Currently 1,141 nodes, 11,052 cores, ~103 Tflops. ~360 Tflops
1,400+ users, 175+ research groups from 80 departments
Processed 20 million jobs, 50 million core-hours in 2012
Where is my focus and what keeps me up?

<table>
<thead>
<tr>
<th></th>
<th>OIT/IDRE Provided Services</th>
<th>Departmental Provided Services</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FY 02/03</td>
<td>FY 12/13</td>
</tr>
<tr>
<td>Labor Costs</td>
<td>$1,191.60</td>
<td>$1,765.00</td>
</tr>
<tr>
<td>Infrastructure Costs</td>
<td>$554.60</td>
<td>$848.30</td>
</tr>
<tr>
<td>Total Costs</td>
<td>$1,742.60</td>
<td>$2,613.30</td>
</tr>
<tr>
<td>Labor FTE</td>
<td>11.4</td>
<td>12.7</td>
</tr>
<tr>
<td>Users Supported</td>
<td>150</td>
<td>1,200</td>
</tr>
<tr>
<td>Nodes</td>
<td>110</td>
<td>1,139</td>
</tr>
<tr>
<td>Core/CPUs</td>
<td>166</td>
<td>11,056</td>
</tr>
<tr>
<td>Tflops</td>
<td>1.2</td>
<td>300</td>
</tr>
<tr>
<td>Storage (TB's)</td>
<td>10</td>
<td>2,000</td>
</tr>
</tbody>
</table>

Research Programs/Real-time Impact
Informatics/Mobility
<table>
<thead>
<tr>
<th>2009-10</th>
<th>2013-14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governance, Policy and Planning</td>
<td>Campus IT Planning, Infrastructure Alignment &amp; Governance</td>
</tr>
<tr>
<td>Academic Technology Services</td>
<td>IDRE (Institute for Digital Research and Education) Research Technology</td>
</tr>
<tr>
<td>IT and Communications</td>
<td>Learning &amp; Research, Web &amp; Mobility Technology Practice</td>
</tr>
<tr>
<td>Infrastructure Planning</td>
<td>Educational Technology Systems &amp; Administration</td>
</tr>
<tr>
<td>Campus-Wide Academic Applications</td>
<td>IT Strategic &amp; Privacy Policy</td>
</tr>
<tr>
<td>Security, Policy and Compliance</td>
<td>Grant, Stewardship and Licensing Administration</td>
</tr>
<tr>
<td>Practice</td>
<td>Community Partnership Programs &amp; Digital Citizenship</td>
</tr>
<tr>
<td>Administration and Operations</td>
<td></td>
</tr>
<tr>
<td>Architecture and Practice</td>
<td></td>
</tr>
</tbody>
</table>
# Research Informatics Strategic Plan – Strategic Themes

1. **Big Data**
2. **Citizen Scholar**
3. **Enabling a Broader Base of Researchers**
4. **Cross-Disciplinary Collaboration**
5. **Multi-Use Data**
6. **Mobile Technology & Social Networking**
7. **Real Time Dynamic Data**
8. **Image Data**
9. **Data Visualization**
10. **rEcosystem**

## Challenges

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Libraries, Theatre, Film &amp; Television, Arts &amp; Architecture</th>
<th>Health Sciences, Medicine, Dentistry, Nursing &amp; Public Health</th>
<th>Physical Sciences, Life Sciences &amp; Engineering</th>
<th>Management, Law, Public Affairs</th>
<th>Social Sciences, Education &amp; Info. Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campus research informatics expertise not known/not accessible</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Standards for data archival</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Inadequate local storage</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>No standard protocols for cataloging/preserving code or solutions</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Data lost/inaccessible because of formats or technology upgraded</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>No mechanisms to support research equipment staff between grants</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Data backup systems not standardized</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>No mechanisms for researcher collaboration and data sharing</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>No inventory of database subscriptions</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
UCLA’s IDRE rEcosystem Build

- **UCREX**, LADR
- **Hoffman2** Shared Cluster (MSA*, POD, CNSI)
- **Dawson2 GPU** Cluster (MSA*)
- **UCShaRCS**

**10Gb Campus Backbone**

- **GlobusOnline using OpenFlow 100G Layer 2 connection**
- **Medical Enterprises Patient Data**
- **(CNSI*) * OpenFlow**
- **(Terasaki*)**
- **Workflow**

**HPC Storage**

- **Meta Scheduler Self-Service Tools Coordination Expertise**
- **Cloud Storage**

**Collaboration Tools**

- **100G Layer 2 connection**
- **CENIC, Esnet, StarLight, I2, OSG, XSEDE, National Supercomputing Centers**
- **Mobile Web Frame Ohmage R & E**
- **Local support UCLA Expertise Area**
- **UCREX, LADR**
Institutional Emphasis on People

Digital Citizenship
Innovation with IT
“The Community Supporting the Community”

Network of Resources Hub
How to take action
Workflow

Campus & Distributed Resources
Contextualized resources:
Managed links, Infrastructure, Coordination, Feedback, Calls

Search
Campus KB
Programs
Published Campus Portals
UC System Shared Research Computer Services

Additional Campus Cluster…

Local support
UC Expertise Area

LBL Mako Cluster

* Meta-Scheduler
* Support Coordination
* UC Expertise Sharing

ShaRCS

* Shared home directories
* Unified system environment

* Pooling of unused cycles
* Unique capabilities
* Workflow

* Dedicated storage network for performance, cross-mounted home directories & data replication for disaster recovery

SDSC Thresher Cluster

Dawson2 GPU Cluster

Local support
UC Expertise Area

10GB CalREN/CENIC Network*

Local support
UC Expertise Area

UCLA Hoffman2 Shared Cluster

* Pooling of unused cycles
* Unique capabilities
* Workflow

Local support
UC Expertise Area

ShaRCS User
Consistent experience regardless of site
### UCLA Data and Research Informatics

#### Medical Informatics
- HIPAA – De-identification
- Digital Imaging
- Common data indexing strategies
- Basic and translational informatics

#### Collected and Observational Data
- Modeling and version control
- Multiple digital formats
- Large database tools
- Curation
- Data management and analysis tools

#### Computation and Simulation Data
- Large data - beyond TB
- Visualization/Simulation
- Large-scale datasets
- Cloud Computing
- Common Workflows

#### Library
- Managed academic content/publishing
- High-value archives
- Data curation and management
- University resources for scholarship

### Informatics and Computational Data Development Proposal

#### Campus Enterprise Decision Data
- Data warehouse
- Access architecture
- Reporting and access tools

#### Individual Centers, Schools, and Divisions
- Discipline-specific data archives
- Topic-specific research data
- Project data/results

#### Individual & Group e-Portfolios, Education Archives
- Instructional content
- Content creation and management
- Preservation

### Academic Resources and Content

#### Computation and Simulation Data
- Collected and Observational Data
- Medical Informatics

#### Library
- New forms of IT-enabled scholarship reinforce UCLA’s core research strengths...

### GOALS
- Facilitate innovative and impactful use of UCLA research
- Foster and facilitate innovative research
- Build search engine prominence
- Facilitate discovery through data accessibility
- Engender broad public reach

### Digital (Web) Presence

- Public, Press, Gov’t & Inst. Marketing
- Recruiting And Program Promotion
- Research Collaboration Hubs
- Data Hubs
- Publications Linked to Data Sets
- Education Portfolios, Collaboration
- Enterprise Info., Training, Resources

Content Management, Survey, Voting, On-Line Meetings and Management, Webinars, Shared Documents, Comment, Registration Validation, Workflow, Publishing, Portfolio Management, Templates