



**Hewlett Packard  
Enterprise**

# **WELCOME TO CHI UW 2021**

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The 8<sup>th</sup> Annual  
**Chapel Implementers and Users Workshop**

June 4th, 2021

Engin Kayraklıoglu, HPE  
Program Committee Chair

[chapel-lang.org/CHIUW2021.html](http://chapel-lang.org/CHIUW2021.html)

# WHAT IS CHIUW?

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- Chapel Implementers and Users Workshop
  - general information on Chapel
  - recent developments in the language
  - uses of Chapel in different applications
  - implementation/optimization of Chapel
  - ...
- First instance of CHIUW was in 2014
  - Typically held in conjunction with IPDPS/PLDI
- CHIUW 2021 is the first fully virtual CHIUW



[chapel-lang.org](http://chapel-lang.org)



# **CHIUW 2021 AT A GLANCE**

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- CHIUW 2021 has 12 submitted talks
  - 9 talks are 15 minutes + Q&A
  - 3 talks are 10 minutes + Q&A
- The authors span
  - 12 organizations
  - 5 countries
  - 5 time zones
- Some talks are pre-recorded, some are live
  - All presenters will be available for a live Q&A after the talk
  - Submissions, talk slides, and pre-recorded talks will be available at CHIUW website  
<https://chapel-lang.org/CHIUW2021.html>



# ORGANIZING COMMITTEE

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## General Chair

Michelle Strout, *HPE*

## Steering Committee

Brad Chamberlain, *HPE*

Mike Merrill, *U.S. DOD*

Nikhil Padmanabhan, *Yale University*

## Program Committee

Engin Kayraklioglu (chair), *HPE*

Rich Vuduc (co-chair), *Georgia Tech*

Maryam Dehnavi, *University of Toronto*

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Josh Milthorpe, *Australian National University*

Cathie Olschanowsky, *Boise State University*

Mark Raugas, *PNNL*

Tyler Simon, *UMBC*

Christian Terboven, *RWTH Aachen University*

Didem Unat, *Koc University*

Jeff Vetter, *ORNL*



# AGENDA

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PDT	EDT	UTC	Event
<b>8:05</b>	<b>11:05</b>	<b>3:05</b>	State of the Project ( <i>Brad Chamberlain, HPE</i> )
<b>8:45</b>	<b>11:45</b>	<b>3:45</b>	Session 1
<b>10:00</b>	<b>1:00</b>	<b>5:00</b>	Session 2 - Keynote ( <i>Éric Laurendeau, Polytechnique Montreal</i> )
<b>11:15</b>	<b>2:15</b>	<b>6:15</b>	Session 3
<b>12: 25</b>	<b>3:25</b>	<b>7:25</b>	Session 4
<b>1:40</b>	<b>4:40</b>	<b>8:40</b>	Session 5
<b>2:45</b>	<b>5:45</b>	<b>9:45</b>	Session 6 - Lightning Talks, Open Discussion

(15-minute breaks between sessions)



# KEYNOTE

## HPC Lessons from 30 Years of Practice in CFD Towards Aircraft Design and Analysis

Éric Laurendeau, Polytechnique Montreal

The talk will present a **crash course in aircraft design** and in particular the **aerodynamic analysis viewed through the various mathematical models**. The discretization of these into coupled systems will present some challenges. The **impact of HPC on industrial processes**, including aircraft certification, will be discussed. Some case studies will demonstrate **the need for ever increased software and hardware developments as exemplified by NASA's current vision for 2030**.

To that end, contributions from Polytechnique Montreal will show the **impact of the Chapel language for large-scale problems** (billions of unknowns), in its performance and also its ease of use.



**POLYTECHNIQUE  
MONTRÉAL**

# **LIGHTNING TALKS**

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- At the end of the day, we will have a "lightning talk" session
  - Ongoing Chapel-related work
  - Previously published work that you want to talk about
  - Planned projects
  - Other Chapel-related pitches
- 2-5 minutes per speaker
  - With optionally 1-2 slides
- If interested, reach out to Engin Kayraklioglu or Michelle Strout through Zoom chat



## TECHNICAL DETAILS

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- We will use Slido for
  - moderating Q&A
  - polls
  - other interactions with the audience
- During talks, you can ask your questions on Slido
  - We will be moderating the questions to prevent spam
  - Session chairs will relay the questions to the presenters
- Planned polls on Slido
  - Right now; a 1-question poll is available
  - Throughout the day; general CHIUW/Chapel feedback
- Feel free to use Zoom chat for technical issues



[sli.do/chiuw2021](https://sli.do/chiuw2021)





# THANK YOU

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<https://chapel-lang.org>  
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