Annual Technology Event
April 25, 2024

Educating & Connecting the HPC & AI Community

Mission
Educating & Connecting HPC & AI Users to Technology

- SHPCP is a charitable, non-profit 501(c)(3) organization
- Educating and connecting the HPC user community, industry, government, and academia with the latest technology and best practices
- Focus areas include: Simulation, AI/ML, Data Science, Graph Analytics, Cloud Computing, Quantum Computing, Cyber Security, and Visualization
- HPC & AI are horizontal technologies, with applications in Energy, Life Sciences, Engineering, Manufacturing, Weather & Climate, Financial Services, Government, and Academia

Member Benefits

SHPCP membership is open to all HPC professionals serving all industries WW

If you are interested in participating in the Society's efforts to provide a vendor-neutral, user-centric organization that truly serves the needs of the HPC community, please join us!

Individuals can join the Society as Professional Members for an annual fee of just $60.00
- No cost to attend all HPC Society events
- View streamed events if not able to attend in person
- Receive access to:
    - Presentation materials (when approved by the presenting organization)
    - Streamed event recordings
    - Archived presentations and technical publications

Students can join the Society as Student Members *for free*
- No charge to attend annual technology event
- Half price to attend Lunch & Learn events
- Receive access to:
    - Presentation materials (when approved by the presenting organization)
    - Streamed event recordings
    - Archived presentations and technical publications
- A valid .edu email address is required

Note: membership is for full 12 months regardless of when you join (based on join date, not calendar date)

Coming soon: new job board for members and sponsors

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This Year's Speakers

Addison Snell
CEO, Intersect360 Research

Kelly Senecal, Ph.D.
Co-Founder, Convergent Science

Randima (Randy) Fernando
Co-Founder, CHT

Mileidy Giraldo, Ph.D.
WorldwideA Lead, Multi-Modal
Multi-Omics Data Strategy, AWS

Kristjan Hafsteinsson
CEO, Responsible Compute

Michael Gujrall
HPC Service Developmentt
Manager, Shelll

Punith Shivaprasad
Global Technical Lead for
Immersion Coolants, Shell

Morning Agenda

8:00am	**Venue opens**	Registration, breakfast in exhibit area, networking
9:00am	**Welcome & opening remarks** Doug Norton, President SHPCP	Welcome and overview of the day, including important facility information.
9:15am	**Morning keynote address –** **The Outlook for HPC and AI** Addison Snell, CEO Intersect360 Research	Addison will give an overview of the current market trends in HPC and AI, including the massive potential sea changes brought about by hyperscale investment. Will AI rule the world? Will GPUs rule the world? Will cloud rule the world? Is the world itself breaking along regional lines? And what about good old HPC? Let's talk about it.
10:00am	**Driving Change Through** **High-Performance Computing** Dr. Kelly Senecal, Co-Founder of Convergent Science, and visiting professor at the University of Oxford, an adjunct professor at the University of Wisconsin-Madison.	Today's transportation industry is undergoing a major transformation, with the implementation of ever-evolving regulations and a parade of new technologies entering the market. As the shift toward electric vehicles gains momentum, recent challenges and setbacks have highlighted the complexities of this transition. At the same time, advances in engine technology and sustainable fuels are offering a promising alternative, demonstrating significant real-world gains in efficiency and reductions in emissions. In this talk, Dr. Kelly Senecal will highlight the power of high-performance computing (HPC) and computational fluid dynamics (CFD) for simulating and optimizing vehicle performance with unprecedented precision. Through the collaborative efforts of industry experts and leading research organizations, and the adoption of cutting-edge computational methodologies and advanced computing capabilities, we can usher in a more sustainable era of transportation.
10:45am	**Break and networking**	
11:00am	**Navigating the AI Explosion:** **A Pivotal Moment in History** Randy Fernando, Co-Founder of Center for Humane Technology (CHT)	The recent advances in general-purpose AI are yet another instance of technology that's advancing faster than our minds and our institutions can keep up. General-purpose AI has amazing potential, but also presents incredible risk - companies captured by economic incentives are racing to integrate the latest AI tech without adequately understanding its capabilities and harms. This presentation integrates key insights from numerous conversations with concerned insiders, legislators, NGOs, and other stakeholders. The better we understand the problem and potential solutions, the better chance we have of releasing AI at a thoughtful speed that is right for society
11:45am	**Lunch and networking**	

Afternoon Agenda

1:00pm	**End-to-End Drug Discovery through Digital Integration of Data & Analytics: From Wet-lab to Dry-lab to Insight** Mileidy Giraldo, PhD, Worldwide Lead, Multi-Modal Multi-Omics Data Strategy, AWS Healthcare and Life Sciences	End-to-End Drug Discovery through Digital Integration of Data & Analytics: From Wet-lab to Dry-lab to Insight
1:45pm	**Pushing the boundaries of performance, efficiency & sustainability** Punith Veeralinga Shivaprasad & Michael Gujral, Shell	Pushing the boundaries of performance, efficiency & sustainability
2:15pm	**Harnessing Mother Earth to run HPC workloads Sustainably** Kristjan Hafsteinsson, CEO Responsible Compute	Responsible Compute utilizes the sustainable energy infrastructure in Iceland, harnessing Geothermal and Hydroelectric energy sources. These provide the base for a sustainable HPC and AI/ML solution, with support from one the most stable energy grids in the world. In addition, free air-to-air cooling and water cooling provide an extremely efficient solution leading to a world class low carbon footprint. Customers can view their carbon footprint via a dashboard that shows per job, week, month, Q or year.
2:45pm	**Break and networking**	
3:00pm	**Panel Discussion: How will Exascale, quantum, etc. impact your science?**	Moderated by Doug Norton Panelists: Kelly Senecal, Randy Fernando, Mileidy Giraldo, Kristjan Hafsteinsson. Punith Shivaprasad, Michael Gujral
4:00pm -	**Wrap up and networking** Doug Norton, President SHPCP	

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