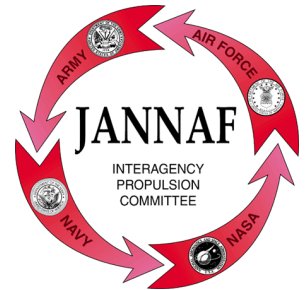


JANNAF INTERAGENCY PROPULSION COMMITTEE

JOINT ARMY-NAVY-NASA-AIR FORCE

63rd JANNAF Propulsion Meeting (JPM)
Programmatic and Industrial Base Meeting (PIB)
47th Combustion (CS)
35th Airbreathing Propulsion (APS)
35th Exhaust Plume and Signatures (EPSS)
29th Propulsion Systems Hazards (PSHS)
Joint Subcommittee Meeting



Meeting Invitation

Newport News Marriott at City Center

Newport News, Virginia
and

NASA Langley Research Center

Hampton, Virginia

16 - 19 May 2016

Last updated 5/2/16



JANNAF Meeting Invitation - May 2016

You are invited to attend the May 2016 meeting of the Joint Army-Navy-NASA-Air Force (JANNAF), which will consist of the 63rd JANNAF Propulsion Meeting; the Programmatic and Industrial Base (PIB) Meeting; and the Joint Meeting of the 47th Combustion / 35th Airbreathing Propulsion / 35th Exhaust Plume and Signatures / 29th Propulsion Systems Hazards Subcommittees. This meeting will be held **Monday through Thursday, 16 - 19 May 2016, at the Newport News Marriott at City Center in Newport News, Virginia. Classified sessions will be located at NASA Langley Research Center in Hampton, Virginia.**



The Program Chair for the meeting is **Dr. Christine M. Michienzi**, OUSD(AT&L)/DASD, MIBP, Alexandria, VA. A complete list of Program Committee Members can be found on pages 6-9.

The JANNAF Interagency Propulsion Committee coordinates fundamental research, exploratory development, and advanced development 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.

The **JANNAF Propulsion Meeting (JPM)** encompasses research and applications at the systems level. The JPM is held each year in conjunction with standing JANNAF subcommittee meetings on a rotating basis. The scope of the 63rd JPM in 2016 spans eight mission areas: Tactical Propulsion; Missile Defense/Strategic Propulsion; Propulsion Systems for Space Access; Gun and Gun-Launched Propulsion; Propulsion and Energetics Test Facilities; Sensors for Propulsion Measurement Applications; System-wide Application of Additive Manufacturing for Propulsion Applications; and Improvised / Homemade Explosives.

The **Programmatic and Industrial Base** 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 (RPIB) rationalization opportunities; special actions from senior agency, department, or Executive Office of the President (EOP) leadership; and information provided to decision makers for either situational awareness or policy decisions.

JANNAF subcommittees focus their resources on technical issues of interest to the JANNAF agencies.

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.

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

The **Exhaust Plume and Signatures Subcommittee (EPSS)**

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Johns Hopkins University Whiting School of Engineering Energetics Research Group (JHU WSE ERG)
provides technical and administrative support to the JANNAF Interagency Propulsion Committee.
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Telephone: (410) 992-7300 - Telefax (410) 730-4969 - Email: info@erg.jhu.edu - www.erg.jhu.edu

JANNAF Meeting Invitation - May 2016

addresses the phenomena associated with the exhaust from rockets, ramjets, space, gun propulsion systems, and Electro-Optical/Infrared (EO/IR) signature community.

The **Propulsion Systems Hazards Subcommittee (PSHS)** examines potential hazards associated with missile, space, and gun propulsion systems.

Hotel Information

Sleeping rooms have been reserved with the **Newport News Marriott at City Center**, located at 740 Town Center Drive, Newport News, VA 23606. Amenities include complimentary self-parking and high speed internet access in guestrooms.

The room rate per night for government attendees with a valid government employee i.d. will be at the GSA FY 2016 per diem rate, currently \$89 plus tax (currently 14%), and a \$1 per day lodging fee, for single or double occupancy. The discounted rate for all other attendees is \$104 plus tax and lodging fee.

These discounted rooms will be held for JANNAF attendees until the extended deadline of Wednesday, 27 April 2016 at 11:59 p.m. EDT, or until they sell out, whichever comes first. Each individual is responsible for his/her own reservation. Reservations may be made either on the Web (recommended) or by telephone.



WEB: Click on the applicable reservation link ([Government](#) or [Non-government](#)) on the [Hotel Page](#) of the meeting website to make your reservation. Using these links will give you direct access to the JANNAF meeting discounted room block.

TELEPHONE: Call Marriott reservations at (866) 329-1758.

Be sure to mention that you will be attending the JANNAF Conference.

Group ID for Government Employees: JAMJAMA
Group ID for non-Government attendees: JFMJFMA

Need to cancel your reservation? Be sure to do so no less than 48 hours prior to arrival to avoid paying a cancellation penalty.

Transportation and Parking

Three airports serve the area, listed below in order by distance from the hotel:

- Newport News/Williamsburg International Airport (15 minute drive)
- Norfolk International Airport (30-60 minute drive, depending on traffic)
- Richmond International Airport (one hour drive)

The hotel does not offer airport shuttle service.

DoD employees must follow specific [travel guidelines/restrictions](#) as posted on the [meeting website](#), with respect to which of the above airports should be used, as well as restrictions regarding use of personal vehicles or rental cars.

Ground transportation costs range from \$17 for a cab from the Newport News/Williamsburg airport, to over \$100 for a taxi or shuttle from the Richmond airport. More information can be found on the airports' websites.

For those driving personal vehicles or renting a car, the hotel is offering all JANNAF attendees complimentary self-parking.

If attending classified sessions at NASA Langley Research Center, attendees will need to drive; carpooling with other attendees is strongly encouraged due to limited parking.

Unclassified Meeting Site

Unclassified sessions will be held at the **Newport News Marriott at City Center Hotel** in Newport News, Virginia. For attendance at Unclassified sessions only, please see the Security/Attendance Requirements and Registration instructions on page 4.

Classified Meeting Site

Classified sessions will be held at **NASA Langley Research Center** in Hampton, Virginia. Check-in at the JANNAF registration desk at the Newport News Marriott at City Center is required prior to attending classified sessions. Please reference the detailed Security/Attendance Requirements, as well as registration instructions specific to attendance at BOTH Classified and Unclassified sessions, located on page 4.

JANNAF Meeting Invitation - May 2016

Security/Attendance Requirements

The overall security classification of this meeting is Secret.

To qualify to attend this meeting, all attendees must be employed by a DoD, DoE, or NASA facility, or with a DoD, DoE, or NASA contractor facility eligible for receipt of militarily-critical technical data. All attendees must also be **U.S. citizens qualified to receive unclassified, limited-distribution information. No foreign nationals will be permitted to attend.**

In addition, CLASSIFIED SESSION attendance is restricted to U.S. citizens who possess, at minimum, a SECRET U.S. 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 the JHU WSE ERG Facility Security Officer, Mary Gannaway, at (410) 992-7304, ext. 211 or mtg@jhu.edu.

Registration

To register, you must have a JANNAF Secure Portal account. Please visit the [Registration Page](#) of the meeting website for additional information and important links.

If attending **UNCLASSIFIED SESSIONS ONLY**, registration for this JANNAF meeting is a **two-part process**; to complete this process:

1. Register for the meeting via the **JANNAF Secure Portal**.
2. Pay the registration fee (Portal account not required).

If attending **BOTH UNCLASSIFIED AND CLASSIFIED sessions, complete both of the steps above, and in addition:**

- **DoD Employees ONLY:** Submit a Visit Request via JPAS. Please use **SMO Code: 0W2X85**
- **All OTHER attendees:** Complete and submit the Security Clearance Certification Form (link provided via Registration Questionnaire)

Additional information and important links for completing your meeting registration can be found at <https://www.jannaf.org/mtgs/May2016/pages/registration.html>.

Register by 2 May if attending classified sessions, and to take advantage of the lowest fee.

Registration Fee

For details of what the registration fee includes, please go to the [Registration Page](#) of the meeting website. Please reference the registration fee chart below to determine the amount applicable to your registration. **The dates noted below are based on payment being received.**

Payment Received	Regular Attendee	Student*
<i>on or before 5/2/16</i>	\$ 900.00	\$200.00
<i>5/3/16 or later</i>	\$1,050.00	\$200.00

* *A discounted registration fee is offered for full time students, interns, and cooperative education students. Students must meet the security/attendance requirements noted above and present current student identification upon registration on-site.*

Registration payment will be accepted via check payable to JHU WSE Energetics Research Group, purchase order (government only), or by credit card (VISA, MasterCard, American Express) using the Registration Payment site available online. Go to the [Registration Page](#) of the meeting website, and click on "Pay Registration Fee."

Attendees are encouraged to complete step one of the registration process via the JANNAF Secure Portal, and submit payment, on or before 2 May 2016 to ensure prompt registration upon arrival at the meeting. Credit card payments made electronically via the Web will be charged immediately; a receipt will be sent to you via email.

Cancellation Policy

Please note our cancellation policy—written (email) cancellations on or before 2 May 2016 will receive a full refund minus an administrative fee of \$50.00. Cancellations made after 2 May 2016 **will not be refunded**. Substitutes are welcome as long as attendance certifications are appropriately met. Please contact Shelley Cohen via email to scohen@erg.jhu.edu to transfer or cancel your registration.

On-Site Registration / Check-in

The JANNAF Registration desk will be located on the first floor of the Newport News Marriott at City Center. Photo identification is required upon registration or check-in. The desk will be open Sunday, 15 May from 5:00 p.m. - 7:00 p.m., and Monday, 16 May through Thursday, 19 May from 7:00 a.m. - 5:00 p.m.

JANNAF Meeting Invitation - May 2016

Attention DoD

An approval package to certify the May 2016 JANNAF Meeting as a “government approved” conference has been submitted by Mr. Stuart Blashill, Chair of the JANNAF Executive Committee from the Naval Air Warfare Center Weapons Division in China Lake, CA.

DoD approval of conferences takes several months and judging from past meetings, may not be received until just prior to the start of the May meeting. **Interested DoD attendees are strongly encouraged to obtain a JANNAF Secure Portal account now and register for the meeting (step 1).** This step does not require travel or training office authorization as it does not include a financial commitment. Payment of the registration fee may be completed as soon as permitted.

Attire

There is no official dress code for JANNAF conferences; however, most attendees wear business or business casual attire. 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 sweater or jacket and dress in layers.

Dining

Approximately one and one-half hours for lunch has been built into the program each day. The hotel restaurant is Kitchen 740. Additionally, the hotel is located in City Center where many dining options can be found within a short walk.

Networking Room

Salon I of the Grand Ballroom will serve as the JANNAF networking area at the hotel; a light continental breakfast and mid-morning coffee break along with mid-afternoon refreshments will be served at the times stated in the program. This area will be open Monday - Thursday from 7:00 a.m. - 5:00 p.m. Please note that scheduled breaks are included in session agendas where time permits. For those attending classified sessions at NASA Langley Research Center, refreshments will be offered there during breaks as well.

Reading Room

All unclassified papers presented in the technical sessions and received in time will be available to read via JANNAF touch-screen tablets. The reading room, located in Pearl Ballroom III, will be open Monday from 10:00 a.m. - 4:30 p.m., and Tuesday through Thursday from 8:00 a.m. - 4:30 p.m. Reproduction of reading room papers is not permitted.

Side Meetings

A limited number of meeting rooms of varying sizes, located on the 1st and 10th floors of the hotel, are available for JANNAF-related side meetings. 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. Rooms will be assigned first-come, first-served.

Program Changes

Meeting programs will be distributed to attendees upon registration/check-in on-site. Note that **Final Programs are Distribution Statement C and should be secured when not in your possession.** Changes to the Final Program will be posted on touch screen monitors located in the ballroom pre-function space. Attendees should periodically check for program updates and administrative announcements and note these updates in their copy of the Final Program.

Meeting Proceedings

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

JANNAF Meeting Invitation - May 2016

Questions

Questions concerning this program and/or payment of the registration fee should be directed to Shelley Cohen at (410) 992-7302, ext. 215 or email: scohen@erg.jhu.edu.

Questions pertaining to registering via the JANNAF Secure Portal should be directed to Mary Gannaway at (410) 992-7304, ext. 211 or email: mtg@jhu.edu.

Upcoming JANNAF Meetings

Liquid Propulsion Subcommittee (LPS)
Advanced Materials Panel Meeting (AMP)
Additive Manufacturing for Propulsion Applications
Technical Interchange Meeting (TIM)
23-25 August 2016
The Jackson Center
Huntsville, Alabama

Programmatic and Industrial Base Meeting
11th Modeling and Simulation;
9th Liquid Propulsion;
8th Spacecraft Propulsion
Joint Subcommittee Meeting
5-9 December 2016
Phoenix, AZ

Program Committee Members

PROGRAM CHAIR

Dr. Christine M. Michienzi
OUSD(AT&L)/DASD, MIBP
Alexandria, VA

JANNAF PROPULSION MEETING

JPM PROGRAM COMMITTEE

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Mr. Frank C. Tse
Naval Surface Warfare Center / Indian Head, MD

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Mr. Bruce R. Askins
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Dr. Charles J. Trefny
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Navy Strategic Systems Programs / Arlington

Dr. Robert J. Jensen
Sierra Lobo, Incorporated / Edwards AFB

Area III: Propulsion Systems for Space Access

Mr. Bruce R. Askins
NASA Marshall Space Flight Center / Huntsville

Area IV: Gun and Gun-Launched Propulsion

Mr. Lucas R. Lopez
Army Armament Research, Development and
Engineering Center / Picatinny Arsenal, NJ

JANNAF Meeting Invitation - May 2016

Area V: Propulsion and Energetics Test Facilities

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Ms. Julie A. Carlile
Air Force Research Laboratory / Edwards AFB, CA

Area VI: Sensors for Propulsion Measurement Applications

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NASA Glenn Research Center / Cleveland

Mr. Robert F. Peterson
Aerojet Rocketdyne / Culpeper

Area VII: System-wide Application of Additive Manufacturing for Propulsion Applications

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Area VIII: Improvised / Homemade Explosives

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Dr. Matthew L. Gross
Naval Air Warfare Center Weapons Division / China Lake, CA

Dr. Scott A. Felt
Aerojet Rocketdyne / Rancho Cordova, CA

Mission Area III: Explosive Performance/Enhanced Blast

Dr. Richard J. Lee
Naval Surface Warfare Center / Indian Head, MD

Dr. Barrie E. Homan
Army Research Laboratory / Aberdeen Proving Ground, MD

Mission Area IV: Airbreathing Combustion

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

JANNAF Meeting Invitation - May 2016

Mission Area V: Combustion Diagnostics

Dr. Robert J. Balla
NASA Langley Research Center / Hampton, VA

Mission Area VI: Liquid, Hybrid and Novel Propellants Combustion

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

Mr. A. Paul Zuttarelli
Air Force Research Laboratory / Edwards AFB, CA

AIRBREATHING PROPULSION SUBCOMMITTEE

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Technical Steering Group Deputy Chair

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JANNAF Executive Committee Liaison

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Air Force Research Laboratory / Wright Patterson AFB, OH

JHU WSE ERG Technical Representative

Bryan S. DeHoff
Aerospace Technical Services / West Chester, OH

Mission Area I: Conventional Ramjet Propulsion

Mr. John B. Moore
Naval Air Warfare Center Weapons Division / China Lake, CA

Mission Area II: Scramjet Propulsion

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

Mission Area III: Scramjet Propulsion/Structures

Mr. Brett Hauber
Air Force Research Laboratory / Wright Patterson AFB, OH

Mission Area IV: Scramjet Component/Engine Testing

Dr. Thomas A. Jackson
Air Force Research Laboratory / Wright Patterson AFB, OH

Mission Area V: Combined/Advanced Cycle Propulsion

Dr. Charles J. Trefny
NASA Glenn Research Center / Cleveland, OH

Mission Area VI: Small/Expendable Turbopropulsion

Dr. Barry V. Kiel
Air Force Research Laboratory / Wright-Patterson AFB, OH

Mission Area VII: Fuel Technology

Mr. Richard W. Wills
Air Force Research Laboratory / Wright-Patterson AFB, OH

Mission Area VIII: Component Modeling Simulation

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

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

Mission Area IX: Advanced Combustion Control

Ms. Alana Jane Spurling
Naval Air Warfare Center Weapons Division / China Lake, CA

EXHAUST PLUME AND SIGNATURES SUBCOMMITTEE

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Dr. Marty J. Venner
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Technical Steering Group Deputy Chair

Ms. Robin L. Miller
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JANNAF Executive Committee Liaison

Mr. Drew O. DeGeorge
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JHU WSE ERG Technical Representative

Mr. Nick Keim
JHU WSE Energetics Research Group / Columbia, MD

Mission Area I: Exhaust Plume Flow Field Analysis

Dr. Kevin D. Kennedy
Army Aviation and Missile Research, Development and Engineering Center / Redstone Arsenal, AL

Mission Area II: Exhaust Plume Radiation

Mr. Jonathan Mautz
National Air and Space Intelligence Center
Wright-Patterson AFB, OH

Mission Area III: Exhaust Plume Effects

Dr. Forrest E. Lumpkin
NASA Johnson Space Center / Houston, TX

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Mission Area IV: Other Exhaust Plume Related Problems

Mr. Thomas A. Smith
Air Force Research Laboratory / Edwards AFB, CA

Mission Area V: Signatures and Spectral and In-band Radiometric Imaging of Targets and Scenes (SPIRITS)

Ms. Robin L. Miller
Naval Air Warfare Center Weapons Division / Point Mugu, CA

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

Mission Area II: Impact/Shock-Induced Reactions

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Army Research Laboratory / Aberdeen Proving Ground, MD

Mission Area III: Insensitive Munitions Technology

Ms. Jamie M. Fisher
Army Aviation and Missile Research, Development
and Engineering Center / Redstone Arsenal, AL

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

Mission Area IV: Gun Propellant Vulnerability

Mr. J. Kevin Boyd
Army Research Laboratory / Aberdeen Proving Ground, MD

Mission Area V: Propulsion Systems Safety and Hazard Classification

Dr. Josephine Covino
DoD Explosives Safety Board / Alexandria, VA

Mission Area VI: Energetic Liquid Hazards

Mr. Adam J. Brand
Air Force Research Laboratory / Edwards AFB, CA

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JANNAF Meeting Invitation - May 2016

Program Highlights

NASA Welcome

Dr. David E. Bowles, Director of NASA Langley Research Center, will offer welcoming remarks on behalf of NASA prior to the Keynote address.

Keynote Address



Ms. Karen S. Burrows, Executive Director of the Naval Ordnance Safety and Security Activity (NOSSA) and the Deputy for Weapons Safety, Naval Sea Systems Command (NAVSEASYSKOM), will present the keynote at this year's conference. The title of Ms. Burrows' address is "An Overview of US Naval Weapons and Ordnance Safety; Past and Present." Her presentation will

be a discussion of Naval history and key events that prompted the establishment of the Navy's Ordnance Safety Program. Ms. Burrows will also discuss NOSSA's Mission, DoN System Safety and efforts to ensure safety in joint warfighter environments.

In her present position, Ms. Burrows provides executive and technical direction for all weapons ordnance and safety programs in the Department of the Navy and is the NAVSEASYSKOM Technical Domain Manager for Weapons Systems and Ordnance – Explosives Safety and Security. Ms. Burrows also serves as the chair of the Navy's Weapon System Explosives Safety Review Board (WSESRB) which provides safety reviews and concurrences for all Navy and Marine Corps munitions, ordnance items, weapons and combat systems prior to fielding to operating forces.

Ms. Burrows was appointed to the Senior Executive Service in April 2012 with 29 years of Service in the Department of Defense. From 2010 to 2012 Ms. Burrows concurrently held positions at the Defense Technical Information Center (DTIC) as the Deputy Administrator and Chief Information Officer responsible for the operational provision of scientific and technical information to the DoD Enterprise.

She has also served as the Director of the Emerging Capabilities Division of the Rapid Reaction Technology Office in the Office of the Assistant Secretary of Defense (Research and Engineering) where she was responsible for developing, maturing and transitioning technologies supporting border security, surveillance and maritime domain awareness missions through partnerships with the Services and other Federal departments.

Ms. Burrows has held several key technical and managerial positions at the Naval Surface Warfare Center throughout her career. Her experience spans the areas of energetic materials, insensitive munitions and weapons research, development, test and evaluation.

Ms. Burrows is the recipient of two Department of Navy Meritorious Civilian Service Awards, is certified as a Lean Six Sigma Black Belt and is a member of the International System Safety Society. She has authored numerous technical publications and is a member of the Acquisition Professional Community. Ms. Burrows holds a Bachelor's Degree in Chemical Engineering from Carnegie Mellon University.

All attendees are invited to participate. The Keynote Address begins at 8:00 a.m. on Tuesday, 17 May, in Salon II of the Grand Ballroom at the hotel.

NASA Langley Research Center Tour

On the occasion of NASA's 100th anniversary, JANNAF is honored that NASA Langley Research Center is sponsoring the classified sessions. As an added benefit, a tour of several sites at NASA LaRC is being offered on Friday, 20 May for interested attendees. Sign up to attend the tours via the online Registration Questionnaire as soon as possible to ensure a spot, limited to the first 50 registrants. There is no cost to participate.

The following sites will be included in the tour: 8-Ft High Temperature Tunnel, Scramjet Test Complex, Langley Aerothermodynamics Laboratory, Unitary Wind Tunnel, and Landing & Impact Research Facility.

Bus transportation between the Newport News Marriott at City Center and NASA LaRC will be provided to attendees who have signed up for the tour, with pick-up at 8:00 a.m. and return at approximately 12:30 p.m.

Scramjet Propulsion Development History Specialist Session

Many of the original researchers in the investigation of supersonic combustion and its application to airbreathing propulsion systems for hypersonic vehicles are now retired or passed away, and the community is in danger of losing not only their expertise, but the rich history that they created. Senior leaders have the challenge of mentoring a new generation of researchers. Presentations will focus on important technical advancements, significant contributions and lessons learned in the development of scramjet propulsion, and will look to the future. This specialist session, intended to serve as a mentoring tool for new workers in this exciting area, will be held on the afternoon of Monday, 16 May (Session 1Q).

JANNAF Meeting Invitation - May 2016

Technical Program

This year's technical program currently consists of 38 technical sessions with more than 200 presentations, plus 5 specialist sessions, 2 workshops, 10 panel meetings, 2 town hall meetings, and 3 working group meetings. A detailed daily schedule of all sessions, workshops, meetings and networking activities is provided below and continues through page 14. Detailed agendas of the technical sessions, specialist sessions, and workshops are listed in the Program Section of the Preliminary Program beginning on page 15. You must log in to your JANNAF Secure Portal account to view the Preliminary Program. **Schedule Color Key provided on pages 12 and 14.**

SCHEDULE - Sunday, 15 May

5:00 p.m. - 7:00 p.m.	On-Site Check-In and Registration Desk Open
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SCHEDULE - Monday, 16 May

7:00 a.m. - 5:00 p.m.	On-Site Check-In and Registration Desk Open			
7:00 a.m. - 5:00 p.m.	I.T. Office Open (for Presenters and Session Chairs needing technical assistance)		Blue Point II	Open
7:00 a.m. - 8:00 a.m.	Networking Area Refreshments		Grand Ballroom I	Open
7:15 a.m. - 7:30 a.m.	Session Chair Meeting (Monday Sessions)		Blue Point III	Closed
8:00 a.m. - 12:05 p.m..	Monday Morning Technical Sessions			
8:00 a.m. - 12:05 p.m.	IC	CS	Cold-Start - I	Grand Ballroom IV Open
8:00 a.m. - 12:05 p.m.	IE	APS	Combined and Advanced Cycle Propulsion	Pearl Ballroom I Open
8:00 a.m. - 12:05 p.m.	IG	CS	Reactive Materials	Pearl Ballroom III Open
10:05 a.m. - 10:35 a.m.	Networking Area Refreshments		Grand Ballroom I	Open
10:00 a.m. - 4:30 p.m.	Reading Room		Blue Point III	Open
1:30 p.m. - 5:00 p.m.	PIB – Test and Evaluation Working Group		Boardroom	Closed
1:30 p.m. - 5:00 p.m.	PIB - Large Solids Working Group		Blue Point I	Closed
1:30 p.m. - 6:35 p.m.	Monday Afternoon Technical Sessions, Town Hall Meetings, and Panel Meetings			
1:30 p.m. - 5:35 p.m.	IO	CS	Cold-Start - II	Grand Ballroom IV Open
1:30 p.m. - 6:05 p.m.	IP	CS	Green Monopropellant and Hypergolic Hybrid Combustion	Grand Ballroom V Open
1:30 p.m. - 5:35 p.m.	IQ	APS	<i>SPECIALIST SESSION: Scramjet Propulsion Development History</i>	Pearl Ballroom I Open
5:35 p.m. - 6:35 p.m.	IQ	CS/APS	<i>TOWN HALL MEETING: Joint Combustion Subcommittee / Airbreathing Propulsion Subcommittee</i>	Pearl Ballroom I Open
1:30 p.m. - 3:05 p.m.	IR	PSHS	Thermal Decomposition and Cook-off	Pearl Ballroom II Open
3:35 p.m. - 4:35 p.m.	IR	PSHS	<i>PANEL MEETING: Cook-off Hazards</i>	Pearl Ballroom II Open
1:30 p.m. - 5:05 p.m.	IS	CS	<i>SPECIALIST SESSION: Lethality Assessments Using Reactive Materials - I</i>	Pearl Ballroom III Open
3:05 p.m. - 4:05 p.m.	Networking Area Refreshments		Grand Ballroom I	Open

Schedule Color Key

Meeting Services	Concurrent Sessions or Panel Meetings
Networking Opportunities	Session Details
Closed Meetings	Panel, Town Hall, & Working Group Meetings

JANNAF Meeting Invitation - May 2016

SCHEDULE - Tuesday, 17 May

7:00 a.m. - 5:00 p.m.	On-Site Check-In and Registration Desk Open					
7:00 a.m. - 5:00 p.m.	I.T. Office Open (for Presenters and Session Chairs needing technical assistance)			Blue Point II	Open	
7:00 a.m. - 8:00 a.m.	Networking Area Refreshments			Grand Ballroom I	Open	
7:15 a.m. - 7:30 a.m.	Session Chair Meeting (Tuesday Sessions)			Blue Point III	Closed	
8:00 a.m. - 10:00 a.m.	NASA Welcoming Remarks: Dr. David E. Bowles, Director, NASA LaRC KEYNOTE ADDRESS: "An Overview of US Naval Weapons and Ordnance Safety; Past and Present" - Ms. Karen Burrows <i>Announcements</i>			Grand Ballroom II	Open	
8:00 a.m. - 4:30 p.m.	Reading Room			Blue Point III	Open	
9:30 a.m. - 10:00 a.m.	Networking Area Refreshments			Grand Ballroom I	Open	
10:00 a.m. - 6:00 p.m.	JANNAF Technical Executive Committee Meeting			Board Room	Closed	
10:00 a.m. - 12:10 p.m.	Tuesday Morning Technical Sessions					
10:00 a.m. - 12:10 p.m.	2B	EPSS	SPIRITS and AC Signatures / Spacecraft Plume Signatures	Grand Ballroom III	Open	
10:00 a.m. - 11:35 a.m.	2C	APS	Scramjet Technology Maturation	Grand Ballroom IV	Open	
10:00 a.m. - 11:35 a.m.	2D	CS	Gun Propellant Computational Thermochemistry	Grand Ballroom V	Open	
10:00 a.m. - 11:35 a.m.	2F	PSHS	IM Technology - I	Pearl Ballroom II	Open	
10:00 a.m. - 11:35 a.m.	2G	APS	Ramjet Technologies	Pearl Ballroom III	Open	
10:30 a.m. - 12:00 p.m.	CS Reactive Materials Integrated Product Team Meeting			Blue Point I	Closed	
12:00 p.m. - 1:30 p.m.	Lunch Break - <i>On Your Own</i>					
1:30 p.m. - 5:35 p.m.	Tuesday Afternoon Technical Sessions, Specialist Sessions, Town Hall, Panel, and Working Group Meetings					
1:30 p.m. - 4:35 p.m.	2N	EPSS	Launch Vehicle Plume Flowfield Effects	Grand Ballroom III	Open	
1:30 p.m. - 5:05 p.m.	2O	JPM	Enabling Future Space Access	Grand Ballroom IV	Open	
1:30 p.m. - 4:05 p.m.	2P	CS	Gun Interior Ballistics	Grand Ballroom V	Open	
4:05 p.m. - 5:05 p.m.	2P	CS	TOWN HALL MEETING: Gun Propulsion / Combustion	Grand Ballroom V	Open	
1:30 p.m. - 4:35 p.m.	2R	PSHS	IM Technology - II	Pearl Ballroom II	Open	
4:35 p.m. - 5:35 p.m.	2R	PSHS	PANEL MEETING: IM Technologies	Pearl Ballroom II	Open	
1:30 p.m. - 4:05 p.m.	2S	CS	SPECIALIST SESSION: Lethality Assessments Using Reactive Materials - II	Pearl Ballroom III	Open	
4:05 p.m. - 5:05 p.m.	2S	CS	PANEL MEETING: Reactive Materials	Pearl Ballroom III	Open	
1:30 p.m. - 5:05 p.m.	2T	APS	SPECIALIST SESSION: Hypersonic Programs Overview (U)	NASA LaRC - Reid 3	Open	
3:05 p.m. - 4:05 p.m.	Networking Area Refreshments			Grand Ballroom I	Open	
7:00 p.m. - 8:00 p.m.		APS	WORKING GROUP MEETING: Inflow Profile Effects	Blue Point I	Open	
7:00 p.m. - 8:35 p.m.		APS	WORKING GROUP MEETING: Fuels Panel - Endothermic Fuel Product Description	Pearl Ballroom III	Open	

Schedule Color Key

Meeting Services	Concurrent Sessions or Panel Meetings
Networking Opportunities	Session Details
Closed Meetings	Panel, Town Hall, & Working Group Meetings

JANNAF Meeting Invitation - May 2016

SCHEDULE - Wednesday, 18 May

7:00 a.m. - 5:00 p.m.	On-Site Check-In and Registration Desk Open					
7:00 a.m. - 5:00 p.m.	I.T. Office Open (for Presenters and Session Chairs needing technical assistance)			Blue Point II	Open	
7:00 a.m. - 8:00 a.m.	Networking Area Refreshments			Grand Ballroom I	Open	
7:15 a.m. - 7:30 a.m.	Session Chair Meeting (Wednesday Sessions)			Blue Point III	Closed	
8:00 a.m. - 4:30 p.m.	Reading Room			Blue Point III	Open	
8:00 a.m. - 12:00 p.m.	PIB - Small Liquids Working Group			Boardroom	Closed	
8:00 a.m. - 12:00 p.m.	PIB - Small Solids Working Group			Blue Point I	Closed	
8:00 a.m. - 11:35 a.m.	Wednesday Morning Technical Sessions and Workshop					
8:00 a.m. - 11:35 a.m.	3C	PSHS	Explosive Sensitivity	Grand Ballroom IV	Open	
8:00 a.m. - 11:05 a.m.	3E	APS	Scramjet Engine Ground Test and Analysis	Pearl Ballroom I	Open	
8:00 a.m. - 11:05 a.m.	3F	CS/PSHS	WORKSHOP: Ammonium Perchlorate Decomposition Research – Past and Present	Pearl Ballroom II	Open	
8:00 a.m. - 11:05 a.m.	3G	CS/JPM	Gun Propellant Ingredients and Testing	Pearl Ballroom III	Open	
8:00 a.m. - 11:05 a.m.	3H	EPSS	Plume Signature Modeling, Data, and Analysis (U)	NASA LaRC - Reid 3	Open	
9:35 a.m. - 10:35 a.m.	Networking Area Refreshments			Grand Ballroom I	Open	
12:00 p.m. - 1:00 p.m.	APS Technical Steering Group Meeting			Room 1034	Closed	
12:00 p.m. - 1:30 p.m.	Lunch Break - <i>On Your Own</i>					
1:30 p.m. - 5:00 p.m.	PIB - Science and Technology Working Group			Boardroom	Closed	
1:30 p.m. - 5:00 p.m.	PIB - Large Liquids Working Group			Blue Point I	Closed	
1:30 p.m. - 6:05 p.m.	Wednesday Afternoon Technical Sessions and Panel Meetings					
1:30 p.m. - 5:05 p.m.	3N	JPM	Improvised and Homemade Explosives	Grand Ballroom III	Open	
1:30 p.m. - 4:35 p.m.	3O	PSHS	Impact-Induced Reaction	Grand Ballroom IV	Open	
4:35 p.m. - 5:35 p.m.	3O	PSHS	PANEL MEETING: Impact and Shock Induced Reactions	Grand Ballroom IV	Open	
1:30 p.m. - 5:05 p.m.	3P	CS	Combustion Diagnostics	Grand Ballroom V	Open	
5:05 p.m. - 6:05 p.m.	3P	CS	PANEL MEETING: Flowfield Diagnostics	Grand Ballroom V	Open	
1:30 p.m. - 5:05 p.m.	3Q	APS	Scramjet Components	Pearl Ballroom I	Open	
5:05 p.m. - 5:35 p.m.	3Q	APS	PANEL MEETING: Component Level Modeling and Simulation	Pearl Ballroom I	Open	
1:30 p.m. - 4:40 p.m.	3R	APS	High Temperature Seals and Materials / Practical Active Combustion Control	Pearl Ballroom II	Open	
4:40 p.m. - 5:40 p.m.	3R	APS	PANEL MEETING: Active Combustion Control	Pearl Ballroom II	Open	
1:30 p.m. - 3:35 p.m.	3S	JPM	Gun Propulsion Systems	Pearl Ballroom III	Open	
3:05 p.m. - 4:05 p.m.	Networking Area Refreshments			Grand Ballroom I	Open	
6:00 p.m. - 8:00 p.m.	Networking Night - Dinner and Cash Bar - <i>JANNAF Badge or Ticket required</i>			Grand Ballroom I	Open	

Schedule Color Key

Meeting Services	Concurrent Sessions or Panel Meetings
Networking Opportunities	Session Details
Closed Meetings	Panel, Town Hall, & Working Group Meetings

JANNAF Meeting Invitation - May 2016

SCHEDULE - Thursday, 19 May

7:00 a.m. - 5:00 p.m.	On-Site Check-In and Registration Desk Open			
7:00 a.m. - 5:00 p.m.	I.T. Office Open (for Presenters and Session Chairs needing technical assistance)		Blue Point II	Open
7:00 a.m. - 8:00 a.m.	Networking Area Refreshments		Grand Ballroom I	Open
7:15 a.m. - 7:30 a.m.	Session Chair Meeting (Thursday Sessions)		Blue Point III	Closed
8:00 a.m. - 4:30 p.m.	Reading Room		Blue Point III	Open
8:00 a.m. - 12:05 p.m.	Thursday Morning Technical Sessions, Specialist Session, and Panel Meetings			
8:00 a.m. - 9:35 a.m.	4B	EPSS	Plume Signature Modeling, Data, and Analysis - III	Grand Ballroom III Open
8:00 a.m. - 12:05 p.m.	4C	CS	Explosive Performance	Pearl Ballroom I Open
8:00 a.m. - 12:05 p.m.	4D	CS	Solid Propellant Burning Rate Augmentation	Grand Ballroom V Open
8:00 a.m. - 11:35 a.m.	4F	APS	<i>SPECIALIST SESSION</i> : Recent Advances in Pressure Gain Combustion	Pearl Ballroom II Open
8:00 a.m. - 11:05 a.m.	4G	PSHS	Propulsion Systems Safety and Hazard Classification - I	Pearl Ballroom III Open
11:05 a.m. - 12:05 p.m.	4G	PSHS	<i>PANEL MEETING</i> : Safety and Hazard Classification	Pearl Ballroom III Open
8:00 a.m. - 12:05 p.m.	4H	APS	High Speed Strike Weapon Technology Review - I (U)	NASA LaRC - Reid 3 Open
9:35 a.m. - 10:35 a.m.	Networking Area Refreshments		Grand Ballroom I	Open
12:00 p.m. - 1:30 p.m.	CS Technical Steering Group Meeting		Boardroom	Closed
12:00 p.m. - 1:30 p.m.	Lunch Break - <i>On Your Own</i>			
1:00 p.m. - 3:00 p.m.	EPSS Technical Steering Group Meeting		Room 1034	Closed
1:30 p.m. - 5:00 p.m.	PIB - Executive Committee Meeting		Blue Point I	Closed
1:30 p.m. - 6:00 p.m.	APS Pressure Gain Combustion Working Group Meeting		Pearl Ballroom II	Closed
1:30 p.m. - 6:35 p.m.	Thursday Afternoon Technical Sessions, Workshop, and Panel Meetings			
1:30 p.m. - 5:35 p.m.	4N	CS	<i>WORKSHOP</i> : Gun Muzzle Blast Overpressure: Seeking Novel Concepts for Mitigation Using Gas Dynamic and Chemical Methodologies	Grand Ballroom III Open
1:30 p.m. - 5:35 p.m.	4P	CS	Solid Propellant Decomposition, Ignition, and Combustion	Grand Ballroom V Open
5:35 p.m. - 6:35 p.m.	4P	CS	<i>PANEL MEETING</i> : Kinetics	Grand Ballroom V Open
1:30 p.m. - 3:05 p.m.	4Q	CS/JPM	Sensors and Measurements for Propulsion Applications	Pearl Ballroom I Open
1:30 p.m. - 5:10 p.m.	4S	PSHS	Propulsion Systems Safety and Hazard Classification - II / Energetic Liquid Hazards	Pearl Ballroom III Open
5:10 p.m. - 6:10 p.m.	4S	PSHS	<i>PANEL MEETING</i> : Energetic Liquid Hazards	Pearl Ballroom III Open
1:30 p.m. - 4:10 p.m.	4T	APS	High Speed Strike Weapon Technology Review - II (U) / X-51A Post-Flight Updates (U)	NASA LaRC - Reid 3 Open
3:05 p.m. - 4:05 p.m.	Networking Area Refreshments		Grand Ballroom F	Open
5:30 p.m. - 7:00 p.m.	PSHS Technical Steering Group Meeting		Blue Point III	Closed

SCHEDULE - Friday, 20 May 2016

8:30 a.m. - 12:00 p.m.	NASA Langley Research Center Tour - <i>pre-registration is required</i>	NASA LaRC	Open
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Schedule Color Key

Meeting Services	Concurrent Sessions or Panel Meetings
Networking Opportunities	Session Details
Closed Meetings	Panel, Town Hall, & Working Group Meetings