2018 DoD High Performance Computing (HPC) User Group Meeting
Hosted by the Air Force

CALL FOR PRESENTATIONS

The 2018 DoD High Performance Computing (HPC) User Group Meeting Hosted by the Air Force will provide the opportunity for engineers and scientists to present and discuss new ideas, research, study results, applications and experiences on all aspects of high performance computing including modeling, networking, data analytics, and visualization. The 2018 DoD HPC User Group Meeting is sponsored by the Air Force principal leadership supporting the DoD HPC Modernization Program (DoD HPCMP). The event will take place at Wright-Patterson AFB, 24-28 September 2018. Registration begins 31 July 2018 and space will be limited. Attendance will be limited to U.S. citizens who are U.S. Government employees or individuals who are on contract with the U.S. Government. There is no cost associated with registration for this technical meeting; this is not a conference. We invite you to join us for this exciting event and consider participating as a presenter.

The high-level agenda is as follows:
Mon-Tues, 24-25 September, 2018: Specialized training sessions & side meetings
Wed-Thur, 26-27 September, 2018: Plenary sessions & technical program/user paper presentations
Fri, 28 September 2018: AFRL DoD Supercomputing Resource Center Tour & additional training, meetings

The technical program and paper presentations will focus on supercomputing that supports Science and Technology, Test and Evaluation, and Acquisition Engineering, and in particular, the application of HPC to advance technology areas of high impact to the DoD mission. The organizing committee also welcomes presentations on best practices related to the application or development of HPC architectures and resources to support RDT&E and acquisition engineering domains. Presentations that introduce new ideas to the field on topics such as modeling and simulation, innovative user applications, parallel algorithms, data analytics, visualization, and performance analysis are also welcome.

Please allow 20-30 minutes for your presentation, including time for questions from the audience.

Presentation Topic Areas

Submissions for presentations will be considered on any topic related to high performance computing including, but not limited to, the 6 topical areas below:

1. State of the Practice: How best practices or approaches to HPC relate to current or ongoing RDT&E and Acquisition Engineering projects
2. Applications: Concerns the development and enhancement of algorithms, models, software and problem solving approaches or environments for domain-specific applications that require HPC.

Topics include:

<table>
<thead>
<tr>
<th>Integrated Modeling &amp; Test Environments</th>
<th>Climate/Weather/Ocean Modeling &amp; Simulation</th>
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<tbody>
<tr>
<td>Weapon System or Forces Modeling &amp; Simulation</td>
<td>Computational Chemistry</td>
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<tr>
<td>Acquisition Engineering</td>
<td>Computational Fluid Dynamics</td>
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<td>Cybersecurity</td>
<td>Computational Electromagnetics &amp; Acoustics</td>
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<td>Bioinformatics &amp; Computational Biology</td>
<td>Environmental Quality Modeling and Simulation</td>
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<td>Computational Medicine &amp; Bioengineering</td>
<td>Signal/Image Processing</td>
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<td>Computational Materials Science &amp; Engineering</td>
<td>Space &amp; Astrophysical Sciences</td>
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<td>Use of Uncertainty Quantification or Analytical Techniques</td>
<td>Artificial Intelligence, Machine Learning, Deep Learning</td>
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<td>Logistics or Weapon Systems Support/Sustainment</td>
<td>Other High Performance Applications</td>
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3. Optimization for Performance on High Performance Computers and Networks

Topics include:

- Integrated hardware and software coding considerations
- Parallel and scalable methods and approaches
- Leveraging processor architecture, GPUs, cache, and memory subsystems
- Innovative approaches that leverage protocols, quality of service, congestion management and collective communication

4. Distributed Computing: Covers all aspects of distributed computing using HPC, including architecture, configuration, optimization and evaluation

Topics include:

- Data management and scientific applications
- Portals and problem-solving environments
- Programming models and tools
- Scheduling, load balancing, workflows and resource provisioning
- Security and identity management
- Self-configuration, management, information services and monitoring
- Virtualization
5. **Visualization and Data Analytics**: All aspects of data analytics, visualization and storage using HPC

Topics include:

- Databases and scalable structured storage for HPC
- Data mining, analysis and visualization for modeling and simulation
- I/O performance tuning, benchmarking and middleware
- Visualization and image processing

6. **Performance and Utilization Analysis**: Management aspects of large-scale performance that typically span multiple areas of expertise and are crucial factors in the allocation of resources, as well as the design and operation of scalable high performance computing systems

Topics include:

- User workflow
- Tools for storage of user models and credentialed data
- Troubleshooting connectivity issues
- Scheduling tools and techniques

**Important Dates**

- **Abstract Submissions Open**: May 31, 2018
- **Abstracts Submissions Close**: June 29, 2018
- **Acceptance Notification Sent**: July 16, 2018
- **Agenda Published**: July 30, 2018
- **Registration Opens**: July 31, 2018
- **Registration Closes**: August 27, 2018
- **Final Date to Send Presentation**: August 27, 2018
- **Presentation Dates**: September 26-27, 2018

More information regarding the DoD HPC User Group Meeting hosted by the Air Force will be posted at:

[https://www.afrl.hpc.mil/DoDHPCUserMeeting/](https://www.afrl.hpc.mil/DoDHPCUserMeeting/)

Registration begins 31 July 2018 and space will be limited. The website will be updated to assist with registration after the abstract deadline has passed. No registration fees are required.

**Submitting Abstracts & Presentations**

Abstracts should be limited to 1 page and submitted in Microsoft Word or Adobe Reader (.pdf) format. Abstracts should reflect content for a 30 minute presentation. Please include author’s name, contact
information (email and phone number), and organizational address on the abstract. Also include the anticipated Distribution level for the presentation. Presentations should be constructed to support either “Release C” or “Release D” distribution. Presentation content requiring distribution statements or caveats that restrict access beyond that of “Release C” or “Release D” will not be accepted. For further information regarding Distribution Levels, please see DoD Instruction 5230.24.

Abstracts may be submitted electronically using the following email address: afrlrcm.outreach@us.af.mil

Abstracts must be received no later than COB 29 June 2018

NOTE: Accepted presentations should be submitted electronically by 27 August 2018 or by special arrangement. IMPORTANT: Access to all briefings is restricted to U.S. Government employees and their contractors only. Presentations up to Distribution Statement C will be allowed. We will not reproduce any presentations. Attendees wishing electronic or hard copies should contact the presenter. The presenter will have full control over distribution of their presentations and will be responsible for appropriate handling of requests after the event in accordance with established Public Affairs (PA) guidance.

If you are unable to submit your abstract or presentation electronically per the instructions above, please contact the organizers via the email address shown above or via phone at 937-904-8272 prior to the applicable deadline for further instructions.