

Introducing The Frontier Center of Excellence

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AMD

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Frontier Centers of Excellence (CoE)

Topics:

- Concept and Structure
- CAAR and ECP Application Team Support
- Looking Forward

Frontier Center of Excellence (CoE)

Our charter:

- Assist in the **porting and tuning** of key DOE applications and libraries for *Frontier*
- Help ensure the robustness of the *Frontier* **programming environment**.
- Assistance in the **development of critical software infrastructure** necessary to enable robust application performance.
- CoE staff **act as liaisons** between other software-related NRE activities and lab application and library teams to ensure that the software environment supports their needs and priorities.

Note: “Subcontractor” in the SOW wording means Cray

Vision

- Cray and AMD want the Frontier CoE to function as a **partnership with ORNL**, working side by side to enable applications to take full advantage of the planned Frontier system.
- We have staffed the CoE with **skilled engineers** committed to helping the application teams enable new science at Exascale.
- Cray and AMD are here to support the ORNL **for the long-haul** -- starting now and lasting many years -- to 2024.
- We're excited about the accomplishments this partnership will achieve and the **scientific advances** we'll help enable!



CAAR and ECP Application Enablement

- Hands-on Collaboration with the Application Teams
- Customized Training Products
- Hackathons & Workshops
- Early Delivery Platform Access
- Application Bottleneck Analysis
- Both Portable and Vendor-Specific Solutions
- On-site Vendor expertise

Frontier CoE Management Council

- Establishes future work plans in six-month periods
- Meets monthly to review progress and make adjustments where needed

***Frontier* CoE Mgmt. Council**

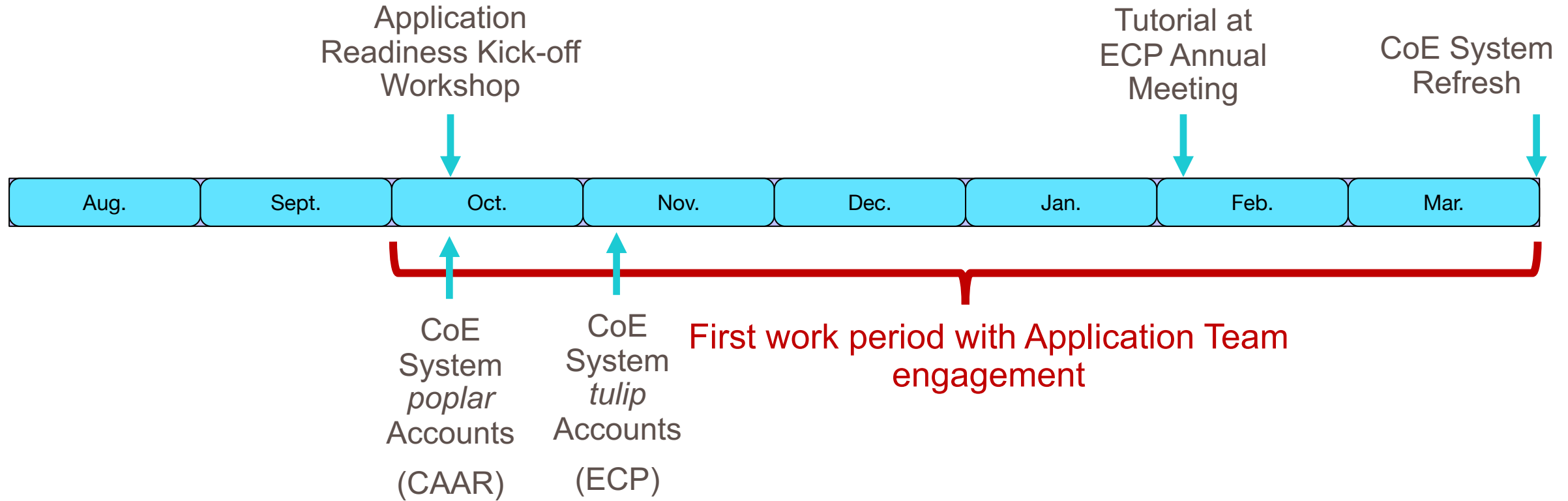
- Bronson Messer – CoE Lead
- Judy Hill – TR
- Noah Reddell – Cray
- Nick Malaya – AMD

Frontier CoE Staffing

- 9.5 FTE Senior staff from Cray's Performance Team, Programming Environment Group, CTO Office and engineers from AMD.
- Over two centuries collective experience in High Performance Computing, including:
 - Multiple PhDs with expertise in physical sciences, computer science, electrical engineering and applied mathematics.
- Expertise in performance analysis , optimization, and scientific application development



Frontier CoE Look-Ahead



NRE Working Group CoE Participation

Working Group	Cray	AMD
Compilers	Gene Wagenbreth	Chip Frietag
Messaging	Trey White Jerome Berryhill	Nick Malaya
Libraries	Kostas Makrides	Noel Chalmers
Performance and Correctness Tools	John Levesque, Adam Lavelly	Rene van Oostrum, Scott Moe
System Management	<i>none</i>	Damon McDougall

Contacting the Frontier CoE

We have no single answer at this point

- Make connections this week during breaks and in afternoon application team breakout meetings
- You can make contact / triage:

coe-frontier@cray.com

- We're working to create a more complete solution supporting collaboration
 - Eg. Sharepoint or Confluence



THANK YOU

QUESTIONS?



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