



Computing R&D μ Retreat - Why are we here?

Adam Lyon & Jim Kowalkowski

April 20, 2018

All Scientists' Retreat

Thursday April 26

- What are the interests of the Fermilab scientists for the decade or so following 2026?
- How do we give our input to both the US community planning and the European Strategy Group?
- What is the post-retreat plan for working with US, European, and other partners to give our input?

Open to Computing Professionals and Engineers
[Let me know if you want to go]



All Scientists' Retreat 2015

All Scientists' Retreat

Thursday April 26

- 12:00 **Cosmic Science Working Group 25'**
Speakers: Dr. Bradford Benson (Fermilab), Dr. Lauren Hsu (Fermilab), Dr. Albert Stebbins (Fermilab)
- 12:25 **Energy Frontier Science Working Group 25'**
Speakers: Dr. Anadi Canepa (Fermilab), Dmitri Denisov (Fermilab), Dr. Patrick Fox (Fermilab), Sergei Nagaitsev (FNAL)
- 12:50 **Neutrino Science Working Group 25'**
Speakers: Dr. Louise Suter (FNAL), Dr. Joseph Zennamo (Fermilab)
- 13:15 **Precision Science Working Group 25'**
Speakers: Dr. Douglas Glenzinski (Fermilab), Prof. Mark Lancaster (UCL), Dr. Chris Polly (Fermilab)
- 14:00 **Accelerator Science and Technology Working Group 25'**
Speakers: Dr. Jonathan Jarvis (Fermilab), Dr. Martina Martinello (Fermilab), Dr. Nikolay Solyak (FNAL), Jayakar Thangaraj (Fermilab), Alexander Valishev (Fermilab)
- 14:25 **Computational Science Working Group 25'**
Speakers: Mr. Jim Kowalkowski (Fermilab), Dr. Adam Lyon (Fermilab)
- 14:50 **Detectors for Science Working Group 25'**
Speakers: Dr. Juan Estrada (FNAL), Angela Fava, Dr. Petra Merkel (Fermi National Accelerator Laboratory), Dr. Vadim Rusu (FNAL)
- 15:15 **Quantum Science Working Group 25'**
Speaker: Dr. James Amundson (Fermilab)



All Scientists' Retreat 2015

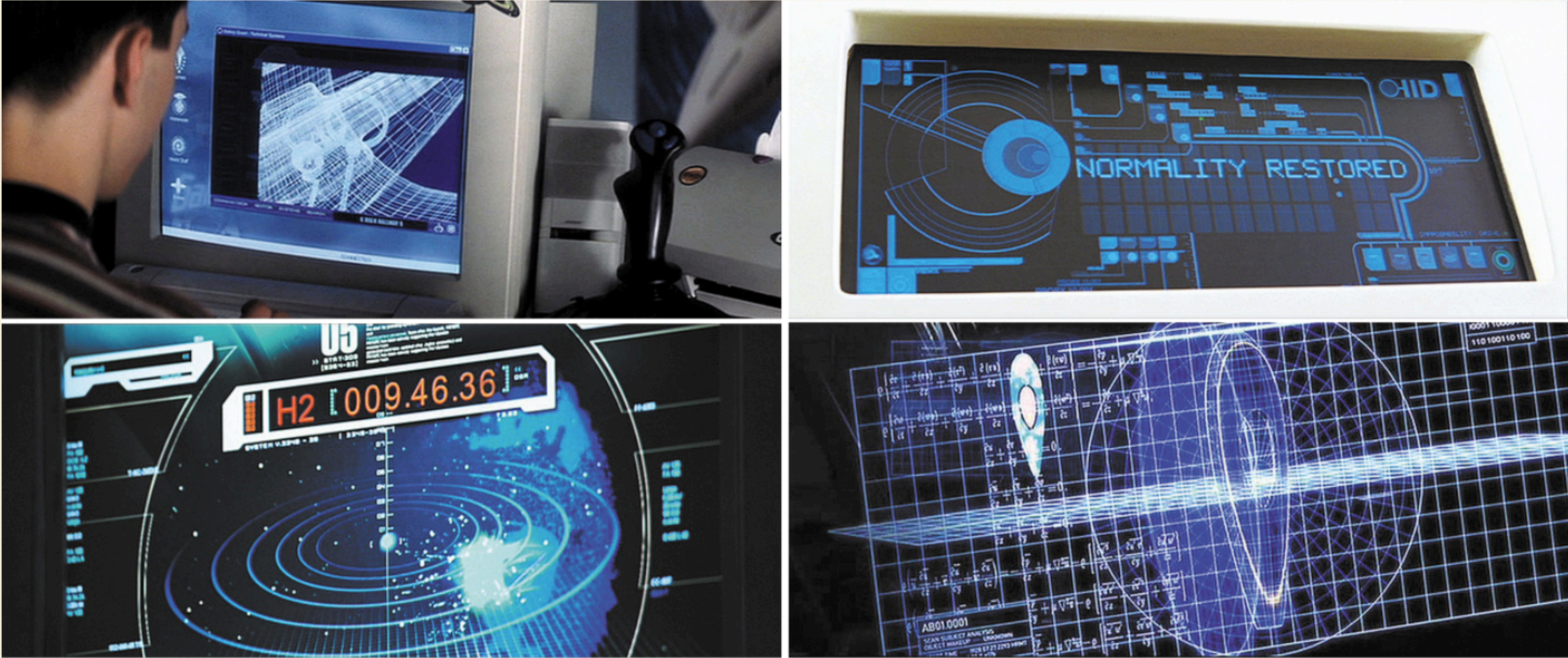


What will Computing Look like in 2026+ ??



<https://99percentinvisible.org/episode/future-screens-are-mostly-blue/>

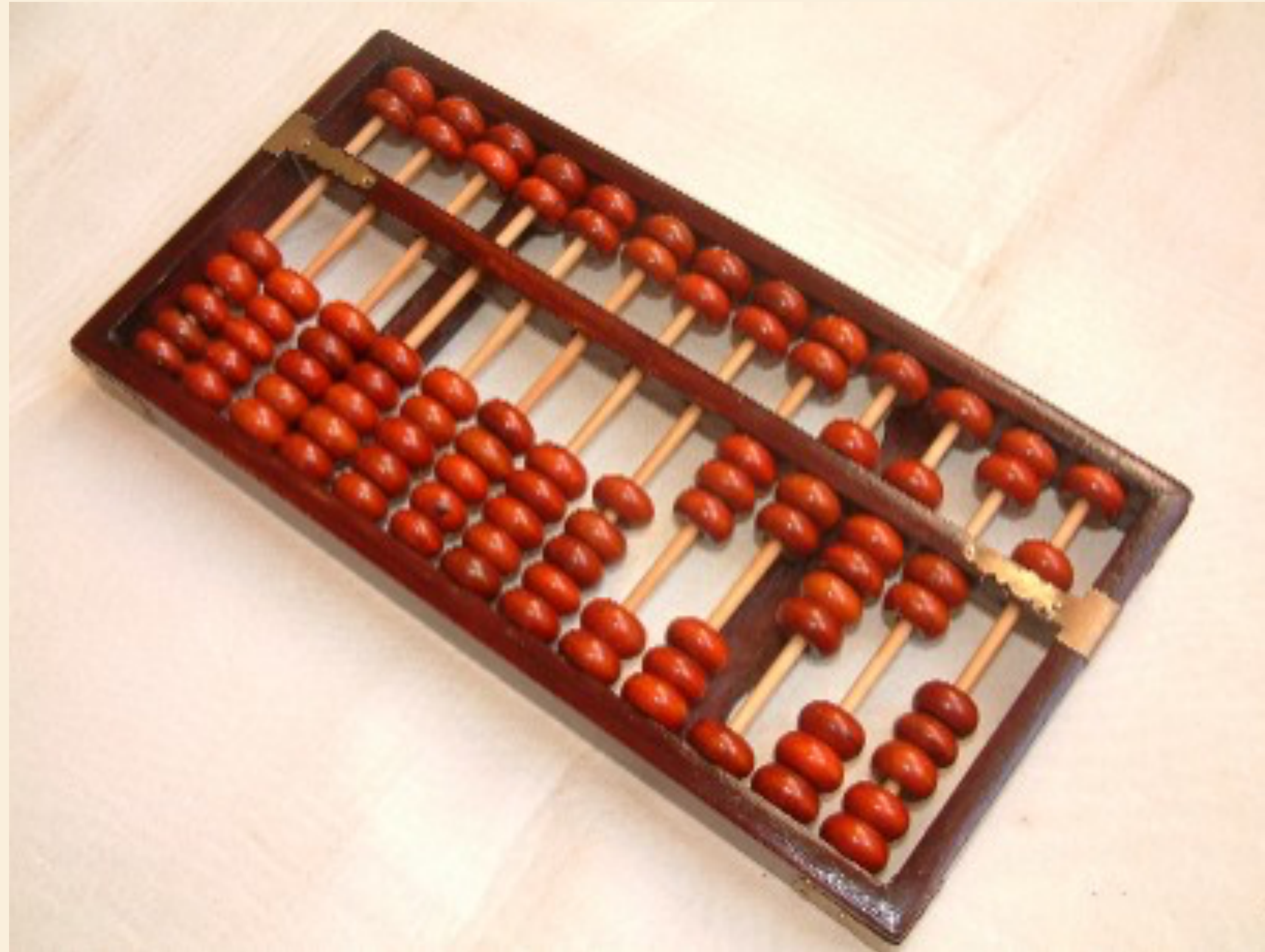
What will Computing Look like in 2026+ ??



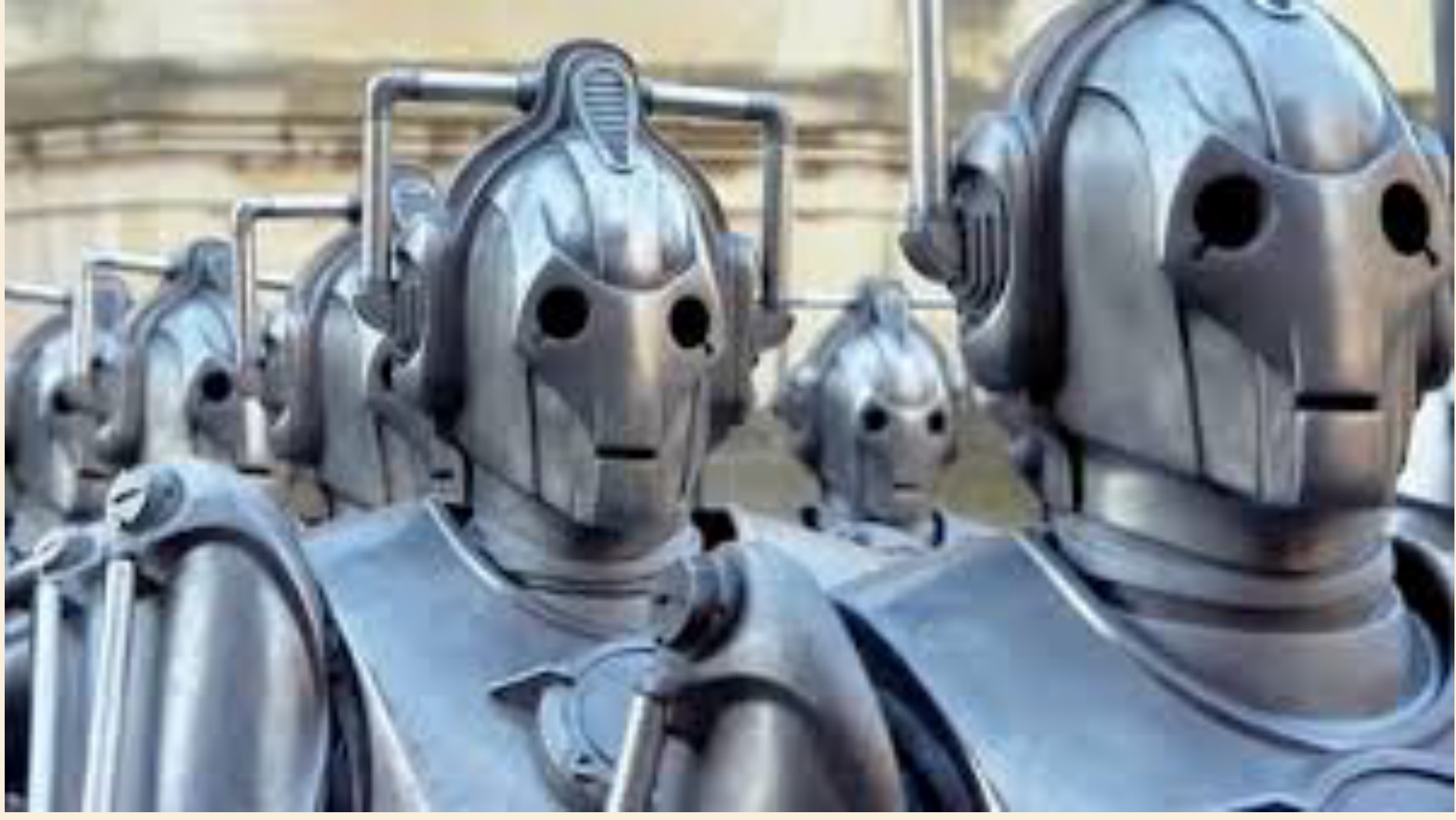
Clockwise from Left: 1. Galaxy Quest (1999) Dreamworks; 2. The Hitchhiker's Guide to the Galaxy (2005) Touchstone; 3. Supernova (2000) MGM; 4. Fantastic 4 (2005) 20th Century FOX

<https://99percentinvisible.org/episode/future-screens-are-mostly-blue/>

What will Computing Look like in 2026+ ??



What will Computing Look like in 2026+ ??



What will Computing Look like in 2026+ ??

Don't know! We're not going to try to guess

Instead, think about what we'll be doing in 2026+

How would computing support that science? What R&D is necessary?

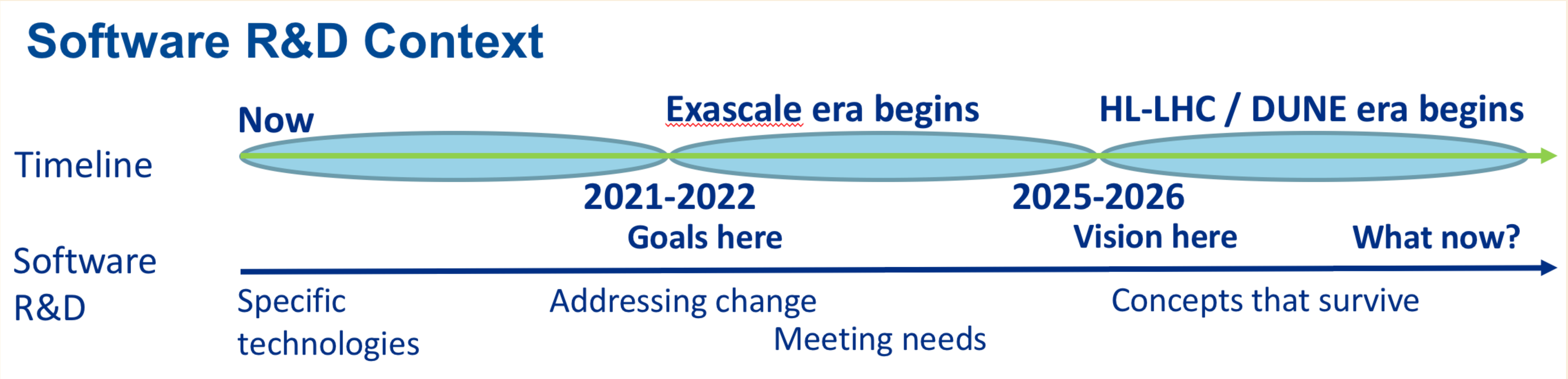
Three “triggers” for Computational R&D...

- 1) Receive requirements from experiments based on upcoming needs**
- 2) Forward thinking to keep up with the evolving computing landscape**
- 3) Cool technologies that scientists adopt and needs support**

Three areas for R&D

- A) Computational Software**
- B) Operating Computing Systems**
- C) Data Acquisition**

Timeline



JBK

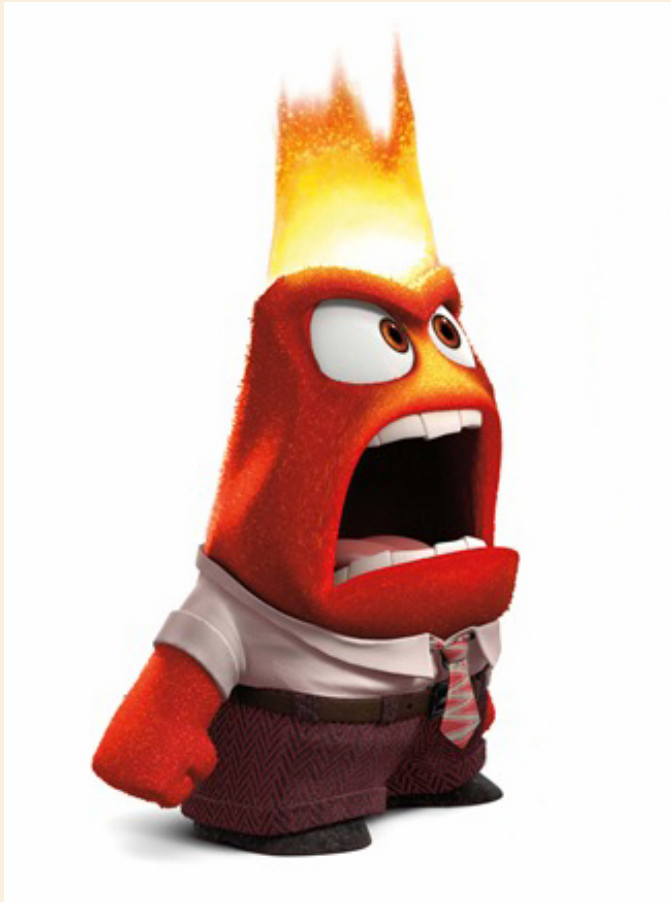
Let's keep this fun (and fast)

These are ideas - not official strategy - not official plans

Speakers have had short notice and have to give short presentations

There may be conflicting ideas. That's ok

There may be ideas you don't like (strongly). That's ok too...



No need for this



@ the Wine & Cheese

Let's get going...

- **Thanks in advance to all our speakers!**
- **5 minutes — really! Take a candy or tangerine when done**
- **If you have time constraints, feel free to jump in front of other speakers**
- **Keep your questions and comments very brief (perhaps follow up in the Google Doc)**
- **For the April 26 Retreat Jim and I will summarize,**
 - **This meeting**
 - **The Google Doc (please write more thoughts and questions; see earlier e-mail or ask me for link)**
 - **Whatever you tell us**
- **This meeting will be recorded**