Berkeley Research Computing (BRC)
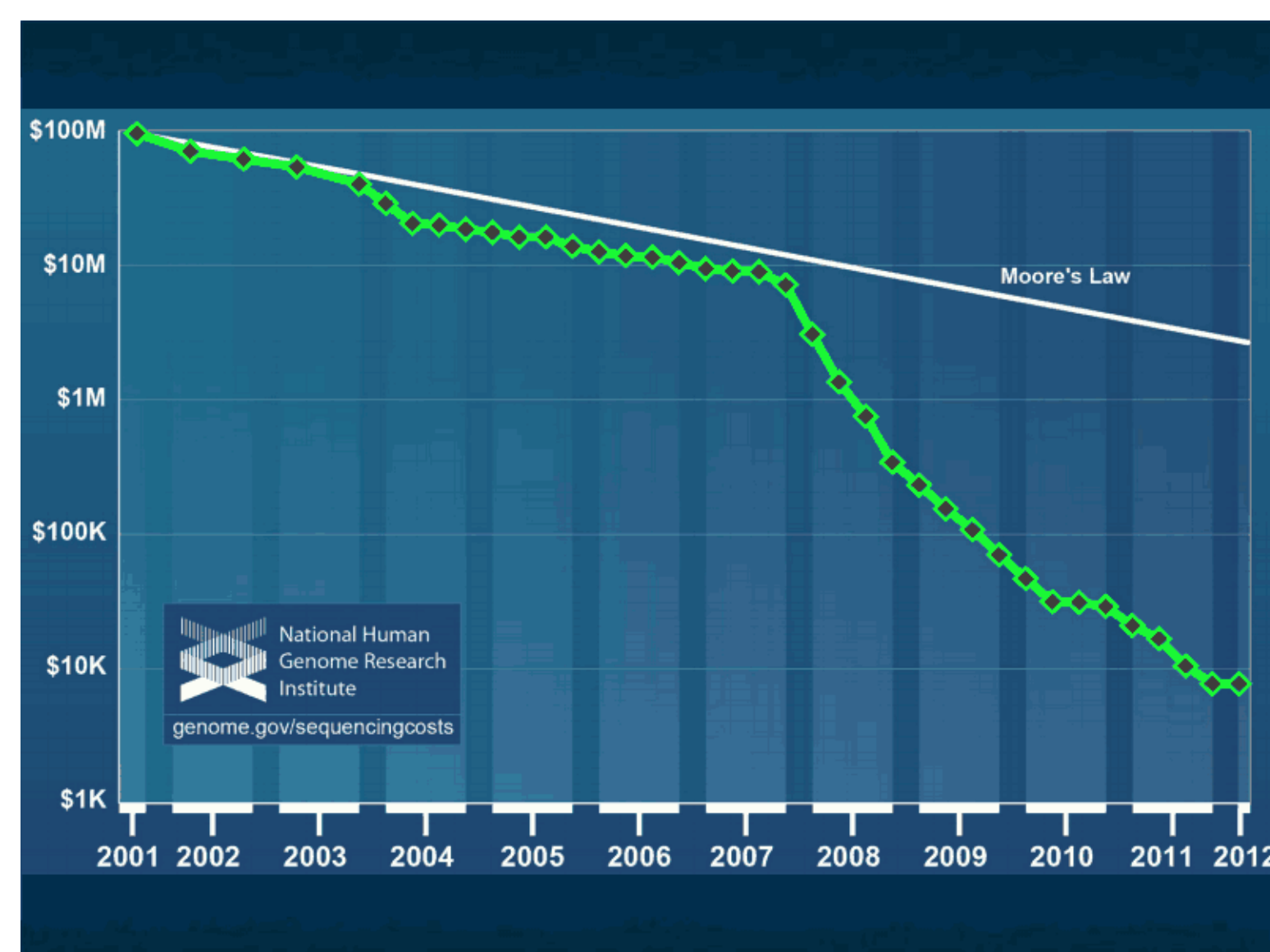
Listening to Needs

Faculty Input and Perspectives

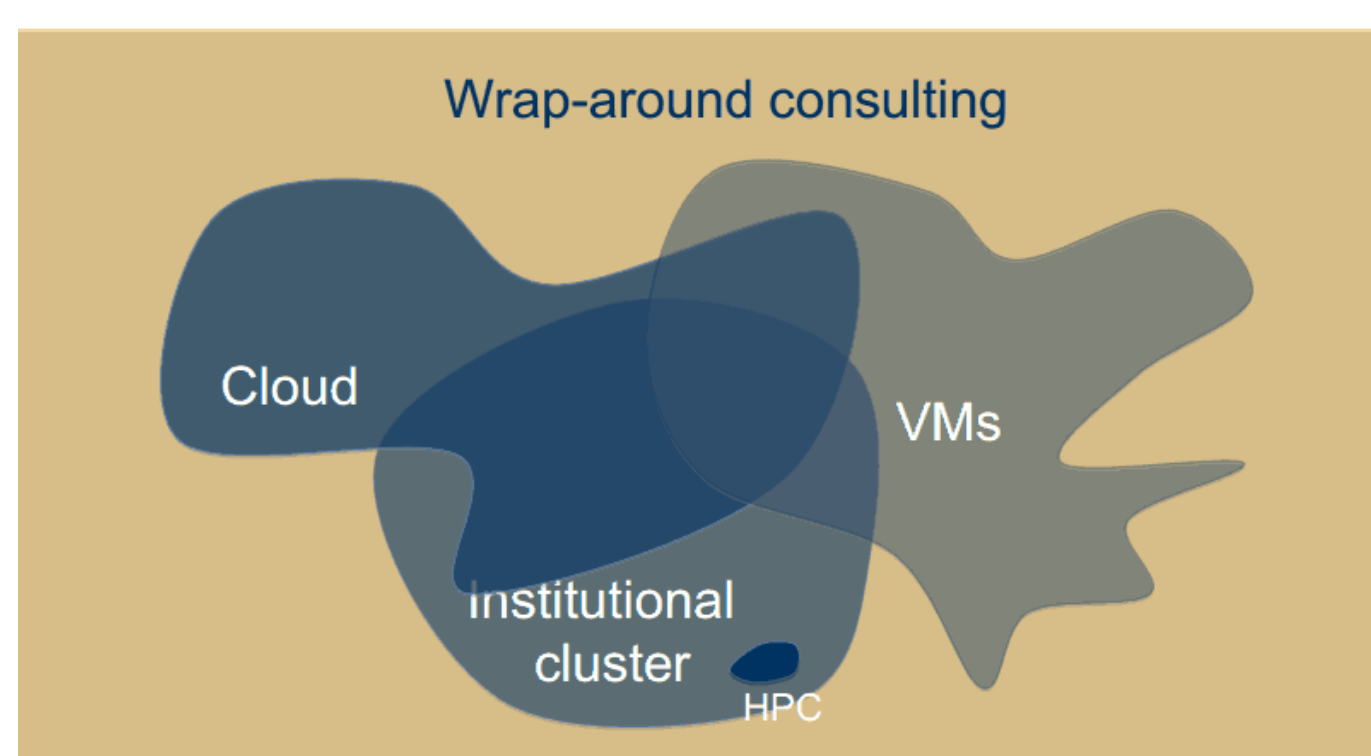**MAY 21, 2013 LETTER FROM PI ELIOT QUATAERT, ET AL. TO VCR FLEMING**

Dear Graham,

We are writing to propose that UC Berkeley adopt a condominium computing model, i.e., a more centralized model for supporting research computing on campus...
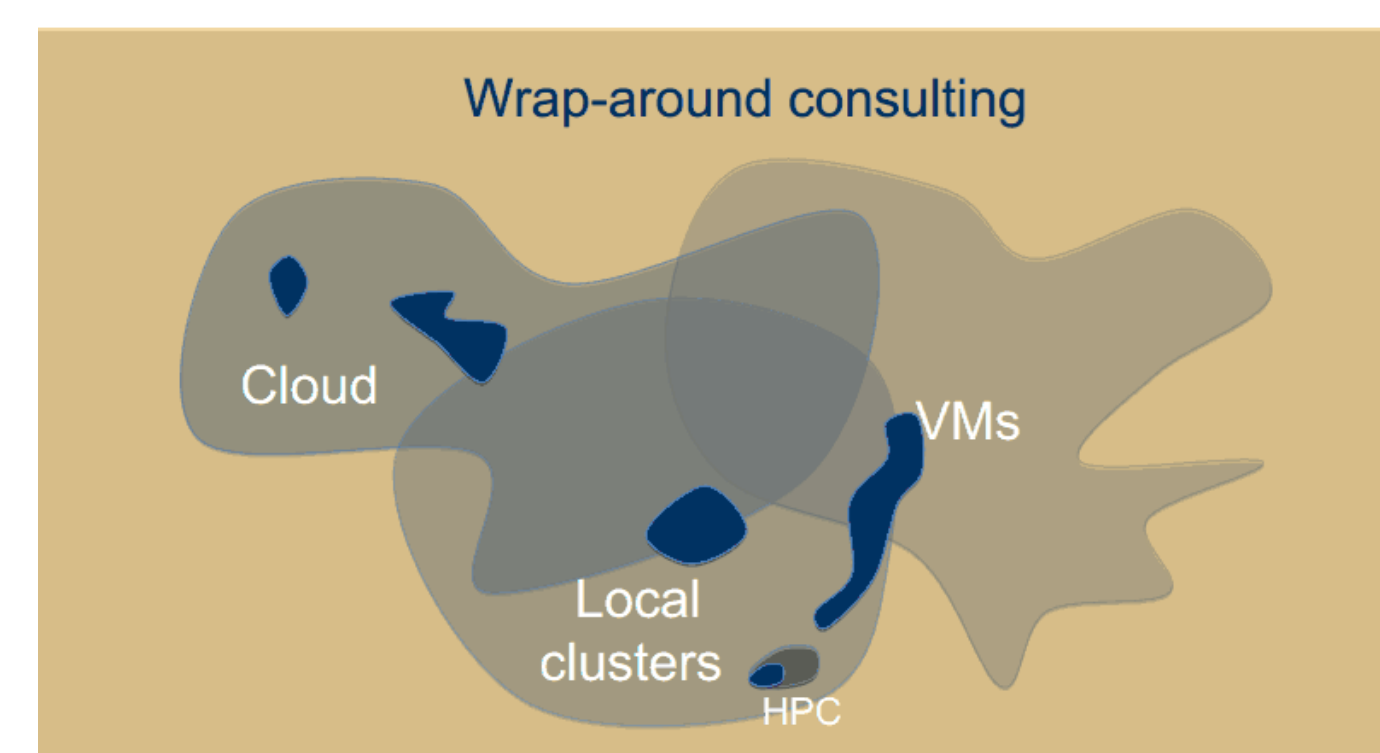
One year after this letter BRC launched

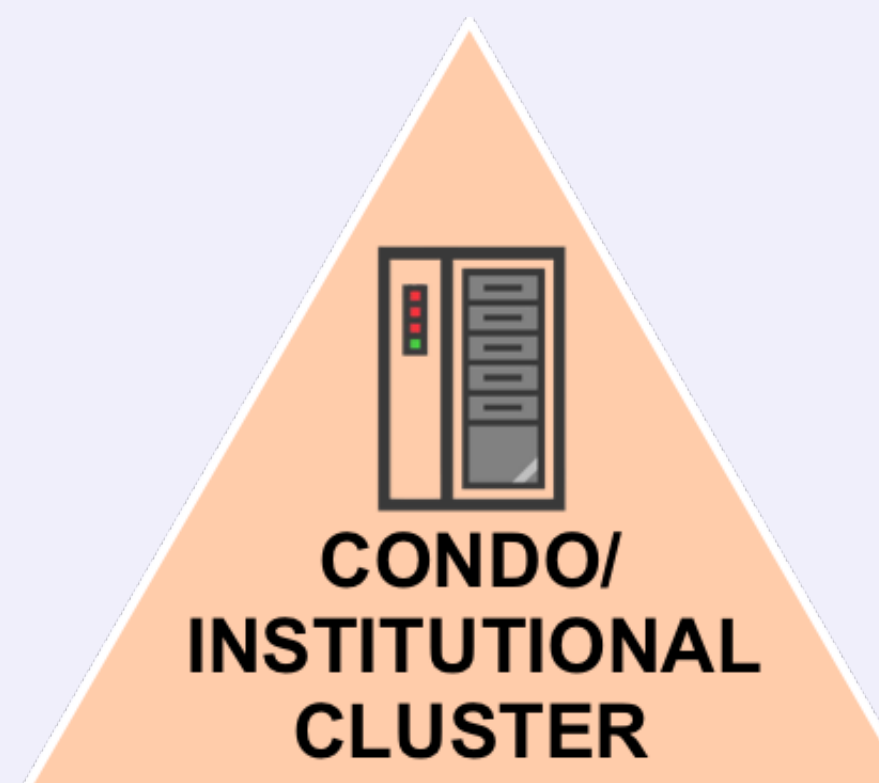Moore's Law vs. Cost to Sequence Gene


Computing needs of Social Sciences...

...not met by services available today

Defining Solutions

Condo/Institutional Cluster ("Savio")

CONDO/ INSTITUTIONAL CLUSTER

- High performance computing with high-speed, low- latency interconnect, parallel filesystem, and data transfer node on Science DMZ
- Infrastructure and admin costs subsidized for Condo contributions, unused capacity available to campus
- Condo users can "burst" beyond their hardware
- Institutional cluster provides subsidized access for all faculty, and students learning computational methods
- Managed in partnership with LBNL HPC Services group
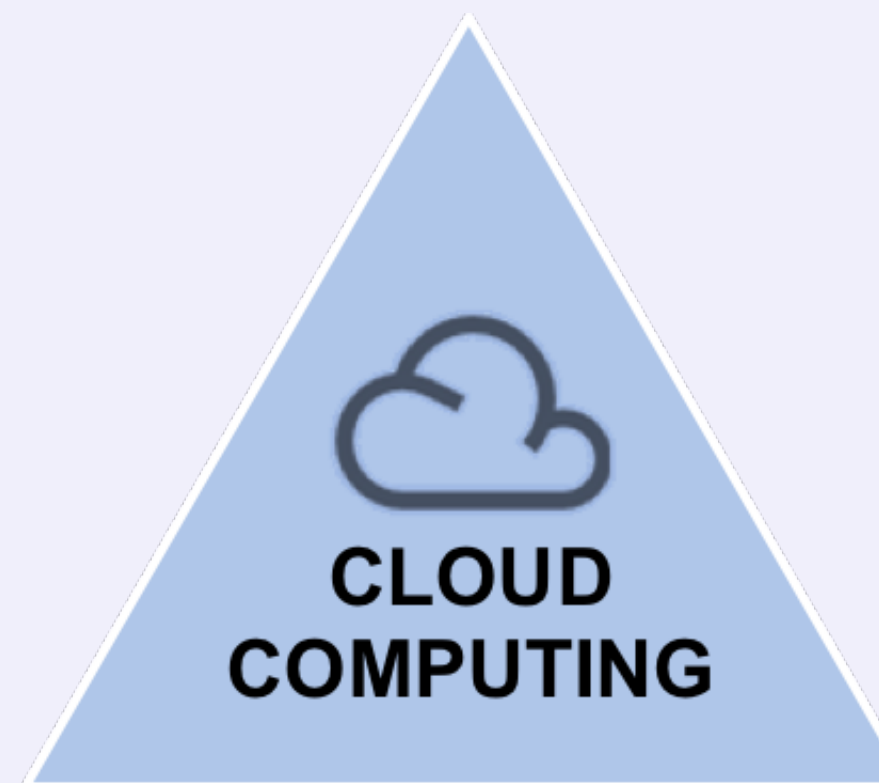
Cloud Computing support

CLOUD COMPUTING

- Set of compute nodes plus management layer for fast spin-up, image management
- Some amount of private cloud for protected data, very high data IO, experimentation, etc
- Public cloud (Amazon, Azure, Google, etc) access for scale, many common needs
- Virtual private cloud may be a hybrid at some point
- Working with EECS to define appropriate services

### Virtual Workstation support

VIRTUAL WORKSTATIONS

- Analytics stacks on-demand: self-serve access to compute, storage, and commonly used software
- Domain-specific VM images can be prepared, managed
- Expanded access to lab workstation model (24/7, anywhere)
- Working with Library, SCF, D-Lab, ETS, IST to define
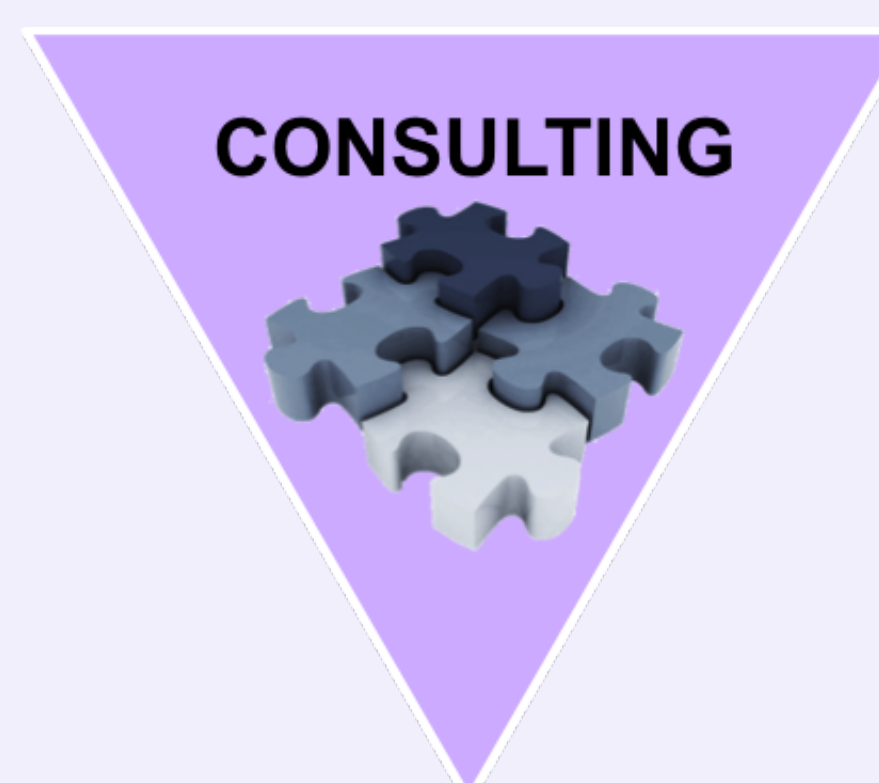
Consulting and Community

CONSULTING

- First point of contact for faculty and researchers, to ensure match to appropriate resources
- Specialist consulting in each service area
- Support migration between computational modes for efficient scaling and reproducible research
- Domain consultants for various disciplines, as part-time staff/Fellows
- Foster cross-domain community and knowledge-sharing

Building with Partners
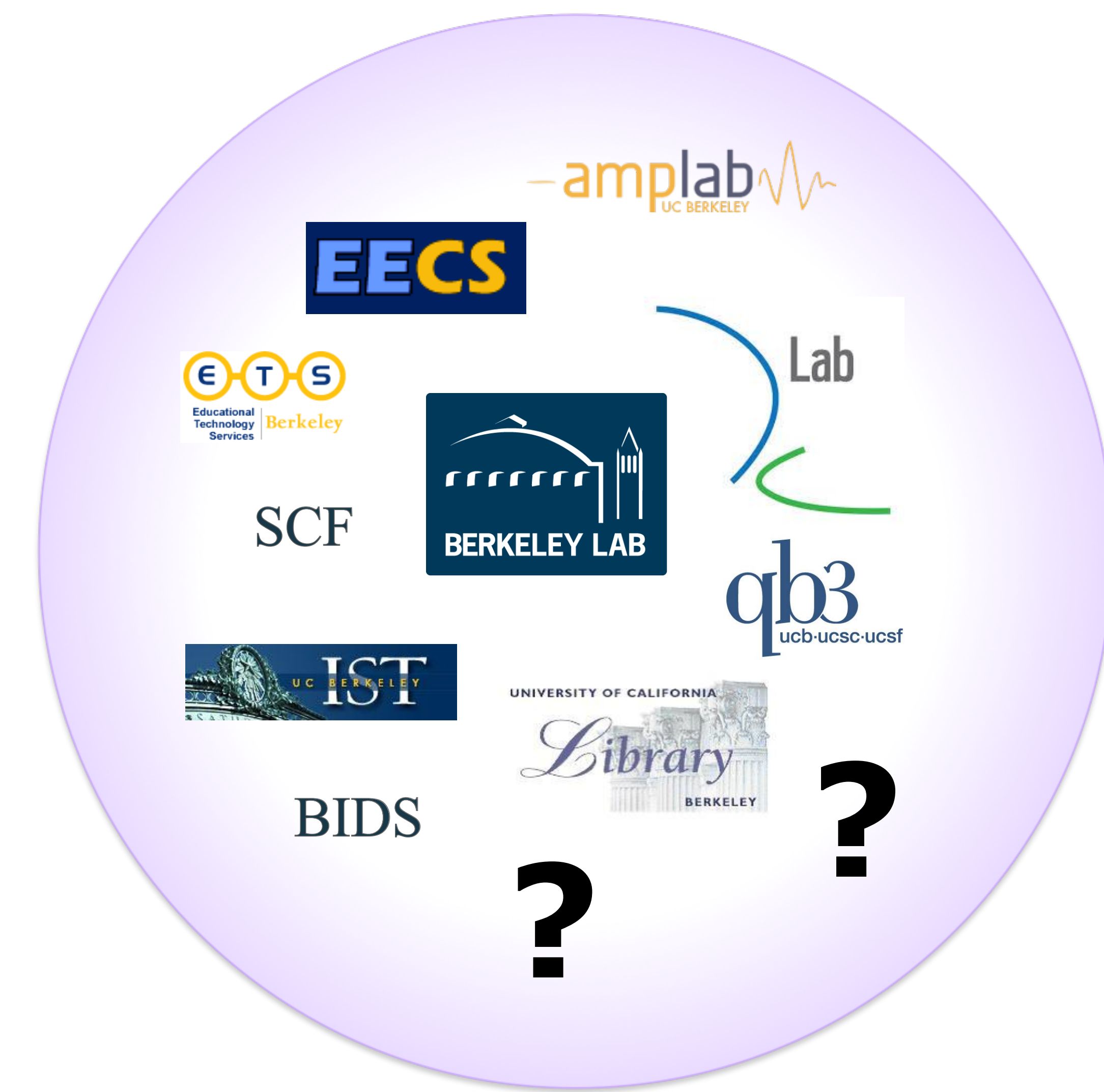
How to get involved

- Become a partner
- Help define services
- Provide early feedback
- Collect use cases
- Identify success metrics
- Contribute a condo
- Join the community