Can our clusters keep up?
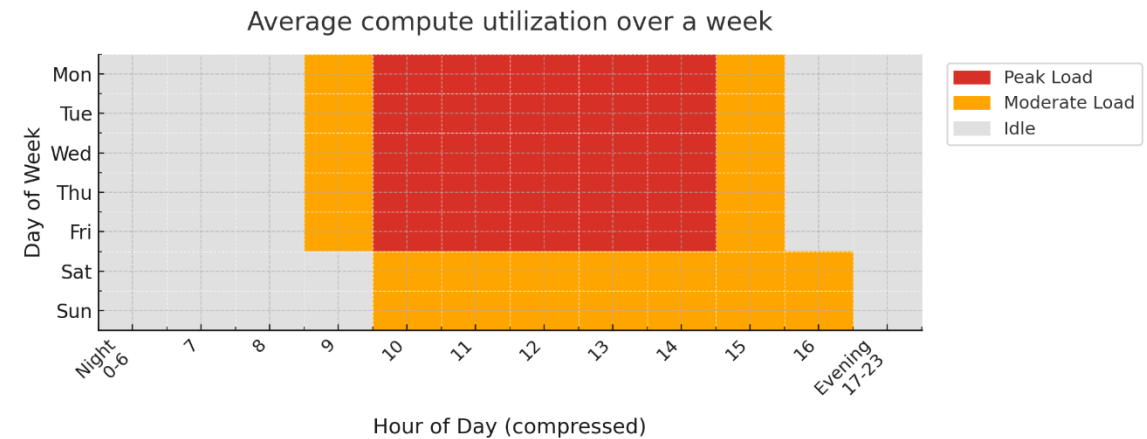
Research is hitting a compute wall
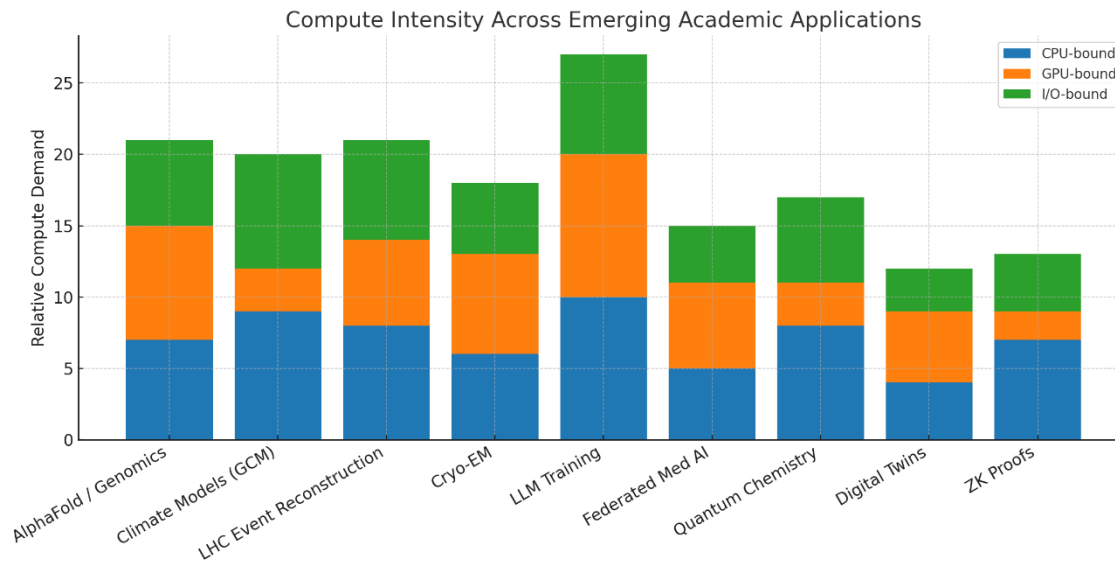
From AI to climate models, **modern science demands more CPU, GPU, and I/O**. Without flexible, scalable infrastructure, **compute becomes a bottleneck**—and **innovation slows down**.

The use of compute is discontinuous

Compute usage is inherently discontinuous, intense bursts during coding-heavy weeks, lulls when work shifts to design, meetings, or data prep. Provisioning for the "average" load leaves **systems swinging between congestion and wasted capacity**.

Scaling and Sharing beyond clusters walls

Entities borrowing capacity

Spare capacity provider

DYNAMIC FEDERATED COMPUTE CONTINUUM

Policy-governed

Borrow when needed. Contribute when idle.
No central control.

Accelerate research by accessing additional compute when local resources are saturated.

Put unused infrastructure to work, support collaborative innovation
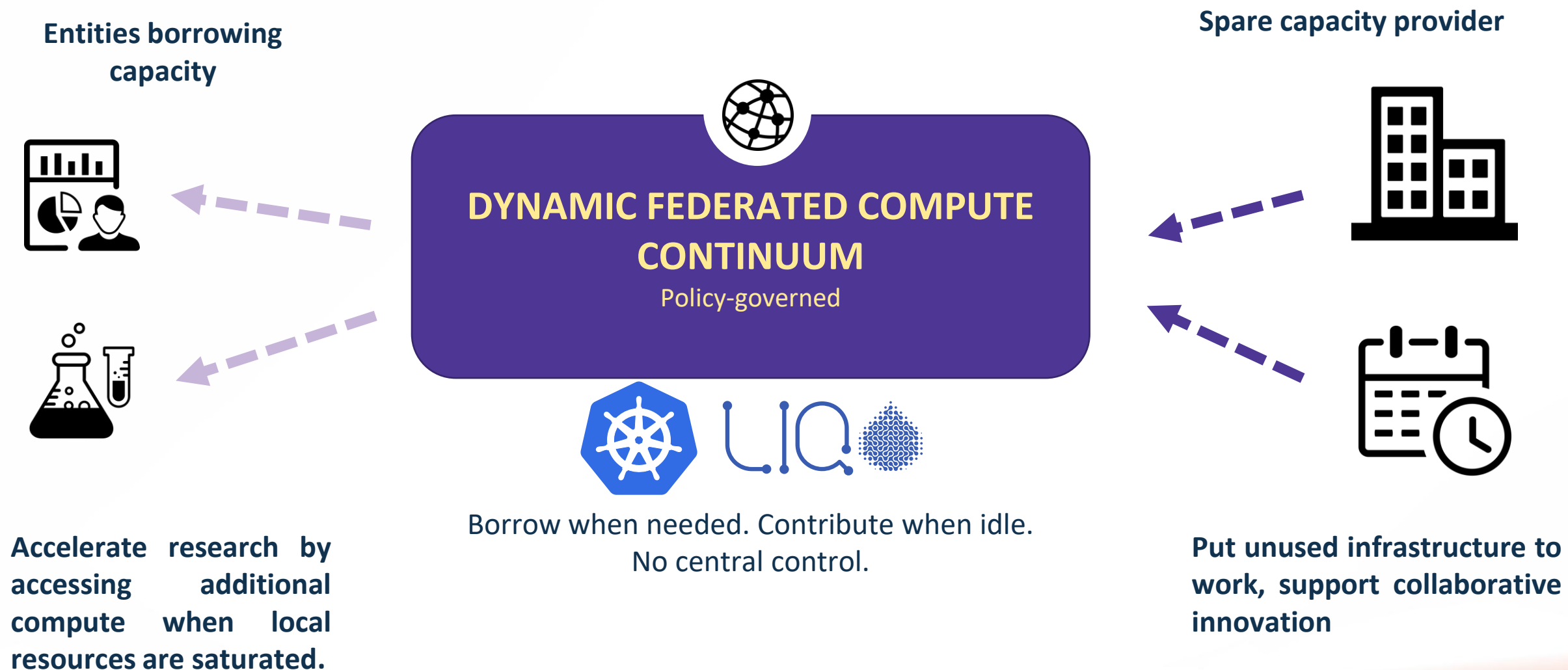
AGER Today: Live, Running, Federated

Politecnico di Torino

Bare-metal Cluster
Turin

bi-rex
Big Data Innovation & Research Excellence

Bare-metal Cluster
Bologna

AGER
Kubernetes Continuum
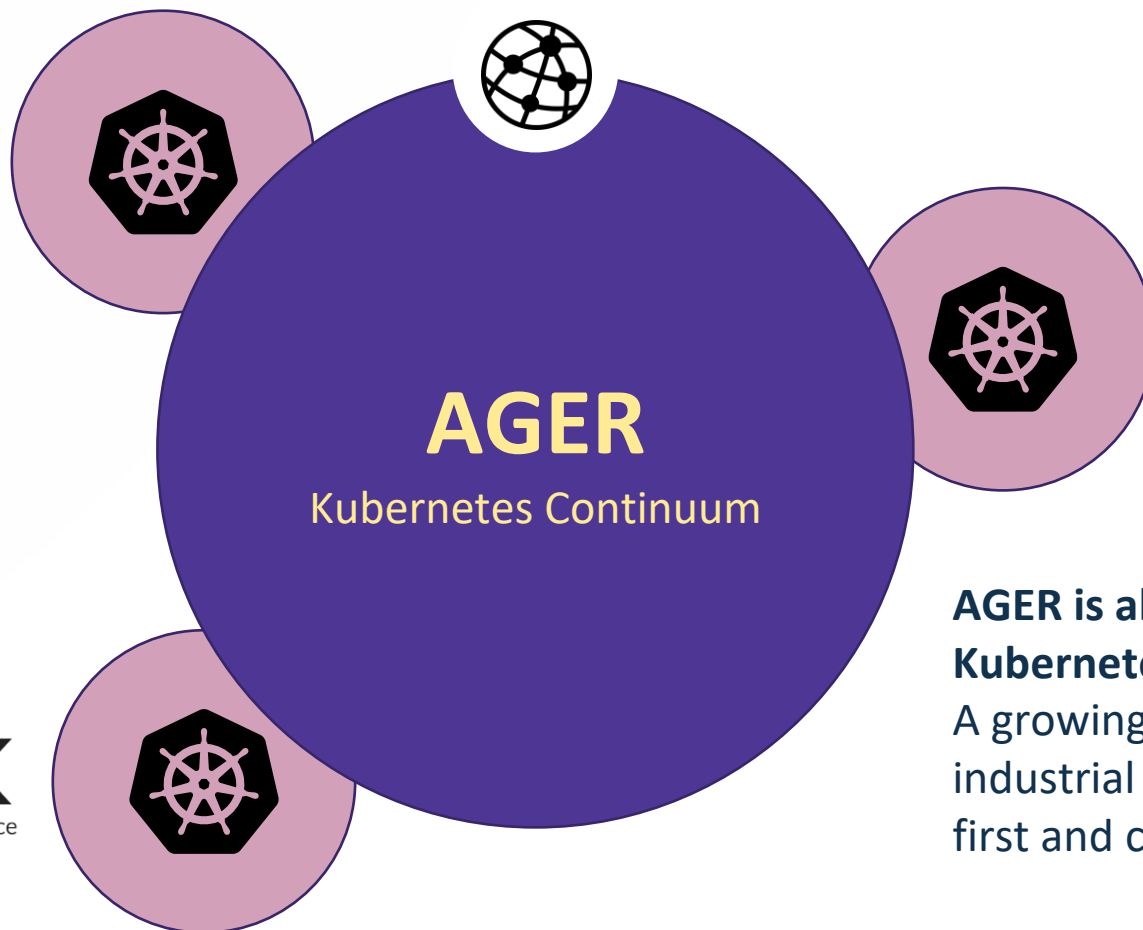
aruba.it
KUBE

Aruba Managed Kubernetes
Bergamo

AGER is already live, connecting production-grade Kubernetes clusters across Italy.
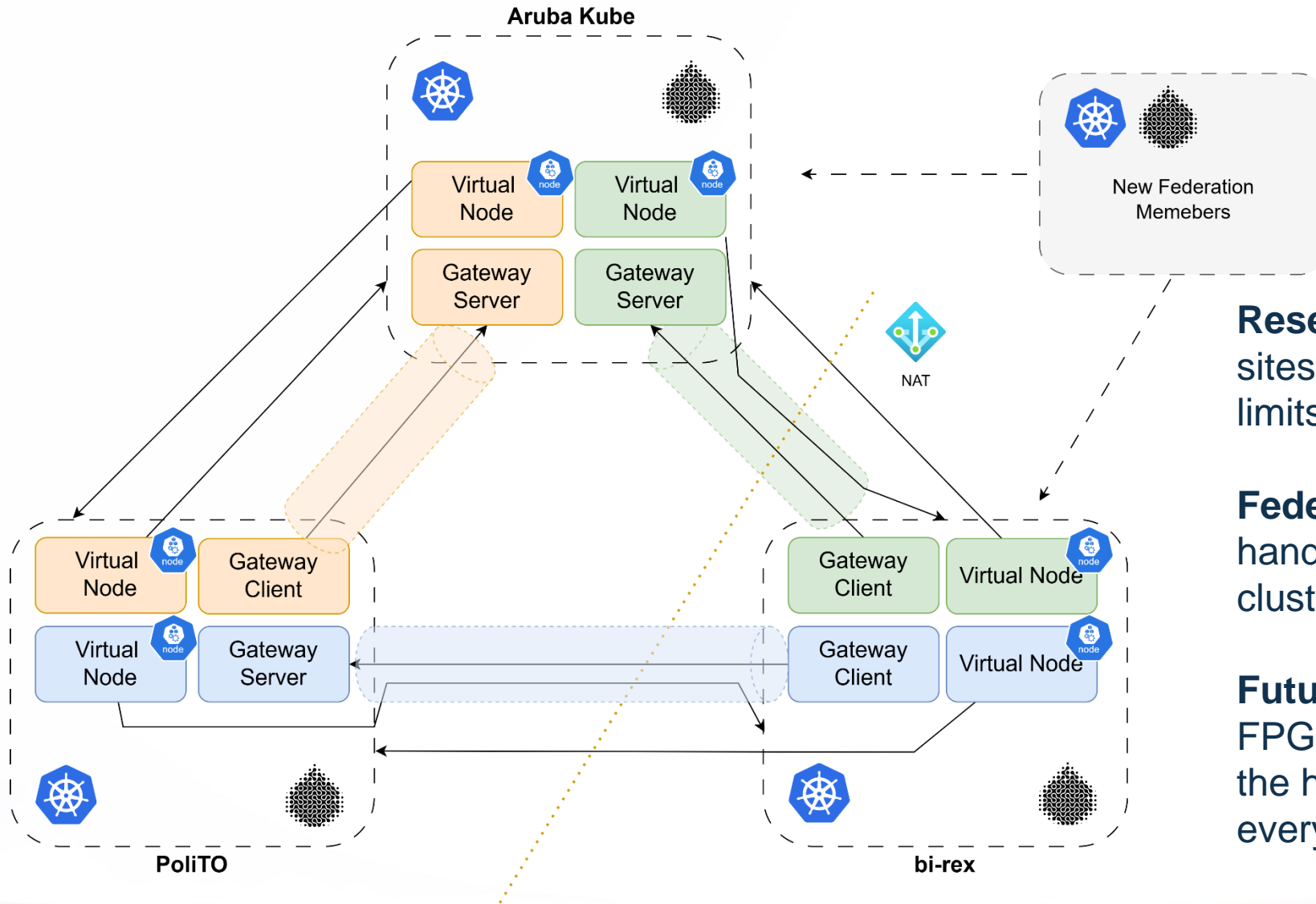A growing federation where academic and industrial partners scale and share compute, policy-first and cloud-agnostic.

We are actively seeking new contributors: bring your cluster, offer spare capacity, or burst when you need it.

What powers AGER? Transparent federation via Liqo 1.0

Research without walls Run across sites as if local. No more queue-induced limits on collaboration or scale.

Federation-as-code One install, and Liqo handles peering, policies, and multi-cluster identity, zero disruption.

Future-ready compute GPUs today, FPGAs tomorrow, Kubernetes abstracts the hardware, Liqo makes it usable everywhere.

Run Federated. Feel Local. Stay in Control.

```
fra in ⚙ager-arubakube in ~
> liqoctl info
┌ Local installation info ─────────────────────────────────┐
│  Cluster ID:      ager-arubakube                         │
│  Version:         v1.0.0                                  │
│  K8s API server: https://95.110.142.35:6443              │
│  Cluster labels                                          │
│      liqo.io/provider:         aruba                     │
│      topology.kubernetes.io/zone: bergamo                │
└──────────────────────────────────────────────────────────┘
┌ Installation health ─────────────────────────────────────┐
│  ✔   Liqo is healthy                                     │
└──────────────────────────────────────────────────────────┘
┌ Active peerings ─────────────────────────────────────────┐
│ bi-rex-cluster                                           │
│      Role:                   ConsumerAndProvider         │
│      Networking status:      Healthy                     │
│      Authentication status: Healthy                      │
│      Offloading status:      Healthy                     │
│ poli-cladispe                                            │
│      Role:                   ConsumerAndProvider         │
│      Networking status:      Healthy                     │
│      Authentication status: Healthy                      │
│      Offloading status:      Healthy                     │
└──────────────────────────────────────────────────────────┘
```

Deploy as usual – Use your existing kubectl, Helm, or CI pipeline, no need to learn new tools.

Burst automatically – When local resources are full, workloads transparently overflow to trusted AGER peers.

Stay in control – You define what can run where, with quotas, labels, and namespaces enforced by policy. You decide what to share.

See what's happening – Unified observability lets you track jobs and resource usage across clusters.

Scale with us: From core Partners to a Community Fabric

AGER is live, but not finished. You can help shape how this federation grows: technically, organizationally, and ethically.

We're building the policies together. Quotas, access, incentives, fairness, partners will co-design the rules, not just follow them.
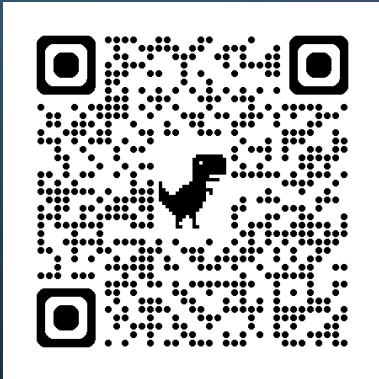
You don't need to commit today. Peer in, test workloads, explore governance. The door is open—no vendor, no lock-in.

Why now? Because the foundation is running—and it's solid. But what it becomes is up to the community that joins next.

Join not just to run workloads, join to invent the future of shared academic infrastructure.