

54th CS | 42nd APS | 42nd EPSS | 36th ESHS
Joint Subcommittee Meeting | PIB Meeting

Meeting Invitation

CLEARED
For Open Publication

Sep 16, 2026

Department of War
OFFICE OF PREPUBLICATION AND SECURITY REVIEW

7 - 11 December 2026 | Hampton, VA

Last updated: 16 September 2026



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Join Us @ JANNAF

The December 2026 JANNAF Interagency Propulsion Committee meeting will feature the **54th Combustion (CS)**, **42nd Airbreathing Propulsion (APS)**, **42nd Exhaust Plume and Signatures (EPSS)**, **36th Energetic Systems Hazards (ESHS) Joint Subcommittee Meeting**, and **Programmatic and Industrial Base (PIB) Meeting**.



Program Chair:
Dr. Brian T. Bojko
Naval Research Laboratory
Washington, DC



Hampton Roads Convention Center
Hampton, Virginia

NASA Langley Research Center
Hampton, Virginia



Monday – Friday
7 – 11 December 2026

MEETING SCOPE

The JANNAF Interagency Propulsion Committee coordinates fundamental research, exploratory development, and advanced developmental programs; standardizes procedures for nomenclature; promotes and facilitates the exchange of technical information; and accomplishes problem solving in the areas of joint agency interest on propulsion systems for missiles, rockets, boosters, spacecraft, satellites, and guns. JANNAF subcommittees focus their resources on technical issues of interest to the JANNAF agencies.

Combustion Subcommittee

The Combustion Subcommittee (CS) covers analytical modeling and experimental research on chemical combustion phenomena for solid, liquid, hybrid, and airbreathing missile, space, underwater, and gun propulsion systems.

Airbreathing Propulsion Subcommittee

The Airbreathing Propulsion Subcommittee (APS) addresses technical problems and issues associated with turbojet, ramjet, scramjet, and combined- or mixed-cycle engines.

Exhaust Plume and Signatures Subcommittee

The technologies of concern to the Exhaust Plume and Signatures Subcommittee (EPSS) involve phenomena associated with exhaust plumes from rockets, ramjets, space, and gun propulsion systems as well as wakes and hypersonic flows. These phenomena can be divided into three technical areas: plume/wake/hypersonic flowfields, plume/wake/hypersonic signatures (to include electro-optical, infrared, and radio frequency radiation), and a broad area incorporating other plume/wake/hypersonic effects.

In addition, the EPSS Signatures panel promotes technical interchange among members of the Electro-Optical/Infrared aircraft/missile signature community from both government and industry.

Energetic Systems Hazards Subcommittee

The Energetic Systems Hazards Subcommittee (ESHS) is concerned with hazards associated with energetic systems and how these vulnerabilities might degrade system performance and lethality. Included in this scope are hazard analyses for tactical and strategic missiles; small, medium, and large caliber gun systems; solid and liquid propellant systems; hazards encountered during loading and firing operations; and key technology areas identified from hazard analyses. Additionally, ESHS is involved with the development, standardization and application of meaningful computational / experimental methods for assessing vulnerability and performance of the energetic materials found in propulsion systems and munitions. Finally, the subcommittee is concerned with the identification and solution development for interagency problems associated with energetic system vulnerability and performance, the coordination of interagency sponsored programs, the establishment of nomenclature, and the promotion of technical information and data exchange.

325+
presentations

74
sessions

5
days

Programmatic and Industrial Base

The JANNAF Programmatic and Industrial Base (PIB) Committee was chartered by the Department of Defense and the National Aeronautics and Space Administration in 2014 as a part of JANNAF. Its focus is on providing a mechanism for DoD and NASA Programs to collaboratively identify and manage risks and issues within the propulsion industrial base, and to work together to solve them. This requires an integrated understanding of each program's plans and key decision points, and how those decisions may impact the propulsion industrial base. PIB areas of interest include integrated program plans and key decision points; industrial base assessments; risks and opportunities with respect to skills, knowledge, and experience; identification of commonality, innovative acquisition, and partnership opportunities; integrated assessments to identify rocket propulsion industrial base rationalization opportunities; special actions from senior agency, department, or Executive Office of the President leadership; and information provided to decision makers for either situational awareness or policy decisions.

ACCESS THE JANNAF JOURNAL EXCLUSIVELY ONLINE!

JANNAF Journal papers are distinct from the meeting papers being presented at this meeting, and offer a deeper dive into critical technical data and scholarly research. These papers require a separate submission procedure and undergo a rigorous peer-review process with more comprehensive standards than what is required of meeting papers.

To access any volume of the JANNAF Journal, log onto jannaf.org and click the tab labeled JANNAF Journals in JDOC.

To learn more about the Journal, including manuscript submission guidance and Journal standards, visit jannaf.org/jannaf-journal.

MEETING SITES & HOTEL

Unclassified Sessions will be held at:

Hampton Roads Convention Center
1610 Coliseum Dr.
Hampton, VA 23666

The convention center is located in Hampton, Virginia, a short drive away from a variety of dining and entertainment options. It will also serve as the meeting site for all unclassified sessions. It is conveniently adjacent to the Embassy Suites hotel which will serve as the JANNAF location for lodging.

For information about parking at the convention center or hotel, view Transportation & Parking on [page 7](#).

Classified Sessions will be held at:

NASA Langley Research Center (NASA LaRC)
Hampton, VA 23666

Attendance at Classified sessions requires that an additional step be completed when registering. Only those who have completed registration for the JANNAF meeting and the additional step for Classified sessions will be permitted on the shuttle bus to NASA LaRC or permitted to enter Classified sessions. Attendees who are approved to attend classified sessions and are not taking the shuttle bus will be provided with directions to the NASA LaRC location and parking. For information about these registration steps, view Registration on [page 8](#).

For information about travel to the Classified meeting site, view Transportation & Parking on [page 7](#).

Sleeping rooms have been arranged at:

Embassy Suites by Hilton Hampton Convention Center
1700 Coliseum Dr.
Hampton, VA 23666

JANNAF has negotiated a special discounted room rate, equal to the GSA FY2027 rate of \$113 plus tax (currently 15%) and a \$2 per night cultural tax. This rate is applicable for single/double occupancy. Those eligible for tax exemption for lodging can view guidance on the [Information tab](#) of the meeting webpage. The room rate includes a complimentary breakfast buffet and evening reception.

These discounted rooms are limited and will be held for JANNAF attendees until the reservation deadline of Friday, 13 November at 11:59 p.m. ET, or until they sell out—whichever comes first. Each individual is responsible for their own reservation. View Making Reservations on [page 7](#) for guidance to reserve a room.

The JANNAF discounted room rate may be applied for stays between Sunday, 6 December and the night of Friday, 11 December (i.e., check-out Saturday, 12 December) until the reservation deadline or until rooms in the JANNAF block are sold out, whichever comes first. For those who wish to stay longer, the hotel will honor the JANNAF discounted rate for up to three days pre- and post-meeting (pending availability).

DID YOU KNOW?

Using the JANNAF reservation link/code helps both you and JANNAF.

You receive the discounted rate for your hotel room at the meeting hotel...

...and JANNAF can meet its obligation to the hotel, avoiding penalties and keeping meeting costs down.

MAKING RESERVATIONS

Click on the reservation link on the [Information tab](#) of the meeting webpage to make your reservation. Using this link is recommended as it will give you direct access to the JANNAF discounted room block at the hotel.

For additional reservation assistance:

Embassy Suites – call 1-800-362-2779 and mention JANNAF

Need to cancel or change your reservation? Information pertaining to room reservation cancellation and early departure is on the [Information tab](#) of the meeting webpage and in your reservation confirmation email.

TRANSPORTATION & PARKING

Unclassified Sessions // Hampton Roads Convention Center

Those staying at the Embassy Suites by Hilton Hampton Convention Center can access the convention center by exiting the hotel lobby and taking the covered walkway to the side entrance of the convention center where the JANNAF Registration area will be located.

Attendees who are not staying at the Embassy Suites may park at the convention center free of charge during meeting hours. Please use the main entrance beneath the “white sails” for easiest access to the JANNAF registration area.

Classified Sessions // NASA Langley Research Center

Shuttle bus service will be provided on a very limited schedule in order to adhere to NASA security policy. The bus will make one trip to NASA before the start of the morning session and one trip back to the Convention Center after the afternoon session ends. For those planning to attend both classified and unclassified sessions on the same day and needing greater flexibility, you will need to arrange for your own transportation so that you can come and go as you please. Ample free parking is available near the venue.

Only those registered to attend the JANNAF meeting as a whole and specifically the Classified sessions will be permitted on the shuttle bus or provided with driving directions to the NASA LaRC building location and parking; and granted entry into the session location.

Hotel // Embassy Suites by Hilton Hampton Convention Center

There are three airports to choose from when flying to the Hampton area. [Newport News/Williamsburg International Airport](#) (PHF) is 12 miles from the hotel; [Norfolk International Airport](#) (ORF) is 19 miles from the hotel; and [Richmond International Airport](#) (RIC) is 69 miles from the hotel. Amtrak is another option for travel to the Hampton area. Rideshare is available from all three airports, and ranges from \$35 - \$150 depending on the airport you select. If you prefer to have a car there are several options at each airport. More information can be found on the [Information tab](#) of the meeting webpage.

JANNAF guests staying at the Embassy Suites will have a discounted overnight self-parking rate of \$5 per night or \$22 per night if using valet services. Instructions will be provided to register for discounted parking via your cell phone or a weblink, or you can self-identify during check-in to receive a discounted parking pass to place in your vehicle.

SECURITY/ATTENDANCE REQUIREMENTS

The overall security classification of this meeting is SECRET.

Before you can register to attend Unclassified sessions at this meeting, you must both:

- be a US citizen currently employed by the US Government or employed by a US Government contractor,
and
- have an active [JANNAF Account](#).

Before you can register to attend Classified sessions at this meeting, you must both:

- meet the requirements listed above for Unclassified sessions,
and
- possess, at minimum, a SECRET US Security Clearance with a need-to-know in the areas of rocket, missile, space, or gun propulsion.

Questions concerning attendance eligibility should be directed to Mionna Sharp at (410) 992-7300, ext. 224, or msharp@erg.jhu.edu.

REGISTRATION

To register to attend Unclassified sessions at this meeting, you must:

- obtain, renew or have an active JANNAF Account (<http://www.jannaf.org/create-account>),
- complete the meeting registration form (login required),
and
- submit your registration payment (see fee chart on [page 9](#)).

To register to attend Classified sessions at this meeting, by 13 November you must:

- complete the meeting registration steps listed above for Unclassified sessions,
and
- complete an additional Classified registration requirement based on your employer.
DOD Employees ONLY: Submit a Visit Authorization Request (VAR) via DISS.
Search SMO Name: 0W2X8; select SMO Name: 0W2X8-Johns Hopkins University-2.
All other attendees: Complete and submit the [Security Clearance Certification Form](#)

Go to the [Register tab](#) on the meeting webpage for links to complete your meeting registration, and for additional information.

Registration steps may be completed as soon as permitted, but should be completed on or before Friday, 6 November at 11:59 p.m. ET to take advantage of the lowest fee. For details of what the registration fee includes, please go to the [Register tab](#) on the meeting webpage. Use the registration fee chart on [page 9](#) to determine the amount applicable to your registration. The dates noted are based on payment being received.

The deadline to register for Classified session attendance is 13 November 2026.

Follow the instructions above and on the Register tab of the meeting webpage to register.

Registration Fees

by 6 Nov

Last day to qualify for Early registration rate

Government*\$1200****Contractor****\$1300*****Student****\$500**

by 20 Nov

Last day to qualify for Regular registration rate

Government*\$1200****Contractor****\$1400*****Student****\$550**

21 Nov–11 Dec

Late registration period (available until meeting ends)

Government*\$1300****Contractor****\$1500*****Student****\$600**

* Only those directly employed by the US Government are eligible for the Government registration fee.

* To qualify for the student discount, you must be a full time student, intern, or cooperative education student, and meet eligibility requirements listed on [page 8](#) and on the [Register tab](#) of the meeting webpage.

Accepted Payment Methods

**Credit Card
(recommended)**

- VISA
- MasterCard
- American Express

Submit payment via the [Payment site](#) by 6 November to qualify for discounted rate.

Online credit card payments will be charged immediately; a receipt will be emailed to you from meetings@erg.jhu.edu. To facilitate the delivery of this and other meeting-related communication, you are urged to add "@erg.jhu.edu" to the list of accepted email domains in your email client.

**Government
Purchase Order**

Completed Government P.O.s must be received by 6 November to qualify for discounted rate or by 20 November for regular registration price.

P.O.s are accepted from government only, but will not be accepted for late registration.

CANCELLATION POLICY

Written (email) cancellations submitted on or before 6 November will receive a full refund minus an administrative fee of \$75.00. Cancellations made after 6 November will not be refunded. Substitutes are welcome as long as the request for substitution is from the original attendee; attendance eligibility is appropriately met by the substitute; and the original and substitute attendee are from the same organization to facilitate transfer of registration funds. Please contact Shelley Cohen via email (scohen@erg.jhu.edu) to transfer or cancel your registration.

ON-SITE REGISTRATION CHECK-IN

The JANNAF Registration Check-in desk will be located at the Hampton Roads Convention Center lobby, which can be accessed through the main entrance under the “white sails” (shown in image below), or for guests of the Embassy Suites, via the covered walkway between the hotel and center. Government-issued photo identification is required upon check-in. Be sure to complete both registration steps (registration form and payment) before arriving at the Registration Check-in desk and allow extra time if you register after 20 November. You must check in at the Registration Check-in desk before you will be permitted to attend any Classified sessions. The last day to register to attend Classified sessions is 13 November.

JANNAF Registration Check-in Desk Hours

Sunday	5 – 7 p.m.
Monday	7 a.m. – 5 p.m.
Tuesday	7 a.m. – 5 p.m.
Wednesday	7 a.m. – 5 p.m.
Thursday	7 a.m. – 5 p.m.
Friday	7 a.m. – 5 p.m.

Hampton Roads Convention Center Main Entrance



ATTIRE

There is no official dress code for JANNAF meetings; however, business or business casual attire is suggested. When packing, keep in mind that it can be difficult to regulate the temperature in meeting rooms to everyone's liking, and any changes may not be noticeable quickly, so it is best to bring a light sweater or jacket and dress in layers.

DINING

Approximately one and one-half hours for lunch has been built into the unclassified portion of the program each day. Outside food cannot be brought into the Hampton Roads Convention Center. Lunch options will be available at the Convention Center. In addition, the Cypress Grille and Bar, located in the Embassy Suites, will be open throughout the week for attendees to dine-in (lunch and dinner). For more dining choices, the Hampton Scuttle Bus service will be available during lunch breaks to transport attendees between the Convention Center and the Peninsula Town Center. A variety of restaurants are also available within a 5–10 minute drive from the hotel and the Convention Center. Lists of nearby restaurants have been provided on the [Information tab](#) of the meeting webpage and will be available in the JANNAF registration area.

Attendees of Classified sessions who anticipate attending both the morning and afternoon sessions at NASA LaRC can purchase lunch in the building where Classified sessions are being held. As an alternative, the lunch break may be long enough (approximately 1 hour) for those with a car to leave NASA LaRC and find a nearby restaurant.

NETWORKING ROOM

Grand Ballroom G will serve as the JANNAF networking area at the Convention Center; light morning refreshments, a mid-morning coffee break, and light mid-afternoon refreshments will be served at the times stated in the Schedule at a Glance on pages 19-24.

ATTENDEE NETWORKING HOUR & POSTER SESSION

Kick off your evening on Wednesday, 9 December by joining us for the attendee networking hour from 5:30 – 7 p.m. to connect with other attendees in an informal and relaxed environment. The networking hour aims to encourage interaction amongst peers and forge lasting relationships between both seasoned attendees and newcomers within the community. Both Early Career and General Posters will be on display during the networking hour event. Poster presenters will be present to discuss their work with attendees during this time. The posters will remain on display through Thursday, 10 December at 12 p.m. The list of posters can be found on page 70.

Light refreshments and a bar (credit cards, cash, and mobile payment options) will be available to fuel your conversations and connections.

There is no charge for meeting attendees to participate in the networking hour—simply wear your badge for access. This is an attendee-only event.

For those wishing to continue networking after the event concludes, dining information for nearby restaurants will be available.

JANNAF 101 ORIENTATION AND EARLY CAREER WORKING GROUP

First-time JANNAF meeting attendees and those who self-identify as early career professionals are invited to attend a brief primer on JANNAF as an organization on Sunday, 6 December, beginning at 6 p.m. in Room 106 at the Hampton Roads Convention Center. Arrive early at the Registration Check-in desk (opening at 5 p.m. on Sunday) to get your badge and take advantage of the opportunity to meet and network with other first-time and early career participants while learning more about the JANNAF structure, activities, and community.

For those attendees who are early career professionals, a meeting of the JANNAF Early Career Working Group will take place immediately following the JANNAF 101 orientation on Sunday. Continue your networking during this discussion regarding updates, new initiatives, and actions for the group. Topics for discussion include a brief overview of the structure and historical perspectives of JANNAF, opportunities for mentorship and leadership, upcoming social events, and new award initiatives designed to highlight contributions from early career JANNAF attendees.

Exclusively for attendees who self-identify as Early Career: Join your peers for a tour of the unique 8-Foot High Temperature Tunnel Facility, the nation's largest hypersonic blow down test facility! The tour will be given by Daniel Boyd, Tunnel Test Director and cover all aspects of the tunnel. Two tour groups will be organized on the morning of Friday, 11 December. Group transportation will be provided between the convention center and the facility (driving yourself is not an option). Sign up for the tour time of your choice via the meeting registration form on or before 13 November. There is no fee but participation is limited to 20 people per tour, first come, first served. Should your plans change, you must notify ERG no later than 20 November so that someone else may take your place. Note that if tour participation is low, the two tour times may be combined together at the discretion of ERG.

VIRTUAL READING ROOM

Pre-publication copies of meeting papers that are publicly releasable, DoD Distribution Statement C, or CUI/FEDCON, will be available to read in the virtual Reading Room beginning at 9 a.m. on Monday, 7 December. The virtual Reading Room can only be accessed on your own device, but will remain available 24/7 until the meeting proceedings are published in the JANNAF Digital Online Collection (JDOC) approximately 12 weeks after the meeting. Printing or reproducing Reading Room papers is prohibited.

SIDE MEETINGS

A limited number of small meeting rooms are available for JANNAF-related side meetings. Rooms must be reserved and will be assigned on a first-come, first-served basis, and audiovisual equipment will not be provided. Please contact Shelley Cohen at scohen@erg.jhu.edu to reserve a room as soon as possible. Requests may also be made on-site during the meeting if space is available.

PROGRAM CHANGES

Printed meeting programs will be distributed to attendees upon check-in on-site. The most current version of the Final Program, reflecting changes made after the program has been sent to the printer and throughout the week of the meeting, can be accessed online on the Agenda tab of the meeting webpage or by scanning the QR code printed on the inside cover of the printed program and posted throughout the meeting space. Changes to the Final Program will also be posted on touchscreen monitors in the Registration Area. Attendees should regularly check for program updates. Final Programs are CUI and Distribution Statement C; they must be secured when not in your possession.

MEETING PROCEEDINGS

Proceedings from this meeting will be published by the JHU WSE Energetics Research Group. Papers and presentations will be provided complimentary to attendees of this meeting who have paid the full registration fee. Attendees will have access to these materials beginning approximately 12 weeks following the meeting via the JANNAF Digital Online Collection (JDOC) Database accessible through your JANNAF Portal Account. This benefit is not available for student attendees.

QUESTIONS

Questions concerning this program, hotel reservation issues, and/or payment of the registration fee should be directed to Shelley Cohen at (410) 992-7300, ext. 215 / scohen@erg.jhu.edu.

Questions that pertain to obtaining a JANNAF Portal Account (registration pre-requisite) should be directed to Mionna Sharp at (410) 992-7300, ext. 224 / msharp@erg.jhu.edu.

Johns Hopkins University Whiting School of Engineering Energetics Research Group (JHU WSE ERG) provides technical and administrative support to the JANNAF Interagency Propulsion Committee.

JHU WSE ERG
10630 Little Patuxent Parkway, Suite 202
Columbia, MD 21044-3286
erg.jhu.edu

Upcoming Meetings

7-11 December 2026

Hampton, Virginia

Visit [December 2026 Meeting Website](#)

54th Combustion

42nd Airbreathing Propulsion

42nd Exhaust Plume and Signatures

36th Energetic Systems Hazards

Joint Subcommittee Meeting

Programmatic and Industrial Base Meeting

17-21 May 2027

Huntsville, Alabama

74th JANNAF Propulsion Meeting

Programmatic and Industrial Base Meeting

21st Modeling and Simulation

16th Liquid Propulsion

15th Spacecraft Propulsion

Joint Subcommittee Meeting

6-10 December 2027

Location TBD

51st Structures and Mechanical Behavior

47th Propellant and Explosives Development
and Characterization

36th Safety and Environmental Protection

4th High Temperature Material Applications

Joint Subcommittee Meeting

Programmatic and Industrial Base Meeting

PROGRAM COMMITTEE MEMBERS



Program Chair: Dr. Brian T. Bojko
Naval Research Laboratory
Washington, DC

Combustion Subcommittee

Technical Steering Group Chair

Mr. Joel W. Robinson
NASA Marshall Space Flight Center
Huntsville, AL

Technical Steering Group Deputy Chair

Dr. Christopher P. Stone
DEVCOM Army Research Laboratory
Aberdeen Proving Ground, MD

JANNAF Executive Committee Liaison

Dr. Elliot R. Wainwright
DEVCOM Army Research Laboratory
Aberdeen Proving Ground, MD

JHU WSE ERG Technical Representative

Mr. Peyton Nanney
JHU WSE Energetics Research Group
Columbia, MD

Mission Area I: Ignition and Combustion of Gun Propellants

Dr. Eugene Rozumov
DEVCOM Armaments Center
Picatinny Arsenal, NJ

Mission Area II: Solid Propellants and Combustion

Mr. Timothy P. Kibbey
NASA Marshall Space Flight Center
Huntsville, AL

Mission Area III: Explosive Performance/Enhanced Blast

Mr. Paul M. Giannuzzi
Naval Surface Warfare Center-Indian Head Division
Indian Head, MD

Dr. Benjamin R. Wilde
Air Force Research Laboratory
Eglin AFB, FL

Mission Area IV: Airbreathing Combustion

Dr. Mark R. Gruber
Air Force Research Laboratory
Wright-Patterson AFB, OH

Mr. Matthew R. Gazella
Air Force Research Laboratory
Wright-Patterson AFB, OH

Mission Area V: Combustion Diagnostics

Dr. Jeffrey S. West
NASA Marshall Space Flight Center
Huntsville, AL

Dr. Brian T. Fisher
Naval Research Laboratory
Washington, DC

Mission Area VI: Liquid, Hybrid and Novel Propellants Combustion

Dr. Steven D. Chambreau
Air Force Research Laboratory
Edwards AFB, CA

Mr. Christopher G. Burnside
NASA Marshall Space Flight Center
Huntsville, AL

Airbreathing Propulsion Subcommittee

Technical Steering Group Chair

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Naval Research Laboratory
Washington, DC

Technical Steering Group Deputy Chair

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Dr. Michael S. Brown
Air Force Research Laboratory
Wright-Patterson AFB, OH

JHU WSE ERG Technical Representative

Mr. Alex Bishop
JHU WSE Energetics Research Group
Columbia, MD

Mission Area I: Turbopropulsion

Ms. Rebekah McCormick
Air Force Research Laboratory
Wright-Patterson AFB, OH

Ms. Nicholas B. Canovas
NASA Glenn Research Center
Cleveland, OH

Mission Area II: Ramjet Propulsion

Dr. Trevor D. Hedman
Naval Surface Warfare Center-Indian Head Division
Indian Head, MD

Dr. Brian T. Bojko
Naval Research Laboratory
Washington, DC

Mission Area III: Scramjet Propulsion

Dr. Aaron H. Auslender
NASA Langley Research Center
Hampton, VA

Dr. Mark A. Hagenmaier
Air Force Research Laboratory
Wright-Patterson AFB, OH

Dr. Richard L. Gaffney
NASA Langley Research Center
Hampton, VA

Mission Area IV: Combined/Advanced Cycle Propulsion

Dr. Ernest Thompson
Air Force Research Laboratory
Wright-Patterson AFB, OH

Dr. Heath Reising
NASA Glenn Research Center
Cleveland, OH

Mission Area V: Integrated Vehicle Design and Thermostructural Analysis

Dr. Justin L. Clough
Air Force Research Laboratory
Wright-Patterson AFB, OH

Dr. Dalton M. Baier
Air Force Research Laboratory
Wright-Patterson AFB, OH

Mission Area VI: High-Speed Aerodynamics

Dr. Matthew W. Tufts
Air Force Research Laboratory
Wright-Patterson AFB, OH

Dr. Rajiv R. Shenoy
NASA Langley Research Center
Hampton, VA

Exhaust Plume and Signatures Subcommittee

Technical Steering Group Chair

Dr. Milton E. Vaughn, Jr.
DEVCOM Aviation & Missile Center
Redstone Arsenal, AL

Technical Steering Group Deputy Chair

Dr. Peter G. Cross
DEVCOM Aviation & Missile Center
Redstone Arsenal, AL

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Dr. William A. Hargus, Jr.
Air Force Research Laboratory
Edwards AFB, CA

JHU WSE ERG Technical Representative

Mr. Nicholas S. Keim
JHU WSE Energetics Research Group
Columbia, MD

Mission Area I: Plume/Wake/Hypersonic Flowfield Analysis

Dr. Mark L. Underwood
DEVCOM Aviation & Missile Center
Redstone Arsenal, AL

Mission Area II: Plume/Wake/Hypersonic Radiation and Signatures

Dr. Milton E. Vaughn, Jr.
DEVCOM Aviation & Missile Center
Redstone Arsenal, AL

Mission Area III: Plume/Wake/Hypersonic Effects

Dr. Paul M. Danehy
NASA Langley Research Center
Hampton, VA

Mission Area IV: Additional Plume/Wake/Hypersonic Topics

Dr. Milton E. Vaughn, Jr.
DEVCOM Aviation & Missile Center
Redstone Arsenal, AL

Mission Area V: Composite Scene Signatures of Plume/Wake/Hypersonic Flowfield and Hardbody Configurations

Dr. Ann M. Reagan
Naval Air Warfare Center Aircraft Division
Patuxent River, MD

Mr. Robert M. Watson
Air Force Research Laboratory
Eglin AFB, FL

Energetic Systems Hazards Subcommittee

Technical Steering Group Chair

Mr. Joshua E. Felts
Naval Surface Warfare Center-Indian Head Division
Indian Head, MD

Technical Steering Group Deputy Chair

Dr. Eric J. Welle
Air Force Research Laboratory
Eglin AFB, FL

JANNAF Executive Committee Liaison

Dr. Ephraim B. Washburn
Naval Surface Warfare Center Weapons Division
China Lake, CA

JHU WSE ERG Technical Representative

Mr. Michael "Miki" Fedun
JHU WSE Energetics Research Group
Columbia, MD

Mission Area I: Thermal Decomposition and Cookoff

Ms. Aubrey D. Farmer
Naval Air Warfare Center Weapons Division
China Lake, CA

Dr. William W. Erikson
Sandia National Laboratory
Albuquerque, NM

Mission Area II: Shock/Impact-Induced Reactions

Mr. Joshua E. Felts
Naval Surface Warfare Center-Indian Head Division
Indian Head, MD

Dr. Joel B. Stewart
DEVCOM Army Research Laboratory
Aberdeen Proving Ground, MD

Dr. Eric J. Welle
Air Force Research Laboratory
Eglin AFB, FL

Mission Area III: Insensitive Munitions Technology

Ms. Jessica L. Vaughn
DEVCOM Aviation & Missile Center
Redstone Arsenal, AL

Mr. Daniel J. Pudlak
DEVCOM Armaments Center
Picatinny Arsenal, NJ

Mr. Stephen R. Struck
Air Force Research Laboratory
Eglin AFB, FL

Ms. Cynthia C. Manns
Naval Ordnance Safety and Security Activity
Indian Head, MD

Mission Area IV: Combustion Vulnerability of Stowed Energetics

Mr. James S. Anderson
DEVCOM Army Research Laboratory
Aberdeen Proving Ground, MD

Mr. Justin E. Pritchett
DEVCOM Army Research Laboratory
Aberdeen Proving Ground, MD

Mission Area V: Safety Hazard and Classification of Solid and Liquid Energetics

Dr. Kirstin F. Warner
DoW Explosives Safety Board
Alexandria, VA

Mission Area VI: Energetic Defect Characterization

Mr. Daniel J. Pudlak
DEVCOM Armaments Center
Picatinny Arsenal, NJ

Programmatic and Industrial Base**PIB Executive Committee Co-Chairs**

Mr. Alexander E. Woods
OUSD (A&S)
Alexandria, VA

Mr. Michel Fazah
NASA Marshall Space Flight Center
Huntsville, AL

JHU WSE ERG Technical Representative

Mr. Kirk V. Sharp
JHU WSE Energetics Research Group
Columbia, MD

JANNAF Senior Meeting Planner

Shelley S. Cohen
JHU WSE Energetics Research Group
Columbia, MD

JANNAF Assistant Meeting Planner

Atashia Allen
JHU WSE Energetics Research Group
Columbia, MD

ERG Facility Security Officer

Mary T. Gannaway
JHU WSE Energetics Research Group
Columbia, MD

ERG Assistant Facility Security Officer

Mionna Sharp
JHU WSE Energetics Research Group
Columbia, MD

KEYNOTE ADDRESS

Dr. Robert A. Baurle
Senior Scientist for Hypersonics
Air Force Research Laboratory
Wright-Patterson AFB, OH



Dr. Robert A. Baurle will give the keynote presentation during the December meeting. He currently serves as the Senior Scientist for Hypersonics at the Air Force Research Laboratory, where he leads the Air Force's hypersonics science and technology strategy, coordinates Air Force interests with other government agencies, and advises senior Air Force leadership on hypersonic systems development.

Dr. Baurle has supported the advancement of hypersonic propulsion technologies throughout his educational and professional career. Upon receiving his Ph.D. from North Carolina State University in 1995, he joined Taitech, Inc. to lead a high-speed propulsion system analysis group focused on air-augmented rocket and scramjet engine technologies. He then spent 21 years as a research scientist in the Hypersonic Airbreathing Propulsion Branch at the NASA Langley Research Center. During this time, he led the development of the branch's computational fluid dynamics tools used for the design and evaluation of hypersonic air-breathing propulsion systems. He also served as NASA's leading subject matter expert supporting both internal and Department of Defense hypersonic propulsion programs.

As the keynote presenter at the December JANNAF meeting, the title of Dr. Baurle's talk is, "Accelerating the Research and Development of Hypersonic Capabilities." Hypersonic technology development is a priority for the Department of War, but the extreme environments encountered at hypersonic speeds continue to challenge our ability to predict performance and rapidly develop new technologies. AI provides an opportunity not simply to accelerate existing computational methods, but to fundamentally change how we model, experiment, and discover when developing complex hypersonic systems. This keynote will describe the marriage of experimental and computational science that provided the foundation for our 1st generation of hypersonic systems, and explore the potential of AI-driven science to dramatically compress the timeline from physics understanding to fielded hypersonic capability moving forward.

All attendees are invited to participate. The Keynote Address begins at 8:00 a.m. on Tuesday, 8 December in Grand Ballroom EF on the second floor of the Hampton Roads Convention Center. Award presentations will immediately follow the Keynote Address.

TECHNICAL PROGRAM

This year's technical program currently consists of more than 325 presentations in 53 technical sessions, 13 specialist sessions, six workshops, a poster session, and keynote; plus seven panel meetings and a town hall meeting. A detailed daily schedule of all sessions, workshops, meetings, and networking activities is provided below and continues through page 24. Detailed agendas of the technical sessions, specialist sessions, and workshops are listed in the Program section of the Preliminary Program beginning on page 25.

Please note that the agendas of 29 sessions begin with at least one presentation that is restricted at either distribution statement B (US Government only), D (DoD and DoD Contractors only), or E (DoD Components only). Sessions with at least one restricted presentation are indicated in the Schedule at a Glance below and through page 24 with "Open *". The schedule color key on each page explains other markings. Please review the detailed session agendas in the Preliminary Program for additional information about the restricted talks and who is eligible to attend them. Presentation and session restrictions are subject to change.

What are Panel Meetings & why should I attend them?

Subcommittee Panels represent the primary mechanism for collaboration in technical areas of joint interest to JANNAF agencies, the industry, and academia. If you are interested in participating in JANNAF tasks or wish to learn about potential areas for collaboration, please look through the Schedule at a Glance (pp. 20-24) for panel meetings that align with your interests.

SCHEDULE - Sunday, 6 December

Registration Check-In Desk:

5:00 - 7:00 p.m.

Convention Center Main Lobby (near Grand Staircase)

6:00 - 7:00 p.m.	JANNAF 101 Orientation and Early Career Working Group Meeting	Room 106	Open
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Schedule Color Key

Session Details	Closed Meetings
Panel Meetings	Networking Opportunities
"Open B", "Open D", and "Open *" indicate a session with at least one presentation restricted at B, D, or E. "Open S" and "Open S*" indicate a Secret session.	

SCHEDULE - Monday, 7 December

Registration Check-In Desk:

7:00 a.m. - 5:00 p.m., Convention Center Main Lobby

IT Office: 7:00 a.m. - 5:00 p.m. in Room 101

Morning Sessions: 8:00 a.m. - 12:05 p.m.

Afternoon Sessions: 1:30 - 6:05 p.m.

Networking Area Refreshments:

7:00 - 8:00 a.m. in Grand Ballroom G

9:35 - 10:35 a.m. in Grand Ballroom G

3:05 - 4:05 p.m. in Grand Ballroom G

Lunch Break (On Your Own): 12:00 - 1:30 p.m.

7:15 - 7:30 a.m.	Session Chair Meeting (Monday sessions)			Room 102	Closed
8:00 a.m. - 12:00 p.m.	1A	ESHS	WORKSHOP: Canonical Data and the Supporting Experiments and Models for Explosive Train Design - I	Room 104-105	Open
8:00 - 11:05 a.m.	1B	EPSS	Plume / Wake / Hypersonic Flowfield Measurements	Room 106	Open *
8:00 a.m. - 11:35 a.m.	1C	APS/MSS	WORKSHOP: Model Validation with Uncertainty Quantified Using Probability Boxes - I	Room 107	Open
8:00 a.m. - 12:05 p.m.	1D	CS	Metal, Alloy, and Boron Fuel Particle and Propellant Studies	Room 108	Open
8:00 - 10:05 a.m.	1E Part 1	CS	Advances in ASCENT	Room 109	Open
10:30 a.m. - 12:05 p.m.	1E Part 2	CS	Combustion Analytics	Room 109	Open
8:00 - 11:35 a.m.	1F	APS	Fundamental CFD and Modeling	Ballroom E	Open
8:00 - 11:35 a.m.	1G	APS	Air Breathing RDE Studies	Ballroom F	Open *
1:30 - 5:30 p.m.	1P	ESHS	WORKSHOP: Canonical Data and the Supporting Experiments and Models for Explosive Train Design - II	Room 104-105	Open
1:30 - 5:30 p.m.	1Q	EPSS	SPECIALIST SESSION: EPSS Tutorial: How to Use the JANNAF US3D-PWH Code - Recommended Practices	Room 106	Open
1:30 - 5:35 p.m.	1R	APS/MSS	WORKSHOP: Model Validation with Uncertainty Quantified Using Probability Boxes - II	Room 107	Open
1:30 - 6:05 p.m.	1S	CS	Combustion Diagnostic Methods and Applications	Room 108	Open
1:30 - 4:35 p.m.	1T	CS	Advances in Propellant Combustion	Room 109	Open
4:35 - 5:35 p.m.	1T	CS	TOWN HALL MEETING: Liquid Rocket Propulsion	Room 109	Open
1:30 - 4:35 p.m.	1U	APS	Integrated Design and System Level Impacts	Ballroom E	Open *
4:35 - 6:05 p.m.	1U	APS	PANEL MEETING: Structures and Materials in Hypersonics	Ballroom E	Open
1:30 - 6:05 p.m.	1V	APS	RDE Fueling	Ballroom F	Open *

Schedule Color Key

Session Details	Closed Meetings
Panel Meetings	Networking Opportunities
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SCHEDULE - Tuesday, 8 December**Registration Check-In Desk:**

7:00 a.m. - 5:00 p.m., Convention Center Main Lobby

IT Office: 7:00 a.m. - 5:00 p.m. in Room 101**Keynote Address:** 8:00 - 9:30 a.m.**Morning Sessions:** 10:00 a.m. - 12:05 p.m.**Afternoon Sessions:** 1:30 - 6:05 p.m.**Networking Area Refreshments:**

7:00 - 8:00 a.m. in Grand Ballroom G

9:30 - 10:00 a.m. in Grand Ballroom G

3:05 - 4:05 p.m. in Grand Ballroom G

Lunch Break (On Your Own): 12:00 - 1:30 p.m.

7:15 - 7:30 a.m.	Session Chair Meeting (Tuesday sessions and Wednesday AM classified session)			Room 102	Closed
8:00 - 9:30 a.m.	KEYNOTE ADDRESS: Keynote presenter TBA Awards and Announcements			Grand Ballroom EF	Open
10:00 a.m. - 12:00 p.m.	2A	ESHS	WORKSHOP: Canonical Data and the Supporting Experiments and Models for Explosive Train Design - III	Room 104-105	Open
10:00 - 11:35 a.m.	2B	EPSS	Composite Scene Signatures of Plume / Wake / Hypersonic Flowfield and Hardbody Configurations	Room 106	Open
10:00 a.m. - 12:05 p.m.	2C	APS	Multi-Mode Detonative Propulsion	Room 107	Open
10:00 - 11:35 a.m.	2D	CS	Propellant Characterization I: Burn Rate and Pressure Response	Room 108	Open *
10:00 a.m. - 12:05 p.m.	2E	CS	Explosive Performance	Room 109	Open *
10:00 - 11:35 a.m.	2F	APS	Vehicle Level Aerodynamics	Ballroom E	Open *
10:00 a.m. - 12:05 p.m.	2G	APS	Turbopropulsion I: Modeling and Simulation	Ballroom F	Open
10:00 a.m. - 6:00 p.m.	JANNAF Technical Executive Committee Meeting			Room 102	Closed
1:30 - 5:30 p.m.	2P	ESHS	WORKSHOP: Canonical Data and the Supporting Experiments and Models for Explosive Train Design - IV	Room 104-105	Open
1:30 - 5:30 p.m.	2Q	EPSS	SPECIALIST SESSION: EPSS Tutorial: Application of the JANNAF Signatures Suite I - Boosting Missile Configurations	Room 106	Open
1:30 - 5:05 p.m.	2R	APS/MSS	SPECIALIST SESSION: Scramjet/Ramjet Design Tools and Frameworks - I	Room 107	Open
1:30 - 5:05 p.m.	2S	CS	Propellant Characterization II: Diagnostics and Control Strategies for Solid Rocket Combustion	Room 108	Open
5:05 - 6:05 p.m.	2S	CS	PANEL MEETING: Kinetics	Room 108	Open
1:30 - 5:05 p.m.	2T	CS	Modeling and Simulation Activities in Axisymmetric Dual-Mode Ramjets	Room 109	Open
1:30 - 6:05 p.m.	2U	APS	Geometry Effects in RDEs	Ballroom E	Open
1:30 - 5:35 p.m.	2V	APS	HIFiRE Flight 2-C	Ballroom F	Open

Schedule Color Key

	Session Details		Closed Meetings
	Panel Meetings		Networking Opportunities
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SCHEDULE - Wednesday, 9 December**Registration Check-In Desk:**

7:00 a.m. - 5:00 p.m., Convention Center Main Lobby

IT Office: 7:00 a.m. - 5:00 p.m. in Room 101**Morning Sessions:** 8:00 a.m. - 12:20 p.m.**Afternoon Sessions:** 1:30 - 5:35 p.m.**Networking Area Refreshments:**

7:00 - 8:00 a.m. in Grand Ballroom G

9:35 - 10:35 a.m. in Grand Ballroom G

3:05 - 4:05 p.m. in Grand Ballroom G

Lunch Break (On Your Own): 12:00 - 1:30 p.m.

7:15 - 7:30 a.m.	Session Chair Meeting (Wednesday sessions and Thursday AM classified session)			Room 102	Closed
8:00 - 10:05 a.m.	3A Part 1	ESHS	Safety and Hazard Classification of Solid and Liquid Energetics	Room 104-105	Open
10:30 - 11:35 a.m.	3A Part 2	ESHS	Energetic Systems Vulnerability	Room 104-105	Open
8:00 a.m. - 12:00 p.m.	3B	EPSS	SPECIALIST SESSION: EPSS Tutorial: Application of the JANNAF Signatures Suite II - Hypersonic Glide Vehicles	Room 106	Open
8:00 - 11:05 a.m.	3C	APS	Experimentation of Thermal-Structural Components	Room 107	Open *
8:00 - 11:35 a.m.	3D	CS	Advances in RDRE and PDE	Room 108	Open *
8:00 - 11:35 a.m.	3E	CS	Metalized Explosive Development and Characterization	Room 109	Open D
8:00 a.m. - 12:00 p.m.	3F	PIB	SPECIALIST SESSION: National Space Strategies: Access, Mobility, Logistics, and Assembly	Ballroom E	Open
8:00 - 11:35 a.m.	3G	APS	Single and Dual Mode Ramjets	Ballroom F	Open *
8:00 a.m. - 12:20 p.m.	3H	APS	(U) SPECIALIST SESSION: Legacy Scramjet Technology Development Programs	NASA LaRC	Open S
12:00 - 1:30 p.m.	CS Technical Steering Group Meeting			Room 102	Closed
1:30 - 5:35 p.m.	3P	ESHS	Shock Initiation of Explosives	Room 104-105	Open
1:30 - 5:05 p.m.	3Q	ESHS	Thermal Decomposition and Cookoff	Room 106	Open *
1:30 - 4:35 p.m.	3R	APS/MSS	SPECIALIST SESSION: Scramjet/Ramjet Design Tools and Frameworks - II	Room 107	Open
1:30 - 5:35 p.m.	3S	CS	Modeling of Non-Ideal Explosives	Room 108	Open *
1:30 - 5:05 p.m.	3T	CS	Experimental Research Activities in Axisymmetric Dual-Mode Ramjets	Room 109	Open
1:30 - 5:35 p.m.	3U	APS	Solid Fuels	Ballroom E	Open *
1:30 - 5:35 p.m.	3V	APS	Inlets for Combined and Advanced Cycle Propulsion	Ballroom F	Open
1:30 - 4:35 p.m.	3W	APS/EPSS	(U) Hypersonic Inlets, RDEs, and Signatures	NASA LaRC	Open S*
5:30 - 7:00 p.m.	Attendee Networking Hour and Poster Session JANNAF Badge required (this event is for attendees only)			Grand Ballroom G	Open

Schedule Color Key

	Session Details		Closed Meetings
	Panel Meetings		Networking Opportunities
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SCHEDULE - Thursday, 10 December

Registration Check-In Desk:

7:00 a.m. - 5:00 p.m., Convention Center Main Lobby

IT Office: 7:00 a.m. - 5:00 p.m. in Room 101

Morning Sessions: 8:00 a.m. - 12:15 p.m.

Afternoon Sessions: 1:15 - 6:05 p.m.

Networking Area Refreshments:

7:00 - 8:00 a.m. in Grand Ballroom G

9:35 - 10:35 a.m. in Grand Ballroom G

3:05 - 4:05 p.m. in Grand Ballroom G

Lunch Break (On Your Own): 12:00 - 1:30 p.m.

7:15 - 7:30 a.m.	Session Chair Meeting (Thursday sessions)			Room 102	Closed
8:00 - 11:35 a.m.	4A	ESHS	Explosive Safety, Impact, and Late-time Response	Room 104-105	Open *
8:00 a.m. - 12:05 p.m.	4B	EPSS	Plume / Wake / Hypersonic Flowfield Modeling - I	Room 106	Open *
8:00 a.m. - 12:05 p.m.	4C	APS	Fuels, Structures, and Materials	Room 107	Open *
8:00 a.m. - 12:05 p.m.	4D	CS	Propellant Developments: Measurement and Modeling	Room 108	Open *
8:00 - 11:05 a.m.	4E	CS	Reactive Material Development - I	Room 109	Open *
8:00 a.m. - 12:00 p.m.	4F	APS	SPECIALIST SESSION: Mixed Fuel Ramjet Testing and Analysis - I	Ballroom E	Open B
8:00 a.m. - 12:15 p.m.	4H	APS	(U) SPECIALIST SESSION: Aether DS Subscale Ground Testing and Design/Analysis Studies - I	NASA LaRC	Open S
8:30 - 11:00 a.m.	PIB Large Liquid Propulsion Working Group Meeting			Room 102	Closed
12:00 - 1:30 p.m.	APS Technical Steering Group Meeting			Room 103	Closed
1:00 - 5:30 p.m.	PIB Executive Committee Meeting			Room 102	Closed
1:30 - 5:05 p.m.	4P	ESHS	Explosive Evaluation, Microstructure, and Modeling	Room 104-105	Open *
5:05 - 6:05 p.m.	4P	ESHS	PANEL MEETING: Shock-/Impact-Induced Reactions	Room 104-105	Open
1:30 - 6:05 p.m.	4Q	EPSS	Plume / Wake / Hypersonic Flowfield Modeling - II	Room 106	Open *
1:30 - 6:05 p.m.	4R	APS	Turbopropulsion II: Experimental and Materials	Room 107	Open
1:30 - 6:05 p.m.	4S	CS	Advances in Gun Propulsion	Room 108	Open
1:30 - 3:05 p.m.	4T	CS	Reactive Material Development - II	Room 109	Open
3:05 - 4:05 p.m.	4T	CS	PANEL MEETING: Reactive Material	Room 109	Open
1:30 - 5:00 p.m.	4U	APS	SPECIALIST SESSION: Mixed Fuel Ramjet Testing and Analysis - II	Ballroom E	Open B
1:30 - 5:35 p.m.	4V	APS	Fuel Mixing and Flame Holding in RDEs	Ballroom F	Open *
1:15 - 5:00 p.m.	4W	APS	(U) SPECIALIST SESSION: Aether DS Subscale Ground Testing and Design/Analysis Studies - II	NASA LaRC	Open S
6:00 - 8:00 p.m.	ESHS Technical Steering Group Meeting			Room 103	Closed
6:30 - 8:30 p.m.	EPSS Technical Steering Group Meeting			Room 102	Closed

Schedule Color Key

	Session Details		Closed Meetings
	Panel Meetings		Networking Opportunities
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SCHEDULE - Friday, 11 December**Registration Check-In Desk:**

7:00 a.m. - 5:00 p.m., Convention Center Main Lobby

IT Office: 7:00 a.m. - 5:00 p.m. in Room 101**Morning Sessions:** 8:00 a.m. - 12:05 p.m.**Afternoon Sessions:** 1:30 - 6:05 p.m.**Networking Area Refreshments:**

7:00 - 8:00 a.m. in Grand Ballroom G

9:35 - 10:35 a.m. in Grand Ballroom G

3:05 - 4:05 p.m. in Grand Ballroom G

Lunch Break (On Your Own): 12:00 - 1:30 p.m.

7:15 - 7:30 a.m.	Session Chair Meeting (Friday sessions)			Room 102	Closed
8:00 - 10:05 a.m.	5A	ESHS	Energetic Defect Characterization	Room 104-105	Open *
10:05 - 11:05 a.m.	5A	ESHS	PANEL MEETING: Energetic Defect Characterization for Performance	Room 104-105	Open
8:00 a.m. - 12:00 p.m.	5B	EPSS	SPECIALIST SESSION: EPSS Tutorial: Advanced Diagnostic Capabilities for Making Detailed Validation Measurements	Room 106	Open
8:00 - 10:05 a.m.	5C	APS	Component Level and Experimental Aerodynamics	Room 107	Open
8:00 a.m. - 12:05 p.m.	5D	CS	Combustion Diagnostic Techniques and Sensors	Room 108	Open
8:00 - 10:05 a.m.	5E	CS	Propulsion System Modeling and Machine Learning	Room 109	Open
10:05 - 11:05 a.m.	5E	CS	PANEL MEETING: Modeling Propulsion Systems and Propellants	Room 109	Open
8:00 a.m. - 11:35 a.m.	5F	APS	RDE System Performance and Modeling	Ballroom E	Open
8:00 a.m. - 12:05 p.m.	5G	APS	Applied CFD and Modeling	Ballroom F	Open *
9:15 - 11:15 a.m.	ECWG NASA 8' Wind Tunnel Tour Bus Departure from/Return to Convention Center			Outside HRCC Exhibit Hall A	Ticket Required
10:15 - 12:15 p.m.	ECWG NASA 8' Wind Tunnel Tour Bus Departure from/Return to Convention Center			Outside HRCC Exhibit Hall A	Ticket Required
1:30 - 5:05 p.m.	5P	ESHS	Insensitive Munitions	Room 104-105	Open *
5:05 - 6:05 p.m.	5P	ESHS	PANEL MEETING: Insensitive Munitions	Room 104-105	Open
1:30 - 4:00 p.m.	5S	CS	SPECIALIST SESSION: Effective Use of AI/ML for Increased Efficiency in Combustion Diagnostic Testing, Analysis, and Modeling	Room 108	Open
1:30 - 5:35 p.m.	5U	APS	Ground Testing	Ballroom E	Open
1:30 - 6:05 p.m.	5V	APS	CMC Propulsion Applications and Material Development	Ballroom F	Open *

Schedule Color Key

	Session Details		Closed Meetings
	Panel Meetings		Networking Opportunities

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A note about Author Lists

Session agendas provided in the Preliminary Program list the primary author only unless the primary author is not the presenter. In that case, both the primary author and presenter are listed.

The full author lists will be included on the papers in the virtual Reading Room during the meeting, and in JDOC once papers have been published.