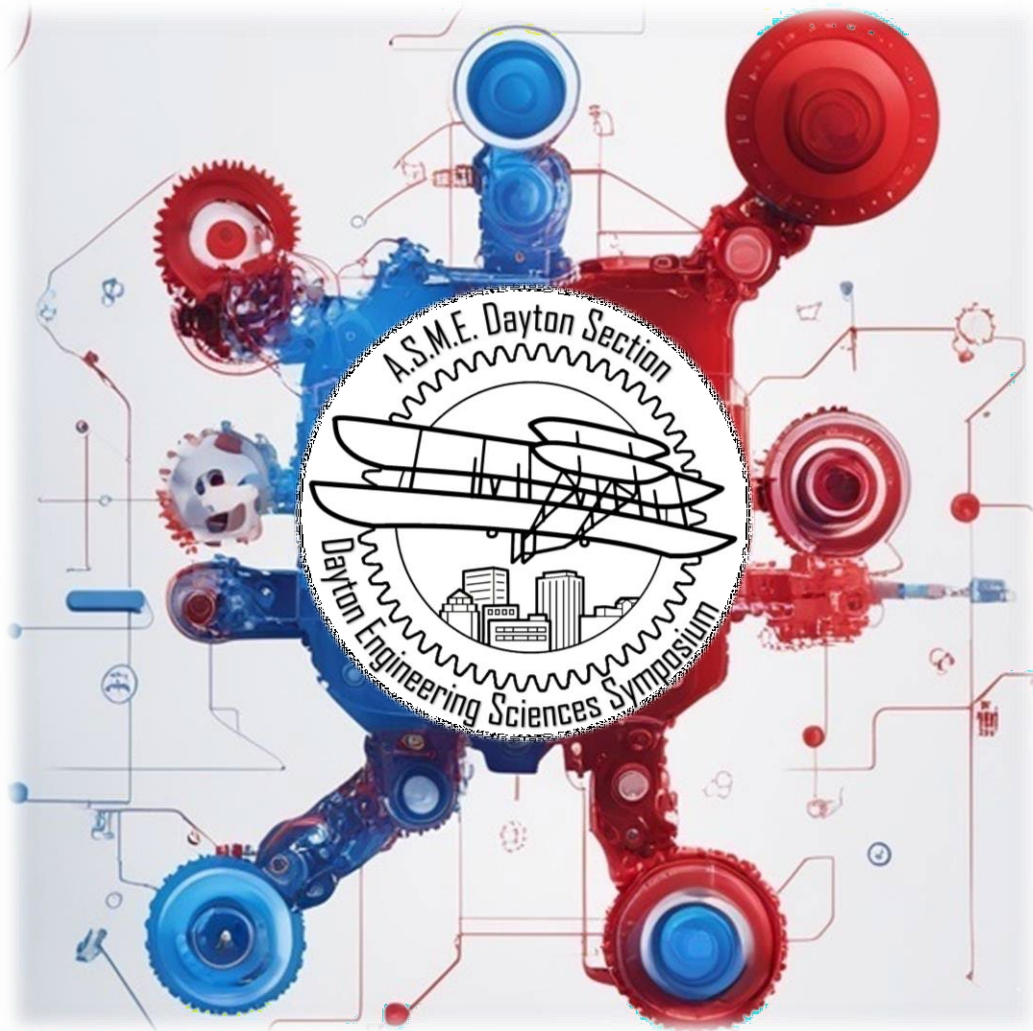


Dayton Engineering Sciences Symposium



**University
of Dayton**



**WRIGHT STATE
UNIVERSITY**



UDRI
UNIVERSITY
of DAYTON
RESEARCH
INSTITUTE



Hello All,

On behalf of the Organizing Committee, we would like to welcome you to the 17th Annual Dayton Engineering Sciences Symposium (DESS), sponsored by the Dayton Section of the American Society of Mechanical Engineers (ASME). This year, DESS is being hosted by Wright State University. This symposium is expected to facilitate communication between local and regional scientists, engineers and students by providing a forum for presenting the latest technical research, sharpening technical presentation skills, and creating outstanding opportunities for networking.

This year's technical content includes a range of topics: fluid/thermal engineering, additive manufacturing, biomedical engineering, aerospace engineering and others. The keynote speaker will be Jacob Matthews. He is a technology entrepreneur and U.S. Army veteran currently serving as the Founder and CEO of Potomac Database Systems and a Principal System Architect at the University of Dayton Research Institute (UDRI). Previously, he was the co-founder and CTO of Zeno Power Systems, where he developed and patented the first commercial radioisotope power systems for extreme environments. A graduate of West Point and Vanderbilt University, Jake specializes in bridging the gap between complex engineering and viable commercial products in the space, defense, and energy sectors.

To ensure that all attendees have up-to-the-minute schedule information, we have opted to include the detailed schedule as a scannable QR code. The QR code will take you directly to the online schedule with all session, talks, and presenter information. Please see the next pages for the QR code, basic overview of the day, and facilities maps.

DESS continues to highlight engineering and science productivity in the greater Ohio region. It would not have been possible without the continued support and active participation of all speakers, session chairs, sponsors, students, faculty, government and industry representatives, organizing committee, and the ASME Dayton Section Executive Board. We thank each and every one of you for your dedicated and committed contributions.

Dan Young

Symposium Chair

DESS Committee

Chair – Dan Young

Past Chair – Megan Reissman

Technical Prog. Chair – Dan Young

Website & Registration Chair – Tim Leger

Sponsor Relations – Sivaram Gogineni

UD Coordinator – Timothy Reissman

CU Coordinators – B. Chasnov and J. Miller

WSU Coordinators: D. Young and A. Mian

Government Relations – Carl Tilmann

Dayton Section Chair – Tim Reissman

ASME Dayton Section Treasurer – Tim Leger

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Mitch Wolff, WSU

Yanan Yue, MU

Sharon Bommer, UD

Shiva Prasad, FTT

Bob Chasnov, CU

Joseph Miller, CU

Timothy Reissman, UD

Arashdeep Singh (student), WSU

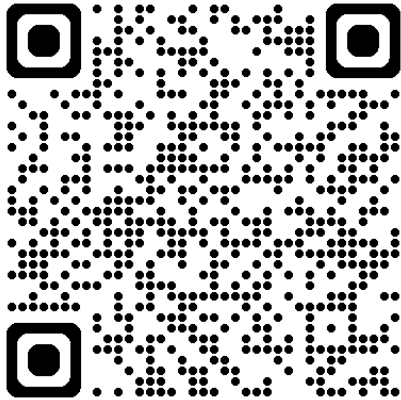
Ahsan Mian, WSU

Dan Young, WSU

John Brewer, AFIT

Megan Reissman, UD

Schedule Overview - for detailed schedule scan the QR code



8:30 AM	-	Registration and Breakfast open
9:20 AM	-	Podium Session 1
10:20 AM	-	Coffee Break
10:30 AM	-	Podium Session 2
11:30 AM	-	Poster Session
11:50 AM	-	Lunch Buffet
12:10 PM	-	Welcome remarks
12:20 PM	-	Keynote starts
1:10 PM	-	Final remarks
1:20 PM	-	Podium Session 3
2:40 PM	-	Adjourn

KEYNOTE SPEAKER

Jacob Matthews

Principal System Architect
Digital Transformation Center (DTC) powered by UDRI



From Incorruptible Cashiers to Nuclear Power on the Moon: Forging Ohio's Future in Space and Nuclear Engineering

As an entrepreneur developing space nuclear systems, I kept finding myself drawn to the Midwest for talent, procurement, and engineering services. This experience spanned material science, aerospace engineering, and nuclear fuels. No matter which way I turned, all roads led to Ohio.

And it turns out, the Miami Valley's foundational role in American aerospace and space nuclear power is no historical accident. The establishment of Wright-Patterson Air Force Base, NASA Glenn Research Center, and the University of Dayton Research Institute are the direct results of an unbroken, 150-year chain of local innovation. Beginning not with airplanes, but with a Dayton saloonkeeper's 1879 invention, and transforming it into a global engineering powerhouse that served as a "university" for a generation of innovators.

This unique local talent pool was secretly tapped by the Manhattan Project, a mission that was institutionalized at the Mound Laboratory, a location that could have served as the inspiration for the Hawkins Laboratory in *Stranger Things*. This forgotten lab, however, led directly to the development of the nuclear power systems that have explored our solar system from Voyager to Perseverance. This local ecosystem of talent, entrepreneurship, and "spin-offs", all built upon a foundation of Ohio's 19th-century industrial might, created the legacy that DESS conference attendees carry forward today.

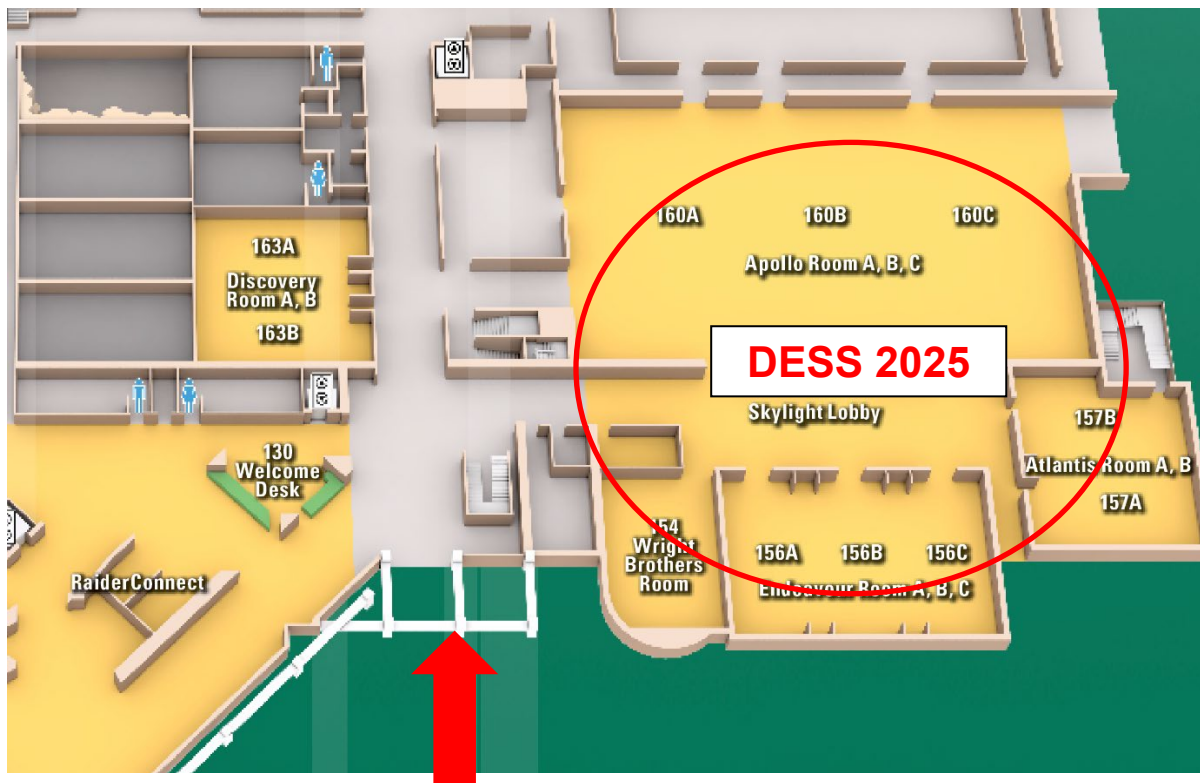
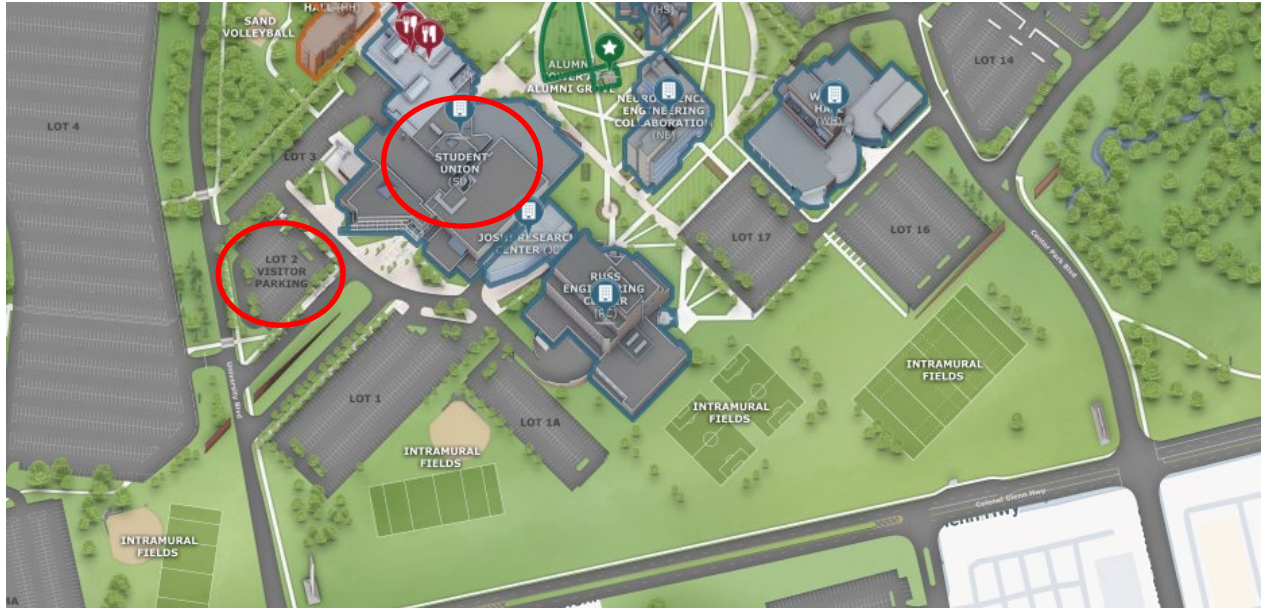
Wright State University Student Union

University Maps:

<https://www.wright.edu/maps>

Student Union Map:

<https://www.wright.edu/sites/www.wright.edu/files/page/attachments/SU-Map-2022.png>



**FRONT ENTRANCE
TO STUDENT UNION**