

May 17-21 • Portland Hilton Downtown • Portland, Oregon USA

Authors are invited to submit manuscripts that present original unpublished research in all areas of parallel and distributed processing. Work focusing on emerging technologies and interdisciplinary work covering multiple IPDPS focus areas is especially welcome. Topics of interest include but are not limited to the following topic areas:

- **Algorithms: *Parallel and distributed computing theory and algorithms.*** Design and analysis of novel numerical and combinatorial parallel algorithms; reputation and incentive compatible design for distributed protocols and for distributed resource management; communication and synchronization on parallel and distributed systems; parallel algorithms handling power, mobility, and resilience; algorithms for cloud computing; algorithms for edge and fog computing; machine learning algorithms; domain-specific parallel and distributed algorithms; randomization in distributed algorithms and block-chain protocols.
- **Experiments: *Experiments and practice in parallel and distributed computing.*** Design and experimental evaluation of applications of parallel and distributed computing in simulation and analysis; experiments on the use of novel commercial or research architectures, accelerators, neuromorphic and quantum architectures, and other non-traditional systems; performance modeling and analysis of parallel and distributed systems; innovations made in support of large-scale infrastructures and facilities; methods for and experiences allocating and managing system and facility resources.
- **Programming Models & Compilers: *Programming models, compilers and runtimes for parallel and distributed applications and systems.*** Parallel programming paradigms, models and languages; compilers, runtime systems, programming environments and tools for the support of parallel programming; parallel software development and productivity.
- **System Software: *System software and middleware for parallel and distributed systems.*** System software support for scientific workflows (including in-situ workflows); storage and I/O systems; system software for resource management, job scheduling, and energy-efficiency; frameworks targeting cloud and distributed systems; system software support for accelerators and heterogeneous HPC computing systems; interactions between the OS, runtime, compiler, middleware, and tools; system software support for fault tolerance and resilience; containers and virtual machines; system software supporting data management, scalable data analytics, machine learning, and deep learning; specialized operating systems and runtime systems for high performance computing and exascale systems; system software for future novel computing platforms including quantum, neuromorphic, and bio-inspired computing.
- **Architecture:** Architectures for instruction-level and thread-level parallelism; manycore, multicores, accelerators, domain-specific and special-purpose architectures, reconfigurable architectures; memory technologies and hierarchies; volatile and non-volatile emerging memory technologies, solid-state devices; exascale system designs; data center and warehouse-scale architectures; novel big data architectures; network and interconnect architectures; emerging technologies for interconnects; parallel I/O and

storage systems; power-efficient and green computing systems; resilience, security, and dependable architectures; performance modeling and evaluation; emerging trends for computing, machine learning, approximate computing, quantum computing, neuromorphic computing and analog computing.

- **Multidisciplinary:** Papers that cross the boundaries of the tracks listed above and/or address the application of parallel and distributed computing concepts and solutions to other areas of science and engineering are encouraged and can be submitted to the multidisciplinary track. Papers focused on translational research are particularly encouraged. Contributions should either target two or more core areas of parallel and distributed computing, or advance the use of parallel and distributed computing in other areas of science and engineering. During the submission of multidisciplinary papers, authors should indicate the areas of focus of their paper.

*Special Note due to Pandemic.* IPDPS 2021 is being planned for Portland, Oregon May 17-21. Some form of remote paper presentation and attendance will be allowed to accommodate various constraints and restrictions caused directly (i.e., travel bans or health concerns) or indirectly (i.e., financial constraints) by the pandemic. A fully virtual conference is being planned at the same time since we cannot know what local or state constraints might be in effect in May.

## **BEST PAPER AWARD**

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The program committee will select the top papers as finalists, and one paper as the winner, for recognition with the Best Paper Award.

## **WHAT/WHERE TO SUBMIT**

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Abstracts of at most 500 words must be submitted by ~~October 5, 2020~~ October 12, 2020  
Manuscripts must be submitted by ~~October 12, 2020~~ October 19, 2020; submitted manuscripts may not exceed ten (10) single-spaced double-column pages using 10-point size font on 8.5x11 inch pages (IEEE conference style), including figures, tables, and references. The submitted manuscripts should include author names and affiliations. Instructions for submission will be posted in September.

The IEEE conference style templates for MS Word and LaTeX provided by IEEE eXpress Conference Publishing are available for download. [See the latest versions here.](#)

## **REVIEW OF MANUSCRIPTS**

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All submitted manuscripts will be reviewed by the Program Committee. Submissions will be judged on correctness, originality, technical strength, significance, potential impact, quality of presentation, and interest and relevance to the conference scope. Submitted papers should NOT have appeared in or be under consideration for another conference, workshop or journal. Authors will have the opportunity to provide feedback on the reviews of their submission before the final decisions are made.

Questions may be sent to [pc2021@ipdps.org](mailto:pc2021@ipdps.org). Abstracts are due October 12, 2020, and full manuscripts must be received by October 19, 2020. This is a final, hard deadline. To ensure fairness, no extensions will be given.

Preliminary decisions will be sent by December 8, 2020, with a decision of either accept, revise, or reject. Authors of “revised” papers will have the opportunity to revise the content according to reviewers’ comments and will submit their final paper (together with a cover letter explaining the changes) by January 6, 2021. Notification of final decisions will be mailed by January 19, 2021 and camera-ready papers will be due February 13, 2021.

## **2021 IMPORTANT DATES**

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Abstracts due ~~October 5, 2020~~ extended to October 12, 2020  
Submissions due ~~October 12, 2020~~ extended to October 19, 2020  
Preliminary decisions December 8, 2020  
Final submissions due January 11, 2021  
Final notification January 19, 2021  
Camera ready due February 13, 2021

## **2021 PROGRAM CHAIR**

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Karen L. Karavanic (Portland State University, USA)

## **2021 PROGRAM AREA CHAIRS AND VICE CHAIRS**

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### **Algorithms:**

Richard Vuduc (Georgia Tech, USA)  
Maryam Mehri Dehnavi (University of Toronto, Canada)

### **Architecture:**

Shuaiwen Leon Song (University of Sydney, Australia)  
Michael Taylor (University of Washington, USA)

### **Experiments:**

Shirley Moore (University of Texas El Paso, USA)  
Allen D. Malony (University of Oregon, USA)

### **System Software:**

Dorian Arnold (Emory University, USA)  
Heike Jagode (University of Tennessee Knoxville, USA)

### **Programming Models & Compilers:**

Martin Schulz (Technical University of Munich, Germany)  
EJ Park (Los Alamos National Laboratory, USA)

### **Multidisciplinary:**

Michela Taufer (University of Tennessee Knoxville, USA)  
Florina M. Ciorba (University of Basel, Switzerland)