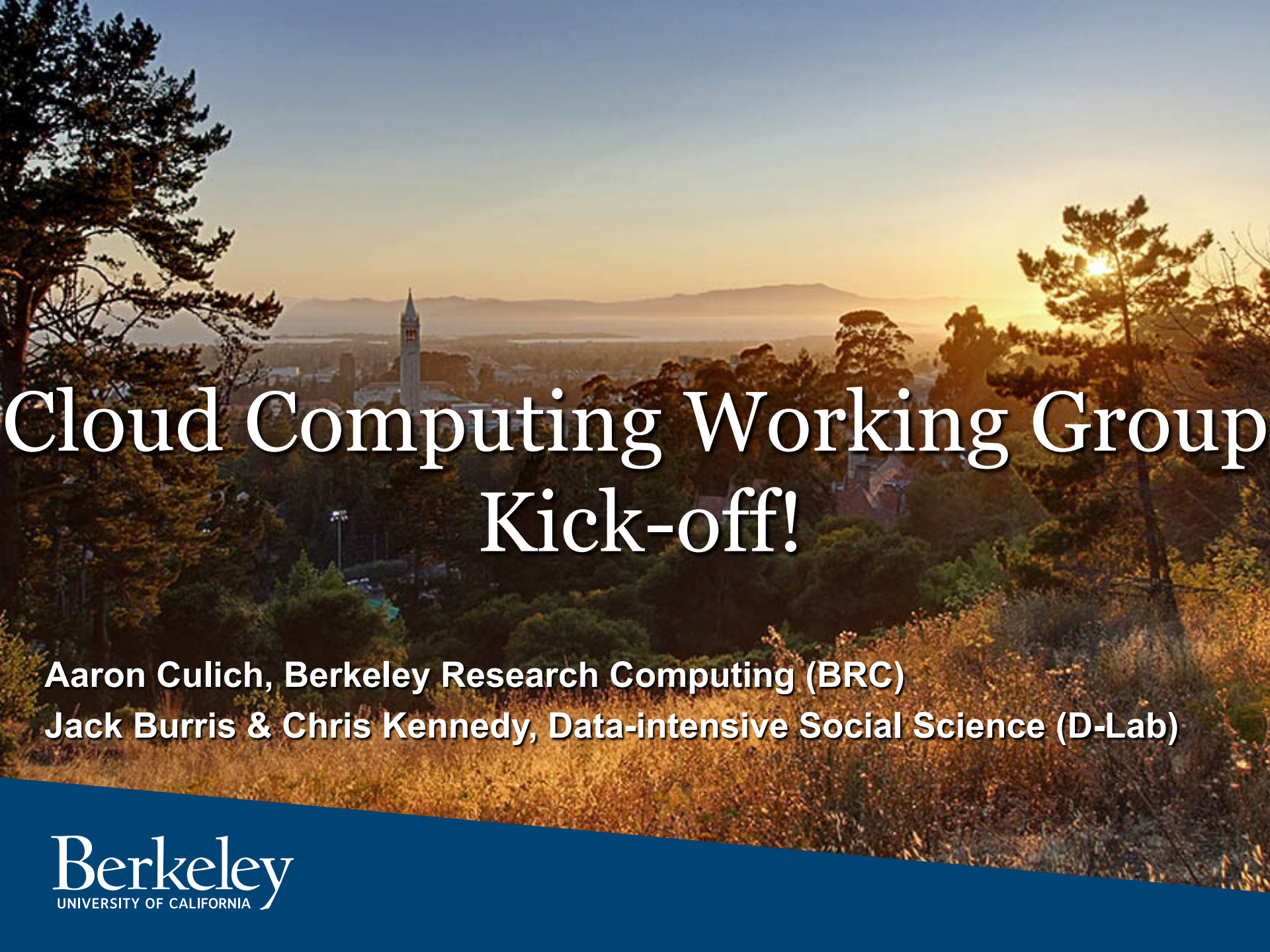


Cloud Computing Working Group Kick-off!

Aaron Culich, Berkeley Research Computing (BRC)
Jack Burris & Chris Kennedy, Data-intensive Social Science (D-Lab)

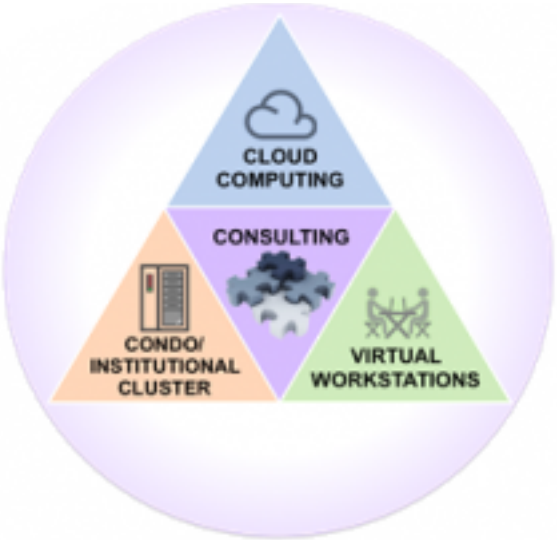
Berkeley
UNIVERSITY OF CALIFORNIA

Who are your hosts?

Lab

Jack Burris

Chris Kennedy

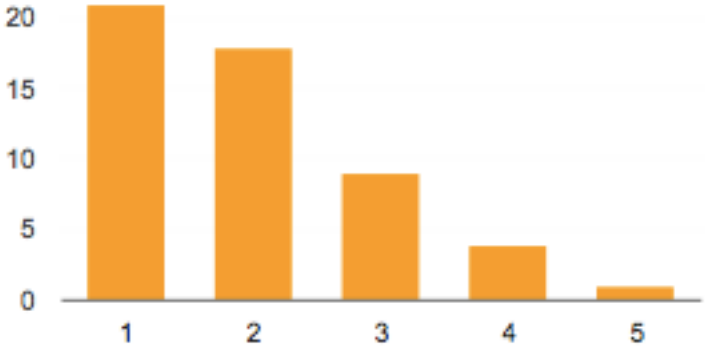


Aaron Culich

Who are all of you?

Who are all of you?

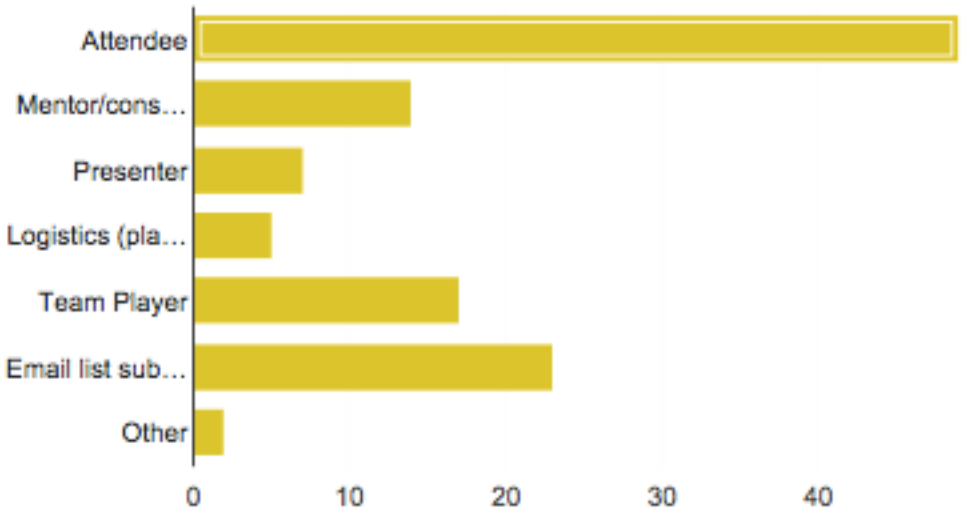
What is your estimated level of expertise with cloud computing?



Absolute Beginner: 1	**21**	39.6%
2	**18**	34%
3	**9**	17%
4	**4**	7.5%
Seasoned Pro: 5	**1**	1.9%

Who are all of you?

How would you like to participate in the Cloud Compute Working Group?



Attendee	**49**	92.5%
Mentor/consultant/staff	**14**	26.4%
Presenter	**7**	13.2%
Logistics (planning, resources, etc)	**5**	9.4%
Team Player	**17**	32.1%
Email list subscriber	**23**	43.4%
Other	**2**	3.8%

Who are all of you?

Faculty
Grad student
Undergrad
Postdoc
Researcher Staff
Student Staff
Library Staff
IT Staff
Volunteer

Statistics
Environmental Health Sciences
Goldman School of Public Policy
Haas/Master of Financial Engineering
School of Public Health/Epidemiology
Sociology
Anthropology
School of Information
ESPM
Haas School of Business
Nuclear Engineering
EECS/AMPLab
PATH / Institute of Transportation Studies
IST Data Services
Research IT

BIDS
IS&T/RIT
Biostatistics
California Digital Library
ITS / PATH / Connected Corridors
GSE
D-Lab
Epidemiology
Biostatistics
Radiology & Biomedical Imaging, UCSF
ESPM
Sociology
UC Berkeley Libraries
Information Management and Systems

Tell us about you…

Very brief history of the Cloud

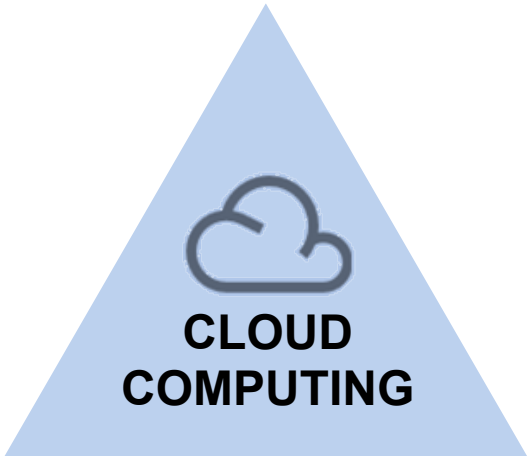
amazon web services™

CLOUD COMPUTING

May 2006

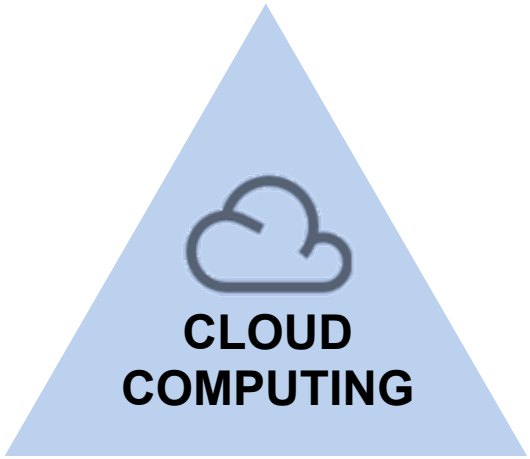
HARVARD ENGINEERING AND APPLIED SCIENCES

Commercial Clouds



2015

National Infrastructure



1974 - 2014

Emerging National Infrastructure

XSEDE
Extreme Science and Engineering Discovery Environment

CLOUD COMPUTING

BRIDGES
A PITTSBURGH SUPERCOMPUTING CENTER RESOURCE

2015 - 2016

CloudLab

Chameleon

TACC WRANGLER DATA PORTAL
TEXAS ADVANCED COMPUTING CENTER

What are the challenges?

Complexity


XSEDE
Extreme Science and Engineering
Discovery Environment


DigitalOcean


amazon
web services™


Google Cloud Platform


BRIDGES
A PITTSBURGH SUPERCOMPUTING CENTER RESOURCE


Microsoft
Azure


CloudLab


COMET

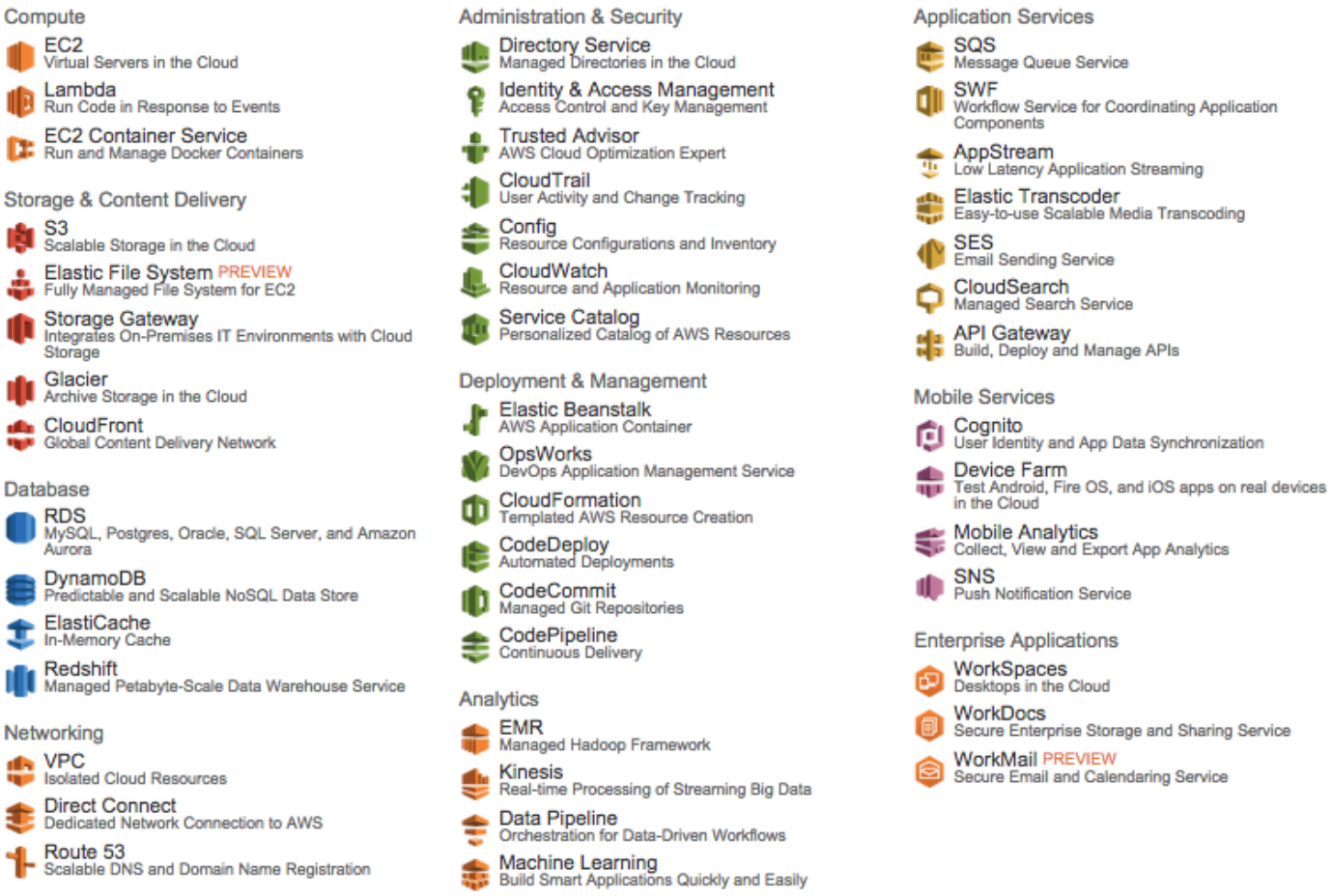

TACC
TEXAS ADVANCED COMPUTING CENTER
WRANGLER
DATA PORTAL


rackspace
the open cloud company


chameleon


jetstream

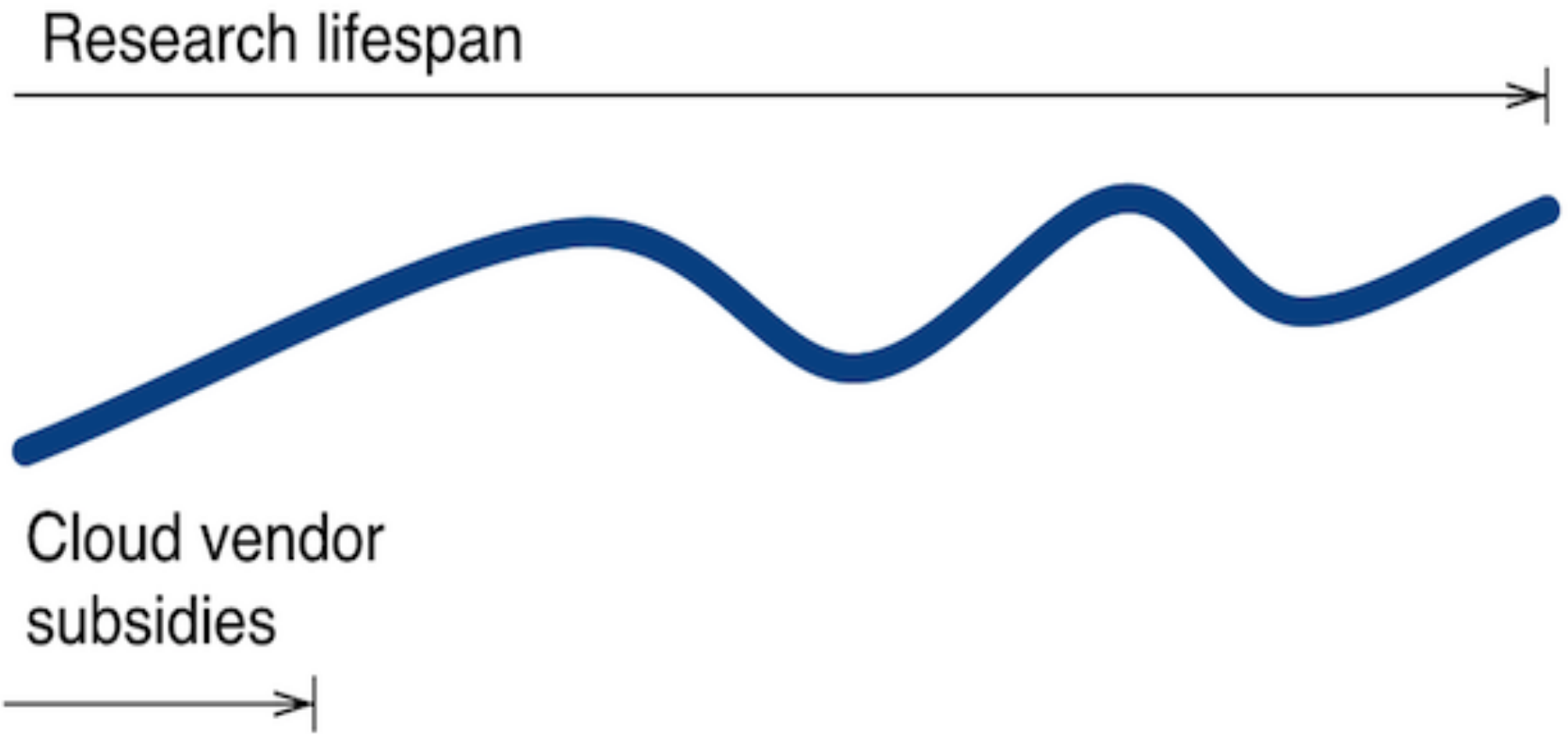
Complexity


Compute
EC2
Virtual Servers in the Cloud
Lambda
Run Code in Response to Events
EC2 Container Service
Run and Manage Docker Containers
Storage & Content Delivery
S3
Scalable Storage in the Cloud
Elastic File System PREVIEW
Fully Managed File System for EC2
Storage Gateway
Integrates On-Premises IT Environments with Cloud Storage
Glacier
Archive Storage in the Cloud
CloudFront
Global Content Delivery Network
Database
RDS
MySQL, Postgres, Oracle, SQL Server, and Amazon Aurora
DynamoDB
Predictable and Scalable NoSQL Data Store
ElastiCache
In-Memory Cache
Redshift
Managed Petabyte-Scale Data Warehouse Service
Networking
VPC
Isolated Cloud Resources
Direct Connect
Dedicated Network Connection to AWS
Route 53
Scalable DNS and Domain Name Registration
Administration & Security
Directory Service
Managed Directories in the Cloud
Identity & Access Management
Access Control and Key Management
Trusted Advisor
AWS Cloud Optimization Expert
CloudTrail
User Activity and Change Tracking
Config
Resource Configurations and Inventory
CloudWatch
Resource and Application Monitoring
Service Catalog
Personalized Catalog of AWS Resources
Deployment & Management
Elastic Beanstalk
AWS Application Container
OpsWorks
DevOps Application Management Service
CloudFormation
Templated AWS Resource Creation
CodeDeploy
Automated Deployments
CodeCommit
Managed Git Repositories
CodePipeline
Continuous Delivery
Analytics
EMR
Managed Hadoop Framework
Kinesis
Real-time Processing of Streaming Big Data
Data Pipeline
Orchestration for Data-Driven Workflows
Machine Learning
Build Smart Applications Quickly and Easily
Application Services
SQS
Message Queue Service
SWF
Workflow Service for Coordinating Application Components
AppStream
Low Latency Application Streaming
Elastic Transcoder
Easy-to-use Scalable Media Transcoding
SES
Email Sending Service
CloudSearch
Managed Search Service
API Gateway
Build, Deploy and Manage APIs
Mobile Services
Cognito
User Identity and App Data Synchronization
Device Farm
Test Android, Fire OS, and iOS apps on real devices in the Cloud
Mobile Analytics
Collect, View and Export App Analytics
SNS
Push Notification Service
Enterprise Applications
WorkSpaces
Desktops in the Cloud
WorkDocs
Secure Enterprise Storage and Sharing Service
WorkMail PREVIEW
Secure Email and Calendaring Service

Complexity

IOKN2K!

Cost



Access

"Do you know how most faculty handle cloud computing payments?"

-- a new faculty member

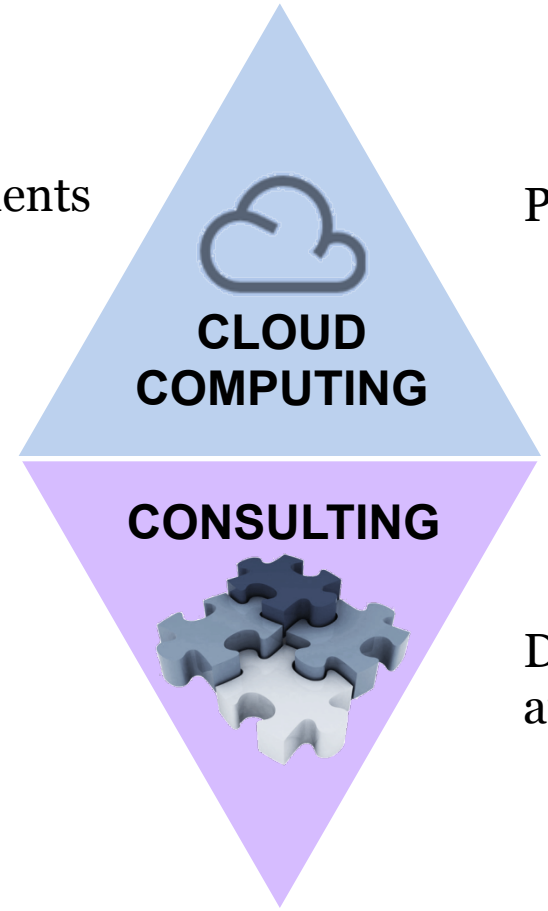
UC BearBuy

Security… and re-inventing the wheel!

Cloud Consulting

Match computational requirements with appropriate resources

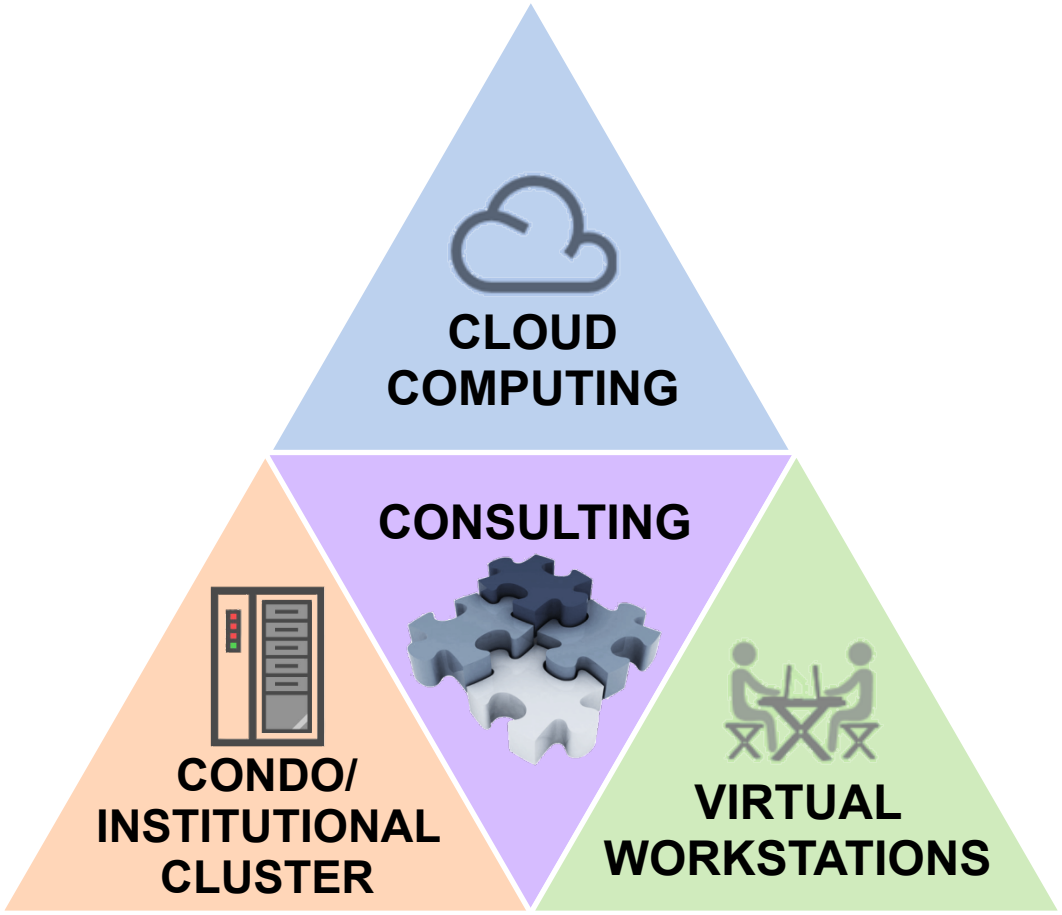
Plan for and manage costs



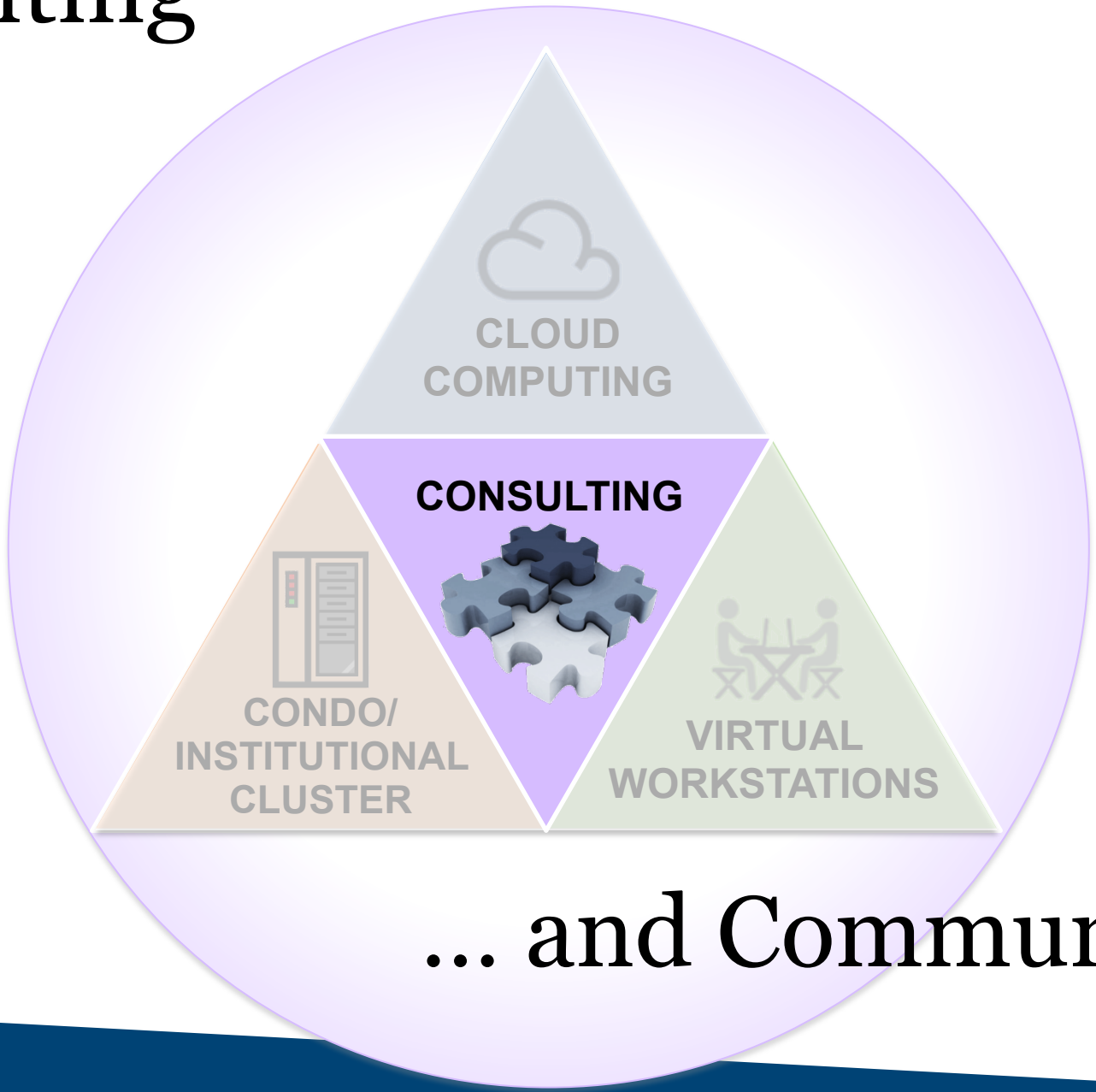
Facilitate access to resources

Document best practices and automate provisioning

BRC Services

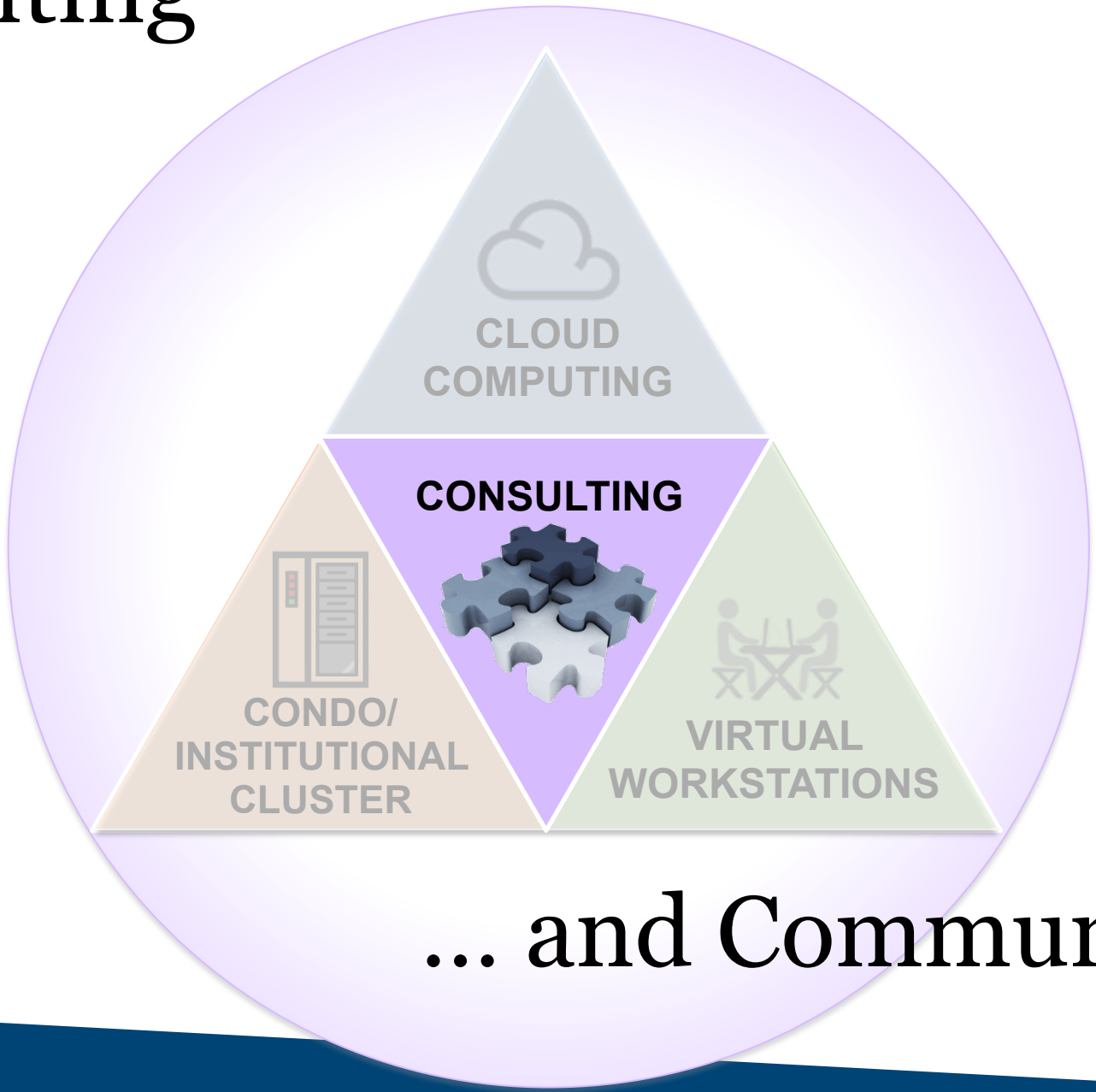


Consulting



... and Community

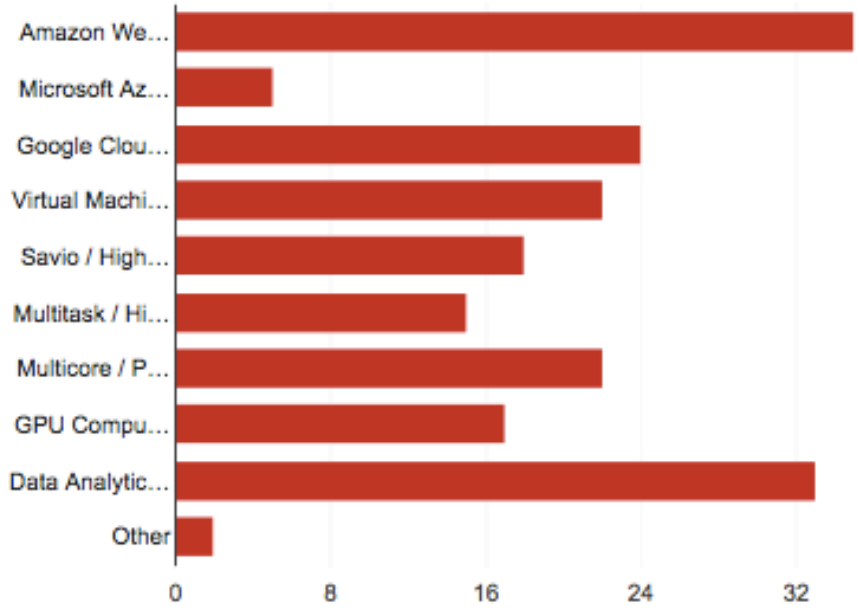
Consulting



... and Community

What topics interest you?

What topics would you most want the group to cover?



Amazon Web Services / EC2	**35**	76.1%
Microsoft Azure	**5**	10.9%
Google Cloud Platform	**24**	52.2%
Virtual Machines and Docker Containers	**22**	47.8%
Savio / High Performance Computing (HPC)	**18**	39.1%
Multitask / High Throughput Computing (HTC)	**15**	32.6%
Multicore / Parallel Computing	**22**	47.8%
GPU Computing	**17**	37%
Data Analytics with Spark or Hadoop	**33**	71.7%
Other	**2**	4.3%

What topics interest you?

Proposed agenda for Fall 2015

1) Sept 3: Kick-off, Introductions, & Signing Up for AWS
2) Sept 17: AWS EC2 Basics, Part 1
3) Oct 1: AWS EC2 Basics, Part 2
4) Oct 15 Berkeley Common Environment (BCE) on AWS
5) Oct 29: Applying for an AWS Research Grant
6) Nov 12: Savio and Globus Data Mobility (S3)
7) Nov 23 Monday: BCE & Custom Built AMIs
   not Thursday due to Thanksgiving holiday!)
8) Dec 10: Spark for Data Analysis