



# WebGL Working Group Updates

WebGL Meetup, July 2021

# Agenda

Cool WebGL Stuff

WebGL 2.0 in Safari Updates

Chrome Browser / ANGLE Status Updates

ANGLE Metal Backend Status Updates

WebGPU Status Updates

# Cool WebGL Stuff

- Lots of great web sites and products using WebGL are released every day!
- Khronos' WebGL working group tries to find and highlight these to the community
- They're sent via email every couple of weeks to the [WebGL Dev List](#)
  - Also archived on [this blog](#)
- Please join the community, and share your own creations and findings!

# WebGL 2.0 In Safari Updates

- WebGL 2.0 is [enabled by default](#) in Safari 15!
  - Uses ANGLE's Metal backend
  - Huge thanks to Lê Hoàng Quyền for the original contribution
  - Credit to Kyle Piddington and team from Apple for the direct-to-Metal translator
- The latest code can be tested on both macOS and iOS
  - macOS: install macOS 12 (Monterey) Betas
  - iOS: install iOS 15 Betas
- Please test your applications now while bugs are still being fixed for the release!
- File any bugs you see on [bugs.webkit.org](https://bugs.webkit.org), WebGL component

# Chrome Browser / ANGLE Status Updates

- Chrome browser making an architectural switch to use ANGLE everywhere
  - Centralizes WebGL validation
  - Enables switch to Vulkan / Metal backends
  - Many other benefits
- While switching to ANGLE on macOS, ran into showstopper problems in OpenGL driver
  - Graphical corruption
  - Kernel panics
- Diagnosed and worked around this problem
- Joint work between Chris Cameron, Geoff Lang, Ken Russell of Chrome team
- Can read the story to date on [crbug.com/1181068](https://crbug.com/1181068)
- Will probably give a presentation on this bug workaround in the future...

# ANGLE Metal Backend Status Updates

- Ongoing collaboration between Apple and ANGLE team to upstream Apple's direct-to-Metal translator from WebKit's ANGLE snapshot
- While doing this, encountered another showstopper bug: kernel panics on Chromium's Mac testing machines
  - Older MacBook Pros still running macOS 10.14.6
- Thanks to Quỳn Lê for finding the root cause
- Can read all about this on [anglebug.com/6127](https://anglebug.com/6127)
- Upstreaming is moving forward again
- Both teams are heavily invested in getting to a common code base

# WebGPU Status Updates

- Spec and implementations are moving forward well
- Now's a great time to try out the [specification](#), [shading language](#) and [various implementations](#)!
  - They're all behind flags in web browsers right now
  - Don't browse the open web with these flags turned on yet
- WebGPU is the spec where compute shaders will be delivered to the web
  - WebGL 2.0 Compute spec is no longer being developed
- Jasper St. Pierre's presentation today will show you how to get started bringing your WebGL application to WebGPU!

# Presentations

Great group of presenters today!

- Jasper St. Pierre, Yacht Club Games: Porting WebGL to WebGPU
- Moritz Becher, UX3D: glTF™ Sample Viewer
- Sandra Voelker, Target: latest glTF extensions & advantages to tech artists
- Philip Taylor, Zea: leveraging multi-draw to speed up small object rendering
- Brendan Duncan, Unity: enabling SRP Batchers with WebGL

We'll answer your Q&A live at the end of the session!