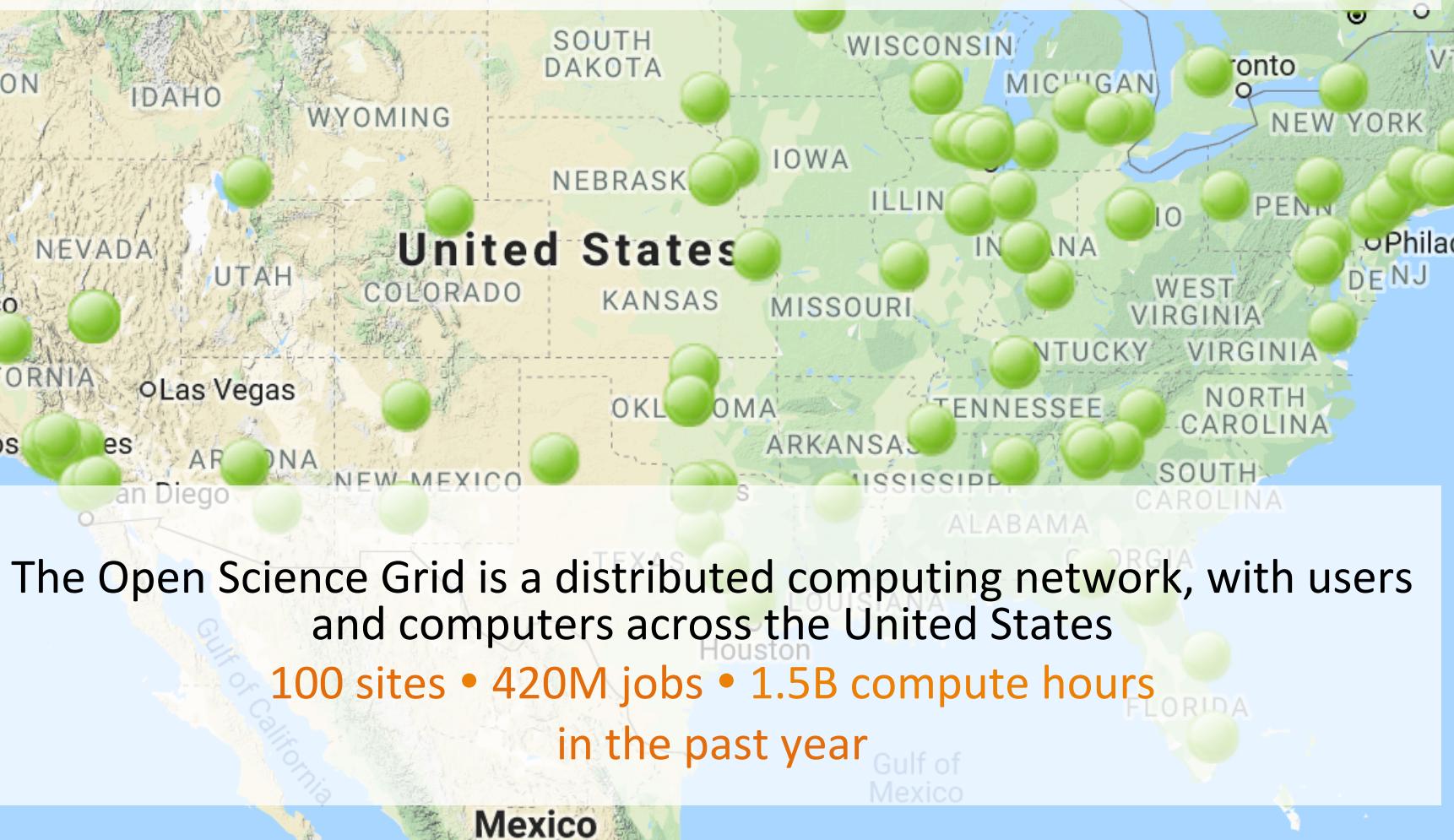


Submit Locally, Run Globally

COMPUTING ON THE OPEN SCIENCE GRID

What is the Open Science Grid (OSG)?



How does it work?

1.
Get an
account

OSG Connect

(anyone at a US institution/center)

local access

(through a project or university)

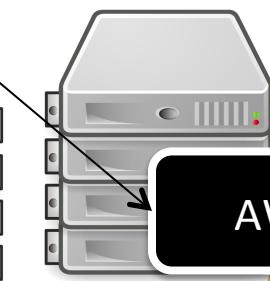
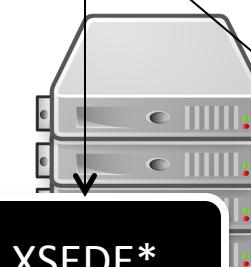


2.
Submit jobs

3.
Jobs run on



OSG

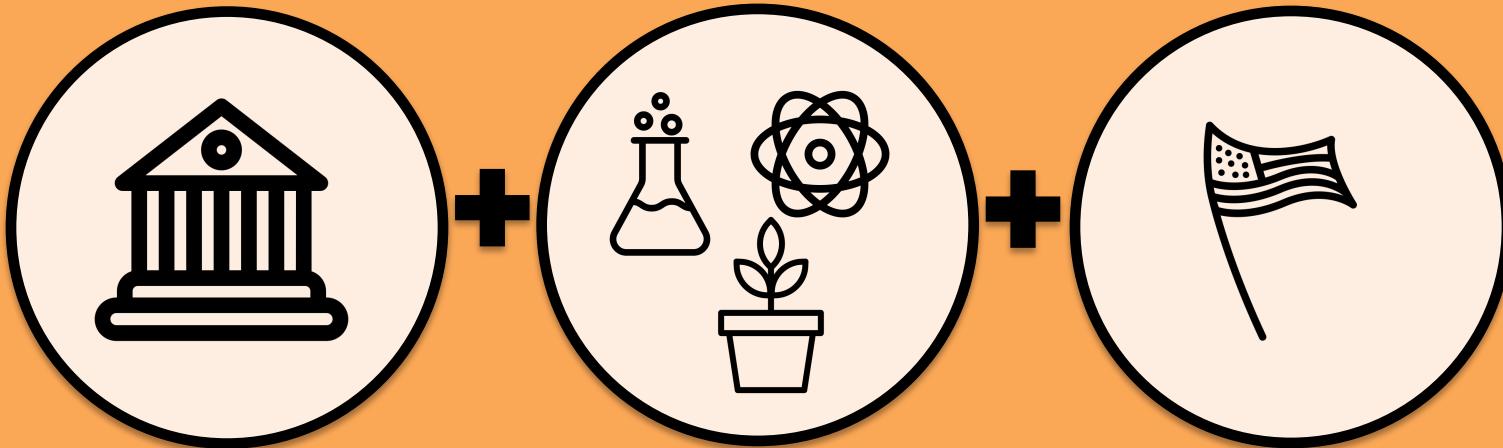


XSEDE*

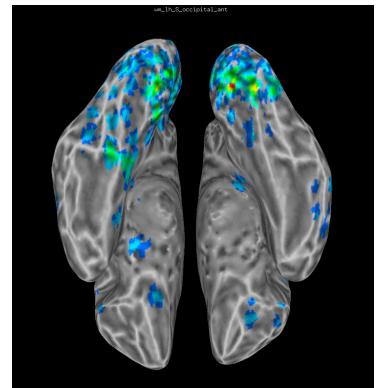
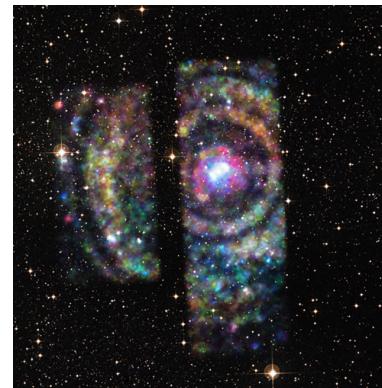
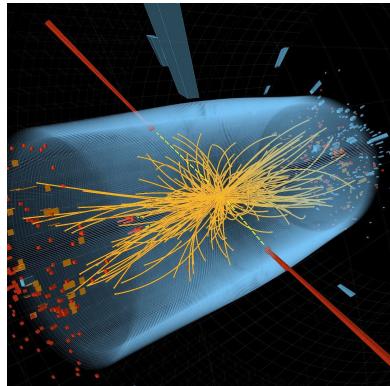
AWS*

*talk to the OSG
team for details

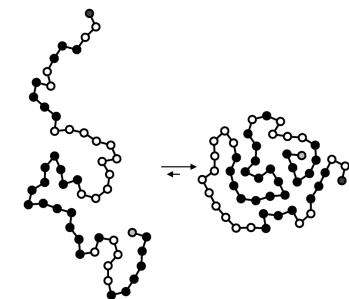
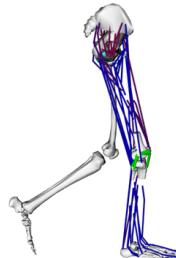
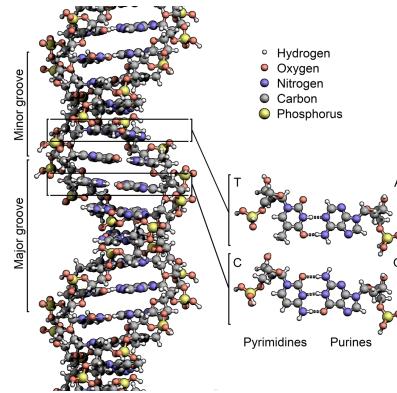
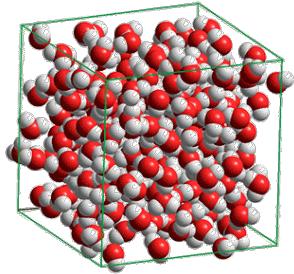
Who can use the OSG?



Anyone who is affiliated with a United States research institution (university or laboratory) can use the OSG.



What research can use the OSG?



What are the benefits of using OSG?





Is the OSG right for me?

Can you break your computation into many
independent pieces?

Context: High Throughput Computing

- The OSG is built on a “High Throughput Computing” (HTC) model.
- HTC = concurrently run many small/medium, independent tasks
- Goal is to use as many cpus as possible, maximizing work over a long period of time,
 - i.e., “how many protein structures can I analyze in a month”
 - not “how detailed can I make this weather simulation?”

HTC: An Analogy



Q: How do you bake the world's largest cake?

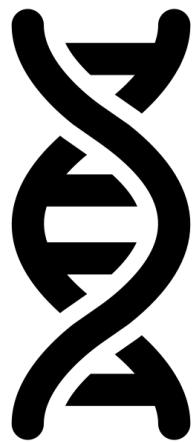
HTC: An Analogy



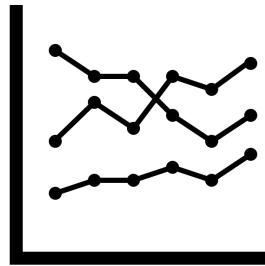
A: Bake many small cakes, in many ovens, then join.
This is the idea behind high throughput computing

Moral of the story: break it up!

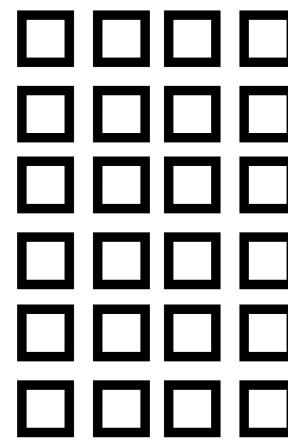
Is your problem divisible into lots of “laptop-sized” pieces?



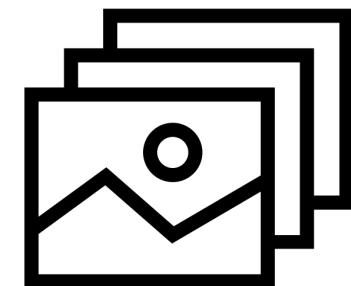
RNA/DNA sequence
alignment



statistical model
optimization



parameter sweep



multiple image/
sample analysis

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