Aerospace Policy, Miss Cassidy Brozovich, senior undergraduate student in the Department of Food, Agricultural and Biological Engineering and Mr. Kenny McDonald, president and CEO of the Columbus Partnership, participated in the panel.

(See Attachment X for background information, page number XX)
3. **Pelotonia Research Center's Future Impact on Societal Challenges:** Dr. Peter Mohler along with Dr. Russell Lonser, professor and chair of the Department of Neurological Surgery, and Dr. Sayoko Moroi, professor and chair of the Department of Ophthalmology and Visual Sciences, discussed the recently launched Gene Therapy Institute and its holistic approach to providing global impact. A portion of this research will be housed in the Pelotonia Research Center at Carmenton, which opened on Monday, May 15.

(See Attachment X for background information, page number XX)

Items for Action



4. Approval of Minutes: No changes were requested to the February 16, 2023, meeting minutes; therefore, a formal vote was not required, and the minutes were considered approved.

EXECUTIVE SESSION

It was moved by Mr. Von Thaer, and seconded by Dr. Wilkinson, that the committee recess into executive session to consider business-sensitive trade secrets required to be kept confidential by federal and state statutes and to consult with legal counsel regarding pending or imminent litigation.

A roll call vote was taken, and the committee voted to go into executive session with the following members present and voting: Mr. Von Thaer, Dr. Wilkinson, Mr. Perez. Mr. Hunt and Dr. Popovich.

The committee entered executive session at 1:44 p.m., and the meeting adjourned at 2:31 p.m.

DRAFT