Cross-Architecture Graphics in 2016

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Today: Reductionism

- HPG research focusing more on SW innovation
 - Algorithms that combine data-, task-, & pipeline parallelism
 - New pipelines

- End-state of reductionism trend (< 5 years)
 - The entire graphics software stack running in user space
 - General-purpose (throughput) hardware
 - A few special-purpose hardware components

Rendering in 2016

- Use multiple pipelines per frame ("right tool for the job")
 - uPoly, ray tracing, rasterization, particles ...
 - Composite with 2.5D deep frame buffers



Cross-Arch Rendering Abstraction?

- Single monolithic rendering pipeline
- Multiple specialized rendering pipelines (raster, uPoly, RT)
- Minimally configurable rendering pipeline
- Rendering pipeline component toolkit
- Data-, task-, pipeline-parallelism primitives
- Graphics ISA



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Not Performan

Portable